



AGENDA / PANUI

NGA POUTIRIAO O MAUAO (Mauao Joint Administration Board) MEETING

Tuesday, 13 February 2018

Commencing at 9.30 am

Tauranga City Council

Council Chambers/ Te Awanui Harbour Room, 91 Willow Street (access off the Library Arcade), Tauranga

Meeting No.20

Table of Contents

ITEM	SUBJECT	PAGE NO
1.	Karakia	4
2.	Apologies	4
3.	Presentation: s 7(2)(a) - Privacy - Mount Maunganui Scanning System	4
4.	Lead Officer's Report	4
5.	Acceptance of Late Items	4
6.	Confirmation of Minutes / Matters Arising	4
6.1	Minutes for Agenda - Mauao - 3 October 2017 - Meeting No.19	5
7.	Declaration of Conflicts of Interest	11
8.	Business	12
8.1	Mauao Base Track Remediation Works - update presentation by Boffa Miskell	12
8.2	Ngā Poutiriao ō Mauao - Operational Report February 2018	16
8.2.1	Mauao 2017 track counter report	20
8.2.2	Mauao 2018 Summer Events Calendar	29
8.2.3	Mauao Threatened Plants Survey 2017 Final	37
8.3	Mauao Historic Reserve Management Plan	82
8.3.1	Report - Nga Poutiriao o Mauao (Joint Admin Board) Review of the Mauao Historic Reserve Management Plan - Appendix A - Formatted version	87
8.3.2	Report - Nga Poutiriao o Mauao (Joint Admin Board) Review of the Mauao Historic Reserve Management Plan - Appendix B - track changes to draft version of plan	145
8.4	Report - Nga Poutiriao o Mauao (Joint Admin Board) 13 February 2018 - Review of the Mauao MOU	199

8.4.1	DRAFT Report Nga Poutiriao o Mauao (Joint Admin Board) Review of Mauao MOU - Appendix A - final formatted version	203
8.4.2	DRAFT Report Nga Poutiriao o Mauao (Joint Admin Board) Review of Mauao MOU - Appendix B - final formatted version with annotation of key changes	219
8.5	Approval from Mauao Trust to Mauao Historic Reserve Management Plan and Mauao Revised Memorandum of Understanding	235
8.6	Discussion of the final Design for the Historic Reserve Management Plan and Mauao Revised Memorandum of Understanding	235
8.7	Arataki Cultural Trails - s 7(2)(f)(ii)	235
8.8	Possible Funds that the Mauao Trust can apply to fund an administrator for the Trust - s 7(2)(f)(ii)	235
8.9	Next steps in the development of an implementation plan for projects identified in the Mauao Historic RMP - s 7(2)(f)(ii)	235
9.	Discussion of Late Items	235
10.	Karakia	235

1. Karakia

2. Apologies

s 7(2)(a) - Privacy

3. Presentation: s 7(2)(a) - Privacy - Mount Maunganui Scanning System

4. Lead Officer's Report

5. Acceptance of Late Items

6. Confirmation of Minutes / Matters Arising

- (i) Previous Minutes for Confirmation dated 3 October 2017
(Attached)
- (ii) Matters Arising

6.1 Minutes for Agenda - Mauao - 3 October 2017 - Meeting No.19



MINUTES

Ngā Poutiriao o Mauao

Mauao Joint Administration Board

Meeting No. 19

Tuesday, 3 October 2017

Mount Surf Club, 21 Adams Avenue, Mount Maunganui
at 9.30 am

OPEN SECTION

Members Present:

§ 7(2)(a) - Privacy (Chairperson)

§ 7(2)(f)(ii)

Cr Steve Morris

§ 7(2)(a) - Privacy (Ngati Ranginui Iwi)

§ 7(2)(a) - Privacy (Waitaha a Hei)

§ 7(2)(a) - Privacy (Ngai Te Rangi)

Also Present:

§ 7(2)(a) - Privacy (Mauao Trustee)

§ 7(2)(a) - Privacy (Mauao Trust)

§ 7(2)(a) - Privacy (Mauao Trustee)

§ 7(2)(f)(ii)

§ 7(2)(a) - Privacy (Heritage New Zealand)

In Attendance:

§ 7(2)(f)(ii)

1. **Karakia**

§ 7(2)(a) - Privacy Mauao Trust opened the meeting with a Karakia.

2. **Introductions**

An introduction was provided by those present.

3. **Presentation – Mount Surf Club –** § 7(2)(a) - Privacy

§ 7(2)(a) - Privacy provided **PowerPoint presentation (A)** outlining the following:

Key Points

- History of the Club since 1929 until current day
- Focus on competitive strength in the Club provided high level of excellence for the lifesavers
- Rena 2011/12
- Beach Tragedy – § 7(2)(a) - Privacy
- High level of call outs for medical events on Mauao
- Faster, Fitter creates skilled lifeguards
- The Future: Key Legacy Project: Our Facility.

Points Raised by Members

- Noted the importance of the relationship between the Club, Council, the Board and the Trust and that this should be reflected in the Management Plan
- Recognised that the relationship with Tangata Whenua was a key consideration.

In Response to Questions

- A dedicated area for meeting rooms would be incorporated in the new Club facility, that would be available for the Mauao Trust meetings

4. **Verbal Presentation – Brian Palmer, Tauranga Coastguard – Proposal to Install New Communication Repeater on Mauao**

Key Points

- Consisted of more than 70 volunteers
- Provided a vital service in life saving
- Summit of Mauao was considered the prime radio signal site for the area
- The transmitter/receiver would be discreet and solar powered, i.e. no requirement for power supply
- Sought approval to erect a transmitter/receiver at the summit of Mauao and would like to work with the Board and Council in making this possible
- There was a 'shadow area' currently not covered in radio transmissions, which would be opened if there was a transmitter/receiver on the summit of Mauao
- The Port of Tauranga used a different, dedicated radio channel, which the Coastguard listened to (for ship movements) but could not use
- Access to unhindered radio signals was an important component of safety during rescue operations.

Points Raised by Members

- The summit was considered a sensitive area and the threshold for approving new installations was high.

Action:

- Further information, concept design, preferred location etc. for the Mauao Summit transmitter/receiver to be provided by the Coastguard for the Board's consideration

Action By:

Coastguard/ s 7(2)(a) - Privacy s 7(2)(f)(ii)

Action by When:

Next meeting

5. Lead Officer's Report

Provided **PowerPoint presentation (B)**, outlining the following:

Key Points

- **Nga Poutiriao o Mauao 3 October 2017 Lead Officers Report**
- Update draft Mauao Historic RMP
- Objective 1 Issues (n=61) – prelim review
- Objective 2 Issues (n=13) – prelim review
- Objective 3 Issues (n=134) – prelim review
- Miscellaneous Issues (n=14) – prelim review
- Update draft Mauao Historic RMP
- Maps showing:
 - Extent of climbing identified on site
 - Pa and Wahi Tapu sites from Cultural Values Assessment 2014
- Map showing extent of climbing compared to extent of wahi tapu sites

6. Confirmation of Minutes / Matters Arising

Moved: s 7(2)(f)(ii) Seconded: s 7(2)(a) - Privacy

That it be Resolved

That the Ngā Poutiriao o Mauao – Joint Administration Board:

- (a) ***Confirm the previous minutes dated 1 August 2017 – Meeting No.17 as a true and correct record, with the following amendments:***
- s 7(2)(a) - Privacy
 - ***Heritage New Zealand (not Historic Places Trust)***

CARRIED**7. Verbal Update – s 7(2)(a) - Privacy – Effects of Rock Climbing on Wahi Tapu Sites****Key Points**

- The draft Plan did not permit rock climbing on Mauao, whereas the existing Plan did
- There were concerns around Wahi Tapu sites, vegetation damage and Health & Safety issues
- Had met with rock climbers to discuss the concerns of the Board
- Some areas of climbing used in the past had been abandoned and removal of the anchors was progressing
- The majority of climbers were international visitors with extensive climbing experience
- The current sites were considered quite unique, suitable for climbers with medium level experience onwards

- The climbing sites were advertised internationally via websites etc.

Points Raised by Members

- Concerned regarding the H&S danger of climbers being immediately above walkers on the track towards the summit
- Noted that as there were no controls around rock climbing, there could potentially be a high risk for injury of inexperienced climbers.

In Response to Questions

- Hang-gliding and paragliding were currently permitted in the draft Plan
- Advice had been provided by Sport NZ that sport injuries were not included in the new H&S legislation and did not transfer as a liability for the owners of the site.

s 7(2)(g) - Legal privilege

BUSINESS

8. Verbal Update – s 7(2)(f)(iii) – Mauao Base Track Remediation Works

Key Points

- Provided an overview of the base track rehabilitation project
- The new track was expected to be completed by December 2018
- Aimed to have the track well integrated and visually aligned with the surrounding environment.

In Response to Questions

- Once a timeframe for the rehabilitation had been established, communication would be released regarding the project to ensure the public was well informed
- There were specific challenges surrounding constructions on a historic reserve that needed to be taken into account.

9. Mauao Operational Report October 2017

Key Points

- Report was taken as read
- The current base track bypass (staircase) was temporary, however until the track had been fully rehabilitated, this was the only viable option.

In Response to Questions

- There were two ways water travelled on Mauao:
 - Surface (visible)
 - Internal (honeycomb effect)
- The key was to reduce volume and speed of water of existing springs to minimise damage, and for this purpose, bunding could potentially be effective.

Action:

- Visitor numbers to be presented in annual summary form as well as for specific months and peak periods

Action By:

s 7(2)(f)(ii)

Action by When:

Next meeting (if possible)

Moved: s 7(2)(f)(ii)**/Seconded:** s 7(2)(f)(ii)**That it be Resolved*****That the Ngā Poutiriao o Mauao – Joint Administration Board:***

- (a) Receives the Operational Report for October 2017.***

CARRIED**10. Next Meeting**

Noted that the next meeting of Ngā Poutiriao o Mauao (Mauao Joint Administration Board) had been tentatively scheduled for Friday, 8 December 2017 at 1.00 pm.

11. Karakia Whakamutunga

s 7(2)(a) - Privacy Mauao Trust closed the meeting with a Karakia.

The meeting closed at 11.24 a.m.

7. Declaration of Conflicts of Interest

8. Business

8.1 Mauao Base Track Remediation Works - update presentation by Boffa Miskell

Re: Update on the Proposed Mauao Base Track Remediation Project 2018

Tēnā te mihi ki a koutou katoa ngā kaitiaki o te Poari Matua o Mauao,

Figure 1 - A large Pōhutukawa Tree and part of the base track slips 8 metres to the beach at Te Kawa Point in April 2017.



Tauranga City Council (TCC) confirmed the successful team of consultants to develop and design a permanent long term solution as part of the remediation works to the Mauao base track as the result of a large land slip at Te Kawa Point during Cyclone Debbie in April 2017. The size and scale of the damage to the base track is shown in the photo below (TCC website).

Tenders were called to provide a preliminary concept plan for Client approval and then full detailed engineering design plans and drawings for the consent process and construction. The tender was based on the Clients preference for Option 5 from the “Mauao Base Track Repair Assessment Options Report” by Tonkin and Taylor in June 2017.

TCC awarded the Mauao base track project in November 2017 with a team of experts including:

- Boffa Miskell Ltd Tauranga, led by s 7(2)(a) - Privacy to provide strategic planning, Iwi and hapū cultural, landscape architecture and design, ecology and coastal marine advice;
- GHD Tauranga an international engineering company, led by s 7(2)(a) - Privacy to provide the coastal engineering and geotechnical expertise to construct the proposed design;
- Alta, led by s 7(2)(a) - Privacy provides advice on the construction methodologies, machinery options and material storage sites, engineering and cost implications for the project;
- Arbor Care Ltd, s 7(2)(a) - Privacy provides the risk management assessment and maintenance plan for the existing trees and vegetation and in particular the iconic Pōhutukawa trees;
- Insitu-Heritage, s 7(2)(a) - Privacy project archaeologist.
- Lysaght Consultants provided the survey and contour data of the project area and slip site.

The project team will develop and provide TCC and Ngā Poutiriao o Mauao with an innovative concept design and engineering solution for a new section of the Mauao base track from Waipatukakahu Puna around Te Kawa Point and re-joining the track between the Te Kawa and Ruarapapari Waipuna.

The proposed walking track will be on top of an engineered structure built of rock materials that is designed to absorb the energy of the waves but to also allow the water to be dissipated, this is known as a “revetment.” Working examples of revetments in public use along the Fergusson Park and the Waikareao Estuary walkways. The final design of the Te Kawa Point base track will meet the following criteria:

- a. Consented, constructed and completed by Christmas 2018,
- b. Within the project budget of \$2.2 million;
- c. Meet the appropriate quality assurances;
- d. Provide safe public access for all abilities that enhances their Mauao experience;
- e. Recognise and enhance the cultural significance of Te Kawa Point and the surrounding natural character and landscape features of Mauao;
- f. Address the engineering constraints of construction within the coastal environment and the source of appropriate materials;
- g. Manage public access to the coastal marine area;
- h. Minimise effects on the archaeological features within the project site area;
- i. Manage effects on ecology and marine environment;
- j. Manage landscape and visual effects;
- k. Support the long term care and maintenance of the new track structure as well as the clean-up following further storm events.

Figure 2 – The proposed lower coastal track route is indicated by the red line shown above.



The proposed track will provide a new opportunity to formally access the southern coastal shoreline of Mauao, walk past the track and connect with the sandy Te Kawa beach area and large grass embankment.

The team met and visited the Te Kawa Point project site on 13 December 2017 and reconvened on 10 January 2018 to assess what the constraints and opportunities with the preferred alignment were and how we can address these matters in developing an initial concept design.

The project team recognises the cultural significance of Mauao to the Mauao Trustees, Tauranga Moana Iwi and hapū as well as Ngā Poutiriao o Mauao and TCC. The project team would like to meet with the Trustees and Ngā Poutiriao to discuss the following matters to appoint a Mauao Trust representative as a member of our project team to:

- a. Assist and contribute to the cultural integrity of the proposed design and construction processes for the new track;
- b. Report to the Trustees on specific project matters that require Trust sign off;
- c. Confirm the cultural values and principles associated with Mauao for the Te Kawa Point project area including those values identified in the Mauao Historic Reserve Management Plan Section 3.2 Rangatiratanga, Mana, Kaitiaki and Mauri are enhanced within the project design;
- d. Discuss impacts on cultural taonga along the proposed base track route:
 - i. The Pōhutukawa trees around the Te Kawa slip site and the foreshore area are noted as important natural cultural features that should be maintained and enhanced by the project;
 - ii. The natural boulder fields along the shoreline at the start of the proposed new track alignment;
 - iii. The lower section of the Te Kawa Waipuna are notable natural cultural features and cultural sites located within the proposed base track route.

- e. Review and comment on the “Cultural Monitoring of Earthworks Protocol” of TCC;
- f. Undertake the role or facilitate the appointment of a cultural earthworks monitor with the appropriate skills and knowledge during the construction period for the new track;
- g. Assist with the identification of an appropriate source of rock material to be used in the construction of the track revetments;
- h. Assist in the identification of stock pile sites for rock and materials during the construction phase.

The project team will present a revised route for the base track that takes into consideration the current information and constraints (i.e. this is shown as the yellow and purple lines below) for discussion.



The project team looks forward to meeting you to discuss these significant matters and provide a project update on 13th February 2018.

Ngā mihi, nā

s 7(2)(f)(ii)

Ngā Poutiriao ō Mauao - Operational Report February 2018

Ngā Poutiriao ō Mauao (Mauao Joint Administration Board)

13 February December 2018

Objective ID: A8451590



Tauranga City

Executive summary

Recommendation	That the Ngā Poutiriao ō Mauao: (a) Receives the operational report for February 2018.
Summary of issue	This report identifies the key operational issues and achievements over the reporting period October 2017 - February 2018. It identifies up and coming work of interest to Ngā Poutiriao ō Mauao, including ongoing visitor records and an up to date events calendar for Mauao, Main Beach and Pilot Bay Reserves.

Discussion

Pest control update

1. Rabbit control continues to be successful, with a night shooting total for 2017 of 722 rabbits, and many active burrows were eliminated. This sustained and progressive effort is having a noticeable impact on pasture and re-vegetation growth and therefore a positive impact on maintaining vegetation cover on sensitive archaeology. Low numbers of rats are still present. Two feral cats and one juvenile stoat were also controlled this period.
2. Plant pest control is ongoing and working well. The current focus is on the priority invasive weeds and amenity weeds in relation to track edges and high traffic areas. Aerial spraying of a large infestation of Japanese Honeysuckle was completed in November 2017. Staff and contractors are monitoring results to assess how effective this approach is in relation to the alternatives in the target area.

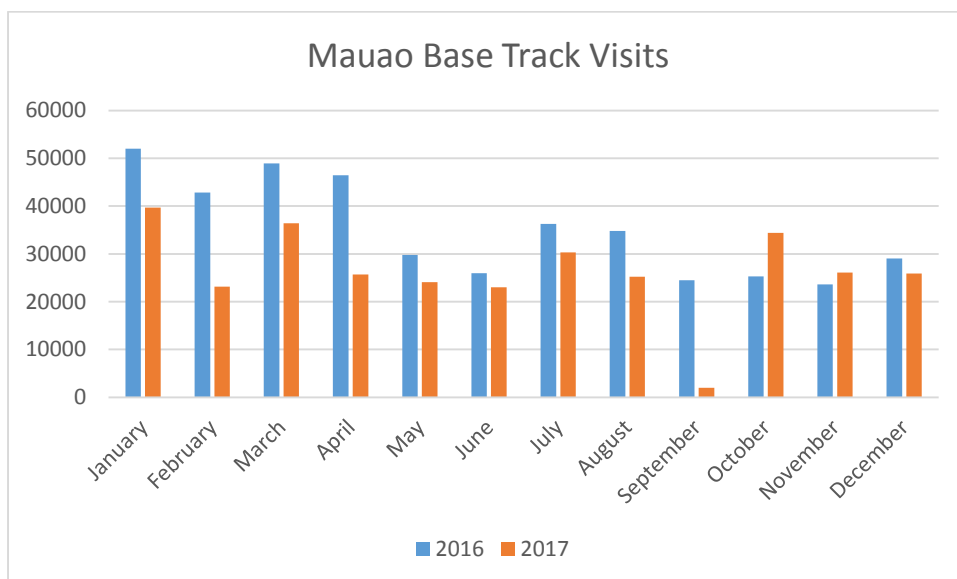
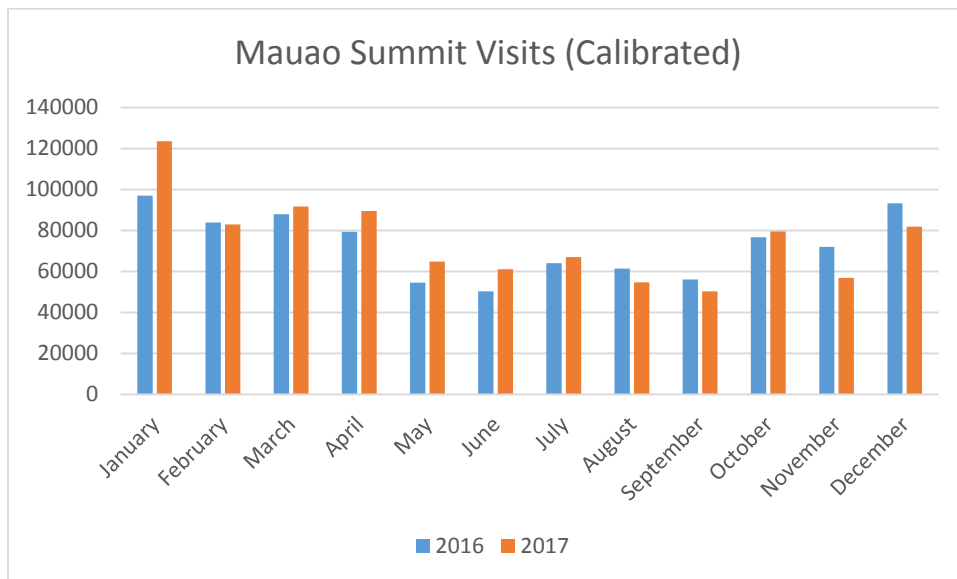
Visitor numbers

3.

	Summit visits (calibrated)	Base track visits	Total visits
2016	876,297	419,588	1,295,885
2017	905,621	318,046	1,223,667

See Appendix A for specific details.

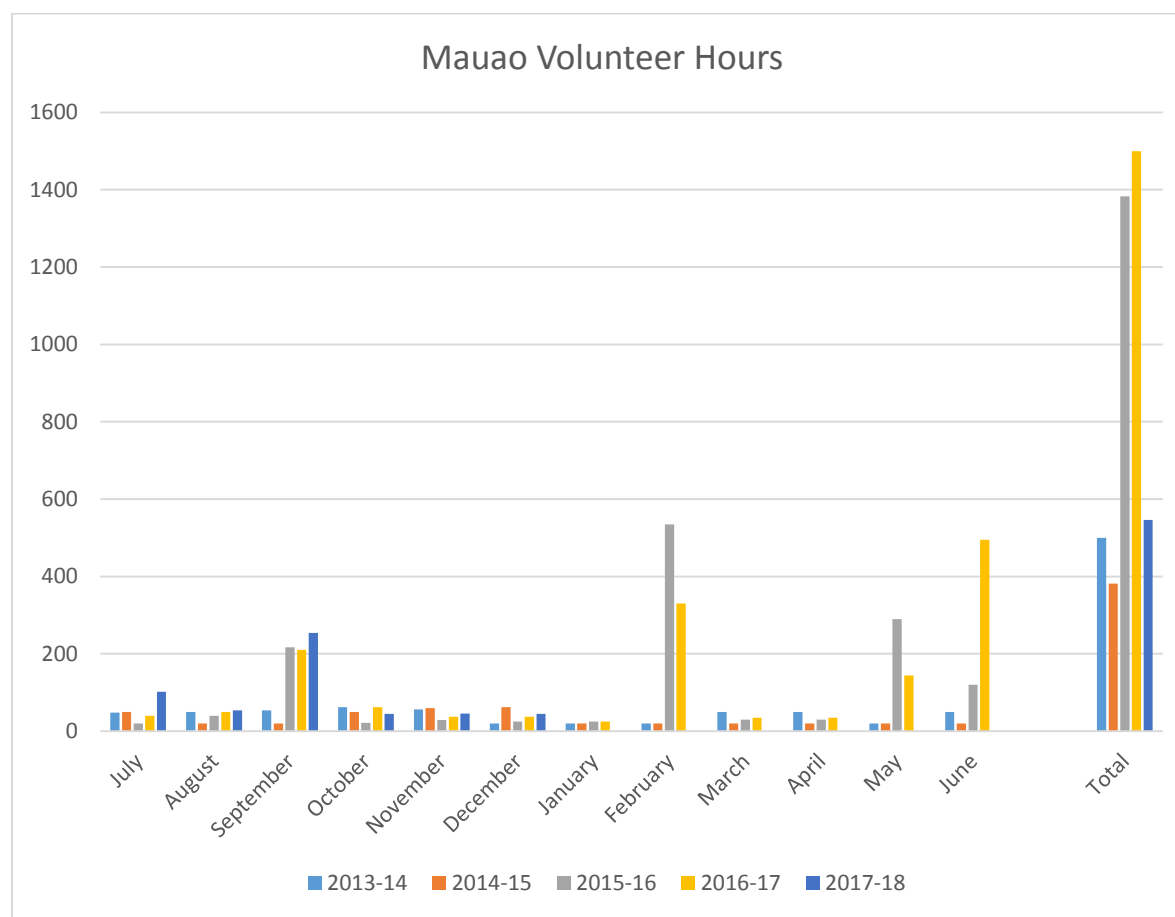
Objective ID: A8451590



Volunteer support

- Volunteer hours on Mauao are made up of a number of ongoing support groups and one off community events. The nature of the support includes the maintenance of animal pest control devices, revegetation planting, and rubbish removal. **Figure 1** shows the number of volunteer hours per month. The peaks are generally planting support and coastal clean ups.

5. Figure 1: Volunteer Support Hours Per Month



Upcoming events

- Refer to **Appendix B** for the Mauao 2018 Summer Events Calendar, for the approaching period.

Recent Successes

Heritage New Zealand Authority for Operational Activities

- This period, an onsite induction was held with the designated archaeologist, key operational staff and contractors who undertake work on Mauao. The induction was to inform all parties of the Heritage New Zealand Authority and its requirements in the ongoing management of maintenance activities, to ensure the protection of heritage values and features within the reserve, and adherence to the authority granted.
- Staff and the designated archaeologist also identified 10 key monitoring sites that will be used for photo point monitoring for the annual monitoring and reporting requirements of the authority. The sites selected cover the full range of issues and threats that have potential to impact on the archaeological and heritage values.

Threatened Plant Survey

- A baseline monitoring survey of threatened plant species on Mauao including *Psilotum nudum*, *Pimelea tomentosa*, *Zoysia pauciflora*, and *Tetragonia tetagoniodes* was completed this period to provide an understanding of the distribution, success and threats to known threatened plant species on the Maunga. See the report at **Appendix C** for specific details.

10. 47 *Psilotum nudum* plants were located during this survey, 39 of which were located immediately adjacent to the known climbing routes, a further eight were located on the bluffs not utilised for climbing and three plants were located at the base of the 'Drop Kick Whizzer' climbing route. These three are considered to be at risk from the climbing activity. Almost all of the plants occurred in the absence of other plants, generally located in the cracks and fissures of the rock face.
11. Seven patches of *Zoysia pauciflora* were located on the northern coastal margin.
12. No specimens of *Tetragonia tetragoniodes* were located in the 2017 survey. The previously known location from 2014 was impacted by the large slip that damaged the base track in April 2017.
13. No specimens of *Pimelia tomentosa* were found in the 2017 survey. The last known record was 2004. Being a relatively short lived shrub it is possible that this specimen was displaced by regeneration of taller indigenous vegetation.
14. The report also touches on the presence of some regionally uncommon species found in the reserve and provides recommendations and actions for the ongoing future management and monitoring of threatened plants on the Maunga.

Arborist Tree removal assessment

15. The city arborist team undertook a site visit this period to assess the condition of some of the large exotic trees that are planned for removal, to help the operational team prioritise this work over the coming years. While some of these trees are in poor condition, the team confirmed there is no immediate threat to the public from any of the trees surveyed using the QTRA assessment process. The city arborist recommendation is to continue with a staged removal of these trees to prevent damage to heritage features by uncontrolled failure over time. This work is covered by the Heritage New Zealand Authority and heritage specifications.

Planned Work for the coming period

Renewals priorities for Mauao 2017/2018

16. Resurfacing of the Oruahine track is planned for early March/ April 2018. This operation will involve the use of a helicopter for delivery of aggregate and material directly onto the track.
17. Three existing seats on the base track have been replaced due to storm damage and poor condition.
18. Some fencing replacement and improvements on the North Eastern side of the Maunga are planned for February / March to allow the necessary site preparation for planting in May 2018.

Mauao maintenance access assessment

19. Contractors recently raised concern regarding the safety of accessing the north paddock stockpile site and the reservoir area with 6-wheeler trucks for the ongoing maintenance activities within the reserve. An engineer was engaged to assess the access for this purpose and found that the two sections of road are suitable for vehicles of this type. Some recommendations were made for minor maintenance improvements and educating drivers on the desired turning radius to keep away from the outside edge of the track. These maintenance improvement will be worked into the existing maintenance programme.

Herpetofauna (reptile) Survey

20. A base line survey of reptiles present on Mauao was undertaken in November 2017 to provide an understanding of the presence and distribution of reptile species on Mauao, and any threats to their existence for consideration in the future management of the Maunga. The survey results are expected early in 2018.

21. **Ongoing maintenance continues on the following aspects of the reserve:**

- restoration plantings
- plant and animal pest control
- stock and pasture management
- walkway maintenance
- sign and structure maintenance
- four wheel drive track maintenance
- geotechnical rock stability monitoring and scaling work

Appendices

No.	Title
A	Mauao 2017 track counter report <i>Objective Id: A8444933</i>
B	Mauao 2018 Summer Events Calendar <i>Objective Id: A8444937</i>
C	Mauao Threatened Plant Survey report – Wildlands <i>Objective Id: A8444942</i>

Signatories

Authors	§ 7(2)(f)(ii)
Committee Lead Review	§ 7(2)(f)(ii)
Authorisers	§ 7(2)(f)(ii)
	§ 7(2)(f)(ii)

Mauao 4wd Track

Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018

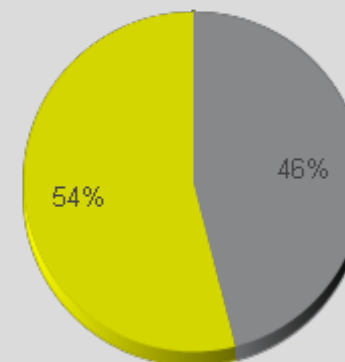


Key Figures

- Total Traffic for the Period Analysed: 286,408
- Daily Average: 736
Weekdays: 677 / Weekend days: 885
- Monthly Average: 22,410
- Busiest Day of the Week: Sunday
- Busiest Days of the Period Analysed:
 1. Wednesday 04 January 2017 (1,849)
 2. Sunday 16 April 2017 (1,745)
 3. Sunday 05 February 2017 (1,705)
- Distribution by Direction:

■ IN: 54%

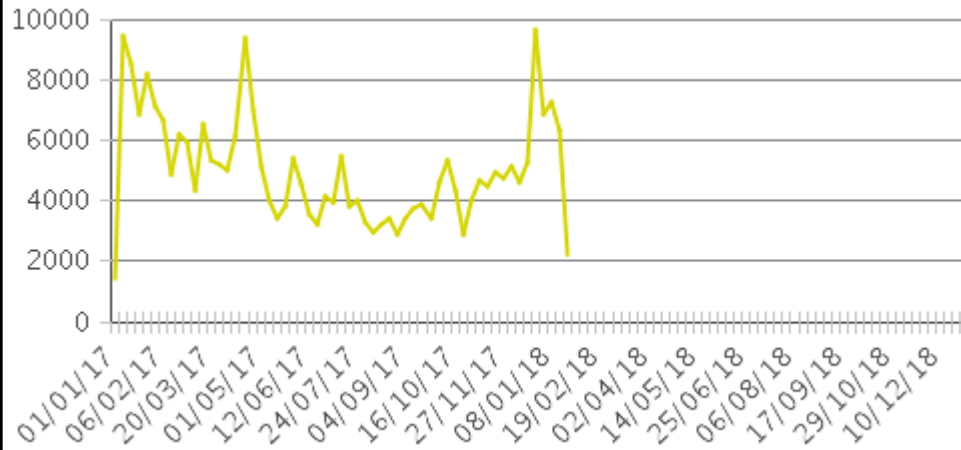
■ OUT: 46%



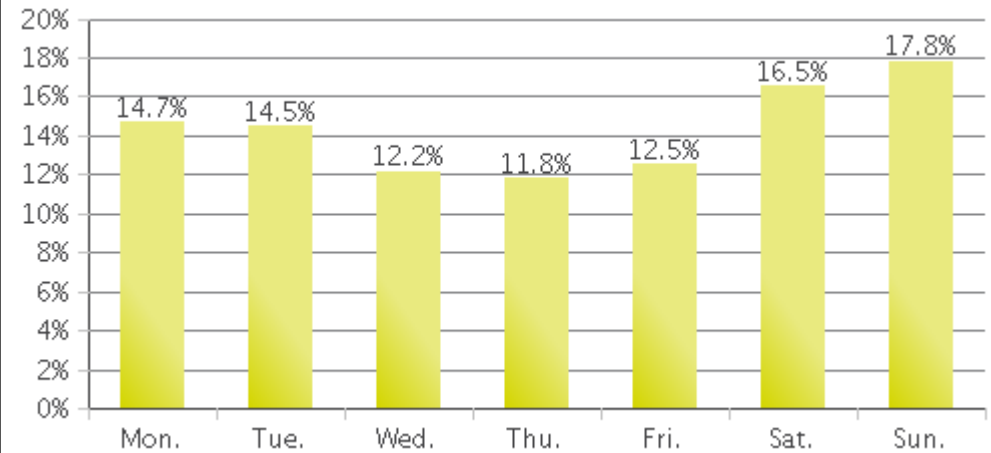
Mauao 4wd Track

Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018

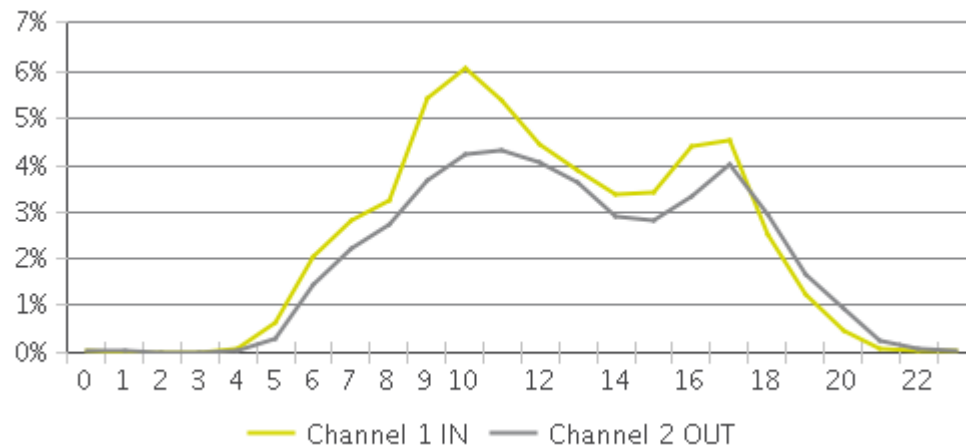
Weekly Traffic



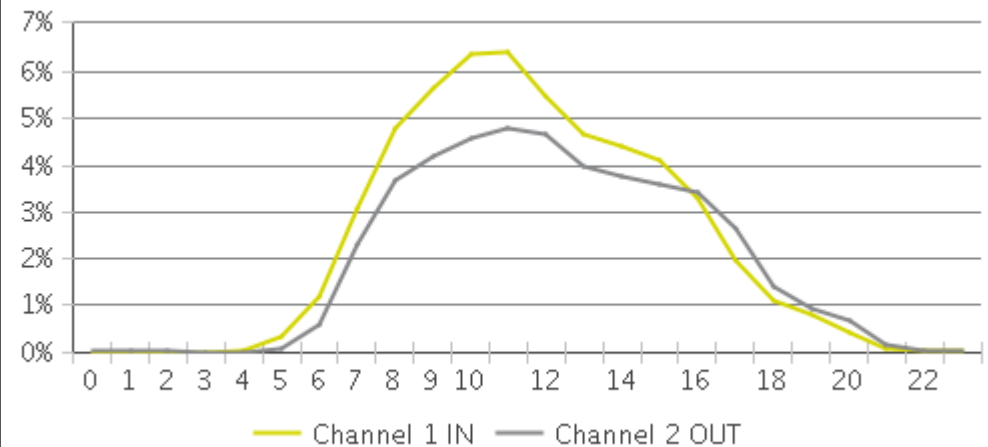
Weekly Profile



Hourly Profile during Weekdays

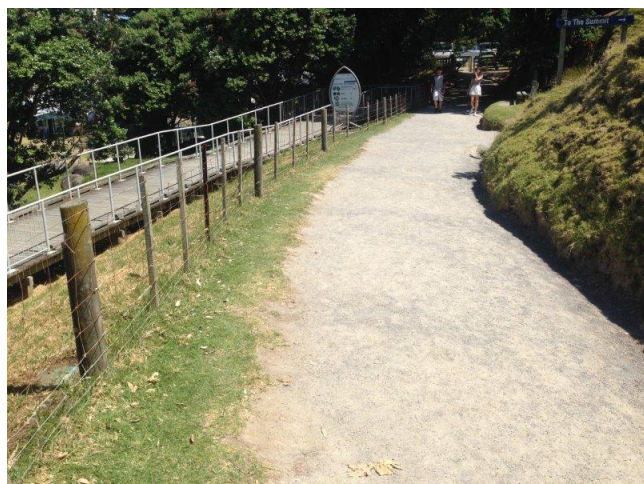


Hourly Profile during the Weekend



Mauao Base Track

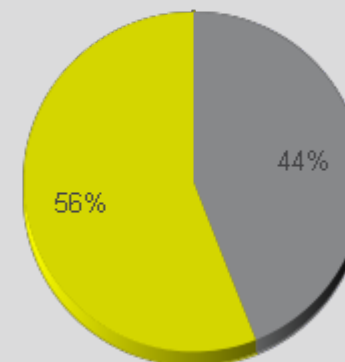
Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018



Key Figures

- Total Traffic for the Period Analysed: 329,467
- Daily Average: 955
Weekdays: 849 / Weekend days: 1,221
- Monthly Average: 29,067
- Busiest Day of the Week: Sunday
- Busiest Days of the Period Analysed:
 1. Sunday 04 June 2017 (3,008)
 2. Thursday 05 January 2017 (2,406)
 3. Sunday 30 July 2017 (2,346)
- Distribution by Direction:

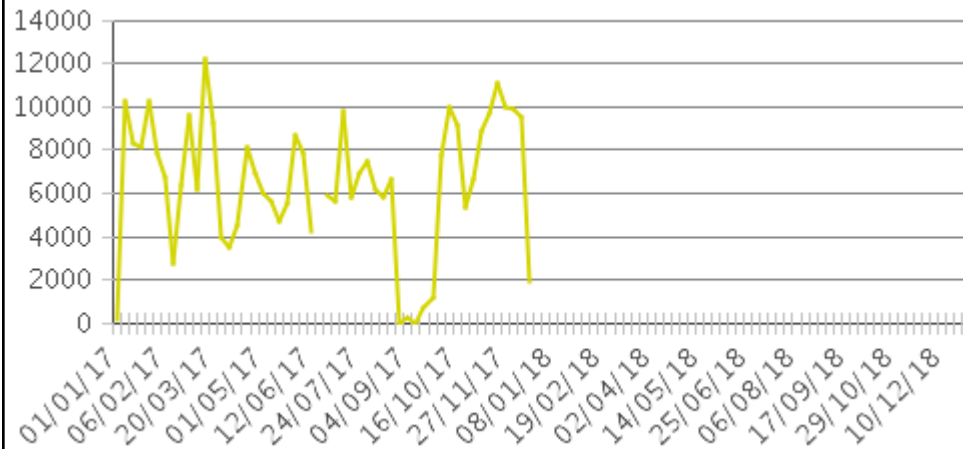
- IN: 56%
- OUT: 44%



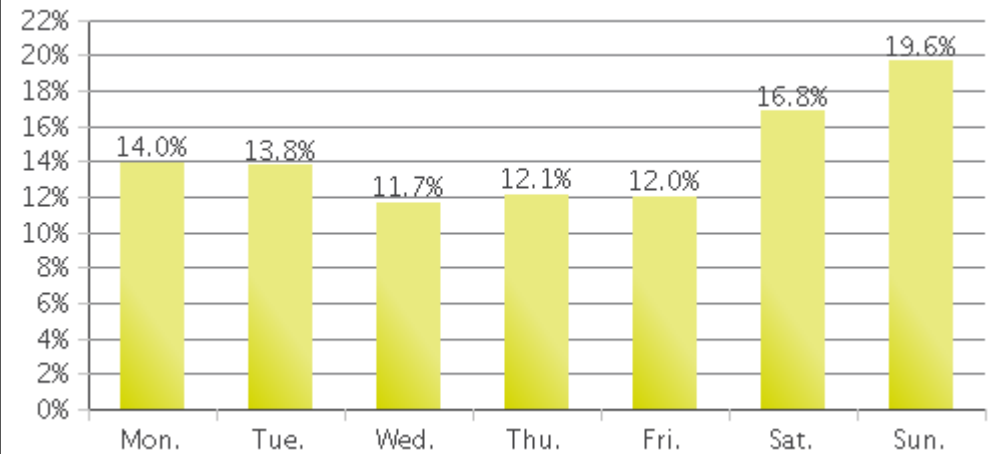
Mauao Base Track

Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018

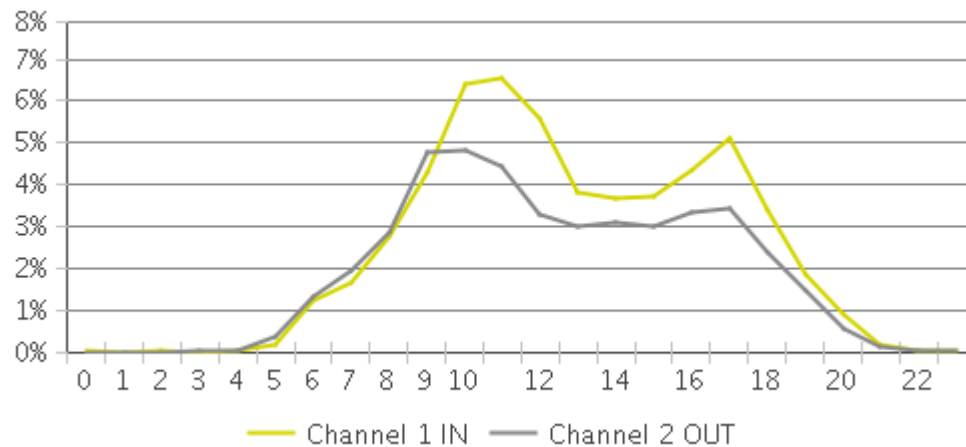
Weekly Traffic



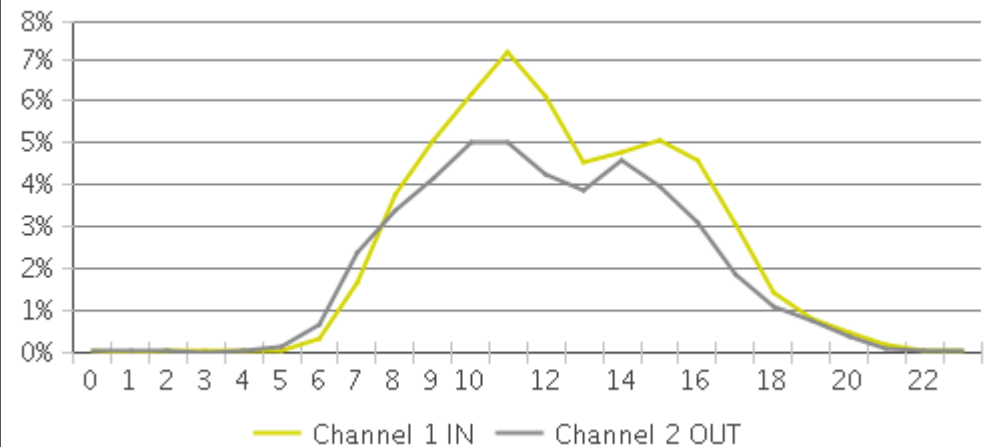
Weekly Profile



Hourly Profile during Weekdays



Hourly Profile during the Weekend



Oruahine Track

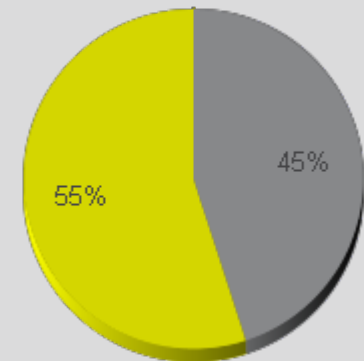
Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018



Key Figures

- Total Traffic for the Period Analysed: 380,133
- Daily Average: 980
Weekdays: 891 / Weekend days: 1,201
- Monthly Average: 29,820
- Busiest Day of the Week: Sunday
- Busiest Days of the Period Analysed:
 1. Wednesday 04 January 2017 (2,335)
 2. Tuesday 25 April 2017 (2,285)
 3. Thursday 05 January 2017 (2,237)
- Distribution by Direction:

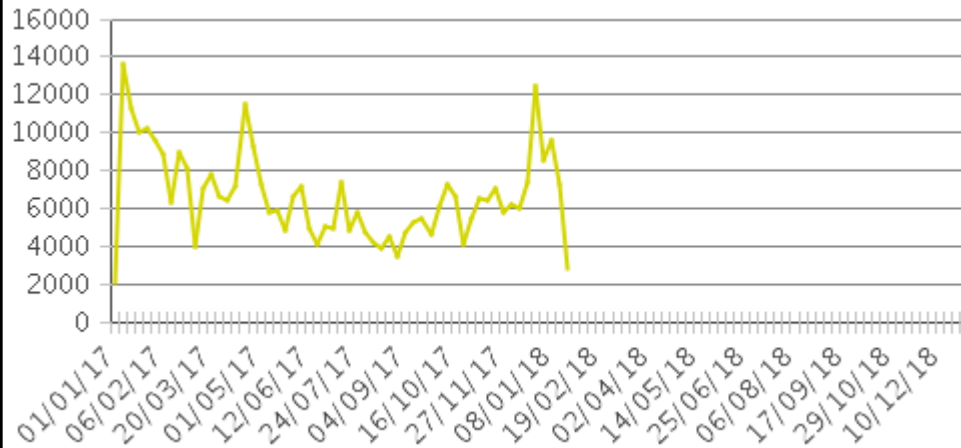
- IN: 55%
- OUT: 45%



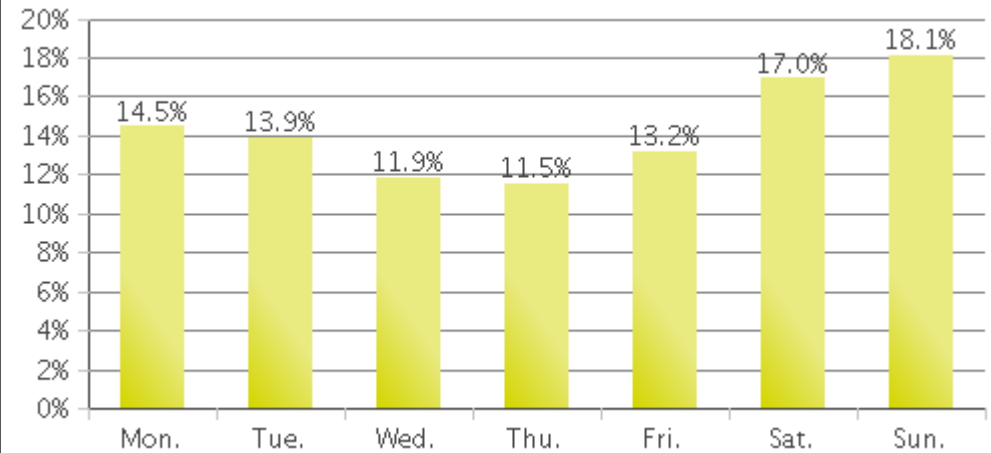
Oruahine Track

Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018

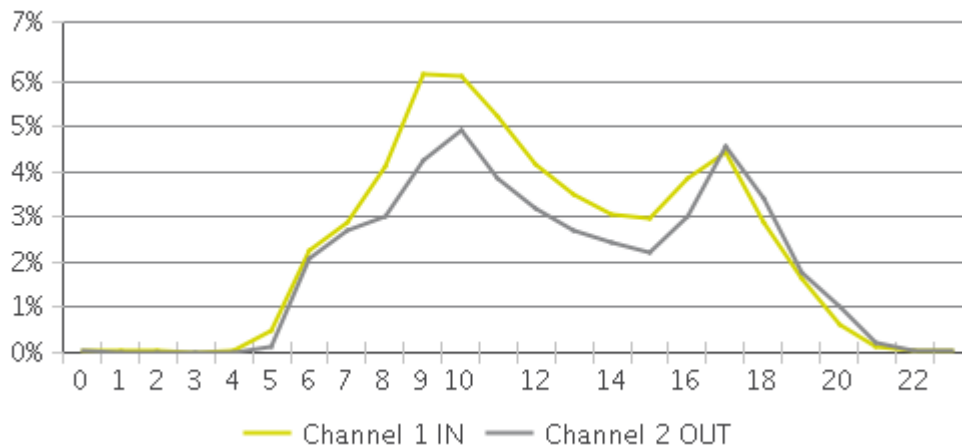
Weekly Traffic



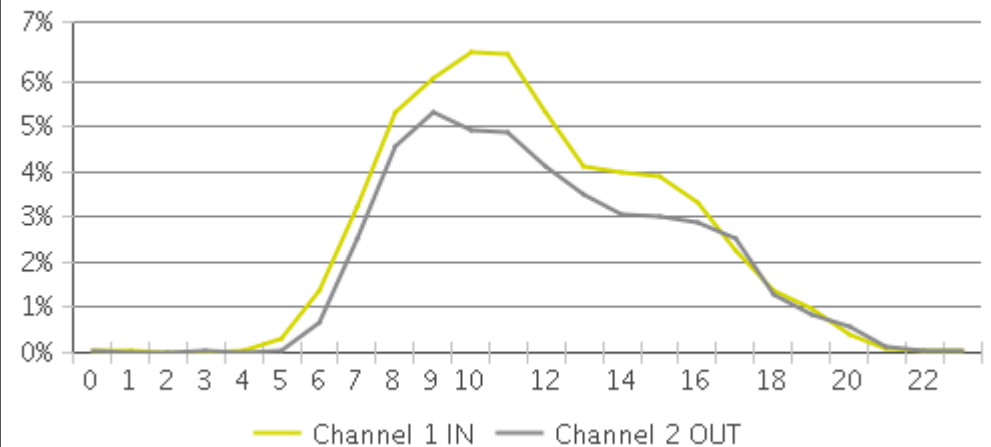
Weekly Profile



Hourly Profile during Weekdays

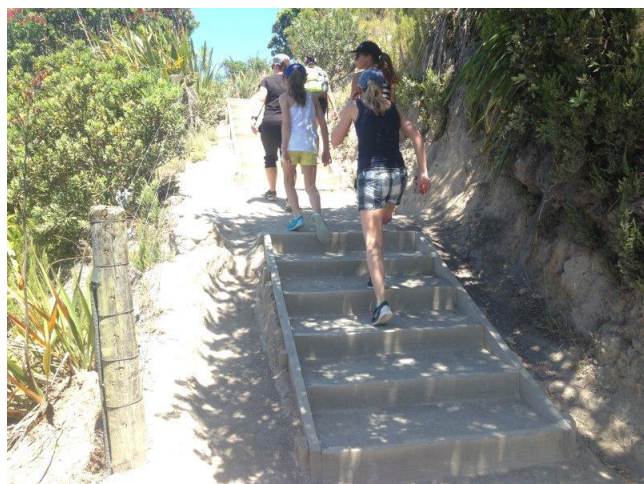


Hourly Profile during the Weekend



Waikorire Track

Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018

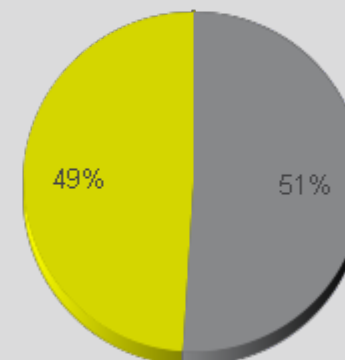


Key Figures

- Total Traffic for the Period Analysed: 1,028,476
- Daily Average: 2,644
Weekdays: 2,514 / Weekend days: 2,969
- Monthly Average: 80,474
- Busiest Day of the Week: Sunday
- Busiest Days of the Period Analysed:
 1. Thursday 28 December 2017 (6,397)
 2. Saturday 30 December 2017 (6,011)
 3. Thursday 05 January 2017 (5,521)
- Distribution by Direction:

■ IN: 49%

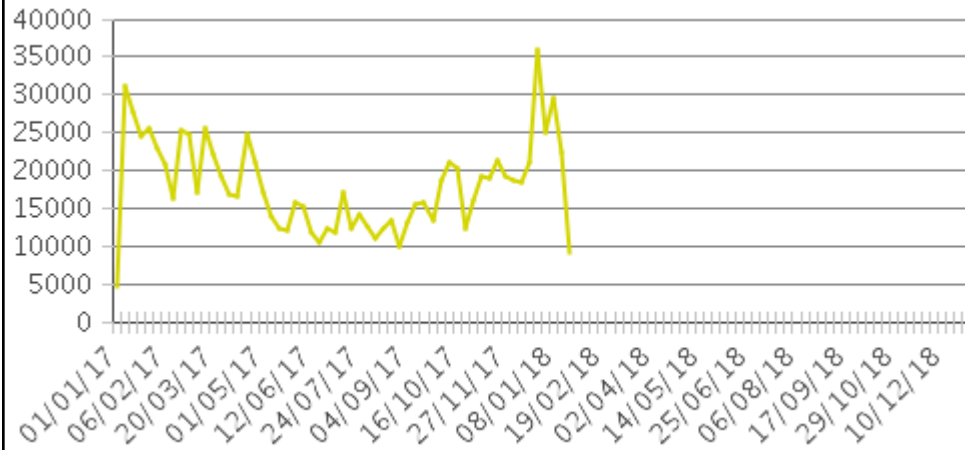
■ OUT: 51%



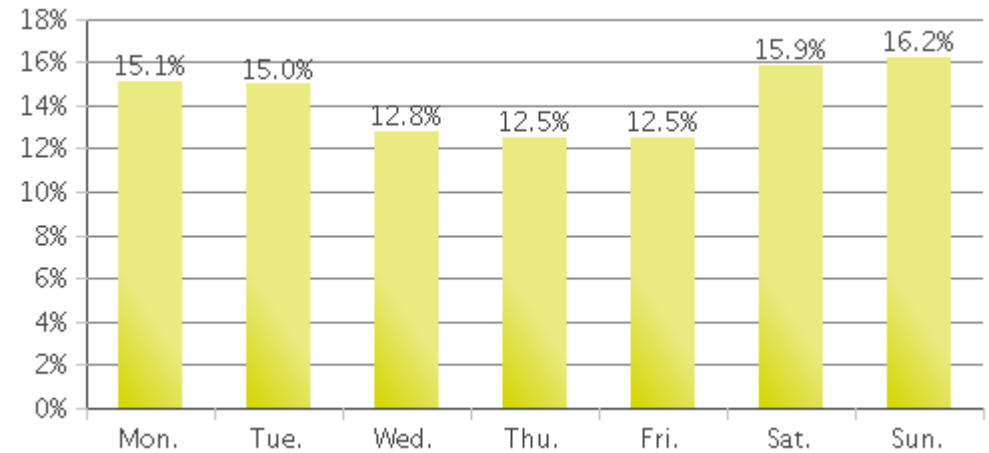
Waikorire Track

Period Analysed: Sunday 01 January 2017 to Monday 31 December 2018

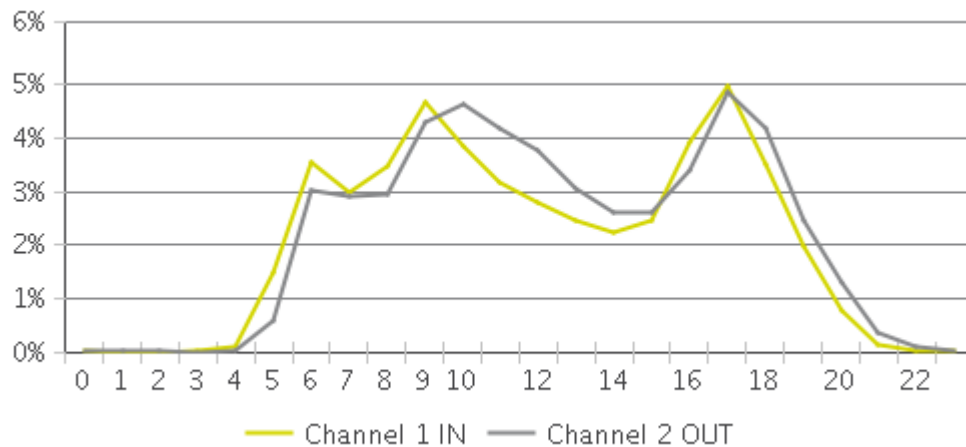
Weekly Traffic



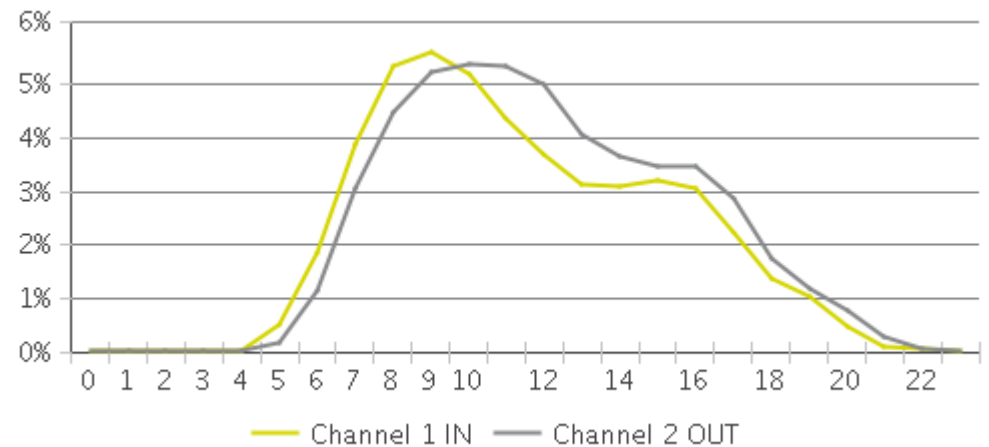
Weekly Profile



Hourly Profile during Weekdays



Hourly Profile during the Weekend



8.2.2 Mauao 2018 Summer Events Calendar

Key –

- Weekend
- Public Holiday
- Cruise Ship

Start Date:	Start Time:	End Date:	End Time:	Location:	Event:
02/01/18				2ND JANUARY PUBLIC HOLIDAY	
03/01/18	10:00 AM	03/01/18	09:00 PM	Soper Reserve	Beast Of A Feast 2018
03/01/18	08:33 AM	03/01/18	09:00 PM	Port of Tauranga - Cruise Ships	Maasdam - Cruise Ship
03/01/18	09:15 AM	03/01/18	09:15 PM	Port of Tauranga - Cruise Ships	Ovation of the Seas - Cruise Ship
03/01/18	12:01 AM	03/01/18	11:59 PM	Blake Park	International Cricket Black Caps vs West Indies
04/01/18	06:00 PM	04/01/18	07:30 PM	Pilot Bay Reserve	Ocean Swim Series 2016/17 (#4)
04/01/18	11:00 AM	04/01/18	01:00 PM	Mt Maunganui Main Beach - West	More FM Beach Dig 2018
05/01/18	05:00 PM	05/01/18	09:30 PM	Coronation Park	Gourmet Night Market
06/01/18	09:00 AM	06/01/18	02:00 PM	Coronation Park	The Little Big Markets
06/01/18	08:00 PM	06/01/18	11:00 PM	Mount Drury Reserve - Soundshell	Night Owl Cinema 2016/2017 #3
06/01/18	12:00 AM	07/01/18	12:00 AM	Mt Maunganui Main Beach	Mt Maunganui Beach Volleyball Open
06/01/18	06:15 AM	06/01/18	07:00 PM	Port of Tauranga - Cruise Ships	Caledonian Sky - Cruise Ship
06/01/18	06:15 AM	06/01/18	09:03 PM	Port of Tauranga - Cruise Ships	Maasdam - Cruise Ship
06/01/18	07:15 AM	06/01/18	06:00 PM	Port of Tauranga - Cruise Ships	Seabourn Encore - Cruise Ship
08/01/18	05:15 AM	08/01/18	06:00 PM	Port of Tauranga - Cruise Ships	Caledonian Sky - Cruise Ship
11/01/18	06:00 PM	11/01/18	07:30 PM	Pilot Bay Reserve	Ocean Swim Series 2016/17 (#5)
12/01/18	06:00 AM	12/01/18	05:30 PM	Port of Tauranga - Cruise Ships	Sun Princess - Cruise Ship

12/01/18	05:00 PM	12/01/18	09:30 PM	Coronation Park	Gourmet Night Market
13/01/18	09:30 AM	13/01/18	06:30 PM	Mt Maunganui Main Beach	NZ Beach Hockey Championships 2018
13/01/18	06:15 AM	13/01/18	06:30 PM	Port of Tauranga - Cruise Ships	Sea Princess - Cruise Ship
13/01/18	02:00 PM	13/01/18	03:00 PM	Mauao - Tangaroa Beach/Sandy Beach	s 7(2)(a) - Privacy Wedding
14/01/18	08:00 AM	14/01/18	11:00 AM	Pilot Bay Reserve	Round the Mount Swim 2018
14/01/18	10:48 AM	14/01/18	08:33 PM	Port of Tauranga - Cruise Ships	Noordam - Cruise Ship
18/01/18	10:00 AM	18/01/18	12:30 PM	Mt Maunganui Main Beach - West	More FM Sand Sculpture 2018
18/01/18	06:00 PM	18/01/18	07:30 PM	Pilot Bay Reserve	Ocean Swim Series 2016/17 (#6)
18/01/18	09:00 AM	18/01/18	08:45 PM	Port of Tauranga - Cruise Ships	Golden Princess - Cruise Ship
19/01/18	09:45 AM	19/01/18	09:30 PM	Port of Tauranga - Cruise Ships	Radiance of the Seas - Cruise Ship
19/01/18	05:00 PM	19/01/18	09:30 PM	Coronation Park	Gourmet Night Market
20/01/18	12:00 AM	21/01/18	12:00 AM	Mt Maunganui Main Beach	Commonwealth Games Qualification Tournament 2 - Beach Volleyball
20/01/18	05:30 PM	21/01/18	12:00 AM	Coronation Park	Mount Festival of Multisport (MFOM) 2018
23/01/18	12:00 AM	24/01/18	12:00 AM	Mt Maunganui Main Beach	NZ Age Group Beach Volleyball Champs
25/01/18	05:45 PM	25/01/18	07:15 PM	Memorial Park	Summer Reading Programme Finale 2018
25/01/18	06:00 PM	25/01/18	07:30 PM	Pilot Bay Reserve	Ocean Swim Series 2016/17 (#7)
25/01/18	07:30 AM	25/01/18	07:45 PM	Port of Tauranga - Cruise Ships	Sun Princess - Cruise Ship
26/01/18	05:00 PM	26/01/18	09:30 PM	Coronation Park	Gourmet Night Market
27/01/18	08:00 AM	28/01/18	05:00 PM	Mt Maunganui Main Beach	Eastern Regional Surf Life Saving Championships - 2018
27/01/18	05:15 AM	27/01/18	05:00 PM	Port of Tauranga - Cruise Ships	Celebrity Solstice - Cruise Ship

27/01/18	06:15 AM	27/01/18	06:00 PM	Port of Tauranga - Cruise Ships	Caledonian Sky - Cruise Ship
27/01/18	12:01 AM	27/01/18	11:59 PM	Blake Park	International Cricket Black Caps vs Pakistan
29/01/18	06:15 AM	29/01/18	07:00 PM	Port of Tauranga - Cruise Ships	Diamond Princess - Cruise Ship
29/01/18				AUCKLAND ANNIVERSARY PUBLIC HOLIDAY	
30/01/18	07:03 AM	30/01/18	06:03 PM	Port of Tauranga - Cruise Ships	Sea Princess - Cruise Ship
30/01/18	07:15 AM	30/01/18	08:00 PM	Port of Tauranga - Cruise Ships	Maasdam - Cruise Ship

February 2018

Start Date:	Start Time:	End Date:	End Time:	Location:	Event:
02/02/18	05:00 PM	02/02/18	09:30 PM	Coronation Park	Gourmet Night Market
02/02/18	06:30 AM	02/02/18	04:45 PM	Port of Tauranga - Cruise Ships	Carnival Spirit - Cruise Ship
03/02/18	09:00 AM	03/02/18	02:00 PM	Coronation Park	The Little Big Markets
03/02/18	12:00 AM	04/02/18	12:00 AM	Mt Maunganui Main Beach	NZ Secondary Schools Beach Volleyball Champs
03/02/18	08:03 AM	03/02/18	06:03 PM	Port of Tauranga - Cruise Ships	Amsterdam - Cruise Ship
04/02/18	10:03 AM	04/02/18	07:00 PM	Port of Tauranga - Cruise Ships	Regatta - Cruise Ship
05/02/18	07:15 AM	05/02/18	06:00 PM	Port of Tauranga - Cruise Ships	Seabourn Encore - Cruise Ship
05/02/18	07:30 AM	05/02/18	05:00 PM	Port of Tauranga - Cruise Ships	Silver Whisper - Cruise Ship
06/02/18	05:30 AM	06/02/18	10:00 AM	Mount Drury Reserve	Waitangi Day Dawn Service 2018
06/02/18	06:45 AM	06/02/18	07:00 PM	Port of Tauranga - Cruise Ships	Golden Princess - Cruise Ship
06/02/18	07:15 AM	06/02/18	04:03 PM	Port of Tauranga - Cruise Ships	Regatta - Cruise Ship
06/02/18				WAITANGI DAY PUBLIC HOLIDAY	

07/02/18	07:15 AM	07/02/18	06:03 PM	Port of Tauranga - Cruise Ships	Seabourn Encore - Cruise Ship
07/02/18	07:15 AM	07/02/18	04:03 PM	Port of Tauranga - Cruise Ships	Seven Seas Navigator - Cruise Ship
08/02/18	08:00 AM	08/02/18	08:00 PM	Port of Tauranga - Cruise Ships	Radiance of the Seas - Cruise Ship
09/02/18	08:45 AM	09/02/18	08:45 PM	Port of Tauranga - Cruise Ships	Ovation of the Seas - Cruise Ship
02/02/18	05:00 PM	02/02/18	09:30 PM	Coronation Park	Gourmet Night Market
09/02/18	05:00 PM	09/02/18	09:30 PM	Coronation Park	Gourmet Night Market
10/02/18	08:00 PM	10/02/18	11:00 PM	Mount Drury Reserve - Soundshell	Night Owl Cinema 2016/2017 #4
10/02/18	12:00 AM	11/02/18	12:00 AM	Mt Maunganui Main Beach	NZ National Champs - Beach Volleyball
16/02/18	05:00 PM	16/02/18	09:30 PM	Coronation Park	Gourmet Night Market
17/02/18	12:00 AM	17/02/18	12:00 AM	Coronation Park	Melt Maunganui Ice Cream Festival
17/02/18	07:03 AM	17/02/18	04:00 PM	Port of Tauranga - Cruise Ships	Diamond Princess - Cruise Ship
17/02/18	08:09 AM	17/02/18	04:00 PM	Port of Tauranga - Cruise Ships	Noordam - Cruise Ship
17/02/18	01:00 PM	17/02/18	02:00 PM	Mt Maunganui Main Beach - West	Platt & Ebrey Wedding
18/02/18	08:30 AM	22/04/18	12:00 PM	Mauao	Run For Life (PINC & STEEL Cancer Rehab Trust) 2018
18/02/18	07:03 AM	18/02/18	04:00 PM	Port of Tauranga - Cruise Ships	Pacific Pearl - Cruise Ship
18/02/18	10:15 AM	18/02/18	10:00 PM	Port of Tauranga - Cruise Ships	Celebrity Solstice - Cruise Ship
19/02/18	06:15 AM	19/02/18	06:00 PM	Port of Tauranga - Cruise Ships	Diamond Princess - Cruise Ship
19/02/18	06:15 AM	19/02/18	06:00 PM	Port of Tauranga - Cruise Ships	Golden Princess - Cruise Ship
20/02/18	06:45 AM	20/02/18	06:00 PM	Port of Tauranga - Cruise Ships	Sea Princess - Cruise Ship
21/02/18	08:15 AM	21/02/18	07:00 PM	Port of Tauranga - Cruise Ships	Azamara Journey - Cruise Ship
23/02/18	05:00 PM	23/02/18	09:30 PM	Coronation Park	Gourmet Night Market

24/02/18	08:45 AM	24/02/18	07:15 PM	Port of Tauranga - Cruise Ships	Azamara Journey - Cruise Ship
25/02/18	08:30 AM	25/02/18	10:30 AM	Pilot Bay Reserve	Generation Homes Women's Triathlon 2018
27/02/18	06:45 AM	27/02/18	06:30 PM	Port of Tauranga - Cruise Ships	Sun Princess - Cruise Ship

March
2018

Start Date:	Start Time:	End Date:	End Time:	Location:	Event:
01/03/18	07:45 AM	01/03/18	07:30 PM	Port of Tauranga - Cruise Ships	Crystal Symphony - Cruise Ship
02/03/18	05:00 PM	02/03/18	09:30 PM	Coronation Park	Gourmet Night Market
03/03/18	09:00 AM	03/03/18	02:00 PM	Coronation Park	The Little Big Markets
03/03/18	03:00 PM	03/03/18	05:00 PM	Sulphur Point	Roberts & Tesselaar Wedding
04/03/18	10:00 AM	04/03/18	03:00 PM	Blake Park	All Ford Day 2018
04/03/18	04:30 AM	04/03/18	07:03 PM	Port of Tauranga - Cruise Ships	Queen Mary 2 - Cruise Ship
04/03/18	10:03 AM	04/03/18	06:00 PM	Port of Tauranga - Cruise Ships	Seven Seas Voyage - Cruise Ship
07/03/18	08:33 AM	07/03/18	04:00 PM	Port of Tauranga - Cruise Ships	Spirit of Enderby - Cruise Ship
09/03/18	05:00 PM	09/03/18	09:30 PM	Coronation Park	Gourmet Night Market
10/03/18	07:00 AM	10/03/18	02:30 PM	Mt Maunganui Main Beach - Moturiki	New Zealand Ocean Swim Series - Sand To Surf
10/03/18	07:48 AM	10/03/18	08:00 PM	Port of Tauranga - Cruise Ships	Noordam - Cruise Ship
10/03/18	03:00 PM	10/03/18	05:00 PM	Sulphur Point	s 7(2)(a) - Privacy Wedding
11/03/18	07:30 AM	11/03/18	12:00 PM	Pilot Bay Reserve	Marra Sprint Triathlon 2018
12/03/18	05:45 AM	12/03/18	05:30 PM	Port of Tauranga - Cruise Ships	Sun Princess - Cruise Ship
14/03/18	06:15 AM	14/03/18	06:00 PM	Port of Tauranga - Cruise Ships	Diamond Princess - Cruise Ship

14/03/18	07:30 AM	14/03/18	06:00 PM	Port of Tauranga - Cruise Ships	Explorer of the Seas - Cruise Ship
16/03/18	05:00 PM	16/03/18	09:30 PM	Coronation Park	Gourmet Night Market
17/03/18	07:30 AM	17/03/18	12:00 PM	Mount Drury and Marine Parade	We Run the Night
17/03/18	10:00 AM	17/03/18	02:00 PM	Wharepai Domain	Tauranga SPCA Pet & Family Fun Day 2018
17/03/18	07:30 AM	17/03/18	04:30 PM	Port of Tauranga - Cruise Ships	Spirit of Enderby - Cruise Ship
23/03/18	05:00 PM	23/03/18	09:30 PM	Coronation Park	Gourmet Night Market
24/03/18	08:00 PM	24/03/18	11:30 PM	Mount Main Beach	Foundation Clinic Half Marathon
25/03/18	08:15 AM	25/03/18	08:00 PM	Port of Tauranga - Cruise Ships	Sun Princess - Cruise Ship
30/03/18	10:00 AM	30/03/18	01:00 PM	Coronation Park	Easter In The Park 2018
30/03/18				GOOD FRIDAY PUBLIC HOLIDAY	

April
2018

Start Date:	Start Time:	End Date:	End Time:	Location:	Event:
02/04/18				EASTER MONDAY PUBLIC HOLIDAY	
05/04/18	08:00AM	09/04/18	5:00PM	Mauao	Fulton Hogan 40'n'4
07/04/18	09:00 AM	07/04/18	02:00 PM	Coronation Park	The Little Big Markets
07/04/18	06:15 AM	07/04/18	06:00 PM	Port of Tauranga - Cruise Ships	Sun Princess - Cruise Ship
08/04/18	09:15 AM	08/04/18	08:00 PM	Port of Tauranga - Cruise Ships	Noordam - Cruise Ship
18/04/18	07:03 AM	18/04/18	07:33 PM	Port of Tauranga - Cruise Ships	Diamond Princess - Cruise Ship
25/04/18				ANZAC DAY PUBLIC HOLIDAY	

25/04/18	08:30 AM	25/04/18	10:00 AM	Memorial Park	ANZAC Day Civic Memorial Service 2018
----------	----------	----------	----------	---------------	---------------------------------------

May
2018

Start Date:	Start Time:	End Date:	End Time:	Location:	Event:
05/05/18	09:00 AM	05/05/18	02:00 PM	Coronation Park	The Little Big Markets
18/05/18	09:15 AM	18/05/18	08:03 PM	Port of Tauranga - Cruise Ships	Insignia - Cruise Ship

8.2.3 Mauao Threatened Plants Survey 2017 Final

BASELINE SURVEY OF THREATENED, AT RISK, AND/OR REGIONALLY UNCOMMON PLANT SPECIES, MAUAO 2017



 providing
outstanding
ecological
services to
sustain
and improve our
environments



Wildlands

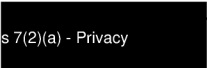
R4398

BASELINE SURVEY OF THREATENED, AT RISK, AND/OR REGIONALLY UNCOMMON PLANT SPECIES, MAUAO 2017

Contract Report No. 4398

September 2017

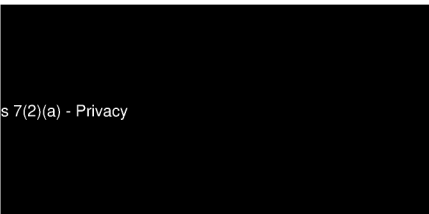
Project Team:

 Field survey and report author
s 7(2)(a) - Privacy - Field survey and report author

Prepared for:

Tauranga City Council

Reviewed and approved for release by:

 s 7(2)(a) - Privacy

Wildland Consultants Ltd

CONTENTS

1.	INTRODUCTION	1
2.	ECOLOGICAL CONTEXT	1
2.1	Vegetation history of Mauao	1
3.	METHODS	2
4.	THREATENED, AT RISK, AND REGIONALLY RARE SPECIES DESCRIPTIONS	5
4.1	<i>Psilotum nudum</i>	5
4.2	<i>Zoysia pauciflora</i>	6
4.3	<i>Tetragonia tetragonioides</i>	7
4.4	<i>Pimelea tomentosa</i>	8
5.	2017 SURVEY RESULTS	9
5.1	<i>Psilotum nudum</i>	9
5.2	<i>Zoysia pauciflora</i>	9
5.3	<i>Tetragonia tetragonioides</i>	10
5.4	<i>Pimelea tomentosa</i>	10
5.5	Other regionally uncommon species	10
5.6	Pest plants	11
6.	MANAGEMENT ACTIONS	12
6.1	<i>Psilotum nudum</i>	12
6.2	<i>Zoysia pauciflora</i>	14
6.3	<i>Tetragonia tetragonioides</i>	14
6.4	<i>Pimelea tomentosa</i>	14
6.5	Other regionally uncommon species	14
7.	MONITORING PLAN	15
7.1	<i>Psilotum nudum</i>	15
7.2	<i>Zoysia pauciflora</i>	15
7.3	Other regionally uncommon species	16
	ACKNOWLEDGMENTS	16
	REFERENCES	16
	APPENDIX	
1.	Location photographs of <i>Psilotum nudum</i> , 2017	19
2.	Photographs of <i>Psilotum nudum</i> , 2017	31
3.	Photopoint monitoring of <i>Zoysia pauciflora</i> 2017	35
4.	Generic monitoring template	40

© Wildland Consultants Ltd 2017

This report has been produced by Wildland Consultants Ltd for Tauranga City Council. All copyright in this report is the property of Wildland Consultants Ltd and any unauthorised publication, reproduction, or adaptation of this report is a breach of that copyright.

1. INTRODUCTION

Mauao is a significant natural area in Tauranga Ecological District, a highly visible promontory sitting at the entrance to the Tauranga Harbour. It has substantial historical, archaeological and ecological values. Mauao is managed by Nga Poutiriao O Mauao a joint management board appointed by jointly by Tauranga City Council and Ngati Ranginui, Ngai Te Rangi, and Ngati Pukenga.

Tauranga City Council released the Draft Mauao Reserve Management Plan for public consultation and require a good understanding of the status of regionally uncommon, At Risk, and Threatened plant species that are present within the Reserve.

Of specific concern are those plants that could potentially be affected by recreational uses such as rock climbing or the establishment or maintenance of walking and access tracks. Further to this, Tauranga City Council wish to know the habitat requirements of these plants, to ensure that future restoration activities within Mauao Reserve are sensitive to the habitat requirements of regionally uncommon, At Risk, and/or Threatened plants that may be present within the restoration area.

This report provides a baseline survey and recommended species management plan for four regionally uncommon, At Risk, or Threatened plant species identified as being present in the 2004 and 2015 Conservation Plans for Mauao (Wildland Consultants 2004, 2015).

2. ECOLOGICAL CONTEXT

Mauao is located on the northeastern edge of the Tauranga Ecological District, within the Northern Volcanic Plateau Ecological Region. Tauranga Ecological District is situated in the western Bay of Plenty, between the eastern foothills of the Kaimai-Mamaku range and the Pacific Ocean, encompassing the western section of the coastal dune systems that stretch between Waihi beach and Opotiki. The Ecological District contains three estuaries, including the entire expanse of the Tauranga Harbour, coastal dunes and plains, and low hills. It is largely located within the coastal bioclimatic zone, with small portions extending inland into the semi-coastal bioclimatic zone.

Non-forested dunes would have included sand binding species such as pīngao (*Ficinia spiralis*) and spinifex (*Spinifex sericeus*), with low vegetated areas of sand coprosma (*Coprosma acerosa*), pōhuehue (*Muehlenbeckia complexa*), *Ficinia nodosa*, and sand pimelea (*Pimelea villosa*) further back from the beach, with forest species such as kānuka (*Kunzea robusta* and potentially *K. tolkenii*), karo (*Pittosporum crassifolium*), pōhutukawa (*Metrosideros excelsa*), ngaio (*Myoporum laetum*), and houpara (*Pseudopanax lessonii*) behind this.

2.1 Vegetation history of Mauao

Prior to human occupation, Mauao would have been covered almost entirely with coastal forest dominated by pōhutukawa, pūriri (*Vitex lucens*), karaka (*Corynocarpus laevigatus*), ngaio, houpara, and kānuka, and shrubs or small trees of karo, houpara,

māpou (*Myrsine australis*), whau (*Entelea arborescens*), and nīkau (*Rhopalostylis sapida*). There are also likely to have been local occurrences of rimu (*Dacrydium cupressinum*), northern rātā (*Metrosideros robusta*), tawa (*Beilschmiedia tawa*), hīnau (*Elaeocarpus dentatus*), rewarewa (*Knightia excelsa*), mangeao (*Litsea calicaris*), and kāmahi (*Weinmannia racemosa*). Specialist species, such as *Euphorbia glauca*, would have been present on bluffs, beaches, coastal rocks and seepages.

Fire has been an important factor in the ecology of Mauao. There may have been occasional natural fires prior to human arrival, but the increased frequency of fire after human arrival has had negative impacts on both vegetation and fauna. The original vegetation will have been cleared at an early stage, and fire would have been used repeatedly to keep Mauao relatively open. Pre-European vegetation was mapped as “fern and mānuka [*Leptospermum scoparium*] scrub” (Stokes 1980), providing evidence of recovery after clearance and burning. In 1929, the vegetation was all low-stature, but by the 1940s pines (*Pinus* spp.) were well-established and by 1960 they were very prominent. Analysis of aerial photographs from 1943 to 1999 indicates that fire has affected the vegetation of parts of Mauao at reasonably regular intervals over the last 60 or so years (Wildland Consultants 2015).

Currently, vegetation and habitats on Mauao comprise a mosaic of vegetation types including regenerating forest, scrub, and shrubland, and grazed pasture, with small pockets of remnant indigenous vegetation (predominantly large, old pōhutukawa). Sixteen broad vegetation and habitat types were identified and mapped by Wildland Consultants (2015), the relevant vegetation types are outlined in Table 1.

3. METHODS

A map of known populations of significant species on Mauao was collated from existing data sources (Wildlands 1998, 2004, 2015, and personal knowledge of Mauao). *Psilotum nudum* (Regionally Uncommon), *Pimelea tomentosa* (Threatened-Nationally Vulnerable), *Zoysia pauciflora* (Regionally Uncommon), and *Tetragonia tetragonioides* (At Risk-Naturally Uncommon) were prioritised for field survey. Information and location details were also collated for mangemange (*Lygodium articulatum*; limited distribution in Tauranga Ecological District), *Lepidosperma laterale* (Regionally Uncommon), and *Tetraria capillaris*. Threat classifications are from de Lange *et al.* (2013), and regionally uncommon plants as per Beadel (2014), and Wildland Consultants (2008).

A field assessment of Mauao Reserve to locate these plant species was undertaken on 16 August 2017. The survey involved abseiling down three known climbing areas on Mauao to assess the presence of *Psilotum nudum*. This was undertaken by specialist rock climbing/abseiling contractors supplied by Tauranga City Council (Avalon Rope Access Service Ltd), who were supported by Wildlands ecologists. Known locations of all the other species were visited, and the immediate area around each location searched for additional plants. Further to this, the entire base track and the strandline was walked and assessed for the potential presence of *Zoysia pauciflora* and *Tetragonia tetragonioides*.

Table 1: Broad vegetation types identified on Mauao (from Wildland Consultants 2015).

Vegetation Type	Description	Area
Pōhutukawa forest	Pōhutukawa canopy up to c.20 m tall (range 10-20 m) understorey and ground cover are variable with four sub-types listed in Wildland Consultants (2015).	8.0 ha
Pōhutukawa/māhoe-mamaku-hangehange forest	Large pōhutukawa/māhoe (<i>Melicytus ramiflorus</i>)-mamaku (<i>Cyathea medullaris</i>)-hangehange (<i>Geniostoma ligustrifolium</i>) forest with, ponga (<i>Cyathea dealbata</i>), māhoe, māpou, kawakawa (<i>Macropiper excelsum</i>), akepiro (<i>Olearia furfuracea</i>), and rangiora (<i>Brachyglottis repanda</i>) present in understorey. Pukupuku (<i>Doodia australis</i>), rereti (<i>Blechnum chambersii</i>), <i>Asplenium oblongifolium</i> , <i>Microsorium pustulatum</i> , <i>Blechnum filiforme</i> , and <i>Astelia solandri</i> present in the understorey. Houhere (<i>Hoheria sexstylosa</i>) rewarewa, rimu, and totara (<i>Podocarpus totara</i>) are occasionally present. Mangemange and Lepidosperma laterale are also present.	12.7 ha
Mānuka-(Spanish heath)-(wharariki) shrubland	Mānuka-wharariki (<i>Phormium cookianum</i>)-Spanish heath (<i>Erica lusitanica</i>) shrubland. Pōhutukawa/māpou-pampas (<i>Cortaderia selloana</i>)-wharariki-radiata pine (<i>Pinus radiata</i>) shrubland. Other species present include <i>Pomaderris amoena</i> , karamū, gorse (<i>Ulex europaeus</i>), tī kōuka (<i>Cordyline australis</i>), ngaio (planted), <i>Hebe parviflora</i> (planted), <i>Metrosideros excelsa</i> × <i>M. kermadecensis</i> (planted), broadleaf (<i>Griselinia littoralis</i>) (planted), Montpellier broom (<i>Genista monspessulana</i>) and <i>Morelotia affinis</i> .	6.3 ha
Mixed exotic-indigenous scrub/shrubland	Spanish-wharariki- <i>Pomaderris amoena</i> -mānuka-pōhutukawa-(gorse) shrubland. Spanish heath-pampas-gorse-wharariki-pōhutukawa-mānuka scrub.	2.8 ha
Māhoe forest and scrub	(Pōhutukawa)/mahoe-kawakawa-mingimingi (<i>Leucopogon fasciculatus</i>) forest. Blackberry (<i>Rubus fruticosus</i> agg.), bracken, and pōhuehue are present. Locally, Japanese honeysuckle forms dense vineland. Other species present within this type include māpou, kānuka, English oak (<i>Quercus robur</i>), Spanish heath, Chinese windmill palm (<i>Trachycarpus fortunei</i>), cotoneaster (<i>Cotoneaster glaucophyllus</i>), sycamore (<i>Acer pseudoplatanus</i>), woolly nightshade (<i>Solanum mauritianum</i>), sweet briar (<i>Rosa rubiginosa</i>), Chinese privet (<i>Ligustrum sinense</i>), and Mexican daisy (<i>Erigeron karvinskianus</i>).	2.8 ha
Pōhutukawa-mixed indigenous species forest, treeland, and scrub	Pōhutukawa/ngaio-glossy karamu (<i>Coprosma robusta</i>)-mānuka scrub with <i>Hebe parviflora</i> and wharariki. Kawakawa, tī kōuka, and nīkau are also present. Some patches of ring fern (<i>Paesia scaberula</i>).	3.8 ha
Planted indigenous species forest/scrub/treeland	Restoration plantings of mixed broadleaved indigenous species.	4.8 ha

Vegetation Type	Description	Area
Pōhutukawa treeland	Pōhutukawa/pōhutukawa-kawakawa, -pōhuehue-glossy karamu (<i>Coprosma lucida</i>) treeland. Grass species present include <i>Rytidosperma</i> species and Yorkshire fog (<i>Holcus lanatus</i>). Other species present include <i>Cyperus ustulatus</i> , <i>Adiantum cunninghamii</i> , <i>Carex</i> aff. <i>raoulii</i> ("raotest"), wīwī (<i>Juncus</i> sp.), wall lettuce (<i>Mycelis muralis</i>), catsear (<i>Hypochaeris radicata</i>), hawkbit (<i>Leontodon taraxacoides</i>), creeping buttercup (<i>Ranunculus repens</i>), and <i>Isolepis cernua</i> . <i>Samolus repens</i> and kikuyu (<i>Cenchrus clandestinus</i>) are also present.	2.7 ha
Mixed indigenous species scrub	Mānuka-koromiko (<i>Hebe stricta</i>)-wharariki (rewarewa) scrub. Also māhoe-hangehange-pōhutukawa scrub with heketara (<i>Olearia rani</i>), mamaku, and karamū common. Scattered kiokio (<i>Blechnum novae-zelandiae</i>), <i>Adiantum cunninghamii</i> , ring fern, and <i>Asplenium polyodon</i> also present. Other species present within this type include glossy karamu (planted), akepiro (planted), <i>Rubus schmidelioides</i> , mingimingi, miro (<i>Prumnopitys ferruginea</i>) (planted), kauri (<i>Agathis australis</i>) (planted), <i>Clematis paniculata</i> , <i>Pyrrosia eleagnifolia</i> , <i>Machaerina juncea</i> , <i>Gonocarpus incanus</i> , <i>Tetraria capillaris</i> , tūrutu (<i>Dianella nigra</i>), Spanish heath, cotoneaster, Japanese spindle tree (<i>Euonymus japonicus</i>), kahili ginger (<i>Hedychium gardnerianum</i>), yucca (<i>Yucca gloriosa</i>), wilding pine (<i>Pinus</i> spp.), and pampas.	1.8 ha
Mixed exotic and indigenous species forest/treeland	Large, mature indigenous and exotic tree species including sycamore, macrocarpa (<i>Cupressus macrocarpa</i>), English oak, radiata pine, Chinese windmill palm, and phoenix palm (<i>Phoenix canariensis</i>) paulownia (<i>Paulownia tomentosa</i>), melia (<i>Melia azedarach</i>), Lombardy poplar (<i>Populus nigra</i> 'Italica'), tree of heaven (<i>Ailanthus altissima</i>), silky oak (<i>Grevillea robusta</i>), sheoak (<i>Casuarina</i> sp.), eucalyptus (<i>Eucalyptus</i> sp.), and box alder (<i>Acer negundo</i>).	2.4 ha
Rocky bluffs	Pampas-gorse- <i>Astelia banksii</i> -(pōhutukawa) scrub. Other species present include boxthorn (<i>Lycium ferocissimum</i>), swan plant (<i>Gomphocarpus</i> sp.), hawthorn (<i>Crataegus monogyna</i>), and <i>Psilotum nudum</i> .	1.0 ha
Rocky promontory	Plants present include wīwī, <i>Samolus repens</i> , <i>Senecio lautus</i> var. <i>lautus</i> , scarlet pimpernel (<i>Anagallis arvensis</i>), and glasswort (<i>Sarcocornia quinqueflora</i>). A small area of <i>Disphyma australe</i> is also present growing in association with glasswort.	0.2 ha
Shallow gully	<i>Cyperus ustulatus</i> and ring fern tussockland is present at the top of a shallow gully around a seep in the hillslope. Horehound (<i>Marrubium vulgare</i>), woolly mullein (<i>Verbascum thapsus</i>) and prickly sow thistle (<i>Sonchus asper</i>). Whau-māhoe/ponga-blackberry-pōhuehue-kawakawa scrub.	<0.1 ha

The following field information was collected for each of the subject species when located:

- GPS waypoint.
- GPS-enabled site photographs
- Number of individuals present (or area of coverage).
- Surrounding vegetation type.
- Any adjacent land uses or recreational activities which could potentially affect the plant.

4. THREATENED, AT RISK, AND REGIONALLY RARE SPECIES DESCRIPTIONS

4.1 *Psilotum nudum*

Psilotum nudum is a primitive form of the fern lineages seen today, having diverged early on the fern family tree (Pryer *et al.* 2001 and 2004). It occurs in Northern New Zealand from Northland to Tokaanu, in a variety of climatic zones from coastal to montane. It is often associated with rocky habitats (including stone walls), geothermal areas and is occasionally found as an epiphyte on trees such as pōhutukawa (de Lange 2011). *Psilotum nudum* is listed as Not Threatened (de Lange *et al.* 2013), however is considered regionally rare, especially on coastal cliffs, in the Bay of Plenty (Wildland Consultants 2008 and 2015).

Commonly known as a ‘whisk fern’, *Psilotum nudum* has stiff, upward pointing ‘twiggy’ branches without leaves. It often has bright yellow fruiting bodies (synangia) on the branches (Yatskievych 1998; de Lange 2011), and during the survey in August, the specimens on Mauao were visibly yellowy-orange (Figure 1). While the tissues in the branches are capable of conducting water and food, *Psilotum nudum* lacks roots, and instead has rhizomes which require a symbiotic mycorrhizal fungi association in order to uptake water and nutrients (Yatskievych 1998).

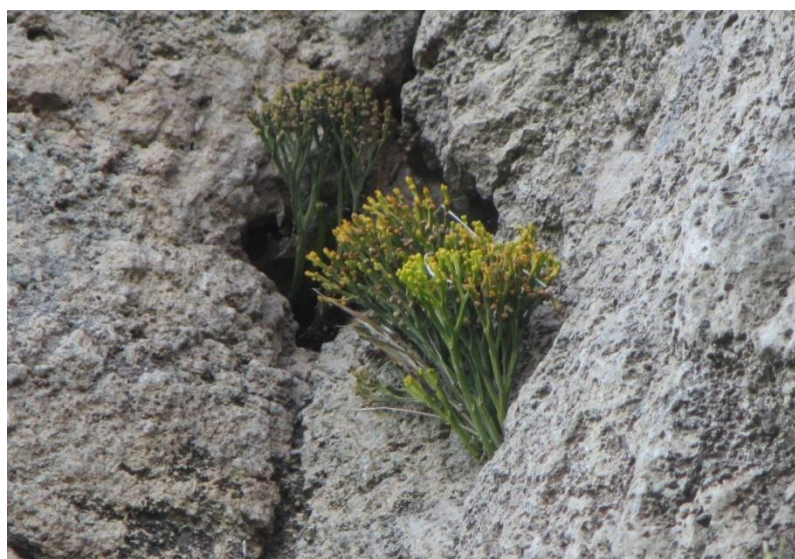


Figure 1: *Psilotum nudum* on Mauao with visibly orangey-yellow synangia.

Psilotum nudum is easily grown from rooted pieces when grown in a well-drained substrate in full sun (de Lange 2011).

4.2 *Zoysia pauciflora*

Zoysia pauciflora is a turf forming grass endemic to New Zealand (Figure 2). Two species of *Zoysia* are present in New Zealand, *Z. minima* and *Z. pauciflora*. *Zoysia minima* is mostly absent from the Bay of Plenty, being known only from the White Island Ecological District, but is known to occur as far south as Akaroa in the South Island. *Zoysia pauciflora* occurs in eight of the Ecological Districts in the Bay of Plenty (Beadel *et al.* 2009). *Zoysia pauciflora* is listed as Not Threatened nationally (de Lange *et al.* 2012), but is considered to be regionally rare.



Figure 2: *Zoysia pauciflora* turf on Mauao following a mild frost.

Zoysia species are often one of the dominant components of coastal turf communities in New Zealand, especially on consolidated substrates, such as rocky headlands and bluffs (Rogers 1999). Coastal Turfs occupy less than 40 hectares in New Zealand and are considered a Threatened Ecosystem (Holdaway *et al.* 2012). While generally associated with sandy and rocky coastal substrates, *Zoysia pauciflora* is also known from inland sites, such as on the banks of Waikato River in the Hamilton Basin (NZPCN 2014).

Threats to *Zoysia pauciflora* include clearance, disturbance and development of rocky and sandy habitats near the coast. It also performs poorly against aggressive plants such as kikuyu, and as such is often limited to areas where competition is low. NZPCN (2014) suggest that *Zoysia pauciflora* is easily grown from fresh seed and rooted pieces. It is a recommended grass species for high foot traffic sites such as lawns and walkways.

4.3 *Tetragonia tetragonioides*

Tetragonia tetragonioides, commonly known as New Zealand spinach or kōkihi, is indigenous to New Zealand, but is also found in other places around the Pacific Ocean and Tasman Sea, such as Australia, the western Pacific, Malesia, Japan and southern South America. It is listed as At Risk-Naturally Uncommon (de Lange *et al.* 2013), and is generally quite rare in the wild (Wilcox 2001). However, due to its long history of cultivation for food, it is occasionally found as plant of waste places around urban settlements (de Lange 2008; Landcare Research 2017).

Māori have been recorded as historically using kōkihi as a food source (Landcare Research 2017). Captain Cook utilised *Tetragonia tetragonioides* as a cure for scurvy in the 1770s, and Joseph Banks took seeds back to England to be propagated in Kew Gardens in the late 1700s, although it is likely these seeds were sourced from Australia (Low 1991).

Tetragonia tetragonioides is found in coastal areas such as sand dunes, boulder/cobble beaches, rocky ledges and occasionally on cliff faces. It is salt and drought tolerant. It is a trailing perennial herb with firmly fleshy, triangular leaves which are often lighter underneath, and covered in papillae (gland-like protuberance) (Figure 3). The flowers are small and yellow found at the leaf bases, and the seeds are visibly horned (de Lange 2008; Wilcox 2001).



Figure 3: *Tetragonia tetragonioides* from Mauao; photograph taken during the 2014 survey (see Wildland Consultants 2015).

Known threats to this species are disturbance, clearance and development of its habitat (sandy and cobble beach areas). It is easily grown from seed, and is often available in garden centres.

4.4 *Pimelea tomentosa*

Pimelea are in the family Thymelaeaceae, which also includes the well-known genus *Daphne* (Burrows 2009). The species of *Pimelea* occurring in New Zealand vary from small prostrate shrubs which occur at the coast and in alpine areas, to upright shrubs up to two metres tall (Figure 4). *Pimelea tomentosa* is a shrub which is endemic to New Zealand, found predominantly in the North Island, but with some occurrences in the north of the South Island in coastal to lower montane climatic zones (de Lange 2003). *Pimelea tomentosa* is classified as Threatened-Nationally Vulnerable (de Lange *et al.* 2013), having had substantial range retraction in the last 50 years (Burrows 2009).



Figure 4: *Pimelea tomentosa*. Photo from Wildland Consultants (2017).

Pimelea tomentosa occupies seral habitats (habitats in an intermediate stage of ecological succession) such as open cliff tops, track sides in scrub, or frost flats. Cultural uses of *Pimelea tomentosa* were probably limited because the restriction of this species to seral habitats may have meant that it was rarely abundant. However, the bark of other *Pimelea* species, such as sand pimelea (autetauranga), *Pimelea urvilliana* and *Pimelea prostrata* (pinātoro), were used by Maori to make strips of fabric to tie their hair up (Landcare Research 2017). The fruits of autetauranga were also eaten. It is probable that *Pimelea tomentosa* was also used on occasion as a fabric, and the berries may have been eaten. Potentially useful pharmacological materials have been identified from *Pimelea prostrata* (Wildland Consultants 2017).

Pimelea tomentosa has an upright habit, with prominent leaf scars on the branches and grey-green leaves which are linear to lanceolate in shape and hairy underneath. The small white flowers are also hairy, and they occur in clusters of four to eight. Small fleshy black fruits are produced throughout the year following flowering (de Lange 2003).

The main threats to *Pimelea tomentosa* are track maintenance, land clearance and development, ecological succession, and competition with weeds (Wildland Consultants 2017).

5. 2017 SURVEY RESULTS

5.1 *Psilotum nudum*

Forty-seven plants of *Psilotum nudum* were found on the rocky bluffs on the northwestern side of Mauao in eleven locations (Table 2 and Appendix 1 and 2). This included at least 39 plants immediately adjacent to known climbing routes, and a further eight plants on bluffs not utilised formally for climbing. The three plants at the base of the ‘Drop Kick Whizzer’ climbing route are considered at risk of removal from rock climbing activities. Anecdotal evidence suggests the rock climbing routes would be unofficially maintained free of plants and loose rocks by recreational climbers.

Almost all occurrences of *Psilotum nudum* occurred in the absence of other plants, generally being located in cracks and fissures of the rock face. Other species occupying similar habitats on the rock face included Spanish heath, harakeke and tī kōuka. Photographs of the surveyed *Psilotum nudum* (where possible) are shown in Appendix 2.

Table 2: GPS coordinates for known locations of *Psilotum nudum*. Please note: many of the coordinates are indicative only due to plants being located on vertical bluffs.

Species	Easting	Northing	ID	Number of Plants
<i>Psilotum nudum</i>	1879685	5830695	Pn1	3
<i>Psilotum nudum</i>	1879706	5830722	Pn2	18
<i>Psilotum nudum</i>	1879717	5830727	Pn3	8
<i>Psilotum nudum</i>	1879719	5830735	Pn4	5
<i>Psilotum nudum</i>	1879728	5830739	Pn5	1
<i>Psilotum nudum</i>	1879744	5830735	Pn6	1
<i>Psilotum nudum</i>	1879784	5830767	Pn7	1
<i>Psilotum nudum</i>	1879813	5830777	Pn8	1
<i>Psilotum nudum</i>	1879729	5830646	Pn9	5
<i>Psilotum nudum</i>	1879796	5830657	Pn10	2
<i>Psilotum nudum</i>	1879703	5830726	Pn11	2

5.2 *Zoysia pauciflora*

Seven patches of *Zoysia pauciflora* were located along the northern coastal margin (Table 3). The smallest patch was approximately 0.1 metres squared and the largest approximately six metres squared. The two largest patches (Zp6 and Zp7) appear to have recently been accidentally sprayed prior to restoration planting in the area.

Zoysia pauciflora was often dominant in patches with occasional *Samolus repens* var. *strictus*, *Dichondra repens* and *Lobelia anceps* interspersed through the turf. There

were some instances of Indian doab (*Cynodon dactylon*) invasion into the turf. Surrounding vegetation was often monoculture patches of *Ficinia nodosa* and *Isolepis cernua* var. *cernua*, with occasional occurrences of *Cyperus ustulatus*.

Table 3: GPS coordinates for known locations of *Zoysia pauciflora*.

Species	Easting	Northing	ID
<i>Zoysia pauciflora</i>	1880215	5830905	Zp1
<i>Zoysia pauciflora</i>	1880232	5830924	Zp2
<i>Zoysia pauciflora</i>	1880207	5830934	Zp3
<i>Zoysia pauciflora</i>	1880106	5831016	Zp4
<i>Zoysia pauciflora</i>	1880092	5831024	Zp5
<i>Zoysia pauciflora</i>	1879915	5831008	Zp6
<i>Zoysia pauciflora</i>	1879892	5831001	Zp7

5.3 *Tetragonia tetragonioides*

No specimens of *Tetragonia tetragonioides* were located in 2017. The previously known location on Mauao (recorded in 2014 (Wildland Consultants 2015)) is where a large slip in April 2017 removed a section of the base track and deposited large amounts of sediment and vegetation onto the beach (Table 4).

Table 4: Coordinates for last known location of *Tetragonia tetragonioides*.

Species	Easting	Northing	ID
<i>Tetragonia tetragonioides</i>	1879716	5829847	Tt1

5.4 *Pimelea tomentosa*

No specimens of *Pimelea tomentosa* were found during the 2017 survey. The last record of this plant on Mauao is from 2004 (Beadel 2004). Being a relatively short lived shrub of seral habitats, it is possible that the recorded specimen was displaced by regeneration of taller indigenous vegetation at that location.

Table 5: Coordinates for the last known location of *Pimelea tomentosa*.

Species	Easting	Northing	ID
<i>Pimelea tomentosa</i>	1879898	5830391	Pt1

5.5 Other regionally uncommon species

Lepidosperma laterale was recorded within indigenous forest and scrub on the southern slopes of Mauao in 2008 and 2015 (Wildland Consultants 2008 and 2015). This species is near its southern limit, and is known from only two other sites in the Bay of Plenty (Beadel 2006). This specimen was unable to be located in 2017, but it may still be present; a dense canopy of Japanese honeysuckle has made access difficult (Table 6).

Tetraria capillaris is present on the margins of secondary mānuka scrub on the northern upper slopes of Mauao (Figure 5; Table 6). This is an unusual habitat for this species in the Bay of Plenty, where it is generally located in wetland habitats.

Elsewhere, in New Zealand it also occurs in gumland scrub, and occasionally associated with regenerating kauri in open forest.



Figure 5: *Tetraria capillaris* on the summit of Mauao, 2017 (Tc1).

Mangemange, whilst not regionally uncommon, is of limited distribution in Tauranga Ecological District having only been recorded from Mauao (Beadel 2006). Mangemange was first recorded from the southeastern midslopes of Mauao in 1999 (Wildland Consultants 1999), and was located again in 2017 (Figure 6, Table 6). Only one specimen of this plant was found.

Table 6: GPS coordinates for known locations of other regionally uncommon species. (* is the last known location, location could not be determined during 2017 survey).

Species	Easting	Northing	ID
<i>Lepidosperma laterale</i> *	1880058	5830591	Ll1
<i>Tetraria capillaris</i>	1879856	5830480	Tc1
Mangemange	1880012	5830512	La1

5.6 Pest plants

Many pest plant species were observed during the 2017 baseline survey. Identification and mapping of pest plant species was not part of the scope of this project, however two species observed in locations away from formal walking tracks have the ability to significantly alter habitats and displace natives. As such, the locations of several Japanese spindle tree and wild ginger observed during the survey have been provided on Figure 7.



Figure 6: Mangemange on the southeastern slope of Mauao, 2017 (La1).

6. MANAGEMENT ACTIONS

Management actions are suggested below for each of the subject species. These actions have been developed to help avoid or mitigate potentially adverse effects of the recreational use of Mauao on the Threatened, At Risk or Regionally Uncommon species present in light of the fact that Mauao can receive up to one million visitors a year.

Control of the two pest plant infestations identified in Figure 7 is recommended to improve the long term sustainability of ecological values on Mauao.

In addition, a survey of Mauao should be undertaken for these species, and other pest plant species, followed by control of all pest plants.

6.1 *Psilotum nudum*

Psilotum nudum is predominantly located within an area utilised for a specific activity (rock climbing). Frequency of use is at present unknown, however anecdotal evidence suggests that it is mainly non-affiliated recreation climbers that would use this area. The following suggested management actions have been developed based on this information:

- An identification and information board placed near the three climbing walls could aid in the recognition and preservation of *Psilotum nudum* by recreational climbers.
- Identification and information about *Psilotum nudum* could be added to local and national climbing guides.
- Ongoing monitoring of *Psilotum nudum* to ensure the population is stable.



Figure 7: Map of known and previously observed locations of Threatened, At Risk, or Regionally Uncommon plants. Selected observations of pest plants during the 2017 are also provided.

- Should a decline in numbers of *Psilotum nudum* be observed through monitoring, management actions including weed control and restoration planting of *Psilotum nudum* could be considered.

6.2 *Zoysia pauciflora*

Zoysia pauciflora is generally located away from frequently utilised areas, however three patches are known from high traffic areas next to tracks. The following management actions have been developed based on this information:

- Upskilling of council staff and contractors by suitably qualified botanist familiar with the species on identification of *Zoysia pauciflora*.
- Use of *Zoysia pauciflora* in restoration plantings, especially around tracks and open coastal areas. This species could replace areas of kikuyu and Indian doab (*Cynodon dactylon*).
- Demarcation of known patches of *Zoysia pauciflora* by a suitably qualified botanist familiar with *Z. pauciflora* prior to weed control or track maintenance works.

6.3 *Tetragonia tetragonoides*

The only known population of *Tetragonia tetragonoides* on Mauao was removed following a large slip in April 2017. The following management actions have been developed based on this information:

- Re-establish species at suitable sites around Mauao, with a botanist to select sites.
- An identification and information board could be placed near established populations to increase public awareness and appreciation of the species.
- Upskilling of council staff and contractors on identification of *Tetragonia tetragonoides* by suitably experienced botanist familiar with the species.

6.4 *Pimelea tomentosa*

- Re-establish *Pimelea tomentosa* at suitable sites on Mauao. Being a plant of seral habitats, *Pimelea tomentosa* would suit being included in the initial revegetation of open areas.
- This species is relatively easy to grow from fresh fruit and semi-hardwood cuttings and reputable native nurseries in the Bay of Plenty (e.g. Coastlands in Whakatāne) regularly grow eco-sourced stock.

6.5 Other regionally uncommon species

Flag known populations of mangemange and *Lepidosperma laterale* and upskill council staff and contractors on the identification of these species. Prior to any control of Japanese honeysuckle on the northeastern side of Mauao, the location of *Lepidosperma laterale* should be confirmed and marked, and the adjacent Japanese honeysuckle cleared by hand. Establish further populations of these species in similar

existing and future habitats to provide resilience to the Mauao populations of these species in the long term.

7. MONITORING PLAN

The Threatened, At Risk, or Regionally Uncommon plants discussed in this report should be monitored at some frequency to assess population trends. Collation and analysis of multiple years of monitoring data will help to develop recovery trajectories for each of the species, and help guide future management actions.

This section outlines the recommendations for long term monitoring of the identified species. Periodicity of monitoring inspections should be reviewed as relevant every five years.

7.1 *Psilotum nudum*

Monitoring of *Psilotum nudum* should be undertaken every two years to verify whether the identified populations are still present. While GPS coordinates have been provided for the populations identified in 2017, the vertical nature of their preferred ecosystem makes the coordinates less accurate. Monitoring should be undertaken by a botanist with binoculars and/or a drone in the areas identified in this report (Appendix 1 and Table 2). Rock climbing specialist should be used if this method of monitoring does not identify any or only low numbers of plants, i.e. relative to the population identified during the 2017 survey. Photopoint monitoring as per the examples in Appendix 1 is the recommended monitoring method.

It is important to monitor the surrounding vegetation to ensure the existing populations are not outcompeted by exotic species. Monitoring should be undertaken during the season when the synangia are yellow/orange to increase visibility (plants were easily visible during current survey - August).

7.2 *Zoysia pauciflora*

Due to high volume of visitor use in the vicinity of the known locations of the *Zoysia pauciflora*, monitoring is recommended annually.

It is important that the area covered by *Zoysia pauciflora*, as well as the surrounding vegetation, is not encroached or displaced by more vigorous vegetation growth. Monitoring should be undertaken in late summer or early autumn (before the first frosts) to accurately determine the area of living *Zoysia pauciflora*. Photopoint monitoring is the recommended monitoring method as per Appendix 3, and any new populations identified should be added to the monitoring programme. As per the examples in Appendix 3, a monitoring form should be used to collect information such as the size of the patch of *Zoysia pauciflora*, the percentage cover of *Zoysia pauciflora* in each patch, the condition of the *Zoysia pauciflora*, the surrounding vegetation types and any comments or threatening processes observed during the survey.

7.3 Other regionally uncommon species

Mangemange is only known from a single location on Mauao. As such, annual photopoint monitoring using the GPS coordinates provided in Table 6 is recommended.

Tetragonia tetragonioides, *Pimelea tomentosa*, and *Lepidosperma laterale* were not located in 2017. Despite this, the areas identified in Table 4, Table 5, and Table 6 should be checked annually to see if these species have recolonised naturally. *Lepidosperma laterale* should be located and flagged prior to any Japanese honeysuckle control in the area it was last recorded in 2015 (see Table 6 and Figure 7).

Should these species be intentionally re-established on Mauao, then GPS coordinates and photopoint monitoring should be undertaken annually to include re-established populations, as well as any natural populations.

A generic monitoring form for mangemange, *Lepidosperma laterale*, *Tetragonia tetragonioides*, and *Pimelea tomentosa* has been included in Appendix 4.

ACKNOWLEDGMENTS

§ 7(2)(f)(ii) is thanked for project initiation and important background information. We would also like to acknowledge § 7(2)(a) - Privacy from Avalon Rope Access Services for undertaking the difficult work on the bluffs.

REFERENCES

- Beadel S.M. 2004: Mauao (Mount Maunganui). *Rotorua Botanical Society Newsletter* 43: 35-50.
- Beadel S.M. 2006: Ōtānewainuku Ecological District. Survey report for the Protected Natural Areas Programme. New Zealand Protected Areas Programme No. 37. *Wildland Consultants Ltd Contract Report No. 1110*. Prepared for Department of Conservation, Bay of Plenty Conservancy, Rotorua. 335 pp.
- Beadel S.M. 2014: Regionally uncommon plant species in the Bay of Plenty. *Wildland Consultants Ltd Contract Report No. 2453*.
- Burrows C.J. 2009: Genus *Pimelea* (Thymelaeaceae) in New Zealand 3. The taxonomic treatment of six endemic hairy-leaved species. *New Zealand Journal of Botany* 47(3): 325-354.
- de Lange P.J. 2003: New Zealand Plant Conservation Network - *Pimelea tomentosa*. http://www.nzpcn.org.nz/c/flora/factsheets/NZPCN_Species_139.pdf. Accessed 01/09/2017

- de Lange P.J. 2008: New Zealand Plant Conservation Network-*Tetragonia tetragonoides*. http://www.nzpcn.org.nz/flora_details.aspx?ID=325. Accessed 31/08/2017
- de Lange P.J. 2011: New Zealand Plant Conservation Network-*Psilotum nudum*. http://www.nzpcn.org.nz/flora_details.aspx?ID=2229. Accessed 31/08/2017
- de Lange P.J., Rolfe J.R., Champion P.D., Courtney S.P., Heenan P.B., Barkla J.W., Cameron E.K., Norton D.A., and Hitchmough R.A. 2013: Conservation status of New Zealand vascular plants, 2012. *New Zealand Threat Classification Series 3*. Department of Conservation, Wellington. 70 pp.
- Holdaway R.J., Wiser S.K., and Williams P.A. 2012: Status Assessment of New Zealand's Naturally Uncommon Ecosystems. *Conservation Biology* 26: 619-629.
- Landcare Research 2017: Maori Plant Use Database. <http://maoriplantuse.landcareresearch.co.nz/WebForms/PeoplePlantsDetails.aspx?firstcome=firstcome&PKey=26746101-D9DC-42B9-9385-C4ECE9963569>. Accessed September 2017.
- Low T. 1991: *Wild Food Plants of Australia*. Angus and Robertson 1991.
- New Zealand Plant Conservation Network (NZPCN) 2014: Factsheet - *Zoysia pauciflora*. http://www.nzpcn.org.nz/c/flora/factsheets/NZPCN_Species_1373.pdf
- Pryer K.M., Schneider H., Smith A.R., Cranfill R., Wolf P.G., Hunt J.S., and Sipes S.D. 2001: Horsetails and ferns are a monophyletic group and the closest living relatives to seed plants. *Nature* 409: 618-622.
- Pryer K.M., Schuettpelz E., Wolf P.G., Schneider H., Smith A.R., and Cranfill R. 2004: Phylogeny and evolution of ferns (monilophytes) with a focus on the early leptosporangiate divergences. *American Journal of Botany* 91: 1582-1598.
- Rogers G. 1999: Coastal turfs of mainland New Zealand - their composition, environmental character, and conservation needs. *Science for Conservation* 107. Department of Conservation, Wellington, New Zealand.
- Stokes E. 1980: *A History of Tauranga County*. Dunmore Press. 489 pp.
- Wildland Consultants 1999: Vegetation and flora of Mauao Historic Reserve. Volumes 1 and 2. *Wildland Consultants Ltd Contract Report No. 266*. Prepared for Tauranga City Council. 57 pp plus maps.
- Wildland Consultants 2004: Conservation plan for Mauao Historic Reserve 2004 - Volumes 1 and 2. *Wildland Consultants Ltd Contract Report No. 730*. Prepared for Tauranga City Council. Volume 1 75 pp; Volume 2 62 pp.
- Wildland Consultants 2008: Natural areas in Tauranga Ecological District. *Wildland Consultants Ltd Contract Report No. 1914*. Prepared for Environment Bay of Plenty. 681 pp.

- Wildland Consultants 2015: Conservation Plan Mauao Historic Reserve 2015. Volumes 1 and 2. *Wildland Consultants Ltd Contract Report No. 3544*. Prepared for Tauranga City Council. 68 pp plus maps.
- Wildland Consultants 2017: Survey for *Pimelea tomentosa* in Tarawera Forest. *Wildland Consultants Ltd Contract Report No. 3355*. Prepared for Timberlands Limited.
- Wilcox M.D. 2001: New Zealand spinach in Mangere. *Auckland Botanical Society Journal* 56: 82
- Yatskievych G. 1998: Encyclopedia Britannica. Whisk fern.
<https://www.britannica.com/plant/whisk-fern#ref39134> Accessed 31/08/2017

LOCATION PHOTOGRAPHS
OF *PSILOTUM NUDUM*, 2017

Species	<i>Psilotum nudum</i>	ID Number	Pn1	
Nearest GPS	E1879685	N 5830695	Number of Individuals	3
Survey Date	16/08/2017	Surveyor	Wildlands	
Nearest Climbing Wall	Genetic Wall	Nearest Climbing Route	N/A	
Description of Location	To the south of Genetic Wall			
Surrounding Vegetation	N/A			
Comments				



Species	<i>Psilotum nudum</i>	ID Number	Pn2	
Nearest GPS	E 1879706	N 5830722	Number of Individuals	18
Survey Date	16/08/2017	Surveyor	Wildlands and Avalon	
Nearest Climbing Wall	Mike Memorial	Nearest Climbing Route	Skinny and Fatty	
Description of Location	Plants not directly on climbing route, but scattered throughout in rock cracks. Includes buttress to right of route.			
Surrounding Vegetation	N/A			
Comments	Twelve plants on the rock face and six above the anchor points.			



Species	<i>Psilotum nudum</i>		ID Number		Pn3	
Nearest GPS	E 1879717		N 5830727		Number of Individuals	3
Survey Date	16/08/2017		Surveyor		Wildlands and Avalon	
Nearest Climbing Wall	Mike Memorial	Nearest Climbing Route		Wongi's Wife, De Homme Semmence and Au Vue		
Description of Location	Plants not directly on climbing route, but scattered throughout in rock cracks					
Surrounding Vegetation	Wharariki, <i>Dicksonia</i> sp.					
Comments						



Species	<i>Psilotum nudum</i>	ID Number	Pn3	
Nearest GPS	E 1879717	N 5830727	Number of Individuals	6
Survey Date	16/08/2017	Surveyor	Wildlands and Avalon	
Nearest Climbing Wall	Mike Memorial	Nearest Climbing Route	Big Fanny, The Great Rock and Roll Trundle	
Description of Location	Plants not directly on climbing routes but located above anchor points.			
Surrounding Vegetation	N/A			
Comments	Identified as Pn3 but the plants are located above the climbing route in a separate patch. Plants not shown on photo.			
				

Species	<i>Psilotum nudum</i>	ID Number	Pn4	
Nearest GPS	E 1879719	N 5830735	Number of Individuals	5
Survey Date	16/08/2017	Surveyor	Wildlands and Avalon	
Nearest Climbing Wall	Mike Memorial	Nearest Climbing Route	Drop Kick Whizzer	
Description of Location	All three plants are at the base of the route below the first anchor point.			
Surrounding Vegetation	<i>Phormium tenax</i>			
Comments				



Species	<i>Psilotum nudum</i>	ID Number	Pn5	
Nearest GPS	E 1879728	N 5830739	Number of Individuals	1
Survey Date	16/08/2017	Surveyor	Wildlands and Avalon	
Nearest Climbing Wall	Mike Memorial	Nearest Climbing Route	Midori Illusion	
Description of Location	At the base of the climbing route, near first anchor point.			
Surrounding Vegetation	<i>Phormium tenax</i>			
Comments				



Species	<i>Psilotum nudum</i>	ID Number	Pn6	
Nearest GPS	E 1879744	N 5830735	Number of Individuals	1
Survey Date	16/08/2017	Surveyor	Wildlands and Avalon	
Nearest Climbing Wall	Warratah	Nearest Climbing Route	Hang Dog	
Description of Location	At least one plant on the route.			
Surrounding Vegetation	N/A			
Comments				



Species	<i>Psilotum nudum</i>	ID Number	Pn7	
Nearest GPS	E 1879784	N 5830767	Number of Individuals	1
Survey Date	16/08/2017	Surveyor	Wildlands and Avalon	
Nearest Climbing Wall	Le Altar	Nearest Climbing Route	Astrolabe	
Description of Location	Disused climbing route.			
Surrounding Vegetation	N/A			
Comments	At least one plant visible.			
				

Species	<i>Psilotum nudum</i>	ID Number	Pn8	
Nearest GPS	E 1879813	N 5830777	Number of Individuals	1
Survey Date	16/08/2017	Surveyor	Wildlands	
Nearest Climbing Wall	Le Altar	Nearest Climbing Route	N/A	
Description of Location	Disused climbing route, on standing pinnacle.			
Surrounding Vegetation	N/A			
Comments	Possibly at least one plant (not shown in photo). Access for identification difficult.			
				

Species	<i>Psilotum nudum</i>	ID Number	Pn9	
Nearest GPS	E 1879729	N 5830646	Number of Individuals	5
Survey Date	16/08/2017	Surveyor	Wildlands	
Nearest Climbing Wall	N/A	Nearest Climbing Route	No formal climbing route	
Description of Location	Not a formal climbing route. Northeast of goat track.			
Surrounding Vegetation	N/A			
Comments	At least five small plants in three locations (not shown in photo).			
				

Species	<i>Psilotum nudum</i>	ID Number	Pn10	
Nearest GPS	E 1879796	N 5830657	Number of Individuals	2
Survey Date	16/08/2017	Surveyor	Wildlands	
Nearest Climbing Wall	N/A	Nearest Climbing Route	No formal climbing route	
Description of Location	Not a formal climbing route. Northeast of summit.			
Surrounding Vegetation	<i>Phormium tenax</i>			
Comments	At least two small plants.			
				

Species	<i>Psilotum nudum</i>	ID Number	Pn11	
Nearest GPS	E 1879796	N 5830657	Number of Individuals	2
Survey Date	16/08/2017	Surveyor	Wildlands	
Nearest Climbing Wall	Mike Memorial	Nearest Climbing Route	No formal climbing DFe Homme	
Description of Location	To the right of De Homme climbing route. Not on route.			
Surrounding Vegetation				
Comments				



PHOTOGRAPHS OF
PSILOTUM NUDUM, 2017



Plate 1: *Psilotum nudum* (Pn1).
Three plants.



Plate 2: *Psilotum nudum* (Pn2).
One of four plants.



Plate 3: *Psilotum nudum* (Pn2).
One of four plants.



Plate 4: *Psilotum nudum* (Pn3).
One plant.



Plate 5: *Psilotum nudum* (Pn4).
Five plants.



Plate 6: *Psilotum nudum* (Pn5).
Two plants.



Plate 7: *Psilotum nudum* (Pn6).
Three plants.



Plate 8: *Psilotum nudum* (Pn7).
One plant.



Plate 9: *Psilotum nudum* (Pn9).
Three of five plants.



Plate 10: *Psilotum nudum* (Pn9).
Two of five plants.



Plate 11: *Psilotum nudum* (Pn10).
Two plants.



Plate 12: *Psilotum nudum* (Pn11).
Two plants.



Plate 13: *Psilotum nudum* (Pn4).
Two of six plants above anchor points.



Plate 14: *Psilotum nudum* (Pn2).
Two of five plants above anchor points.

PHOTOPOINT MONITORING
OF *ZOYSIA PAUCIFLORA* 2017

Species	Zoysia pauciflora		Patch Number	Zp1			
GPS	E 1880215		N 5830905	Area (m²)	1		
Survey Date	16/08/2016		Surveyor	s 7(2)(a) - Privacy			
Coverage of Species (%)	70%		Condition of Species	Slight salt/frost burn and seasonal dieback			
Surrounding Vegetation	Ficinia nodosa, Cynodon dactylon, Samolus repens var. strictus, Dichondra repens, Isolepis cernua var. cernua, exotic grass seedlings						
Comments	Beside walkway. Has potential to be outcompeted by Cynodon						
Photo Code	2842	Photo Direction	North	Photo Code	2843	Photo Direction	North
							

Species	Zoysia pauciflora		Patch Number	Zp2			
GPS	E 1880232		N 5830924	Area (m ²)	2		
Survey Date	16/08/2016		Surveyor	s 7(2)(a) - Privacy			
Coverage of Species (%)	60%		Condition of Species	Slight salt/frost burn and seasonal dieback			
Surrounding Vegetation	Ficinia nodosa, Samolous repens, Cyperus ustulatus, Isolepis cernua var. cernua						
Comments	Two small patches in the same area. Collectively called Zp2.						
Photo Code	2847	Photo Direction	Northeast	Photo Code	2848	Photo Direction	North
							

Species	Zoysia pauciflora		Patch Number	Zp3			
GPS	E 1880207		N 5830934	Area (m²)	1		
Survey Date	16/08/2016		Surveyor	s 7(2)(a) - Privacy			
Coverage of Species (%)	80%		Condition of Species	Slight salt/frost burn and seasonal dieback			
Surrounding Vegetation	Ficinia nodosa, Lobelia anceps						
Comments							
Photo Code	2851	Photo Direction	Northeast	Photo Code	2853	Photo Direction	North



Species		<i>Zoysia pauciflora</i>		Patch Number		Zp4	
GPS		E 1880106		N 5831016		Area (m²)	0.2
Survey Date		16/08/2016		Surveyor		s 7(2)(a) - Privacy	
Coverage of Species (%)		100%		Condition of Species		Slight salt/frost burn and seasonal dieback	
Surrounding Vegetation		<i>Ficinia nodosa</i> , <i>Lobelia anceps</i>					
Comments		A very small thin patch in rock crack					
Photo Code	2854	Photo Direction	South	Photo Code	2855	Photo Direction	South



Species	<i>Zoysia pauciflora</i>	Patch Number	Zp5
GPS	E 1880092	N 5831024	Area (m²) 0.1
Survey Date	16/08/2016	Surveyor	s 7(2)(a) - Privacy
Coverage of Species (%)	10%	Condition of Species	Slight salt/frost burn and seasonal dieback
Surrounding Vegetation	Unknown grass, possibly <i>Cynodon dactylon</i>		
Comments	Possibly small amount of <i>Zoysia</i> in amongst other grass. To re-examine in summer		
Photo Code	2857	Photo Direction	South
			

Species	<i>Zoysia pauciflora</i>	Patch Number	Zp6
GPS	E 1879915	N 5831008	Area (m²) 1
Survey Date	16/08/2016	Surveyor	s 7(2)(a) - Privacy
Coverage of Species (%)	70%	Condition of Species	Has been sprayed
Surrounding Vegetation	Unknown grasses,		
Comments	Area has been sprayed for replanting S. Conn pers. obs June 2017), but <i>Zoysia pauciflora</i> could still come back in spring. Lots of seed.		
Photo Code	2859	Photo Direction	South
			

Species		<i>Zoysia pauciflora</i>		Patch Number		Zp7	
GPS		E 1879892		N 5831001		Area (m²)	6
Survey Date		16/08/2016		Surveyor		s 7(2)(a) - Privacy	
Coverage of Species (%)		80%		Condition of Species		Has been sprayed (S. Conn pers. obs, June 2017)	
Surrounding Vegetation		Unknown grasses, <i>Phormium tenax</i> . Under pōhutukawa.					
Comments		Area has been sprayed for replanting, but could still come back in spring. Lots of seed. Beside base track.					
Photo Code	2861	Photo Direction	South	Photo Code	2862	Photo Direction	North
							

GENERIC MONITORING TEMPLATE

Species				ID Number			
GPS		E		N		Area (m²)	
Survey Date				Surveyor			
Area Occupied (m²)				Number of Individuals			
Coverage of Target Species (%)				Condition of Species			
Surrounding Vegetation							
Potential Threats							
Comments							
Photo Code		Photo Direction		Photo Code		Photo Direction	
Insert Photo				Insert Photo			
Location Map							



Call Free 0508 WILDNZ
Ph: +64 7 343 9017
Fax: +64 7 3439018
ecology@wildlands.co.nz

99 Sala Street
PO Box 7137, Te Ngae
Rotorua 3042,
New Zealand

Regional Offices located in
Auckland, Hamilton, Tauranga,
Whakatane, Wellington,
Christchurch and Dunedin

ECOLOGY RESTORATION BIODIVERSITY SUSTAINABILITY

www.wildlands.co.nz

8.3 Mauao Historic Reserve Management Plan

Ngā Poutiriao ō Mauao (Mauao Joint Administration Board)

13 February 2018

Objective ID No:

A8429506



Executive summary

Recommendation	That Ngā Poutiriao ō Mauao: a. Approve a final version of the Reserve Management Plan for adoption by Council, in accordance with section 41 of the Reserves Act 1977, as set out at Appendix A, plus any changes recommended by the Mauao Trust to section 3.2 “Tangata whenua relationship, history and culture”.
Summary of issue	The draft Mauao Historic Reserve Management Plan (Mauao HRMP) was publicly consulted on during July, August and September 2017. There were 112 submissions to the draft Mauao HRMP, and the Mauao HRMP Hearings Panel heard those submitters who asked to speak to their submissions in October 2017, and undertook deliberations on the submissions in December 2017. The Hearings Panel agree to the proposed wording of the plan for recommendation to Council for adoption. Prior to recommending it to Council, agreement is being sought from Ngā Poutiriao ō Mauao and the Mauao Trust. The proposed final plan is included at Appendices A and B. This includes the outcome of the deliberations, plus a minor amendment recommended by staff subsequent to the deliberations, to address safety issues raised by representatives of rock climbers.
Broader benefit / impact	Approval of the final Mauao HRMP for adoption by Council will progress the process to adopt a final plan. Adoption of the Mauao HRMP enables management of the historical, cultural, ecological and recreational values of the reserve, whilst recognising tangata whenua relationships, culture and traditions with Mauao.
Strategic context	Section 41 of the Reserves Act 1977 requires all administering bodies to prepare reserve management plans for reserves. The Mauao HRMP will set the strategic direction for the management of Mauao. It will enable the development of a programme of works to deliver the outcomes of the plan, by Tauranga City Council working with iwi as strategic partners.

Next steps	• Approval of the Mauao HRMP by the Mauao Trust. • Report to Council seeking adoption of the Mauao HRMP.
------------	---

Discussion

Background

1. At the Council meeting of 18 July 2017, Council adopted the draft Mauao HRMP for public consultation, in accordance with section 41 of the Reserves Act.
2. Public notice was given on Saturday 22 July 2017 that the draft plan was available for comment. Submissions closed two months later on Wednesday 27 September 2017.
3. 112 submissions were received.
4. A hearing was held on 31 October 2017, and of the 23 submitters who wished to be heard, 18 spoke to their submissions. Deliberations were undertaken on 5 December 2017, at which the Mauao HRMP Hearings Panel agreed to amendments to the draft plan to develop a final version.
5. For two issues discussed at the deliberations, the Hearings Panel agreed to staff making amendments to the plan after undertaking some further work, and these issues are discussed in sections seven to ten of this report.
6. After the deliberations, staff commenced engagement with representatives of the rock climbing community to commence the process for them to seek approval from Ngā Poutiriao ō Mauao to allow specific rock climbing routes. During those discussions, the representatives noted that the sentence at Management Statement 5.3.14(a) “No new holes are permitted to be drilled to install bolts or anchors for sport rock climbing” would pose problems, as from time to time, existing bolts need to be replaced for safety reasons. Therefore, it is recommended to amend the wording of this sentence, as detailed at section 11 of this report.

Section 3.2 “Tangata Whenua relationship, history and culture”

7. The Hearings Panel agreed that the final wording of section 3.2 of the plan “Tangata whenua relationship, history and culture” shall be confirmed with the Mauao Trust and their recommendation included in the plan for adoption by Council without further deliberation. Confirmation of the final wording of section 3.2 of the plan is being sought from the Mauao Trust at the joint meeting between the Trust and Ngā Poutiriao ō Mauao on 13 February.

Management Statement 5.1.6(c) Utilities

8. The Hearings Panel agreed that the wording for Management Statement 5.1.6(c), relating to utilities on the summit, would be developed by staff outside the deliberations, and provided to the Hearings Panel for confirmation.
9. Staff prepared proposed wording, and circulated to Hearings Panel members after the deliberations. Six of the ten hearings panel members responded to the request for feedback on the wording proposed by staff, including the Chair of Ngā Poutiriao ō Mauao. The Chair

has confirmed that he considers this majority agreement is sufficient to accept the proposed wording.

10. The proposed wording reads “Allow utilities to be provided on the summit only where approval has been sought from and given by Ngā Poutiriao ō Mauao. Approval will only be given where Ngā Poutiriao ō Mauao is satisfied that the placement of the utility will avoid adverse effects on the maunga’s historic, cultural, archaeological, ecological, landscape, and recreational values. Maintenance and improvement of existing utilities is acceptable but must be in accordance with this Plan”.

Proposed Additional Amendment – Management Statement 5.3.14(a) Climbing

11. It is recommended to amend this sentence to read “No new holes are permitted to be drilled ~~to install bolts or anchors~~ for sport rock climbing, unless approval is given by Ngā Poutiriao ō Mauao”. This proposed wording is supported by the Chair of the Mauao HRMP Hearings Panel and the Chair of Ngā Poutiriao ō Mauao. This proposed change will not change the outcomes of this management statement, but will rather clarify the intent.

Approval Sought

12. Approval is being sought from Ngā Poutiriao ō Mauao to the words in the final formatted version of the plan at Appendix A. This final version includes the proposed wording for Management Statements 5.1.6(c) Utilities and 5.3.14(a) Rock Climbing as detailed above, plus any changes as a result of advice received from the Mauao Trust with regard to section 3.2 “Tangata whenua relationship, history and culture”.

Legal advice – potential health and safety liabilities – use of 4WD track by non-emergency vehicles

13. During the deliberations, the Hearings Panel requested that additional legal advice be sought regarding the potential liabilities of TCC, Ngā Poutiriao ō Mauao and the Mauao Trust with respect to allowing currently permitted vehicles to apply to Ngā Poutiriao ō Mauao annually to continue to use the four wheel drive track at the same time as pedestrians are using the track. A verbal update will be provided at the Ngā Poutiriao ō Mauao meeting on 13 February 2018.

Options

Option 1: Approve final version of the Mauao HRMP

14. Approve a final version of the Mauao HRMP for adoption by Council.

Advantages		Disadvantages	
Will enable the final Mauao HRMP to be adopted by Council.		Not applicable	
Budget - Capex		Not applicable	
Budget - Opex		Not applicable	

Key risks	Not applicable
Recommended?	Yes

Option 2: Do not approve final version of the Mauao HRMP

15. Do not approve a final version of the Mauao HRMP for adoption by Council.

Advantages		Disadvantages	
Nil		Will not enable the final Mauao HRMP to be adopted by Council.	
Budget - Capex		Not applicable	
Budget - Opex		Not applicable	
Key risks		Will delay the formal adoption of the management plan and the ability to commence implementation of projects/actions identified in the plan	
Recommended?		No	

Significance and engagement

16. Under the Significance and Engagement Policy, this decision is considered low risk, as there is a strong and logical flow from a prior decision.

Next Steps

- Staff seek approval from Mauao Trust to the final Mauao HRMP.
- Staff seek Council resolution to adopt the final Mauao HRMP.
- Council, as delegate for the Minister, approve the RMP under section 41(1) of the Reserves Act 1977.

Appendices

No.	Title
	Final formatted version of Mauao Historic Reserve Management Plan <i>Objective ID: A8451275</i>
	Track changes version of the Mauao Historic Reserve Management Plan, showing changes from draft plan to final plan. <i>Objective ID: A8433457</i>

Signatories

Authors	s 7(2)(f)(ii)
Authorisers	s 7(2)(f)(ii)

8.3.1 Report - Nga Poutiriao o Mauao (Joint Admin Board) Review of the Mauao Historic Reserve Management Plan - Appendix A - Formatted version

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

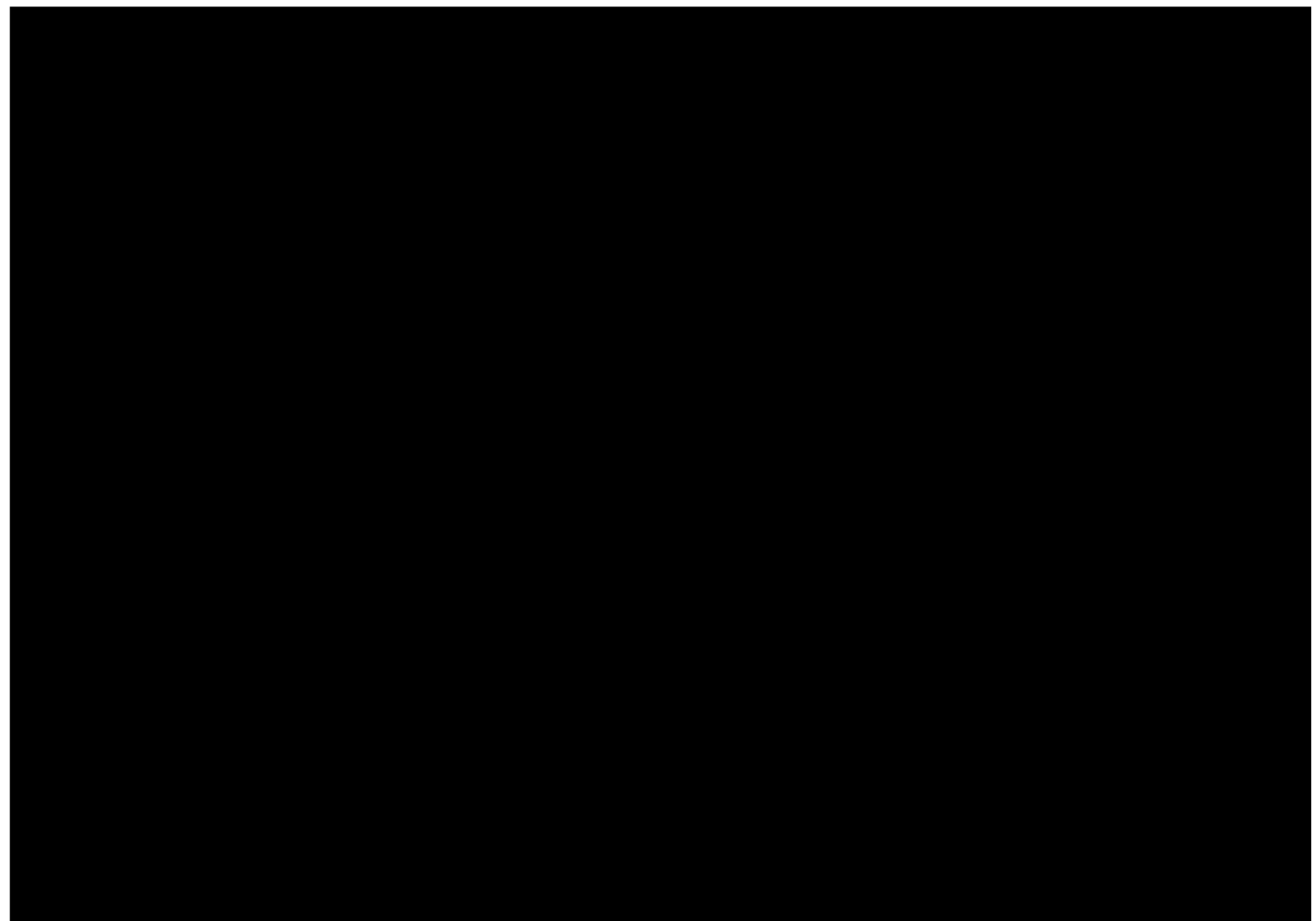
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

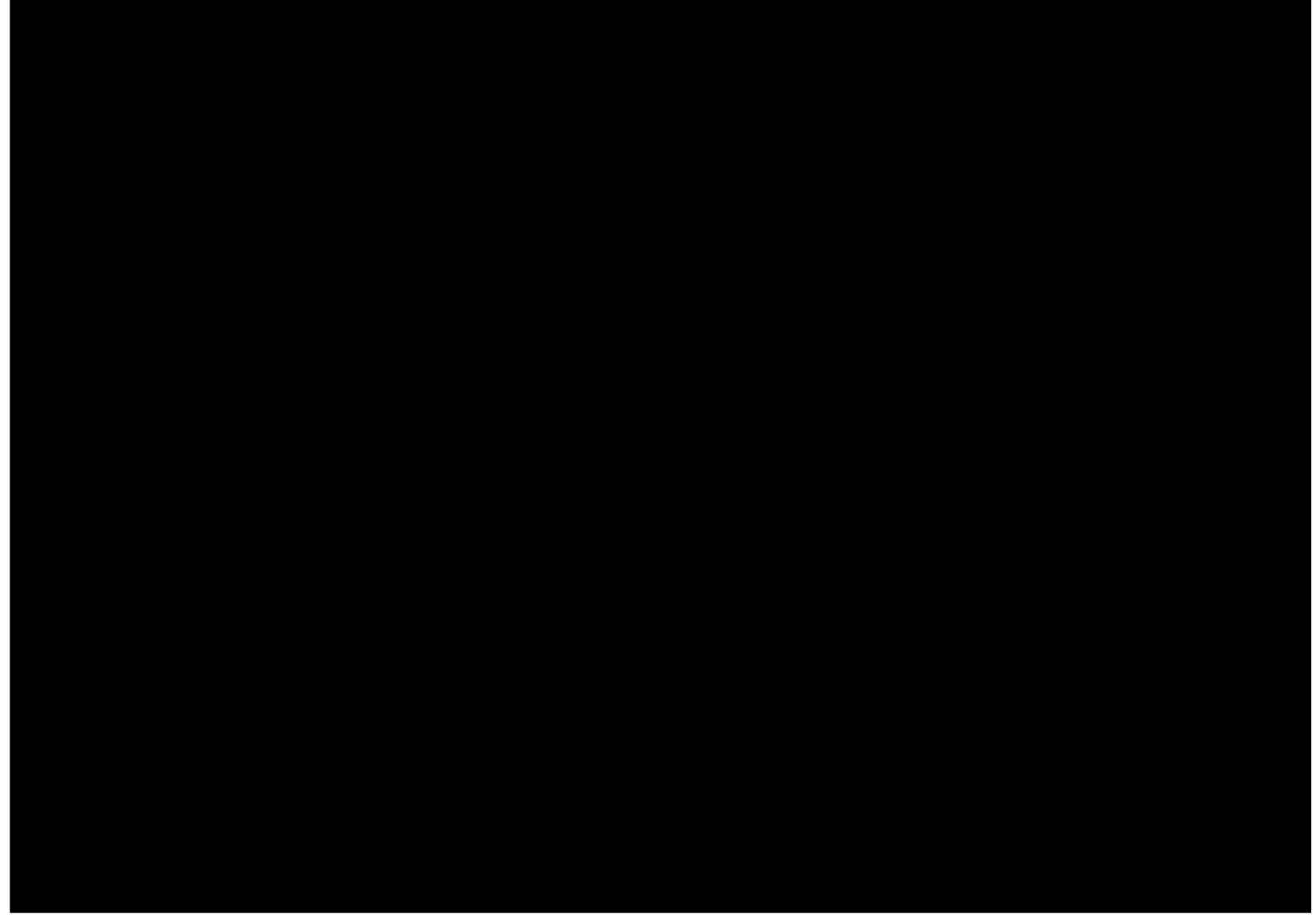
s 7(2)(f)(i) - Free and frank opinion

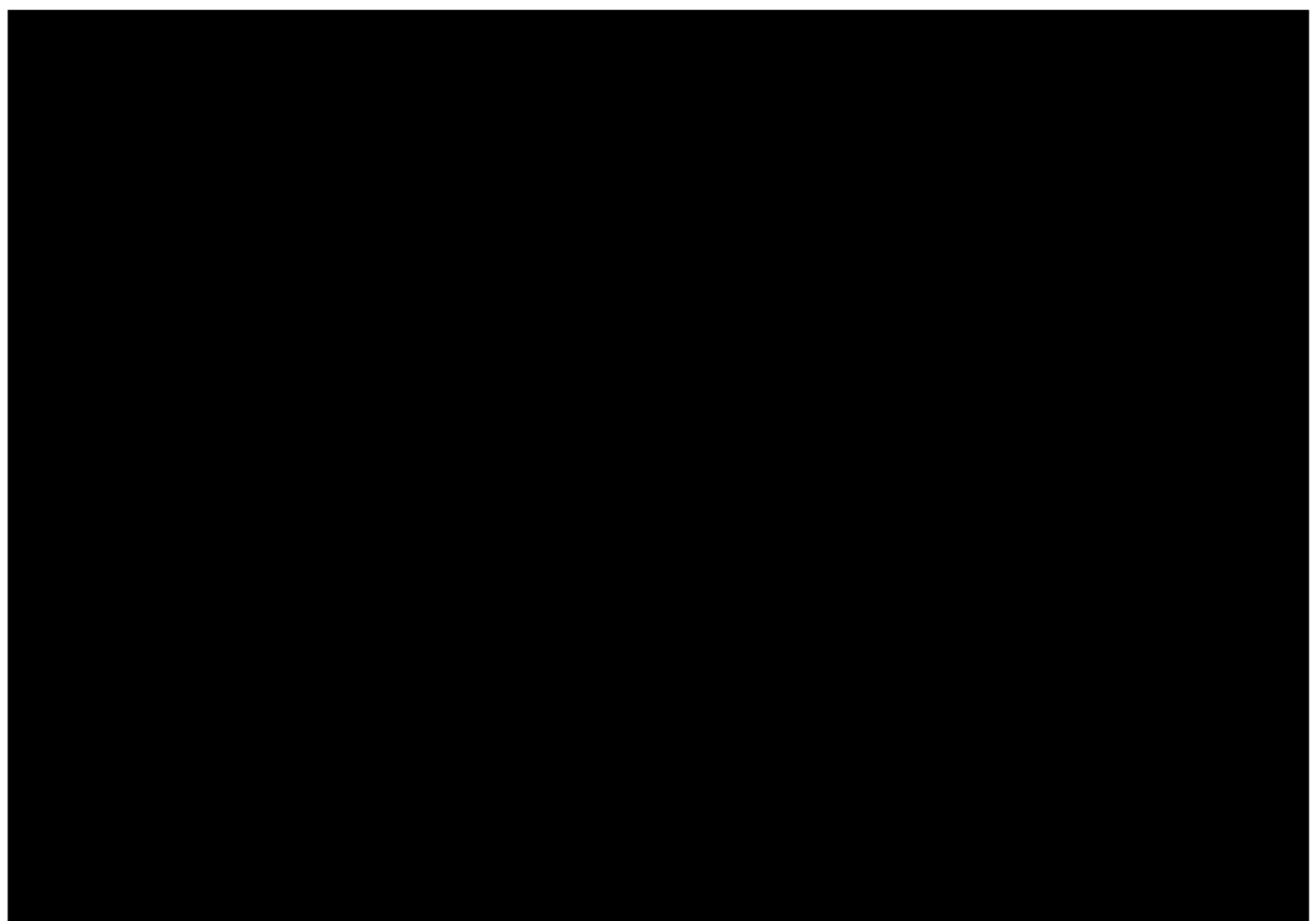
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

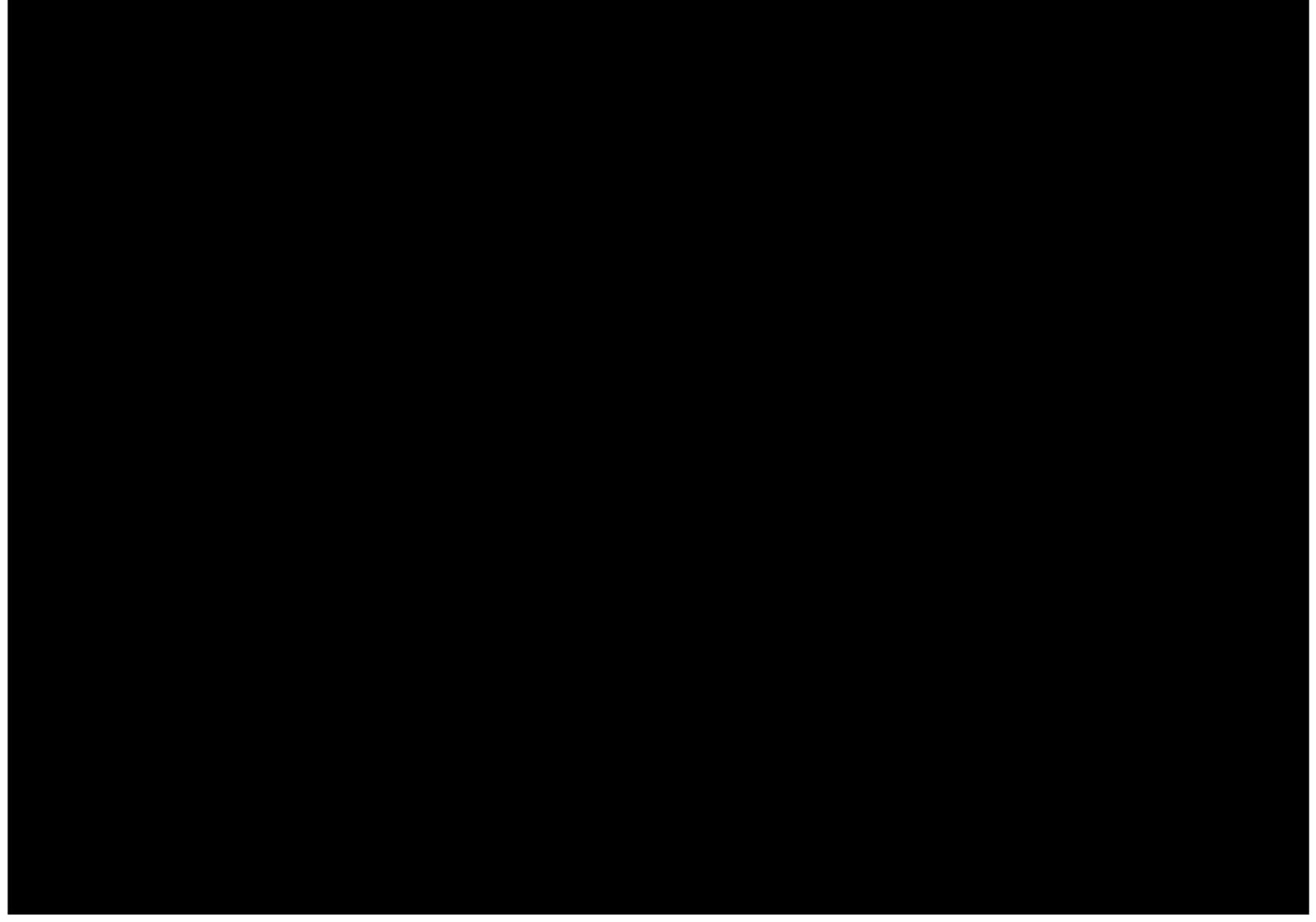


s 7(2)(f)(i) - Free and frank opinion



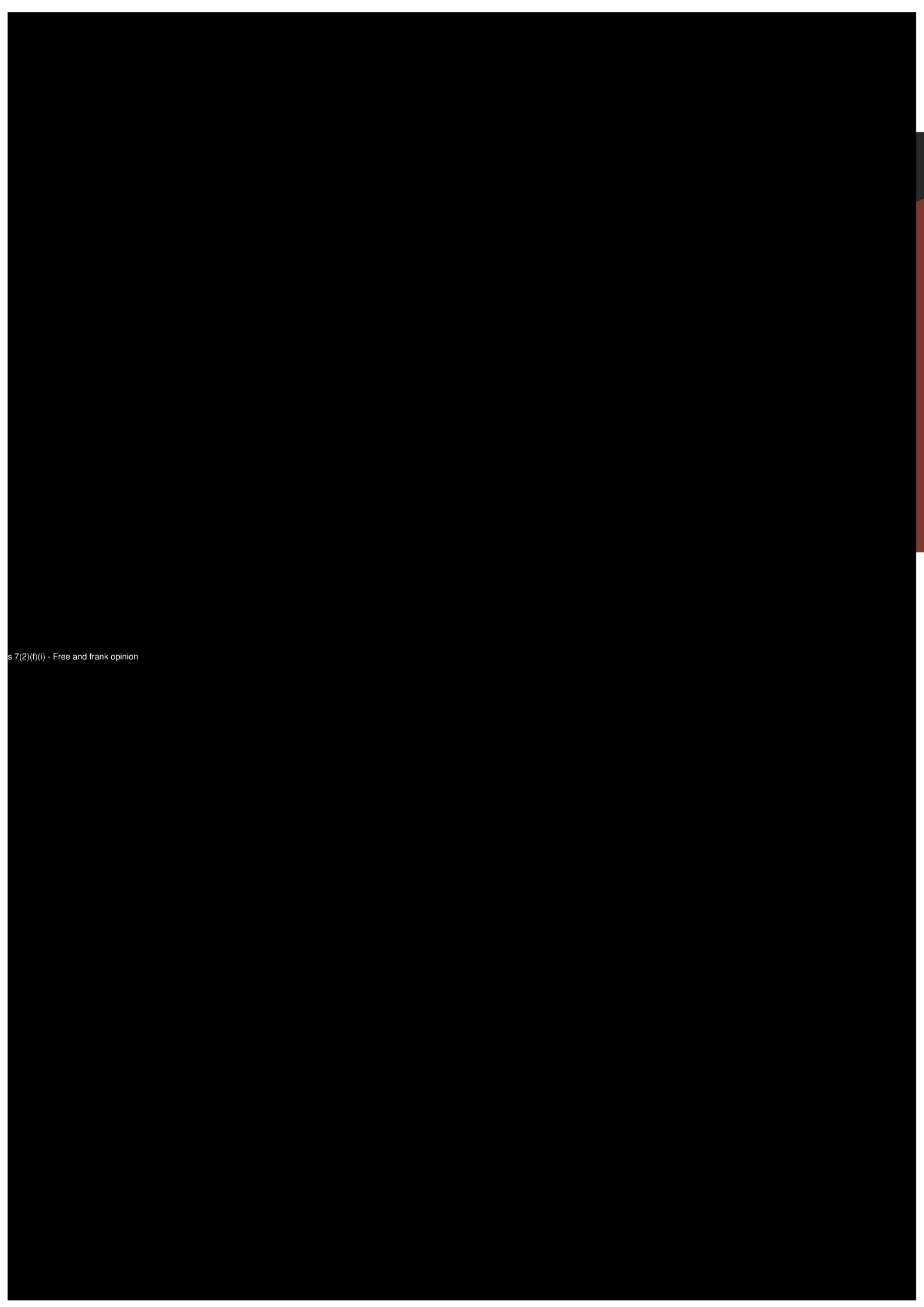


s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

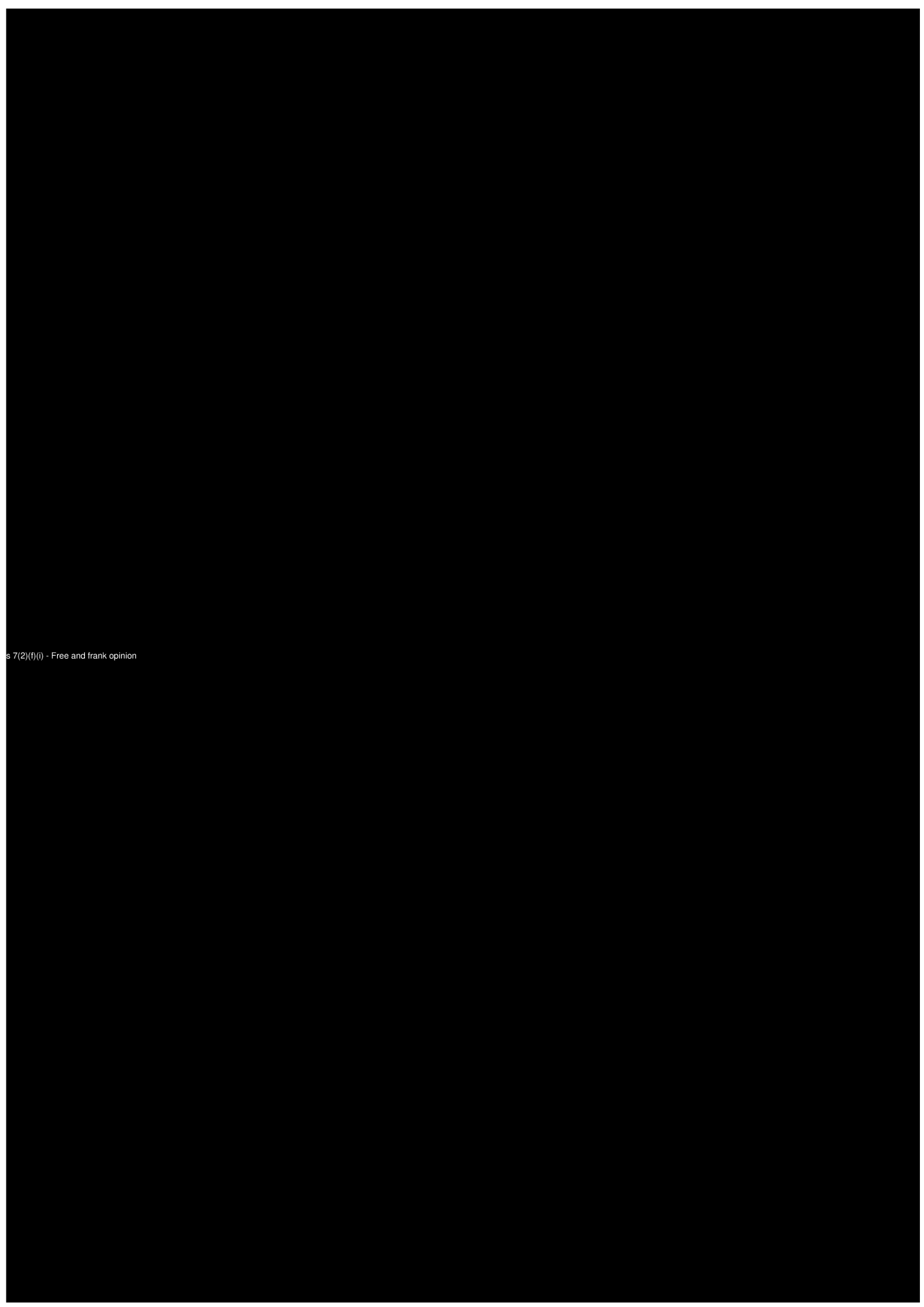
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

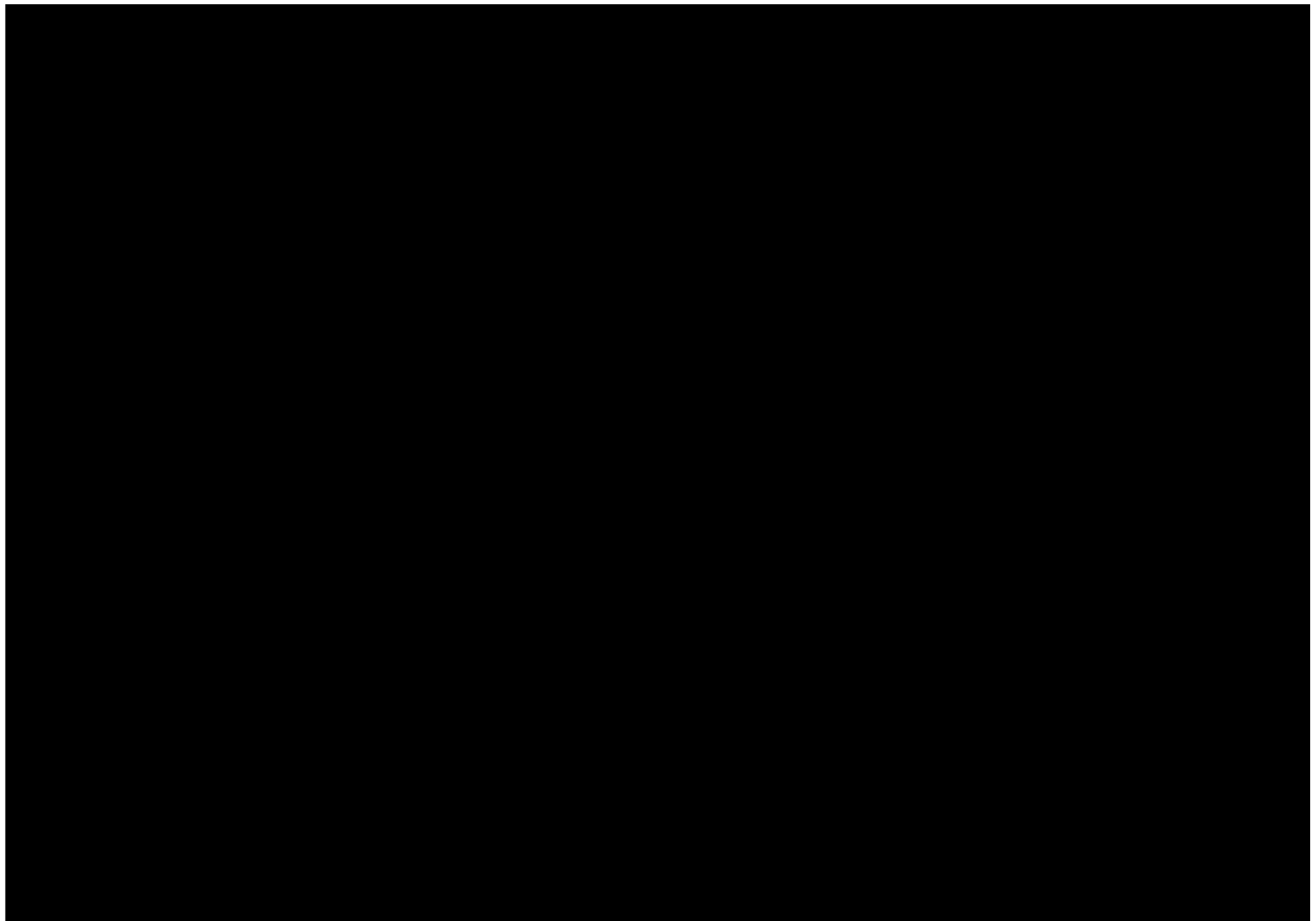
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

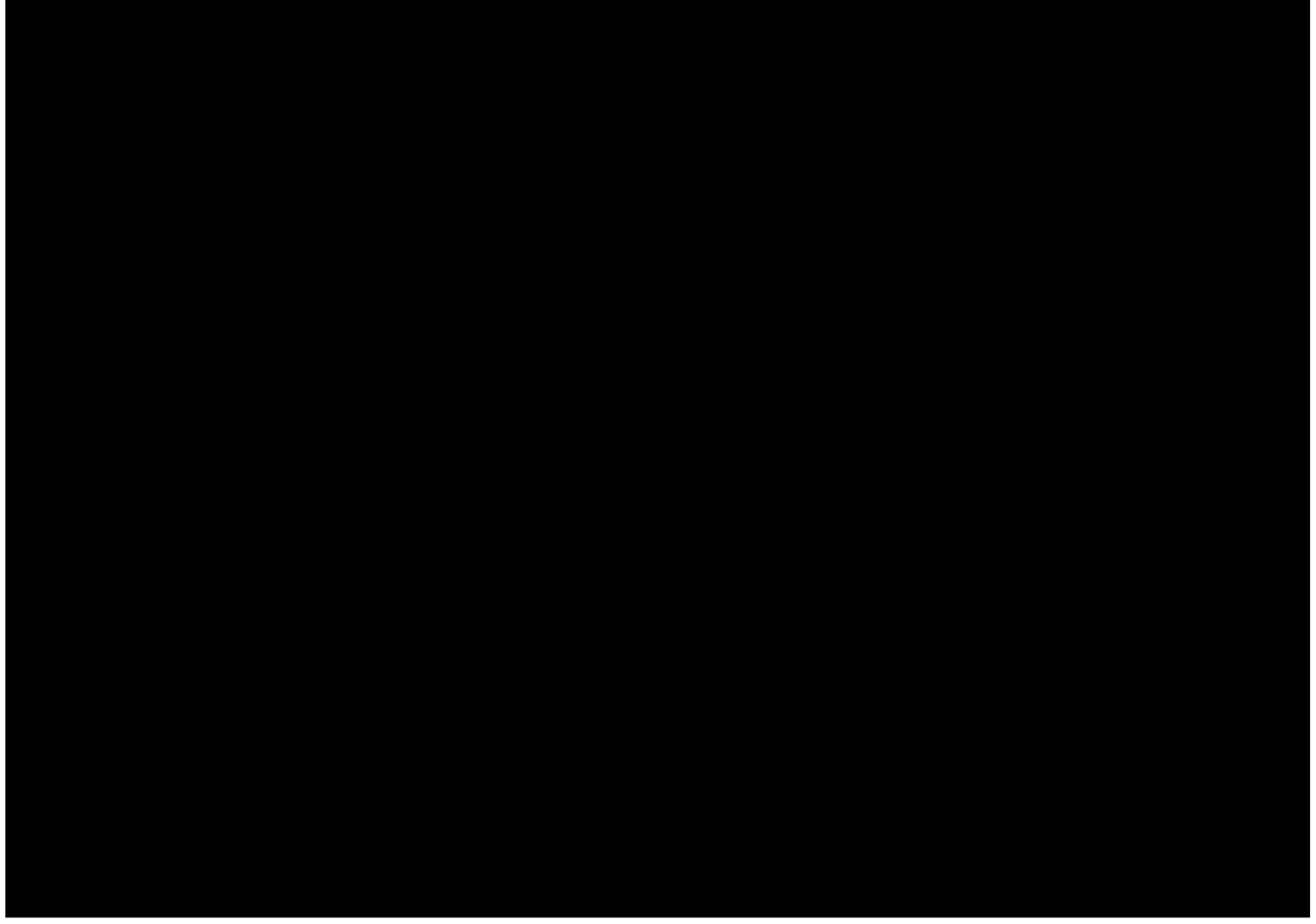


s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

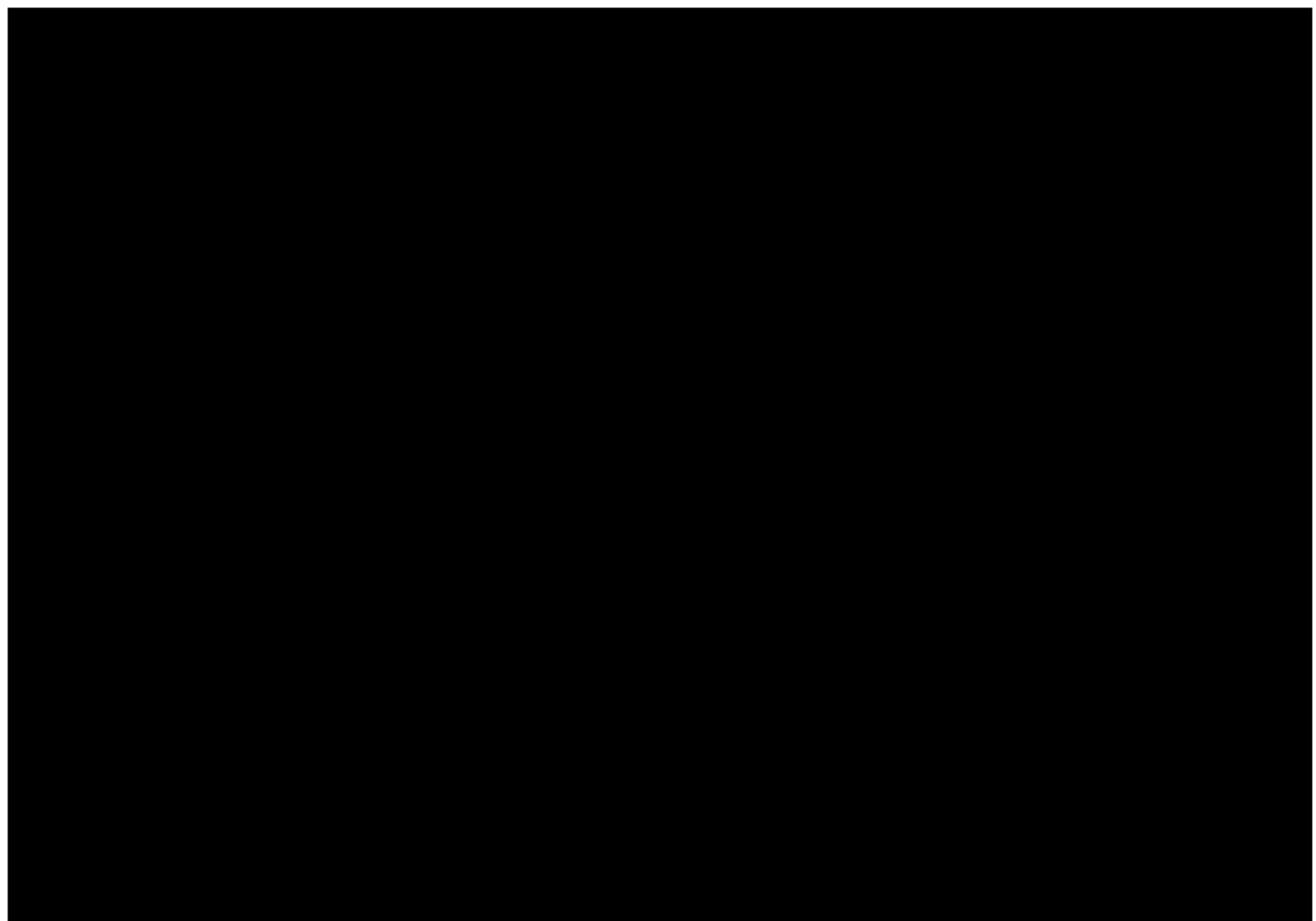


s 7(2)(f)(i) - Free and frank opinion

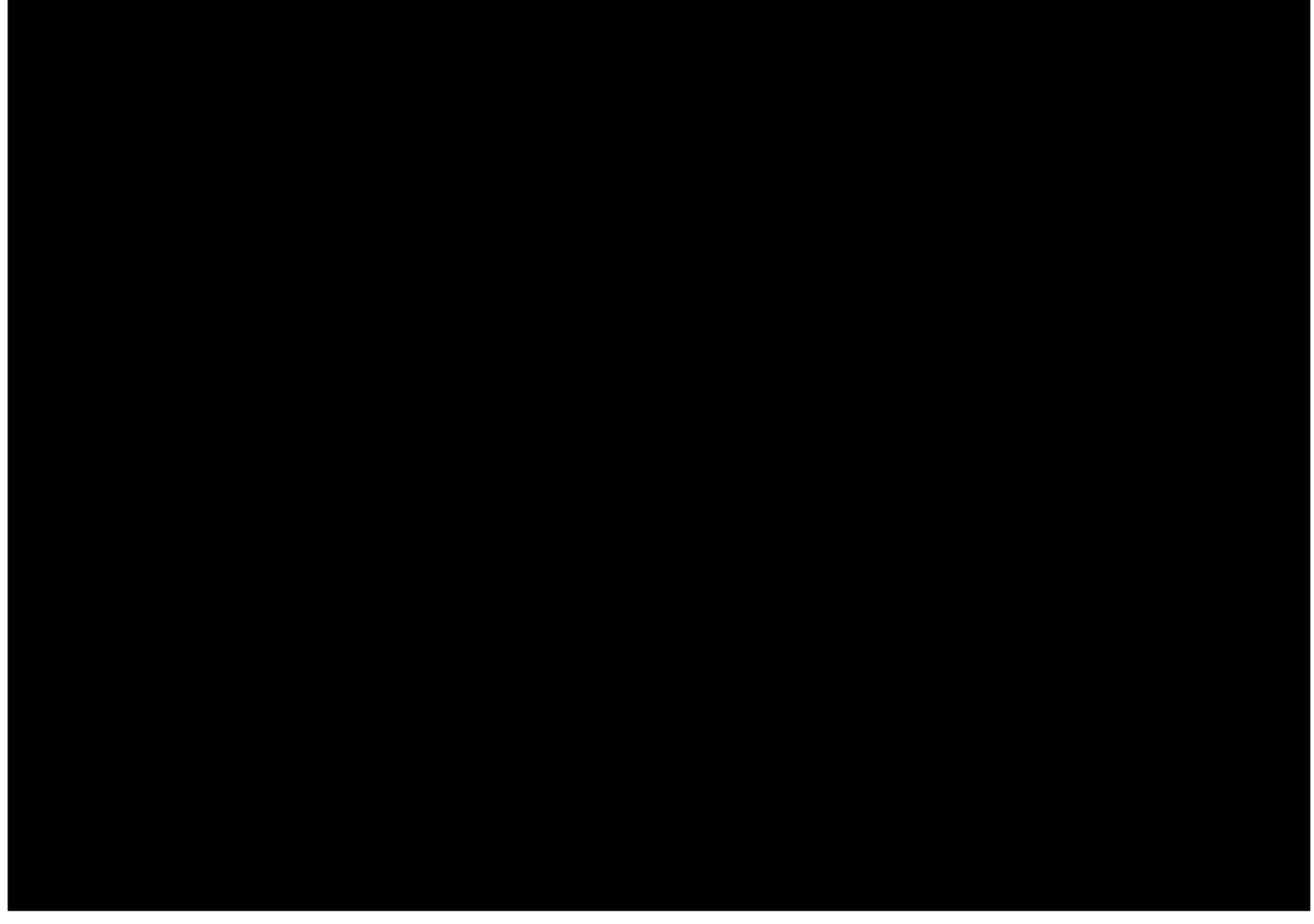


s 7(2)(f)(i) - Free and frank opinion

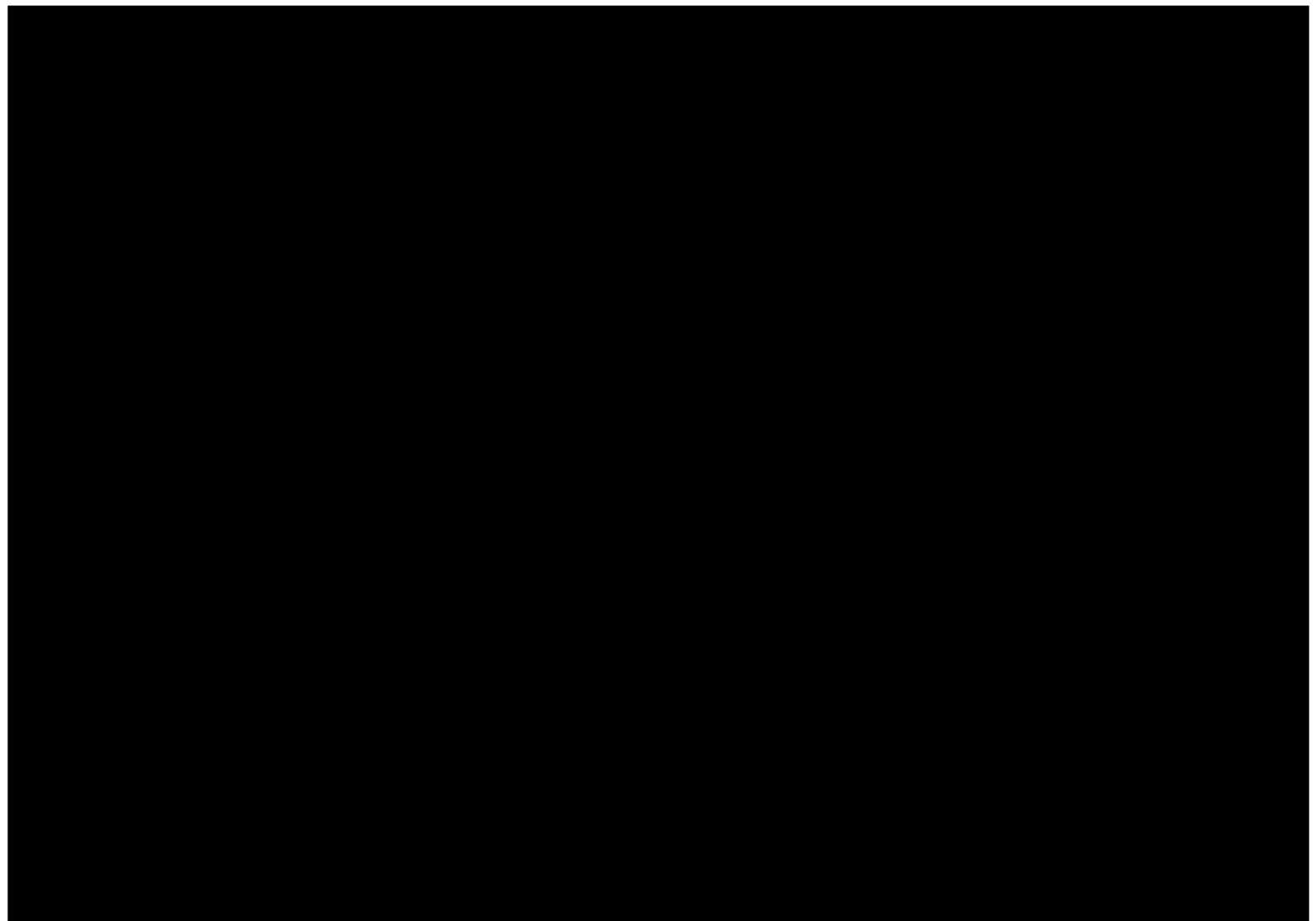
s 7(2)(f)(i) - Free and frank opinion



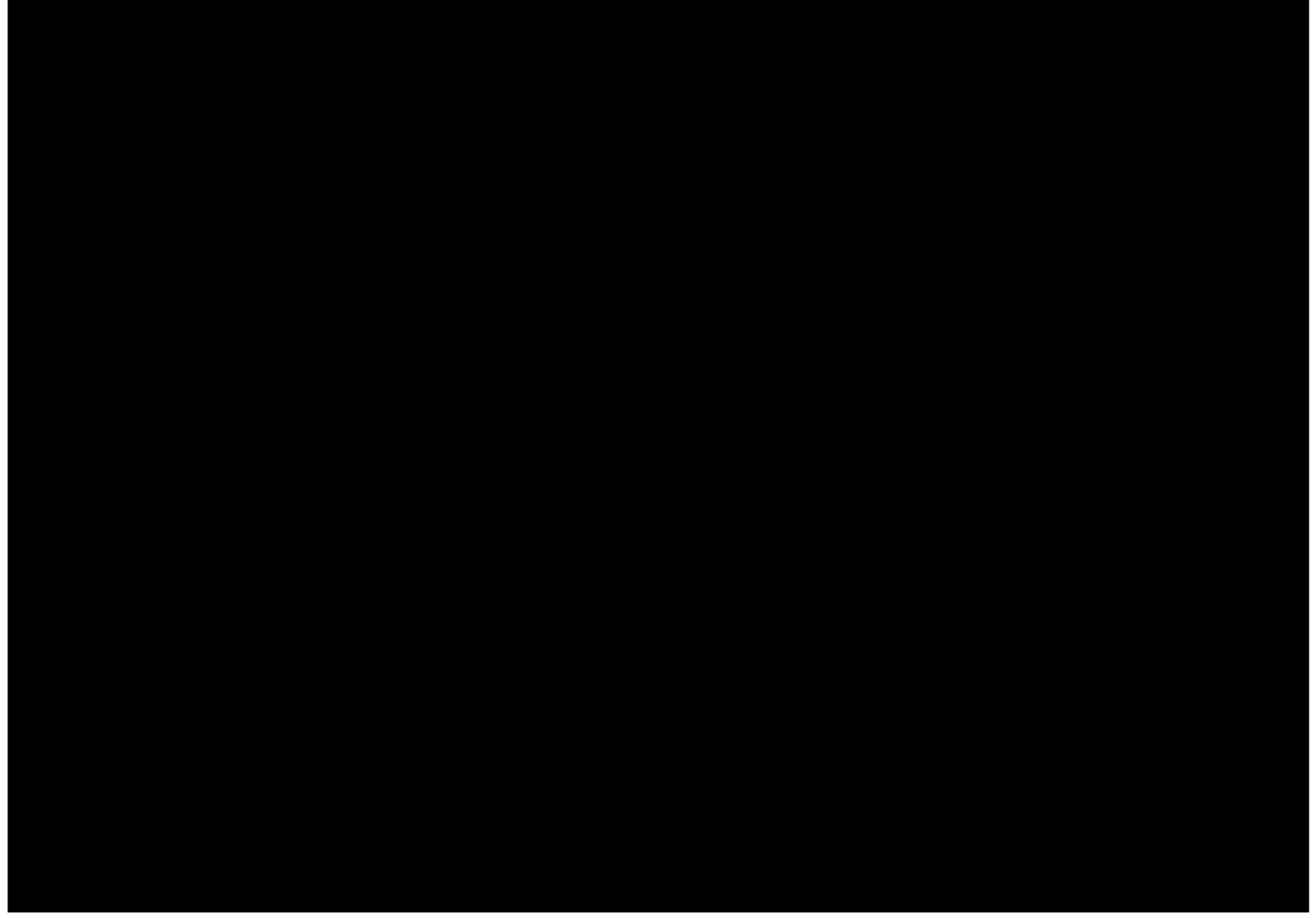
s 7(2)(f)(i) - Free and frank opinion

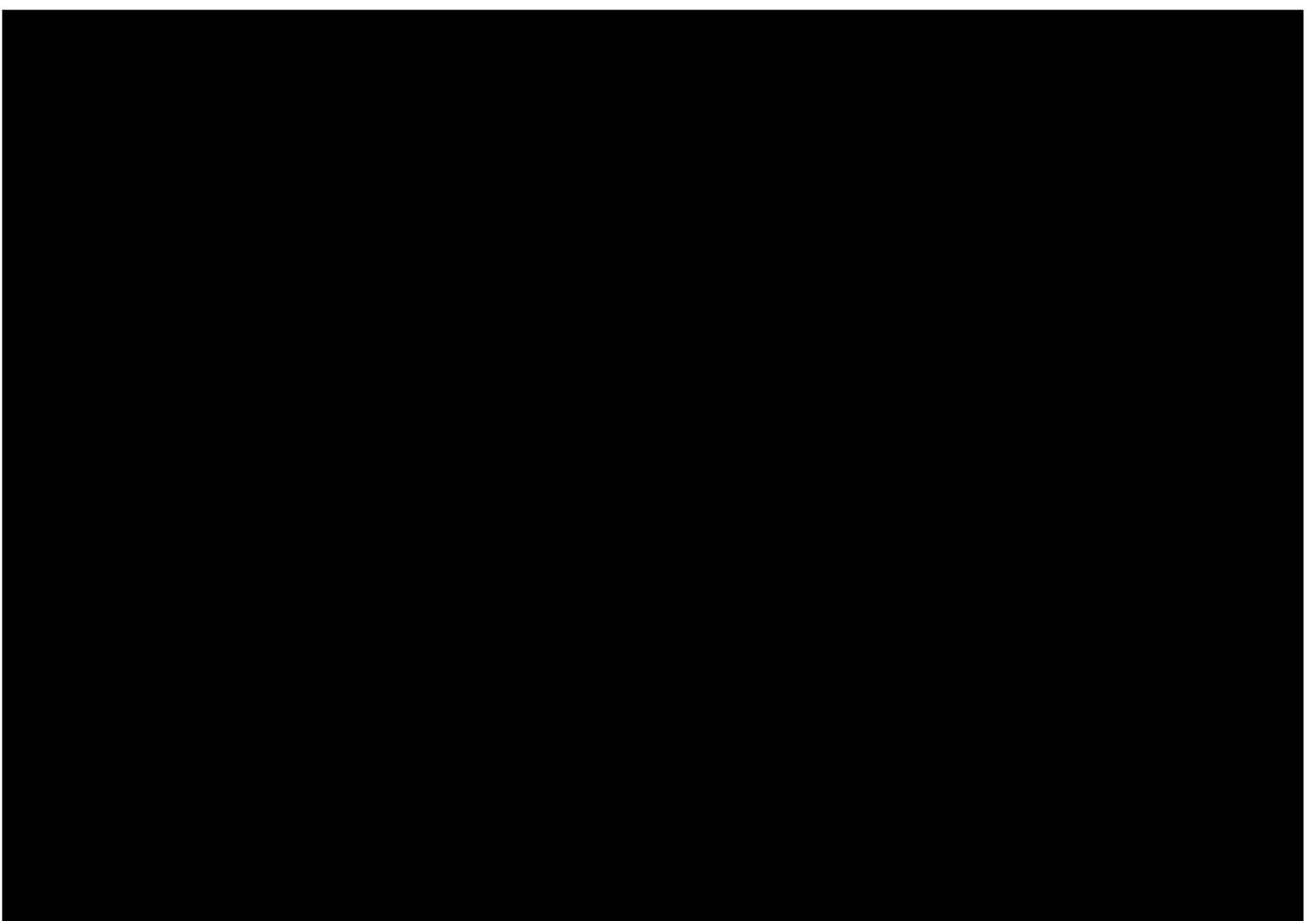


s 7(2)(f)(i) - Free and frank opinion

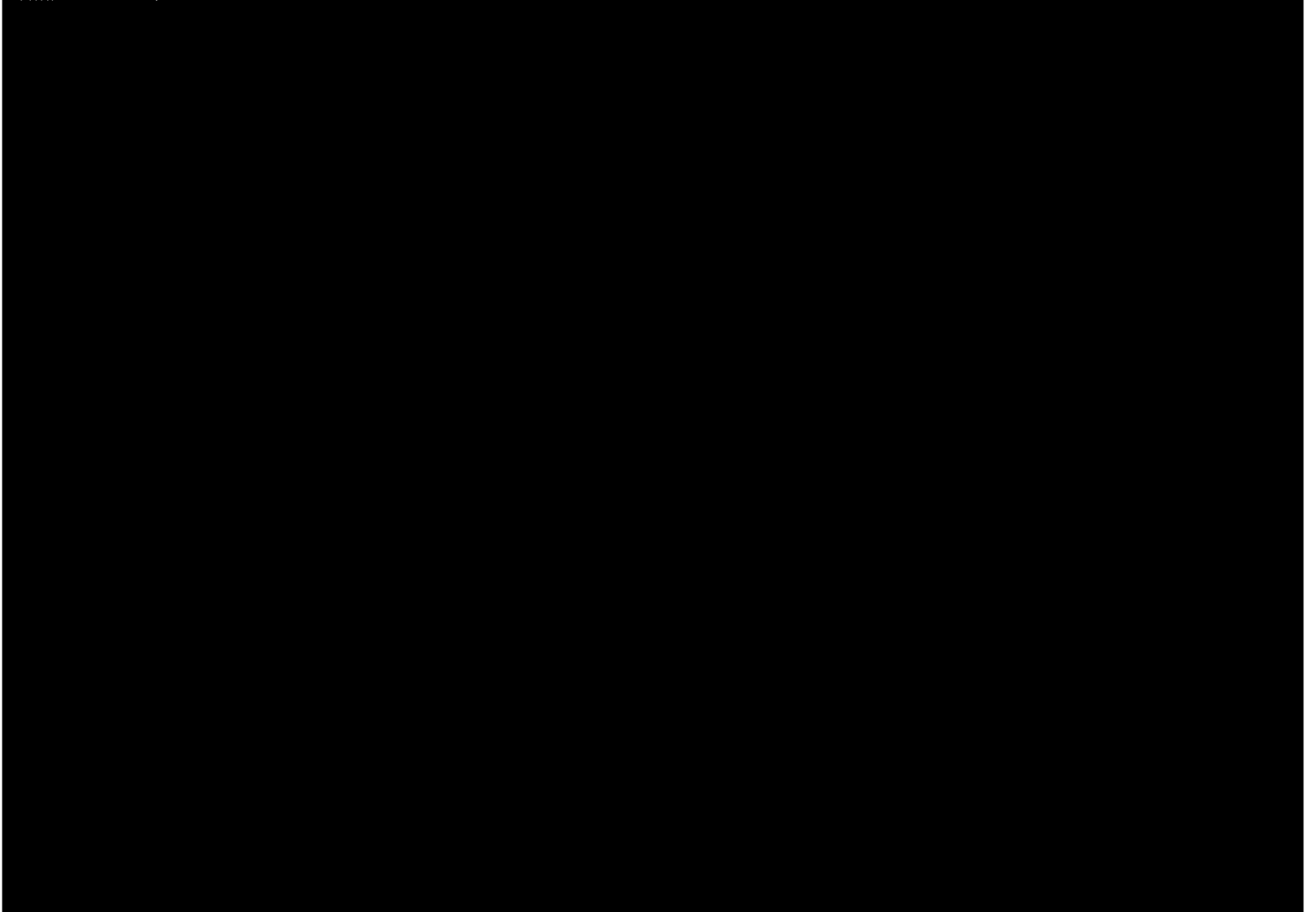


s 7(2)(f)(i) - Free and frank opinion

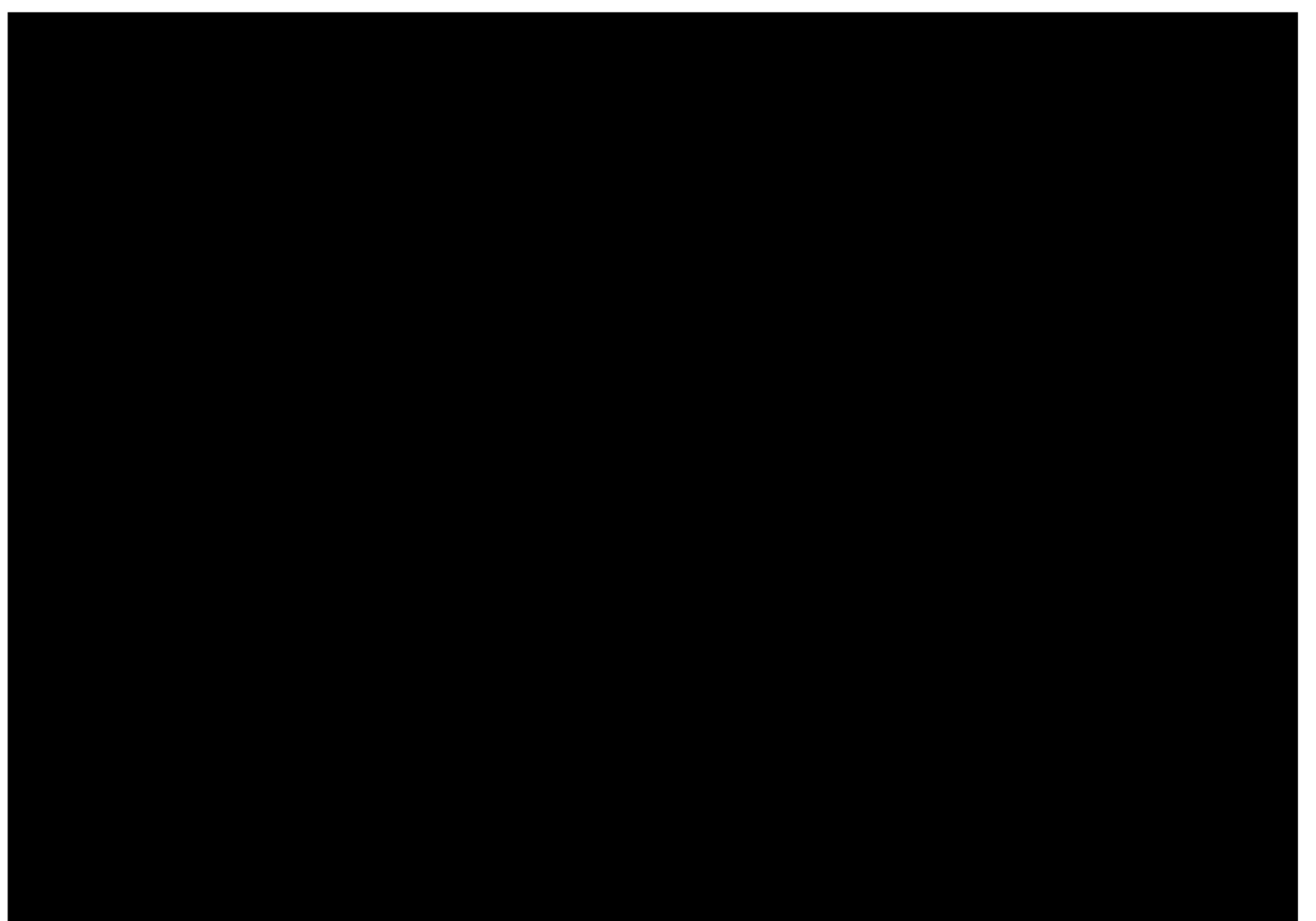




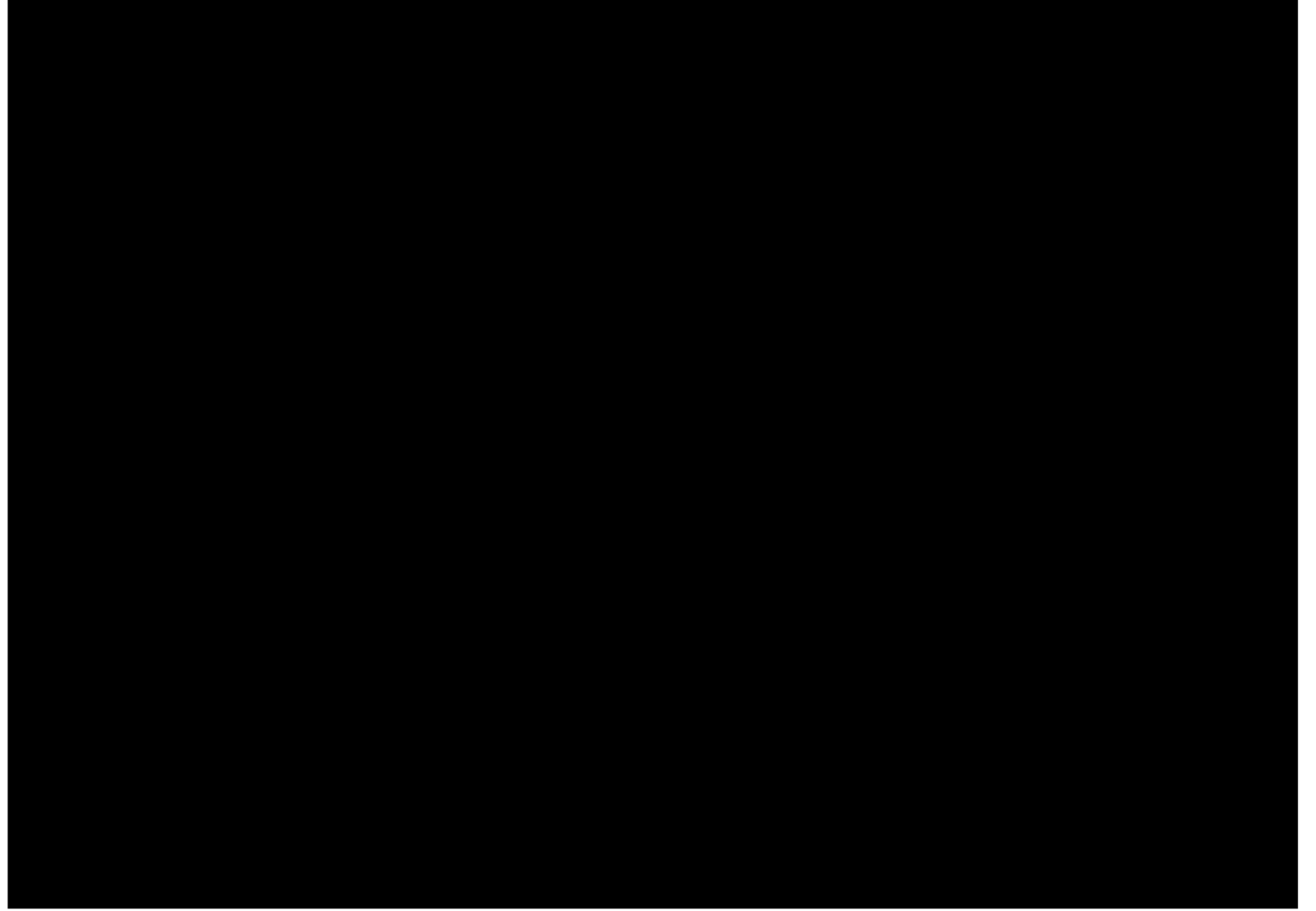
s 7(2)(f)(i) - Free and frank opinion

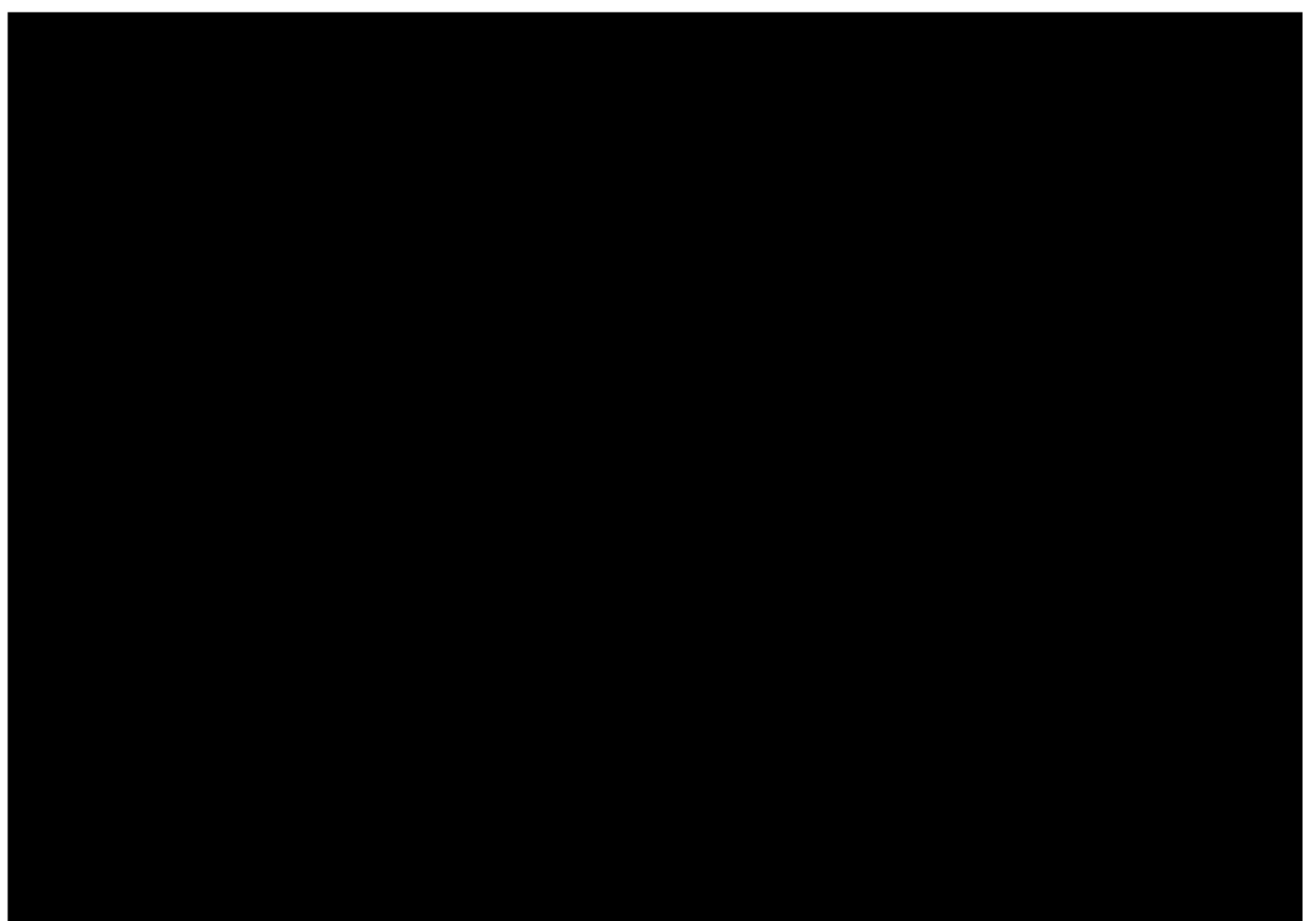


s 7(2)(f)(i) - Free and frank opinion

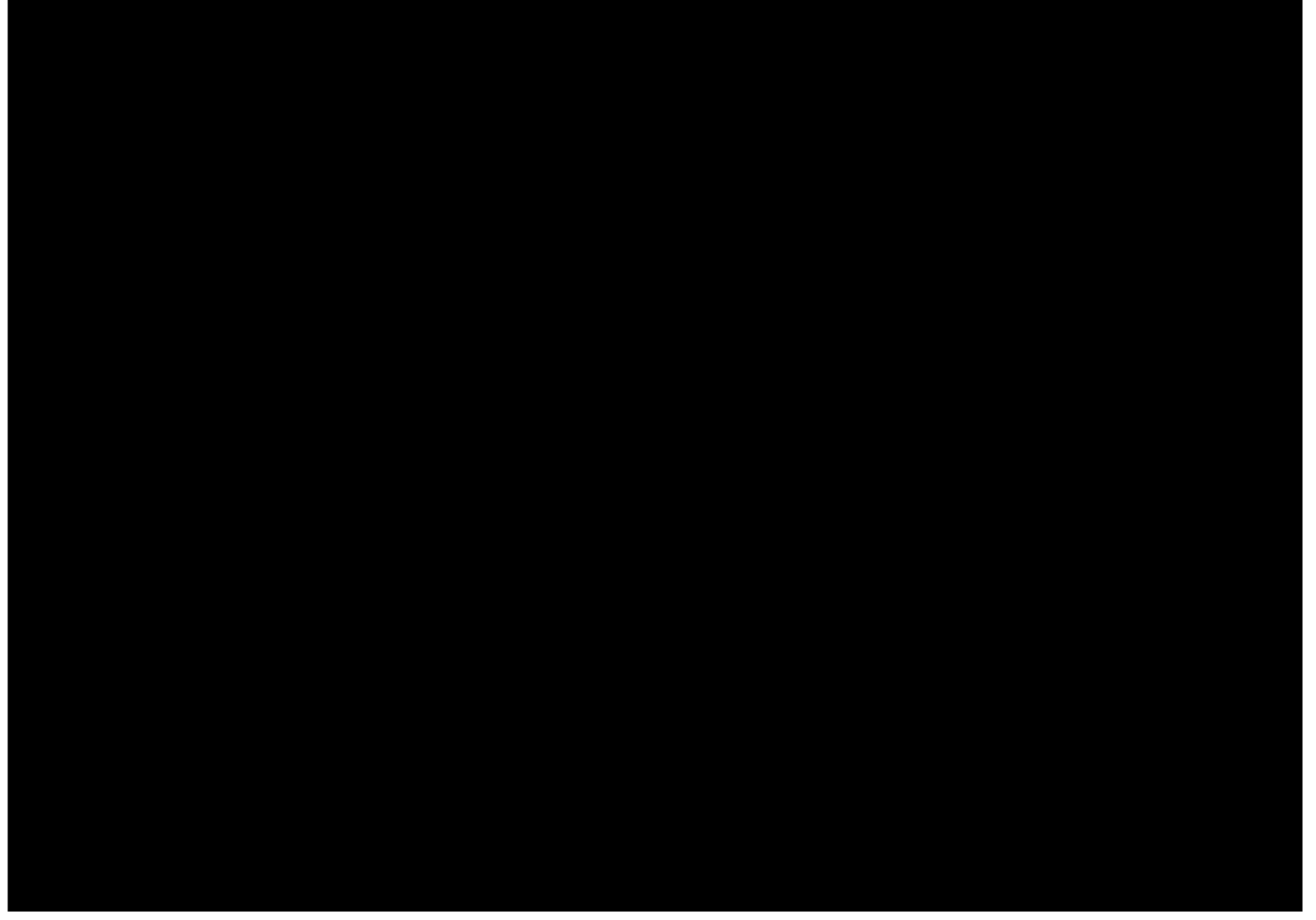


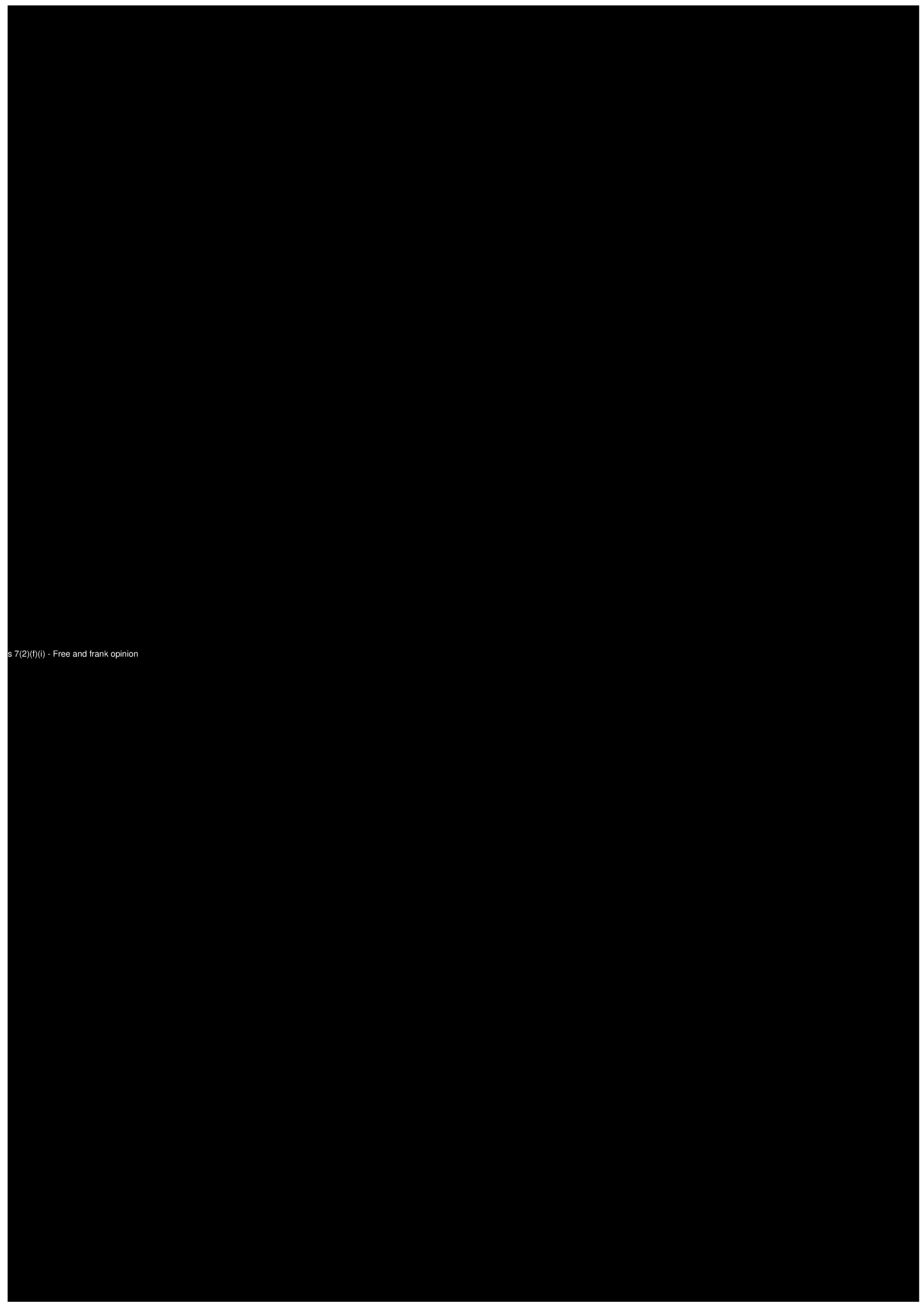
s 7(2)(f)(i) - Free and frank opinion





s 7(2)(f)(i) - Free and frank opinion





s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

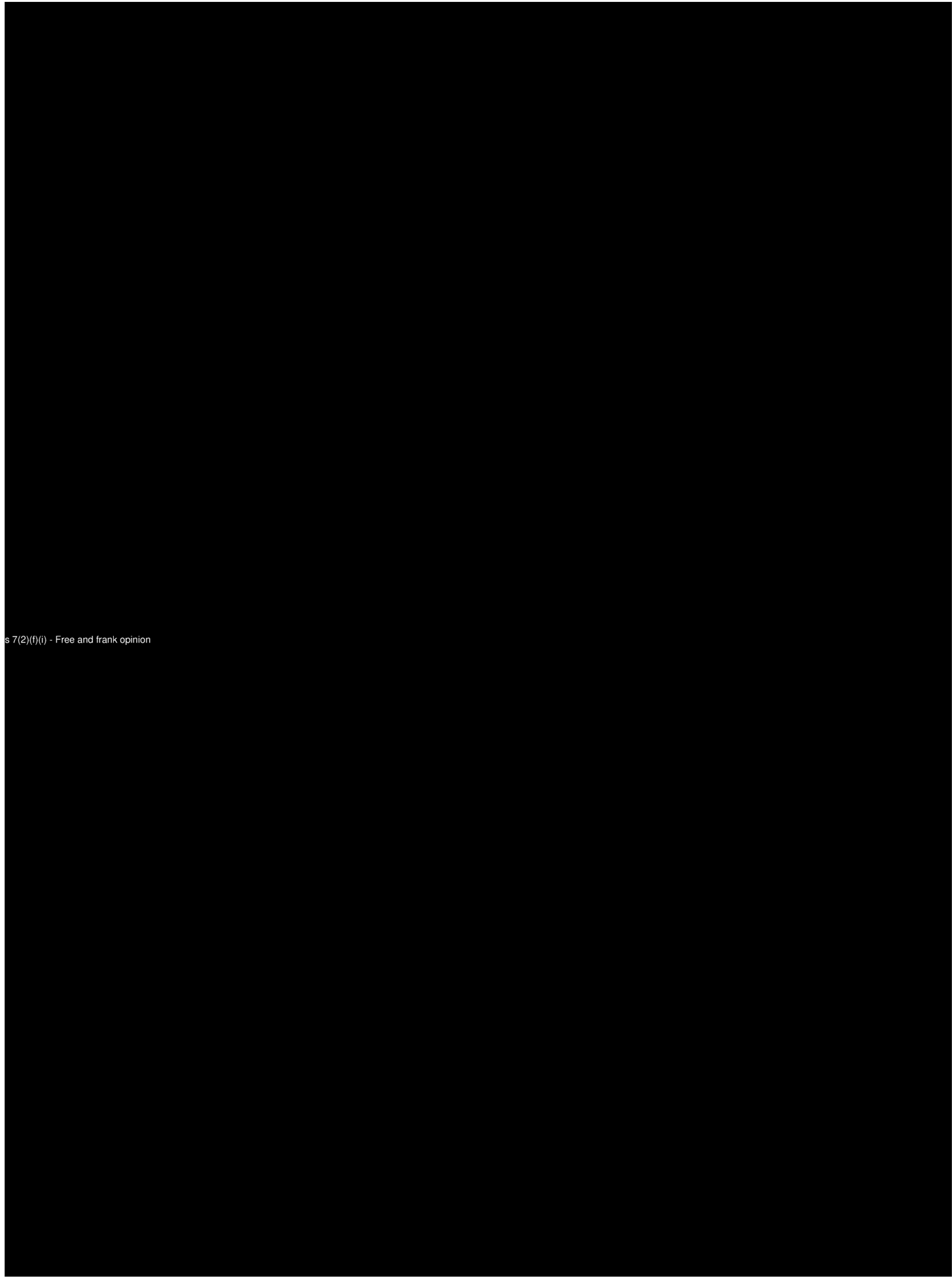
8.3.2 Report - Nga Poutiriao o Mauao (Joint Admin Board) Review of the Mauao Historic Reserve Management Plan - Appendix B - track changes to draft version of plan

s 7(2)(f)(i) - Free and frank opinion

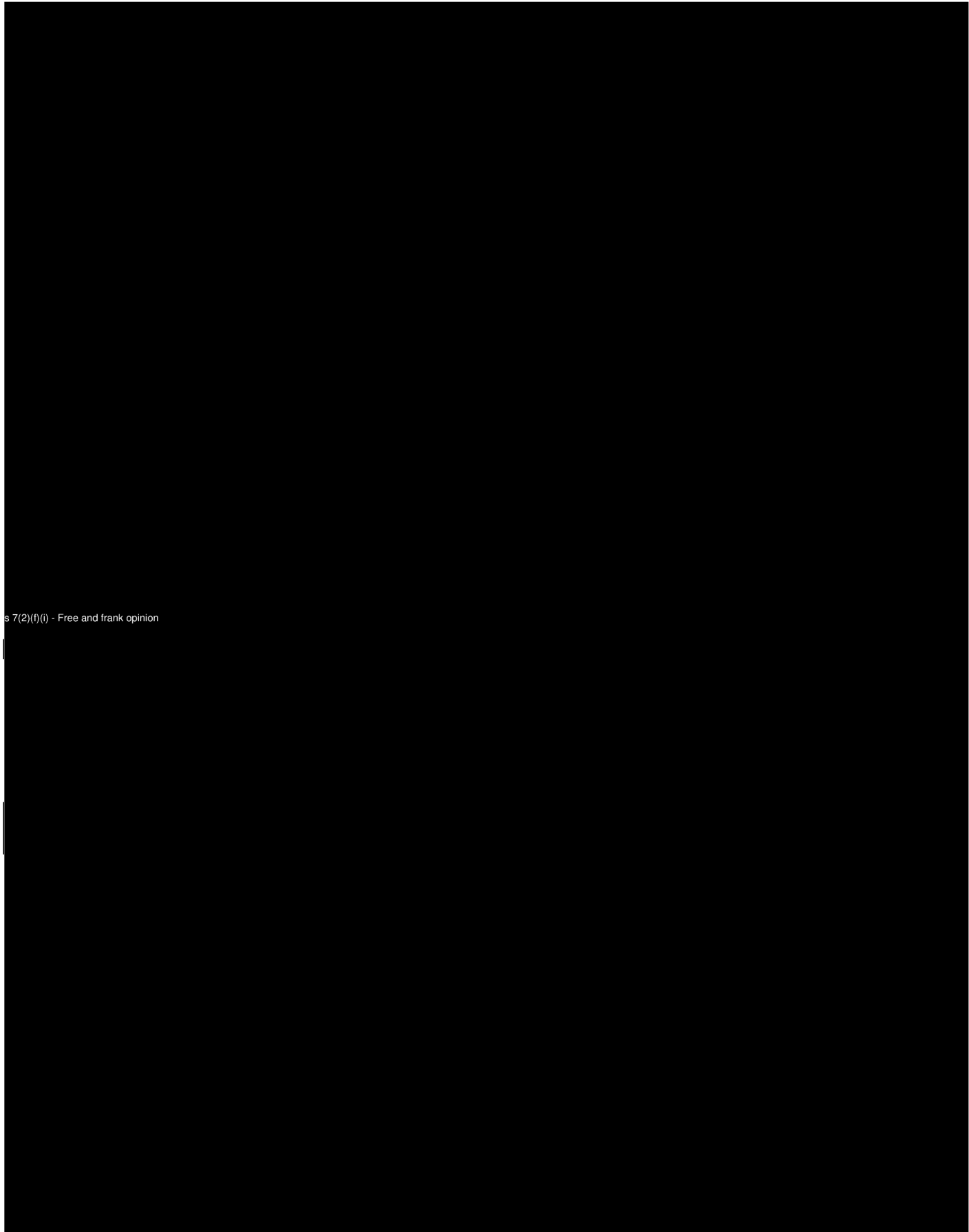
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion



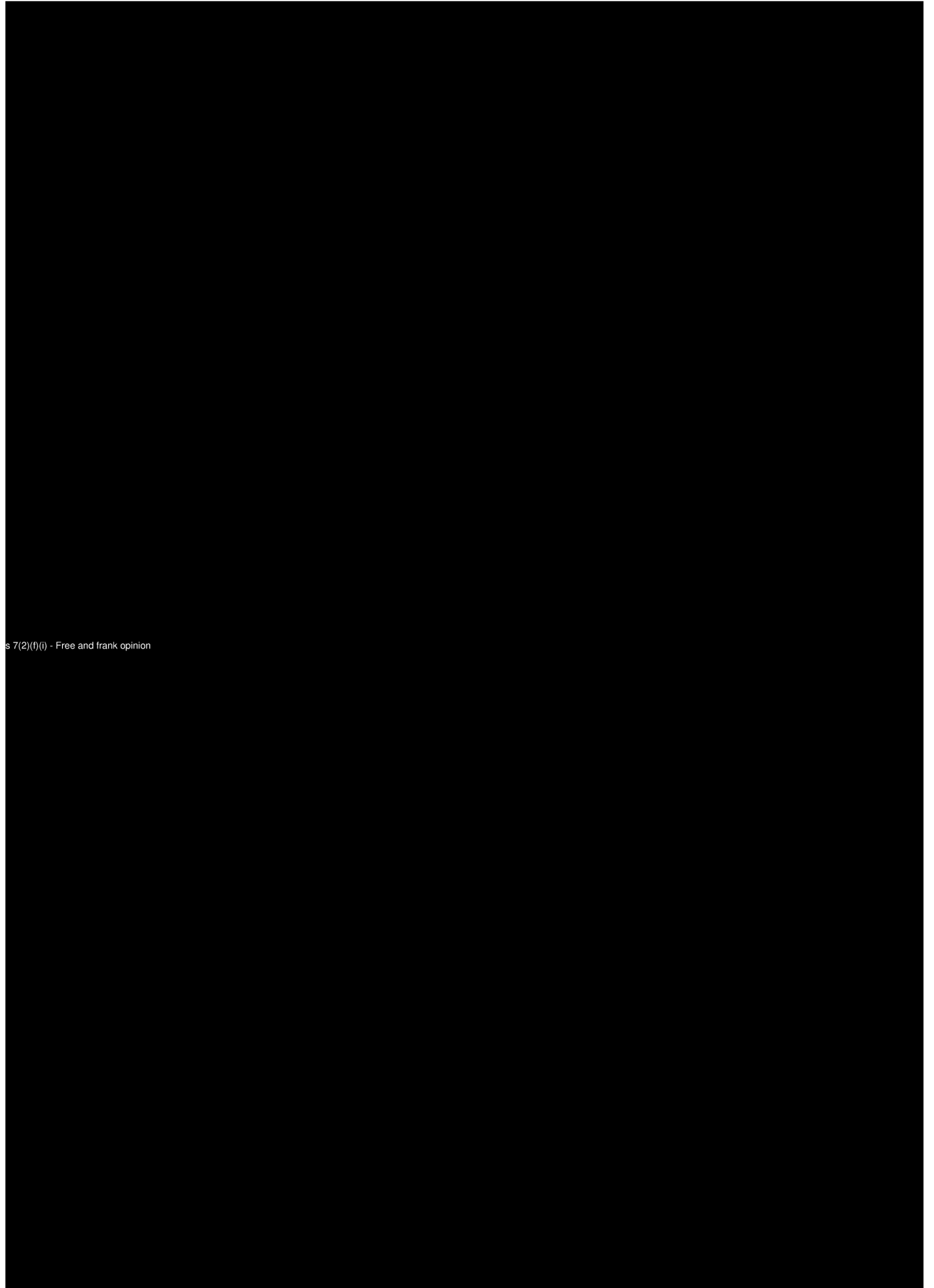
s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

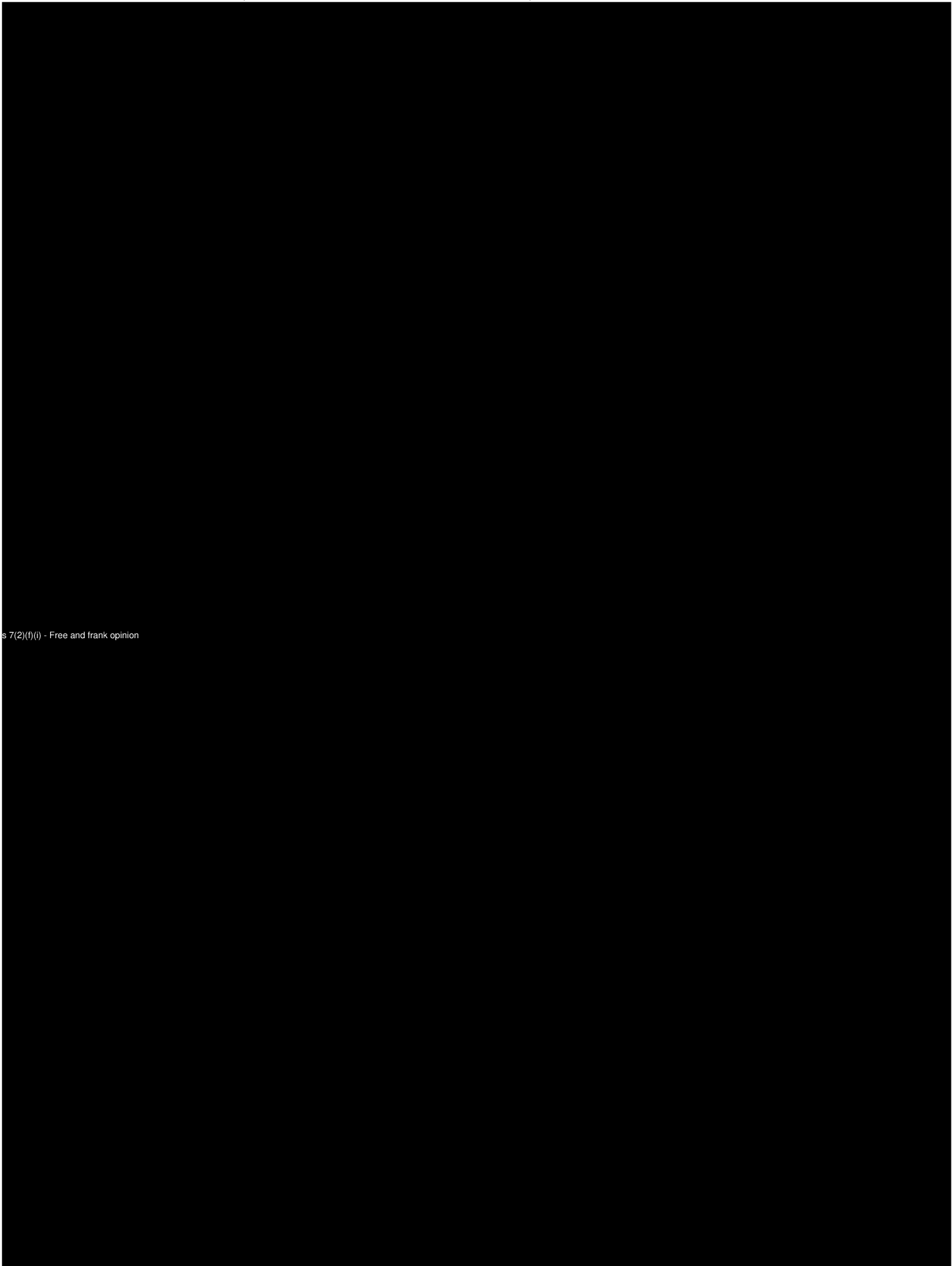


s 7(2)(f)(i) - Free and frank opinion

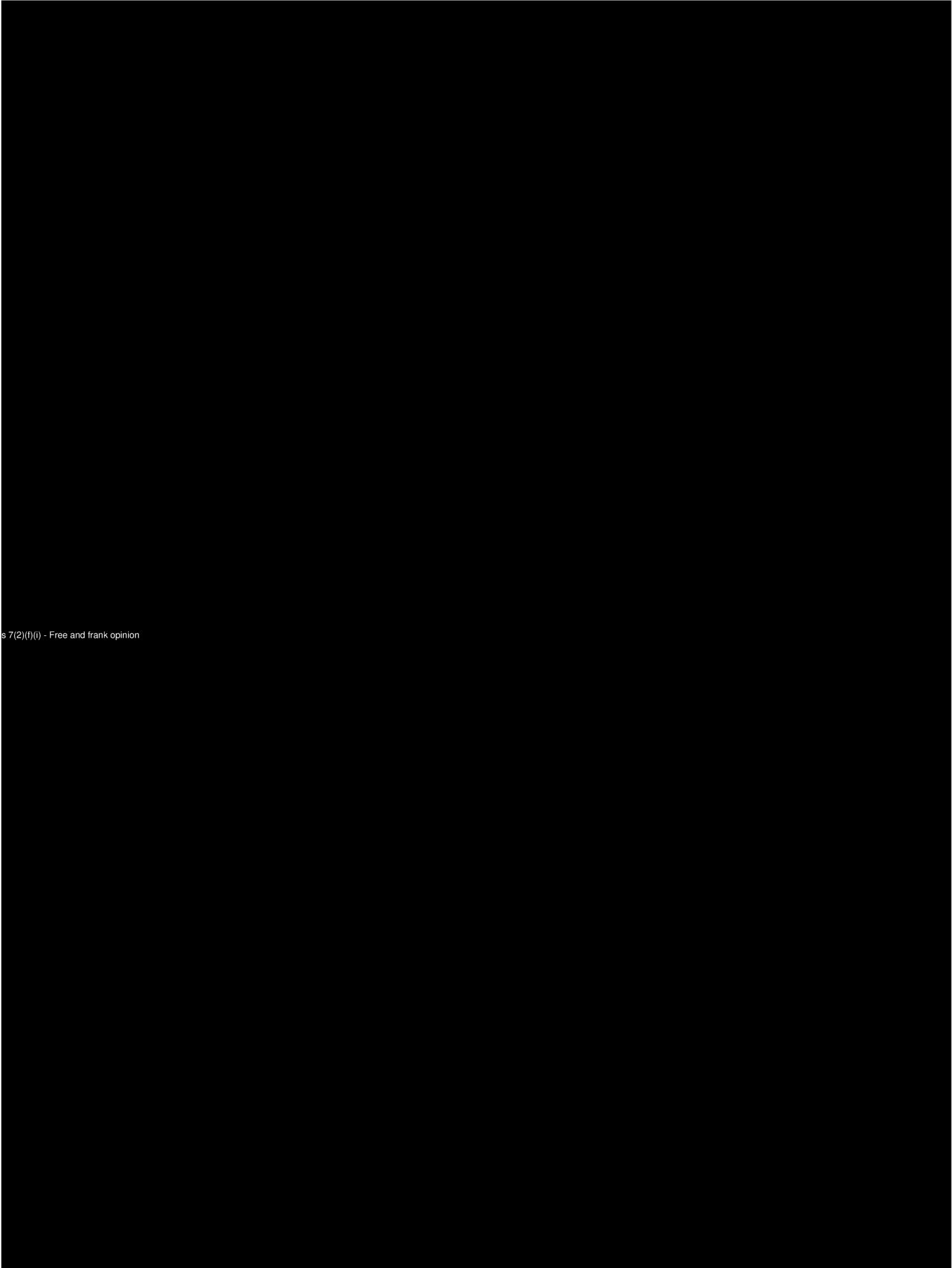
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

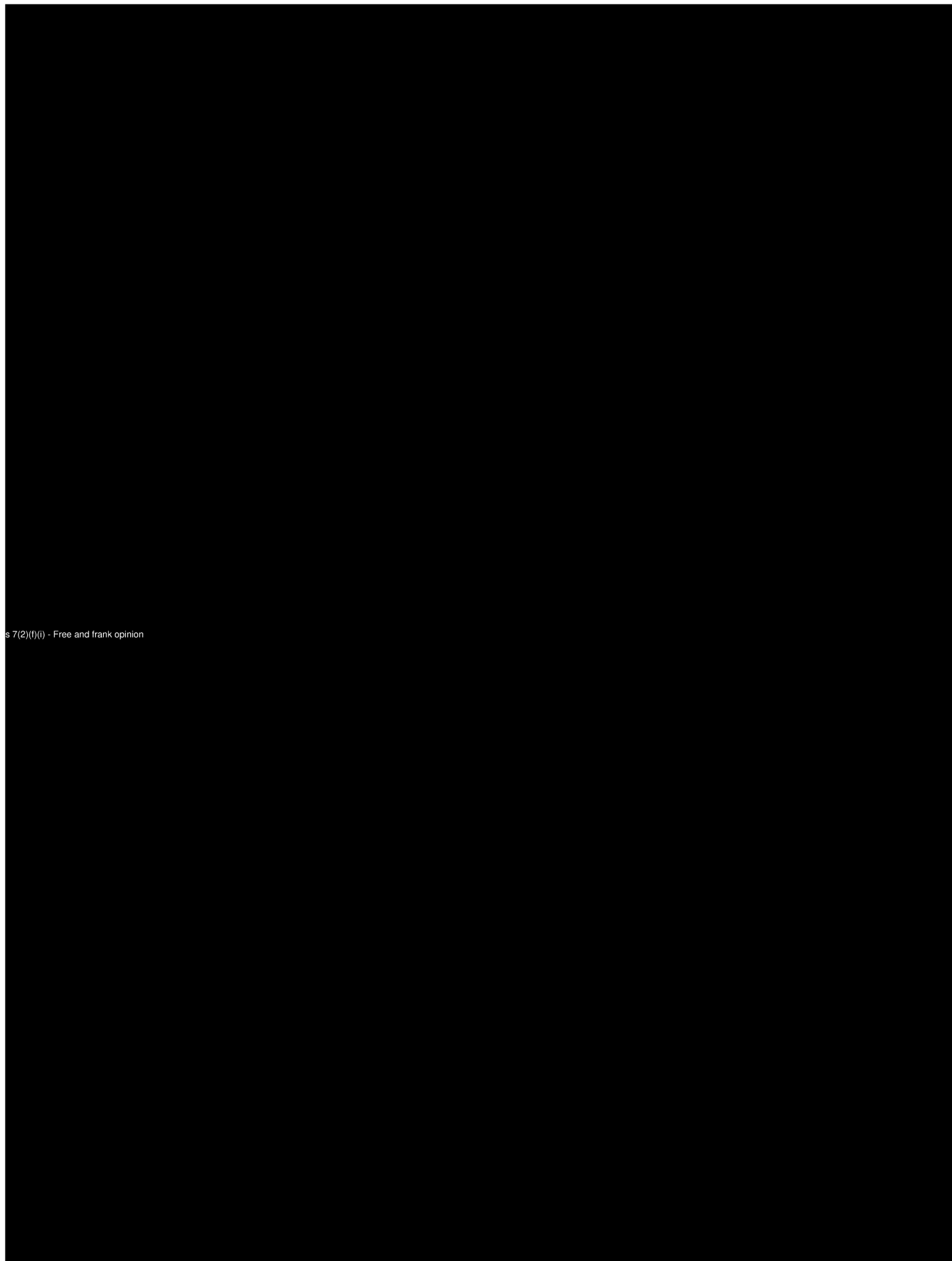
s 7(2)(f)(i) - Free and frank opinion



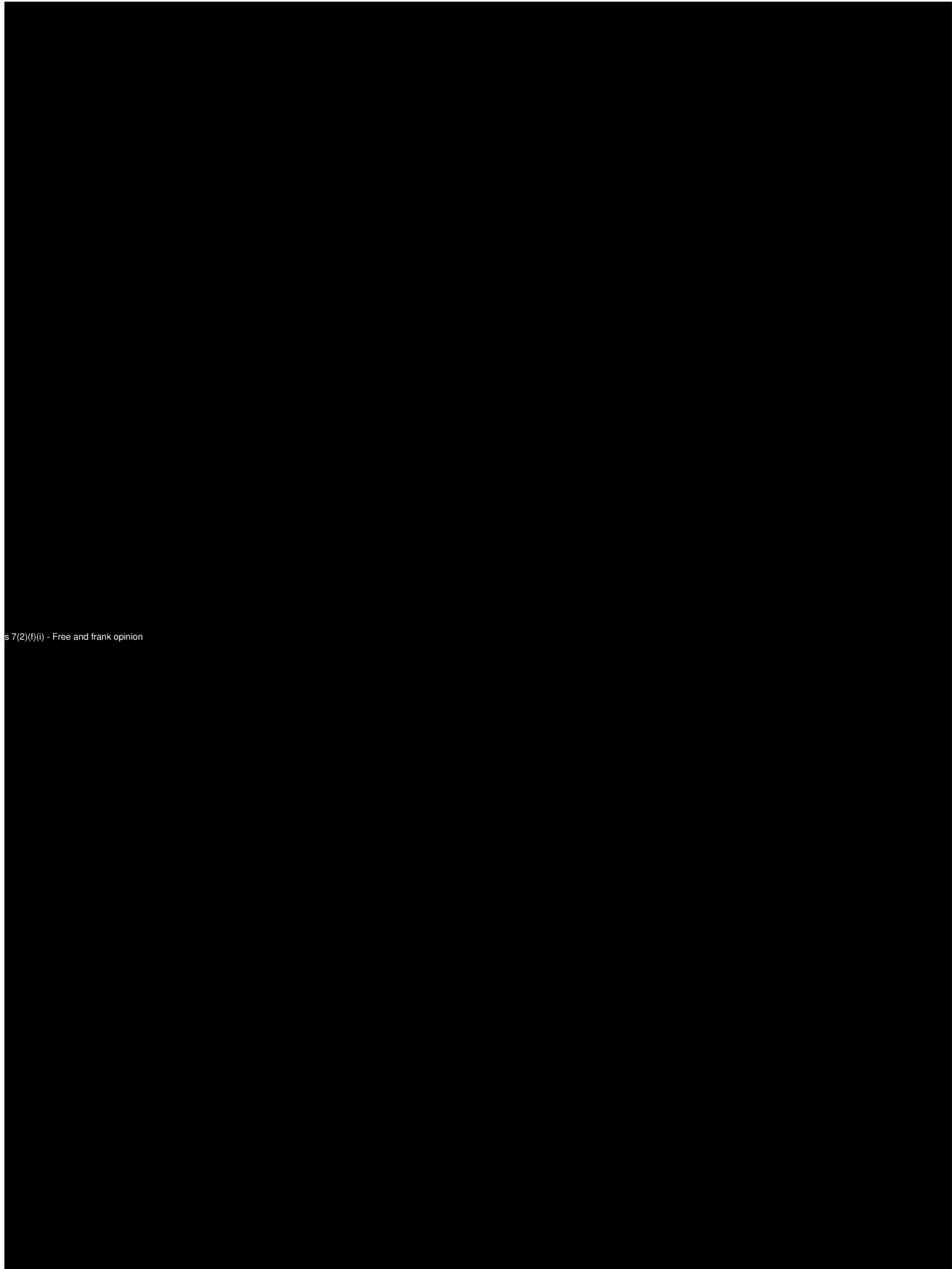
s 7(2)(f)(i) - Free and frank opinion



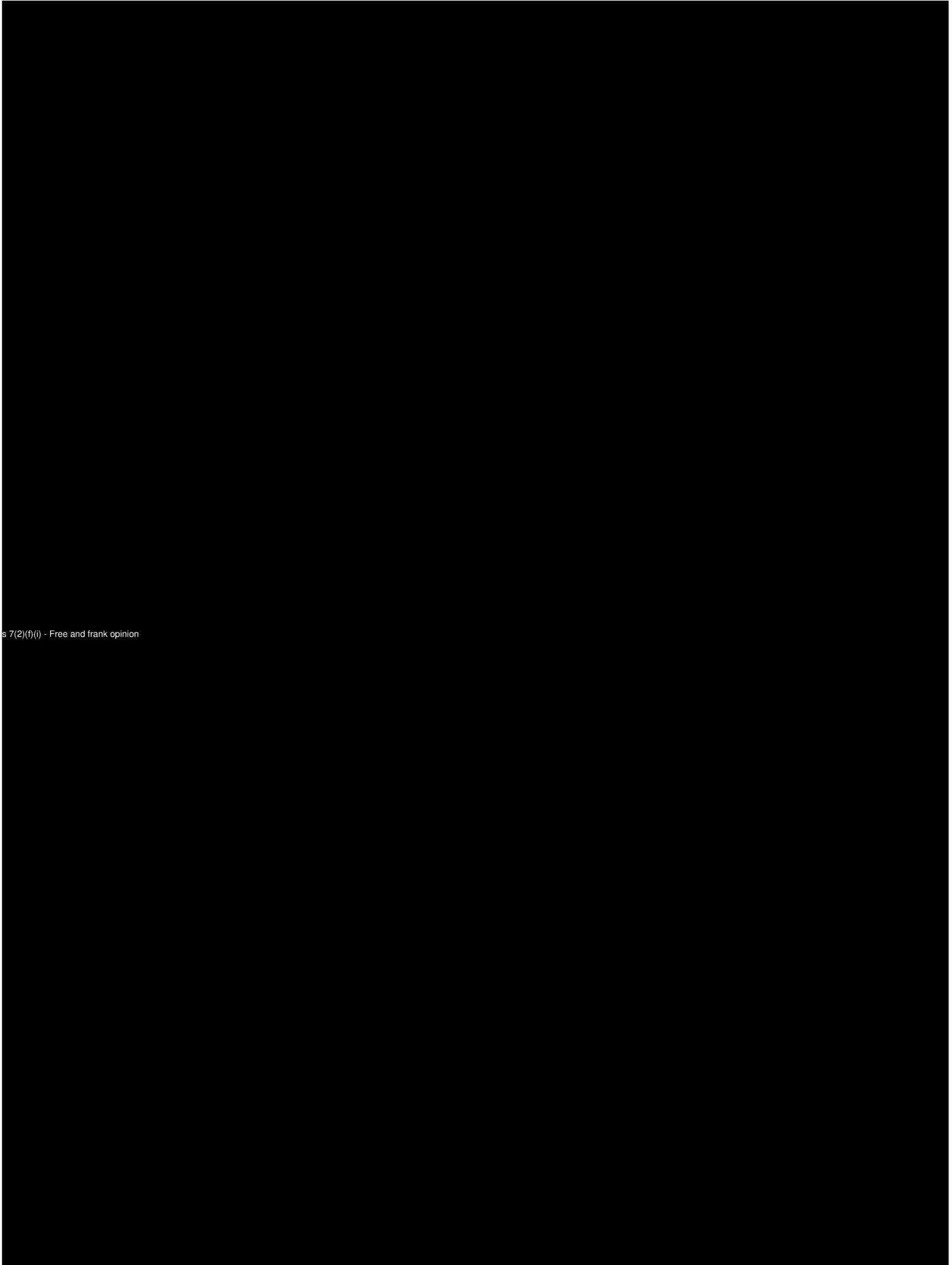
s 7(2)(f)(i) - Free and frank opinion



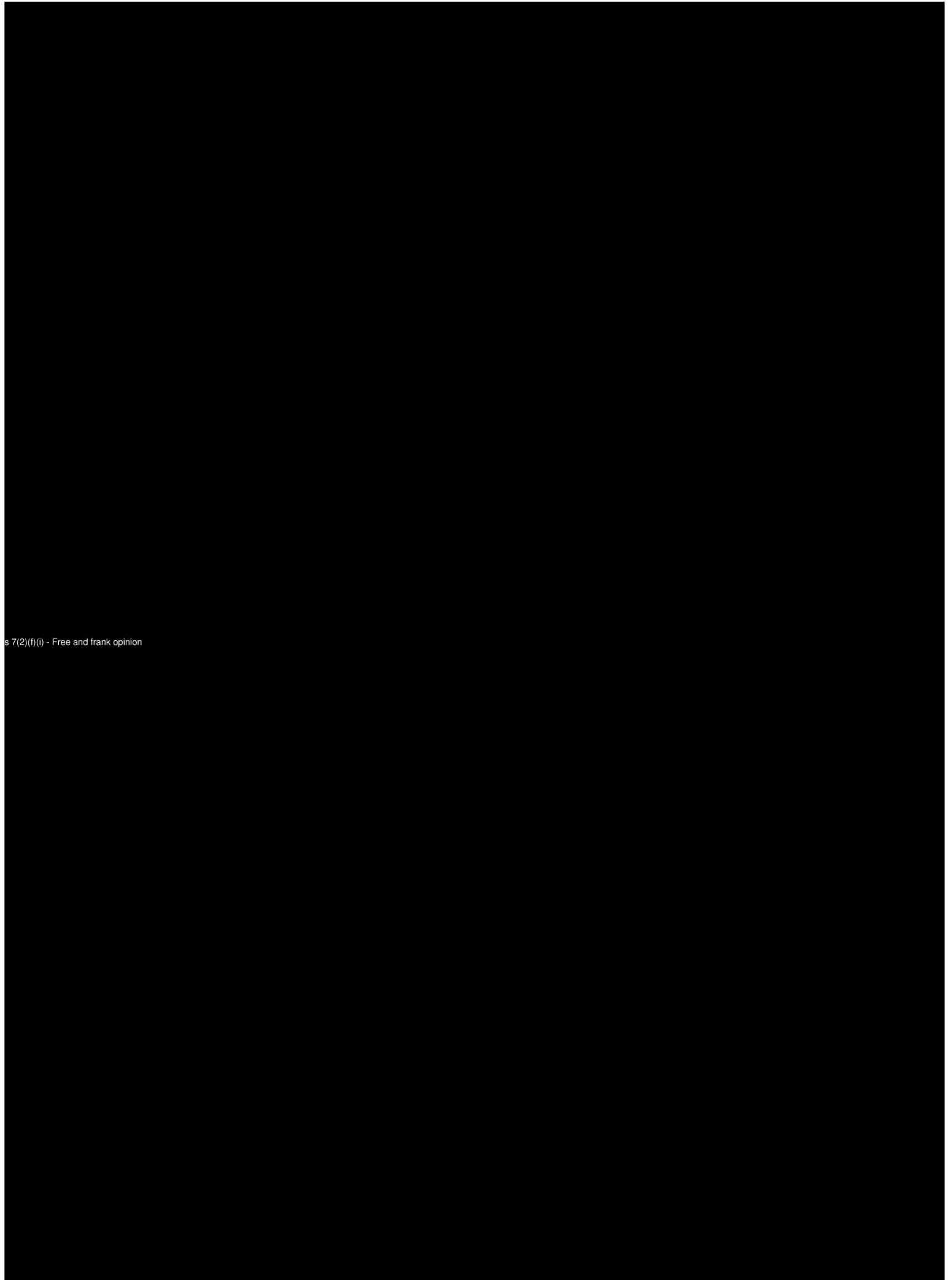
s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

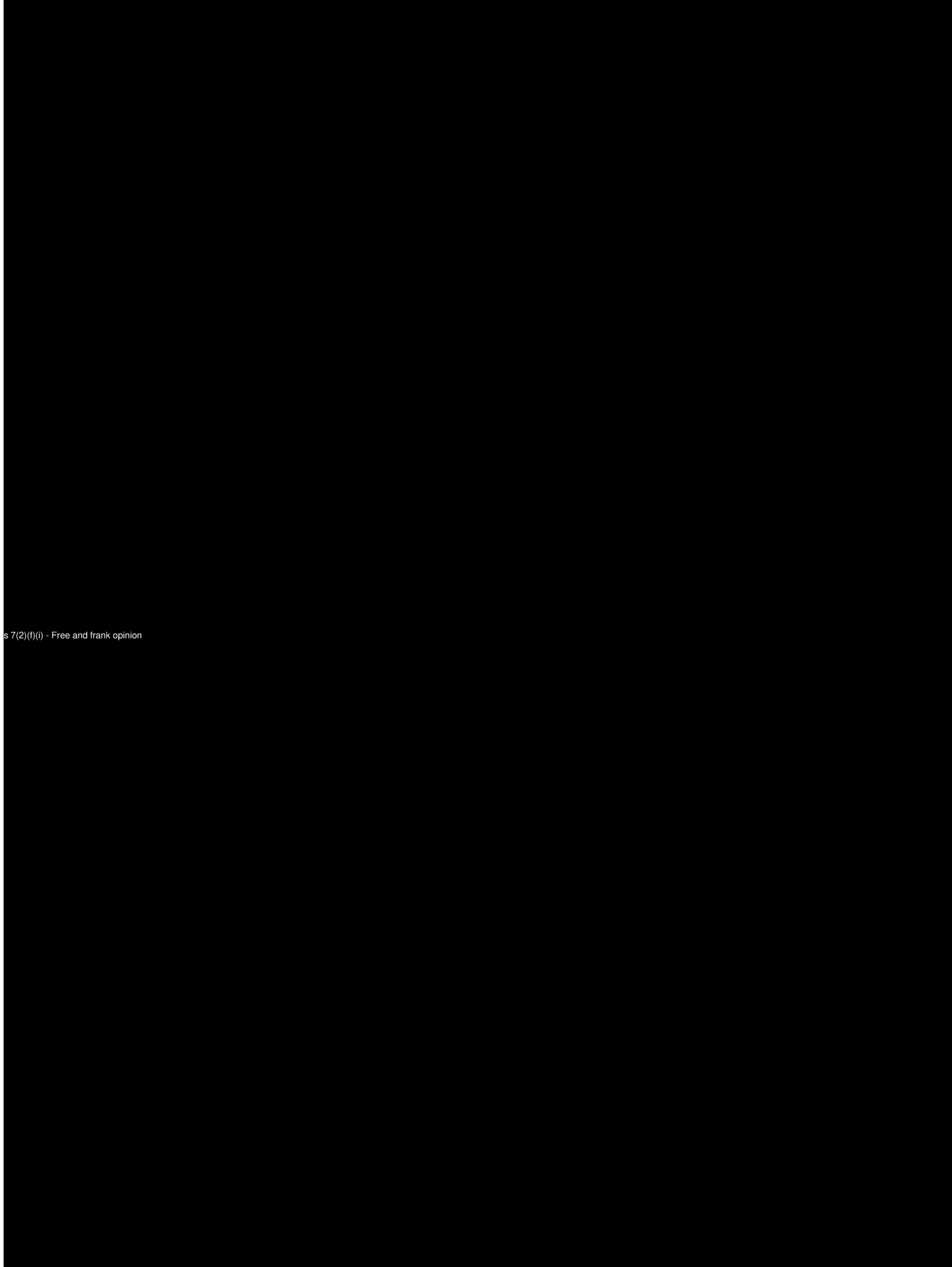


s 7(2)(f)(i) - Free and frank opinion



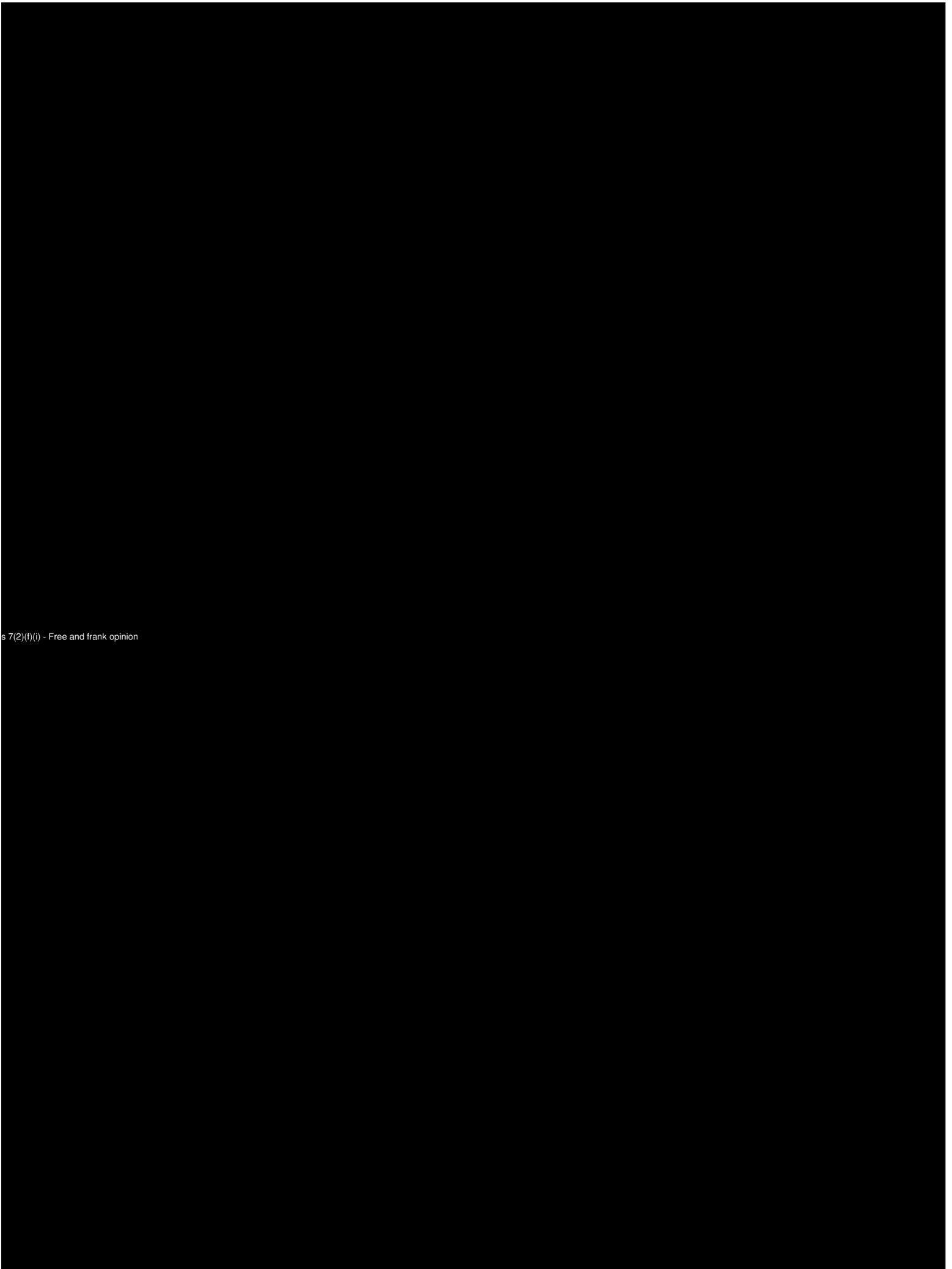
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

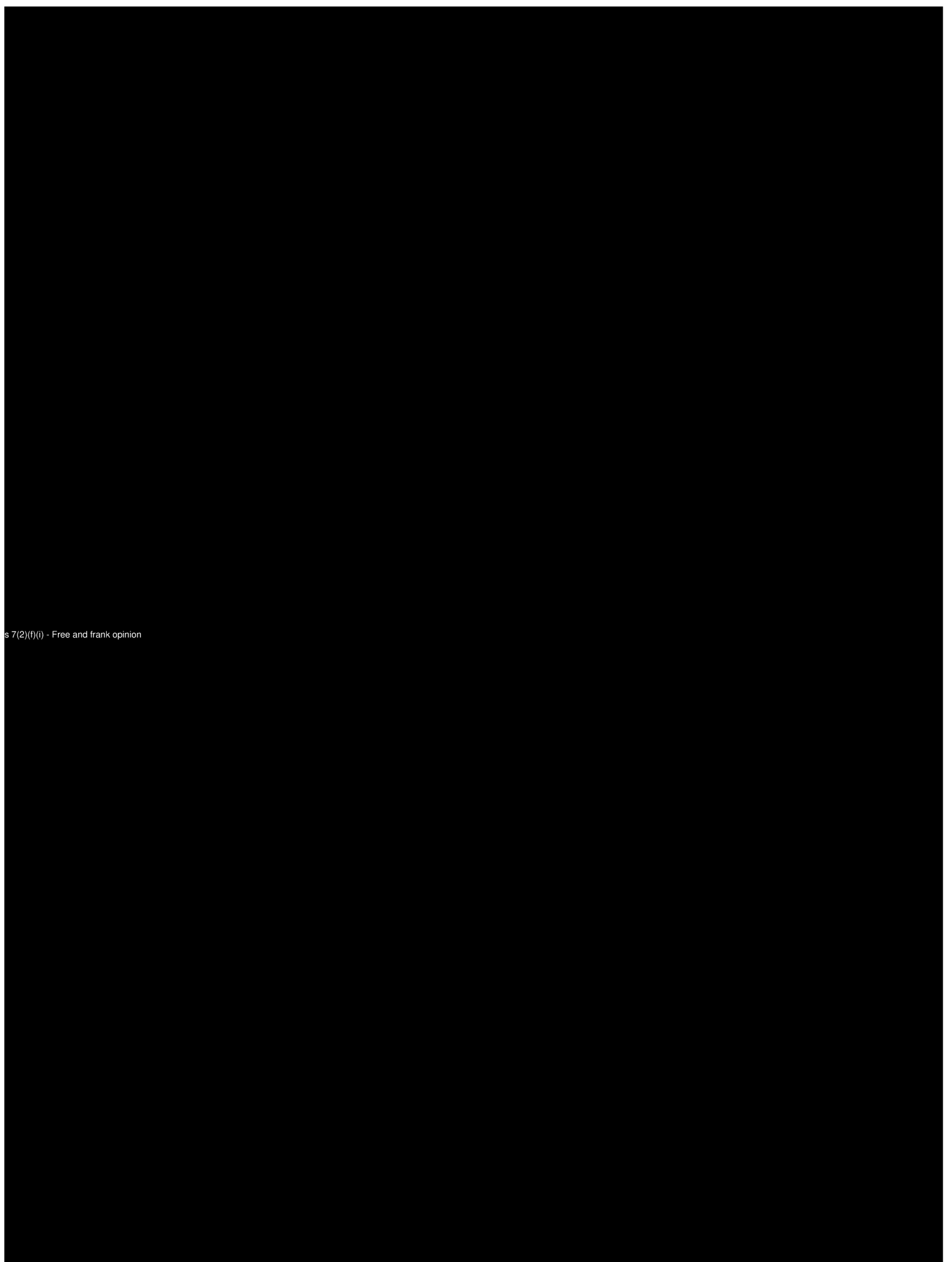


s 7(2)(f)(i) - Free and frank opinion

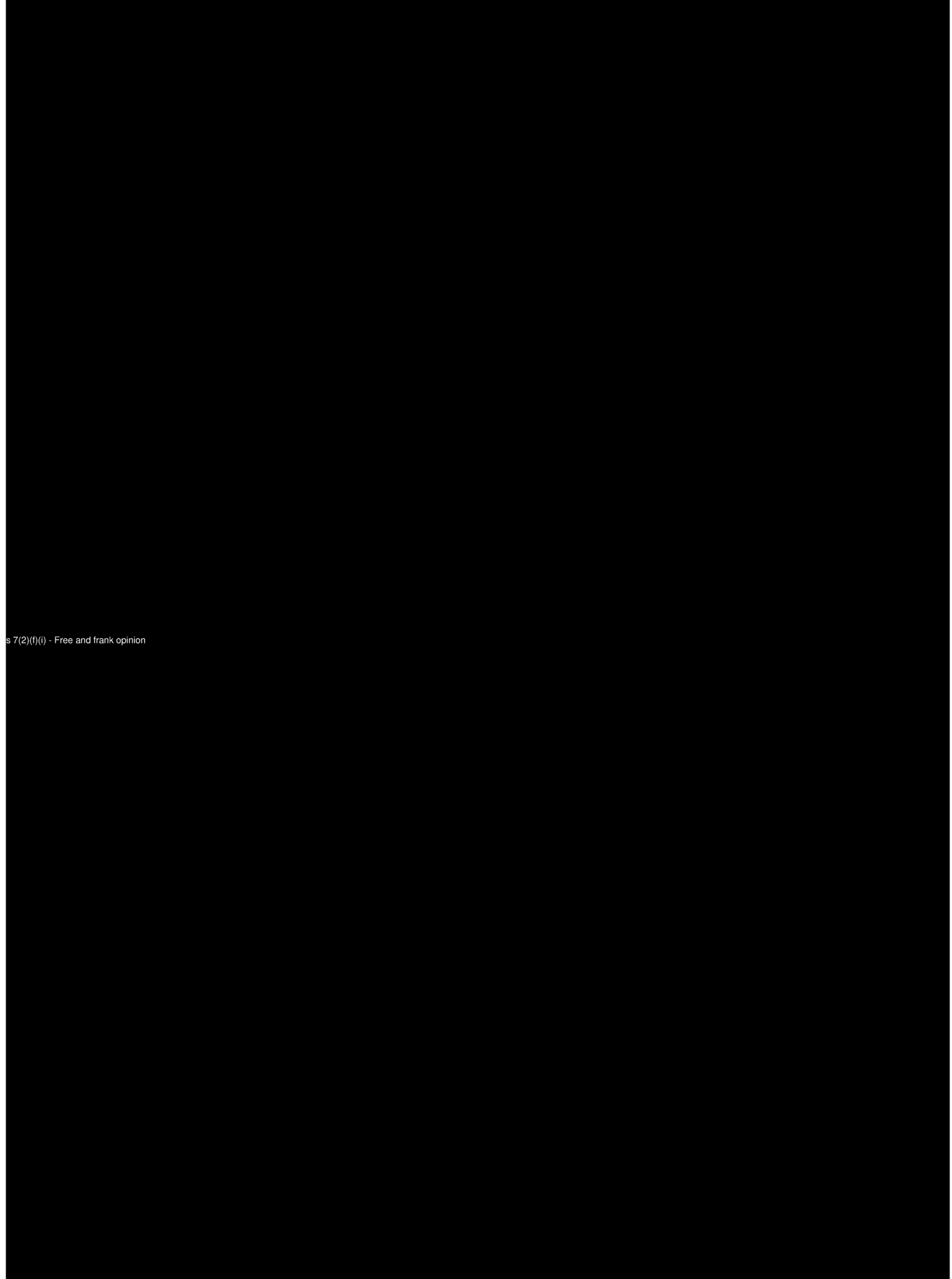
s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

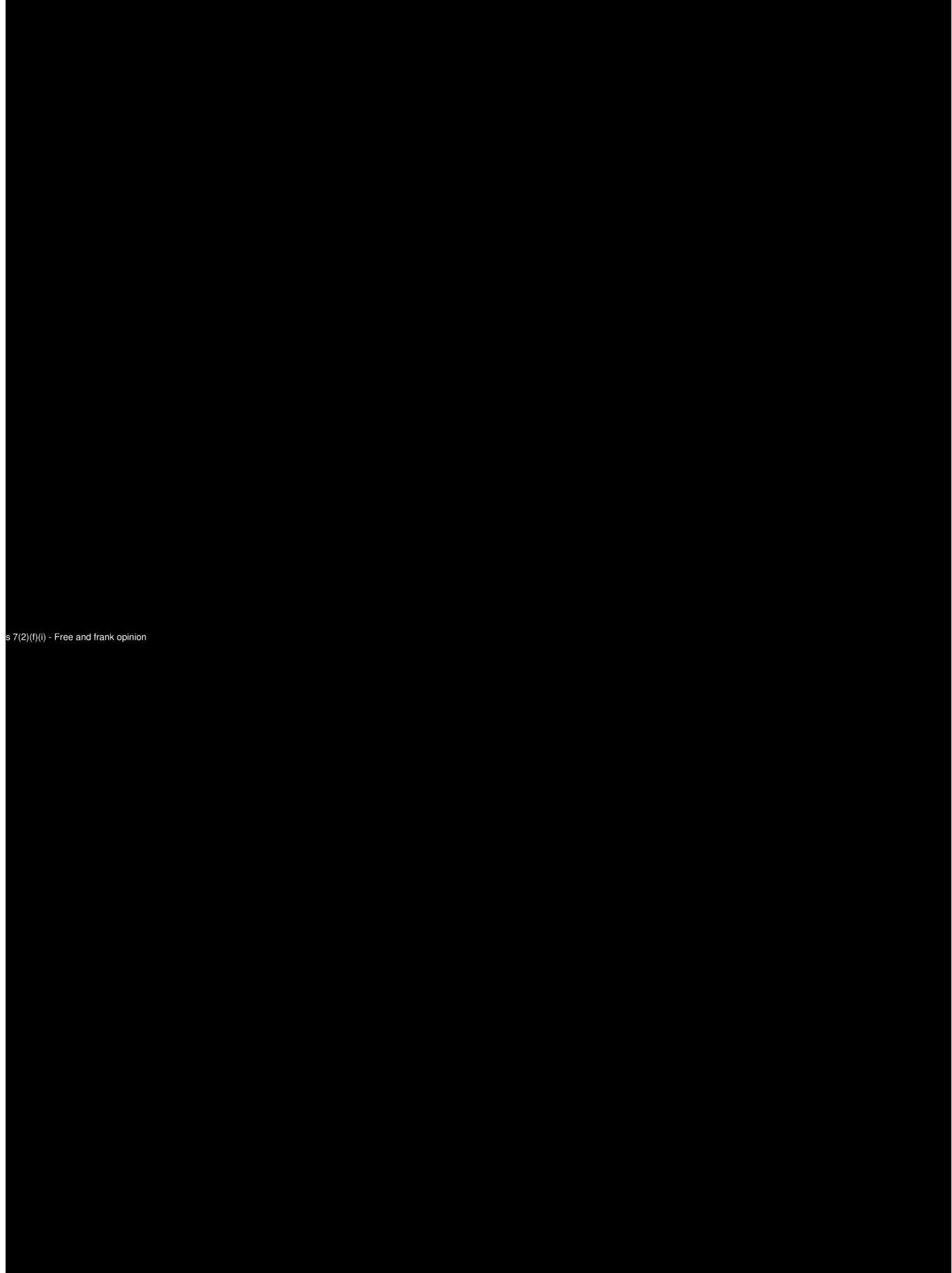


s 7(2)(f)(i) - Free and frank opinion



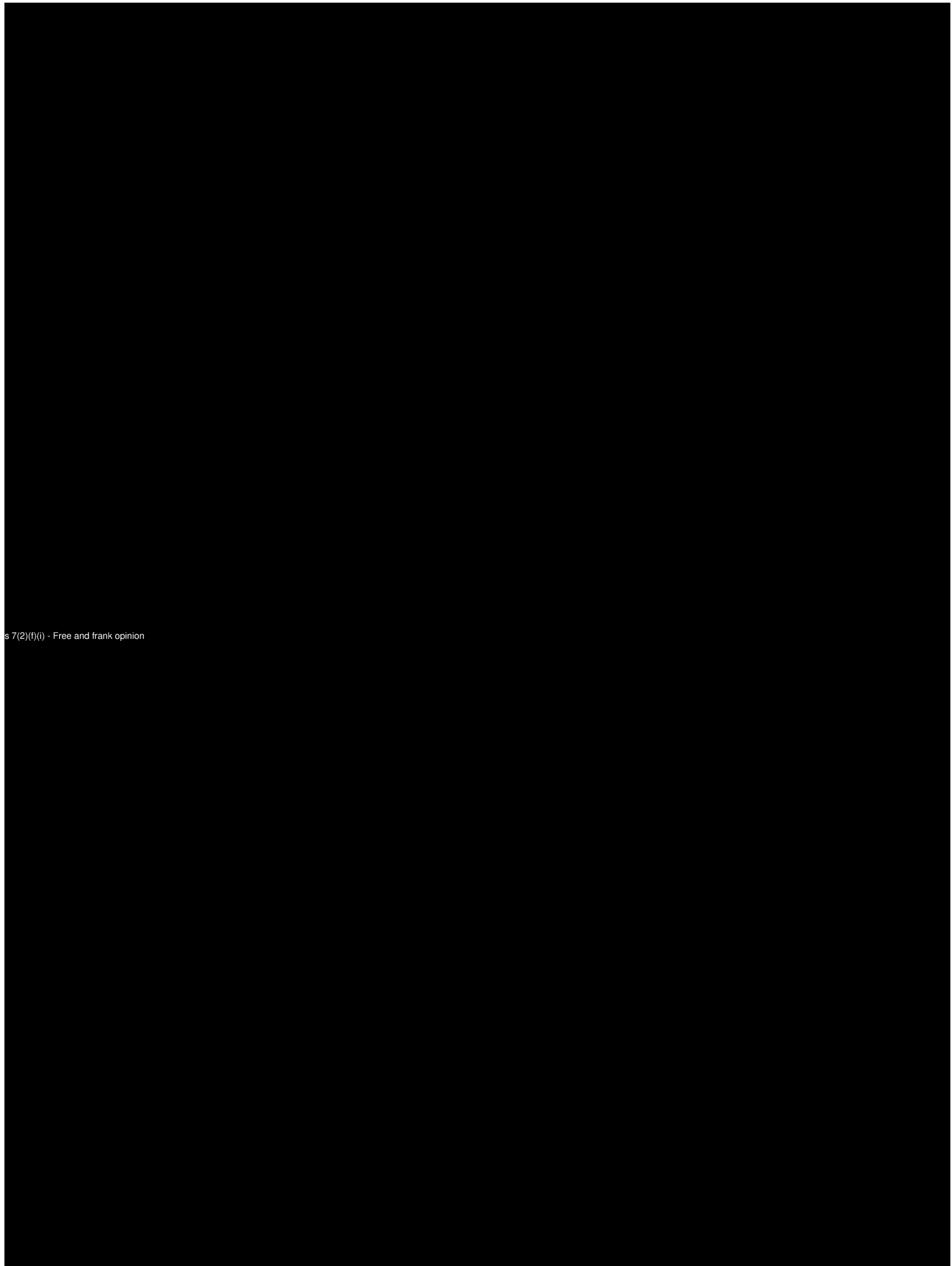
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

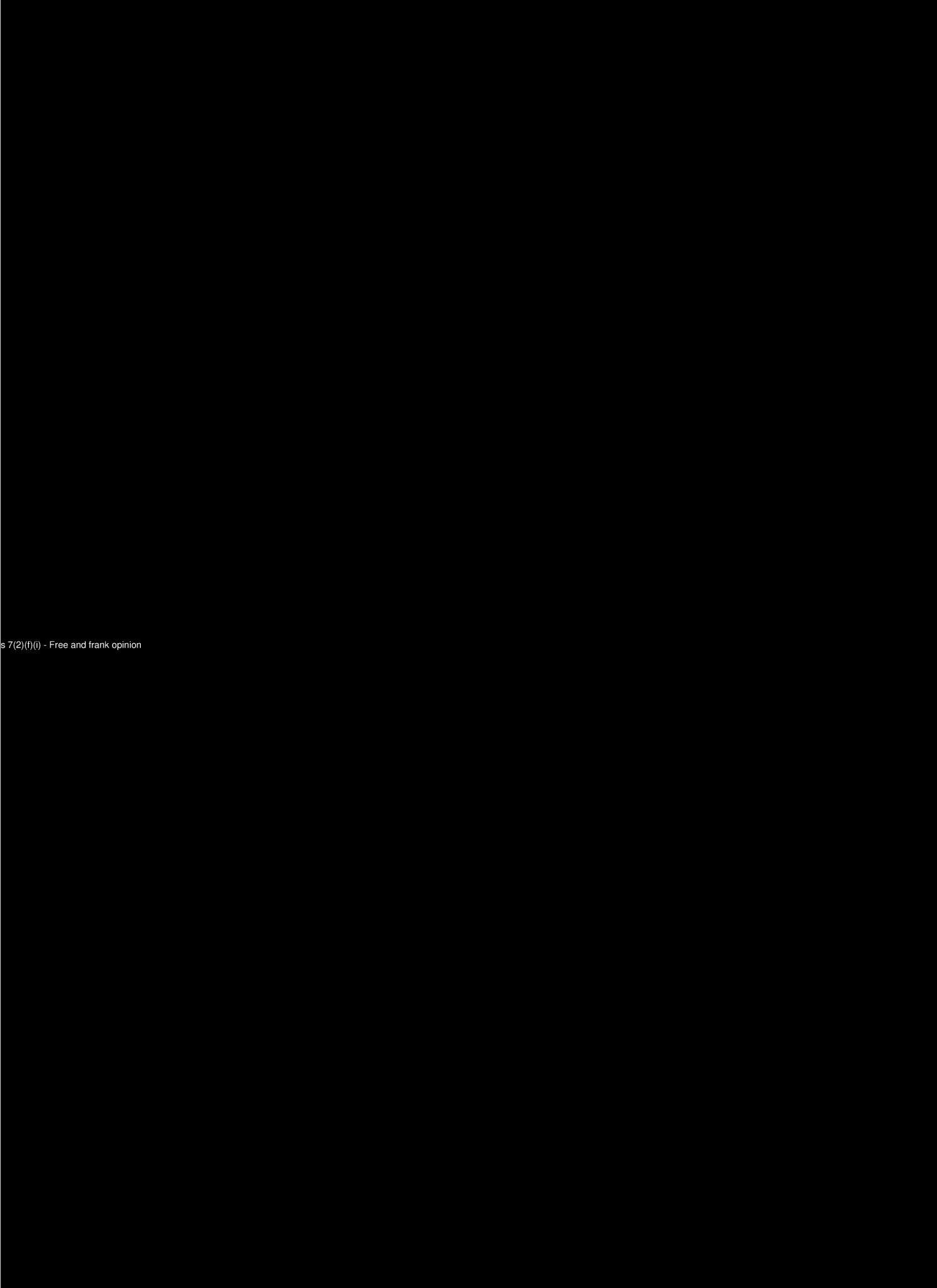
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

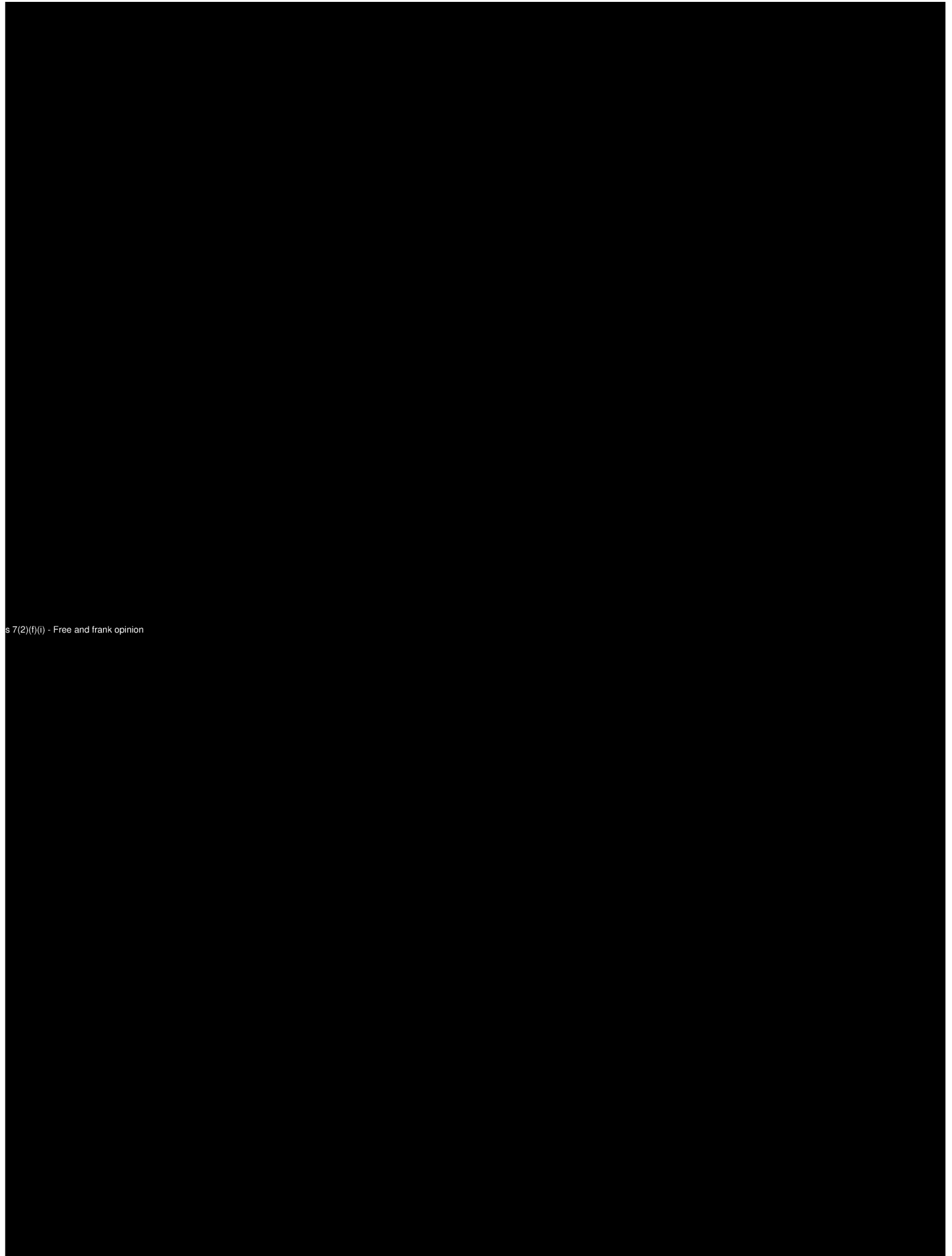
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion



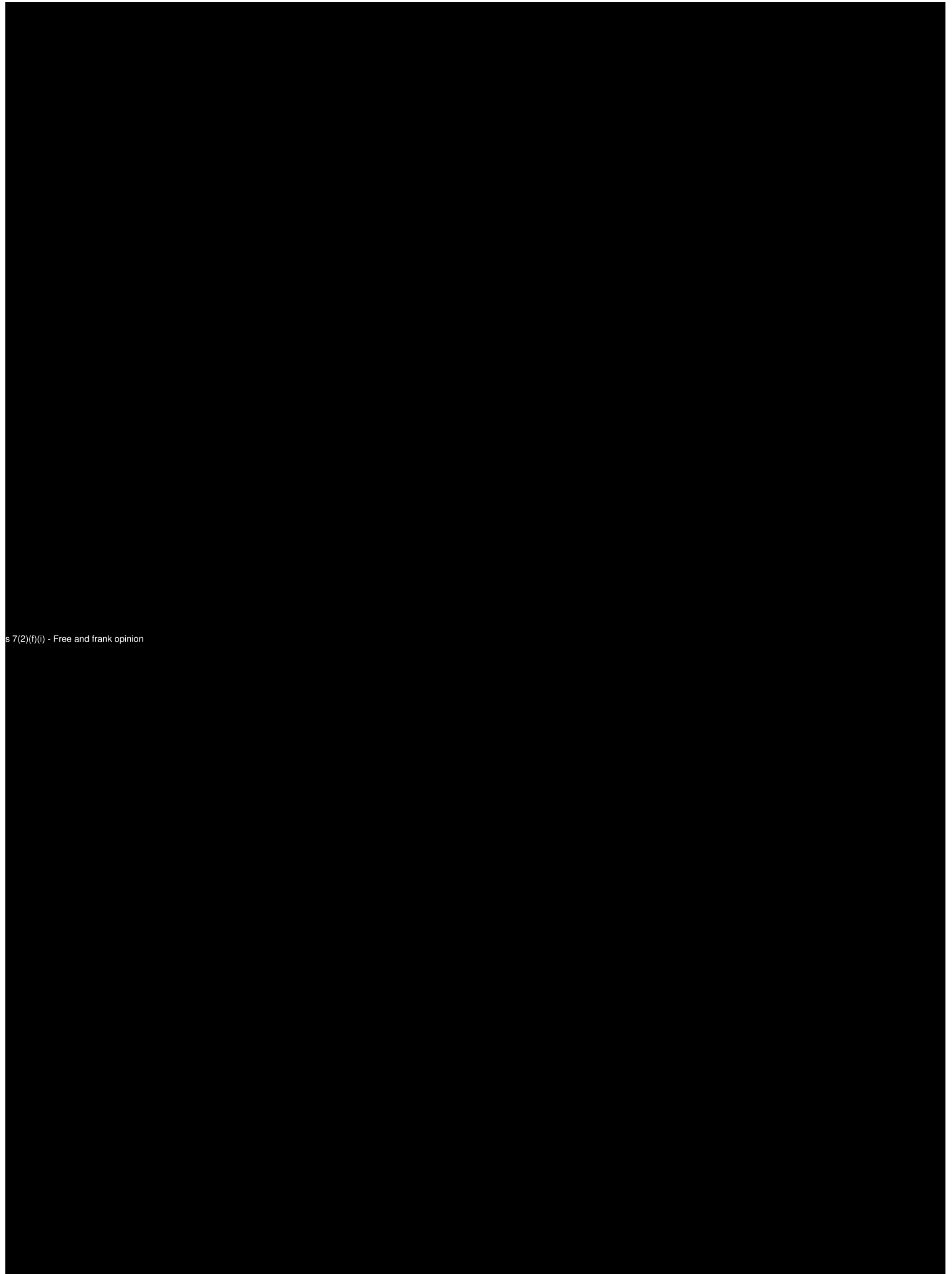
s 7(2)(f)(i) - Free and frank opinion



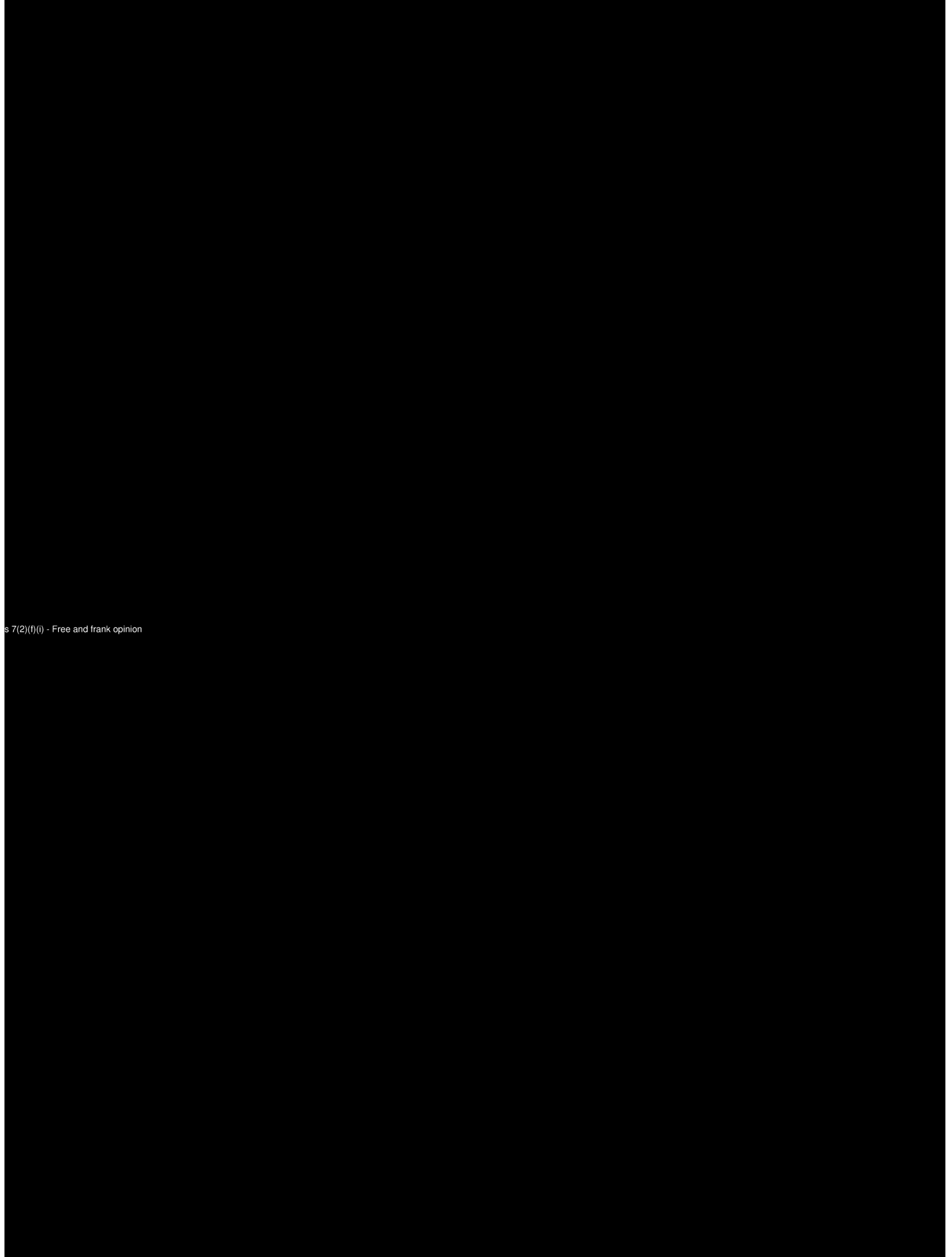
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

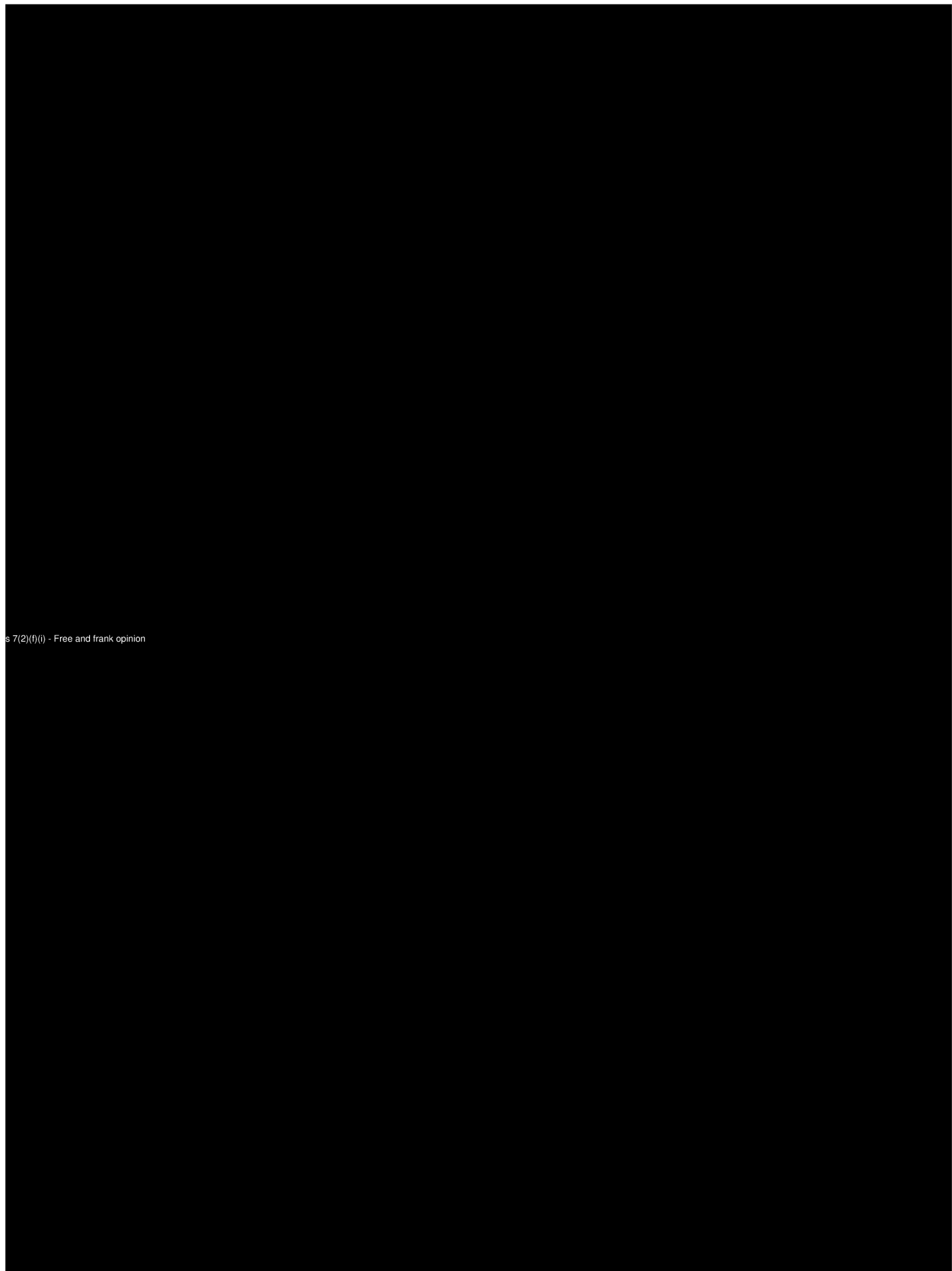


s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

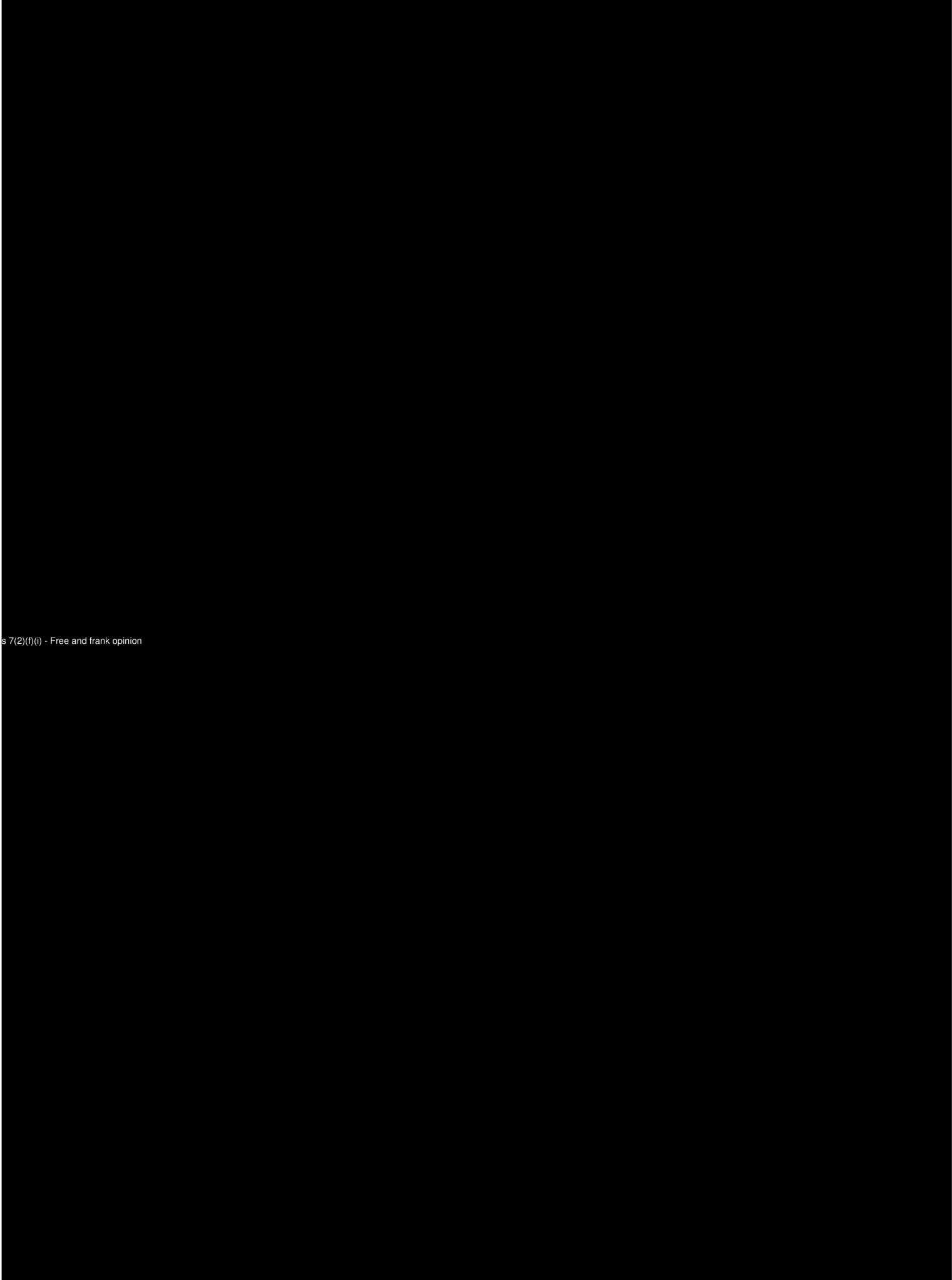
s 7(2)(f)(i) - Free and frank opinion



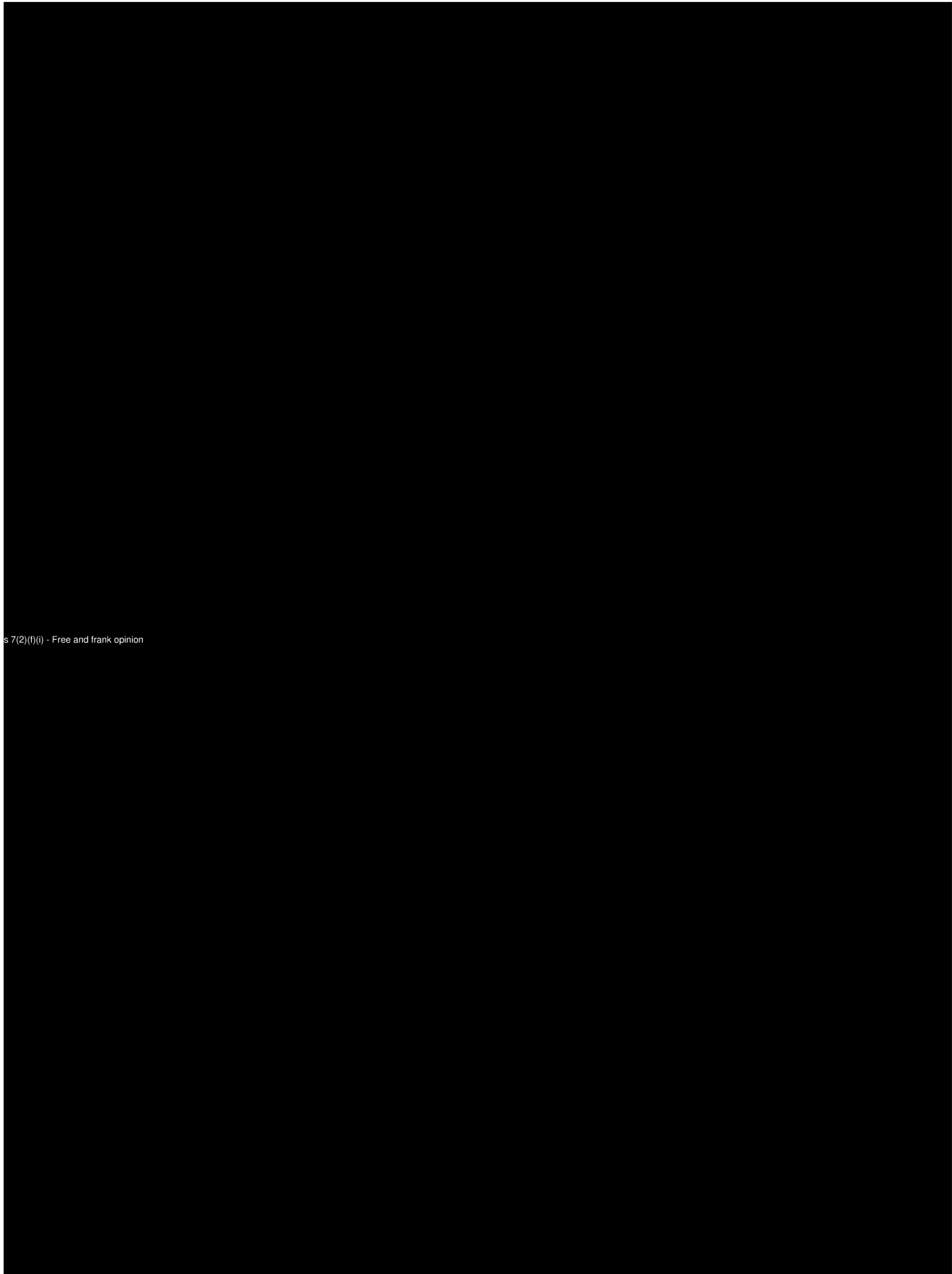
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

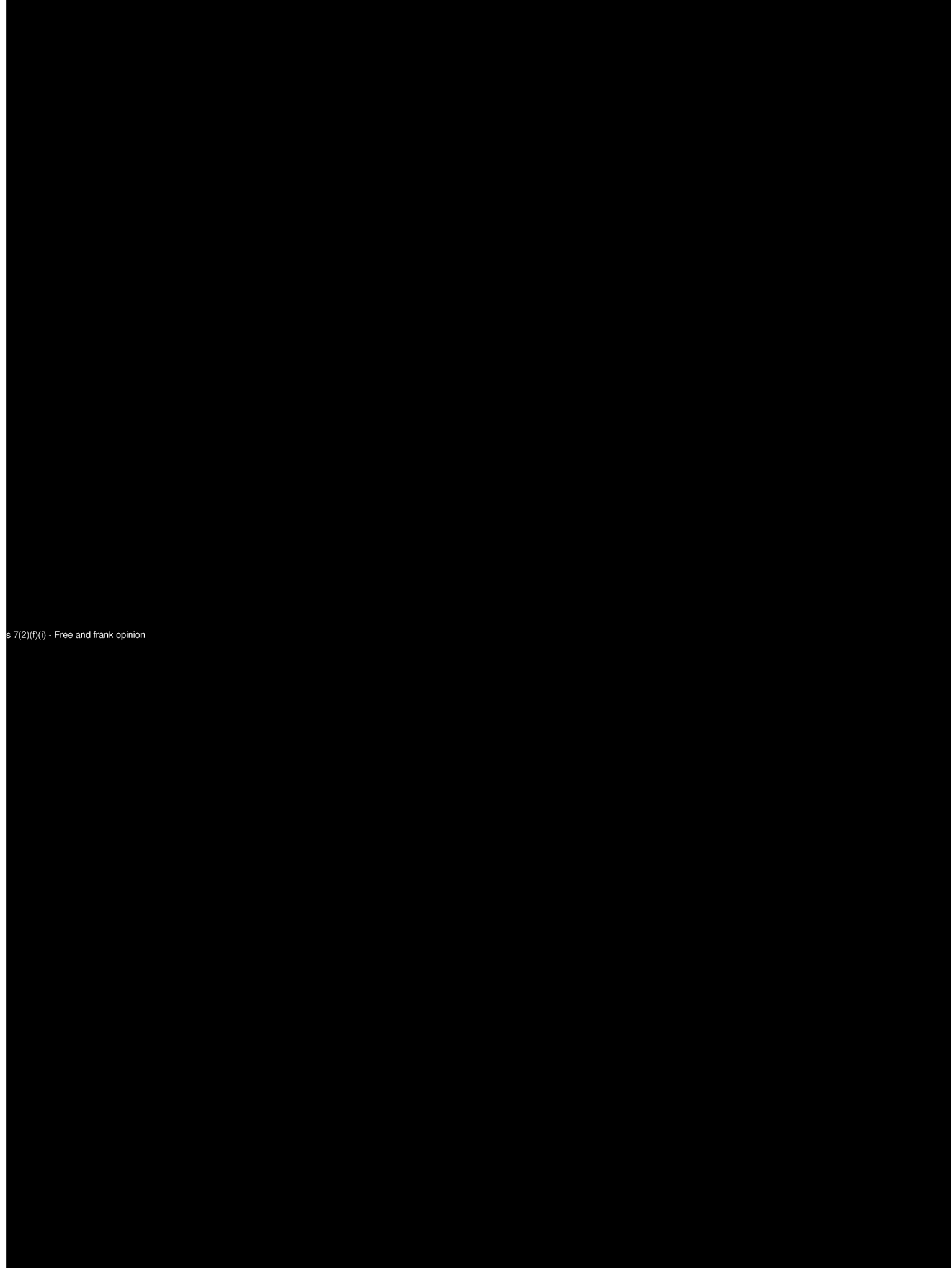
s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

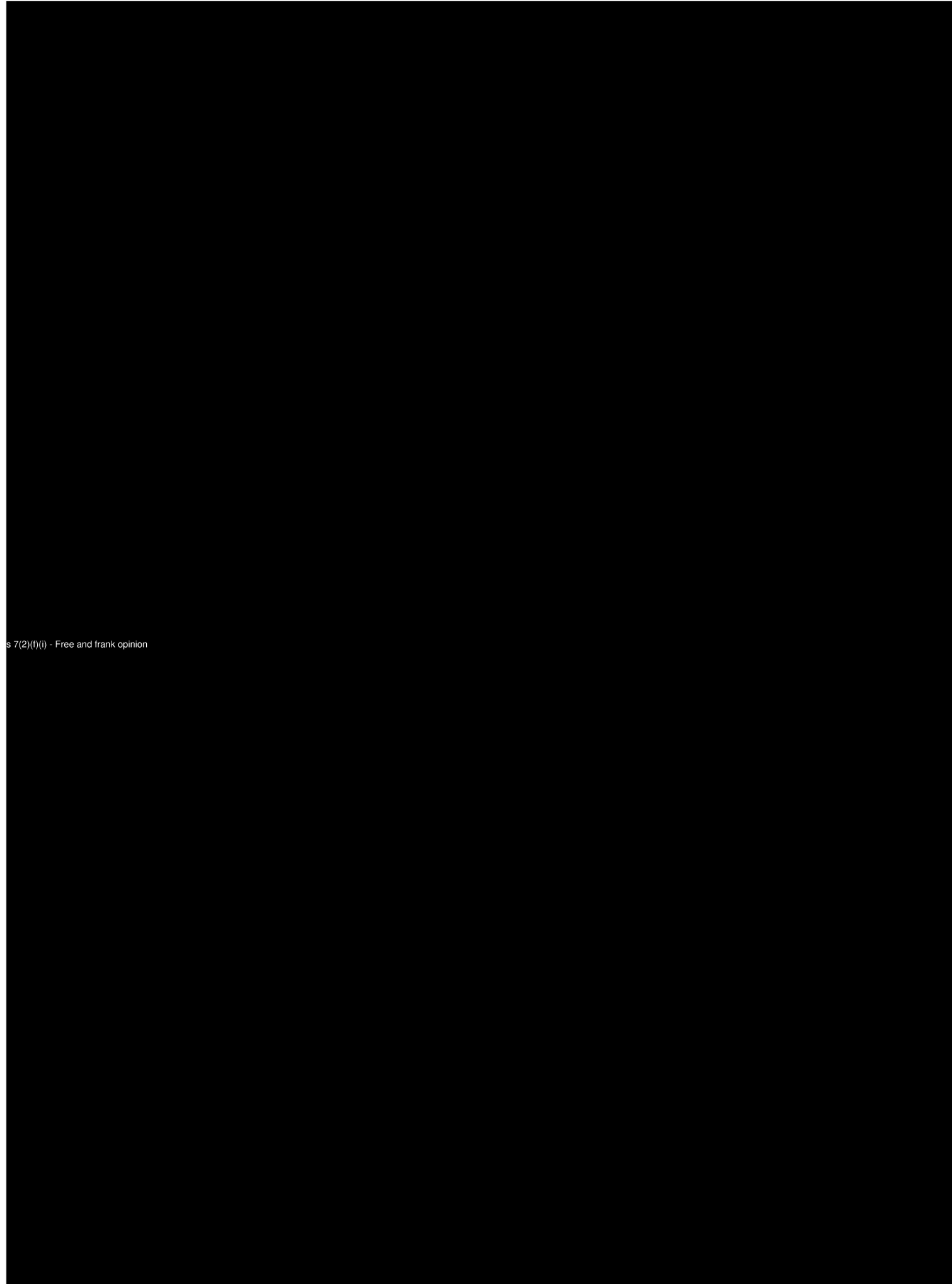


s 7(2)(f)(i) - Free and frank opinion

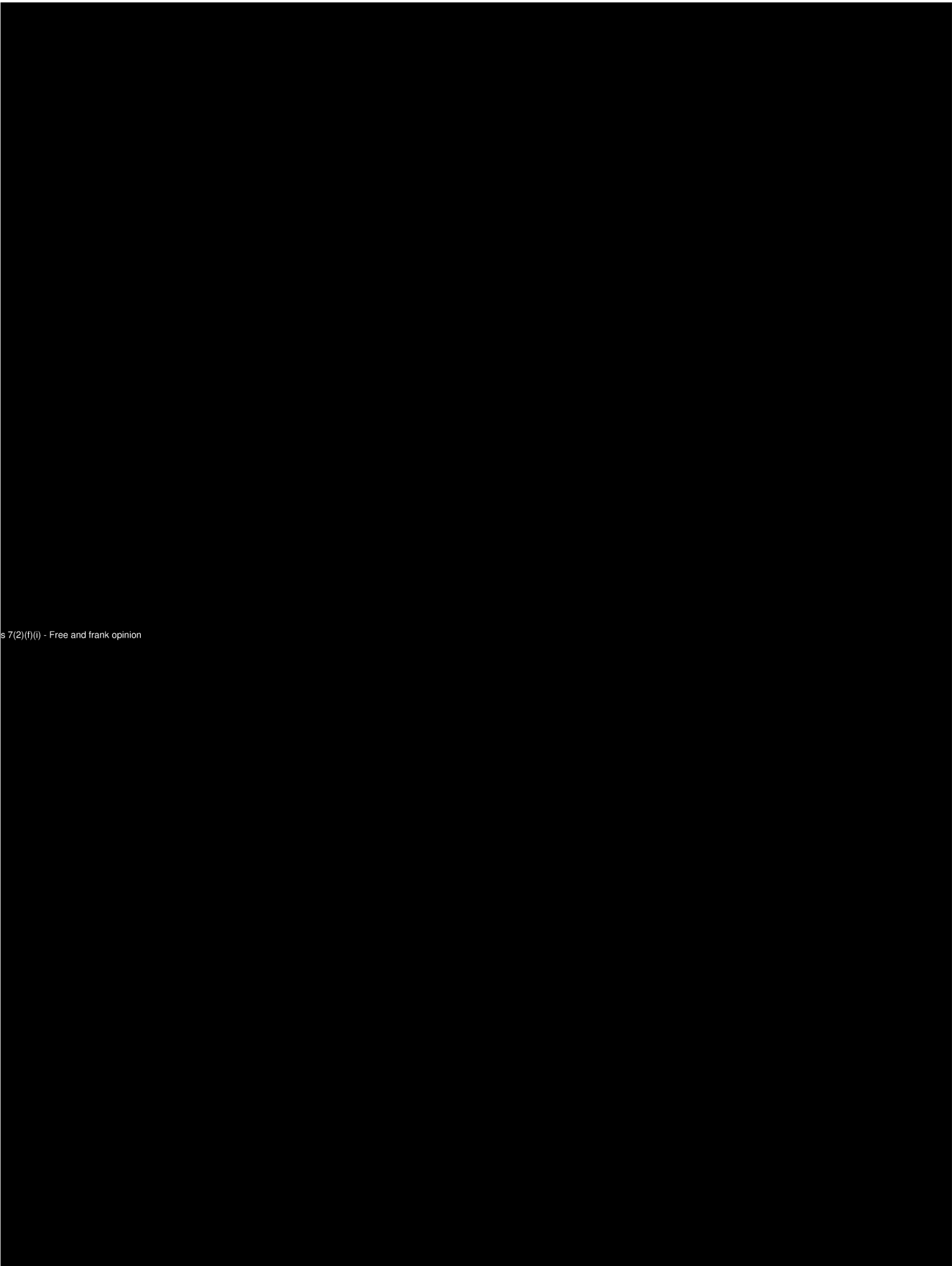


s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

8.4 Report - Nga Poutiriao o Mauao (Joint Admin Board) 13 February 2018 - Review of the Mauao MOU

Memorandum of Understanding Mauao Historic Reserve and the Mauao Joint Administration Board (Ngā Poutiriao ō Mauao – The Guardians of Mauao)

Ngā Poutiriao ō Mauao (Mauao Joint Administration Board)

13 February 2018

Objective ID No: A8429507



Executive summary

Recommendation	That Ngā Poutiriao ō Mauao: Approve the final revised version of the Memorandum of Understanding Mauao Historic Reserve and the Mauao Joint Administration Board (Ngā Poutiriao ō Mauao – The Guardians of Mauao), included at Appendix A.
Summary of issue	The current Memorandum of Understanding Mauao Historic Reserve and the Mauao Joint Administration Board (Ngā Poutiriao ō Mauao – The Guardians of Mauao) (the “MOU”) was signed in 2013, for a term of three years. In April 2017, Ngā Poutiriao ō Mauao supported staff proceeding with initiating the review of the MOU. In June 2017, staff co-ordinated a working group comprising representatives of the Mauao Trust and Tauranga City Council (TCC) and commenced a review the MOU. A number of meetings were held, and on 14 December 2017, a final revised version of the MOU was agreed to by the working group. The review enabled the MOU to be updated to include current information, and to include a process by which Ngā Poutiriao ō Mauao is able to identify projects to be undertaken on Mauao which are consistent with objectives of the Mauao Historic Reserve Management Plan. A copy of the MOU is included at Appendix A. Prior to Council approving the revised MOU, the approval of Ngā Poutiriao ō Mauao is being sought.
Broader benefit / impact	The revised MOU now includes, as a new function of Ngā Poutiriao ō Mauao, a process through which projects identified in, or consistent with, the Mauao Historic Reserve Management Plan may be implemented.
Strategic context	Approval of the revised MOU will continue to enable the collaborative decision making between the Mauao Trust and TCC on the management of Mauao, and will re-inforce the importance of TCC’s ongoing strategic relationships with tangata whenua.
Next steps	- Approval of the revised MOU by the Mauao Trust. - Report to Council seeking adoption of the revised MOU. - Formal signing of the revised MOU between the Mauao Trust and TCC.

Discussion

1. In 2013, TCC and the Mauao Trust signed a three year Memorandum of Understanding Mauao Historic Reserve and the Mauao Joint Administration Board (Ngā Poutiriao ō Mauao – The Guardians of Mauao) (the “MOU”), which set out the guiding principles for the joint management of Mauao.
2. In April 2017, Ngā Poutiriao ō Mauao supported staff proceeding with initiating the review of the MOU.
3. In June 2017, staff co-ordinated a working group comprising representatives of the Mauao Trust and TCC and commenced a review the MOU. A number of meetings were held, and on 14 December 2017, a final revised version of the MOU was agreed to by the working group.
4. A “clean” copy of the revised version is included at Appendix A, and a version noting key changes is included at Appendix B.

Key Changes

5. Some clauses were added to the Background of the MOU to explain the legislative context. This is because when the original MOU was entered in to, it was anticipated that within a short timeframe, legislation would have been enacted that established Ngā Poutiriao ō Mauao as the administering body under the Reserves Act 1977. However, that legislation has not yet been enacted, and it was considered important to explain this point.
6. The functions of Ngā Poutiriao ō Mauao were increased to include the preparation, approval, and annual review of a three year implementation plan for projects consistent with the objectives of the Mauao Historic Reserve Management Plan. The plan will also identify the timeframes and costs for delivery of the projects. This will enable Ngā Poutiriao ō Mauao to apply for funding from TCC through the Long Term Plan or from external sources in a planned and strategic manner.

Options

Option 1: Approve revised MOU

7. Approve the revised version of the MOU.

Advantages	Disadvantages
- Enhances decision making structure for management of Mauao. - Updates roles and responsibilities to reflect changes to TCC structure. - Builds on the relationship between the Mauao Trust and TCC with regard to the management of Mauao. - Provides a clear process to identify projects which are consistent with the objectives of the Mauao Historic Reserve Management Plan.	Not applicable

Budget - Capex	Not applicable
Budget - Opex	Not applicable
Key risks	Not applicable
Recommended?	Yes

Option 2: Do not approve the revised version of the MOU

8. Do not approve the final version of the Mauao HRMP for adoption by Council.

Advantages	Disadvantages

Nil	- Does not enhance decision making structure for management of Mauao. - Does not update roles and responsibilities to reflect changes to TCC structure. - Does not build on the relationship between the Mauao Trust and TCC with regard to the management of Mauao. - Does not provide a clear process to identify projects which are consistent with the objectives of the Mauao Historic Reserve Management Plan.
---	---

Budget - Capex	Not applicable
Budget - Opex	Not applicable
Key risks	The current MOU has expired, so if is not reviewed, there is technically no formal agreement.
Recommended?	No

Significance and engagement

9. Under the Significance and Engagement Policy, this decision is considered low risk, as there is a strong and logical flow from a prior decision.

Next Steps

10. Staff seek approval from the Mauao Trust to the revised MOU.
11. Report to Council seeking adoption of the revised MOU.
12. Formal signing of the revised MOU between the Mauao Trust and TCC.

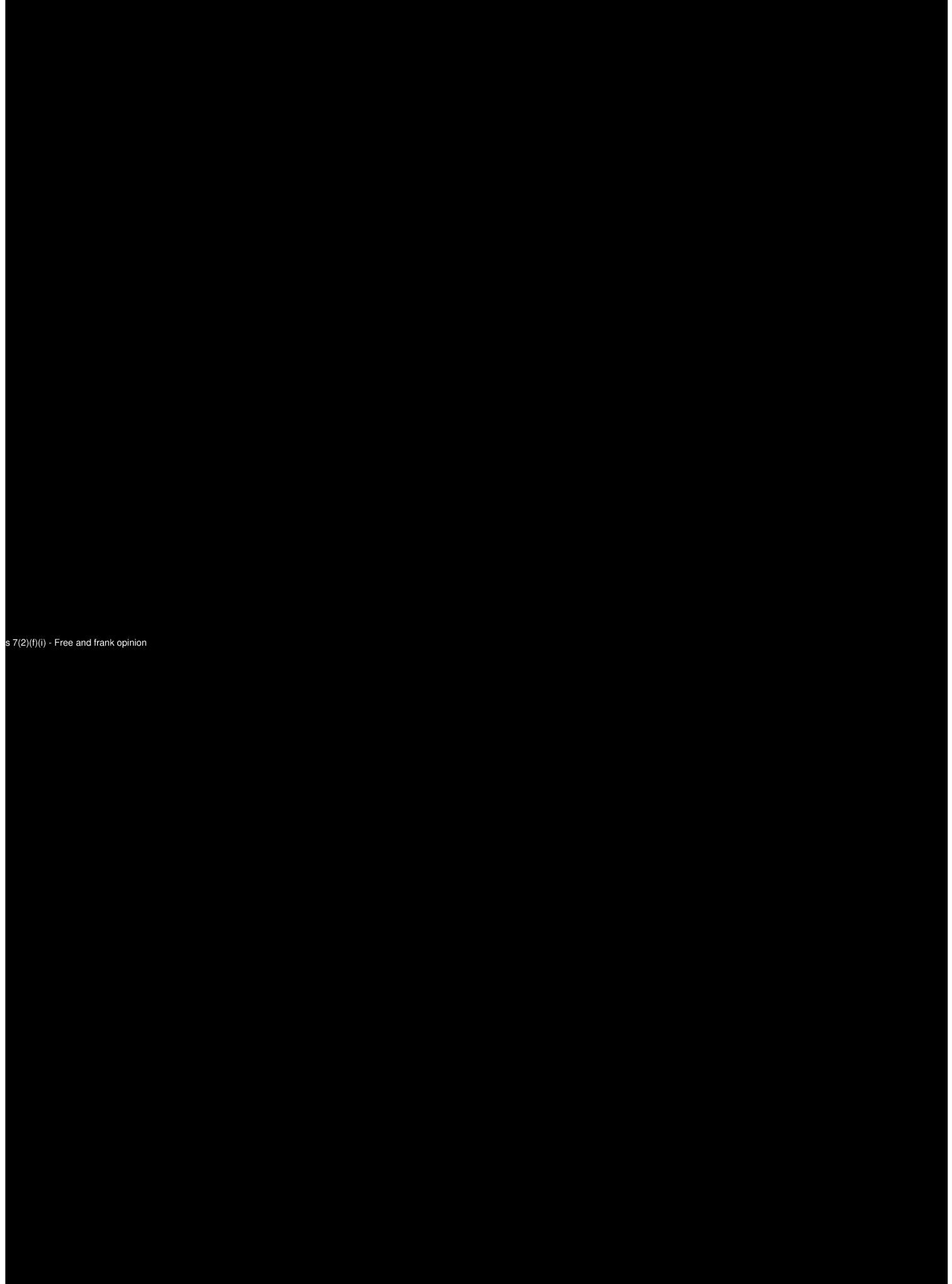
Appendices

No.	Title
A	Final formatted version of MOU <i>Objective ID: A8444920</i>
B	Track changes version of the revised MOU <i>Objective ID: A8444707</i>

Signatories

Authors	§ 7(2)(f)(ii)
Authorisers	§ 7(2)(f)(ii)

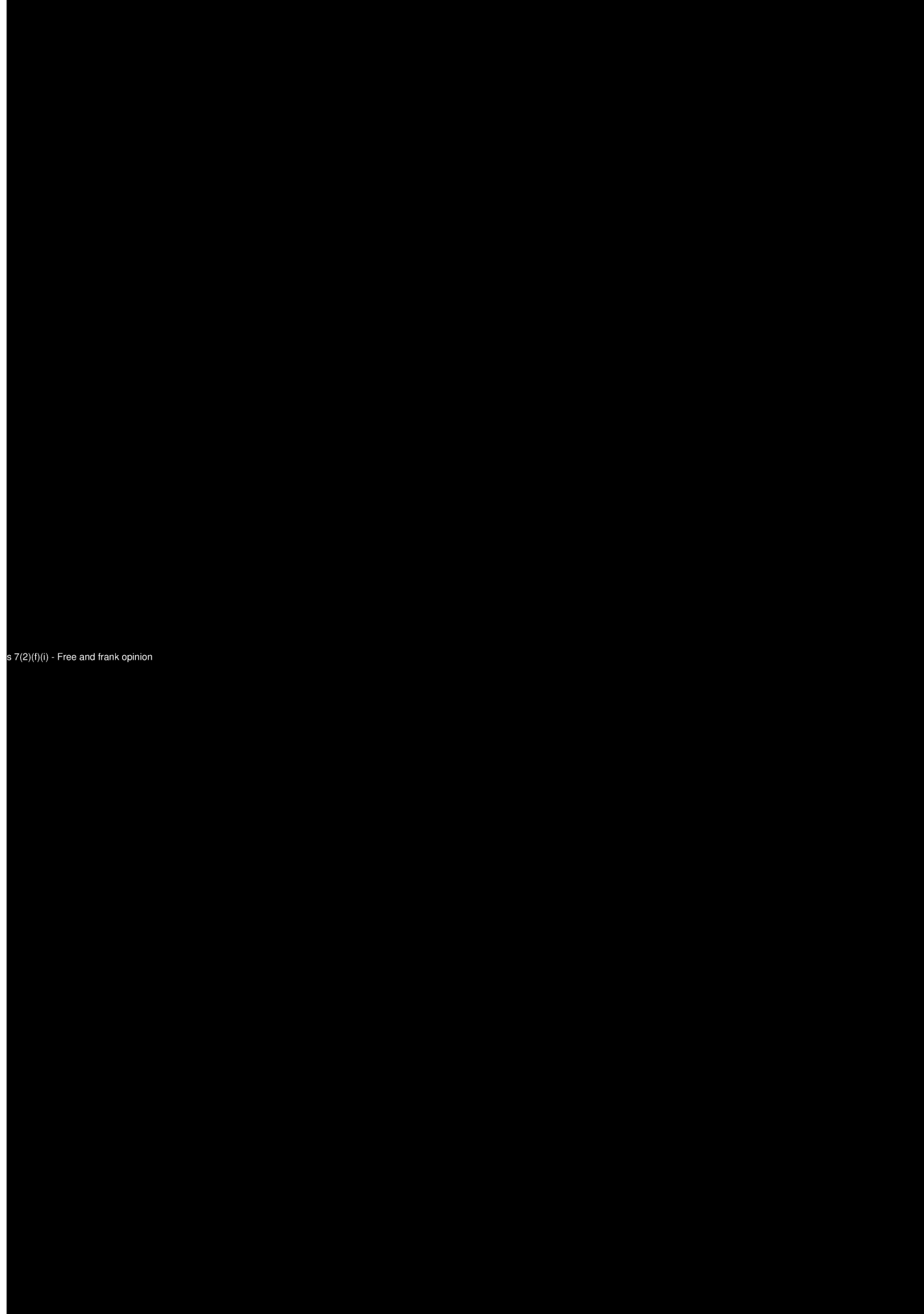
8.4.1 DRAFT Report Nga Poutiriao o Mauao (Joint Admin Board) Review of Mauao MOU - Appendix A - final formatted version



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

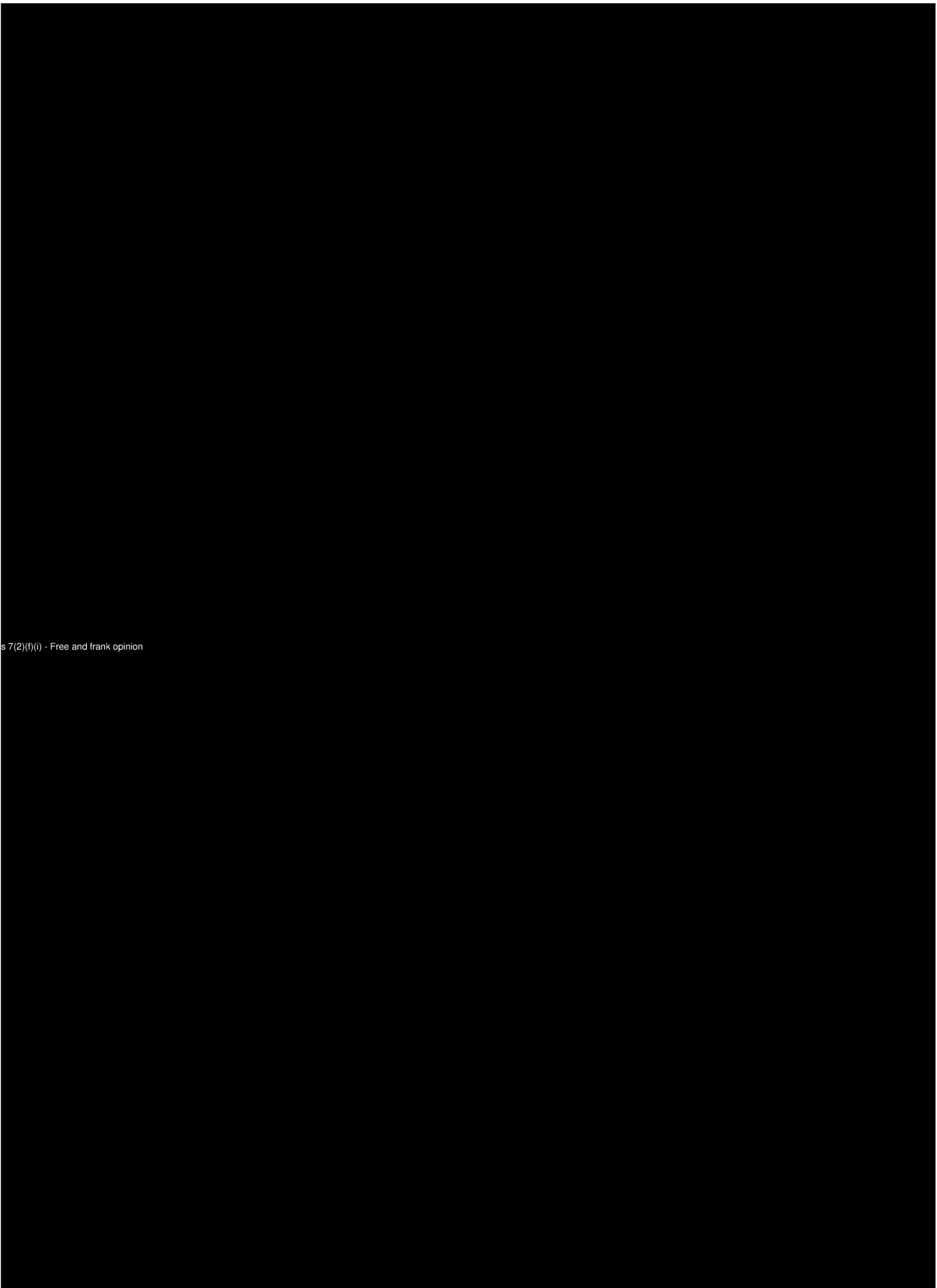
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

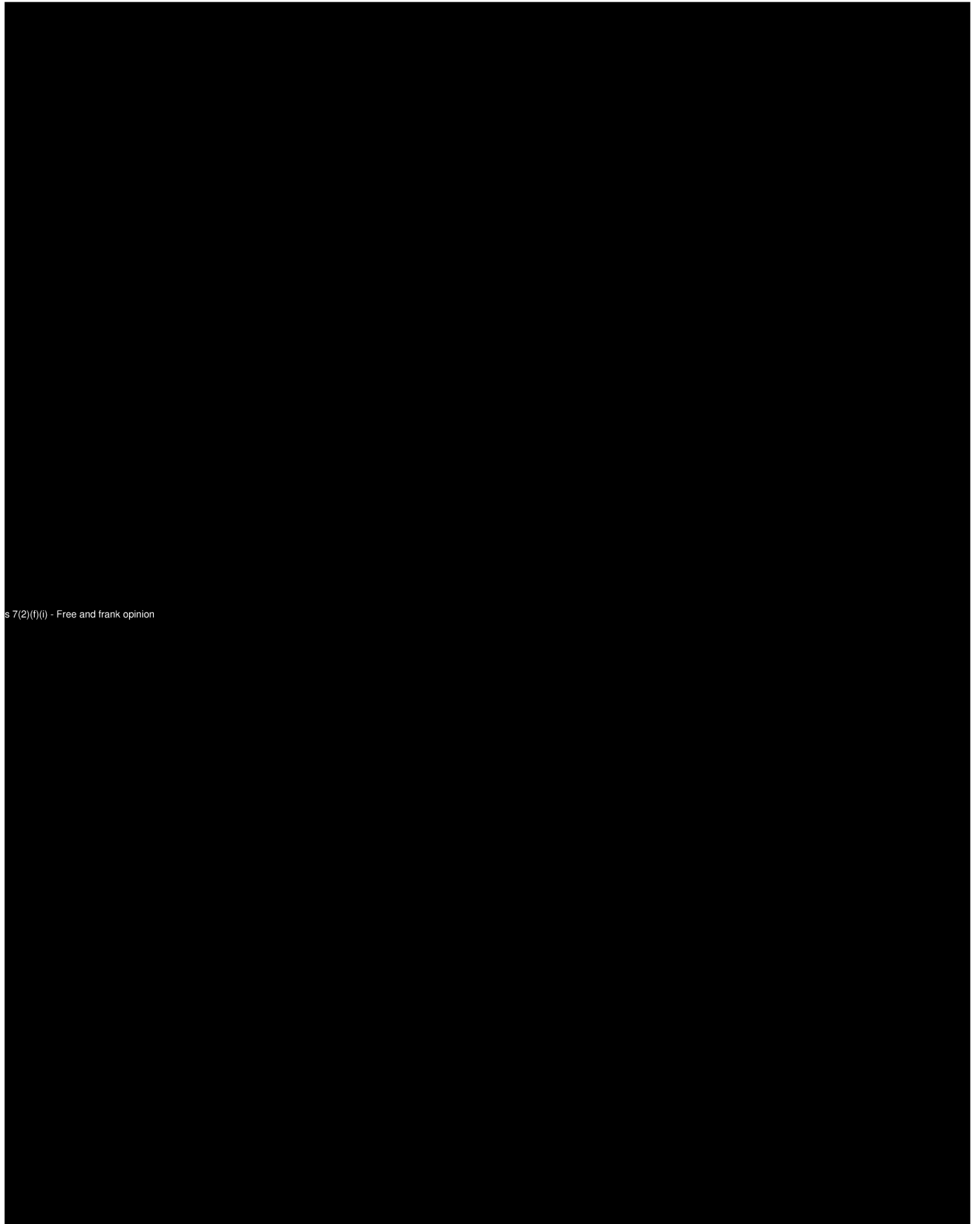


s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

8.4.2 DRAFT Report Nga Poutiriao o Mauao (Joint Admin Board) Review of Mauao MOU - Appendix B - final formatted version with annotation of key changes



s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

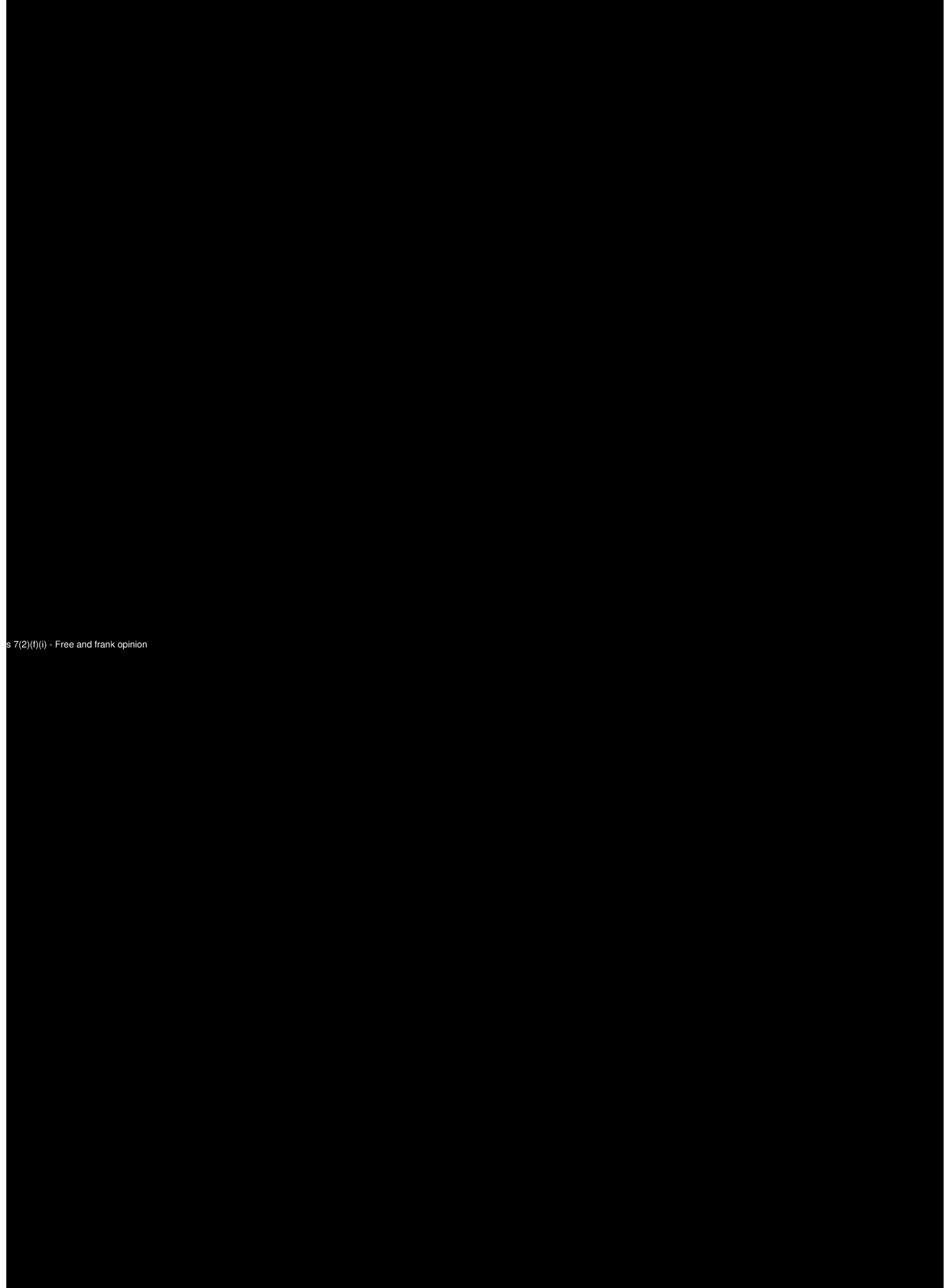
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

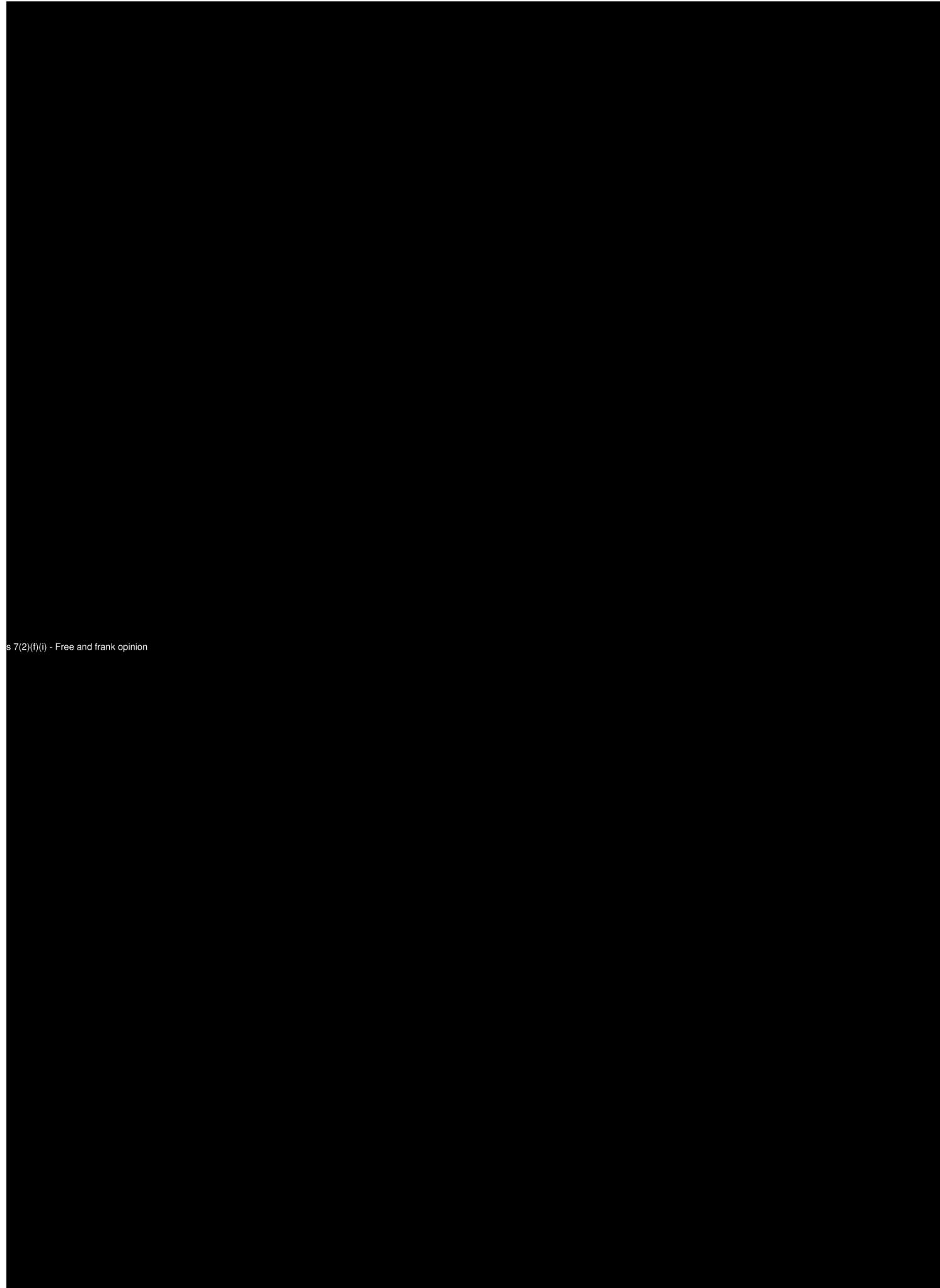
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

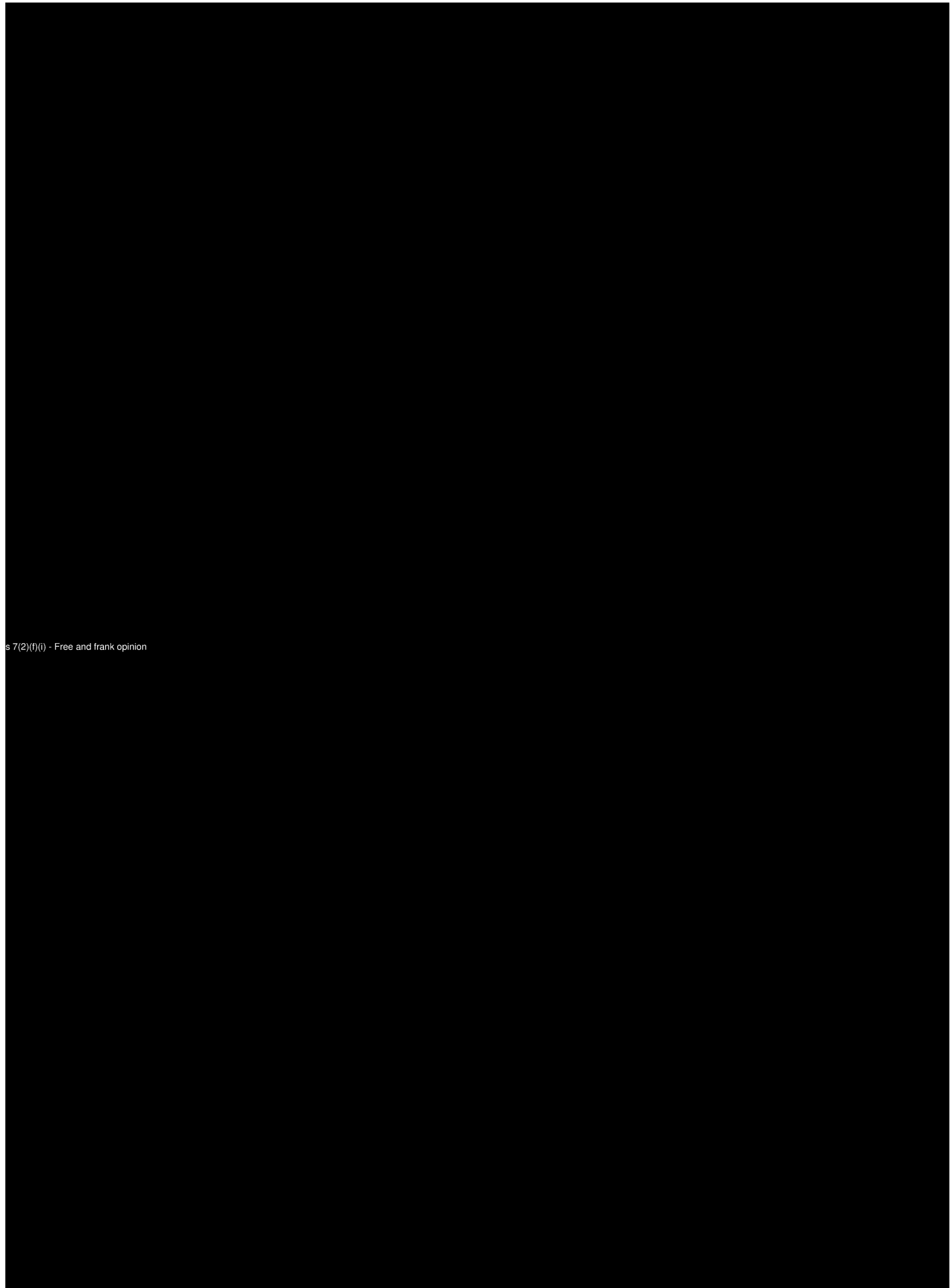


s 7(2)(f)(i) - Free and frank opinion



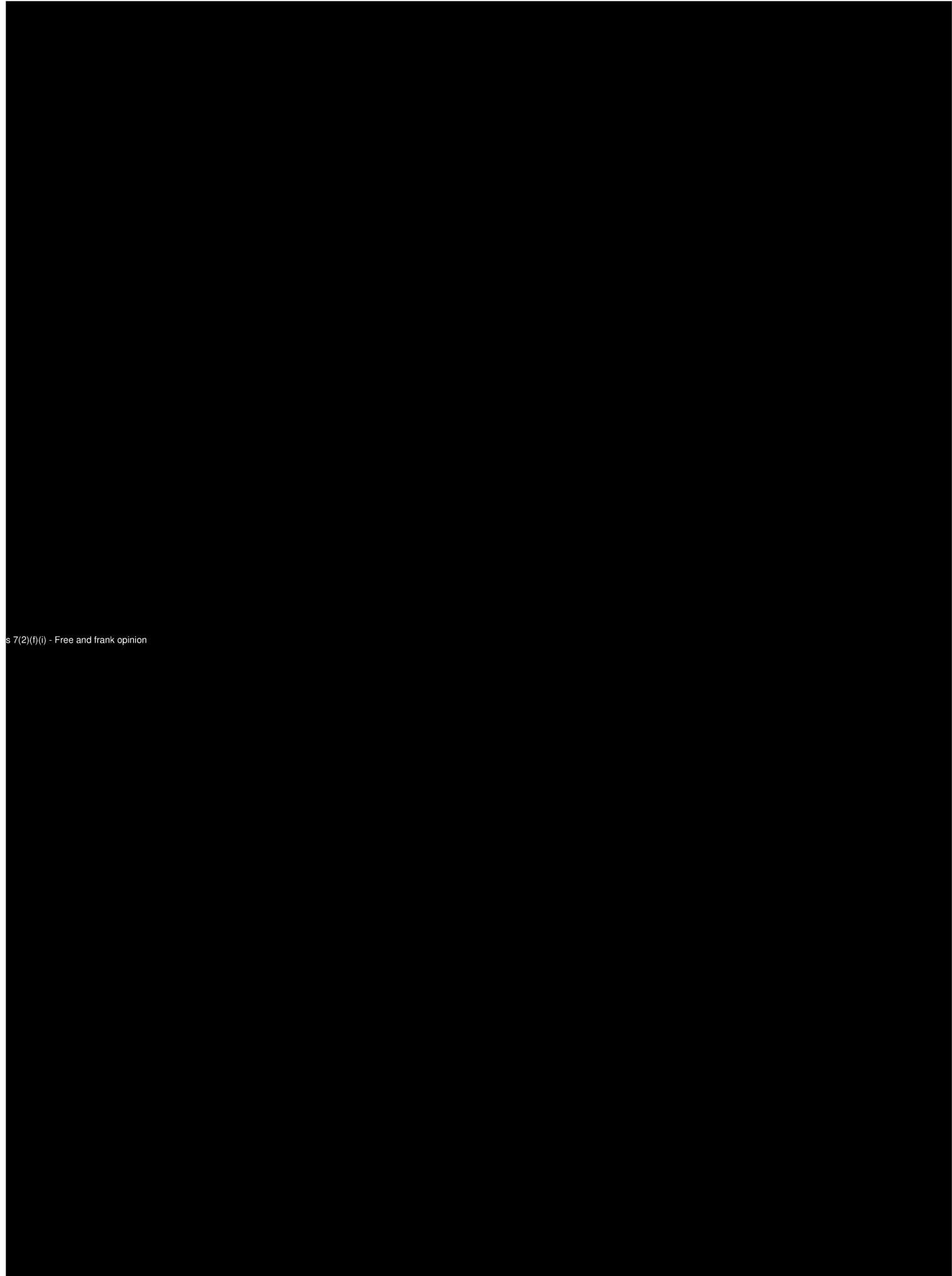
s 7(2)(f)(i) - Free and frank opinion

s 7(2)(f)(i) - Free and frank opinion

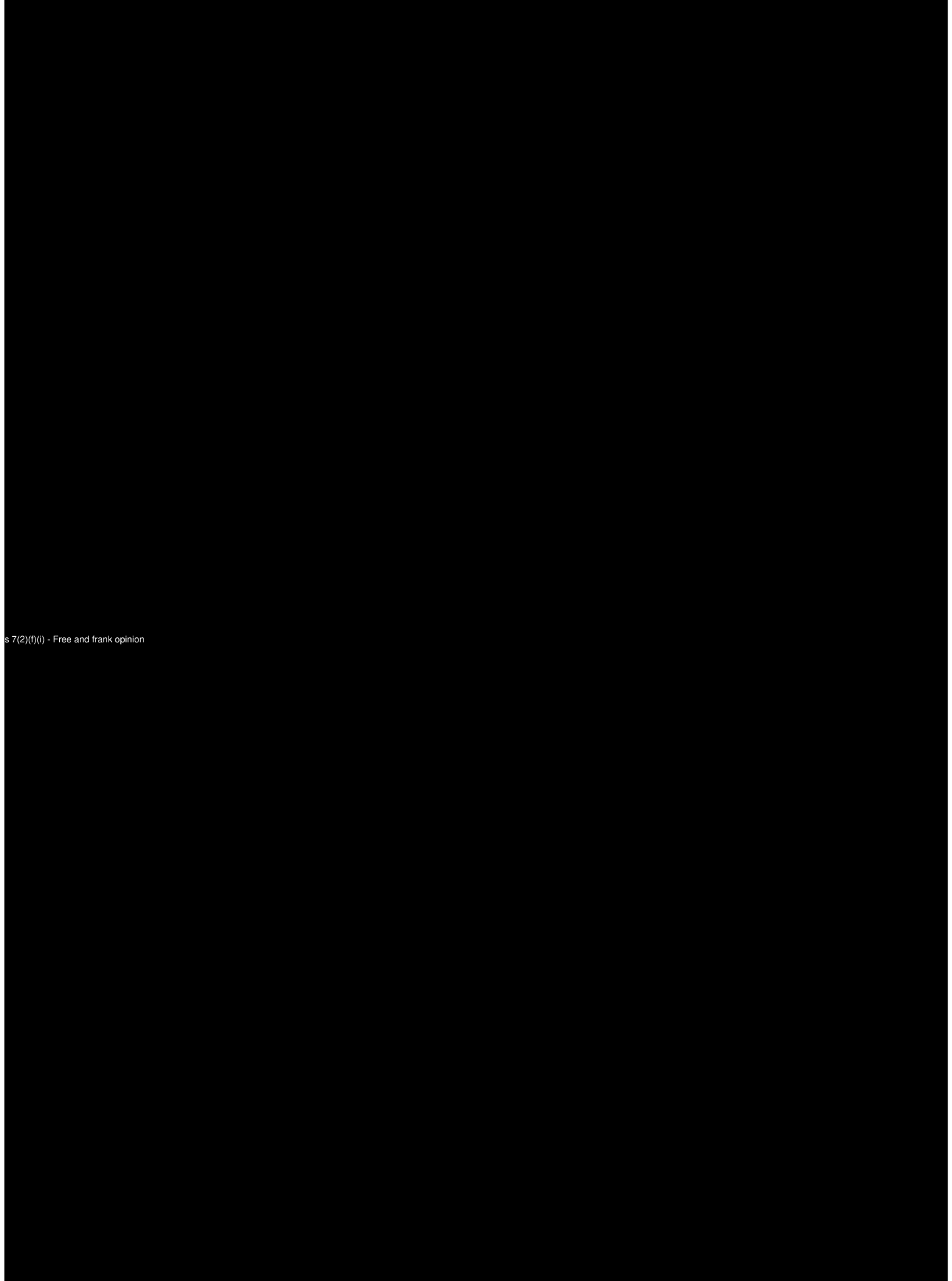


s 7(2)(f)(i) - Free and frank opinion

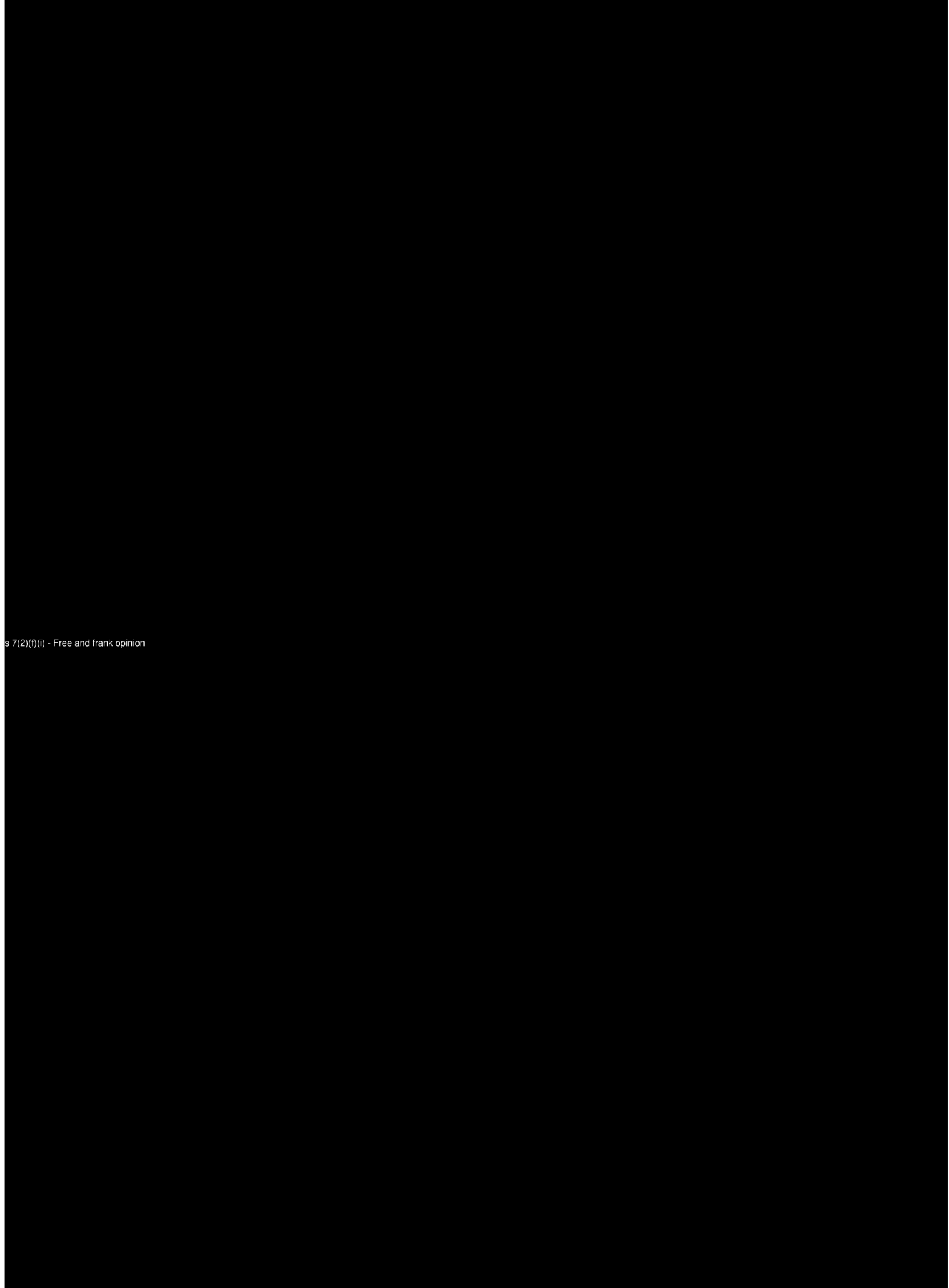
s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion



s 7(2)(f)(i) - Free and frank opinion

- 8.5 Approval from Mauao Trust to Mauao Historic Reserve Management Plan and Mauao Revised Memorandum of Understanding**
- 8.6 Discussion of the final Design for the Historic Reserve Management Plan and Mauao Revised Memorandum of Understanding**
- 8.7 Arataki Cultural Trails -** s 7(2)(f)(ii)
- 8.8 Possible Funds that the Mauao Trust can apply to fund an administrator for the Trust -** s 7(2)(f)(ii)
- 8.9 Next steps in the development of an implementation plan for projects identified in the Mauao Historic RMP -** s 7(2)(f)(ii)
- 9. Discussion of Late Items**
- 10. Karakia**