

ATTACHMENT A

ARTIST'S IMPRESSION

ATTACHMENT A

CLOUDGATE CATENARY DESIGN ELEMENTS

Design Logic	Single long catenary field
Cable hierarchy	primary - street span + field perimeter. secondary - adjustable location to suit adjustment to the disc positions.
Tapered columns	no. 8 size 4 - 455 mm dia @ base: 4 - 355 mm dia @ base
Catenary cables	no. 4 paired primary cables cross the street.
Catenary connectors no.	4 perimeter corner + 4 perimeter edge.
Cloud Discs	no. 13 sizes 2400, 3000, 3600 mm dia
Disc support	above to the catenary - 4 adjustable length rods each. 4 consistently located fixings per disc - tending itself to prefabrication.
Appearance	- minimal structural elements. - minimal catenary expression makes it visually recessive to the discs. - cables and discs are concentrated above the pavement widening. - single unlit catenary net and regular disc groupings. - discs are distributed along the street, complementing the linear nature of the street. - disc locations able to be refined within the single catenary field, on site under the direction of COS and the artist

ABBREVIATIONS

The following are abbreviations:

ARL	Approximate profile of bedrock, extrapolated from Geotechnical report
C/L	Centreline
COS	Confirm On Site
FFL	Finished Floor Level
NOM	Nominal (Dimension)
REV	Mirror Reverse
RL	Relative Level (measured to Australian Height Datum)
S/M	Similar
TBA	To Be Advised
TBC	To Be Confirmed
TYP	Typical
UNO	Unless Notes Otherwise

MATERIALS + COMPONENTS LEGEND

The legend below should be used as a reference. It contains the abbreviations noted on the drawings describing the selection of components and materials required and their assembly.

Reference is required to be made to other relevant areas of the Contract Documents including, but not limited to, the specification, schedules and detail drawings.

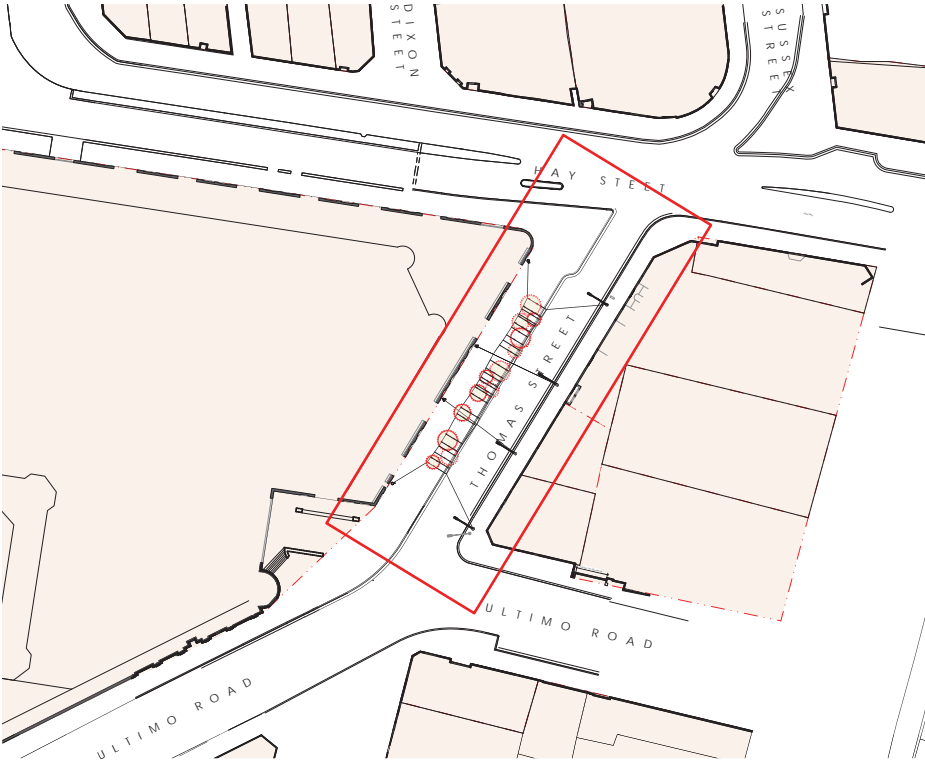
Sub components or requirements of components are indicated with a suffix 'A'/' through suffixes denotes multiple requirements.

GENERAL NOTES

- The Builder is responsible for the accurate setout of the works. The catenary columns are positioned to correspond to the profile of the sandstone cornice line of the Markets building, existing and new awnings and minimum setback from the face of the kerb on the opposite side of the street and in accordance with these drawings. This setout requires confirmation with on site survey and concurrence of the setout with the Architect and COS on site.
- SETOUT 1** The exact position of columns beside the Markets Building primarily relate to the profile of the existing sandstone cornice line.
- SETOUT 2** All of the columns taper from a uniform RL corresponding to the height of the Markets building dado wall - column inflexion point.
- Refer to Landscape Plan and Survey for all site levels, contours and boundaries.
- All work shall comply with the Building Code of Australia, the rules and requirements of City of Sydney Council and the relevant current Standards Association of Australia codes and specifications.
- All landscape in accordance with Landscape Architect's requirements, design, detail & specification. Refer to L and LA below.
- All structure in accordance with Structural Engineer's requirements, design, detail & specification.
- All electrical in accordance with Lighting Designer and Electrical Engineer's requirements, design, detail & specification.
- It is the responsibility of those working on site to verify dimensions and profiles prior to commencing work.
- Use figured dimensions only. Do not scale.
- If discrepancy exists notify the principal's representative.

CLOUDGATE CATENARY DRAWINGS

Architectural	
A100-A	Drawing list, legend and location plan
A101-A	General arrangement drawing
A110-A	Set out and column details
A111-A	Catenary junctions
A120-C	Cloud disc details
Structural	
S0 01-A	General Notes
S7 00-A	Catenary Footing Plan
S7 01-A	Catenary Cable Plan
S7 02-A	Catenary Sections And Details - Sheet 1
S7 03-A	Catenary Sections And Details - Sheet 2
S7 04-A	Catenary Sections And Details - Sheet 3
Lighting	
L02 200 01	Legend, Drawing List And Site Plan
L02 201 01	Lighting + Power Layout
L02 202 01	Details Sheet
Landscape	
LA9 10 01	Catenary Ground Plane - Make Good Existing



- Priming - existing street awning
 - Modify existing awning to accommodate the catenary column. Modify fascia. Modify box gutter to retain existing falls drainage. Match existing materials and finish.
 - The column position is based on the removal of the existing City Mark awning. Removal, design and replacement by others - not in contract.
- AP Access Panel to match material, finish and surface alignment of the structural steel column and in accordance with notes on 1/A110.
- BD Bid deterrent to keep birds away from the cloud discs (avoiding corrosive bird droppings and nesting within the discs). BDP Broad Band Pro including control unit, transformer and speakers installed within CCE1 and CCE2. Install in accordance EE and with the manufacturers requirements. Provide AP.
- C Catenary
SS Ronstan architectural catenary cable system - refer to SE, by SP(1).
Provide shop drawings for approval by SE. Subsequent structural design of the loaded catenary system will be required, including allowances for wind and weather conditions. The design drawings indicate the design requirements comprising a single elongated catenary field of primary catenary support cables, and secondary cross cables. The cross cables (secondary cables) are to be laid out parallel to each other and at right angles to the wall of the markets building. Submit subsequent documentation related to the installation and any tests as requested by the Structural Engineer to the Structural Engineer and Superintendent.

- Tolerances :**
- The RLs stated represent the loaded and tensioned system in still air. The catenary is suspended across Thomas Street and requires clearance above the public street.
 - Catenary net pick up points +/- 50mm in plan and elevation.
- SP(1) to design and construct the cable system to support the cloud discs. Provide Ronstan isolation bushes between SS and dissimilar metals. Refer to structural engineers drawings for indicative cable sizes.
- SS Adjuster - cable tensioner / cable or rod length adjuster as necessary
 - SS Connector - Ronstans open jaw sockets
 - Roof hangers, vertical, to support the Cloud Discs and allow vertical adjustment to the perimeter edge of each cloud disc is horizontal - open jaw connector at the top of each rod. Provide fixed connections to the cloud disc and laise with SP(2). Provide Ronstan isolation bushes between SS and dissimilar metals.
- Purpose made SS connectors.
- SS perimeter corner connector - 4 required
 - SS perimeter connector - 4 required
 - SS clamp connector for 12 dia/8dia cable junction
 - SS clamp connector for 12 dia/8dia cable junction and disc hanger
 - SS clamp connector for 12 dia cable and disc hanger
 - SS clamp connector for 8 dia cable and disc hanger
- CC Catenary column
Prefabricated tapered structural steel circular column in accordance with SE, and by SP(3).
Finish with selected protective paint system FN(PC). Proportionally smaller column diameters are preferred if possible. During design submit with anticipated deflections for COS. Structural Engineer and Architect approval. Provide AP for access to lighting control gear and the like. 455mm dia @ base tapered to 300 @ top UNO.
- east side of the street (with a unique number for each column)
 - Small column - 355mm dia @ base tapered to 235 @ top
 - West side of the street (with a unique number for each column)

- CD Cloud Discs including C(RH), in accordance with the documentation, by SP(2).
The Cloud Discs are to be in accordance with the prototype being prepared as part of these works. Refer to A120 for cloud disc assembly and C(RH) for rod hangers.
Panel welds in the Cloud Discs are to be ground smooth and not be visible.
- 13 Catenary cloud discs:
- 5 x 2.4m dia x 160 deep
 - 4 x 3.0m dia x 200 deep
 - 4 x 3.6m dia x 250 deep
- Tolerances :**
- Depth of Cloud Discs +/- 50mm for 3.6m dia (proportionately for other disc diameters). Variation beyond this tolerance needs to be discussed and agreed with COS and their representatives, including Lindy Lee, UAP and the architect.
 - RL of the centreline of Cloud Discs +/- 50mm
- Arrangement :**
- The Cloud Discs are arranged in overlapping groupings.
The arrangement is based on a 150mm radius of movement for each hanging rod and 150mm movement beyond the edge of each cloud disc perimeter. These non overlapping margins shown with red dotted lines on the drawing 2/A101, should be tested on site to reflect adequate allowance for movement of the assembly in situ while retaining distinct grouping and disc overlaps. Allow to adjust the disc arrangement in plan on site, if required by COS and their representatives.

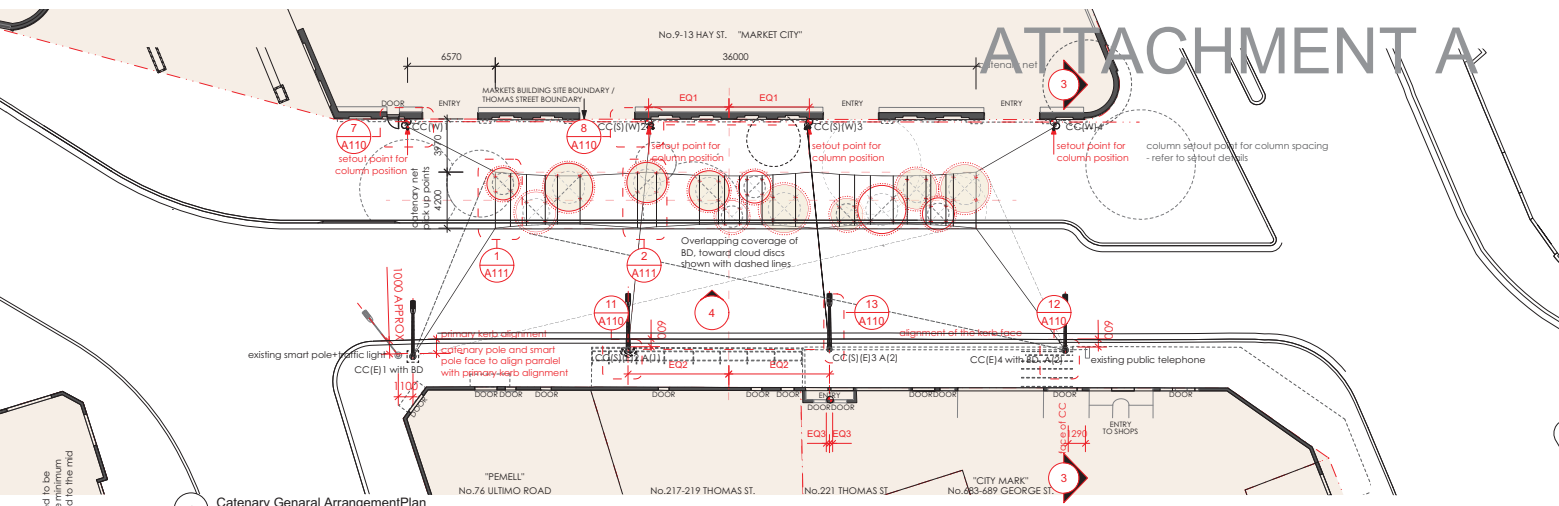
- Finish and colour :**
- Allow for a special paint system + colour on the cloud discs in accordance with Specification 11.3 Cloud Discs.
- Summer shade + winter sun :**
- Orient the layers of perforated discs to provide denser shade in summer and lighter shade in winter. Use midday sun angles suitable for the Sydney situation of 32.5 degree mid winter, 55 degree spring-autumn equinox and 80 degree mid summer.
 - spring equinox to mid summer - progressively more shade pavement, with maximum shade in mid summer - autumn equinox to mid winter - progressively more sunny pavement, with maximum sun in mid winter.
- CL Steel Cleat. In accordance with SE and with selected protective paint system FN(PC).
- CO 30mm conduit for Lj(D1) threaded through stiffener plates in outreach arm in accordance with EE. FN(PC)
- EE Lighting Designer and Electrical Engineer's requirements, design, detail & specification.
- FN Finish
(A) Provide a high durability coating specification designed for environments classified by ISO 12944-2 as C5 - very high corrosivity. Dulux Weathermax HBR MIO 2 - PC 405.
Provide a micaceous oxide finish for elements in a Marine Environment and for visual and non-visual elements. Provide factory applied paint system as specified by Dulux and applied by Dulux licensed tradesman including preparation, priming, intermediate and finish coats to achieve overall 325 microns minimum coverage as indicated below.
- Abrasive blast clean to Class 2.5 (ISO 8501-1:1988) or SSPC-SP10. If oxidation has occurred between blasting and application, the surface should be reblasted to the specified visual standard. Surface defects revealed by the blast cleaning process, should be ground, filed, or treated in the appropriate manner
 - Stripe coats should be applied to all welds, lap joints, plate edges, corners, sharp edges, and any other areas where spray application of the overall coating system may prove difficult resulting in low dry film thickness.
 - 1st coat Zinc primer - zinconade 402, 75 microns min cover
 - 2nd coat - Dulux Duremax GPE 2 pack epoxy, 150 microns min cover
 - 3rd coat - Dulux Weathermax HBR MIO, 100 microns min covertransparent protective coating suitable for multiple applications and for use with FN(PC) 18A.
- (PC) Provide protective paint coatings that conform to structural steelwork and steel products in a Marine Environment in the time to first scheduled maintenance of 7 (seven) years. Micaceous Iron Oxide by Dulux to all visible structural steel and metalwork. Abrasive blast clean class 2.5 steel substrate.
- Primer: Dulux Zinconade 402, PC122 - dry film thickness 75-90um
Intermediate: Dulux Fereko No. 3 - PC5 - dry film thickness 90-125um
Finish: Dulux Fereko No. 3 - PC5 - dry film thickness 90-125um, Colour - natural grey.
- Final system maintenance plan and warranty to be submitted for approval
- Where a warranty is conditional upon the manufacturer's approval of the installer and/or applicator who will undertake the work, provide the Principal with a copy of the manufacturer's written approval of that installer prior to commencing any of the work.
 - Independent inspection is to be made at the completion of surface preparation of steelwork, prior to finishing coats. Report to Principal.
 - Colour - natural grey.
- (SF) Special finish to match FN(PC) colour, for light fittings and exposed parts of steel nuts, locking nuts, bolts, washers, conduits and the like to achieve a neutral and uniform colour, unless noted otherwise.

- L Landscape Architect's requirements, design, detail & specification. Refer to COS for previous contract.
- LA Landscape details.
The pavement and ground plane elements (including boulder seating and scholar stones) have been recently installed and need to be protected during these works. Paving units will need to be removed to undertake these works. Carefully remove, store securely and reinstatement.
Make good pavement to the new columns. Neatly cut paving units around the columns to conclude the works. Repavement and making good needs to seamlessly reinstate the ground plane and existing levels. A site survey in proximity to each column, is required at the outset and conclusion of the works.
- LI Lighting in accordance with EE.
(D1) smart pole light fitting mounted to CC, housing attached to purpose designed outreach arm and CC. (SF) (LI) up lighting to wash the cloud discs - mounted to CC. (SF)
- MP Mounting pipe to receive Lj(D1) threaded through stiffener plates in outreach arm at a minimum length of 900mm in accordance with Lighting Designer's and Electrical Engineer's requirements. Install to manufacturer's instructions.
- PL Steel Plate. In accordance with SE and with selected protective paint system FN(PC). FN(PC)
- SE Structural Engineer's requirements, design, detail & specification.
- SP Specialist contractors
The lead contractor is responsible for coordinating the work of Specialist contractors.
The lead contractor and specialist contractors are to allow for review and approval by COS and their representatives, including Lindy Lee, UAP and the architect of the following :
- shop drawings of the catenary support structure, cloud discs, and cloud disc arrangement; and
- on site of the catenary and cloud disc arrangement.
(1) to undertake design, fabrication and installation of the tensioned cable support structure
(2) to undertake design, fabrication and installation of the cloud discs
(3) to undertake the fabrication and installation of the architectural structural steel

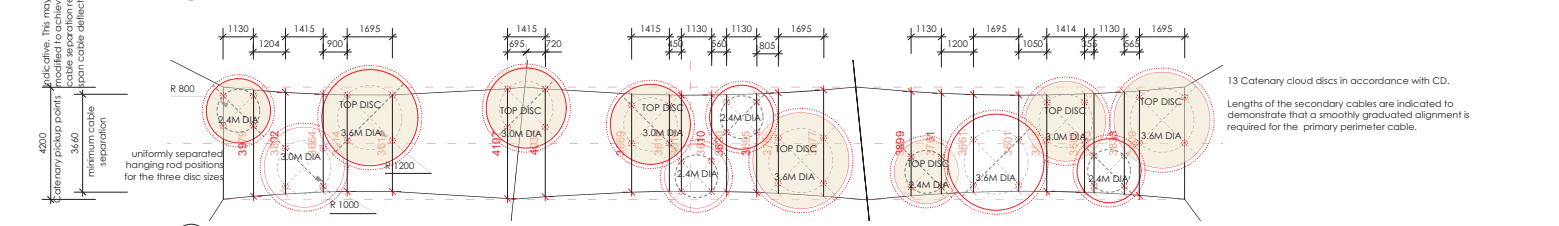
- SS 316 Stainless steel - marine grade. 4/4 fat finish with passivation - 1BC

TENDER DOCUMENTATION - NOT FOR CONSTRUCTION

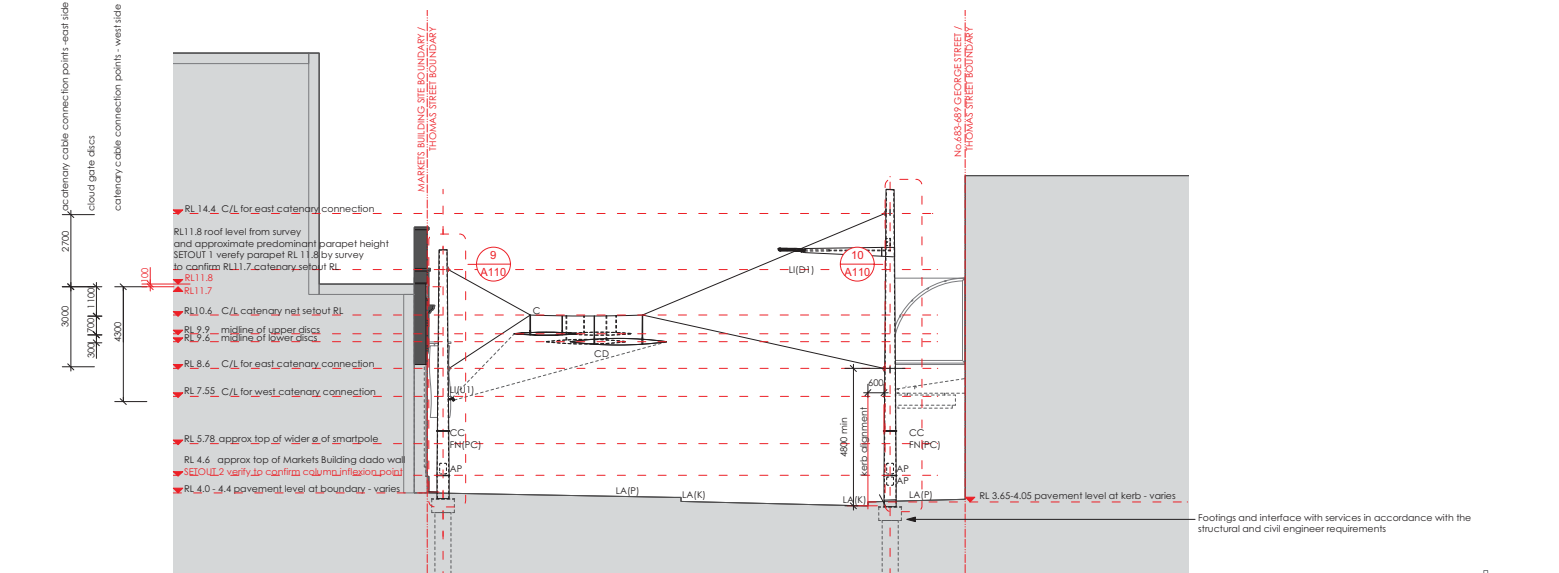
REV. DATE	AMENDMENTS	DESCRIPTION OF AMENDMENTS	PROJECT	SCALE	CADATIC DESIGN	ICA CONSULTANT	TRAFFIC PLANNING AND ENGINEERING		
A	01.09.2015	COS tender issue	THOMAS AND HAY STREET, CHINATOWN	1:1000	Level 1, 21-23, Moorabbin Street Ph: 03 9529 2222 F: 03 9529 2222	Level 1, 21-23, Moorabbin Street Ph: 03 9529 2222 F: 03 9529 2222	Level 1, 21-23, Moorabbin Street Ph: 03 9529 2222 F: 03 9529 2222		
<p>Project</p> <p>For</p> <p>CITY OF SYDNEY</p> <p>City of Sydney 200 West Street Sydney NSW 2000</p>				<p>Lead consultants</p> <p>Artistic team</p> <p>Artistic team Urban Art Projects 1 07 3630 6000 / 07 3630 6246</p>				<p>Drawing prepared by</p> <p>HILL THALIS</p> <p>1 07 3630 6000 / 07 3630 6246</p>	
<p>CONTRACTOR'S CONSULTANTS</p> <p>HYDRAULIC ENGINEERING</p> <p>Level 1, 21-23, Moorabbin Street Ph: 03 9529 2222 F: 03 9529 2222</p>				<p>CONTRACTOR'S CONSULTANTS</p> <p>HYDRAULIC ENGINEERING</p> <p>Level 1, 21-23, Moorabbin Street Ph: 03 9529 2222 F: 03 9529 2222</p>				<p>DRAWING LIST, LEGEND AND LOCATION PLAN</p> <p>DRAWING NO. A100</p> <p>SCALE 1:100 / 1:200 @ A1</p> <p>CHECKED DATE 4 November 2013</p> <p>REVISION A</p>	



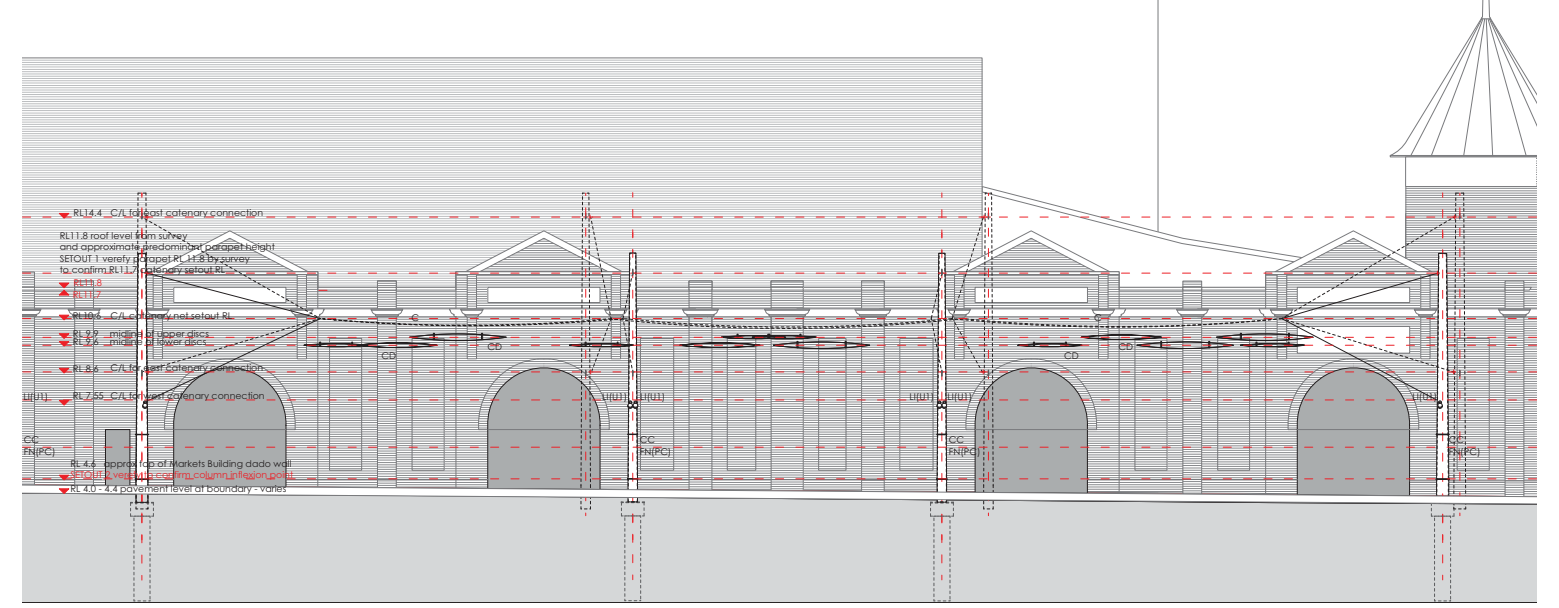
1 Catenary General Arrangement Plan 1:200



2 Catenary Cloud Discs Plan 1:100



3 Street Section 1:100



4 West Elevation 1:100

TENDER DOCUMENTATION - NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENTS
A	01.09.2015	COS tender issue

1. Consultation in accordance with the provisions of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2007.
2. The design is based on the information provided by the client and is subject to the client's verification of the accuracy of the information provided.
3. The design is based on the information provided by the client and is subject to the client's verification of the accuracy of the information provided.
4. The design is based on the information provided by the client and is subject to the client's verification of the accuracy of the information provided.

Project: THOMAS AND HAY STREET, CHINATOWN
For: City of Sydney
City of Sydney
100 Kent Street
Sydney NSW 2000

BAR SCAD
Lead consultants
jila
hill thalys
100 Kent Street
Sydney NSW 2000

Artistic team
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In Association with:
Urban Art Projects
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Cloudgate Catenary
Drawing prepared by:
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100 Kent Street
Sydney NSW 2000

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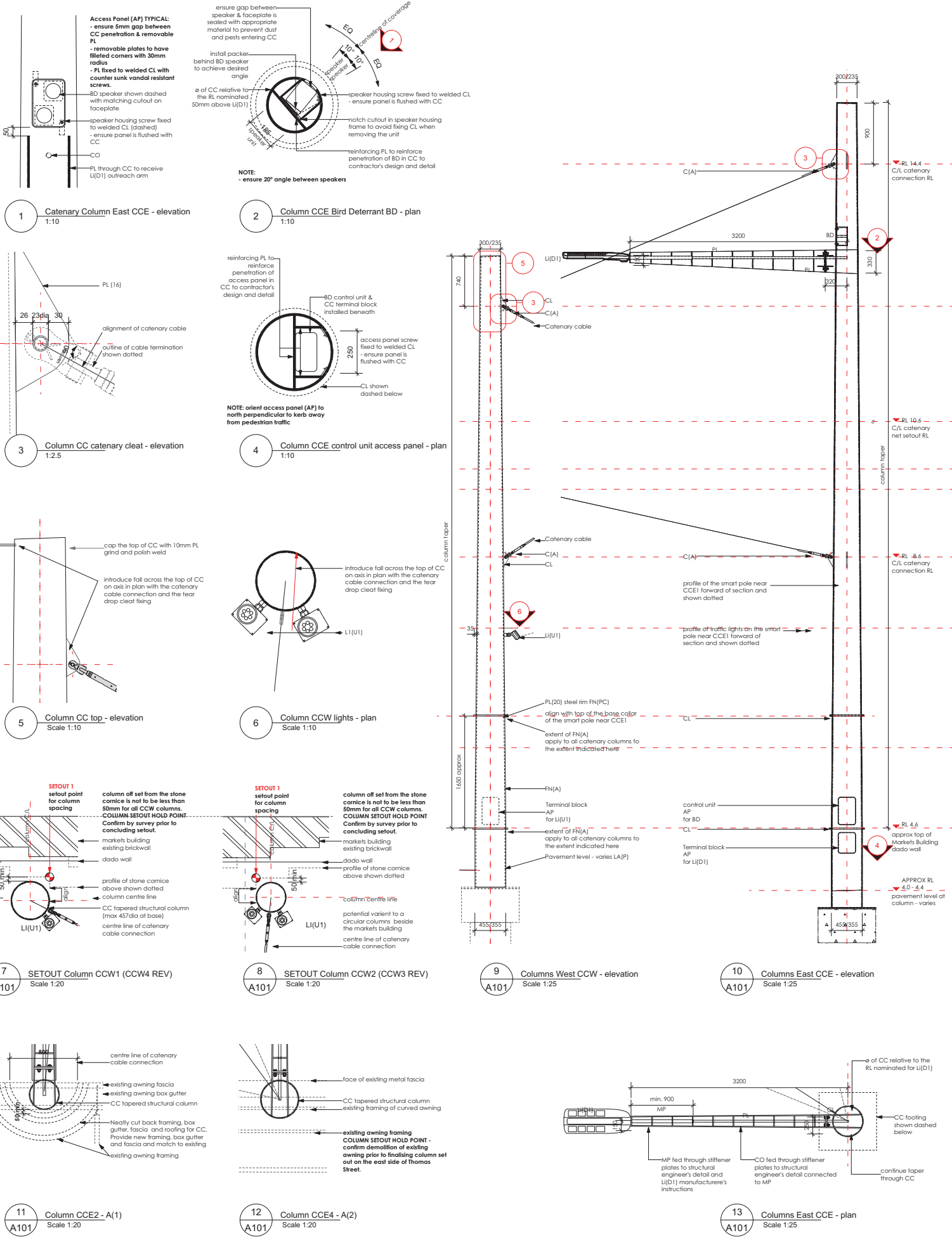
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LIGHTING ART & SCIENCE
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PLANNER
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General Arrangement Drawing	
DRAWN	SCALE
ST	1:100 / 1:200 @ A1
CHECKED	DATE
PT	4 November 2013
DRAWING NO.	REVISION
A101	A

ATTACHMENT A



TENDER DOCUMENTATION - NOT FOR CONSTRUCTION

REV.	DATE	AMENDMENTS	Project	BAR SCALE	GRAPHIC DESIGN	SEA CONSULTANT	TRAFFIC PLANNING AND ENGINEERING	Setout and Column Details				
A	01.09.2015	COS tender issue	THOMAS AND MAY STREET, CHINATOWN	1:100	Graphic Design Shirell 12, 25-36 Ashurst Street Sydney NSW 2007 T: 9112 0265 F: 9112 1460	SEA CONSULTANT Level 11, 21-75 Archer Street Cherrybrook NSW 2762 T: 9111 5260 F: 9111 5420	ENGINEERING Level 10, 464-466 Sydney Street Potts Point NSW 2011 T: 92 834 0700 F: 92 830 4661	DRAWN	SCALE	DRAWING NO.		
			City of Sydney 424 Kent Street Sydney NSW 2000	jila hill thalys Urban Art Projects 1 07 3430 4268 F 07 3430 4264	Artistic team LARRY LEE, ARTIST AND URBAN ART PROJECTS IN ASSOCIATION HILL THALYS Multiple QLD cities	HYDRAULIC ENGINEERING WATERS HOOD CONSULTING Level 10, 46-48 Pitt Street Sydney NSW 2000 T: 9132 8444 F: 9132 9484	LIGHTING DESIGN LIGHTING AFFAIR SCIENCE PO Box 6284, 913 Pacific Richmond NSW 2413 T: 9134 1144 F: 9440 1234	PLANNING TRAFFIC PLANNING CONSULTANTS Level 10, 464-466 Sydney Street Potts Point NSW 2011 T: 92 834 0700 F: 92 830 4661	ENGINEERING CONSULTANT LEVEL 10, 464-466 SYDNEY STREET POTTS POINT NSW 2011 T: 92 834 0700 F: 92 830 4661	DRAWN	SCALE	DRAWING NO.
								ST/AC	1:100 / 1:200 @ A1	A110		
								CHECKED	DATE	REVISION		
								PT	4 November 2013	A		

