

Section B

Pull and Splice, Service, and Junction Boxes

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Scope

This section covers the installation of medium voltage (primary) splice/junction boxes and low voltage (secondary) service boxes.

Underground medium voltage splice boxes are used for duct runs where cable pulling tension or sidewall pressures exceed specification limits. Limiting parameters could be a long cable run, an excessive number of duct bends, sloped terrain, site access, etc. The subject duct run could then be separated into two or more shorter cable sections using splice boxes. Cable sections are spliced together in each splice box.

Junction boxes are used for branching and sectionalizing underground circuits. They contain 200 A loadbreak separable insulated connectors (SICs) or a combination of 200 A loadbreak SICs and 600 A deadbreak SICs.

Underground secondary service boxes are typically the last structures in the utility power distribution system, facilitating the connection of customer service supply conductors and cables.

This section covers the physical size and weight of each structure, design load rating, and construction and installation details.

Lifting and Handling

Boxes, risers, and collars shall be lifted as per the manufacturer's instructions. All lifting equipment shall be tested and comply with local safety codes and regulations.

Confined and Restricted Access Spaces

Confined spaces are hazardous for crews to work in and should be avoided if possible. Medium and low voltage service/junction/pull boxes that are part of the confined space inventory include:

- 632, 832, 1232 boxes with a depth greater than 1372 mm (54"), regardless of the lid type;
- 632 and 555 boxes with manhole lid; and
- 332 box with a depth greater than 1524 mm (60"), regardless of the lid type.

There is a safe work procedure for 332 boxes with a depth between 1372 mm (54") and 1524 mm (60"). Contact your OSH specialist for more information.

Finished Grade Change

The collar and lids are installed flush with the finished grade. Each box shall be installed with a minimum of one and a maximum of two risers, each 150 mm deep, that can be removed to adjust the collar and lid's elevation if needed to accommodate any future finished grade elevation change.

Roadway duty boxes with manhole frame and covers shall be installed with one 150 mm precast concrete riser ring. Additional rings may be installed to accommodate finished grade changes, but the total height of all riser rings shall not exceed 750 mm.

For details on grade changes see ES54 U1-01.

REVISIONS: R3 - REMOVED OFF-ROADWAY DUTY, ADDED 2436 BOX. MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2021-03-04	PULL/SPLICE, SERVICE, AND JUNCTION BOXES GENERAL NOTES	
DISTRIBUTION STANDARDS  BC Hydro		ISSUED: MAR 2021 REPLACES: NOV 2019 ORIGINALLY ISSUED: MAR 2016		PAGE 1 OF 5	ES54 B0-02.01
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Secondary Service Boxes

Table 1 shows a selection summary of secondary service boxes based upon load duty. Service boxes contain three (for triplex) and four (for quadruplex) 600 V insulated multi-connectors. The multi-connectors allow for branching and splicing of secondary cables. For electrical equipment capacity and box selection criteria, refer to ES53 N3-01.

Table 1. Service Box Load Duty and Selection Matrix

Splice Box Type	ES54 Ref. Std.	Load Duty*			
		Non-Traffic	Sidewalk	Access Lane	Roadway
Small lightweight service box (plastic)	B3-01	X			
Large lightweight service box (plastic)	B3-02	X			
Small polymer concrete service box c/w polymer concrete lid	B3-03	X	X		
Small polymer concrete service box c/w cast-iron lid		X	X	X	
Large polymer concrete service box c/w polymer concrete lid	B3-04	X	X		
Large polymer concrete service box c/w cast-iron lid		X	X	X	
Lightweight service box, rectangular type 2436 (for maintenance replacements only)	B3-05	X	X	X	
332 c/w sidewalk duty lids	B7-01	X	X		
332 c/w lane duty lids	B7-02			X	
332 c/w manhole cover	B7-03				X
632 c/w sidewalk duty lids	B6-02	X	X		
632 c/w lane duty lids	B6-03			X	
632 c/w manhole cover	B6-04				X
555 c/w manhole cover	B2-04				X

* For load duty definitions see ES54 U1-02

Roadway duty 332, 632, and 555 boxes with manhole covers may also be used for access lane applications, though this practice is not ideal as it increases operational costs and risks to worker safety. Roadway boxes should only be installed if all other alternatives have first been assessed and deemed impracticable.

REVISIONS: R3 - REMOVED OFF-ROADWAY DUTY, ADDED 2436 BOX. MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2021-03-04	PULL/SPLICE, SERVICE, AND JUNCTION BOXES GENERAL NOTES	
DISTRIBUTION STANDARDS 	ISSUED: MAR 2021 REPLACES: NOV 2019 ORIGINALLY ISSUED: MAR 2016	PAGE 2 OF 5	ES54 B0-02.02		R 3

If a lightweight service box is installed in hilly terrain it can be difficult or impossible to install duct seals into the ducts once cables have been installed. If the meter box entry into a building is more than 1 m below the top of the lightweight service box without riser(s) installed, a 332 service box shall be used instead to allow the installation of effective duct seals.

When required, blast-proofing may be installed on service boxes complete with manhole lids. Refer to ES54 U13 for more information on blast-proofing requirements and design. Boxes with lightweight lids or lane duty lids have been designed and tested to be blast-proof.

Medium Voltage Splice Boxes

Table 2 shows a selection summary for medium voltage splice boxes based upon load duty. For electrical equipment capacity and selection criteria, refer to ES53 B13-01.

Table 2. Medium Voltage Splice Box Load Duty and Selection Matrix

Splice Box Type	ES54 Ref. Std.	Load Duty			
		Non-Traffic	Sidewalk	Access Lane	Roadway
632 c/w slab lids	B6-01	X			
632 c/w sidewalk duty lids	B6-02	X	X		
632 c/w lane duty lids	B6-03			X	
832 c/w slab lids	B5-01	X			
832 c/w sidewalk duty lids	B5-02	X	X		
832 c/w lane duty lids	B5-03			X	
1232 c/w slab lids	B4-01	X			
1232 c/w sidewalk duty lids	B4-02	X	X		

600 A cable systems require regular access for inspection and maintenance, which may preclude the use of slab lids. This limitation applies to 1232 boxes only.

Medium Voltage Junction Boxes

Table 3 shows a selection summary for medium voltage splice and pull boxes based upon load duty. For electrical equipment capacity and installation details, refer to ES53 Section D.

Operational clearance is a critical consideration when determining the placement of junction boxes. Power system workers operate 200 A loadbreak equipment while energized, using a hotstick. Workers shall be able to assume an ergonomic operating position on level footing without any obstructions or tripping hazards. Junction boxes shall be located such that the unobstructed area is level and free of tripping hazards and other obstructions.

REVISIONS: R3 - REMOVED OFF-ROADWAY DUTY, ADDED 2436 BOX. MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2021-03-04	PULL/SPLICE, SERVICE, AND JUNCTION BOXES GENERAL NOTES	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2021 REPLACES: NOV 2019 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 5	ES54 B0-02.03
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Table 3. Medium Voltage Junction Box Load Duty and Selection Matrix

Junction Box Type	ES54 Ref. Std.	Load Duty			
		Non-Traffic	Sidewalk	Access Lane	Roadway
332 c/w sidewalk duty lids	B7-01	X	X		
332 c/w lane duty lids	B7-02			X	
632 c/w sidewalk duty lids	B6-02	X	X		
632 c/w lane duty lids	B6-03			X	
832 c/w sidewalk duty lids	B5-02	X	X		
832 c/w lane duty lids	B5-03			X	
1232 c/w sidewalk duty lids	B4-02	X	X		

The use of junction boxes and junction pads is functionally equivalent. Junction boxes have advantages in terms of aesthetics, immunity to traffic accidents, low risk of graffiti and vandalism, etc. However, there are situations where junction pads are preferred, specifically:

- High-water table areas: If a box is installed in a high-water table area, the box will usually be filled with water. This accelerates galvanic corrosion and makes inspection, maintenance, and operation more difficult and time consuming. In the event of flooding, it may be impossible to access and operate equipment installed in a junction box.
- High snowfall areas: Boxes are difficult to locate and access when under snow and ice.
- Contaminated sites: Old industrial areas, decommissioned mines, landfills, abandoned petrochemical storage sites (fuel stations), etc. may result in contaminated soil and/or groundwater. Such areas should use junction pads instead of junction boxes to help ensure worker safety and equipment reliability.

Refer to ES54 Section D for more information on junction pads.

Box Location

Roadway placement should be avoided whenever possible. Using non-traffic or access lane duty lids improves worker safety and operational efficiency.

Pulling Irons

Splice or pull boxes 632, 832, and 1232 are equipped with threaded TELUS (25 mm diameter) inserts cast in the side walls under the duct window knockouts. 25 mm diameter eyebolts (material number 97002787) should be screwed into the inserts and tightened firmly against the face of the concrete to develop full strength.

REVISIONS: R3 - REMOVED OFF-ROADWAY DUTY, ADDED 2436 BOX. MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2021-03-04	PULL/SPLICE, SERVICE, AND JUNCTION BOXES GENERAL NOTES	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2021 REPLACES: NOV 2019 ORIGINALLY ISSUED: MAR 2016		PAGE 4 OF 5	ES54 B0-02.04
					R 3

The insert ultimate tested pullout capacity is 65 kN and the 25 mm diameter eyebolt ultimate tensile capacity is 142 kN. Pulling at an angle reduces the eyebolt capacity drastically. Assuming a load safety factor of 1.3, this type of pulling iron is rated for a maximum pulling force of 25 kN.

Duct Entry Locations

The standards indicate duct entry and alternate duct entry locations for each box type. The abbreviations LV and MV indicate low voltage (120 V to 600 V) and medium voltage (4 kV to 35kV) respectively.

For secondary boxes, use only duct entry knockouts or alternate duct entry knockouts to avoid cable crossover. Do not use a combination of both.

For junction boxes, both duct entry and alternate duct entry knockouts (where applicable) may be used. Duct entry knockouts are preferred as they allow for more orderly cable training.

For splice and pull boxes, duct entry and alternate duct entry knockouts may be used without restriction. Consideration should be given to using the same knockout on both ends of the box so the ducts will be aligned to allow for pull-through cable installation.

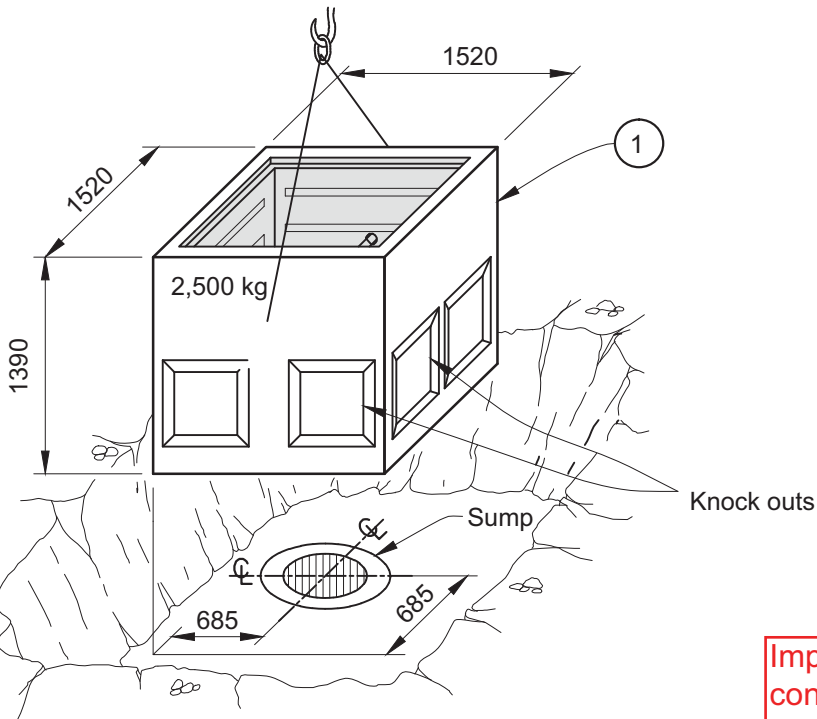
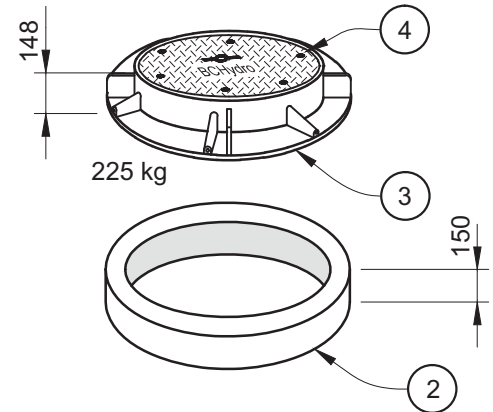
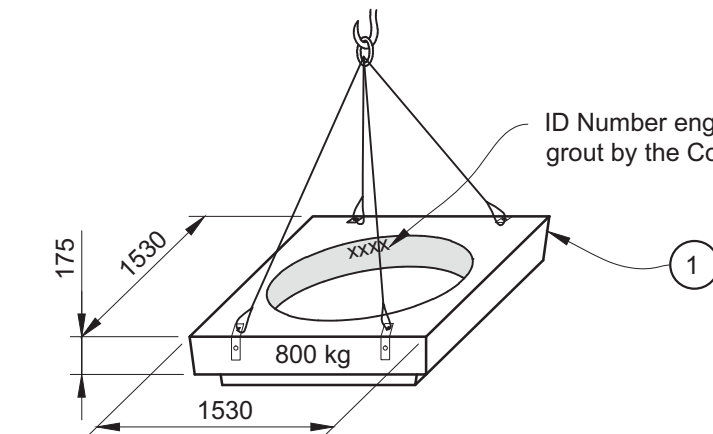
Cast-in-Place Boxes

Cast-in-place boxes are used for maintenance installations over an existing duct bank. Alternatively, bottomless precast boxes may be used.

REVISIONS: R3 - REMOVED OFF-ROADWAY DUTY, ADDED 2436 BOX. MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2021-03-04	PULL/SPLICE, SERVICE, AND JUNCTION BOXES GENERAL NOTES	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2021 REPLACES: NOV 2019 ORIGINALLY ISSUED: MAR 2016		PAGE 5 OF 5	ES54 B0-02.05
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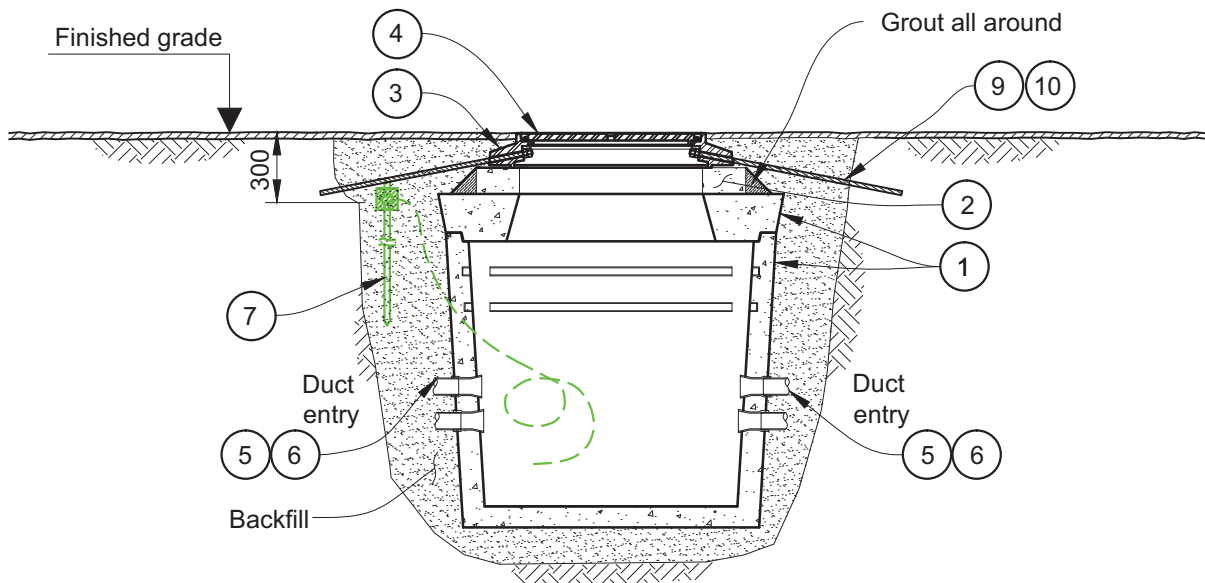
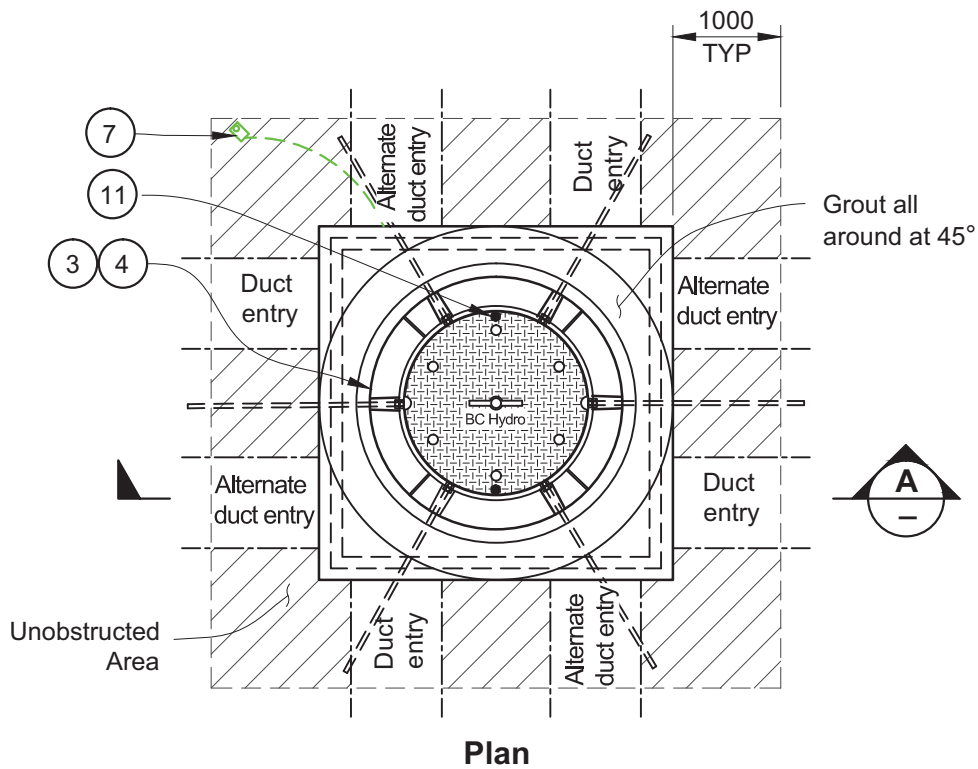
REVISIONS: R.4 - REMOVED LIFTING HOLES, BAR AND 300 MM RISER. ADDED TEXT BOX PG1. OCT '18 CC



Important: This installation is a confined space

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2018-10-30	555 SERVICE BOX ROADWAY DUTY	
DISTRIBUTION STANDARDS 	ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: JUN 1991			PAGE 1 OF 3	ES54 B2-04.01
					R 4

REVISIONS: R.4 - REMOVED LIFTING HOLES, BAR AND 300 MM RISER. ADDED TEXT BOX PG1. OCT '18 CC



Section A

DESIGNED C. CROWSON C. CROWSON	RECOMMENDED L. STEVANOVIC L. STEVANOVIC	ACCEPTED F. DENNERT F. DENNERT	ENGINEER OF RECORD PROFESSIONAL PROVINCE OF C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2018-10-30	555 SERVICE BOX ROADWAY DUTY	PAGE 2 OF 3	ES54 B2-04.02	R 4
DISTRIBUTION STANDARDS BC Hydro			ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: JUN 1991				

Notes

1. Depth of cover shall comply with C0-02.
2. Excavation and backfilling shall comply with W1-01.
3. Grounding shall comply with R2-01.
4. Duct entry shall comply with H1-06.
5. For specific application of 555 box refer to ES53 N3-01.

Bill of Material

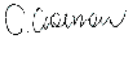
Item	Description	Catalogue ID	Quantity	Supplied By
1	Service box and collar type 555	400-0955	1	BC Hydro
2	150 mm riser ring	97000964	1 or more (as required)	BC Hydro
3	Heavy duty frame	400-0401	1	BC Hydro
4	Heavy duty cover c/w locknut	400-0411	1	BC Hydro
5 OR	75 mm bell ends 100 mm bell ends	401-0183 96021454	Specified by Designer	Contractor Contractor
6 OR	75 mm duct plugs 100 mm duct plugs	401-0197 96021457	Specified by Designer	Contractor Contractor
7	Grounding kit 5/8" x 8' ground rod	412-0022 420-1093	1 1	BC Hydro BC Hydro
8	Sump cover	400-0426	1	BC Hydro
9*	Ø 3/4" x 1000 mm coil rod, B-12 Dayton Superior	N/A	6	Contractor
10*	Ø 3/4" coil nut B-13 Dayton Superior	N/A	12	Contractor
11	Ø 1/2" x 3" 13 TPI S/S security bolt	96005248	2	BC Hydro

*Items 9 and 10 are optional, specified by Designer.

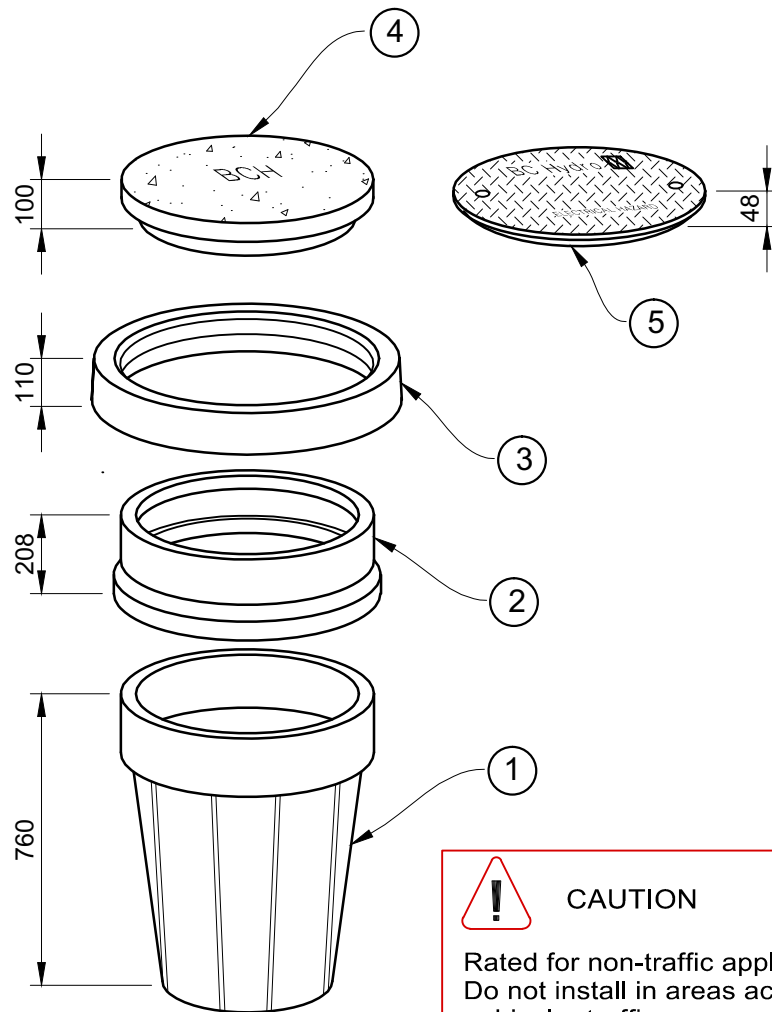
Reference Standards

ES54 C0-02	Vaults, General Notes
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 W1-01	Excavation and Backfill
ES53 N3-01	Service Box Installation Details – Electrical Service Box Capacities

REVISIONS: R.4 - REMOVED LIFTING HOLES, BAR AND 300 MM RISER. ADDED TEXT BOX PG1. OCT '18 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD 	555 SERVICE BOX ROADWAY DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: JUN 1991		PAGE 3 OF 3	ES54 B2-04.03
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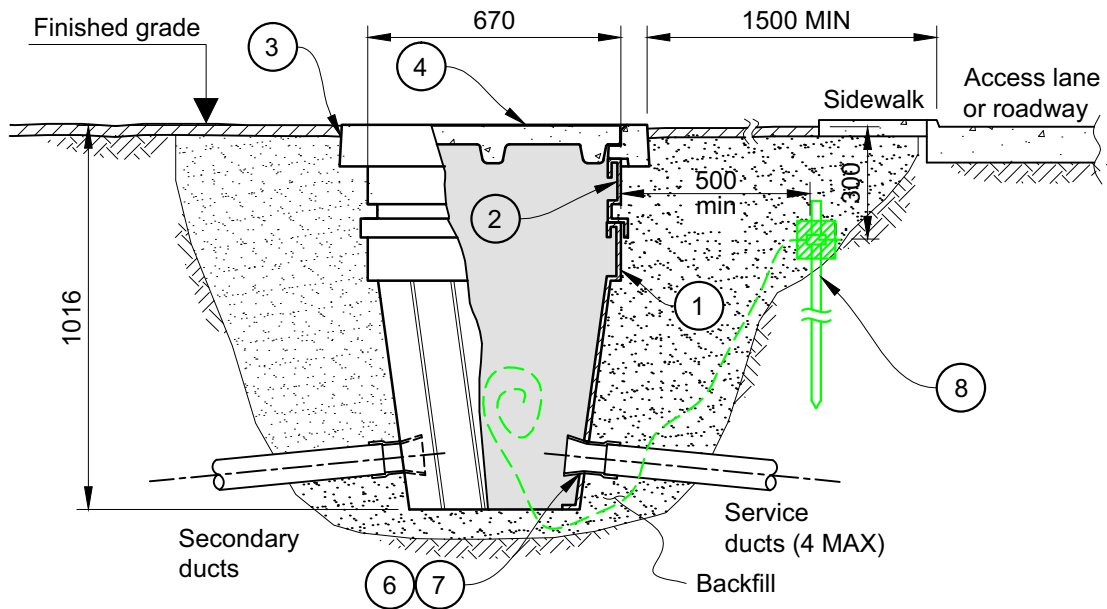
REVISIONS: R.6 - METHODS A AND B ELIMINATED, CAST IRON COVER ADDED. MAR '16 MK



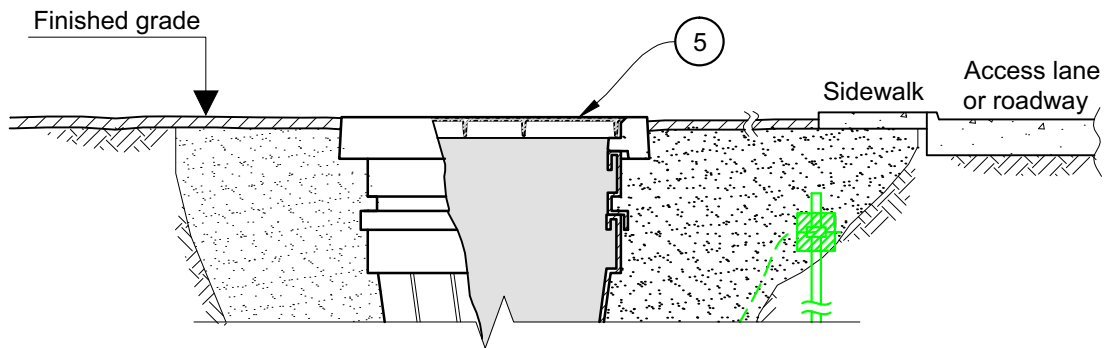
CAUTION

Rated for non-traffic applications only.
Do not install in areas accessible by
vehicular traffic

DESIGNED  M. KELVIN	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2017-02-15	LIGHTWEIGHT SERVICE BOX SMALL NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2016 REPLACES: JAN 1999 ORIGINALLY ISSUED: MAR 1980		PAGE 1 OF 3	ES54 B3-01.01
					R 6



Option 1: Precast Cover



Option 2: Cast-Iron Cover

REVISIONS: R.6 - METHODS A AND B ELIMINATED, CAST IRON COVER ADDED. MAR '16 MK

DESIGNED  M. KELVIN	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2017-02-15	LIGHTWEIGHT SERVICE BOX SMALL NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2016 REPLACES: JAN 1999 ORIGINALLY ISSUED: MAR 1980		PAGE 2 OF 3	ES54 B3-01.02
					R 6

Notes

1. Excavation and backfilling shall comply with W1-01.
2. Grounding shall comply with R2-01.
3. Duct entry shall comply with H1-06.
4. Cast-iron covers should be used for cover replacements.
5. A maximum of one (1) riser may be used for grade changes.

Bill of Material

Item	Description	Catalogue ID	Quantity	Supplied By
1	Small lightweight service box	400-0485	1	BC Hydro
2	Small lightweight riser	400-0481	1	BC Hydro
3	Small concrete collar	400-0484	1	BC Hydro
4 OR	Small concrete cover	400-0483	1	BC Hydro
5*	Small cast-iron cover	96008858	1	BC Hydro
6	75 mm bell ends	401-0183	Specified by Designer	Contractor
OR	100 mm bell ends	96021454		
7	75 mm duct plugs	401-0197	Specified by Designer	Contractor
OR	100 mm duct plugs	96021457		
8	Grounding kit	412-0022	1	BC Hydro
	5/8" x 8' ground rod	420-1093	1	BC Hydro

*Note: Item 5 is optional, selected by Designer, per applicable CUG. For more information, see Distribution Standards Equipment Advisory EA2012-010 R1 – Secondary Services Plastic Boxes Maintenance and New Replacement Covers.

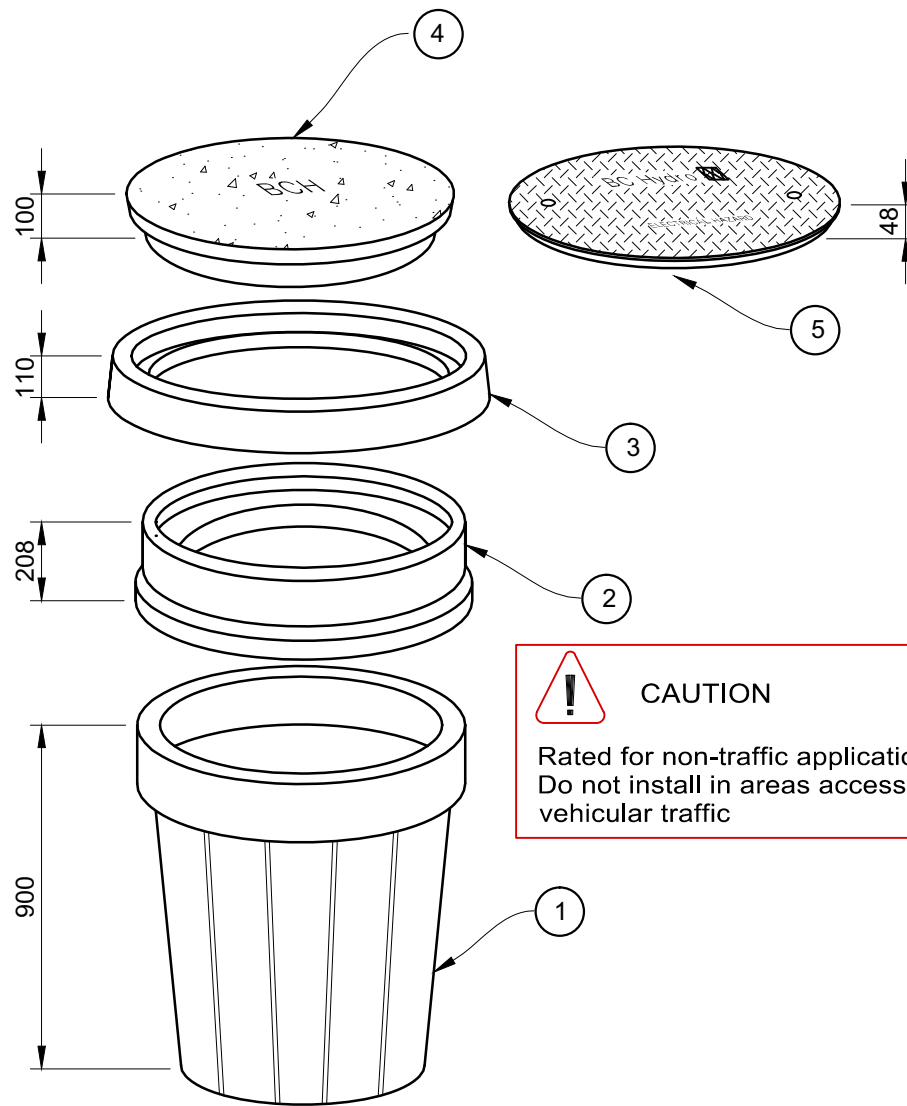
Reference Standards

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 W1-01	Excavation and Backfill
ES53 N3-01	Service Box Installation Details – Electrical Service Box Capacities

REVISIONS: R.6 - METHODS A AND B ELIMINATED, CAST IRON COVER ADDED. MAR '16 MK

DESIGNED  M. KELVIN	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2017-02-15	LIGHTWEIGHT SERVICE BOX SMALL NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2016 REPLACES: JAN 1999 ORIGINALLY ISSUED: MAR 1980	PAGE 3 OF 3		

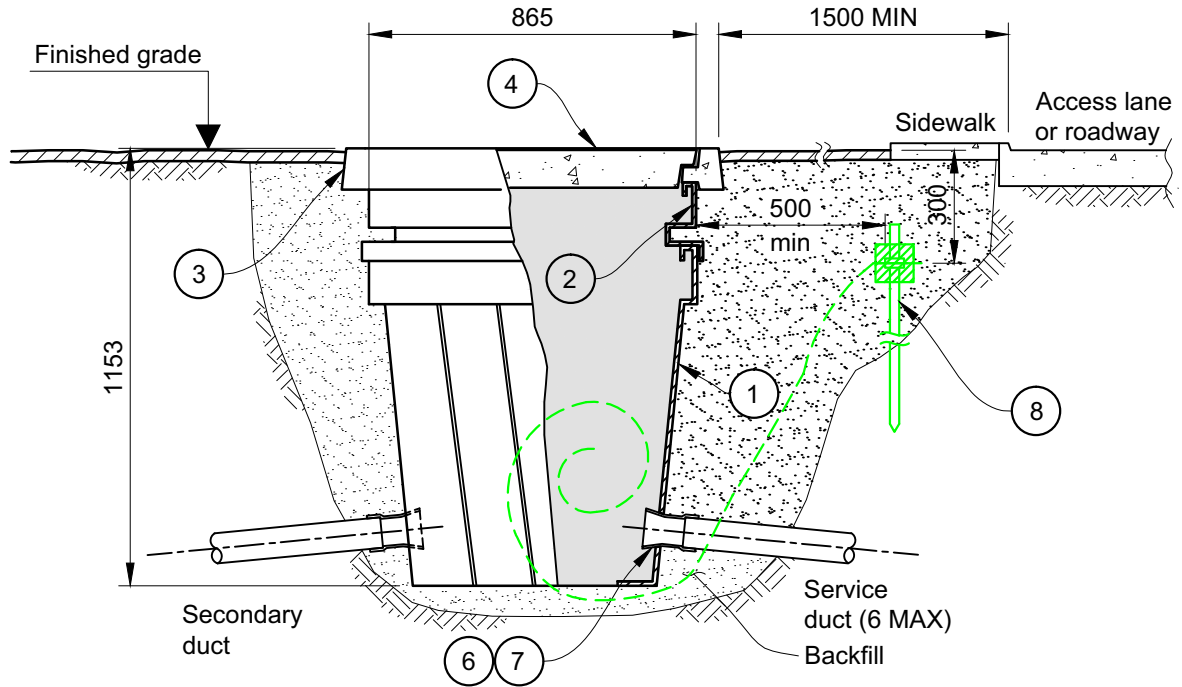
REVISIONS: R.1 - METHODS A AND B ELIMINATED, CAST IRON COVER ADDED. MAR '16 MK



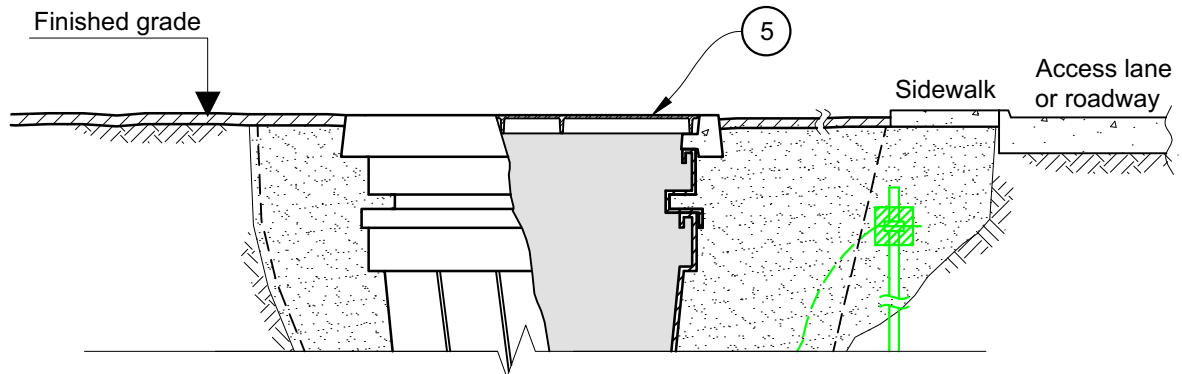
CAUTION

Rated for non-traffic applications only.
Do not install in areas accessible by
vehicular traffic

DESIGNED  M. KELVIN	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2017-02-15	LIGHTWEIGHT SERVICE BOX LARGE NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2016 REPLACES: JAN 1999 ORIGINALLY ISSUED: JAN 1999		PAGE 1 OF 3	ES54 B3-02.01
					R 1



Option 1: Precast Cover



Option 2: Cast-Iron Cover

REVISIONS: R.1 - METHODS A AND B ELIMINATED, CAST IRON COVER ADDED. MAR '16 MK

DESIGNED  M. KELVIN	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2017-02-15	LIGHTWEIGHT SERVICE BOX LARGE NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2016 REPLACES: JAN 1999 ORIGINALLY ISSUED: JAN 1999		PAGE 2 OF 3	ES54 B3-02.02
					R 1

Notes

1. Excavation and backfilling shall comply with W1-01.
2. Grounding shall comply with R2-01.
3. Duct entry shall comply with H1-06.
4. Cast-iron covers should be used for cover replacements.
5. A maximum of one (1) riser may be used for grade changes.

Bill of Material

Item	Description	Catalogue ID	Quantity	Supplied By
1	Large lightweight service box	400-0486	1	BC Hydro
2	Large lightweight riser	400-0482	1	BC Hydro
3	Large concrete collar	400-0494	1	BC Hydro
4 OR	Large concrete cover	400-0493	1	BC Hydro
5*	Large cast-iron cover	96008857	1	BC Hydro
6	75 mm bell ends	401-0183	Specified by	Contractor
OR	100 mm bell ends	96021454	Designer	Contractor
7	75 mm duct plugs	401-0197	Specified by	Contractor
OR	100 mm duct plugs	96021457	Designer	Contractor
8	Grounding kit	412-0022	1	BC Hydro
	5/8" x 8' ground rod	420-1093	1	BC Hydro

*Note: Item 5 is optional, selected by Designer, per applicable CUG. For more information, see Distribution Standards Equipment Advisory EA2012-010 R1 – Secondary Services Plastic Boxes Maintenance and New Replacement Covers.

Reference Standards

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 W1-01	Excavation and Backfill
ES53 N3-01	Service Box Installation Details – Electrical Service Box Capacities

REVISIONS: R.1 - METHODS A AND B ELIMINATED, CAST IRON COVER ADDED. MAR '16 MK

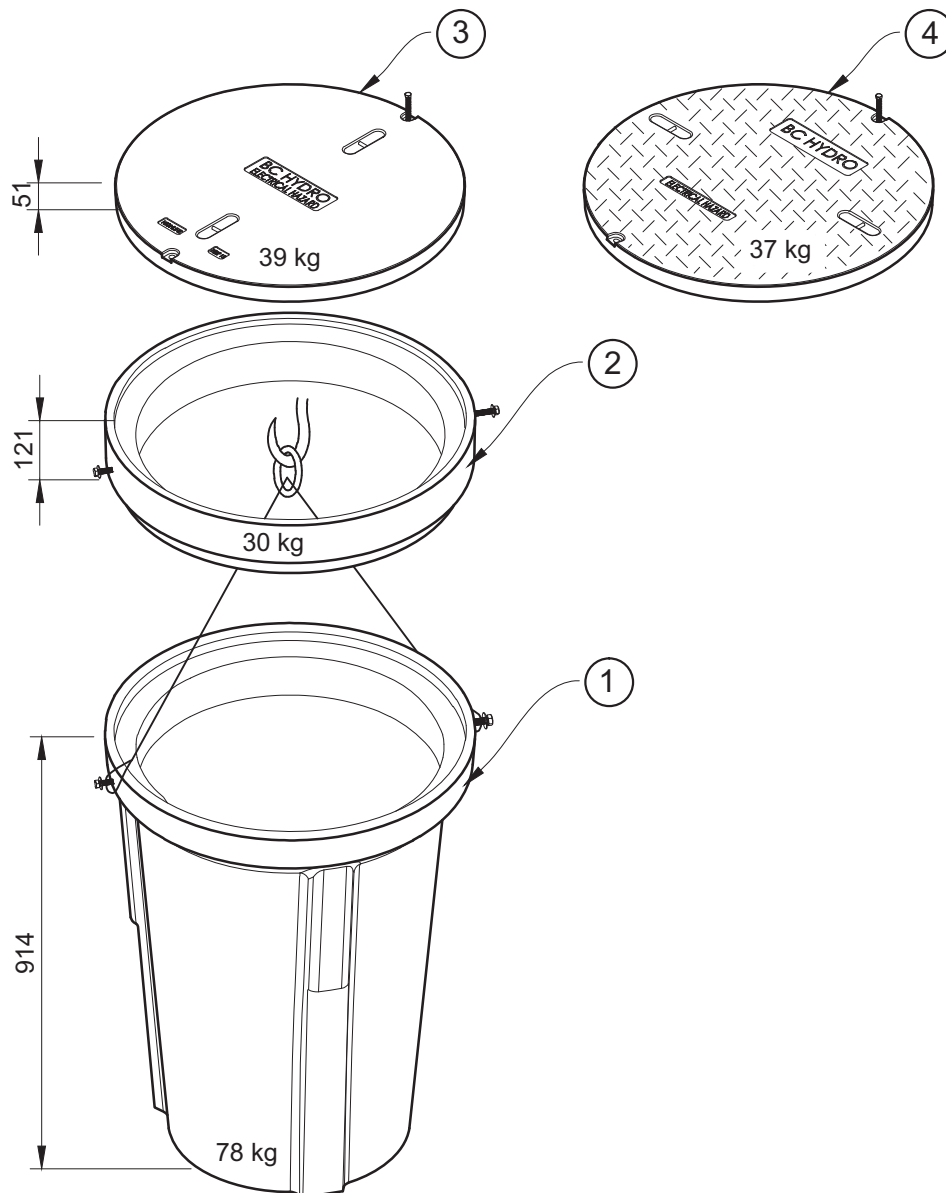
DESIGNED  M. KELVIN	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2017-02-15	LIGHTWEIGHT SERVICE BOX LARGE NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2016 REPLACES: JAN 1999 ORIGINALLY ISSUED: JAN 1999		PAGE 3 OF 3	ES54 B3-02.03
					R 1

Application

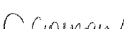
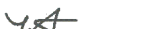
This standard applies to the installation of polymer concrete lightweight secondary service boxes.

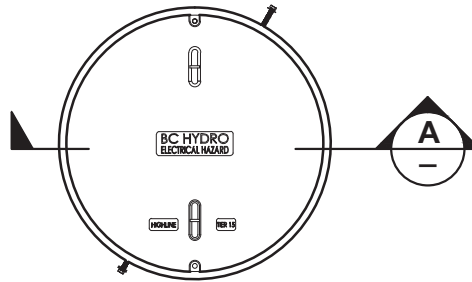
Lightweight boxes installed with polymer concrete risers and lids are rated for sidewalk duty applications. This includes sidewalks and other pedestrian areas separated from traffic by a barrier curb with a vertical face.

Lightweight boxes installed with polymer concrete risers and cast-iron covers are suitable for access lane duty applications. This includes areas for parking, private driveway, sidewalk or pedestrian walkway not separated from traffic by vertical curb, or other areas restricted to occasional non-deliberate heavy vehicular traffic with speed limited to 30 km/h.

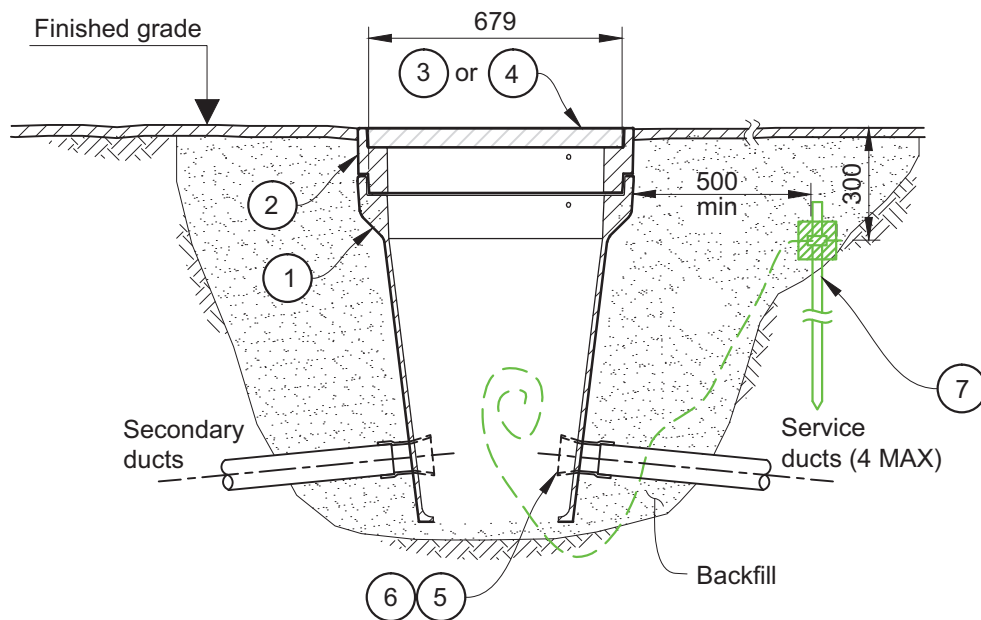


REVISIONS: R2 - REVISED LOAD DUTY, MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2021-03-03	LIGHTWEIGHT SERVICE BOX SMALL SIDEWALK / LANE DUTY		
DISTRIBUTION STANDARDS 		ISSUED: MAR 2021 REPLACES: APR 2018 ORIGINALLY ISSUED: OCT 2017		PAGE 1 OF 3	ES54 B3-03.01	R 2

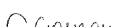


Plan



Section A

REVISIONS: R2 - REVISED LOAD DUTY, MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  G.E. CROWSON # 45713 BRITISH COLUMBIA ENGINEER 2021-03-03	LIGHTWEIGHT SERVICE BOX SMALL SIDEWALK / LANE DUTY	
DISTRIBUTION STANDARDS  BC Hydro		ISSUED: MAR 2021 REPLACES: APR 2018 ORIGINALLY ISSUED: OCT 2017		PAGE 2 OF 3	ES54 B3-03.02
				R 2	

Bill of Material

Item	Description	Material Number	Quantity	Supplied By
1	Small sidewalk duty lightweight service box	97002910	1	BC Hydro
2	Small sidewalk duty lightweight riser	97003109	1	BC Hydro
3 or 4*	Small polymer concrete cover Small cast-iron cover	97002912 96008858	1 1	BC Hydro
5	75 mm bell ends, or 100 mm bell ends	401-0183 96021454	Specified by designer	Contractor
6	75 mm duct plugs, or 100 mm duct plugs	401-0197 96021457	Specified by designer	Contractor
7	Grounding kit 5/8" x 8' ground rod	412-0022 420-1093	1 1	BC Hydro
8	Ø 1/2" x 3" 13 TPI S/S security bolt	96005248	2	BC Hydro

* Note: Item 4, cast-iron cover, may be selected by the designer for lane duty applications.

Notes

- Excavation and backfilling shall comply with W1-01.
- Grounding shall comply with R2-01.
- Duct entry shall comply with H1-06.
- A maximum of one additional riser may be used for grade changes.

Reference Standards

ES53 N3-01	Service Box Installation Details Electrical Service Box Capacities
ES54 H1-06	General Trenching Details Duct Entry Details
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 W1-01	Construction Materials Excavation and Backfill

REVISIONS: R2 - REVISED LOAD DUTY, MAR 2021 CC

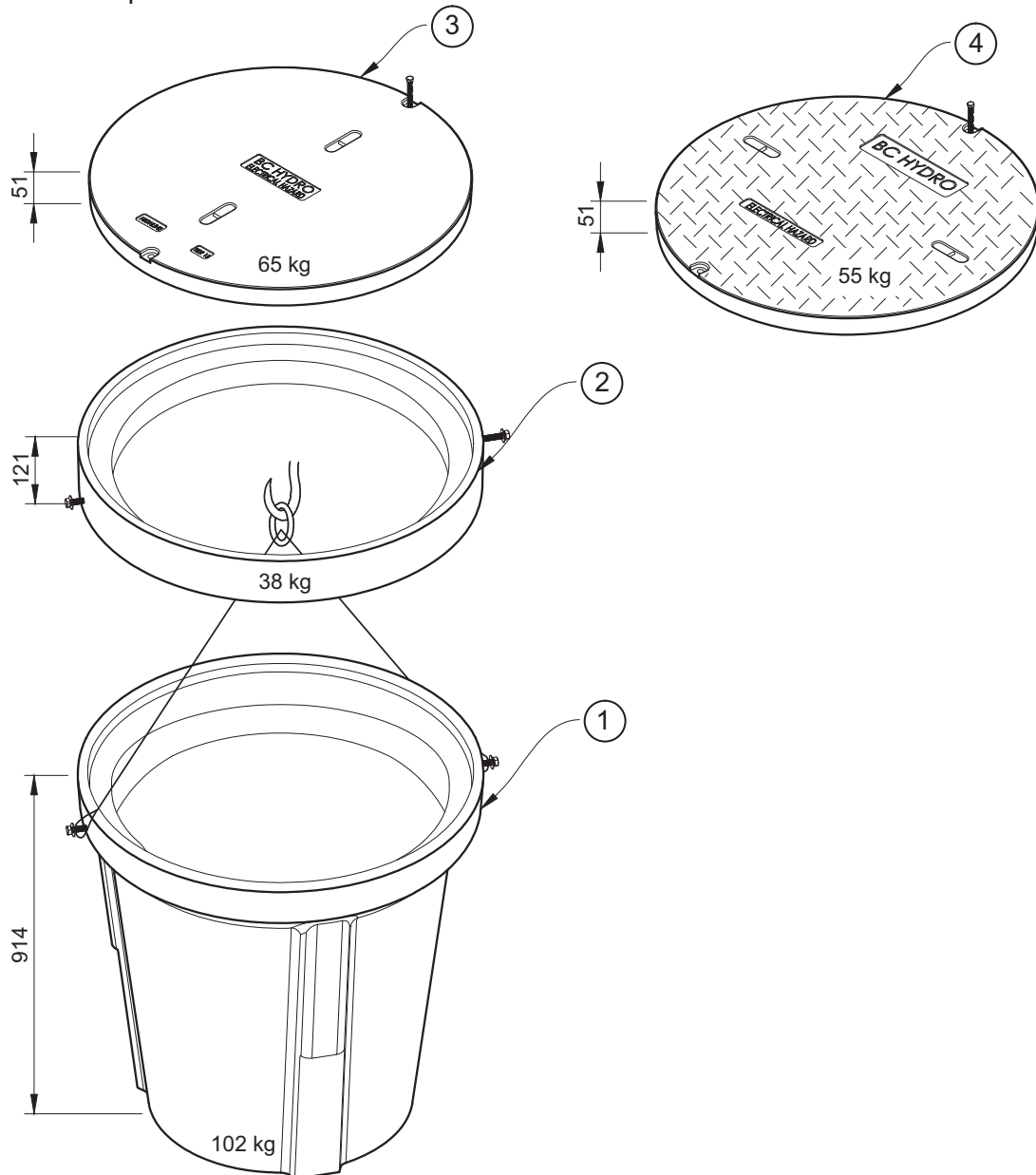
DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD 	LIGHTWEIGHT SERVICE BOX SMALL SIDEWALK / LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2021 REPLACES: APR 2018 ORIGINALLY ISSUED: OCT 2017		PAGE 3 OF 3	ES54 B3-03.03
					R 2

Application

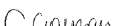
This standard applies to the installation of polymer concrete lightweight secondary service boxes.

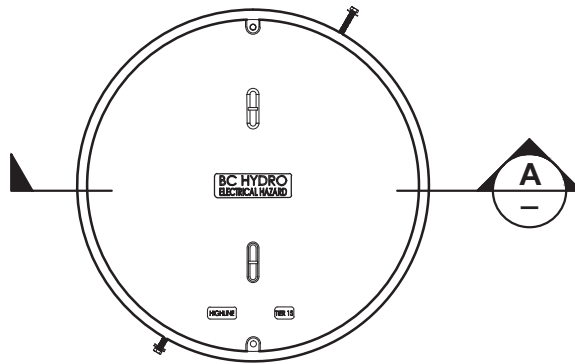
Lightweight boxes installed with polymer concrete risers and lids are rated for sidewalk duty applications. This includes sidewalks and other pedestrian areas separated from traffic by a barrier curb with a vertical face.

Lightweight boxes installed with polymer concrete risers and cast-iron covers are suitable for access lane duty applications. This includes areas for parking, private driveway, sidewalk or pedestrian walkway not separated from traffic by vertical curb, or other areas restricted to occasional non-deliberate heavy vehicular traffic with speed limited to 30 km/h.

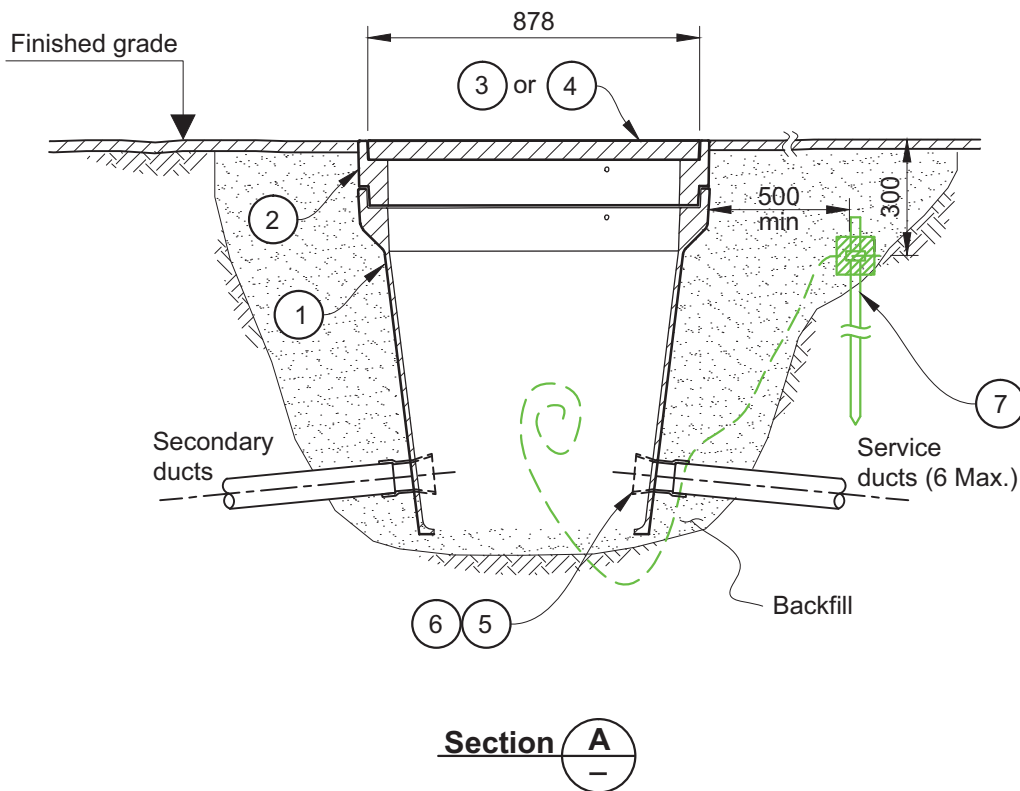


REVISIONS: R3 - REVISED LOAD DUTY, MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON # 45713 BRITISH COLUMBIA ENGINEER 2021-03-03	LIGHTWEIGHT SERVICE BOX LARGE SIDEWALK / LANE DUTY	
DISTRIBUTION STANDARDS  BC Hydro		ISSUED: MAR 2021 REPLACES: APR 2018 ORIGINALLY ISSUED: OCT 2017		PAGE 1 OF 3	ES54 B3-04.01
				R	3

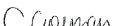


Plan



Section A

REVISIONS: R3 - REVISED LOAD DUTY, MAR 2021 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  G.E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2021-03-03	LIGHTWEIGHT SERVICE BOX LARGE SIDEWALK / LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2021 REPLACES: APR 2018 ORIGINALLY ISSUED: OCT 2017		PAGE 2 OF 3	ES54 B3-04.02
				R 3	

Bill of Material

Item	Description	Material Number	Quantity	Supplied By
1	Large sidewalk duty lightweight service box	97002911	1	BC Hydro
2	Large sidewalk duty lightweight riser	97003110	1	BC Hydro
3 or 4*	Large polymer concrete cover Large cast-iron cover	97002913 96008857	1 1	BC Hydro
5	75 mm bell ends, or 100 mm bell ends	401-0183 96021454	Specified by designer	Contractor
6	75 mm duct plugs, or 100 mm duct plugs	401-0197 96021457	Specified by designer	Contractor
7	Grounding kit 5/8" x 8' ground rod	412-0022 420-1093	1 1	BC Hydro
8	Ø 1/2" x 3" 13 TPI S/S security bolt	96005248	2	BC Hydro

* Note: Item 4, cast-iron cover, may be selected by the designer for lane duty applications.

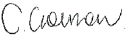
Notes

- Excavation and backfilling shall comply with W1-01.
- Grounding shall comply with R2-01.
- Duct entry shall comply with H1-06.
- A maximum of one additional riser may be used for grade changes.

Reference Standards

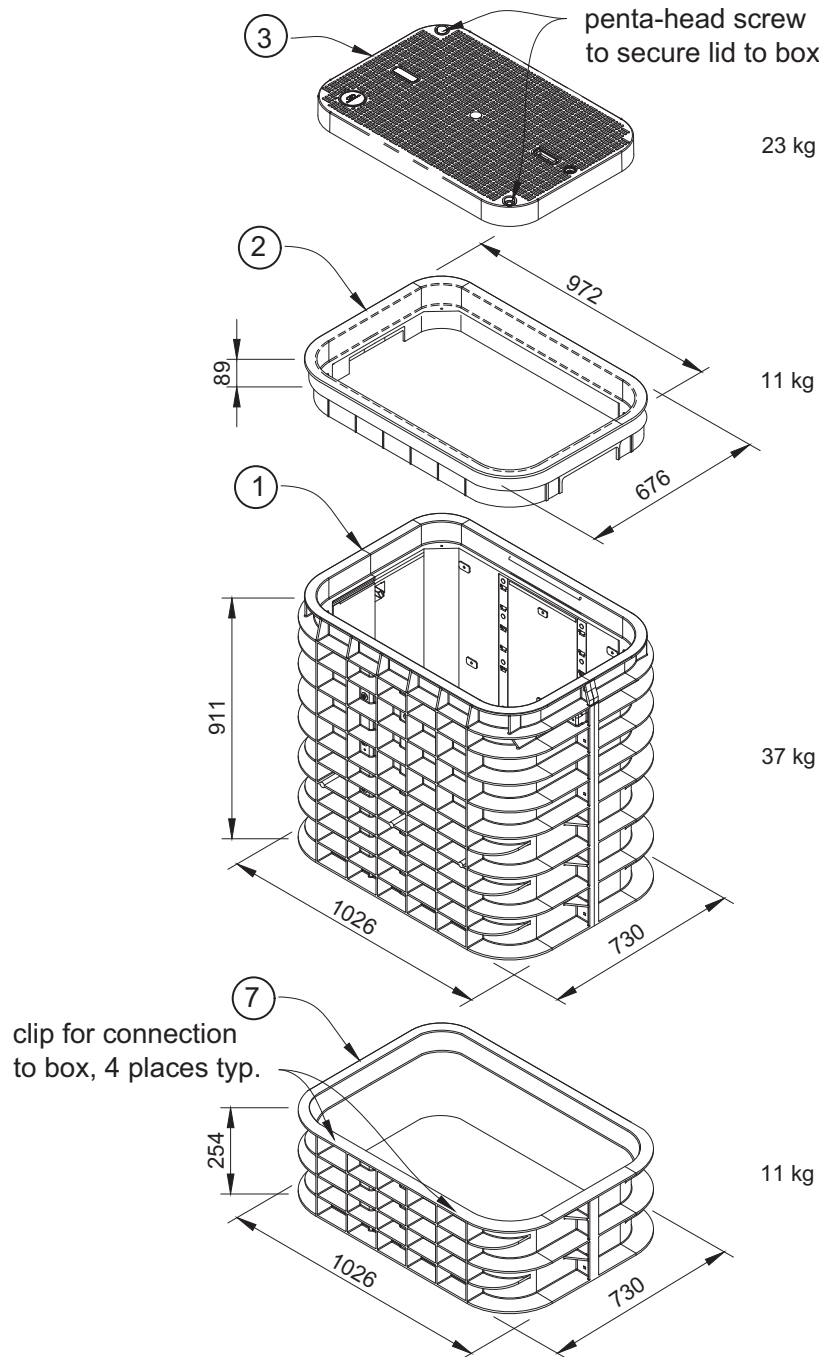
ES53 N3-01	Service Box Installation Details Electrical Service Box Capacities
ES54 H1-06	General Trenching Details Duct Entry Details
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 W1-01	Construction Materials Excavation and Backfill

REVISIONS: R3 - REVISED LOAD DUTY, MAR 2021 CC

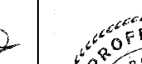
DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER	LIGHTWEIGHT SERVICE BOX LARGE SIDEWALK / LANE DUTY		
DISTRIBUTION STANDARDS 		ISSUED: MAR 2021 REPLACES: APR 2018 ORIGINALLY ISSUED: OCT 2017		PAGE 3 OF 3	ES54 B3-04.03	R 3

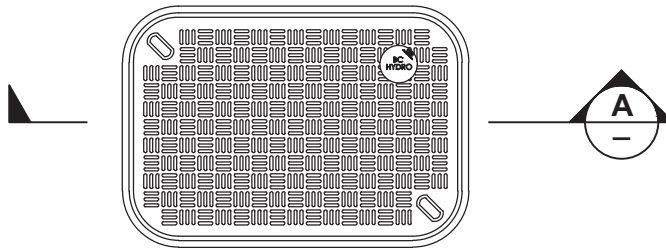
Application

This box is intended as a replacement for old secondary service boxes installed in residential utility corridors with limited space where a 332 box cannot fit. 2436 boxes installed with polymer concrete risers and lids are rated for access lane duty applications in accordance with ES54-U1-02.

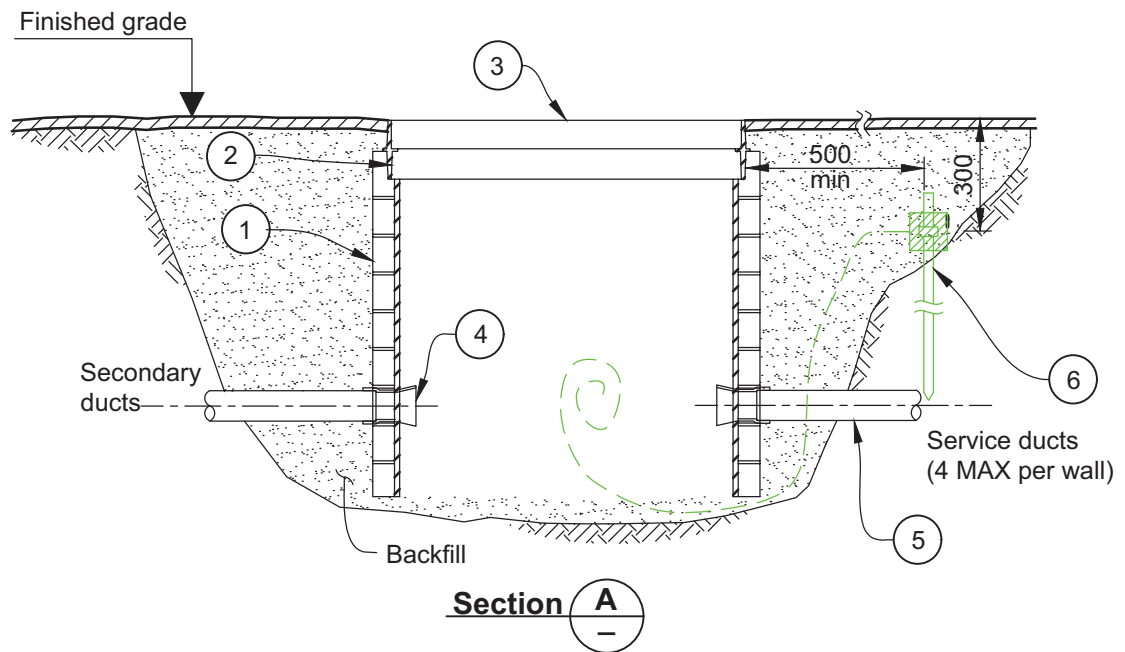


REVISIONS: R1 - UPDATED BILL OF MATERIALS. MAY 2021 LS

DESIGNED  L. STEVANOVIC	RECOMMENDED  C. CROWSON	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  L. STEVANOVIC BRITISH COLUMBIA ENGINEER May. 20 2021	LIGHTWEIGHT SERVICE BOX RECTANGULAR TYPE 2436 LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAY 2021 REPLACES: DEC 2020 ORIGINALLY ISSUED: DEC 2020		PAGE 1 OF 4	ES54 B3-05.01
					R 1

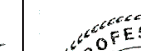


Plan



Section A

REVISIONS: R1 - UPDATED BILL OF MATERIALS. MAY 2021 LS

DESIGNED  L. STEVANOVIC	RECOMMENDED  C. CROWSON	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  L. STEVANOVIC BRITISH COLUMBIA ENGINEER May. 20 2021	LIGHTWEIGHT SERVICE BOX RECTANGULAR TYPE 2436 LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAY 2021 REPLACES: DEC 2020 ORIGINALLY ISSUED: DEC 2020		PAGE 2 OF 4	ES54 B3-05.02
				R 1	

Notes

1. Field cut holes for bell ends shall not be oversized and shall not cut the ribs.
2. Excavation and backfilling shall comply with W1-01.
3. Grounding shall comply with R2-01.
4. Duct entry shall comply with H1-06.
5. A maximum of one top riser may be installed for future grade changes.
6. If overbuilding an existing primary, cut the box bottom as minimally as necessary, and use a pure plain F1 class concrete footing to cover the entire base of the box.
7. If a deeper box is required, apply the following procedure:
 - a. Place box on extension;
 - b. Align edges and secure parts in place with vice grips;
 - c. Slide four clips (provided with the extension) over ribs at locations shown on page 1; and
 - d. Use mallet to knock clips all the way in on the ribs.

Bill of Material

Item	Description	Material Number	Quantity	Supplied By
1,2,3	2436 service box, riser, and lid *	97007034	1	BC Hydro
1,3	2436 service box and lid *	97008948	As needed	BC Hydro
1	2436 service box	N/A	N/A	N/A
2	2436 riser *	97007035	As needed	BC Hydro
3	2436 lid *	97007036	As needed	BC Hydro
4	75 mm bell ends, or 100 mm bell ends	401-0183 96021454	Specified by designer	Contractor
5	75 mm duct plugs, or 100 mm duct plugs	401-0197 96021457	Specified by designer	Contractor
6	Grounding kit 5/8" x 8' ground rod	412-0022 420-1093	1 1	BC Hydro
7	2436 box extension c/w clips (optional)	97008223	1	BC Hydro

* Box is supplied with riser and lid as a kit. Individual material numbers for lid and riser are used if needed for maintenance replacement

REVISIONS: R1 - UPDATED BILL OF MATERIALS. MAY 2021 LS

DESIGNED  L. STEVANOVIC	RECOMMENDED  C. CROWSON	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  L. STEVANOVIC BRITISH COLUMBIA ENGINEER May. 20 2021	LIGHTWEIGHT SERVICE BOX RECTANGULAR TYPE 2436 LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAY 2021 REPLACES: DEC 2020 ORIGINALLY ISSUED: DEC 2020		PAGE 3 OF 4	ES54 B3-05.03
					R 1

Reference Standards

ES53 N3-01	Service Box Installation Details Electrical Service Box Capacities
ES54 H1-06.05	General Trenching Details Duct Entry Details
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 U1-02	Design Criteria Design Loads
ES54 W1-01	Construction Materials Excavation and Backfill

REVISIONS: R1 - UPDATED BILL OF MATERIALS. MAY 2021 LS

DESIGNED  L. STEVANOVIC	RECOMMENDED  C. CROWSON	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  L. STEVANOVIC BRITISH COLUMBIA ENGINEER May. 20 2021	LIGHTWEIGHT SERVICE BOX RECTANGULAR TYPE 2436 LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: MAY 2021 REPLACES: DEC 2020 ORIGINALLY ISSUED: DEC 2020		PAGE 4 OF 4	ES54 B3-05.04
					R 1

Application

This standard applies to the installation of circular concrete secondary service boxes. Circular concrete service boxes installed with cast-iron covers are suitable for both sidewalk duty and access lane duty applications.

Sidewalk duty applications include:

- Sidewalks; and
- Other pedestrian areas separated from traffic by a barrier curb with a vertical face.

Lane duty applications include:

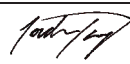
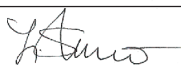
- Areas for parking;
- Private driveway;
- Sidewalk or pedestrian walkway not separated from traffic by vertical curb; and
- Other areas restricted to occasional non-deliberate heavy vehicular traffic with speed limited to 30 km/h.

Revision Notes

Updated item 1 description and material number in *Items Required* and removed extension unit (previous item 2). Updated note 4 to remove extension. Updated Figure 1 to show new higher service box base without extension. Updated number of service ducts allowed (removed 3 ducts max per window) in Figure 2. Substantive changed content is marked with green vertical revision lines in the left margin. This revision released concurrently with Standards and Equipment Advisory Information Bulletin 2025-002 *Revised ES54 Section B Pull and Splice, Service, and Junction Box Standards*.

Items Required

Item	Description	Material number	Quantity	Supplied by
1	Large circular concrete service box base	9701-1476	1	BC Hydro
2	Large circular concrete service box riser	9701-0150	1	BC Hydro
3	Large circular concrete service box collar	9701-0151	1	BC Hydro
4	Large cast-iron cover	9600-8857	1	BC Hydro
5	75 mm bell ends, or 100 mm bell ends	401-0183 9602-1454	Specified by designer	Contractor
6	75 mm duct plugs, or 100 mm duct plugs	401-0197 9602-1457	Specified by designer	Contractor
7	Grounding kit, and 5/8" x 8' ground rod	412-0022 420-1093	1 1	BC Hydro

Designed: J. Yang, P. Eng			Lightweight Service Box Circular Concrete Service Box	
Checked: J. Yang, P. Eng				
Reviewed: L. Stevanovic, P. Eng			DISTRIBUTION STANDARDS 	ES54 B3-06 R1
Approved: L. Stevanovic, P. Eng				

References

BC Hydro Distribution Standards

ES53 N3-01	Service Box Installation Details Electrical Service Box Capacities
ES54 H1-06	General Trenching Details Duct Entry Details
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 W1-01	Construction Materials Excavation and Backfill

Notes

1. Excavation and backfilling shall comply with ES54 W1-01.
2. Grounding shall comply with ES54 R2-01.
3. Duct entry shall comply with ES54 H1-06.
4. If using a standard configuration of one circular concrete service box, riser, and collar, a maximum of one additional riser may be used for grade changes.

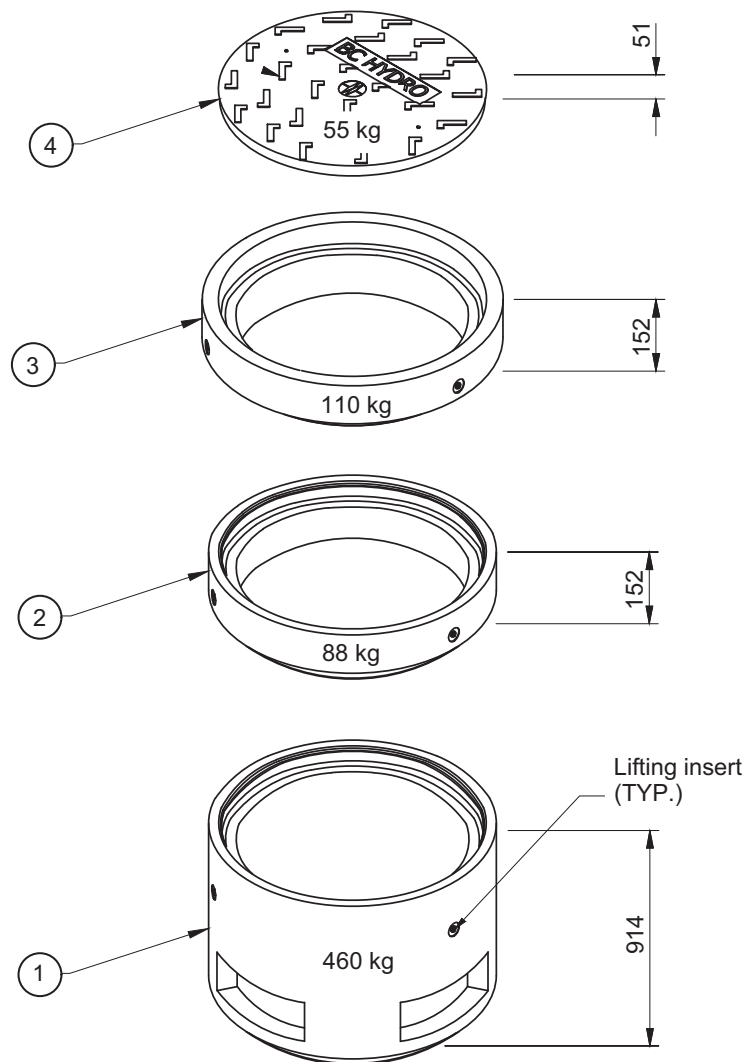


Figure 1 – Circular concrete service box

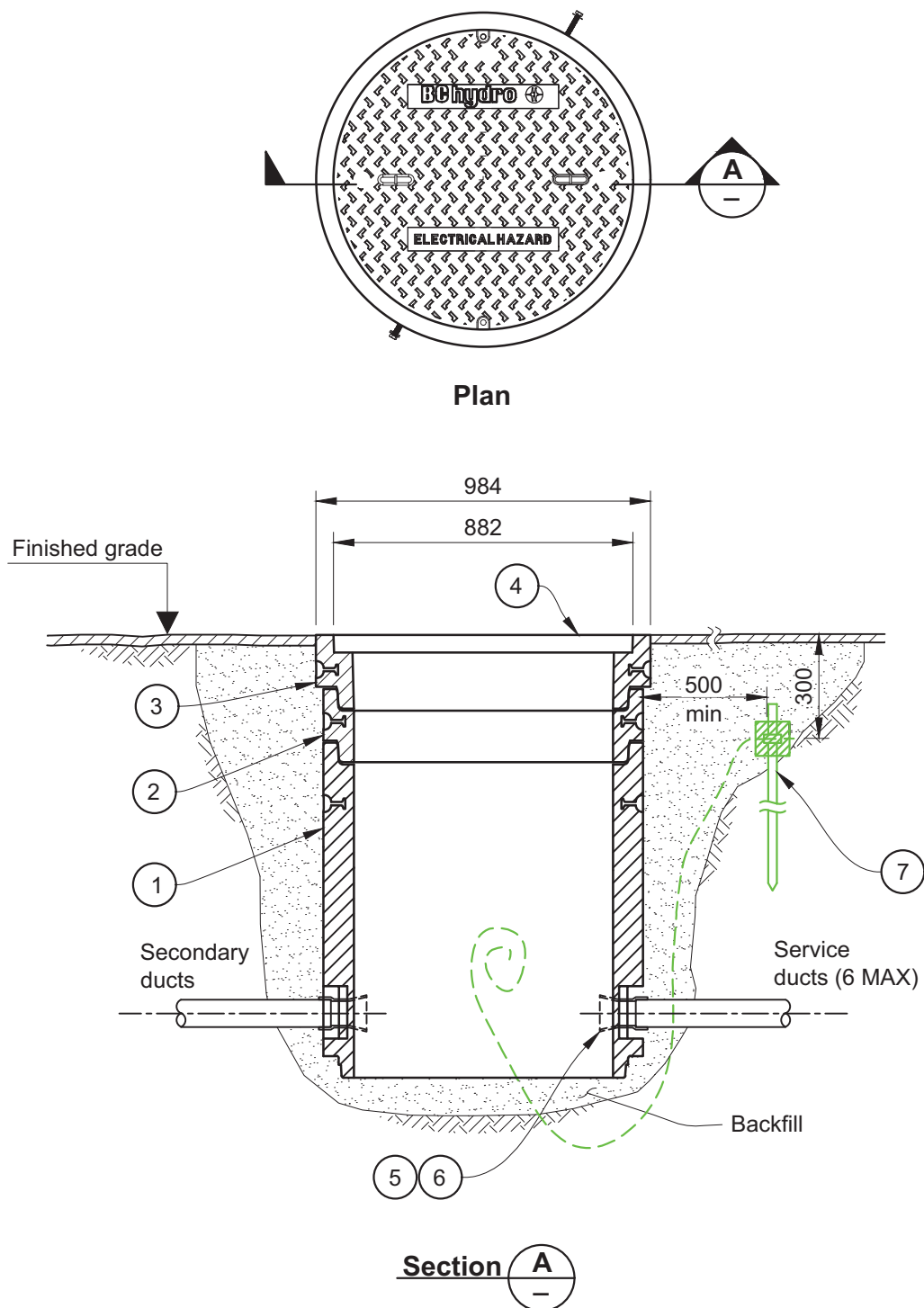
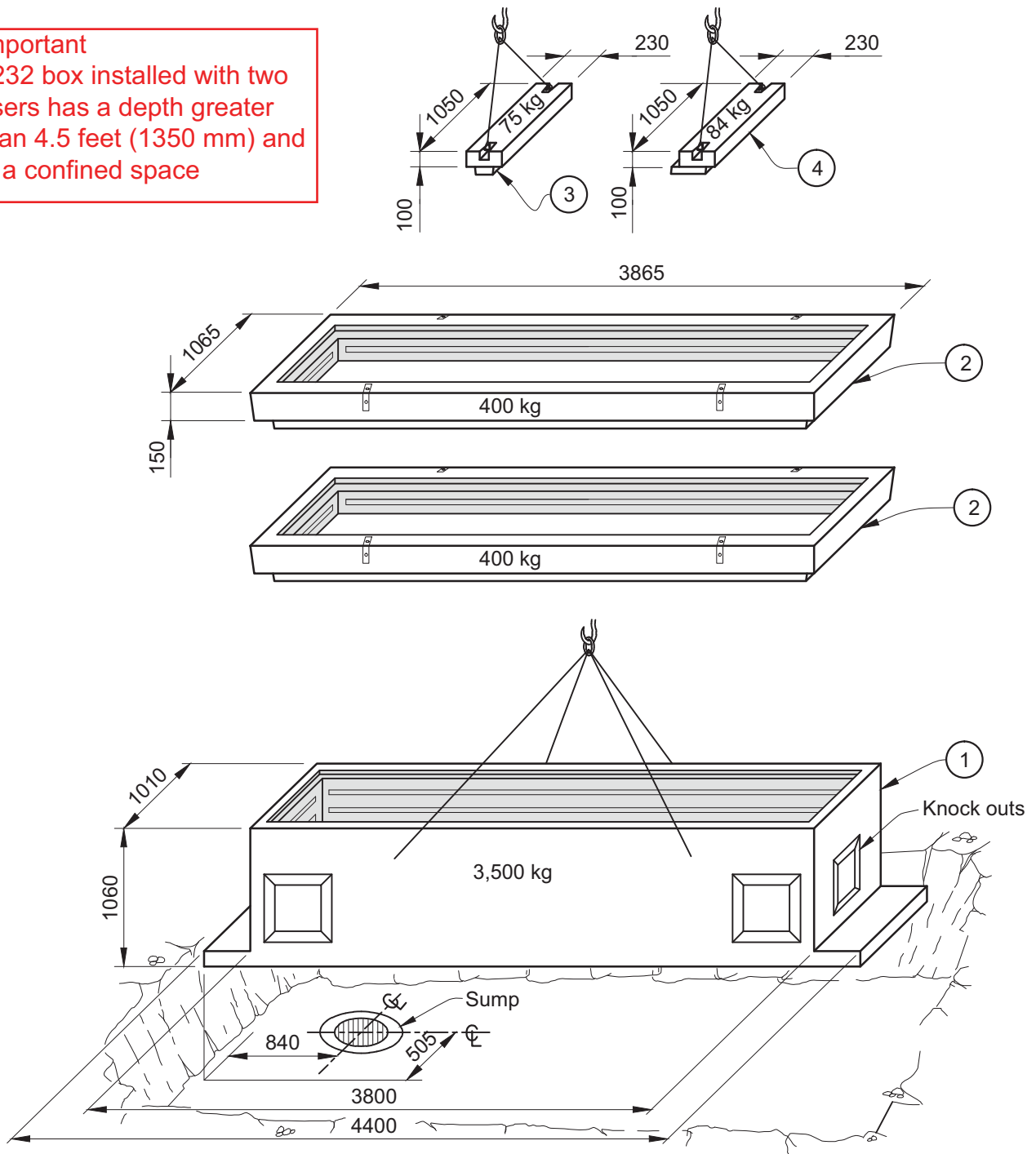


Figure 2 – Circular concrete service box, plan and section view

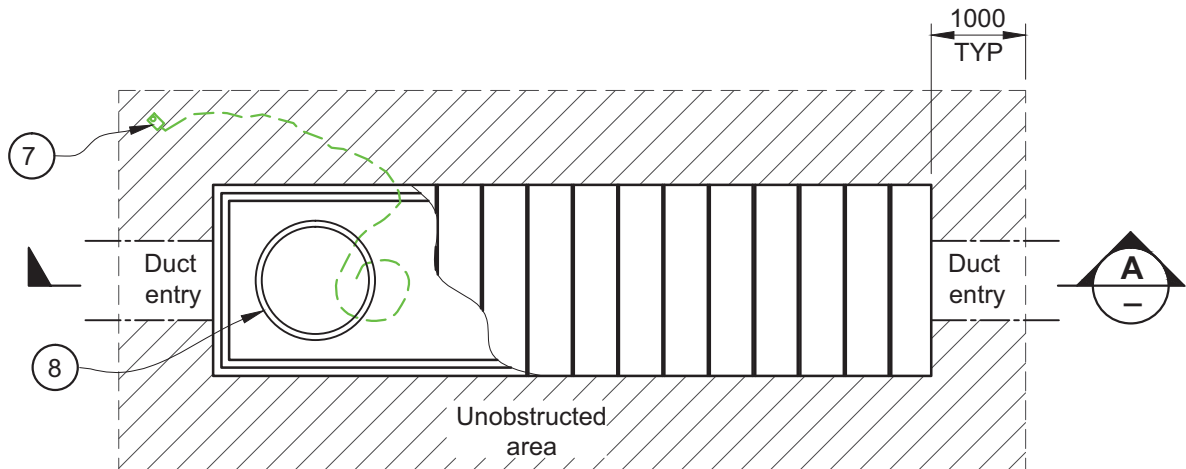
Important
1232 box installed with two risers has a depth greater than 4.5 feet (1350 mm) and is a confined space



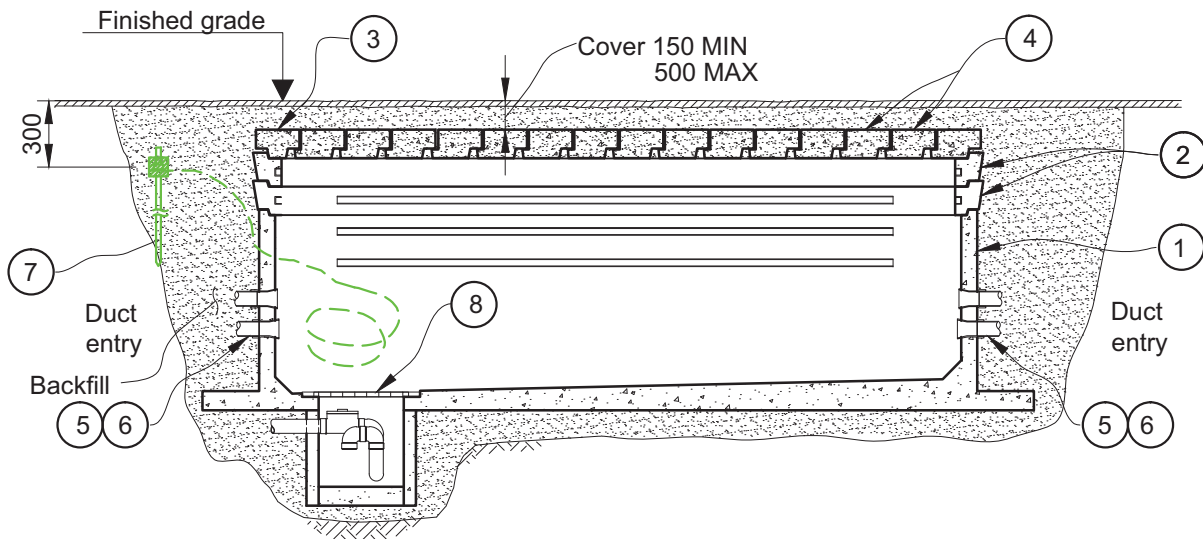
REVISIONS: R.0 - PREVIOUSLY IN B1-02. MAR '16 MK | R.1 - ADDED SECOND RISER. REMOVED LIFTING HOLES/BARS. OCT '18 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2018-10-30	1232 BOX PULL/SPLICE BOX NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 			ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: NOV 1989	PAGE 1 OF 3	ES54 B4-01.01
				R 1	

REVISIONS: R.0 - PREVIOUSLY IN B1-02. MAR '16 MK I R.1 - ADDED SECOND RISER. REMOVED LIFTING HOLES/BARS. OCT '18 CC



Plan



Section A

DESIGNED <i>C. Crowson</i> C. CROWSON	RECOMMENDED <i>L. Stevanovic</i> L. STEVANOVIC	ACCEPTED <i>F. Dennert</i> F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER	1232 BOX PULL/SPLICE BOX NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS BC Hydro		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: NOV 1989	PAGE 2 OF 3	ES54 B4-01.02	R 1

Notes

1. Excavation and backfilling shall comply with W1-01.
2. Sump and drain are optional, selected by Designer.
3. Grounding shall comply with R2-01.

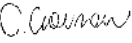
Bill of Material

Item	Description	Catalogue ID	Quantity	Supplied By
1	Splice or pull box type 1232	400-0915	1	BC Hydro
2	Riser type 1232	400-0984	2	BC Hydro
3	Type "A" slab	400-0960	1	BC Hydro
4	Type "B" slab	400-0961	15	BC Hydro
5	75 mm duct plugs	401-0197	Specified by Designer	Contractor
OR	100 mm duct plugs	96021457		Contractor
OR	125 mm duct plugs	96021459		BC Hydro
6	75 mm bell ends	401-0183	Specified by Designer	Contractor
OR	100 mm bell ends	96021454		Contractor
OR	125 mm bell ends	96021455		BC Hydro
7	Grounding kit	412-0022	1	BC Hydro
	$\frac{5}{8}$ " x 8' ground rod	420-1093	1	BC Hydro
8	Sump cover	400-0426	1	BC Hydro

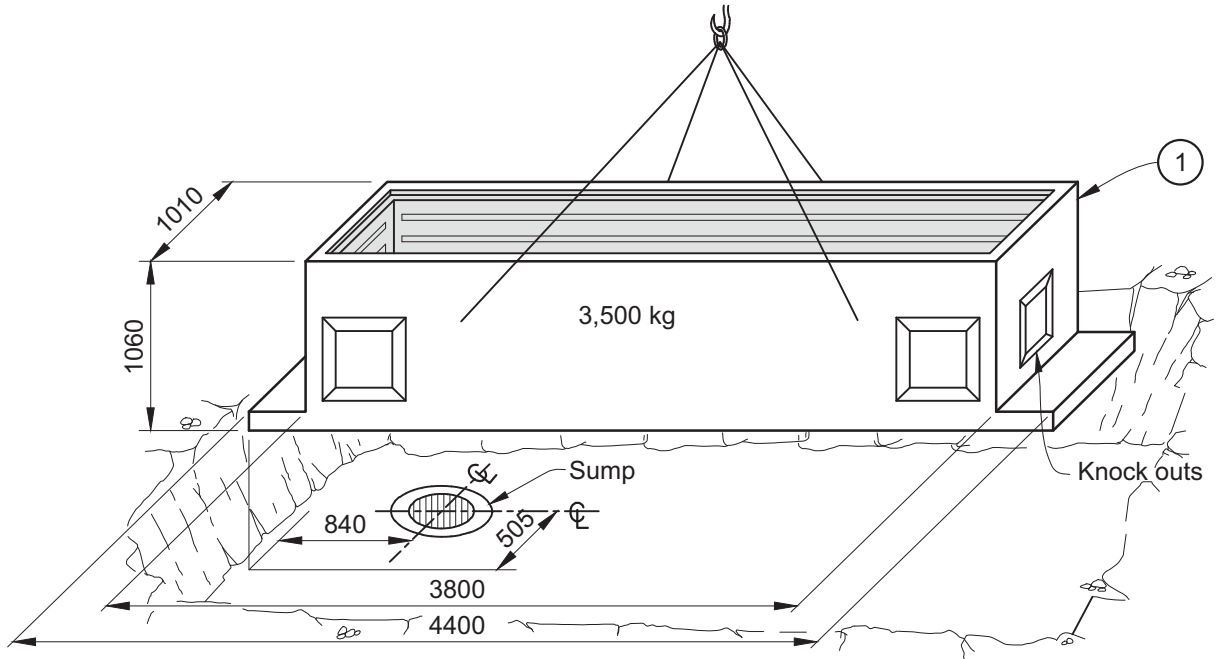
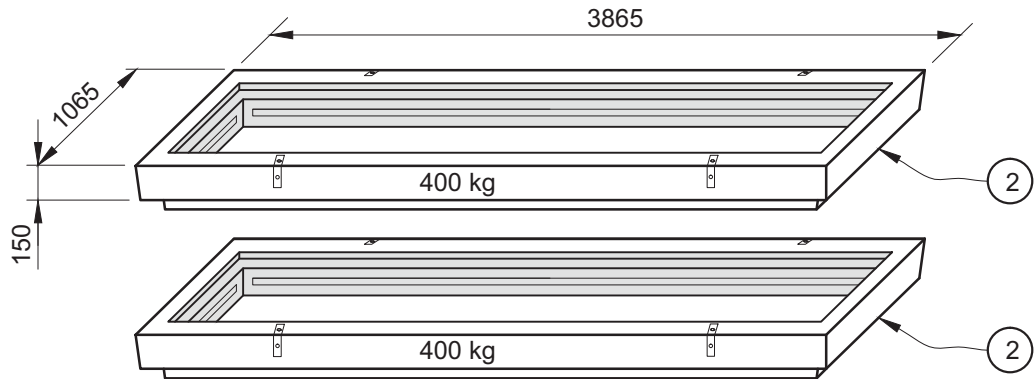
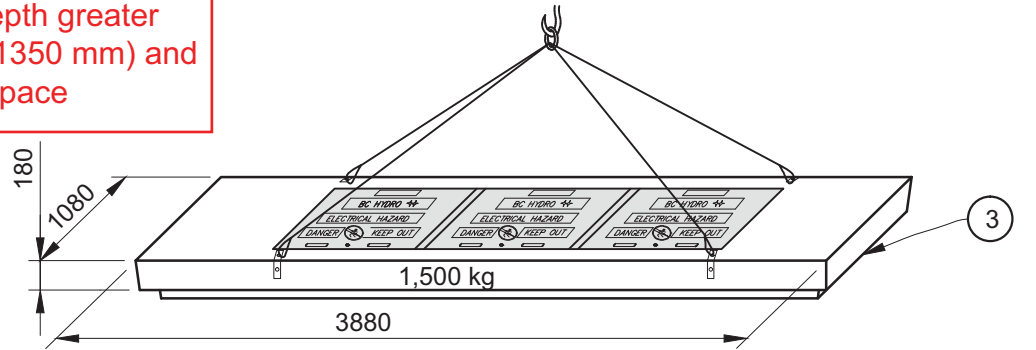
Reference Standards

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill

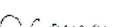
REVISIONS: R.0 - PREVIOUSLY IN B1-02. MAR '16 MK I R.1 - ADDED SECOND RISER. REMOVED LIFTING HOLES/BARS. OCT '18 CC

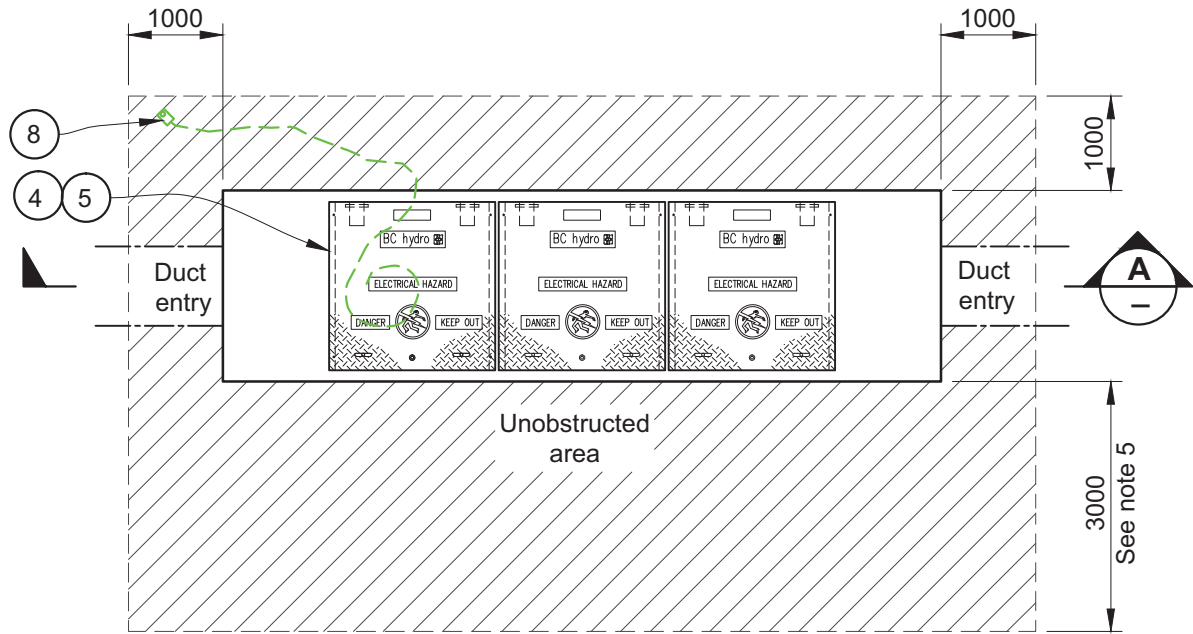
DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 PROFESSIONAL ENGINEER BRITISH COLUMBIA	1232 BOX PULL/SPLICE BOX NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: NOV 1989		PAGE 3 OF 3	ES54 B4-01.03
					R 1

Important
1232 box installed with two risers has a depth greater than 4.5 feet (1350 mm) and is a confined space

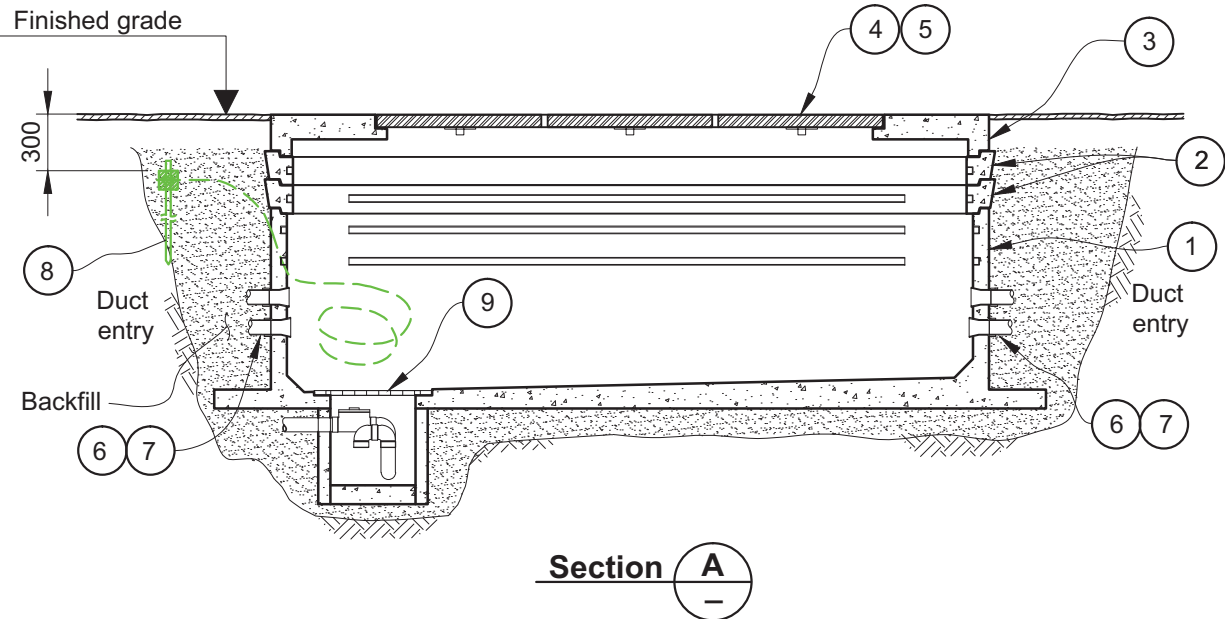


REVISIONS: R1: ADDED SECOND RISER, TEXT BOX AND NOTE 5, REMOVED LIFTING HOLES/BARS. OCT '18 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	1232 BOX PULL/SPLICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED:OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 1 OF 3	ES54 B4-02.01
					R 1

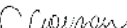


Plan



Section A

REVISIONS: R1: ADDED SECOND RISER, TEXT BOX AND NOTE 5, REMOVED LIFTING HOLES/BARS, OCT '18 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	1232 BOX PULL/SPLICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 2 OF 3	ES54 B4-02.02
					R 1

Notes

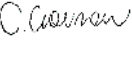
1. Excavation and backfilling shall comply with W1-01.
2. Sump and drain are optional, selected by Designer.
3. Grounding shall comply with R2-01.
4. Duct entry shall comply with H1-06.
5. Unobstructed area may be reduced to 1000 for pull/splice boxes.

Bill of Material

Item	Description	Catalogue ID	Quantity	Supplied By
1	Splice or pull box type 1232	400-0915	1	BC Hydro
2	Riser type 1232	400-0984	2	BC Hydro
3	Collar c/w frame type 1232	400-0916	1	BC Hydro
4	Lid	96007598	3	BC Hydro
5	Hardware for lid	412-0042	3	BC Hydro
6 OR OR	75 mm duct plugs 100 mm duct plugs 125 mm duct plugs	401-0197 96021457 96021459	Specified by Designer	Contractor Contractor BC Hydro or Contractor
7 OR OR	75 mm bell ends 100 mm bell ends 125 mm bell ends	401-0183 96021454 96021455	Specified by Designer	Contractor Contractor BC Hydro or Contractor
8	Grounding kit 5/8" x 8' ground rod	412-0022 420-1093	1 1	BC Hydro BC Hydro
9	Sump cover	400-0426	1	BC Hydro

Reference Standards

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill
ES53 D4-02	Three-Phase 1232 Junction Vaults (600 A/200 A)

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C.E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2018-10-30	1232 BOX PULL/SPLICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B4-02.03
					R 1

REVISIONS: R1: ADDED SECOND RISER, TEXT BOX AND NOTE 5, REMOVED LIFTING HOLES/BARS, OCT '18 CC

Application

This standard provides installation details for the non-traffic duty 832 pull and splice box.

Revision Notes

Added *Application* and *Revision Notes* sections. Removed grounding kit with ground rod from *Items Required* and updated quantity of item 4. Updated Figure 1 due to changes in product design including weights, dimensions, and lifting mechanism to incorporate manufacturers' lifting clutches. Updated Figures 2 and 3 to remove ground rods and show the doubled width of slabs. Substantive changed content is marked by green vertical revision lines in the left margin. This standard released concurrently with Standards and Equipment Advisory Information Bulletin 2025-002 *Revised ES54 Section B Pull and Splice, Service, and Junction Box Standards*.

Items Required

Item	Description	Material no.	Quantity	Supplied by
1	Splice or pull box type 832	400-0990	1	BC Hydro
2	Riser type 832	400-0992	1	BC Hydro
3	Type A slab	400-0960	1	BC Hydro
4	Type B slab	400-0961	5	BC Hydro
5	75 mm duct plugs, or 100 mm duct plugs, or 125 mm duct plugs	401-0197 9602-1457 9602-1459	Specified by designer	Contractor Contractor BC Hydro or contractor
6	75 mm bell ends, or 100 mm bell ends, or 125 mm bell ends	401-0183 9602-1454 9602-1455	Specified by designer	Contractor Contractor BC Hydro or contractor
7	Sump cover	400-0426	1	BC Hydro

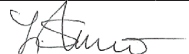
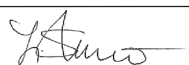
References

BC Hydro Distribution Standards

ES54 section G	Drainage Assemblies
ES54 H1-06	General Trenching Details Duct Entry Details
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 W1-01	Construction Materials Excavation and Backfill

Notes

- Excavation and backfill shall comply with ES54 W1-01.
- Drainage shall comply with ES54 section G.

Designed: J. Yang, P. Eng			832 Pull and Splice Box Non-Traffic Duty	
Checked: E. Eliasov, P. Eng				
Reviewed: L. Stevanovic, P. Eng			DISTRIBUTION STANDARDS 	ES54 B5-01 R2
Approved: L. Stevanovic, P. Eng				
		Issued: 2025-05-07 Effective: 2025-05-07		

3. Grounding shall comply with ES54 R2-01.
4. Duct entry shall comply with ES54 H1-06.

Important: Non-traffic duty 832 box installed with more than 165 mm of earth cover has a depth greater than 4.5 feet (1350 mm) and is a confined space

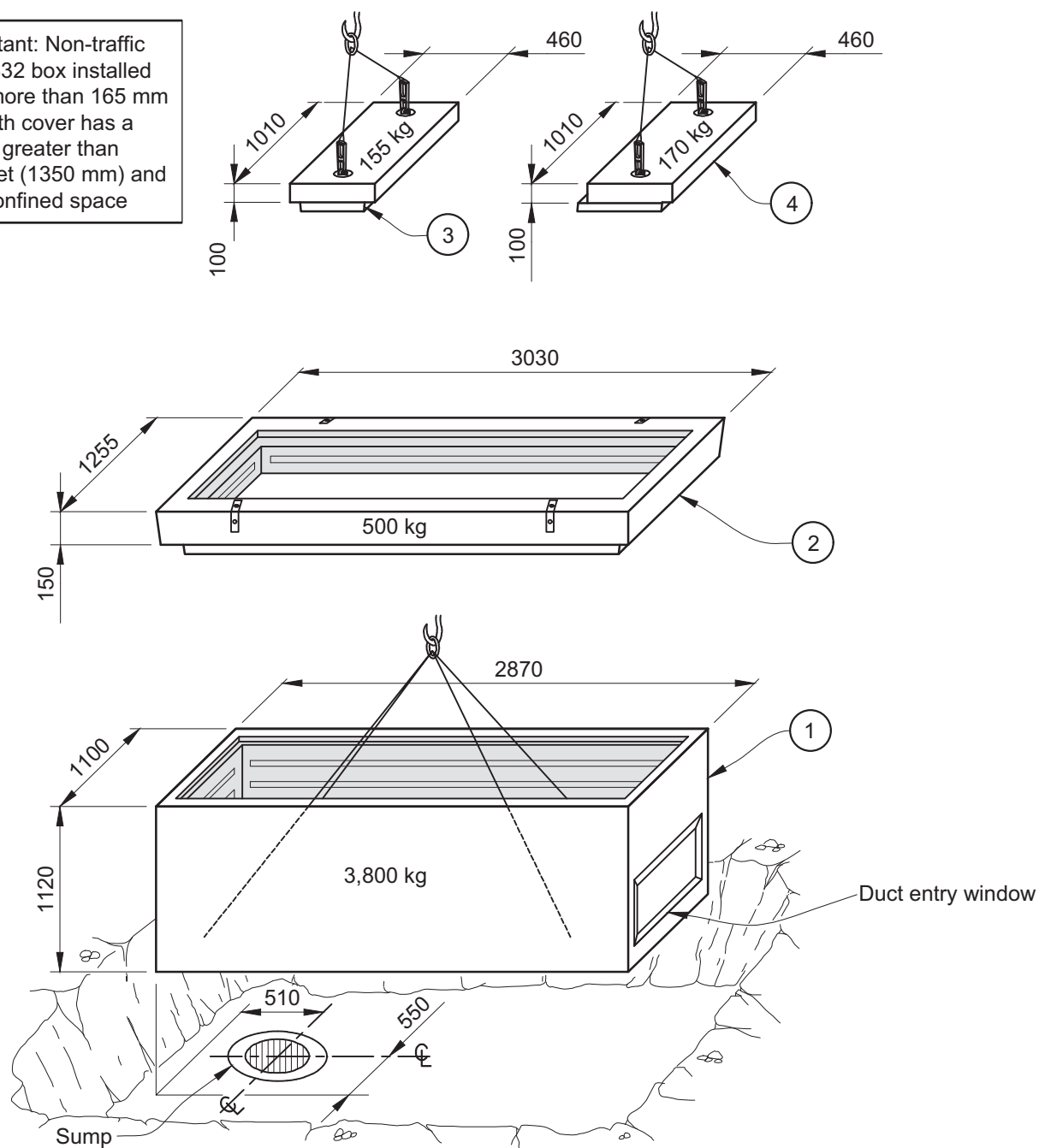


Figure 1 – 832 non-traffic duty precast concrete box installation details

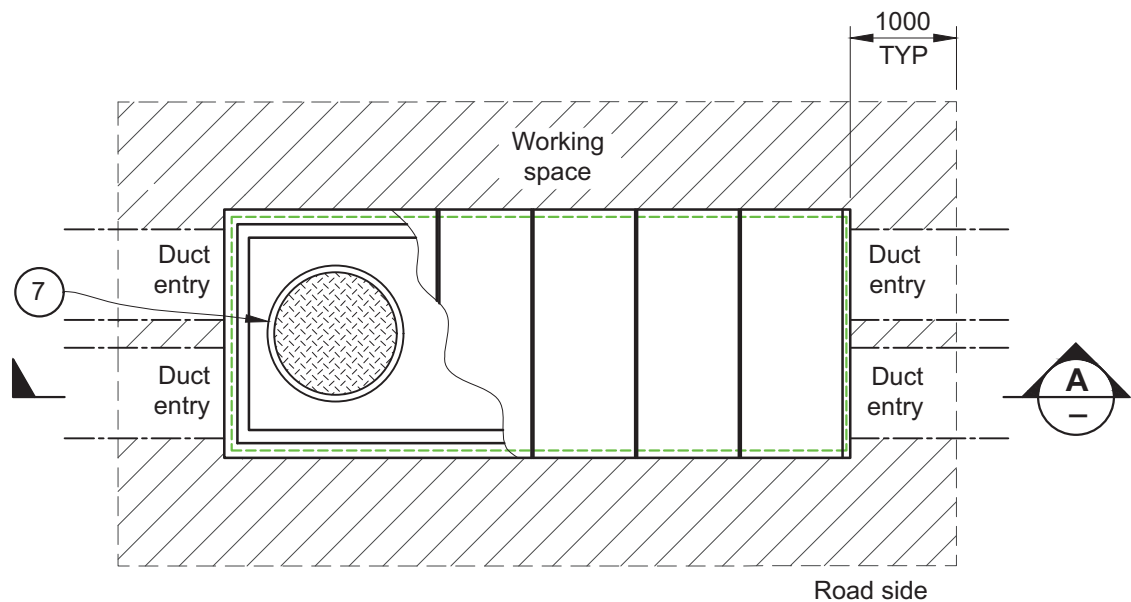


Figure 2 – Plan view

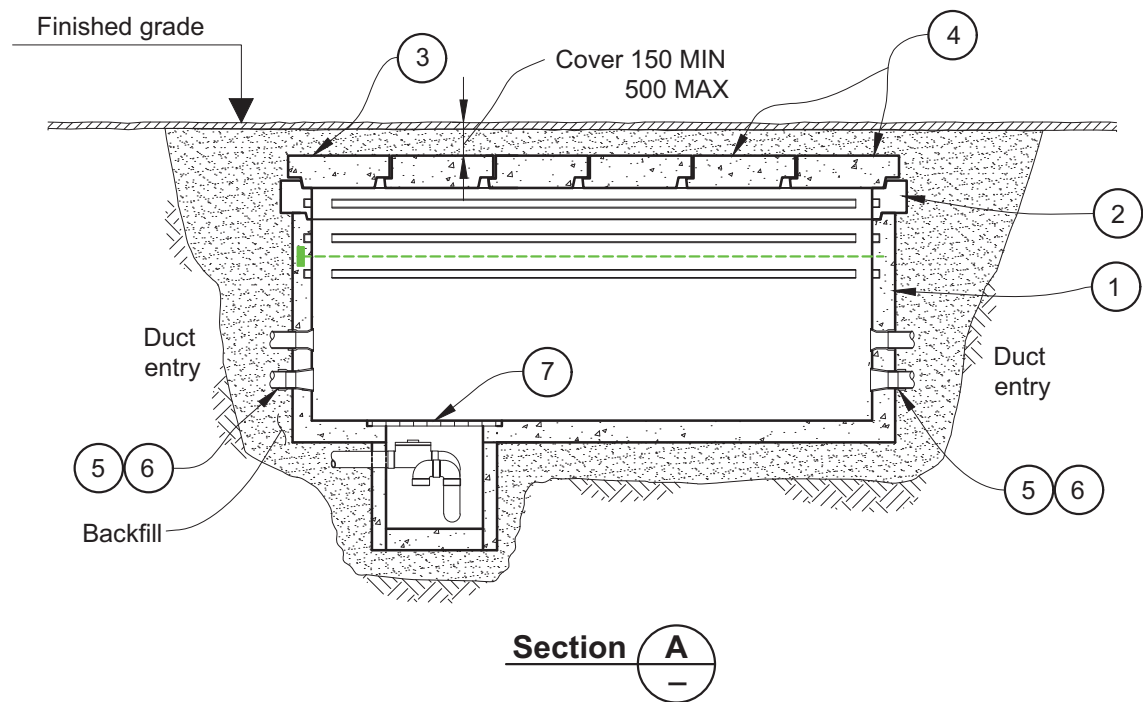


Figure 3 – Section view

Application

This standard provides installation details for the sidewalk duty 832 pull and splice and junction box.

Revision Notes

Added *Application* and *Revision Notes* sections. Removed grounding kit with ground rod from *Items Required*. Updated Figure 1 due to changes in product design including weights, dimensions, and lifting mechanism to incorporate manufacturers' lifting clutches. Removed ground rods from Figures 2 and 3. Substantive changed content is marked by green vertical revision lines in the left margin. This standard released concurrently with Standards and Equipment Advisory Information Bulletin 2025-002 Revised *ES54 Section B Pull and Splice, Service, and Junction Box Standards*.

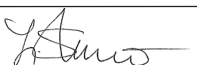
Items Required

Item	Description	Material no.	Quantity	Supplied by
1	Splice or pull box type 832	400-0990	1	BC Hydro
2	Riser type 832	400-0992	1	BC Hydro
3	Sidewalk duty collar, comes with frame, type 832	400-0993	1	BC Hydro
4	Lid, sidewalk duty	9600-7598	3	BC Hydro
5	Hardware for lid	412-0042	3	BC Hydro
6	75 mm duct plugs, or 100 mm duct plugs, or 125 mm duct plugs	401-0197 9602-1457 9602-1459	Specified by designer	Contractor Contractor BC Hydro or contractor
7	75 mm bell ends, or 100 mm bell ends, or 125 mm bell ends	401-0183 9602-1454 9602-1455	Specified by designer	Contractor Contractor BC Hydro or contractor
8	Sump cover	400-0426	1	BC Hydro

References

BC Hydro Distribution Standards

ES53 D4-01	Three-Phase 832 Junction Vault 200 A
ES54 B0-02	Pull and Splice, Service, and Junction Boxes General Notes
ES54 section G	Drainage Assemblies
ES54 H1-06	General Trenching Details Duct Entry Details
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 W1-01	Construction Materials Excavation and Backfill

Designed: J. Yang, P. Eng			832 Pull and Splice and Junction Box Sidewalk Duty	
Checked: E. Eliasov, P. Eng				
Reviewed: L. Stevanovic, P. Eng			DISTRIBUTION STANDARDS 	ES54 B5-02 R3
Approved: L. Stevanovic, P. Eng		Issued: 2025-05-07 Effective: 2025-05-07		

Notes

1. Excavation and backfill shall comply with ES54 W1-01.
2. Drainage shall comply with ES54 section G.
3. Grounding shall comply with ES54 R2-01.
4. Duct entry shall comply with ES54 H1-06.
5. "Alternate duct entry" area shown in Figure 2 is permitted for junction boxes, though "duct entry" area is preferred. See ES54 B0-02.
6. Working space for pull and splice boxes may be reduced to 1000 mm.

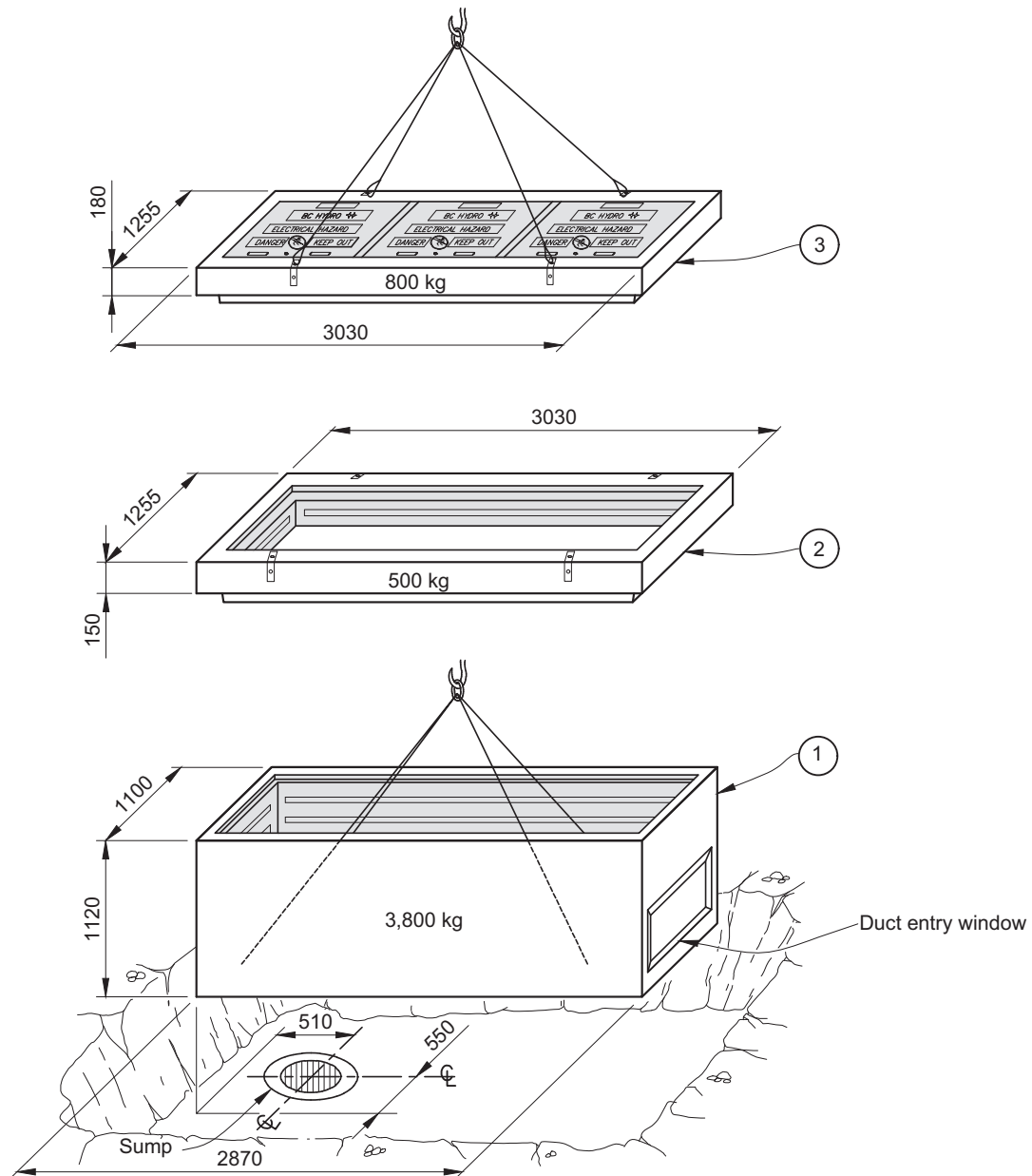


Figure 1 – 832 sidewalk duty precast concrete box installation details

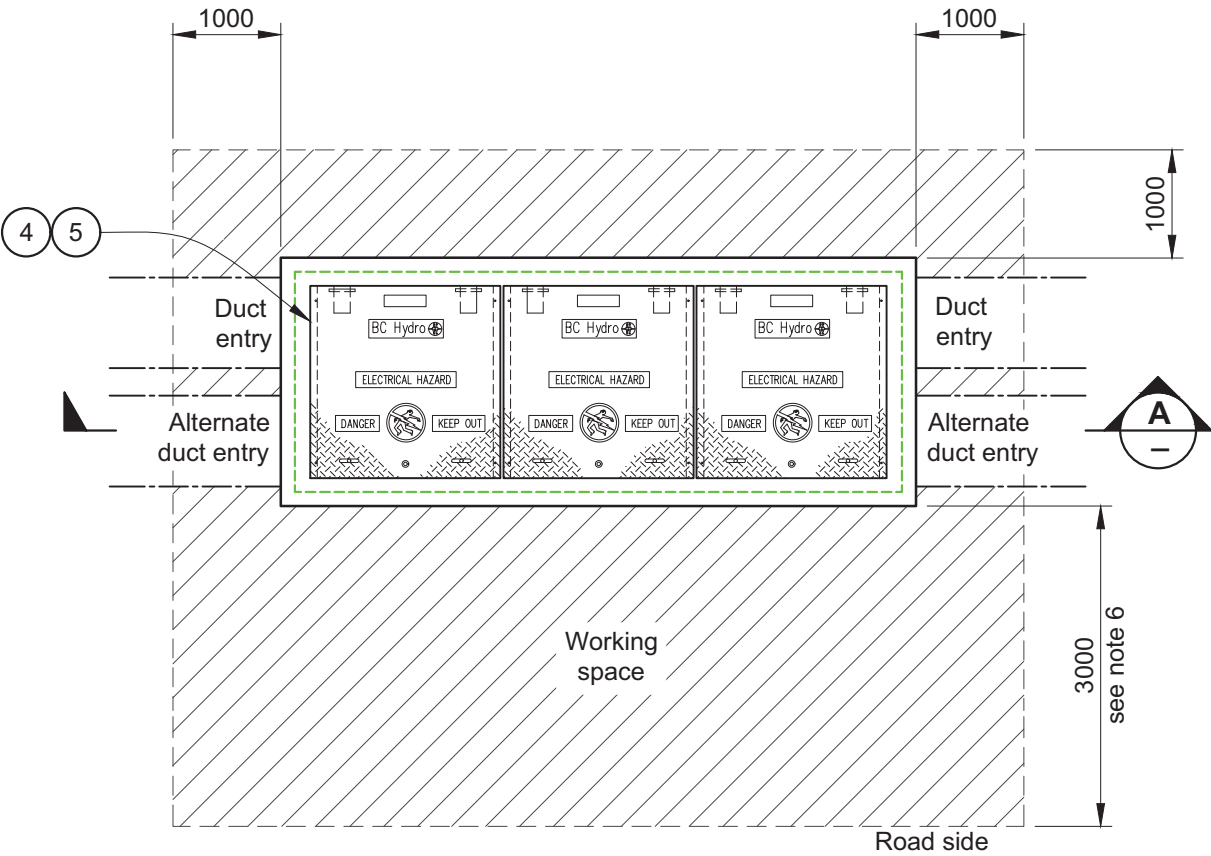


Figure 2 – Plan view

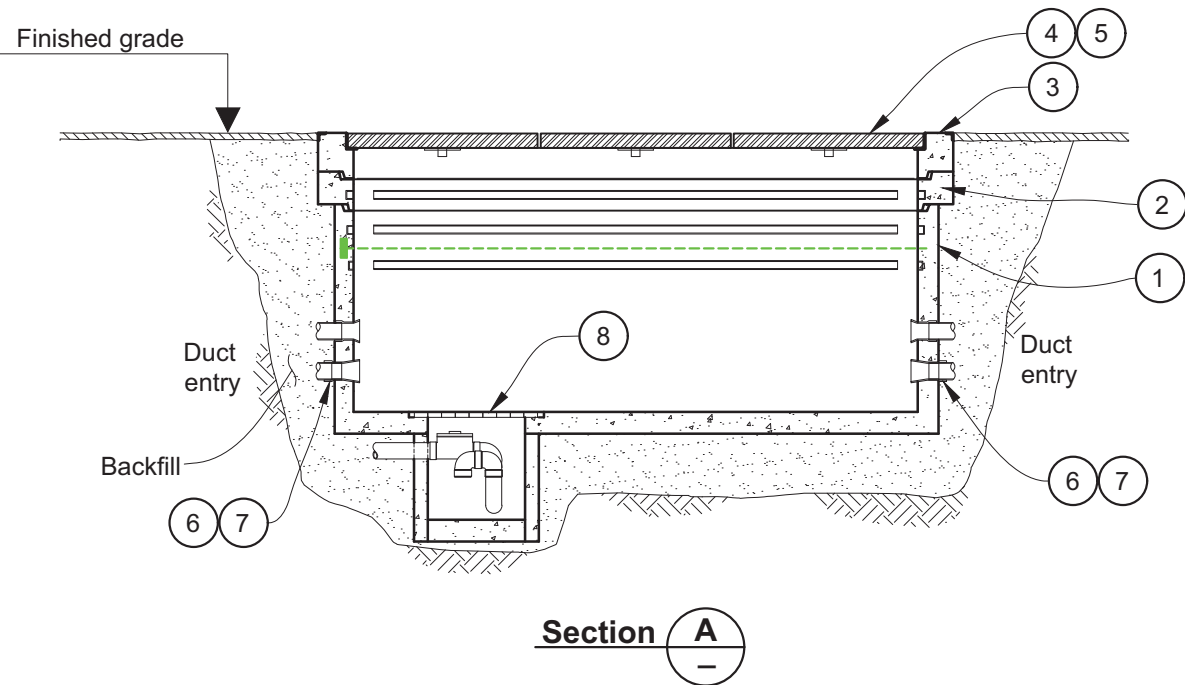


Figure 3 – Section view

Application

This standard provides installation details for the access lane duty 832 pull and splice and junction box.

Revision Notes

Added *Application* and *Revision Notes* sections. Removed grounding kit with ground rod from *Items Required*. Updated Figure 1 due to changes in product design including weights, dimensions, and lifting mechanism to incorporate manufacturers' lifting clutches. Removed ground rods from Figures 2 and 3. Substantive changed content is marked by green vertical revision lines in the left margin. This standard released concurrently with Standards and Equipment Advisory Information Bulletin 2025-002 *Revised ES54 Section B Pull and Splice, Service, and Junction Box Standards*.

Items Required

Item	Description	Material no.	Quantity	Supplied by
1	Splice or pull box type 832	400-0990	1	BC Hydro
2	Riser type 832	400-0992	1	BC Hydro
3	Lane duty collar, comes with frame, type 832	9601-6179	1	BC Hydro
4	Lid, laneway duty	9601-6176	3	BC Hydro
5	Hardware for lid	412-0042	3	BC Hydro
6	75 mm duct plugs, or 100 mm duct plugs, or 125 mm duct plugs	401-0197 9602-1457 9602-1459	Specified by designer	Contractor Contractor BC Hydro or contractor
7	75 mm bell ends, or 100 mm bell ends, or 125 mm bell ends	401-0183 9602-1454 9602-1455	Specified by designer	Contractor Contractor BC Hydro or contractor
8	Sump cover	400-0426	1	BC Hydro

References

BC Hydro Distribution Standards

ES53 D4-01	Three-Phase 832 Junction Vault 200 A
ES54 B0-02	Pull and Splice, Service, and Junction Boxes General Notes
ES54 section G	Drainage Assemblies
ES54 H1-06	General Trenching Details Duct Entry Details
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 W1-01	Construction Materials Excavation and Backfill

Designed: J. Yang, P. Eng			832 Pull and Splice and Junction Box Access Lane Duty	
Checked: E. Eliasov, P. Eng				
Reviewed: L. Stevanovic, P. Eng			DISTRIBUTION STANDARDS 	ES54 B5-03 R3
Approved: L. Stevanovic, P. Eng				
Issued: 2025-05-07 Effective: 2025-05-07				

Notes

1. Excavation and backfill shall comply with ES54 W1-01.
2. Drainage shall comply with ES54 section G.
3. Grounding shall comply with ES54 R2-01.
4. Duct entry shall comply with ES54 H1-06.
5. "Alternate duct entry" area shown in Figure 2 is permitted for junction boxes, though "duct entry" area is preferred. See ES54 B0-02.
6. Working space for pull and splice boxes may be reduced to 1000 mm.

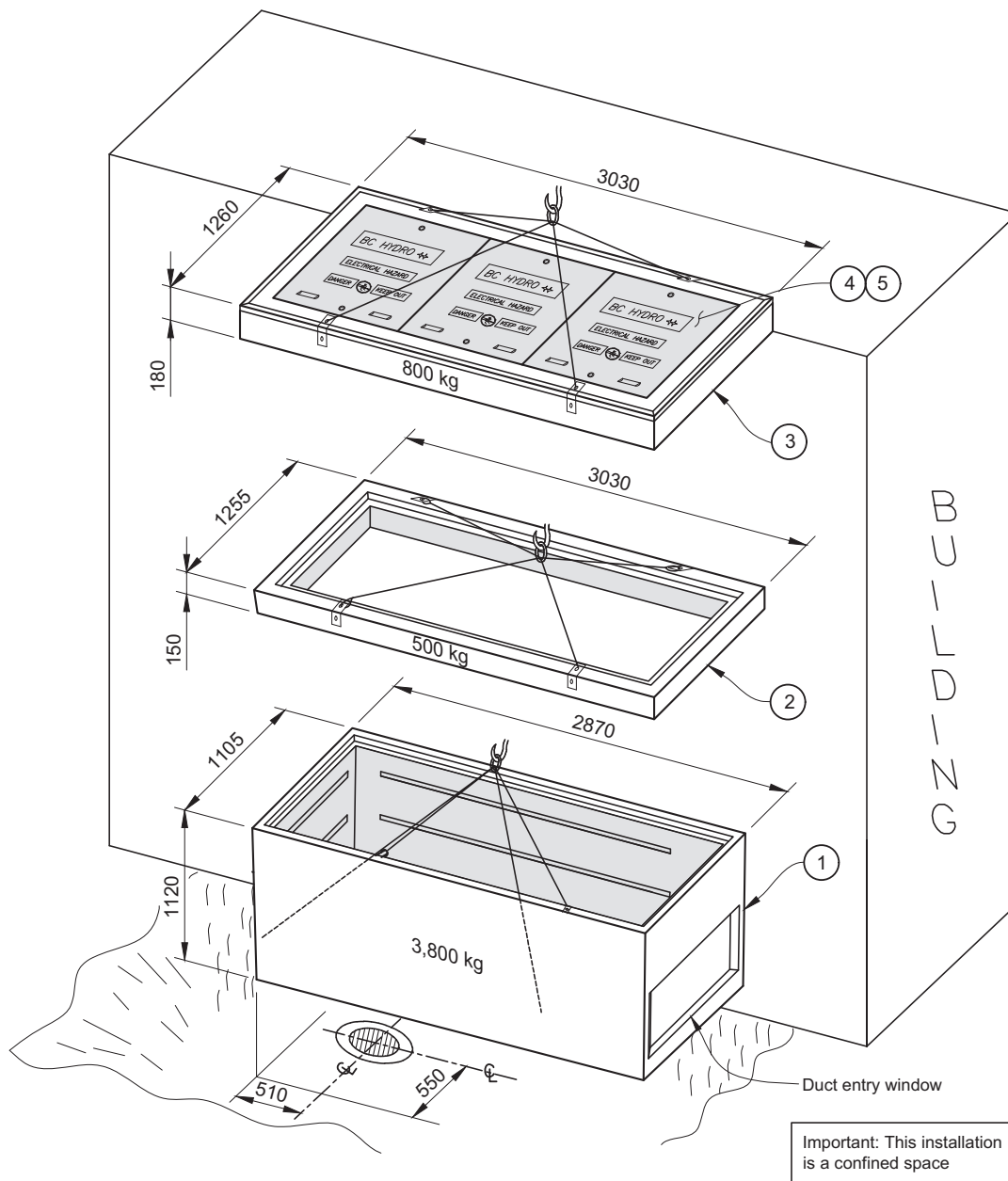


Figure 1 – 832 access lane duty precast concrete box installation details

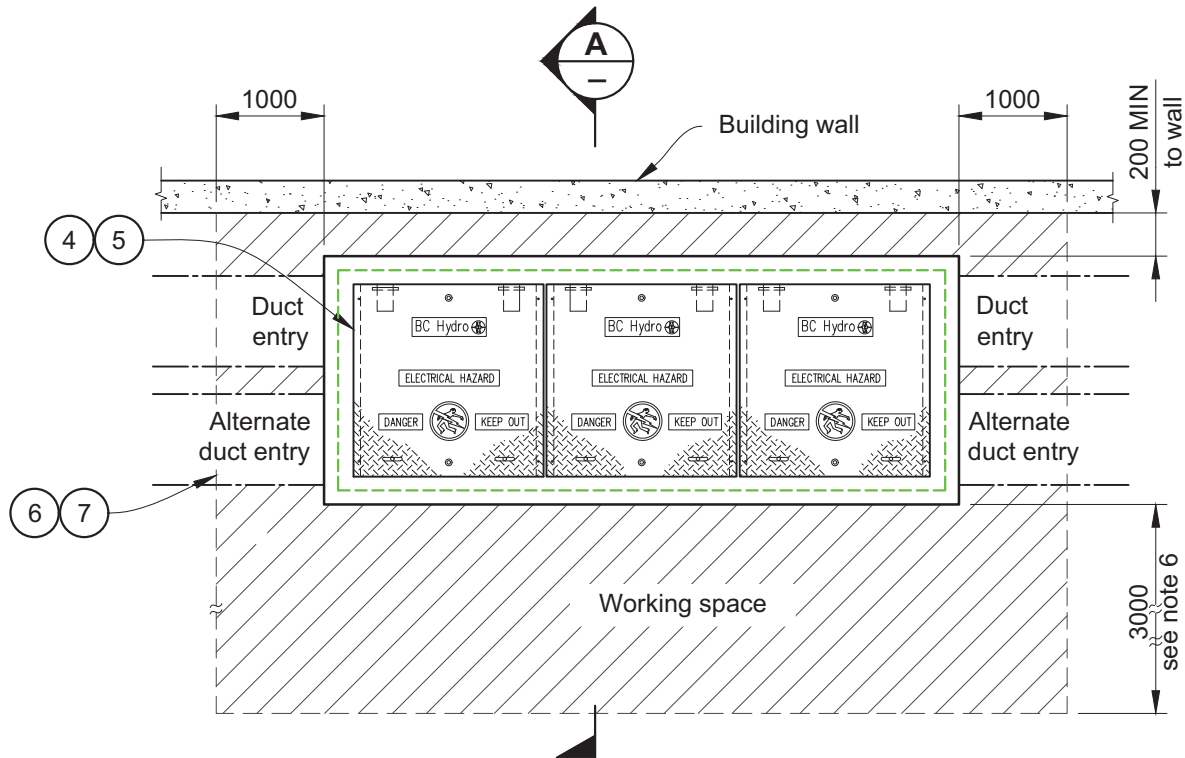


Figure 2 – Plan view

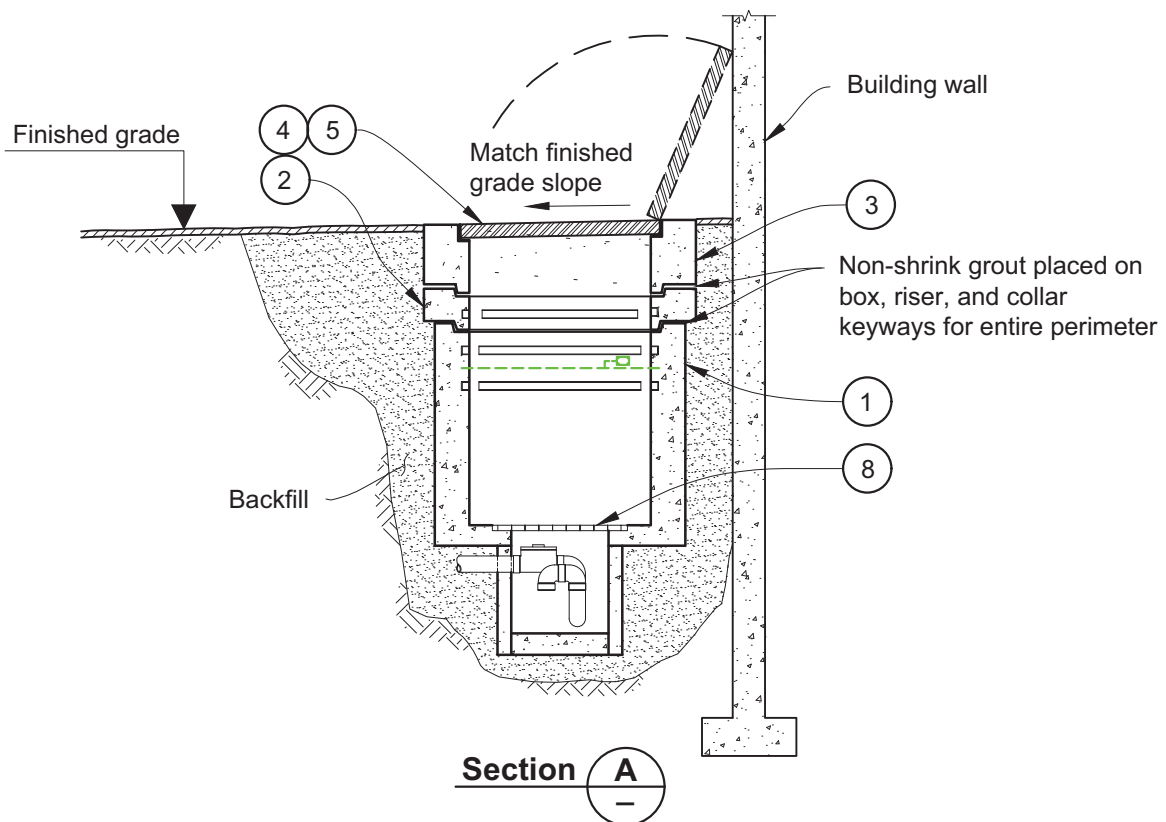


Figure 3 – Section view

Application

This standard provides installation details for the bottomless 832 pull and splice and junction box.

Revision Notes

Added *Application* and *Revision Notes* sections. Removed 254 mm long bolts from *Items Required* and updated rebar descriptions. Updated Figure 1 due to changes in product design including weights, dimensions, and lifting mechanism to incorporate manufacturers' lifting clutches. Added opening size to Figure 3. Added grounding to Figures 4 and 5. Substantive changed content is marked by green vertical revision lines in the left margin. This standard released concurrently with Standards and Equipment Advisory Information Bulletin 2025-002 *Revised ES54 Section B Pull and Splice, Service, and Junction Box Standards*.

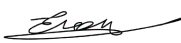
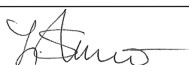
Items Required

Item	Description	Material no.	Quantity	Supplied by
1	Pull and splice and junction box, bottomless, type 832	9601-3341	1	BC Hydro
2	Riser type 832	400-0992	1	BC Hydro
3	Sidewalk duty collar, comes with frame, type 832	400-0993	1	BC Hydro
4	Lid, sidewalk duty	9600-7598	3	BC Hydro
5	Hardware for lid	412-0042	3	BC Hydro
6	75 mm duct plugs, or 100 mm duct plugs, or 125 mm duct plugs	401-0197 9602-1457 9602-1459	Specified by designer	Contractor Contractor BC Hydro or contractor
7	75 mm bell ends, or 100 mm bell ends, or 125 mm bell ends	401-0183 9602-1454 9602-1455	Specified by designer	Contractor Contractor BC Hydro or contractor
8	10M99 straight rebar	N/A	3	BC Hydro
9	15M threaded rebar	N/A	16	BC Hydro
10	Sump cover	400-0426	1	BC Hydro

References

BC Hydro Distribution Standards

ES53 D4-01	Three-Phase 832 Junction Vault 200 A
ES54 section G	Drainage Assemblies
ES54 H1-06	General Trenching Details Duct Entry Details

Designed: J. Yang, P. Eng			832 Pull and Splice, Service, and Junction Box Bottomless	
Checked: E. Eliasov, P. Eng				
Reviewed: L. Stevanovic, P. Eng			DISTRIBUTION STANDARDS 	ES54 B5-04 R1
Approved: L. Stevanovic, P. Eng		Issued: 2025-05-07 Effective: 2025-05-07		

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 W1-01	Construction Materials Excavation and Backfill

External Documents

CSA A23.1-14	Concrete materials and methods of concrete construction
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Notes

1. Excavation and backfill shall comply with ES54 W1-01.
2. Drainage shall comply with ES54 section G.
3. Grounding shall comply with ES54 R2-01.
4. Duct entry shall comply with ES54 H1-06.
5. Working space for pull and splice boxes may be reduced to 1000 mm.
6. Cast-in-place floor concrete shall be C1 class of exposure (35 MPa @ 28 days, 6.5±1.5% air entrainment) in accordance with CSA A23.1-14.
7. Precast concrete surfaces in contact with fresh concrete shall be cleaned by pressure washer and a bonding agent applied prior to pouring.

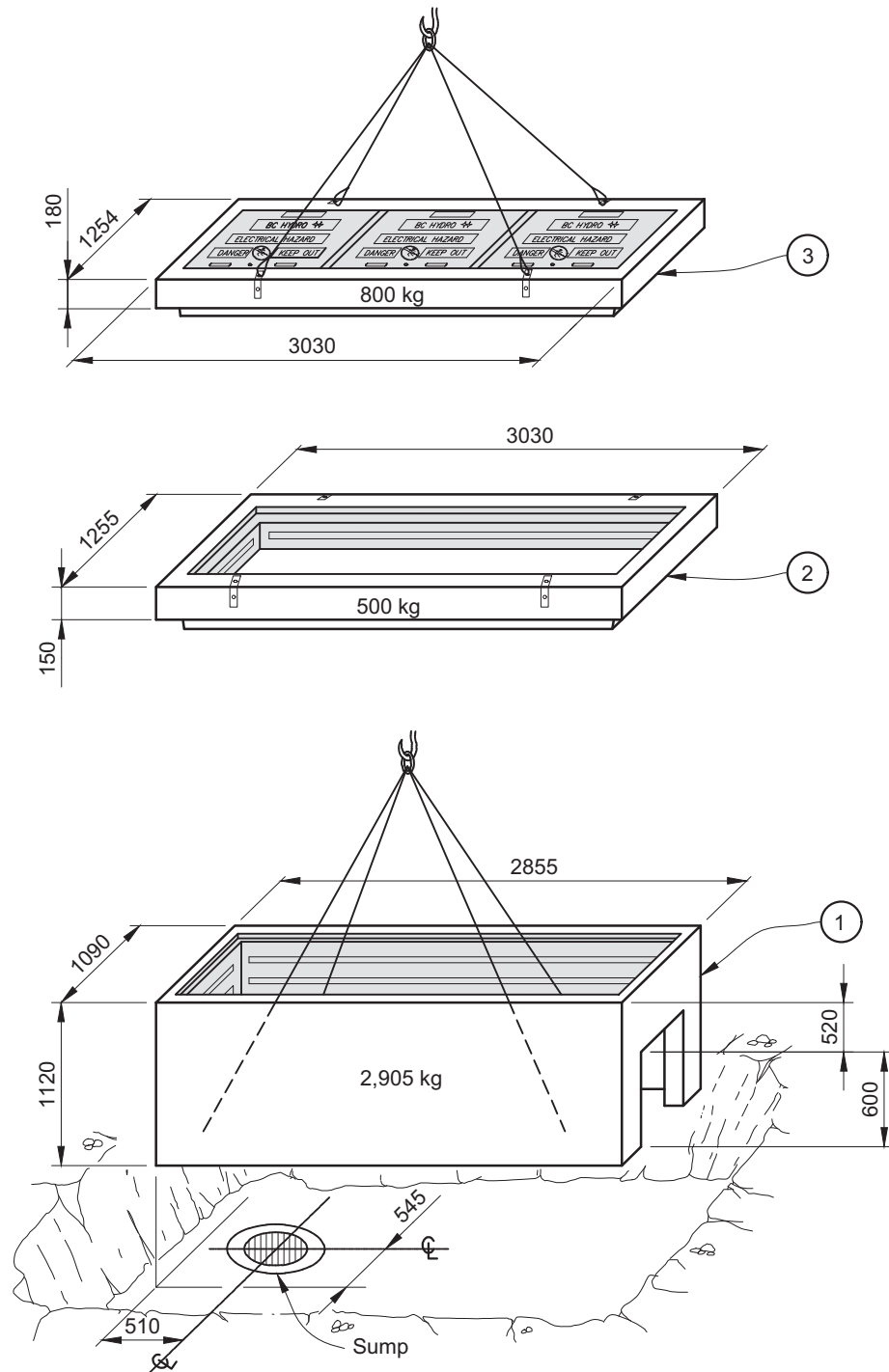


Figure 1 – 832 bottomless precast concrete box installation details

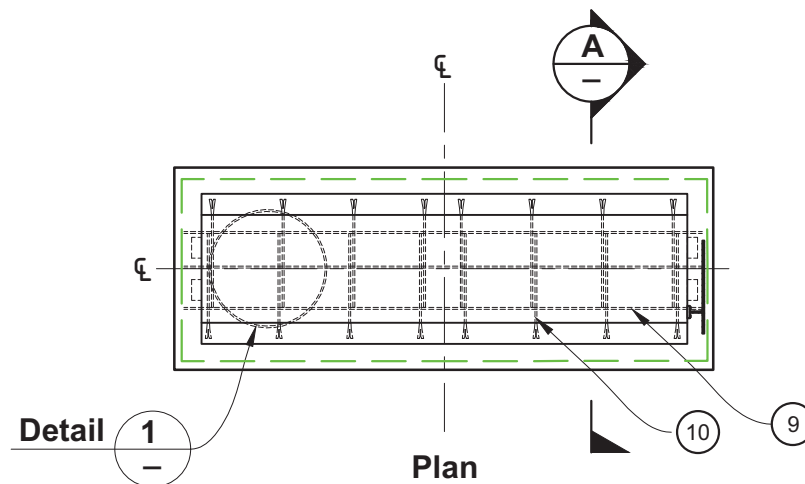


Figure 2 – Rebar plan view

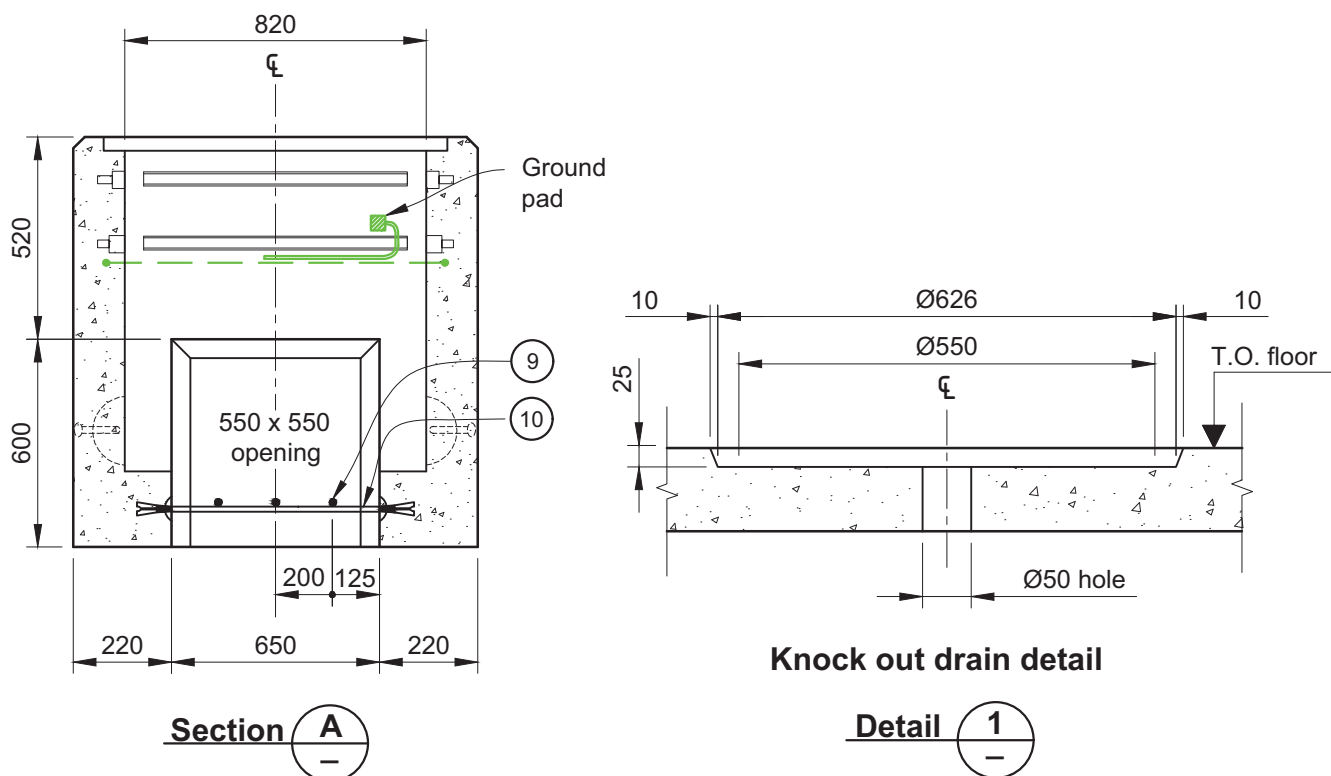


Figure 3 – Section and drain detail

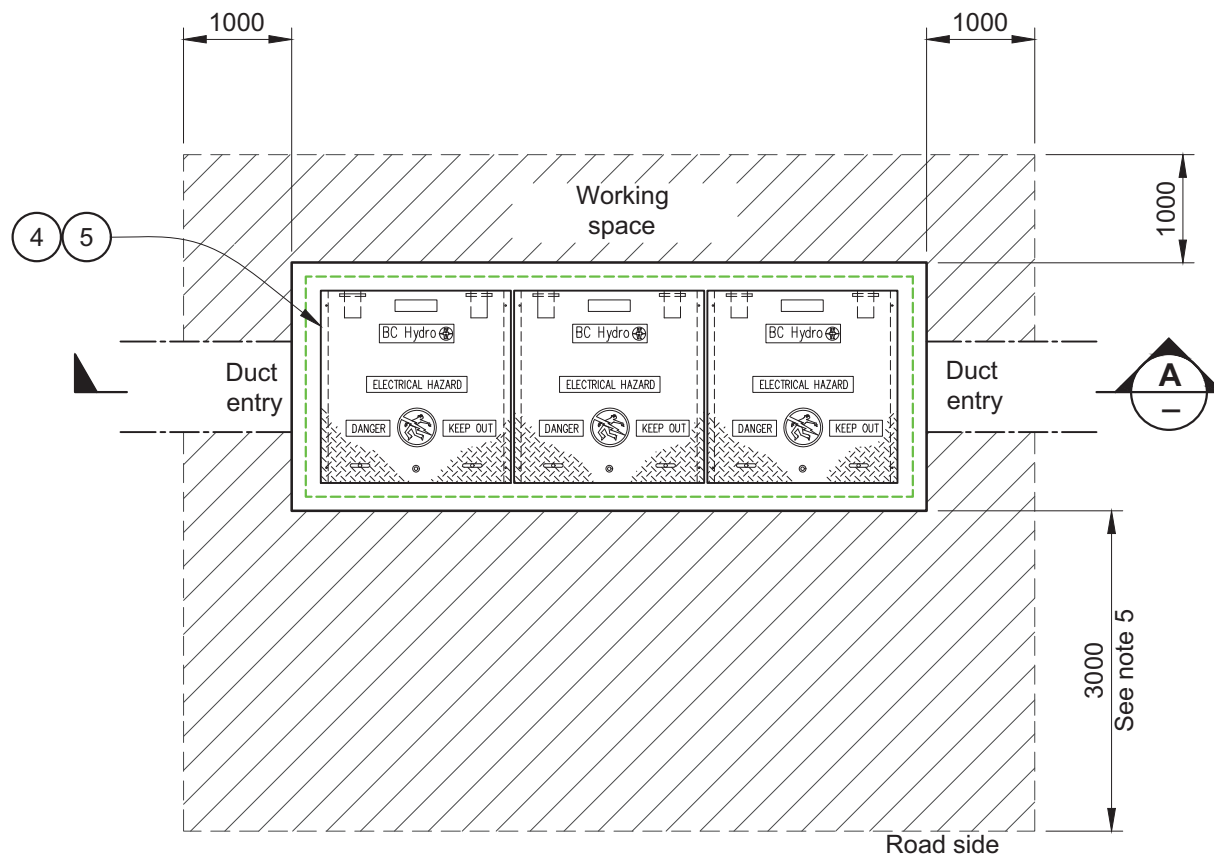


Figure 4 – Plan view

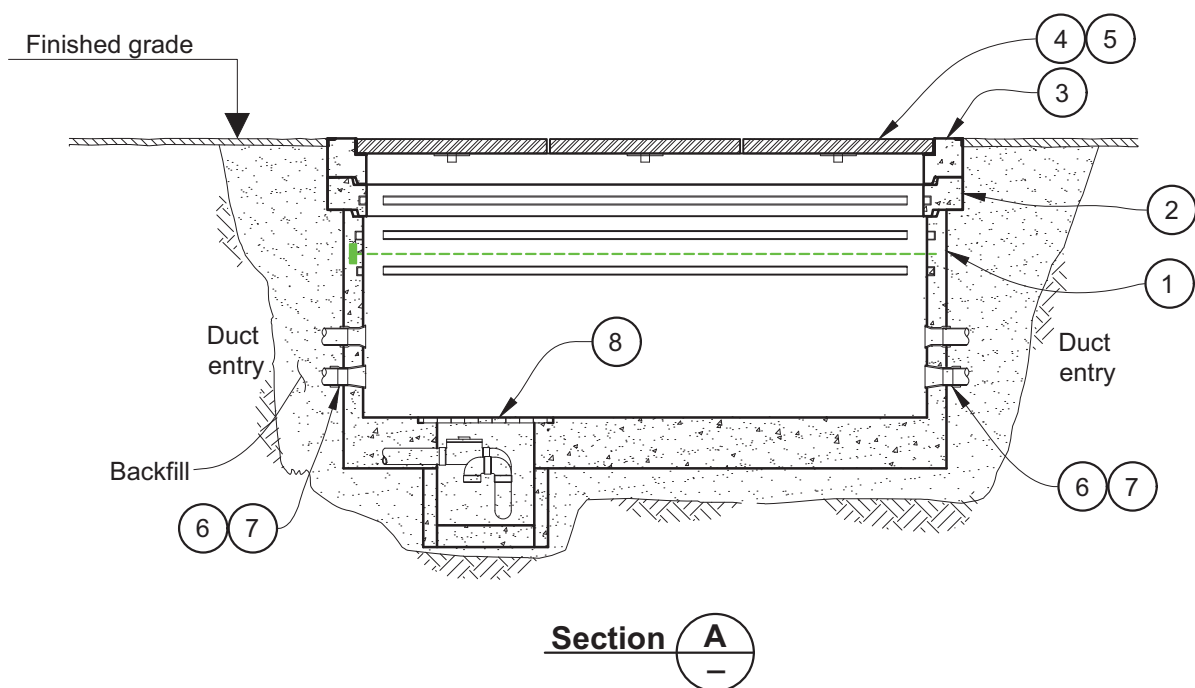
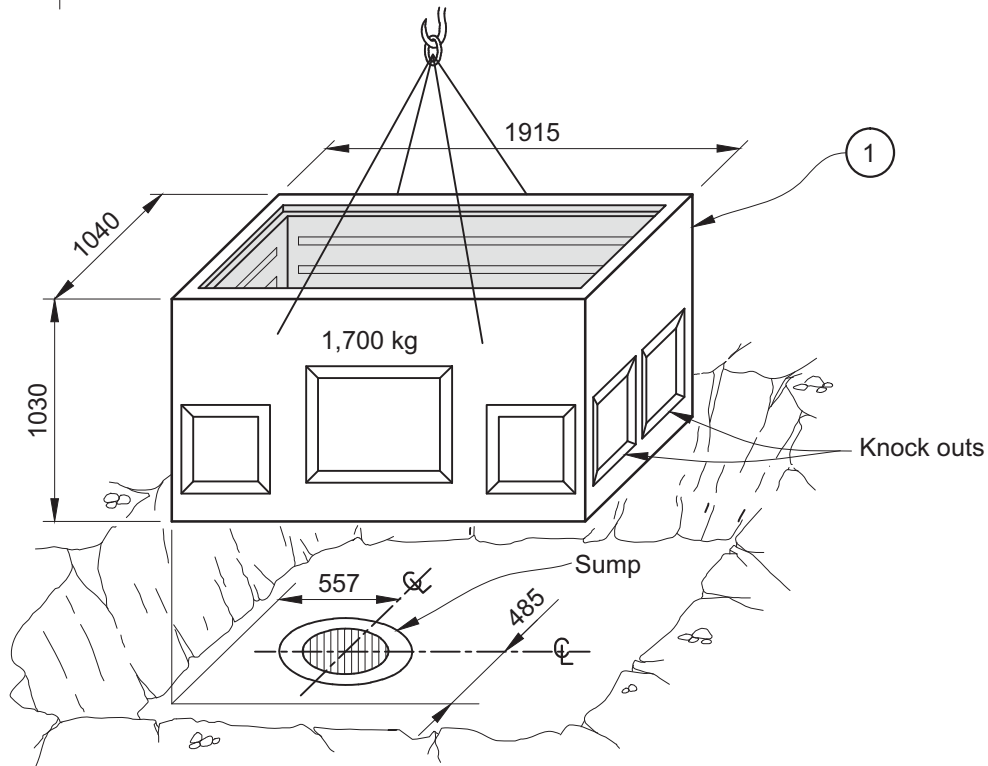
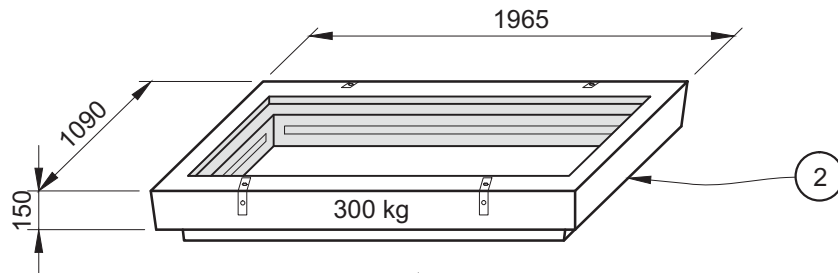
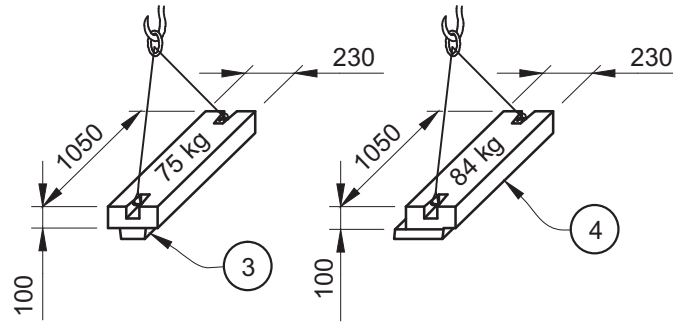
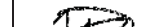


Figure 5 – Section view

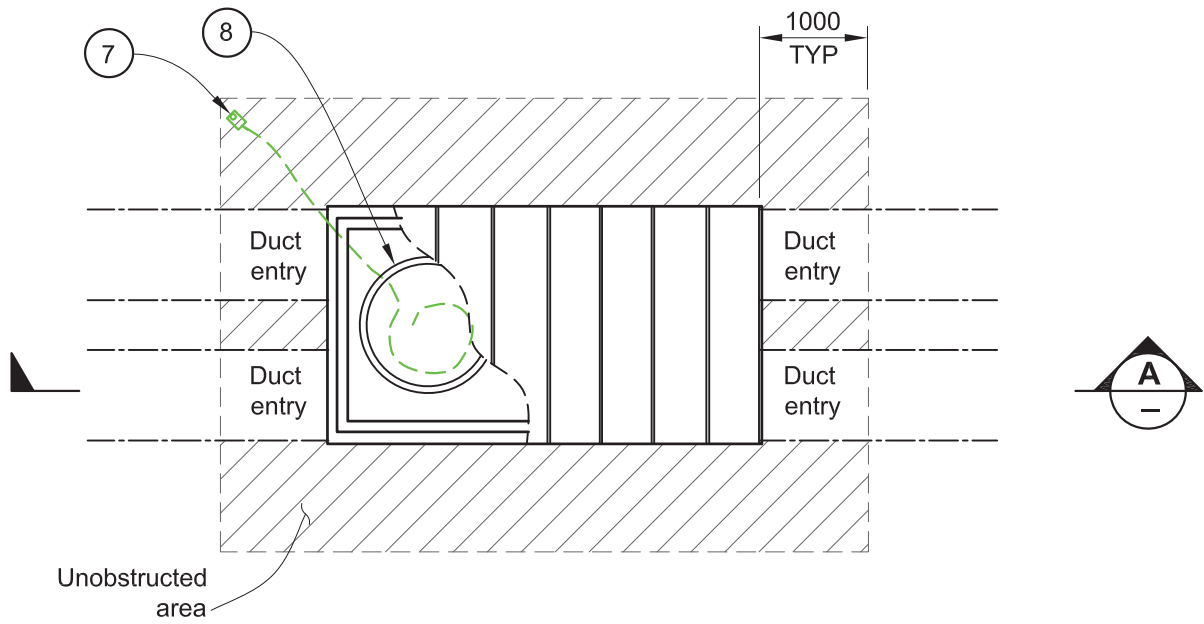
Important: Non-traffic duty 632 box installed with more than 165 mm of earth cover has a depth greater than 4.5 feet (1350 mm) and is a confined space



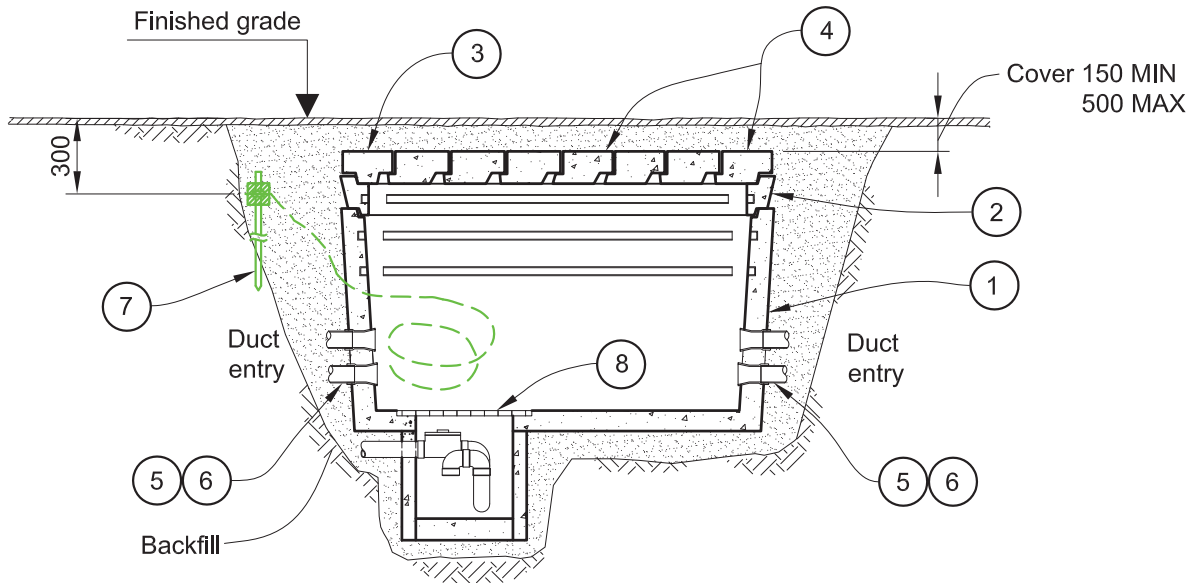
REVISIONS: R1: REVISED DUCT ENTRY/ ALTERNATE ENTRY. REMOVED LIFTING HOLES/ BARS. ADDED TEXT BOX. OCT '18 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	632 BOX PULL/SPLICE BOX NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 			ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016	PAGE 1 OF 3	ES54 B6-01.01
				R 1	

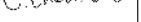
REVISIONS: R1: REVISED DUCT ENTRY/ ALTERNATE ENTRY. REMOVED LIFTING HOLES/ BARS. ADDED TEXT BOX. OCT '18 CC



Plan



Section A

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	632 BOX PULL/SPLICE BOX NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS 			ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016	PAGE 2 OF 3	ES54 B6-01.02
				R 1	

Notes

1. Excavation and backfilling shall comply with W1-01.
2. Sump and drain are optional, selected by Designer.
3. Grounding shall comply with R2-01.
4. Duct entry shall comply with H1-06.
5. Precast box type 632 cannot accommodate 125 mm ducts.

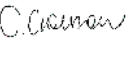
Bill of Material

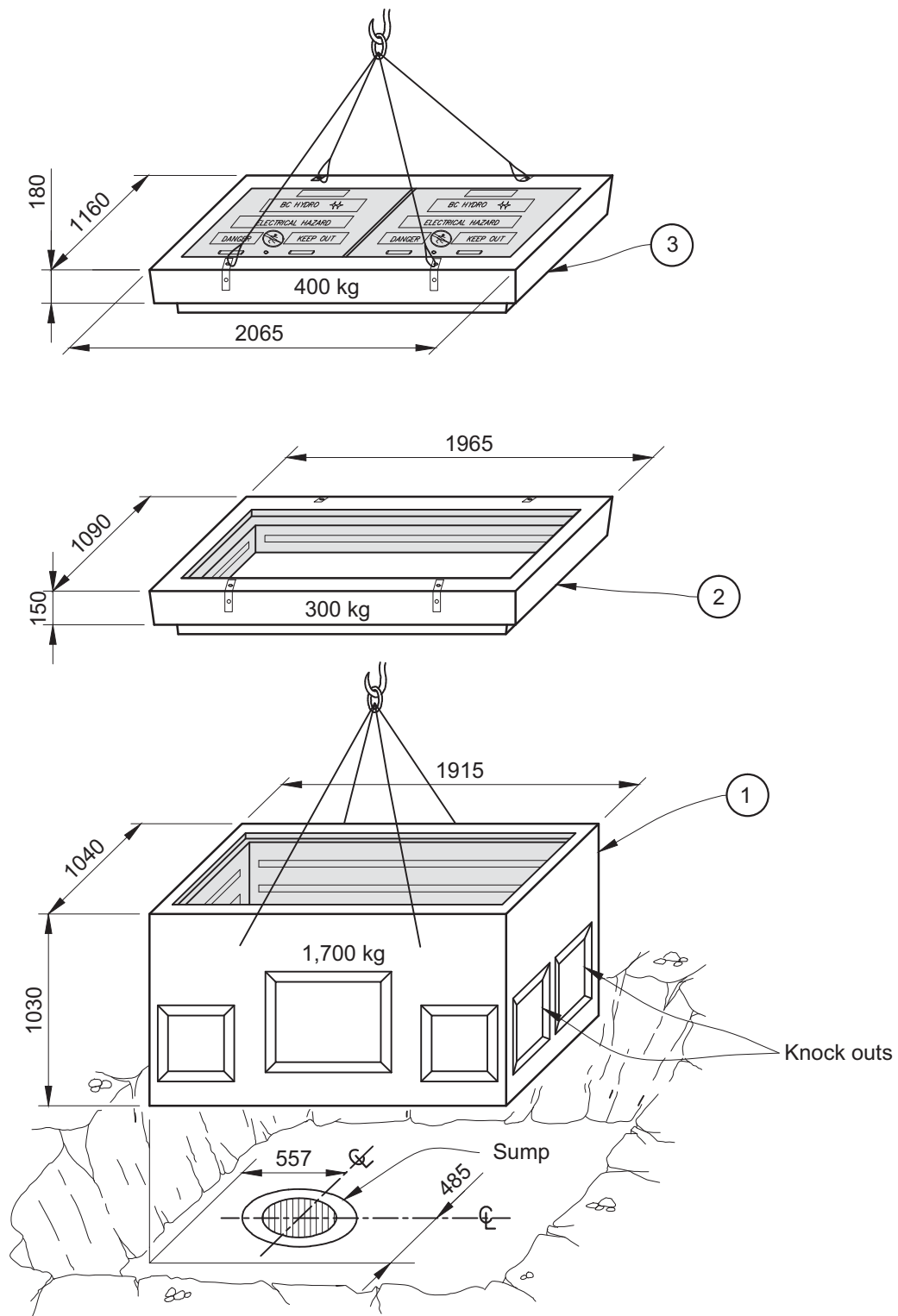
Item	Description	Catalogue ID	Quantity	Supplied By
1	Splice or pull box type 632	400-0995	1	BC Hydro
2	Riser type 632	400-0988	1	BC Hydro
3	Type "A" slab	400-0960	1	BC Hydro
4	Type "B" slab	400-0961	7	BC Hydro
5	75 mm duct plugs	401-0197	Specified by	Contractor
OR	100 mm duct plugs	96021457	Designer	Contractor
6	75 mm bell ends	401-0183	Specified by	Contractor
OR	100 mm bell ends	96021454	Designer	Contractor
7	Grounding kit	412-0022	1	BC Hydro
	$\frac{5}{8}$ " x 8' ground rod	420-1093	1	BC Hydro
8	Sump cover	400-0426	1	BC Hydro

Reference Standards

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill

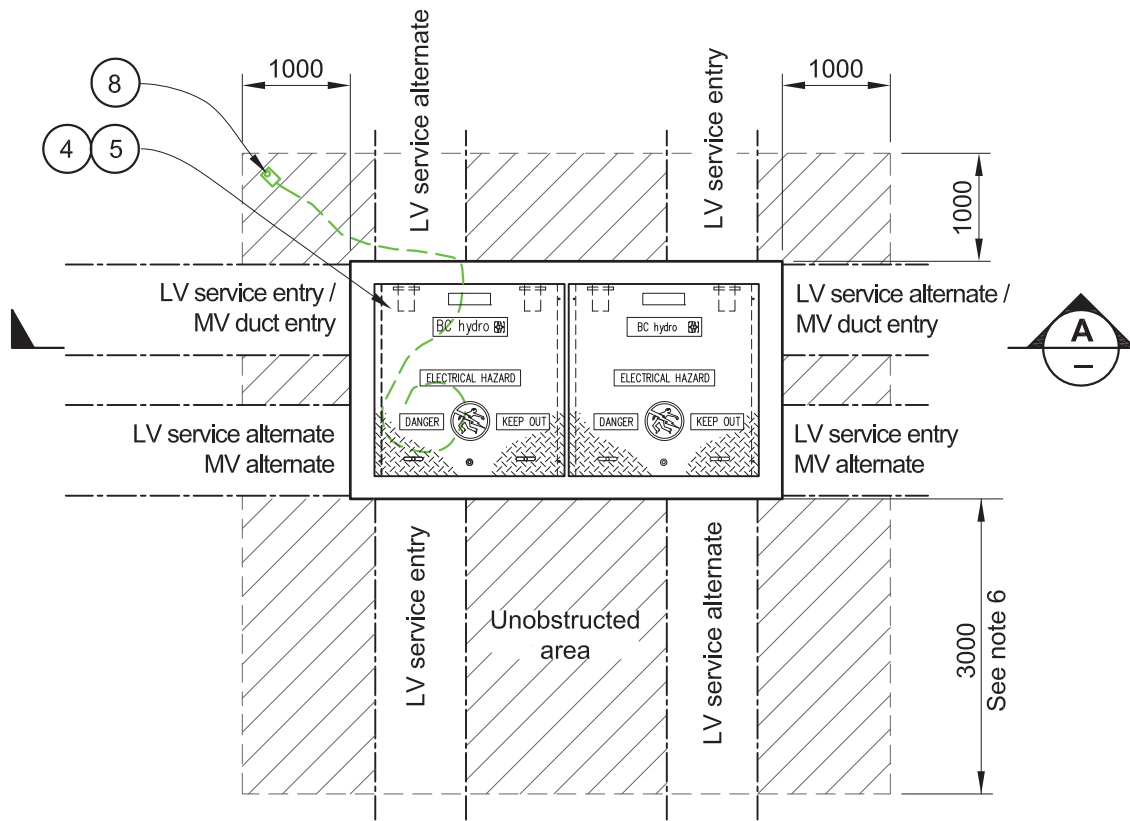
REVISIONS: R1: REVISED DUCT ENTRY/ ALTERNATE ENTRY. REMOVED LIFTING HOLES/ BARS. ADDED TEXT BOX. OCT '18 CC

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2018-10-30	632 BOX PULL/SPLICE BOX NON-TRAFFIC DUTY	
DISTRIBUTION STANDARDS  BC Hydro		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B6-01.03
					R 1

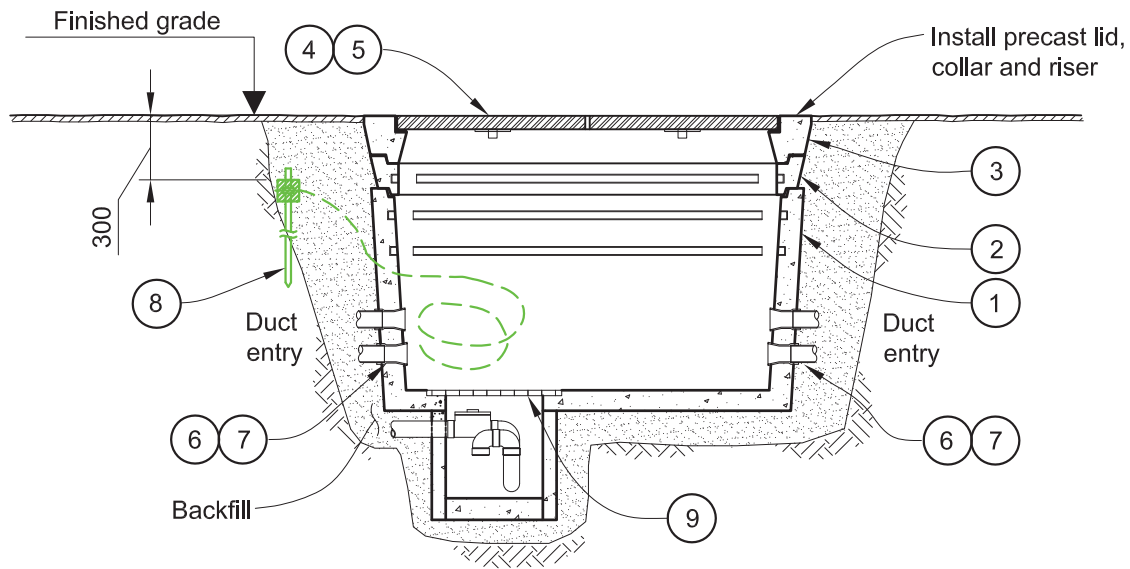


REVISIONS: R.2 - ADDED NOTE 7

DESIGNED  2018-11-15 A.J. NORRIS	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  A. J. NORRIS # 34158 BRITISH COLUMBIA ENGINEER 2019-11-15	632 BOX PULL/SPLICE/SERVICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED: NOV 2019 REPLACES: OCT 2018 ORIGINALLY ISSUED: MAR 2016		PAGE 1 OF 3	ES54 B6-02.01
				R 2	



Plan



Section A

REVISIONS: R.2 - ADDED NOTE 7

DESIGNED  2018-11-15 A.J. NORRIS	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  A. J. NORRIS # 34158 BRITISH COLUMBIA ENGINEER 2019-11-15	632 BOX PULL/SPLICE/SERVICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED: NOV 2019 REPLACES: OCT 2018 ORIGINALLY ISSUED: MAR 2016		PAGE 2 OF 3	ES54 B6-02.02
					R 2

Notes

1. Excavation and backfilling shall comply with W1-01.
2. Sump and drain are optional, selected by Designer.
3. Grounding shall comply with R2-01.
4. Duct entry shall comply with H1-06.
5. Precast box type 632 cannot accommodate 125 mm ducts.
6. Unobstructed area may be reduced to 1000 for pull/splice boxes.
7. For junction boxes, use of "alternate duct entry" knockout is permitted; however, use of "duct entry" knockout shall be preferred. Refer to ES54 B0-02.

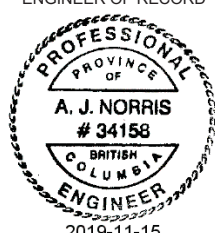
Bill of Material

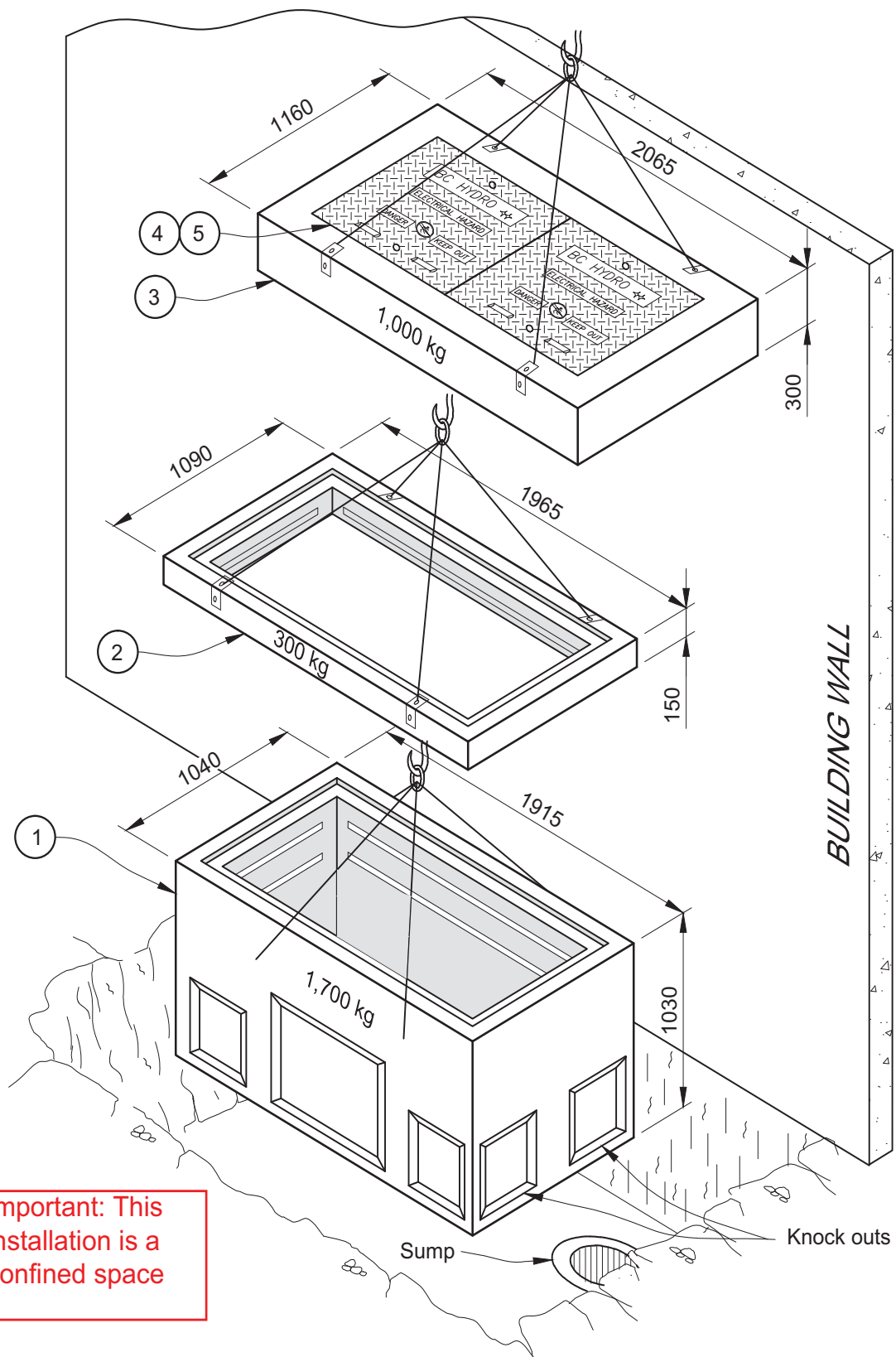
Item	Description	Catalogue ID	Quantity	Supplied By
1	Service box type 632	400-0995	1	BC Hydro
2	Riser type 632	400-0988	1	BC Hydro
3	Collar c/w frame type 632	400-0996	1	BC Hydro
4	Lid	96007598	2	BC Hydro
5	Hardware for lid	412-0042	2	BC Hydro
6	75 mm duct plugs	401-0183	Specified by Designer	Contractor
OR	100 mm duct plugs	96021454		Contractor
7	75 mm bell ends	401-0197	Specified by Designer	Contractor
OR	100 mm bell ends	96021457		Contractor
8	Grounding kit 5/8" x 8' ground rod	412-0022	1	BC Hydro
		420-1093	1	BC Hydro
9	Sump cover	400-0426	1	BC Hydro

Reference Standards

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill
ES53 N3-04	Service Box Installation Details – Electrical, 632 Precast Concrete
ES53 D2-01	Single-Phase 332 Junction Vault (200 A)

REVISIONS: R.2 - ADDED NOTE 7

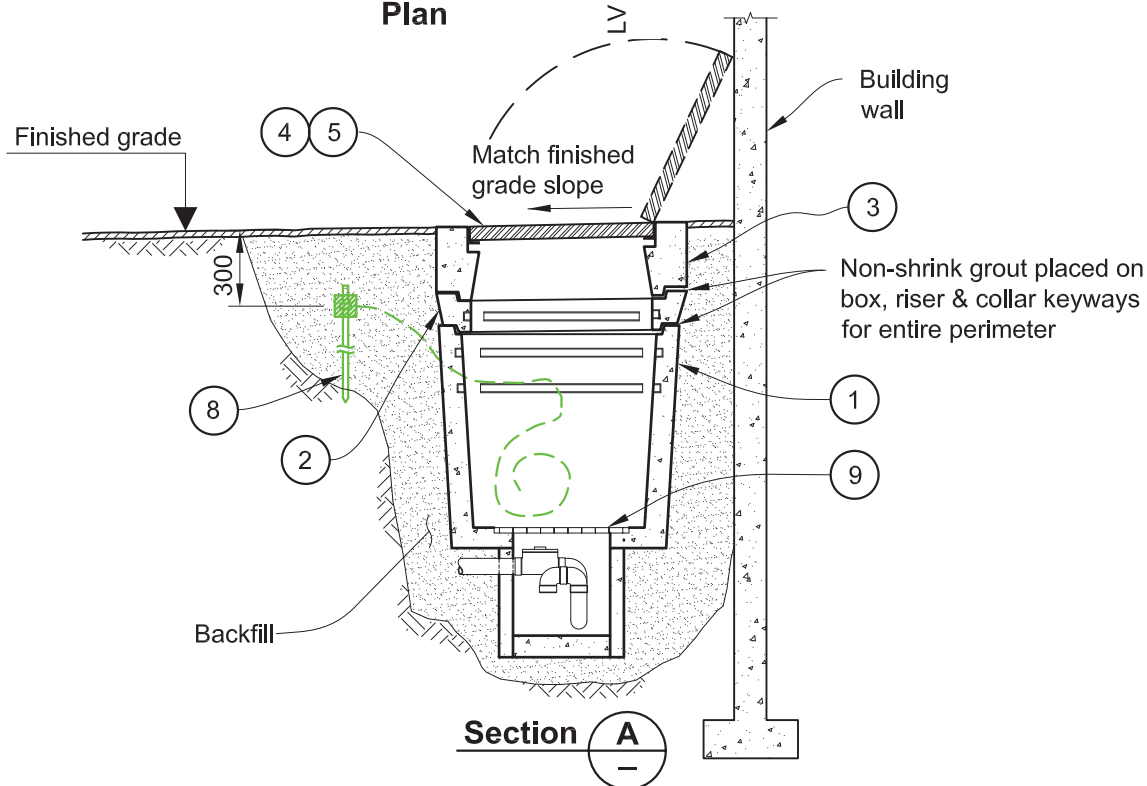
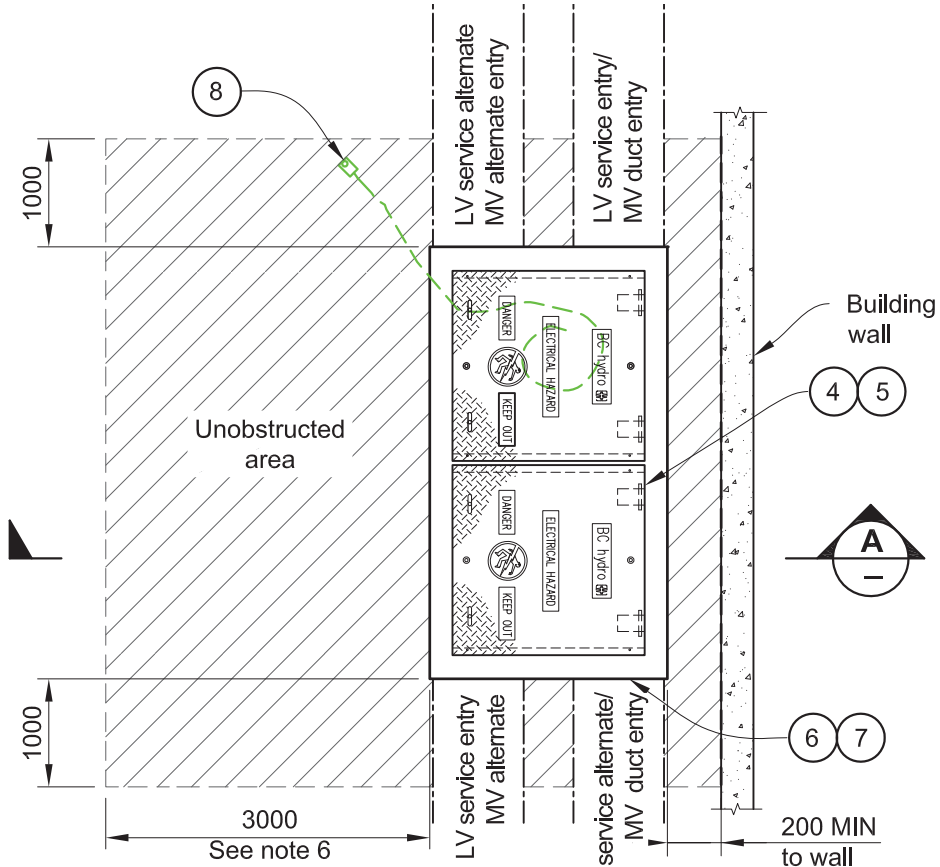
DESIGNED  A.J. NORRIS	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  A. J. NORRIS # 34158 BRITISH COLUMBIA ENGINEER 2019-11-15	632 BOX PULL/SPLICE/SERVICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED: NOV 2019 REPLACES: OCT 2018 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B6-02.03
					R 2



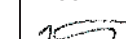
Important: This installation is a confined space

REVISIONS: R.2 - ADDED NOTE 7

DESIGNED  2018-11-15 A.J. NORRIS	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  A. J. NORRIS # 34158 PROFESSIONAL ENGINEER 2019-11-15	632 BOX SERVICE/JUNCTION BOX ACCESS LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: NOV 2019 REPLACES: OCT 2018 ORIGINALLY ISSUED: MAR 2016		PAGE 1 OF 3	ES54 B6-03.01
					^R 2



REVISIONS: R.2 - ADDED NOTE 7

DESIGNED  2019-11-15 A.J. NORRIS	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  A. J. NORRIS # 34158 BRITISH COLUMBIA ENGINEER 2019-11-15	632 BOX SERVICE/JUNCTION BOX ACCESS LANE DUTY		
DISTRIBUTION STANDARDS 		ISSUED: NOV 2019 REPLACES: OCT 2018 ORIGINALLY ISSUED: MAR 2016		PAGE 2 OF 3	ES54 B6-03.02	R 2

Notes

1. Excavation and backfilling shall comply with W1-01.
2. Sump and drain are optional, selected by Designer.
3. Grounding shall comply with R2-01.
4. Duct entry shall comply with H1-06.
5. Precast box type 632 cannot accommodate 125 mm ducts.
6. Unobstructed area may be reduced to 1000 for pull/splice boxes.
7. For junction boxes, use of "alternate duct entry" knockout is permitted; however, use of "duct entry" knockout shall be preferred. Refer to ES54 B0-02.

Bill of Material

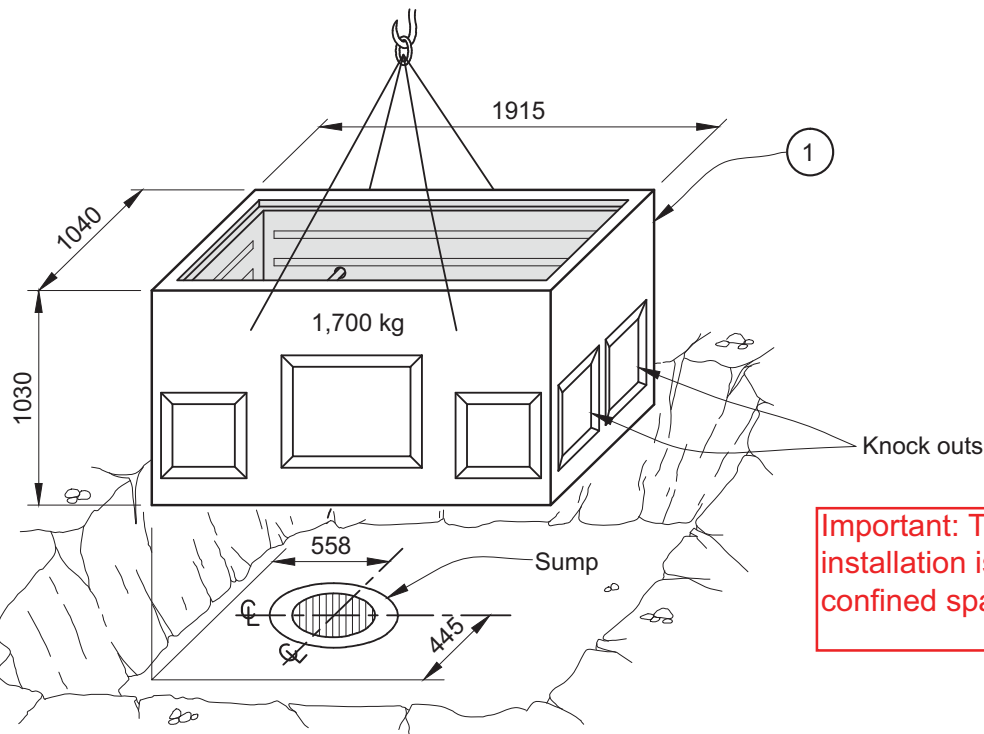
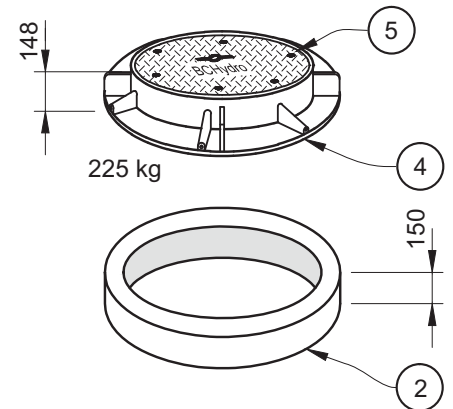
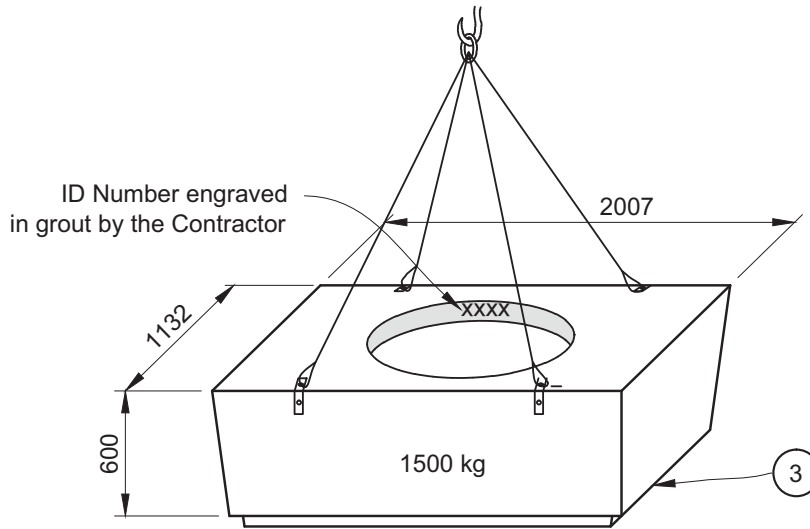
Item	Description	Catalogue ID	Quantity	Supplied By
1	Service box type 632	400-0995	1	BC Hydro
2	Riser type 632	400-0988	1	BC Hydro
3	Lane duty collar c/w frame type 632	96016178	1	BC Hydro
4	Lane duty lid	96016176	2	BC Hydro
5	Hardware for lane duty lid	412-0042	4	BC Hydro
6	75 mm duct plugs	401-0183	Specified by	Contractor
OR	100 mm duct plugs	96021454	Designer	Contractor
7	75 mm bell ends	401-0197	Specified by	Contractor
OR	100 mm bell ends	96021457	Designer	Contractor
8	Grounding kit	412-0022	1	BC Hydro
	5/8" x 8' ground rod	420-1093	1	BC Hydro
9	Sump cover	400-0426	1	BC Hydro

Reference Standards

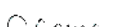
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill
ES53 N3	Service Box Installation Details – Electrical

REVISIONS: R.2 - ADDED NOTE 7

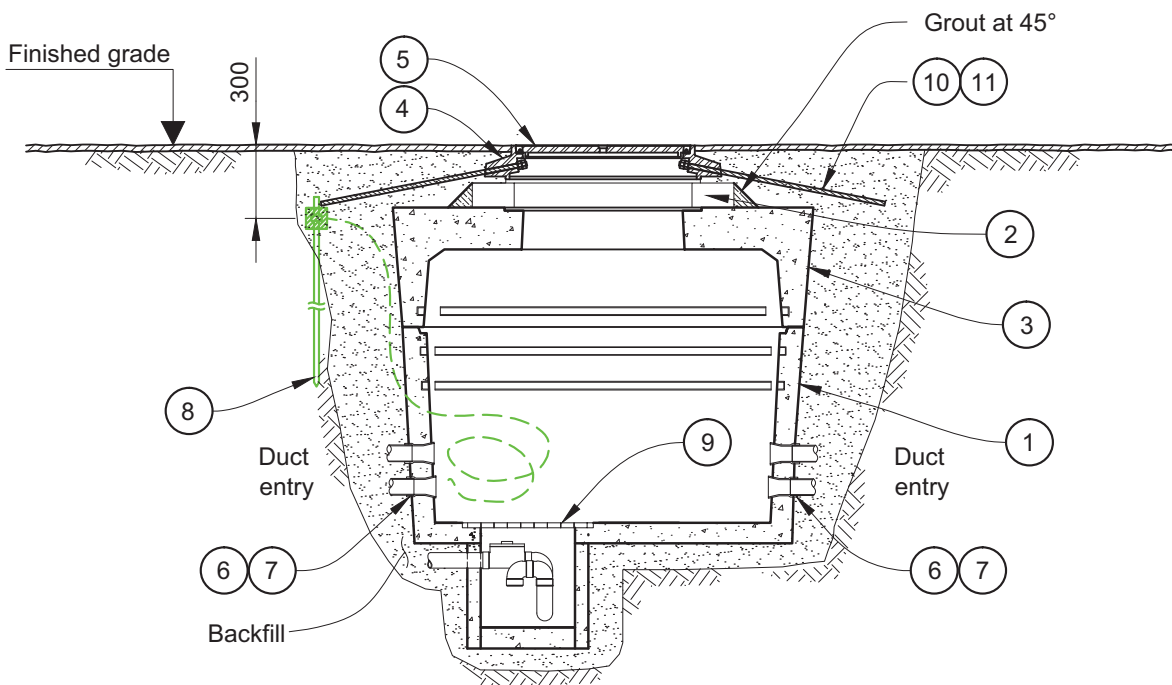
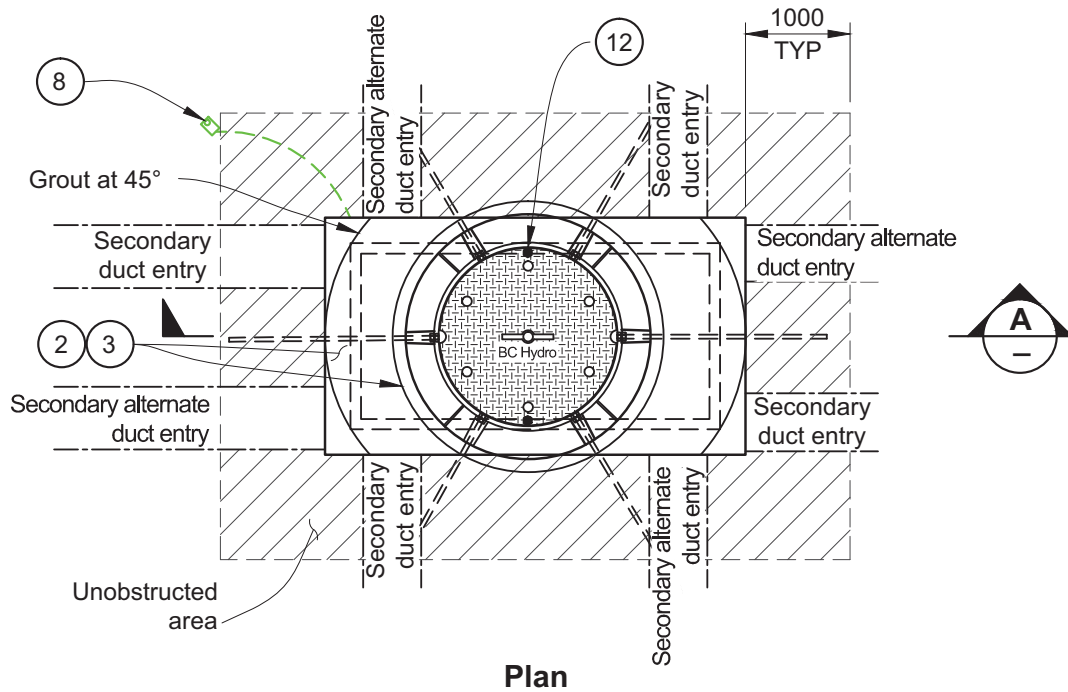
DESIGNED  2019-11-15 A.J. NORRIS	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  A. J. NORRIS # 34158 BRITISH COLUMBIA ENGINEER 2019-11-15	632 BOX SERVICE/JUNCTION BOX ACCESS LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: NOV 2019 REPLACES: OCT 2018 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B6-03.03
					R 2



Important: This installation is a confined space

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	632 BOX SERVICE BOX ROADWAY DUTY (PREVIOUSLY IN B2-06)	
DISTRIBUTION STANDARDS BC Hydro			ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016	PAGE 1 OF 3	ES54 B6-04.01
				R 1	

REVISIONS: R.0 - PREVIOUSLY IN B2-06. RISER RING REPLACES BRICKS, COIL ROD AND SECURITY BOLTS ADDED. MAR '16 MK | R.1 - REVISED DUCT ENTRY/ALTERNATE ENTRY. REMOVED LIFTING HOLES/BAR AND 300 MM RISER. OCT '18 CC



DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	632 BOX SERVICE BOX ROADWAY DUTY (PREVIOUSLY IN B2-06)	
DISTRIBUTION STANDARDS 	ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016			PAGE 2 OF 3	ES54 B6-04.02

Notes

1. Depth of cover shall comply with C0-02.
2. Excavation and backfilling shall comply with W1-01.
3. Sump and drain are optional, selected by Designer.
4. Grounding shall comply with R2-01.
5. Duct entry shall comply with H1-06.
6. Precast box type 632 cannot accommodate 125 mm ducts.

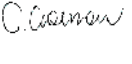
Bill of Material

Item	Description	Catalogue ID	Quantity	Supplied By
1	Service box type 632	400-0995	1	BC Hydro
2	150 mm riser ring	97000964	1 or more (as required)	BC Hydro
3	Collar type 632	400-0997	1	BC Hydro
4	Heavy duty frame	400-0401	1	BC Hydro
5	Heavy duty cover c/w locknut	400-0411	1	BC Hydro
6	75 mm duct plugs	401-0183	Specified by Designer	Contractor
OR	100 mm duct plugs	96021454	Specified by Designer	Contractor
7	75 mm bell ends	401-0197	Specified by Designer	Contractor
OR	100 mm bell ends	96021457	Specified by Designer	Contractor
8	Grounding kit	412-0022	1	BC Hydro
	5/8" x 8' ground rod	420-1093	1	BC Hydro
9	Sump cover	400-0426	1	BC Hydro
10*	Ø 3/4" x 1000 mm coil rod, B-12 Dayton Superior	N/A	6*	Contractor
11*	Ø 3/4" coil nut B-13 Dayton Superior	N/A	12*	Contractor
12	Ø 1/2" x 3" 13 TPI S/S security bolt	96005248	2	BC Hydro

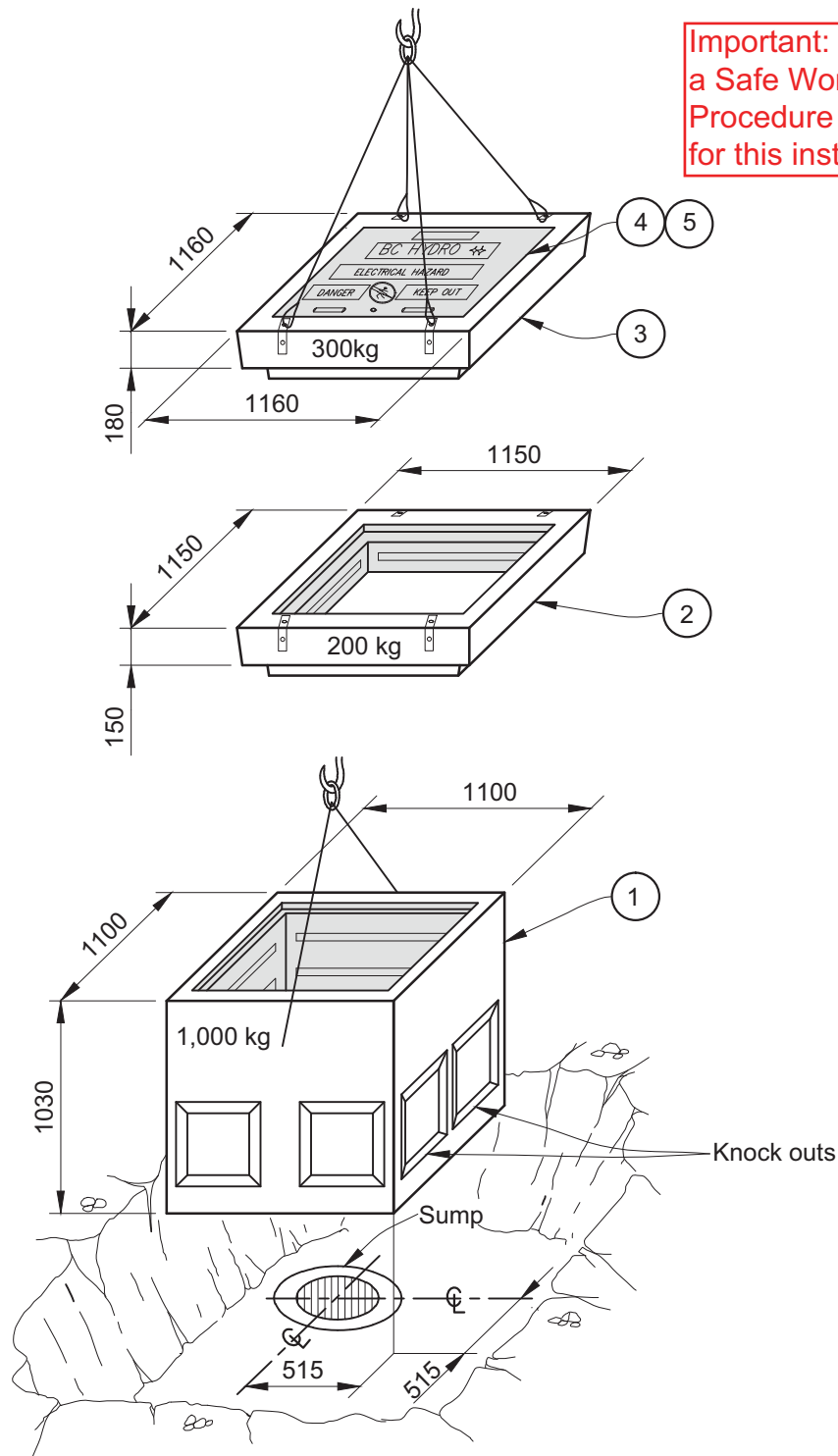
*Items 10 and 11 are optional, specified by Designer.

Reference Standards

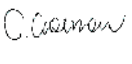
ES54 C0-02	Vault General Notes
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill
ES53 N3-04	Service Box Installation Details – Electrical

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	632 BOX SERVICE BOX ROADWAY DUTY (PREVIOUSLY IN B2-06)	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B6-04.03
					R 1

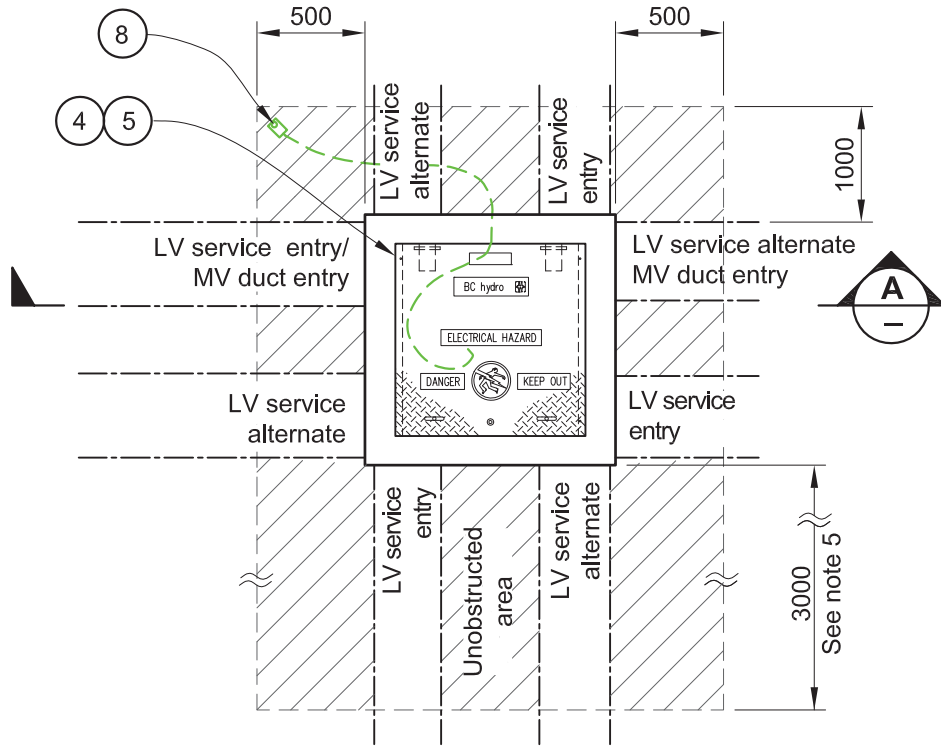
REVISIONS: R.1 - HARDWARE FOR LID QUANTITY CHANGED, AUG '17 MK | R.2 REVISED DUCT ENTRY/ALTERNATE ENTRIES, REMOVED LIFTING HOLES/ BAR, ADDED TEXT BOX AND NOTE 5, OCT '18 CC



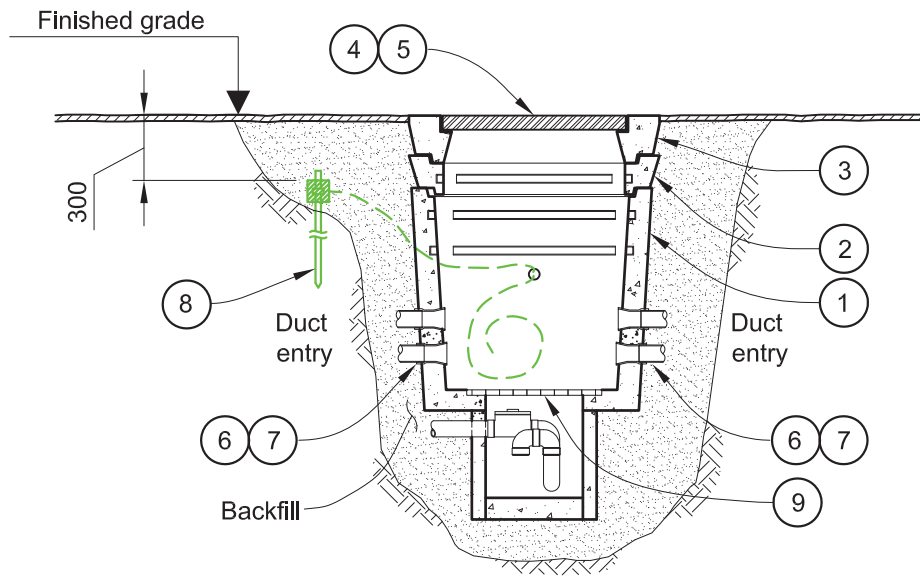
Important: There is a Safe Work Procedure in place for this installation

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	332 BOX SERVICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: AUG 2017 ORIGINALLY ISSUED: MAR 2016		PAGE 1 OF 3	ES54 B7-01.01
					R 2

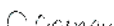
REVISIONS: R.1 - HARDWARE FOR LID QUANTITY CHANGED, AUG '17 MK | R.2 REVISED DUCT ENTRY/ALTERNATE ENTRIES, REMOVED LIFTING HOLES/ BAR, ADDED TEXT BOX AND NOTE 5, OCT '18 CC



Plan



Section A

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	332 BOX SERVICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 	ISSUED: OCT 2018 REPLACES: AUG 2017 ORIGINALLY ISSUED: MAR 2016			PAGE 2 OF 3	ES54 B7-01.02
					^R 2

Notes

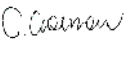
1. Excavation and backfilling shall comply with W1-01.
2. Sump and drain are optional, selected by Designer.
3. Grounding shall comply with R2-01.
4. Duct entry shall comply with H1-06.
5. Unobstructed area may be reduced to 1000 for pull/splice boxes.

Bill of Material

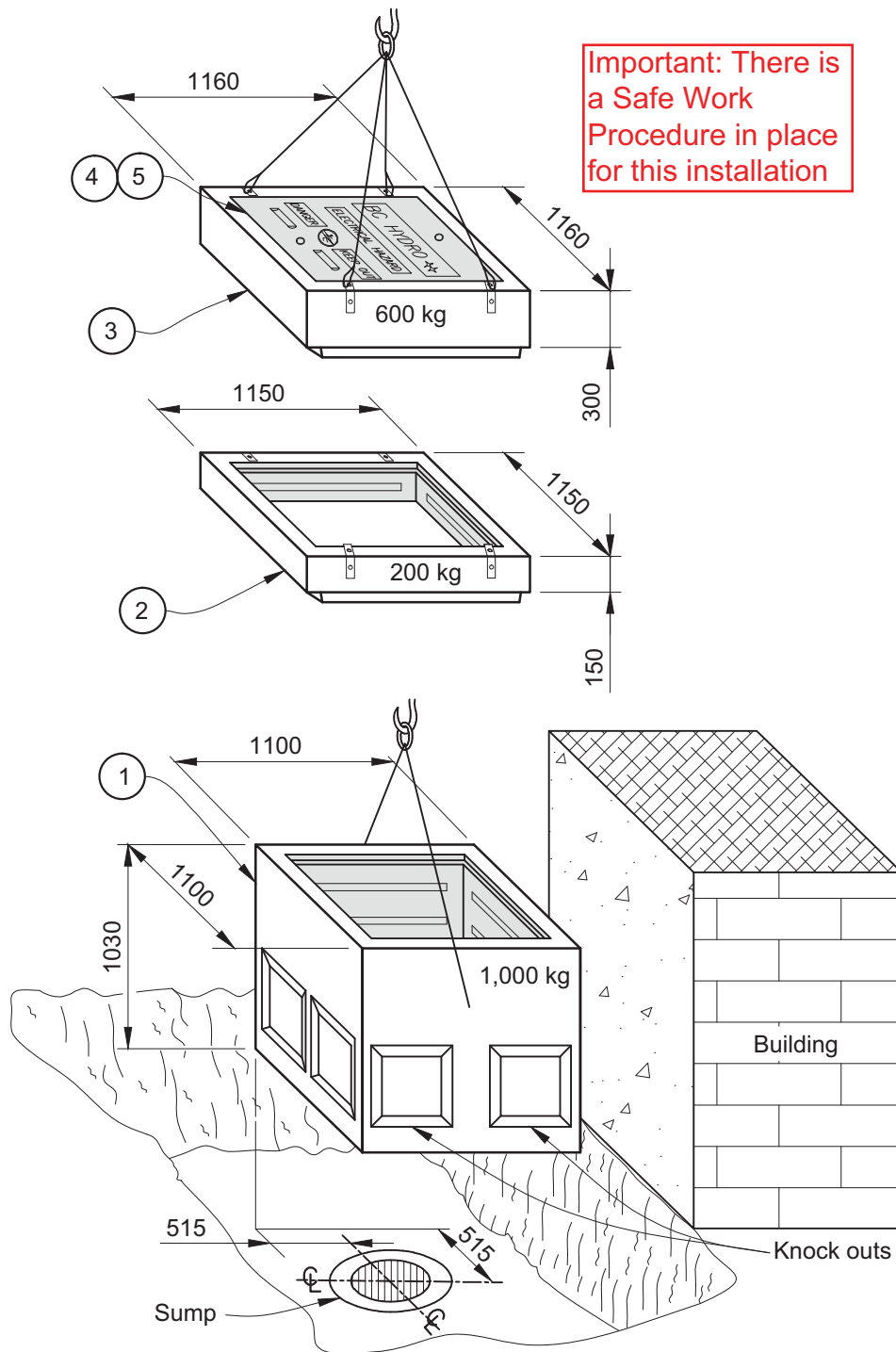
Item	Description	Catalogue ID	Quantity	Supplied By
1	Service box type 332	400-0998	1	BC Hydro
2	Riser type 332	400-0989	1	BC Hydro
3	Collar c/w frame type 332	400-0999	1	BC Hydro
4	Lid	96007598	1	BC Hydro
5	Hardware for lid	412-0042	1	BC Hydro
6	75 mm bell ends	401-0183	Specified by	Contractor
OR	100 mm bell ends	96021454	Designer	Contractor
7	75 mm duct plugs	401-0197	Specified by	Contractor
OR	100 mm duct plugs	96021457	Designer	Contractor
8	Grounding kit	412-0022	1	BC Hydro
	5/8" x 8' ground rod	420-1093	1	BC Hydro
9	Sump cover	400-0426	1	BC Hydro

Reference Standards

ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill
ES53 N3-03	Service Box Installation Details – Electrical
ES53 D2-01	Single-Phase 332 Junction Vault (200 A)

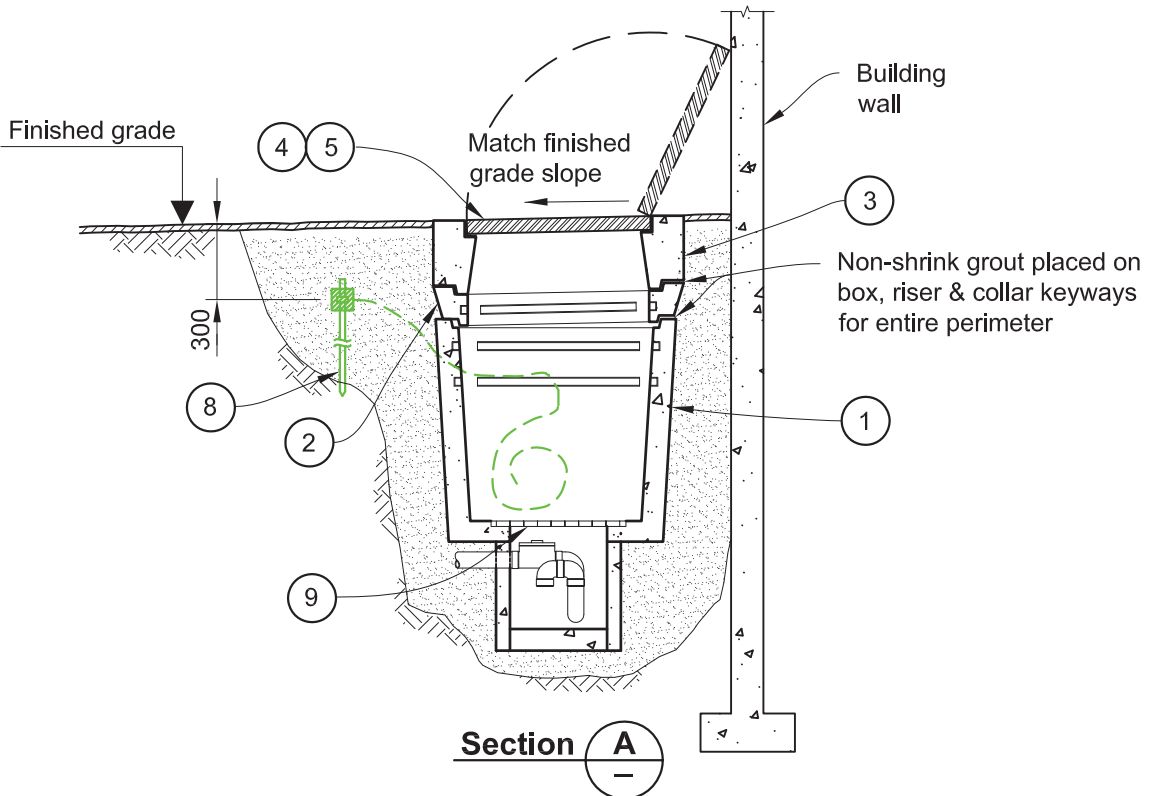
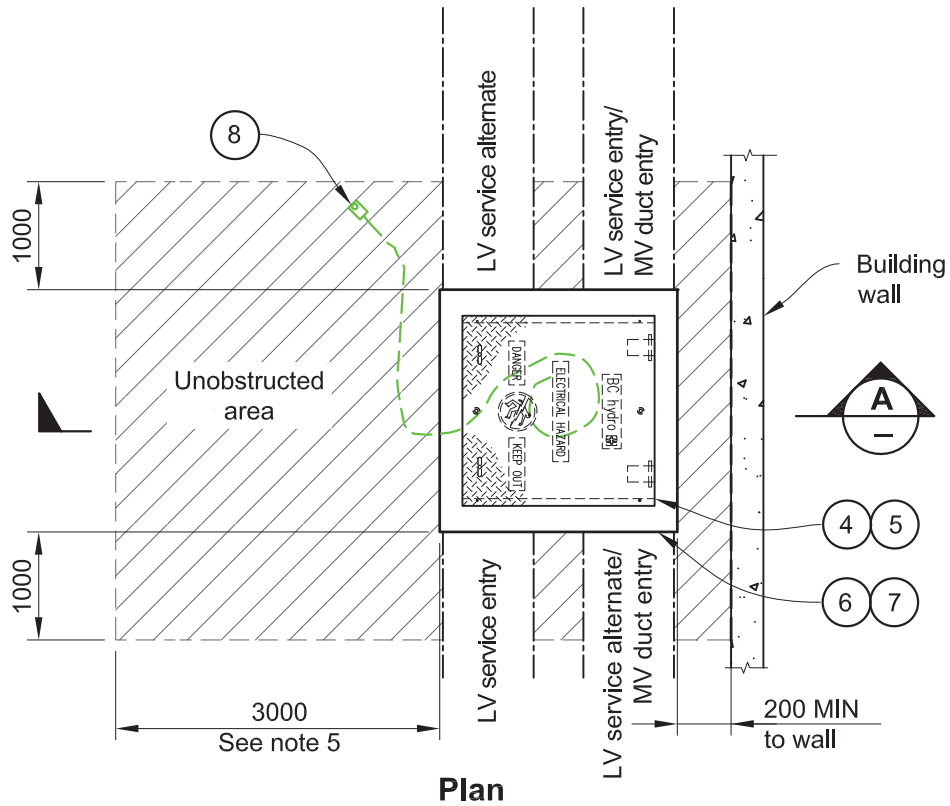
DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	332 BOX SERVICE/JUNCTION BOX SIDEWALK DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: AUG 2017 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B7-01.03
					R 2

REVISIONS: R.2: REVISED DUCT/ALTERNATE ENTRIES. REMOVED LIFTING HOLES/BARS/ ADDED TEXT BOX AND NOTE 5. OCT '18 CC



DESIGNED <i>C. Crowson</i> C. CROWSON	RECOMMENDED <i>L. Stevanovic</i> L. STEVANOVIC	ACCEPTED <i>F. Dennert</i> F. DENNERT	ENGINEER OF RECORD  2018-10-30	332 BOX SERVICE/JUNCTION BOX ACCESS LANE DUTY	
DISTRIBUTION STANDARDS 	ISSUED: OCT 2018 REPLACES: AUG 2017 ORIGINALLY ISSUED: MAR 2016	PAGE 1 OF 3		ES54 B7-02.01	R 2

REVISIONS: R.2: REVISED DUCT/ALTERNATE ENTRIES. REMOVED LIFTING HOLES/BARS/ ADDED TEXT BOX AND NOTE 5. OCT '18 CC



DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	332 BOX SERVICE/JUNCTION BOX ACCESS LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: AUG 2017 ORIGINALLY ISSUED: MAR 2016		PAGE 2 OF 3	ES54 B7-02.02
					^R 2

Notes

1. Excavation and backfilling shall comply with Section W1-01.
2. Sump and drain are optional, selected by Designer.
3. Grounding shall comply with Section R2-01.
4. Duct entry shall comply with H1-06.
5. Unobstructed area may be reduced to 1000 for pull/splice boxes.

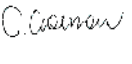
Bill of Material

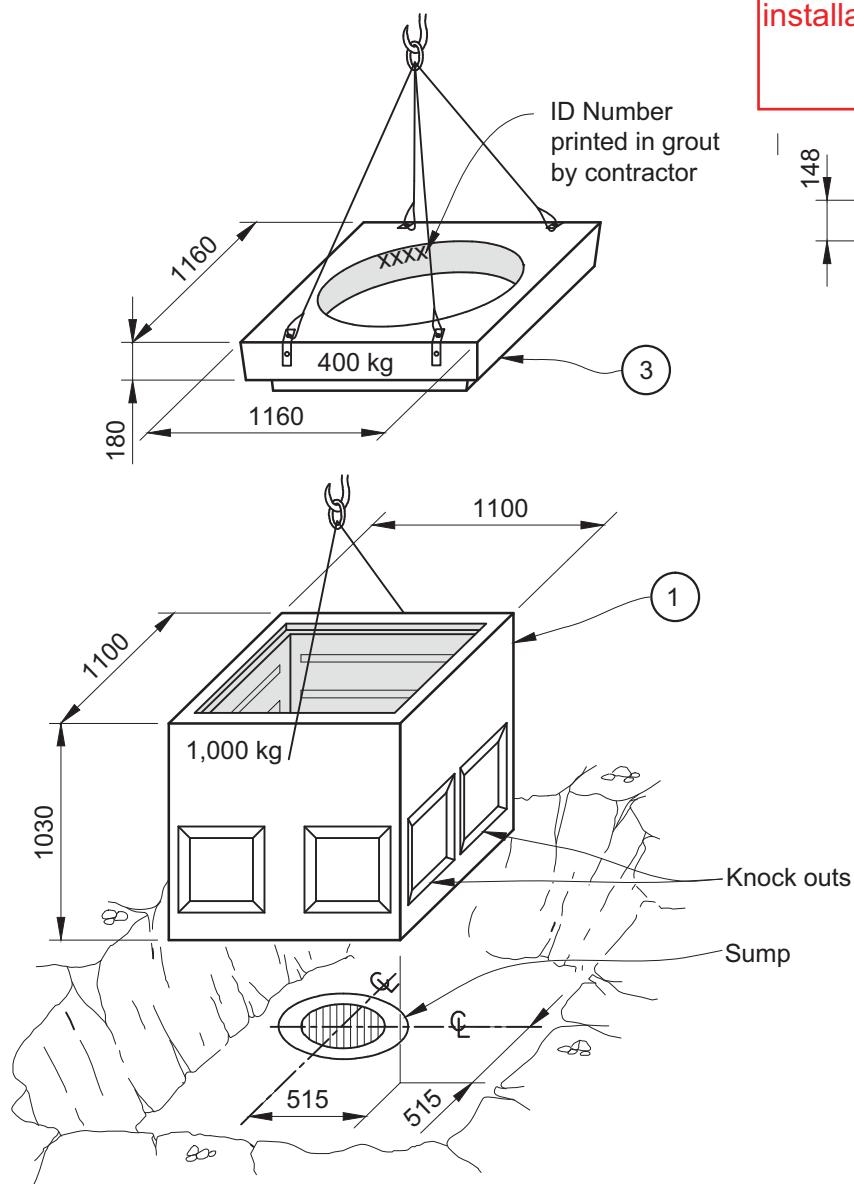
Item	Description	Catalogue ID	Quantity	Supplied By
1	Service box type 332	400-0998	1	BC Hydro
2	Riser type 332	400-0989	1	BC Hydro
3	Lane duty collar c/w frame type 332	96016177	1	BC Hydro
4	Lane duty lid	96016176	1	BC Hydro
5	Hardware for lane duty lid	412-0042	2	BC Hydro
6	75 mm bell ends	401-0183	Specified by Designer	Contractor
OR	100 mm bell ends	96021454		
7	75 mm duct plugs	401-0197	Specified by Designer	Contractor
OR	100 mm duct plugs	96021457		
8	Grounding kit	412-0022	1	BC Hydro
	5/8" x 8' ground rod	420-1093	1	BC Hydro
9	Sump cover	400-0426	1	BC Hydro

Reference Standards

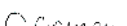
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill
ES53 N3-03	Service Box Installation Details – Electrical
ES53 D2-01	Single-Phase 332 Junction Vault (200 A)

REVISIONS: R.2: REVISED DUCT/ALTERNATE ENTRIES, REMOVED LIFTING HOLES/BARS/ ADDED TEXT BOX AND NOTE 5, OCT '18 CC

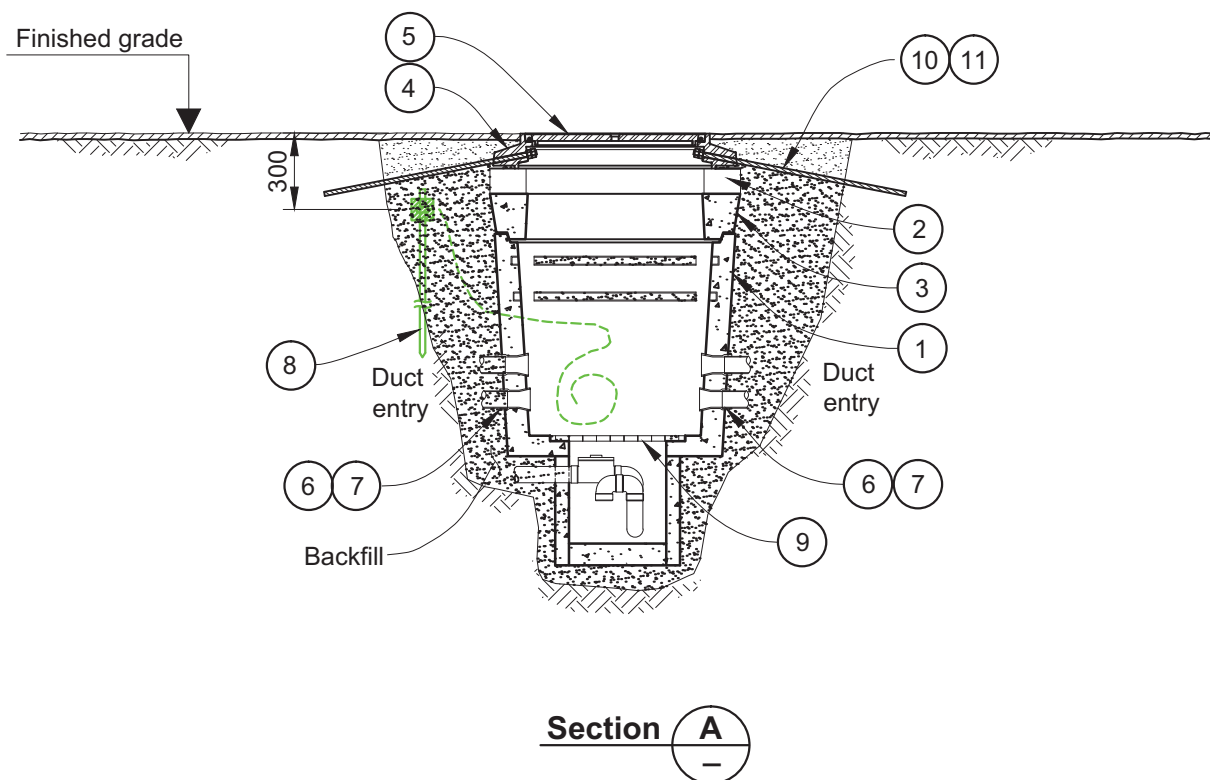
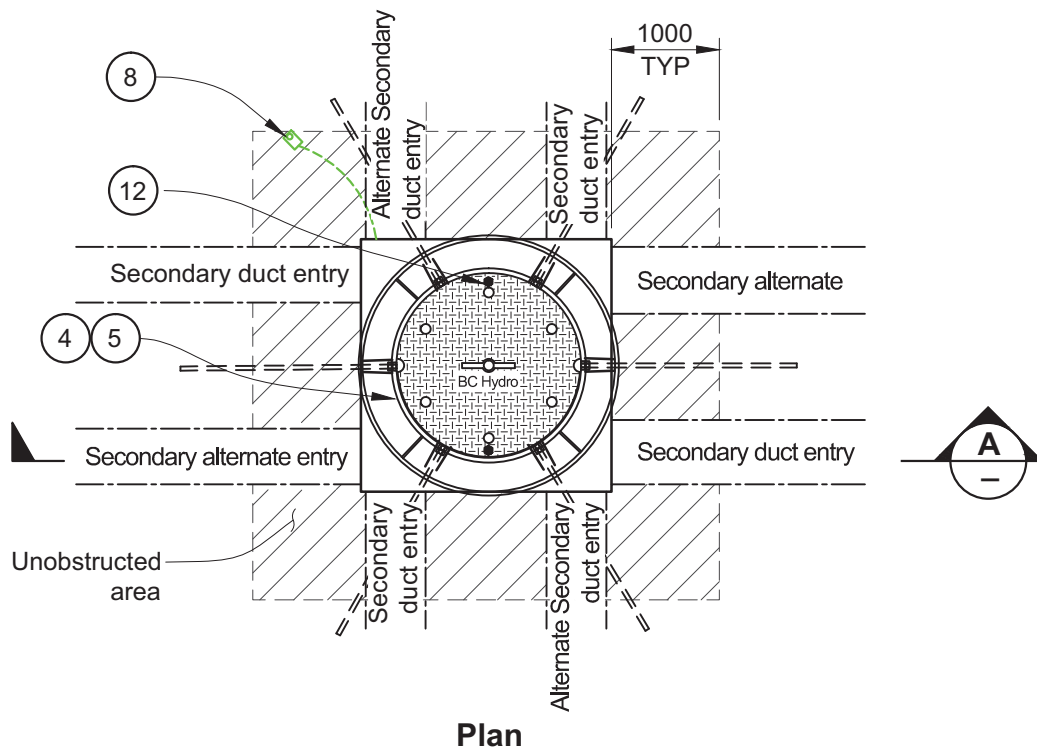
DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	332 BOX SERVICE/JUNCTION BOX ACCESS LANE DUTY	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: AUG 2017 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B7-02.03
					R 2



Important: There is a Safe Work Procedure in place for this installation

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2018-10-30	332 BOX SERVICE BOX ROADWAY DUTY (PREVIOUSLY IN B2-05)	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 1 OF 3	ES54 B7-03.01
					R 1

REVISIONS: R.0 - PREVIOUSLY IN B2-05, RISER RING REPLACES BRICKS. COIL ROD AND SECURITY BOLTS ADDED. MAR '16 MK | R.1 - REVISED DUCT ENTRY/ALTERNATE ENTRY. REMOVED LIFTING HOLES/BAR AND 300 MM RISER. OCT '18 CC



DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  2018-10-30	332 BOX SERVICE BOX ROADWAY DUTY (PREVIOUSLY IN B2-05)	
DISTRIBUTION STANDARDS BC Hydro		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 2 OF 3	ES54 B7-03.02
				R 1	

Notes

1. Depth of cover shall comply with C0-02.
2. Excavation and backfilling shall comply with W1-01.
3. Sump and drain are optional, specified by Designer.
4. Grounding shall comply with R2-01.
5. Duct entry shall comply with H1-06.

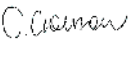
Bill of Material

Item	Description	Catalogue ID	Quantity	Supplied By
1	Service box type 332	400-0998	1	BC Hydro
2A	300 mm riser ring	97000965	1	BC Hydro
2B	150 mm riser ring	97000964	1 or more (as required)	BC Hydro
3	Collar type 332	400-0983	1	BC Hydro
4	Heavy duty frame	400-0401	1	BC Hydro
5	Heavy duty cover c/w locknut	400-0411	1	BC Hydro
6	75 mm bell ends	401-0183	Specified by Designer	Contractor
OR	100 mm bell ends	96021454		
7	75 mm duct plugs	401-0197	Specified by Designer	Contractor
OR	100 mm duct plugs	96021457		
8	Grounding kit	412-0022	1	BC Hydro
	5/8" x 8' ground rod	420-1093	1	BC Hydro
9	Sump cover	400-0426	1	BC Hydro
10*	Ø 3/4" x 1000 mm coil rod, B-12 Dayton Superior	N/A	6*	Contractor
11*	Ø 3/4" coil nut B-13 Dayton Superior	N/A	12*	Contractor
12	Ø 1/2" x 3" 13 TPI S/S security bolt	96005248	2	BC Hydro

*Items 10 and 11 are optional, as specified by Designer.

Reference Standards

ES54 C0-02	Vaults, General Notes
ES54 R2-01	Grounding of URD and UD Subsurface Structures in Public Corridors
ES54 H1-06	Duct Entry at Vaults and Boxes
ES54 G	Drainage Assemblies
ES54 W1-01	Excavation and Backfill
ES53 N3-03	Service Box Installation Details – Electrical

DESIGNED  C. CROWSON	RECOMMENDED  L. STEVANOVIC	ACCEPTED  F. DENNERT	ENGINEER OF RECORD  C. E. CROWSON #45713 BRITISH COLUMBIA ENGINEER 2018-10-30	332 BOX SERVICE BOX ROADWAY DUTY (PREVIOUSLY IN B2-05)	
DISTRIBUTION STANDARDS 		ISSUED: OCT 2018 REPLACES: MAR 2016 ORIGINALLY ISSUED: MAR 2016		PAGE 3 OF 3	ES54 B7-03.03
					R 1

Application

This standard provides installation details for sidewalk duty precast concrete replacement collars with standardized aluminum lids, designed for use on legacy subsurface utility boxes such as BC Hydro's 4040, 444, 1.5, and 555 series. Table 1 lists available precast concrete replacement collars with aluminum lids and their compatibility with legacy box sizes.

Table 1 – Replacement collars compatibility with existing collar external size

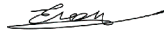
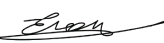
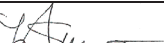
Replacement collar type, description, and material number	Outgoing collar external size (mm)
1160 x 1160 sidewalk duty precast concrete replacement collar with aluminum lid, 9701-2759	Up to 1060
332 sidewalk duty collar with aluminum lid, 400-0999	1070 to 1190
1220 x 1220 sidewalk duty precast concrete replacement collar with aluminum lid, 9701-2757	1200 to 1270
1520 x 1520 sidewalk duty precast concrete replacement collar with aluminum lid, 9701-2758	1500 to 1520

Revision Notes

New standard, released concurrently with Standards and Equipment Advisory Information Bulletin 2025-034
Released ES54 B8-01 Precast Concrete Replacement Collars Sidewalk Duty.

Items Required

Item	Description	Material number	Quantity	Supplied by
1	1220 x 1220 collar, comes with frame	9701-2757	1	BC Hydro
2	1520 x 1520 collar, comes with frame	9701-2758	1	BC Hydro
3	1160 x 1160 collar, comes with frame	9701-2759	1	BC Hydro
4	Lid, sidewalk duty	9600-7598	1	BC Hydro
5	Hardware for lid	412-0042	1	BC Hydro

Designed: E. Eliasov, P. Eng			Precast Concrete Replacement Collars Sidewalk Duty	
Checked: E. Eliasov, P. Eng				
Reviewed: L. Stevanovic, P. Eng			DISTRIBUTION STANDARDS 	ES54 B8-01 R0
Approved: H. Giesbrecht, P. Eng				
		Issued: 2025-12-19 Effective: 2025-12-19		

References

BC Hydro Distribution Standards

ES54 B0-02	Pull / Splice, Service, and Junction Boxes General Notes
ES54 P1-01	Vault / Box Safety Security Bolts for Lightweight Lids
ES54 U1-01	Finished Grade Adjustment and Access
ES54 W1-01	Construction Materials Excavation and Backfill

Notes

1. Excavation and backfilling shall comply with ES54 W1-01.
2. Position the collar with the lid hinges aligned on the J-bar side to allow access for operations.
3. Install collar flush with finished grade. See ES54 U1-01 for details on adjusting collar and lid elevation to accommodate finished grade elevation.
4. Replace deteriorated boxes (e.g. exposed rusted rebar, crumbling concrete) with applicable box. Do not just replace the collar.

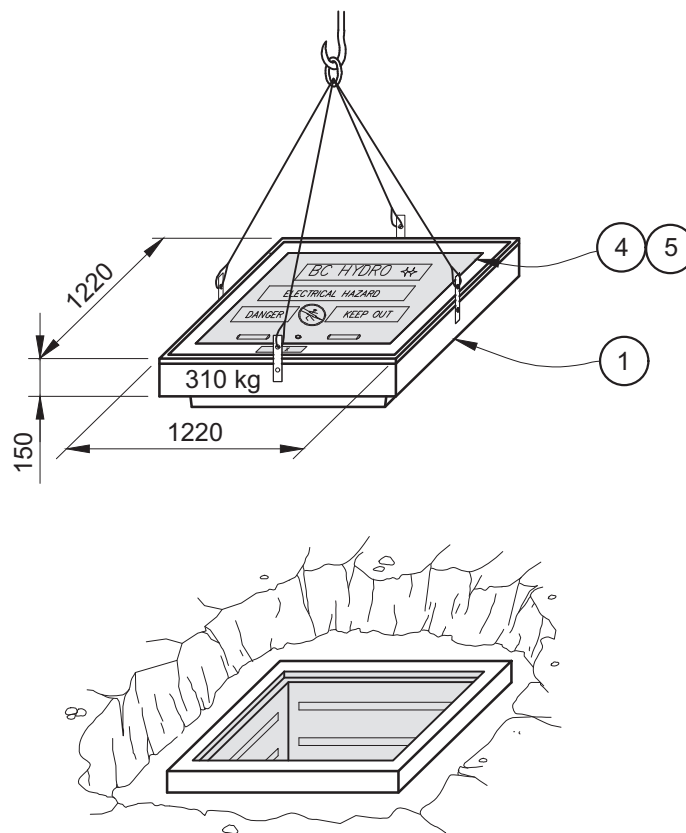


Figure 1 – 1220 x 1220 replacement collar

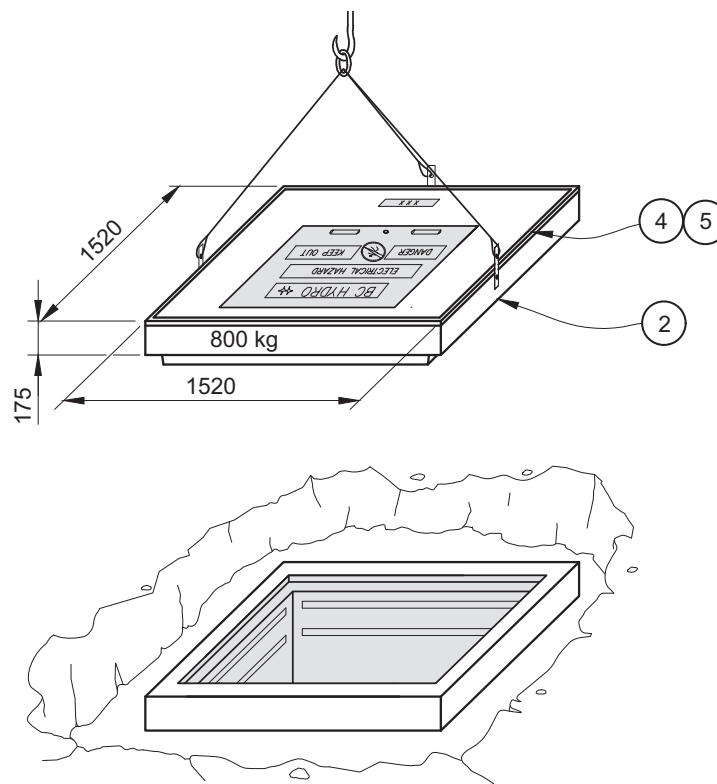


Figure 2 – 1520 x 1520 replacement collar

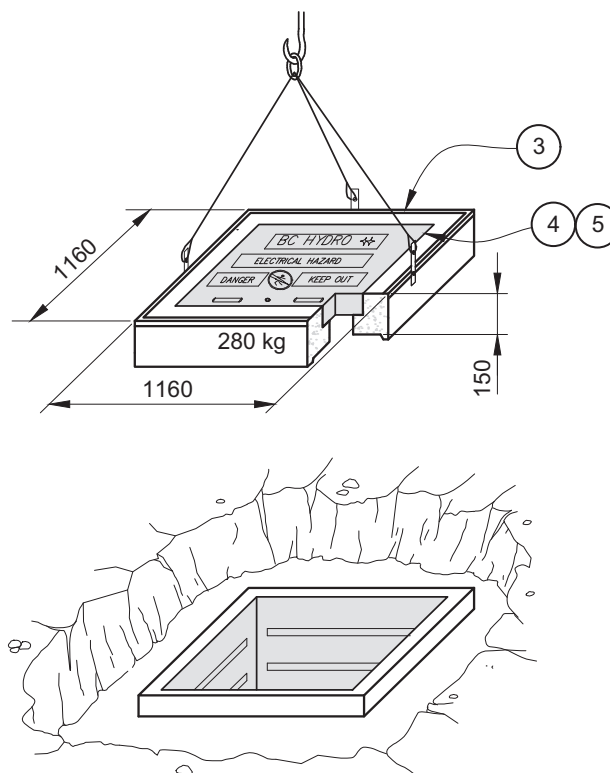


Figure 3 – 1160 x 1160 replacement collar