INDEX - URD CONSTRUCTION

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

URD CONSTRUCTION

DATE: 03/05/25	DWG. NO.: 1600
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1

BURLINGTON ELECTRIC DEPARTMENT (BED)
BED UNDERGROUND DISTRIBUTION GENERAL INFORMATION

- All BED owned underground cable shall be installed in approved conduit. Customer owned cable shall also be installed in approved conduit.
- Conduit sections between termination points, transformers and terminating cabinets should not exceed 400ft. Conduit sections shall not exceed 270° in turns and bends.
- Service to customers in a residential subdivision shall be provided from the property line.
- All underground systems, including underground services from overhead lines, shall be mapped showing the location of all conduits and equipment. Locations shall be in relation to fixed points such as property boundaries. Variations in design shall be reported to the Engineering Department for revision of drawings.
- BED to take ownership of all facilities up to the agreed upon Delivery Point[1].
- BED shall supply transformers for non-primary metered customers. Labor/material to install the transformer shall be at the customer's expense.

I) BED Responsibilities at Customer Expense:
- A) Provide an electrical design plan for electric service.
- B) Provide an estimate of cost for BED work and materials.
- C) Provide trench, vault, conduit, and back-fill specifications.
- D) Provide riser pole specifications.
- E) Provide Metering Specifications.
- F) Install primary/secondary BED owned conductors and terminations.
  - 1) BED shall assist with installation of Customer-Owned Lines[2].
- G) Connect customer owned cable to BED Delivery Point.
- H) Inspection of conduit, vault and handhole installations to BED standards.
- I) Install all BED owned equipment.
- J) Install ground grids.

II) Materials Supplied by BED at Customer Expense to be Owned by BED:
- A) Fiberglass boxes and handholes.
- B) Typical BED owned equipment: Terminating cabinets, Capacitor banks, switches, etc.
- C) Red marking tape.
- D) Frost Sleeves, condulators, mounting brackets and conduit straps for conduits attached to BED poles.
- E) Primary/Secondary cables.

III) Customer Responsibilities at Customer Expense:
- A) Provide a survey plot plan, detailing significant structures and other utilities.
- B) Provide metering specifications and system 1-line of metering equipment.
- C) Provide detailed load information.
- D) Provide for necessary easements.
- E) Make payment to BED in advance of Engineering/Construction.
- F) Provide 5 working days' notice to BED prior to any required installations.
- G) Trench and backfill under inspection of BED personnel.
- H) Install Red marking tape.

[1] As defined in Vermont Public Utility Commission Rule 5.603(e) effective 10/1/2008.
[2] As defined in Vermont Public Utility Commission Rule 5.603(d) effective 10/1/2008.

I) Install all conduits complete with 500 pound rated pull string under inspection of BED personnel per BED's specification and approval.
J) Installation of all vaults, fiberglass boxes and handholes.
K) Install Customer-Owned Lines extending from Delivery Point.
L) Install residential service conduit and cable to BED standards. Ownership to be transferred to BED upon inspection and energization.
M) Install commercial and industrial Customer-Owned Lines in conduit to NEC and Burlington wire inspector standards.
N) DPW excavation fees and Site Restoration.

IV) Materials Supplied by Customer at Customer Expense to be Taken Over and Owned by BED:
A) All conduit, trenching, couplings and sweeps to BED specifications.
B) Riser conduits, 10' of schedule 80 PVC conduit and remainder of schedule 40 PVC conduit to electric zone on pole.
C) Utility holes and padmount vaults per BED specification and approval.
D) Underground Residential secondary conduit and cable from distribution connection point to Delivery Point.

BURLINGTON ELECTRIC DEPARTMENT (BED)
GENERAL SPECIFICATIONS FOR CONTRACTORS

I) GENERAL:

A) The Contractor shall meet the requirements of the NESC (National Electric Safety Code) and Burlington Electric Construction Standards.

B) The Contractor is responsible for all damage to property, public or private, occurring in connection with this construction.

C) The Contractor shall contact Dig Safe a minimum of 48 hours prior to construction. The Contractor shall be responsible for safely working adjacent to all utilities.

D) The Contractor shall maintain at the job site a separate set of plans which shall be used for as-built records. These as-built records shall be provided to BED upon completion of work.

E) The project drawings indicate approximate locations only and are not intended to establish exact locations. In laying out the work, if the Contractor encounters conditions that indicate conflict with the intent of the plans he/she shall promptly notify BED and request adjustment before proceeding with the work in the affected area.

1) Contractors may present alternative conduit routing for consideration by BED. Approval of conduit routing, placement and other items deemed necessary shall be obtained from BED in writing prior to construction.

F) The Contractor shall coordinate final excavation details with BED prior to starting any excavation. Failure to do so, and any subsequent expenses due to such failure, shall be the responsibility of the Contractor.

G) BED shall provide an inspector during Contractor excavation, installation and back-fill operation. The Inspector shall make all attempts to be present at the site, however it shall be understood by the Contractor that the Inspector may have to leave the site as needed for other projects, and therefore the Contractor shall be prepared to perform other work in the interim at no additional cost to BED. Prior to backfilling any trench involving new duct bank systems, contact BED, to schedule the inspection of the new duct bank system location and depth. All work is subject to inspection and approval of BED. Non-complying construction will be brought into compliance as directed at the expense of the Contractor. It is the responsibility of the Contractor to notify BED prior to backfilling. The Contractor shall provide notice at least one full business day ahead of the day backfilling is expected; the specific time may be determined the day of backfilling. If notice is not given prior to backfilling, BED shall have the right to require any or all work to be exposed for visual inspection at the expense of the Contractor.

H) BED shall provide assistance to enter utility holes, vaults, handholes, transformers, pedestals, and other similar locations. The Contractor shall provide a minimum of 24 hours of advance notice when BED assistance is required for access. The Contractor shall be responsible for coordinating work for their crews for the interim. BED shall not cover any costs associated with work stoppage, unless agreed to by BED.

I) All applicable permits and fees, including excavation fees, are the responsibility of the Contractor.

J) Throughout construction, the Contractor shall provide BED with updated schedules to accurately reflect the time frame of work.

K) Throughout construction, the Contractor shall provide appropriate traffic control.

L) When there are energized electrical cables in the project area any work around these cables shall be coordinated with and approved by BED.
M) The Contractor shall provide all materials, unless otherwise noted.

II) TECHNICAL:
A) General (applies to all following sections of this specification):
1) The Contractor shall be responsible for all excavation, conduit / pipe system installation, fiberglass pad installations, transformer vault installations, utility hole installations, CDR box installations, core drilling of utility hole and transformer vault walls for conduit entries, backfilling and site restoration.
2) In areas where the new conduit system will run near the root system of trees, the conduits shall be installed to minimize damage to the root system.
3) The Contractor shall saw cut the existing streets, sidewalks and driveways to prevent jagged, uneven, or broken edges of the existing pavement or concrete.
4) The Contractor shall take appropriate steps to protect the existing pavement, concrete sidewalks, curbing, foundation walls, driveways, pavers, shrubs, trees, etc. from damage during construction. If damage occurs, Contractor shall repair all damages at his/her expense.
5) In general, the top of the conduit shall be at 36 inches below finished grade unless specified on the project drawings (refer to project drawings for each installation).
6) The Contractor shall insure that the installed conduit is free of dirt or debris.
7) The conduit system shall maintain a minimum clearance from water, sewer and gas lines of 5 feet. Where this is not feasible, a lesser clearance may be authorized with written approval of all involved parties. The requesting party shall submit approvals to BED.
8) The conduit system shall maintain a minimum clearance of 12 inches from communication conduits and customer-owned electrical conduits.
9) Conduits crossing water, sewer, or gas lines will be installed so as not to place any strain on these services.
10) A 1/4" nylon or polypropylene pull line having a 500-pound rating shall be installed and secured in each conduit.

B) Temporary restoration of trenches in the street:
1) The Contractor shall wait a minimum of 12 hours after the pours of the concrete before backfilling the trench with loose material. The wait period can be reduced to 6 hours if 5,000 PSI concrete mix with 2% “non-chloride” accelerator is used. The Contractor will then install a top layer of hard surface material with a minimum of 2” of approved material. Until the trench is backfilled, steel plates shall be placed over the open trenches in road-crossings and other street locations. For non-road crossing, the Contractor may elect to barricade the area until the trench is backfilled. The Contractor shall obtain all permits and meter bags from the City Department of Public Works (DPW) for the parking spaces they will be barricading and are responsible for all expenses.
2) The backfill material shall be approved and follow the specifications per DPW.
3) All areas covered with the temporary surface will be compacted per DPW specifications.

C) Permanent site restoration:
1) The Contractor shall permanently backfill the trench with loose material per BED and DPW

specifications. Material shall be placed in maximum 6 inch lifts, with each lift compacted to 95% Proctor. Permanent backfill/compaction shall not take place until the concrete has cured for a minimum of 48 hours after pouring

2) The Contractor shall completely restore all disturbed areas of the private property, street, greenbelt, curbing, and sidewalk to the satisfaction of the DPW, BED, and the property owners.
3) Affected areas of concrete sidewalk shall be replaced with concrete per DPW specifications.
4) The Contractor shall repave the excavated areas in the street or driveway to match the existing pavement.
5) The Contractor shall repave the excavated areas in asphalt sidewalks to match the existing pavement.
6) After backfilling, the Contractor shall loam, rake smooth, roll, and mulch grass areas as required by DPW specifications.

D) Traditional excavation and conduit placement:
1) Installation:
(a) The bottom of the trench designed by BED shall be undisturbed original ground or firmly compacted earth free from voids, rocks, or rubble and of relatively smooth arch. The bottom of the trench shall be lined with a minimum of 2 inches of clean sand.
(b) A maximum of 270 degrees in bends will be permitted in a single run of conduit. Bends and sweeps shall be of a 36" radius at the riser poles and minimum of 48” along the conduit system, unless otherwise indicated on the project drawings. No change of direction greater than 5 degrees will be permitted between lengths of rigid conduit without the use of a formed bend. No kinks or distortions will be accepted in formed bends.
(c) Duct bends required for passing under existing lines or duct banks shall be made using field bends. Field bends shall be made using hot-box benders as recommended by the duct manufacturer. The bends shall not cause any change in the configuration or internal cross section area of the duct.
(d) PVC duct joints shall be made watertight by the use of brush-applied cement as recommended by the manufacturer.
(e) Duct spacers shall be installed not more than 6 feet apart along runs and not more than 2 feet from fiberglass pads or lateral takeoff elbows. Base spacers shall be set on a firm base and anchored to prevent movement during pour.
(f) In areas not requiring encasement, the material used for conduit separation shall be clean sand. A minimum of 6 inches of sand shall cover the conduits.
(g) A two-inch (2") spacing shall be maintained between adjacent conduits (1”- 4” conduits).
(h) All conduits in each run shall be the same type. Mixing is not acceptable.
(i) All backfill shall be free of any material that may damage the conduits.
(j) The Contractor shall install BED furnished plastic warning tape, describing buried electrical lines, along the entire length of the duct bank at a depth of 12 inches below finished grade.
(k) Support brackets on riser poles will be furnished and installed by BED per BED standard 1605. Conduits shall then be stubbed up 6” from the face of the pole with 10’

of SCH80 PVC (supplied by contractor) to allow for stand-off brackets. BED shall then install riser per BED standard 1617 and 1618.

2) Encasement and Anchoring:
   (a) All BED conduits installed in trenches under the street shall be encased with concrete per BED construction standard section 1603, unless otherwise noted on project drawings.
   (b) The top of the conduit shall be at 36" below finished grade. The concrete shall be of a grade of no less than 3,000 psi compressive strength rating. Concrete encasement shall extend a minimum of four inches (4") away from the outermost conduits in all directions. Slump shall be 3 to 5 inches, and the concrete shall be worked in to completely surround all conduits.
   (c) If the top of the conduit is approved by BED to be between 24" and 35 inches below finished grade, the concrete shall be of a grade no less than 5,000 psi comprehensive strength rating. Concrete encasement shall extend at least six inches (6") away from the outermost conduits in all directions. Slump shall be 3 to 5 inches, and the concrete shall be worked in to completely surround all conduits.
   (d) When it is expected that there will be an interval of four hours or longer between pours of concrete, reinforcement bars shall be installed across the construction joint. The bars shall be size #4 and not less than 6 feet in length. One bar shall be installed in each corner, and between ducts in the top and bottom of the concrete envelope, two inches (2") from the outside surface. Each bar shall extend approximately equal distances into the two pours of concrete.
   (e) Prior to pouring concrete, the duct shall be securely anchored to prevent movement during the pour. Anchors shall be within two feet (2') and on each side of a joint, at each end of a bend, and at a maximum distance of ten feet (10') between anchors.
   (f) Where lateral takeoffs of ducts from concrete envelopes are made; the forms shall be slotted for the installation of the elbow with forms placed over the elbow to retain concrete during pour. Lateral takeoff conduits shall be rigidly supported during pour and cure.
   (g) Forms for duct sections shall be provided in all cases except, with BED approval, when the soil conditions are such that the trench can be excavated to the required width and depth, leaving firm and vertical walls that may be suitably employed as a substitute for fabricated forms.
   (h) All forms and other materials shall be completely removed when installation is complete.
   (i) The duct envelope should be square or rectangular in cross section and shall provide for concrete thickness over the outside ducts as specified in BED standard 1604.

3) Conduit used for traditional excavation:
   (a) Conduit shall be installed to the depth and separation requirements as shown on project drawings. The typical cross section of a conduit system is shown in BED standard 1604.
   (b) The Contractor shall install the number, size, and type of conduit(s) shown on all project drawings per BED standard 1603.
   (c) All conduit shall be UL listed and meet NEMA standard TC-2 (Latest Edition). All fittings shall meet NEMA standard TC-3 (Latest Edition).

(d) PVC fittings, couplings, elbows, bell ends, and spacers shall be the product of the same manufacturer as the duct and designed for use with the type of duct installed, or be approved by BED.

E) Directional drilling/boring

1) Directional Boring/Moling Conduit:

(a) The Contractor shall install pipe or conduit of the quantity, size, and strength specified in the project drawings.

(b) Sweeps shall be 36" radius at riser poles and minimum 48” radius along the conduit system and shall have compatible inside and outside diameters with the conduit or HDPE pipe.

(c) All conduit shall be SCH80 PVC or equivalent High Density Polyethylene (HDPE), suitable for direct burial. Conduit shall be red in color to signify buried electrical conduit.

(d) PVC/HDPE fittings, couplings, elbows, bell ends and spacers shall be the product of the same manufacturer as the duct and designed for use with the type of duct installed, or be approved by BED.

(e) All HDPE to HDPE pipe joints shall be made using watertight compression fittings or a fused connection. All HDPE to PVC pipe joints shall be made using Shur-Lock II HDPE Coupler fittings or equivalent.

(f) The Contractor shall chamfer the inside of both conduits / pipes at each joint to provide a smooth transition between the conduits / pipes.

2) Installation:

(a) The Contractor shall submit a detailed construction plan with their bid. At a minimum, this plan shall indicate:

(a) The proposed pipe / conduit routing

(b) The expected location and size of all necessary access pits

(c) Ground shoring and bracing techniques

(d) Ground water stabilization and dewatering techniques

(e) Method of soil disposal

(f) Grade and alignment system details

(g) Pipe jointing method and details

(b) Before beginning construction at any location of this project, the Contractor shall adequately protect existing structures and other permanent objects.

(c) The Contractor shall determine the necessary steps for directional boring or conduit moling, subject to approval by BED.

(d) The Contractor is responsible for the performance of the equipment and methods selected for directional boring.

(e) All work of excavating, shoring, bracing, and directional boring / conduit moling shall be so executed that settlement is minimized, the in-place pipe shall have full bearing against the earth, and no voids or pockets are left in any portion of the work.

(f) The Contractor shall determine the exact starting location for the directional boring / conduit moling process. The Contractor is responsible for maintaining proper alignment and depth below finished grade of the pipe.

(g) The excavation and run of pipe being installed shall be controlled such that any

deviation from grade is below the design grade.

(h) The Contractor shall monitor ground movements associated with the work and make suitable changes in the construction methods to control ground movements and prevent damage or detrimental movement to the work and adjacent structures and pavements.

3) Access pits:
   (a) The Contractor shall construct pits to accommodate the installation of pipe and the directional boring / conduit moling equipment.
   (b) The Contractor shall properly support all excavations and prevent all movement of the soil, pavement, utilities or structures outside of the excavation.
   (c) The Contractor shall install seals in the pit walls as required to control ground movement where the casings enter and exit the ground.

CONDUIT USAGE CHART

LOCATION	MINIMUM ACCEPTABLE CONDUIT
LAWNS (PRIMARY CONDUITS)	SCH 80 PVC, UL LISTED, NON-CONCRETE ENCASED OR SCH 40 PVC, UL LISTED, ENCASED IN CONCRETE
LAWNS (SECONDARY CONDUITS)	SCH 40 PVC, UL LISTED, NON-CONCRETE ENCASED
SIDEWALKS	SCH 80 PVC, UL LISTED, NON-CONCRETE ENCASED (OR EQUIVALENT STRENGTH USING DIRECTIONAL BORING) OR SCH 40 PVC, UL LISTED, ENCASED IN CONCRETE
DRIVEWAYS	SCH 80 PVC, UL LISTED, NON-CONCRETE ENCASED (OR EQUIVALENT STRENGTH USING DIRECTIONAL BORING) OR SCH 40 PVC, UL LISTED, ENCASED IN CONCRETE
PARKING LOT (PRIMARY CONDUITS)	SCH 40 PVC, UL LISTED, ENCASED IN CONCRETE
PARKING LOT (SECONDARY CONDUITS)	SCH 80 PVC, UL LISTED, NON-CONCRETE ENCASED (OR EQUIVALENT STRENGTH USING DIRECTIONAL BORING). PLACED LATERALLY (NON-STACKED) OR SCH 40, UL LISTED, ENCASED IN CONCRETE
PAVED AND NON-PAVED AREAS SUBJECT TO VEHICULAR TRAFFIC	SCH 40 PVC, UL LISTED, ENCASED IN CONCRETE
RISERS, FIRST 10' ABOVE GRADE	SCH 80 PVC, UL LISTED
RISERS, AFTER FIRST 10' ABOVE GRADE	SCH 40 PVC, UL LISTED

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
CONDUIT USAGE CHART	
DATE: 09/05/19	**DWG. NO.:** 160301
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2

MINIMUM CONDUIT SIZE CHART				
CABLE SIZE, TYPE	CONDUIT SIZE			
	2 1/2"	4"	5"	6"
1–1/0 PRIMARY, 15kV	X			
3–1/0 PRIMARY, 15kV		X		
3–350 PRIMARY, 15kV + 1–4/0 CU NEUTRAL		X		
1–750 MCM PRIMARY, 15kV + 1–1/0 CU NEUTRAL		X		
1–1000 MCM PRIMARY, 15kV + 1–1/0 CU NEUTRAL		X		
1/0 TRIPLEX SERVICE	X			
1/0 TRIPLEX SECONDARY	X	X*		
1/0 QUADRUPLEX SERVICE	X			
4/0 TRIPLEX SERVICE	X**	X		
4/0 TRIPLEX SECONDARY		X		
4/0 QUADRUPLEX SECONDARY OR SERVICE		X		
350 TRIPLEX SERVICE		X		
350 TRIPLEX SECONDARY		X		
350 QUADRUPLEX SECONDARY OR SERVICE		X		
500 TRIPLEX SECONDARY		X		
3–750 MCM PRIMARY 15kV OR 35kV + 1–4/0 CU NEUTRAL				X
3–1000 MCM PRIMARY 15kV + 1–4/0 CU NEUTRAL				X

NOTES

1. 2" CONDUIT MAY BE USED FOR SERVICES IF EXISTING METER CHANNELS WILL NOT ACCEPT LARGER CONDUIT.

* USE IF SECONDARY RUN MAY BE UPGRADED IN THE FUTURE.

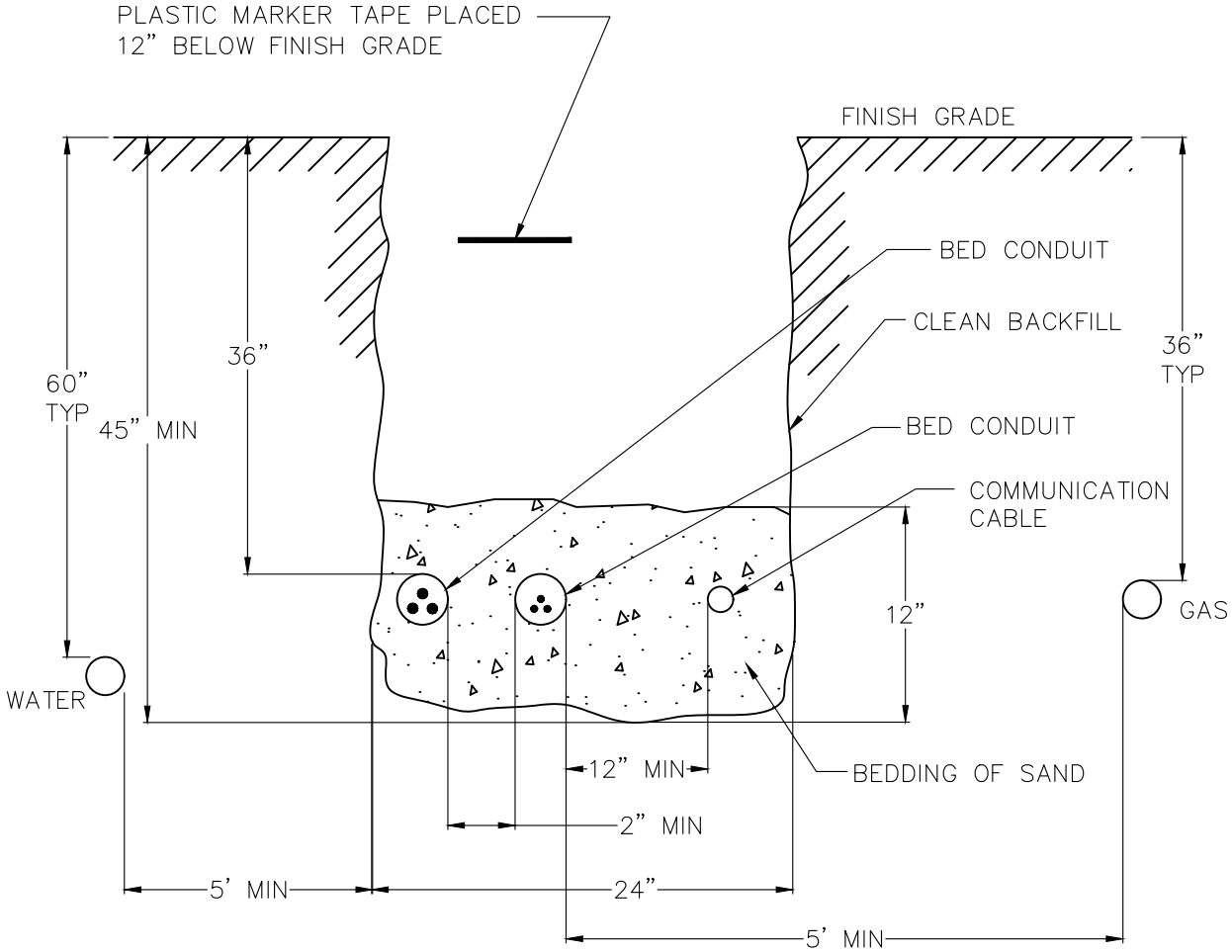
** ONLY FOR USE IN EXISTING CONDUIT RUNS WITH MINIMAL BENDS.

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

CONDUIT SIZE CHART

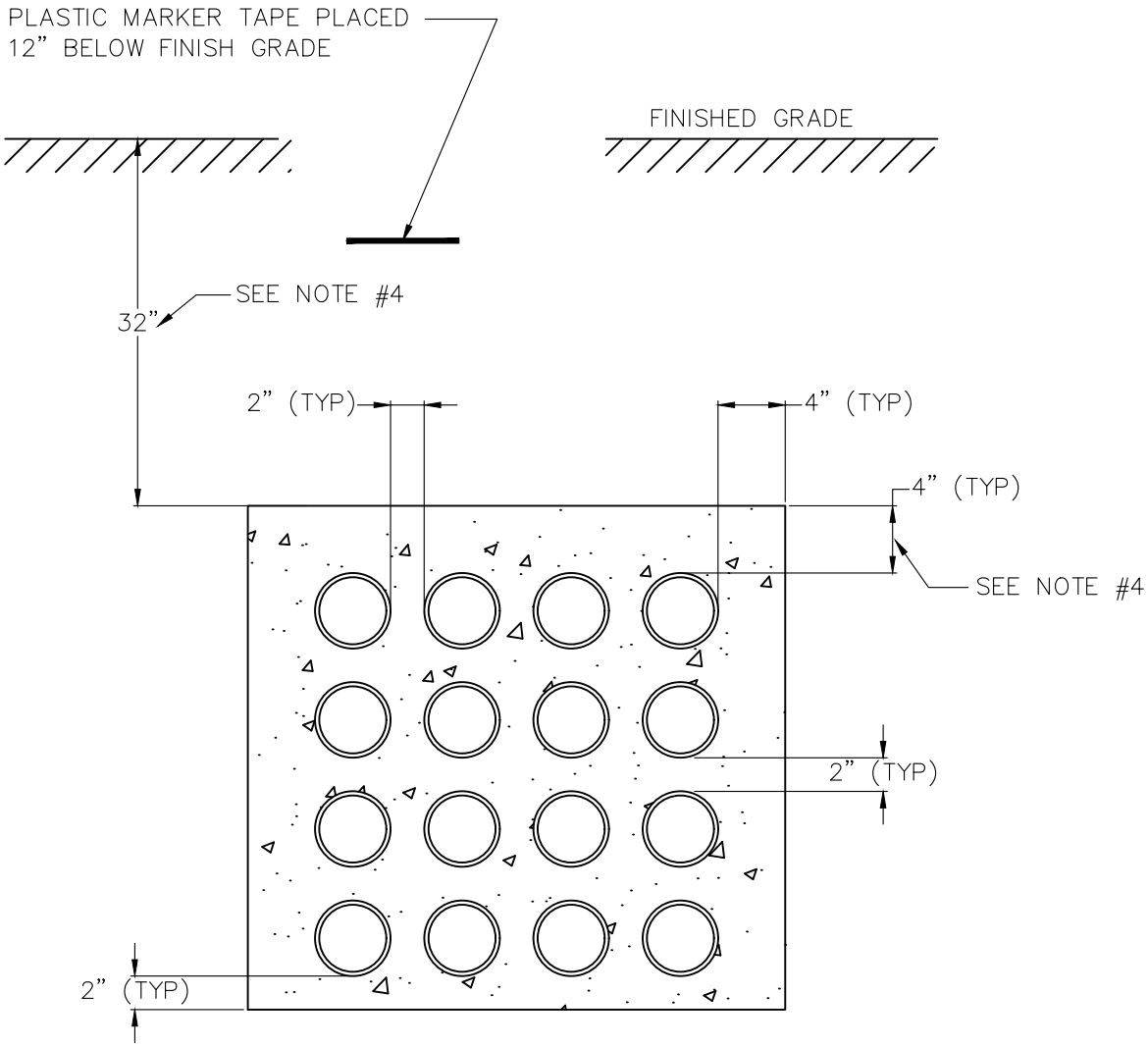
DATE: 11/18/19	DWG. NO.: 160302
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2



NOTES

1. CLEARANCE FROM OTHER UTILITIES (EXCEPT COMMUNICATIONS) IS TO BE 5' MINIMUM. FOR A REDUCED CLEARANCE, APPROVAL FROM ALL UTILITIES AFFECTED IS REQUIRED.
2. ALL CLEARANCES MUST ADHERE TO THE MOST RECENT NESC CODES.
3. MOUNDING THE TRENCH TO GAIN SUITABLE CABLE DEPTH IS NOT PERMITTED.
4. ALL CROSSINGS OF OTHER UTILITIES IN CONDUITS MUST BE A MINIMUM OF 12" APART AND BE PERPENDICULAR FROM EACH OTHER.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
TRENCH CLEARANCES	
DATE: 06/24/19	**DWG. NO.:** 160401
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2

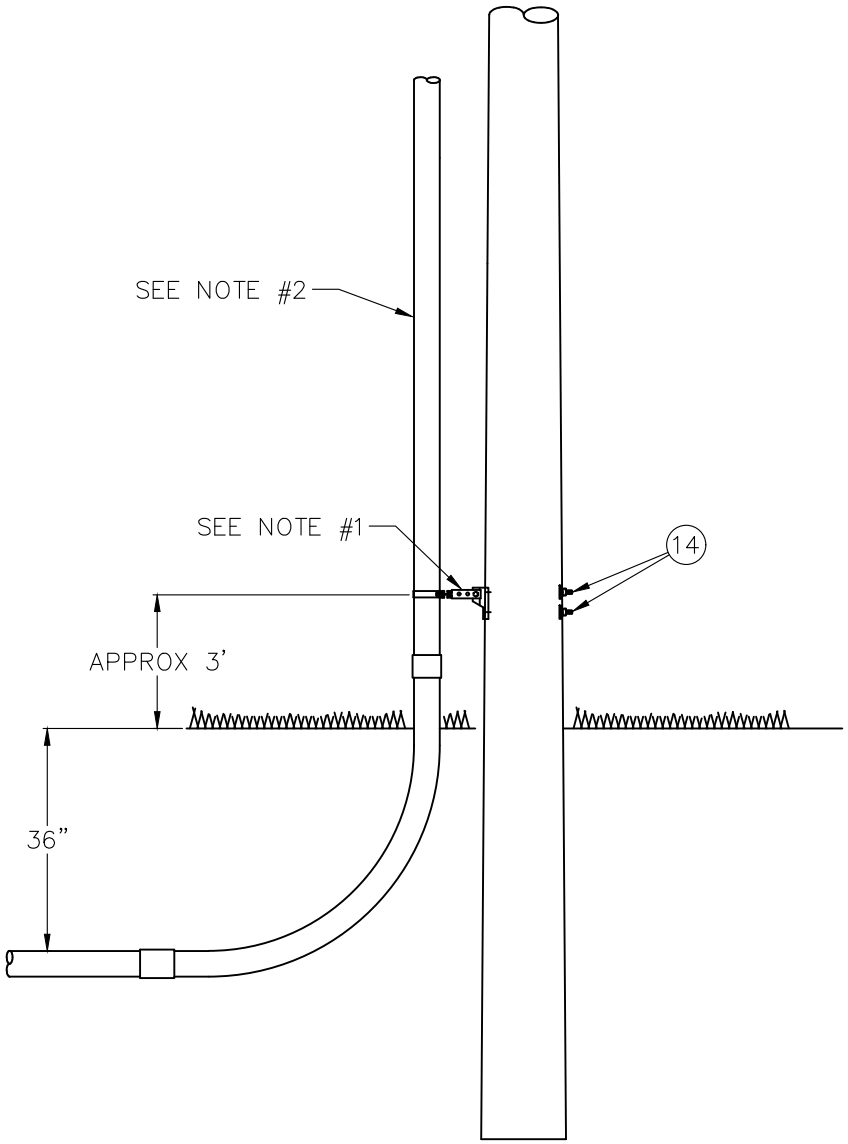


TYPICAL CONDUIT BANK CONSTRUCTION, CONCRETE ENCASED

NOTES

1. ALL BED DUCT BANKS SHOULD HAVE A 2" SPACING BETWEEN CONDUITS.
2. MOUNDING THE TRENCH TO GAIN SUITABLE DEPTH IS NOT PERMITTED.
3. ALL CONDUIT IN ENCASEMENT IS TO BE SCH 40 PVC UNLESS OTHERWISE DIRECTED BY BED.
4. MINIMUM DEPTHS MAY BE REDUCED FROM 32" TO 18" FOR PRIMARY AND SECONDARY CABLE ONLY WHEN CABLE IS INSTALLED IN CONDUIT ENCASED IN 6" OF CONCRETE WITH A GRADE OF NO LESS THAN 5000 PSI STRENGTH, AND APPROVED BY BED'S PROJECT ENGINEER.

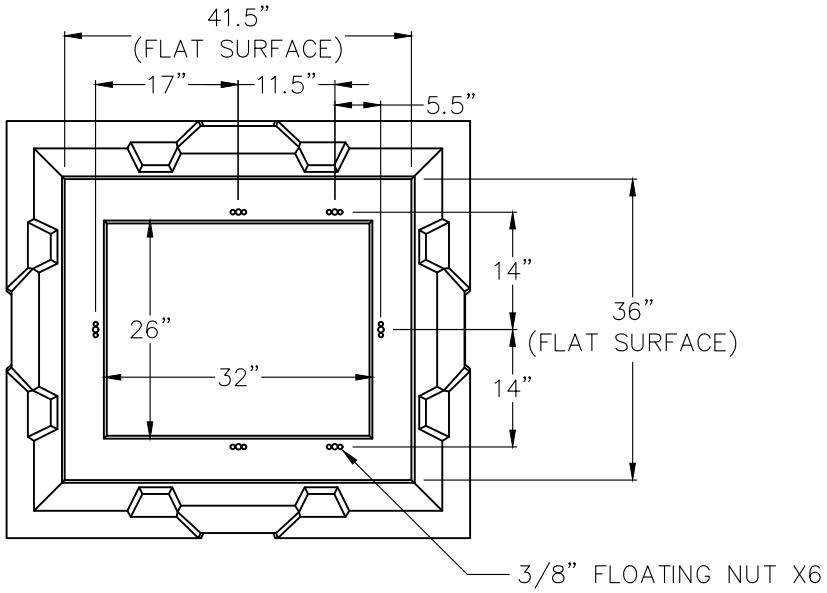
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
TYPICAL DUCT BANK CROSS-SECTION & CLEARANCES	
DATE: 11/18/19	**DWG. NO.:** 1604A
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 2 **OF** 2

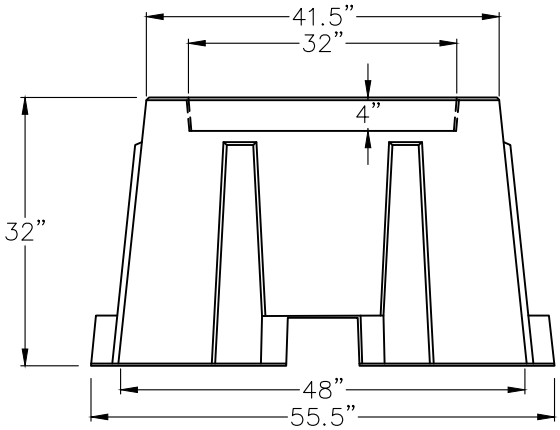


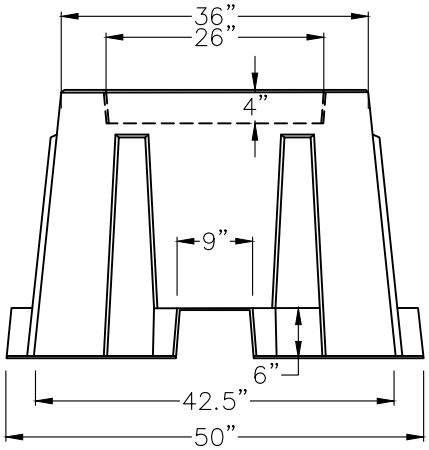
NOTES

1. BED TO ATTACH STANDOFF BRACKET ON POLE PRIOR TO CONDUIT RUN TO POLE.
2. CUSTOMER TO SUPPLY (1) 10' SECTION OF NEMA APPROVED SCH 80 PVC. CUSTOMER TO SUPPLY ALL SCH 40 PVC TO BE USED ABOVE 10'.
3. BED TO SUPPLY FROST SLEEVE, CONDULATOR, SUPPORT BRACKETS, AND STANDOFF BRACKETS.
4. BED SHALL BUILD RISER AND THEN ASSIST IN CABLE PULL.

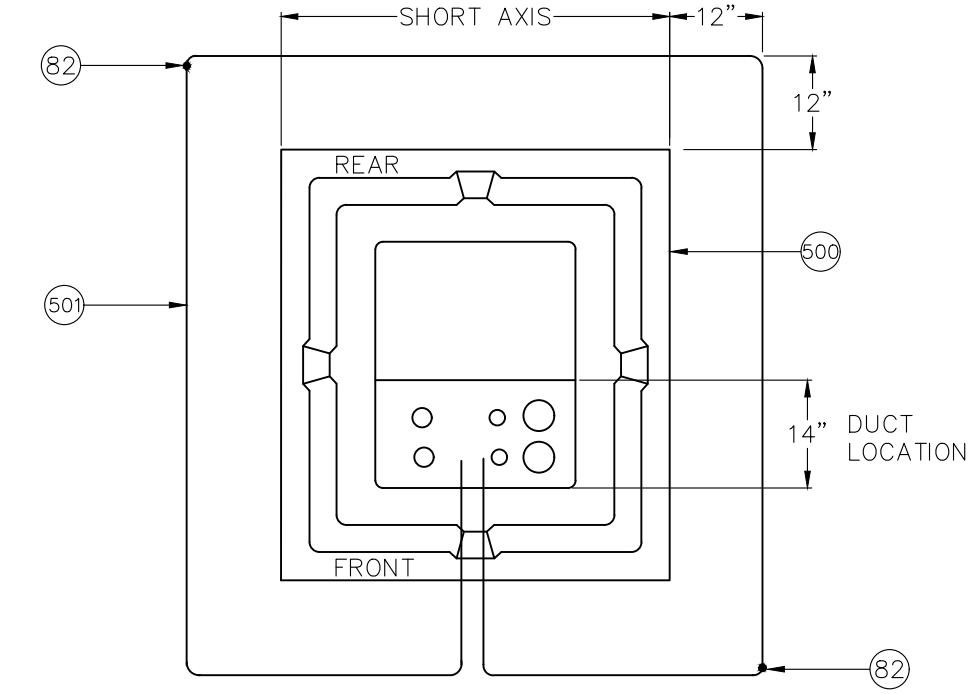
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
RISER POLE SWEEP	
DATE: 08/23/17	**DWG. NO.:** 160501
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 1

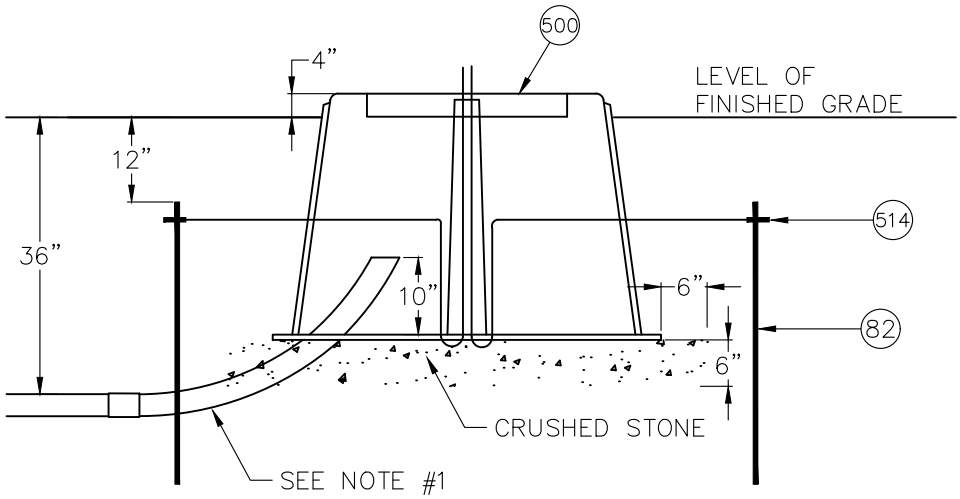






BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
FIBERGLASS BOX SPECIFICATIONS AND INSTALLATION	
DATE: 06/24/19	DWG. NO.: 160601
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 2





NOTES

1. 90° 36" RADIUS BEND MUST BE USED. SWEEP SHALL BE CUT OFF 10" ABOVE BOTTOM OF BOX.
2. A MINIMUM OF 6" CRUSHED STONE WILL BE PLACED UNDER BOX AND EXTEND 6" BEYOND THE PERIMETER OF BOX.
3. FINISHED GRADE SHALL BE A MINIMUM OF 4" BELOW TOP OF BOX.
4. BOXES USED FOR TRANSFORMERS OR TERMINATING POINTS SHALL HAVE A GROUND GRID INSTALLED.
5. CONDUITS WILL ENTER BOX IN THE FRONT 14" OF CLEAR OPENING.
6. FIBERGLASS BOX TO BE SUPPLIED BY BED AND INSTALLED BY CONTRACTORS.

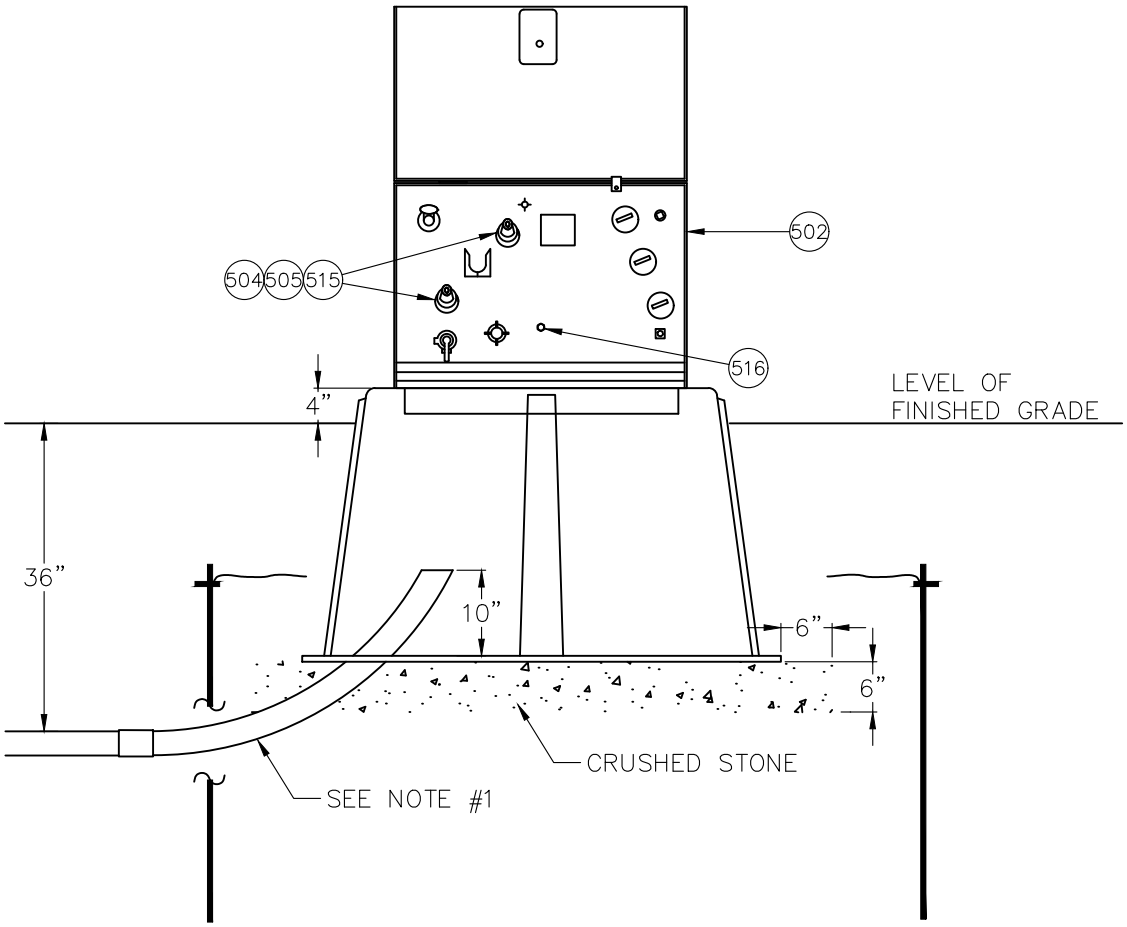
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
FIBERGLASS BOX SPECIFICATIONS AND INSTALLATION	
DATE: 06/24/19	DWG. NO.: 160602
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2

1606

MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
82	2	GROUND ROD	GRD	ROD	00010
500	1	FIBERGLASS BOX	EES	ENC	00100
501	40'	1/0 BARE STRANDED COPPER WIRE	ECW	BAR	00040
514	2	GROUND ROD CONNECTOR	GRD	CON	00010

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
FIBERGLASS BOX SPECS & INSTALLATION	
DATE: 06/24/19	DWG. NO.: 160603
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 3 OF 3



NOTES

1. 90° 36" RADIUS BEND MUST BE USED. SWEEP SHALL BE CUT OFF 10" ABOVE BOTTOM OF BOX.
2. A MINIMUM OF 6" CRUSHED STONE WILL BE PLACED UNDER BOX AND EXTEND 6" BEYOND THE PERIMETER OF BOX.
3. FINISHED GRADE SHALL BE A MINIMUM OF 4" BELOW TOP OF BOX.
4. BOXES USED FOR TRANSFORMERS OR TERMINATING POINTS SHALL HAVE A GROUND GRID INSTALLED.
5. CONDUITS WILL ENTER BOX IN THE FRONT 14" OF CLEAR OPENING.
6. INSTALL ARRESTER PER STANDARD 0703.
7. SEE STANDARD 1606 FOR FIBERGLASS BOX INSTALLATION.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SINGLE Ø PADMOUNTED TRANSFORMER, DEAD FRONT	
DATE: 06/24/19	**DWG. NO.:** 160701
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 1

MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
502	1	PAD MOUNT TRANSFORMER - SINGLE F	XFR	PAD	-
504	AS REQUIRED	200 AMP LOADBREAK ELBOW - #1/0	DEF	ELB	00170
		200 AMP LOADBREAK ELBOW - #2	DEF	ELB	00040
505	1	COLD SHRINK SEALING SLEEVE, #2 - 4/0	DEF	SEA	00010
515	2	SWITCH MODULE	DEF	BUS	00010
516	1	GROUND LUG, #6 - 250	GRD	XFR	00010
XX	AS REQUIRED	SECONDARY CONNECTORS	DUC	PEL	00110

OPTIONAL EQUIPMENT

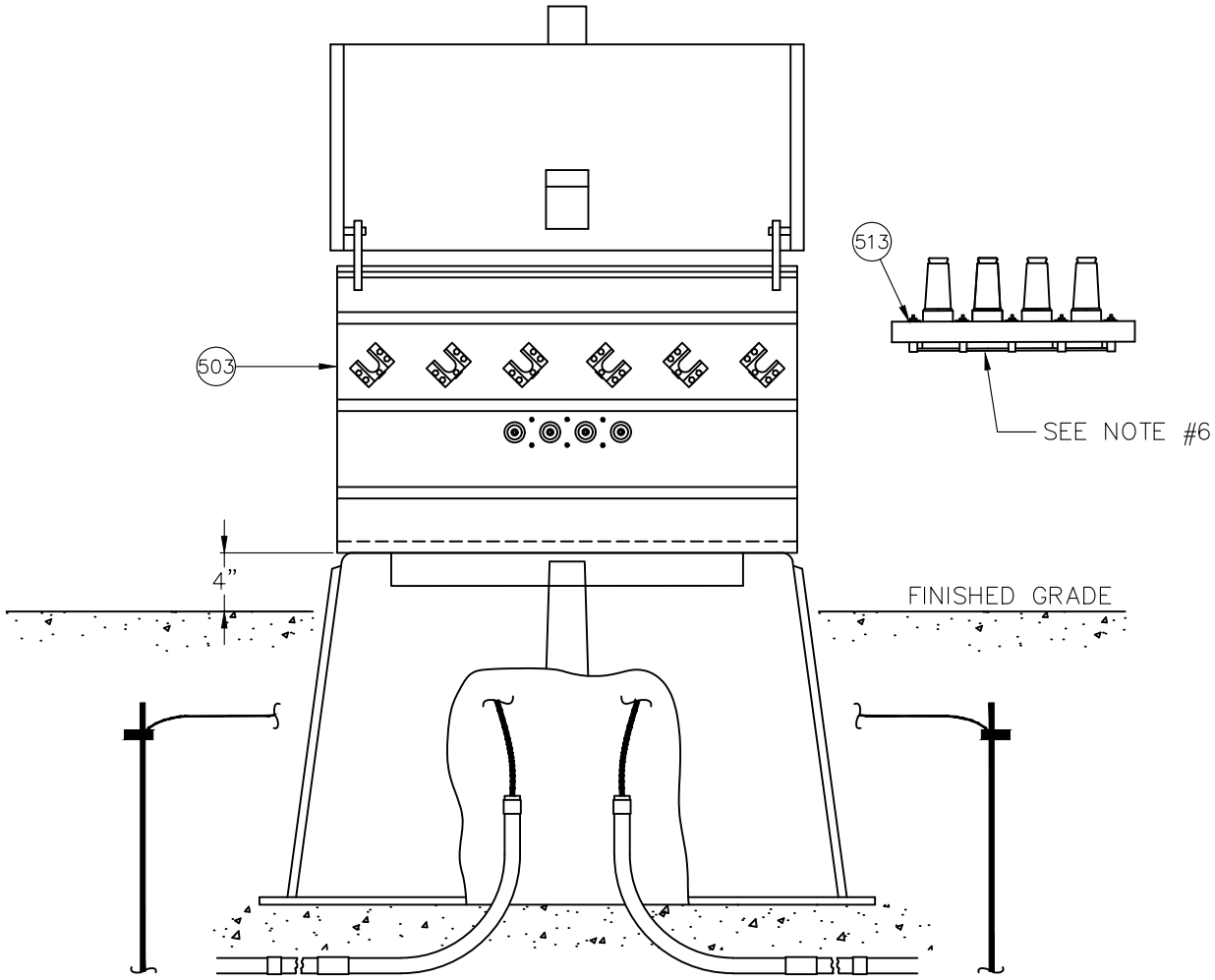
ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
505	AS REQUIRED	COLD SHRINK SEALING SLEEVE, #2 - 4/0	DEF	SEA	00010
507	AS REQUIRED	ELBOW ARRESTER	ARR	ELB	00020
508	AS REQUIRED	BUSHING ARRESTER	ARR	ELB	00040
509	AS REQUIRED	PARKING STAND ARRESTER	ARR	ELB	00040
510	AS REQUIRED	INSULATED PARKING BUSHING	DEF	PLU	00020
511	AS REQUIRED	INSULATED CAP	DEF	INS	00010
512	AS REQUIRED	LOADBREAK FEED THRU INSERT	DEF	JCT	00050

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

SINGLE Φ PADMOUNTED TRANSFORMER, DEAD FRONT

DATE: 06/24/19	DWG. NO.: 160702
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2



NOTES

1. ALL TERMINATING CABINETS SHALL HAVE AN APPROVED WARNING LABEL AFFIXED TO THE OUTSIDE COVER OF THE TERMINATING CABINET, AND AN APPROVED LABEL AFFIXED TO THE INSIDE COVER OF THE TERMINATING CABINET.
2. REMOVE LIFTING LUGS, IF POSSIBLE.
3. METAL TERMINATING CABINET IS TO BE SECURELY BOLTED TO THE FIBERGLASS BOX.
4. INSTALL ARRESTER PER STANDARD 0703.
5. SEE STANDARD 1606 FOR FIBERGLASS BOX INSTALLATION.
6. ALL NEW INSTALLATIONS OF MTC SHALL HAVE 4–WAY JUNCTIONS.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SINGLE Ø PADMOUNTED TERMINATING CABINET	
DATE: 01/30/20	**DWG. NO.:** 160801
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 1

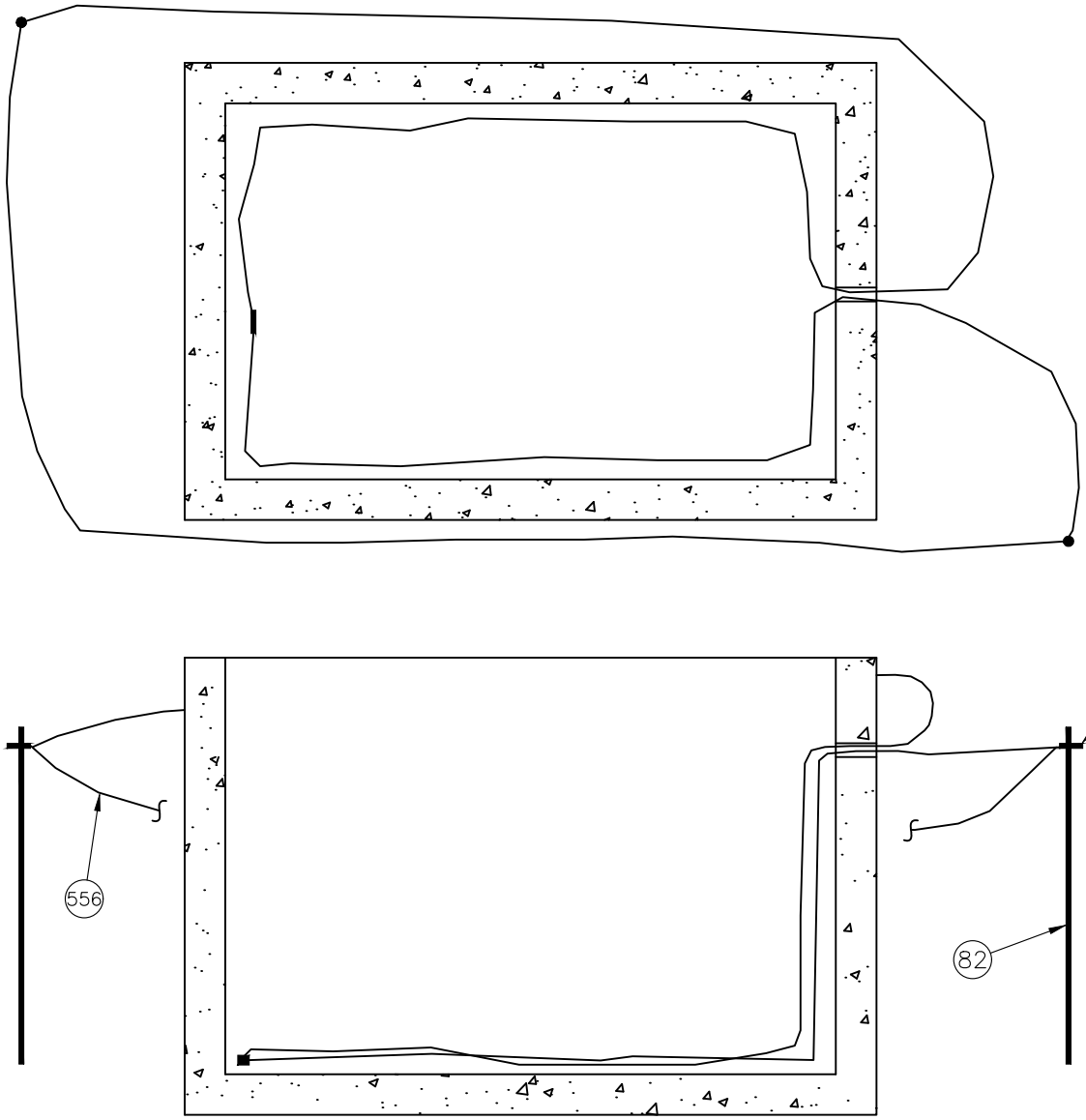
MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
503	1	FIBERGLASS BOX - TERMINATING CABINET	EES	ENC	00090
504	AS REQUIRED	200 AMP LOADBREAK ELBOW - #1/0	DEF	ELB	00170
		200 AMP LOADBREAK ELBOW - #2	DEF	ELB	00040
513	1	MULTI-TAP, 200 AMP LOADBREAK, 4WAY	DEF	JCT	00080

OPTIONAL EQUIPMENT

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
507	AS REQUIRED	ELBOW ARRESTER	ARR	ELB	00020
509	AS REQUIRED	PARKING STAND ARRESTER	ARR	ELB	00040
510	AS REQUIRED	INSULATED PARKING BUSHING	DEF	PLU	00020
511	AS REQUIRED	INSULATED CAP	DEF	INS	00010

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SINGLE Φ PADMOUNTED TERMINATING CABINET	
DATE: 01/30/20	DWG. NO.:
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 2 OF 2



NOTE

1. GROUND LOOP MUST BE CONTINUOUS.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UTILITY HOLE GROUNDING	
DATE: 03/10/11	DWG. NO.: 160901
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1

1609

MATERIAL LIST

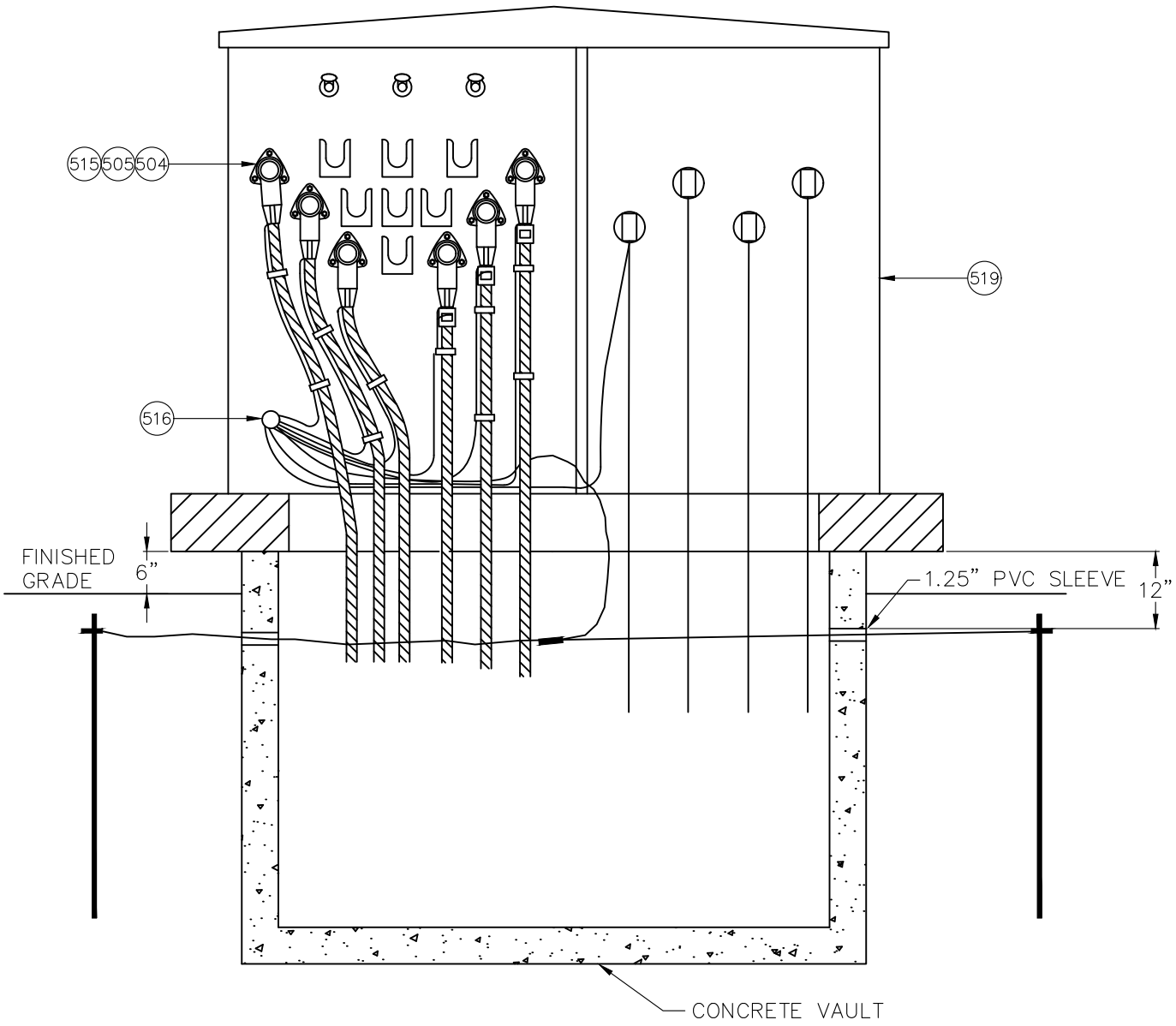
ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
82	2	GROUND ROD	GRD	ROD	00010
514	2	GROUND ROD CONNECTOR	GRD	CON	00010
556	AS REQUIRED	4/0 BARE STRANDED COPPER WIRE	ECW	BAC	00030

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

UTILITY HOLE GROUNDING

DATE: 03/10/11	DWG. NO.:
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2



NOTE

1. INSTALL ARRESTER PER STANDARD 0703.
2. SEE STANDARD 1622 FOR VAULT SPECIFICATIONS.
3. SEE STANDARD 1609 FOR VAULT GROUNDING.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø PADMOUNTED TRANSFORMER, FEED-THRU	
DATE: 06/24/19	DWG. NO.: 161101
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1

MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
504	AS REQUIRED	200 AMP LOADBREAK ELBOW - #1/0	DEF	ELB	00170
		200 AMP LOADBREAK ELBOW - #2	DEF	ELB	00040
505	AS REQUIRED	COLD SHRINK SEALING SLEEVE, #2 - 4/0	DEF	SEA	00010
515	6	SWITCH MODULE	DEF	BUS	00010
516	1	GROUND LUG, #6 - 250	GRD	XFR	00010
519	1	PAD MOUNT TRANSFORMER - THREE Φ - FEED THRU	SEE	MATERIAL	LIST

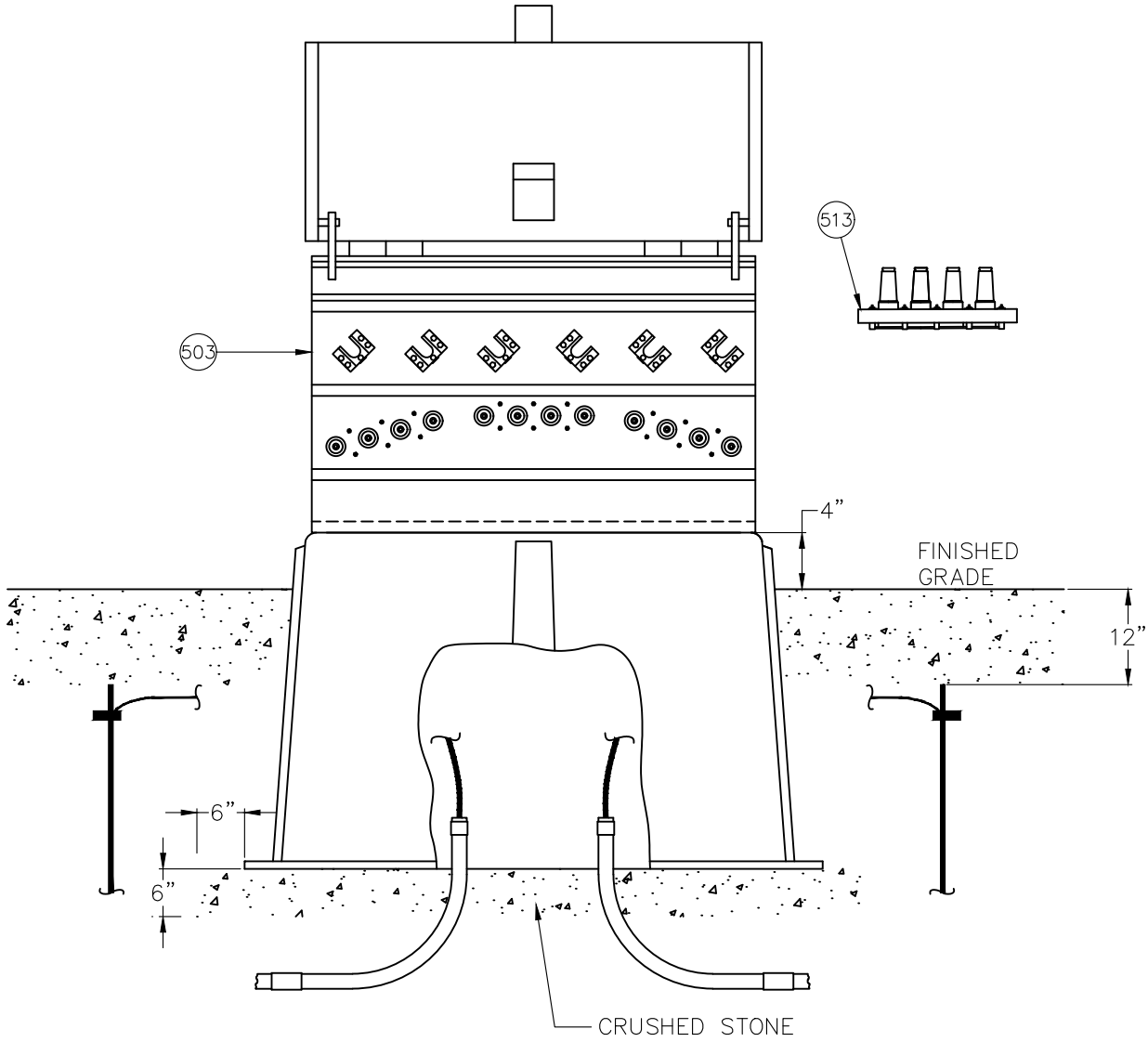
OPTIONAL EQUIPMENT

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
507	AS REQUIRED	ELBOW ARRESTER	ARR	ELB	00020
508	AS REQUIRED	BUSHING ARRESTER	ARR	ELB	00040
509	AS REQUIRED	PARKING STAND ARRESTER	ARR	ELB	00040
510	AS REQUIRED	INSULATED PARKING BUSHING	DEF	PLU	00020
511	AS REQUIRED	INSULATED CAP	DEF	INS	00010
512	AS REQUIRED	LOADBREAK FEED THRU INSERT	DEF	JCT	00050

BURLINGTON ELECTRIC DEPT.
DISTRIBUTION STANDARDS

THREE Φ PADMOUNTED TRANSFORMER, DEAD FRONT

DATE: 06/24/19	DWG. NO.: 161102
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 2 OF 2



NOTES

1. ALL TERMINATING CABINETS SHALL HAVE AN APPROVED WARNING LABEL AFFIXED TO THE OUTSIDE COVER OF THE TERMINATING CABINET, AND AN APPROVED DANGER LABEL AFFIXED TO THE INSIDE COVER OF THE TERMINATING CABINET.
2. REMOVE LIFTING LUGS, IF POSSIBLE.
3. METAL TERMINATING CABINET IS TO BE SECURELY BOLTED TO THE FIBERGLASS BOX.
4. FAULT INDICATORS TO BE INSTALLED PER STANDARD – LATER.
5. INSTALL ARRESTER PER STANDARD 0703.
6. ALL NEW INSTALLATIONS OF MTC SHALL HAVE 4–WAY JUNCTIONS.
7. SEE STANDARD 1606 FOR FIBERGLASS BOX INSTALLATION.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø PADMOUNTED TERMINATING CABINET	
DATE: 01/30/20	DWG. NO.: 161301
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1

MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
503	1	FIBERGLASS BOX - TERMINATING CABINET	EES	ENC	00090
504	AS REQUIRED	200 AMP LOADBREAK ELBOW - #1/0	DEF	ELB	00170
		200 AMP LOADBREAK ELBOW - #2	DEF	ELB	00040
505	AS REQUIRED	COLD SHRINK SEALING SLEEVE, #2 - 4/0	DEF	SEA	00010
513	3	MULTI-TAP, 200 AMP LOADBREAK, 4WAY	DEF	JCT	00080

OPTIONAL EQUIPMENT

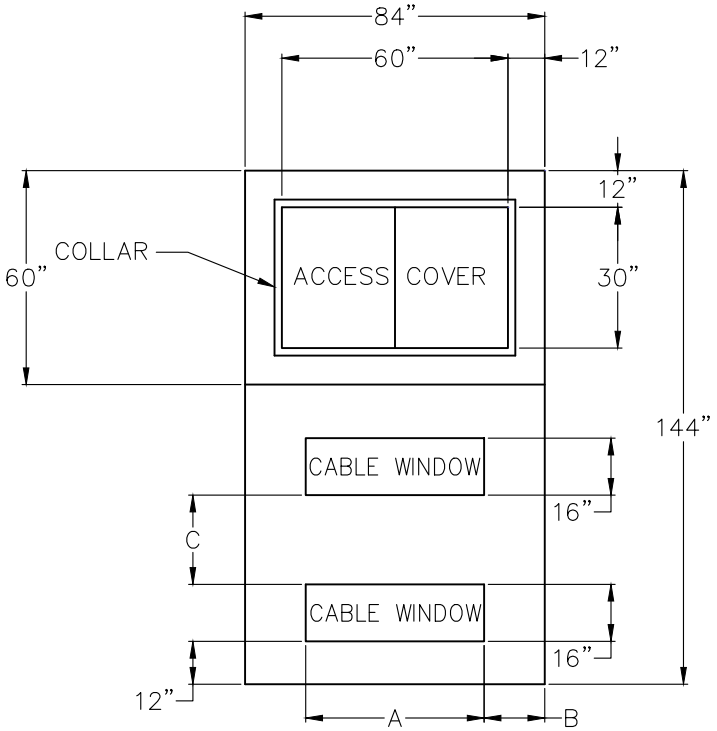
ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
507	AS REQUIRED	ELBOW ARRESTER	ARR	ELB	00020
509	AS REQUIRED	PARKING STAND ARRESTER	ARR	ELB	00040
510	AS REQUIRED	INSULATED PARKING BUSHING	DEF	PLU	00020
511	AS REQUIRED	INSULATED CAP	DEF	INS	00010

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

THREE Φ PADMOUNTED
TERMINATING CABINET

DATE: 01/30/20	DWG. NO.:
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 2 OF 2



COVER DETAIL

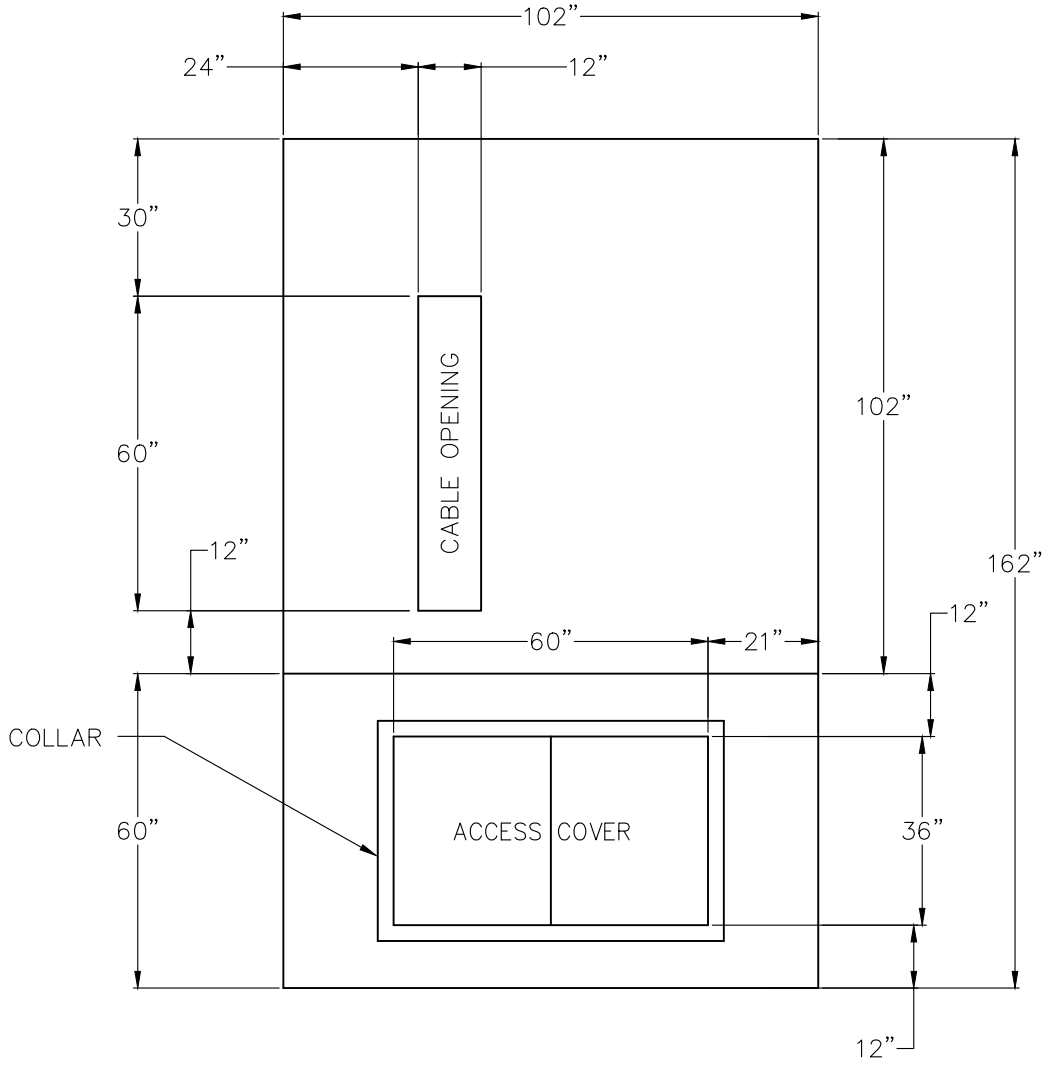
WINDOW DIMENSION TABLE

	LIVE FRONT SWITCH	DEAD FRONT SWITCH
A	60"	68"
B	12"	8"
C	25"	31"

NOTES

1. PAD AND WELL TO BE CONSTRUCTED TO MEET REQUIREMENTS OF LOADING SPECIFICATION H-20 AND SUPPORT A SWITCH WEIGHT OF 4,000 LBS.
2. PRIMARY CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY BED.
3. CONCRETE PAD SHALL HAVE A 3/4" CHAMFER ON ALL SIDES.
4. ACCESS COVER (30" X 60"), MEETING ANSI/SCTE 77-2007 TIER 22, TO BE PROVIDED BY BED.
5. PULLING EYE QUANTITY AND LOCATIONS DETERMINED BY BED. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

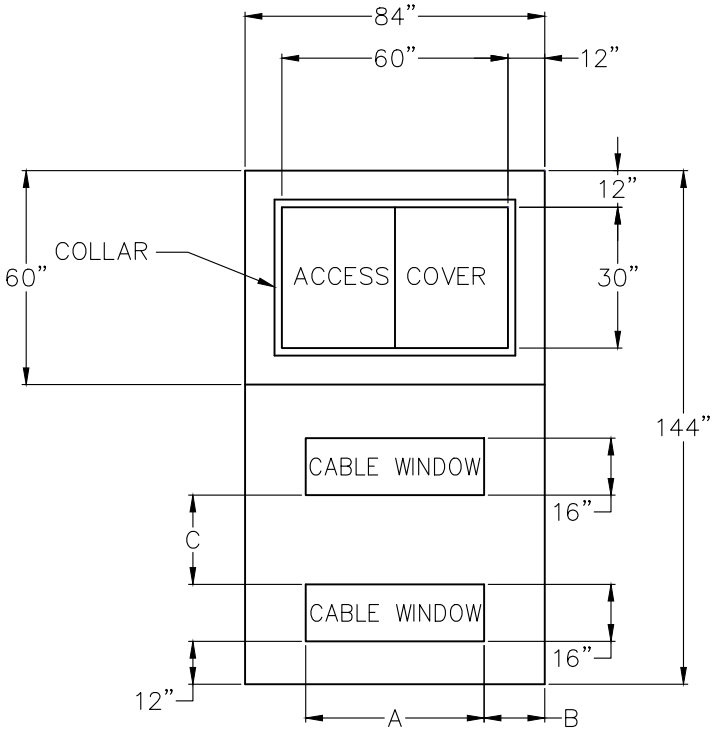
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø SWITCH PAD CONCRETE	
DATE: 05/22/23	**DWG. NO.:** 161401
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2



NOTES

1. PAD AND WELL TO BE CONSTRUCTED TO MEET REQUIREMENTS OF LOADING SPECIFICATION H–20 AND SUPPORT A SWITCH WEIGHT OF 4,000 LBS.
2. PRIMARY CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY BED.
3. CONCRETE PAD SHALL HAVE A 3/4” CHAMFER ON ALL SIDES.
4. ACCESS COVER (36” X 60”), MEETING ANSI/SCTE 77–2007 TIER 22, TO BE PROVIDED BY BED.
5. PULLING EYE QUANTITY AND LOCATIONS TO BE DETERMINED BY BED. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø 4-WAY SWITCH CONCRETE PAD	
DATE: 05/22/23	**DWG. NO.:** 161401B
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2



COVER DETAIL

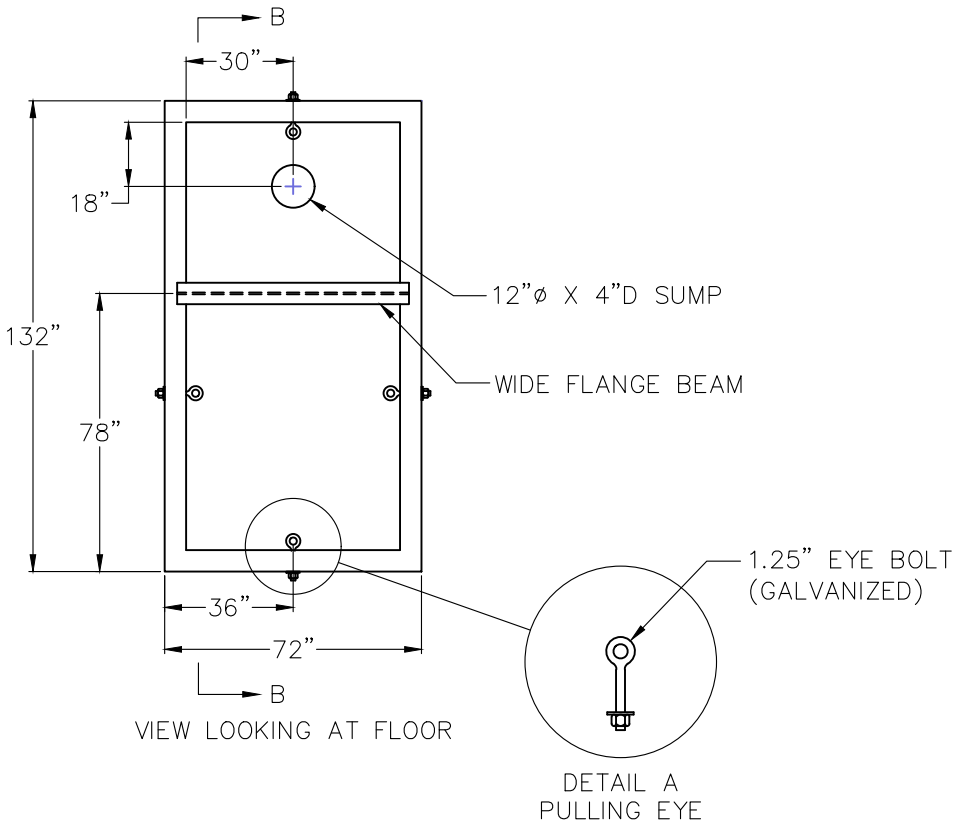
WINDOW DIMENSION TABLE

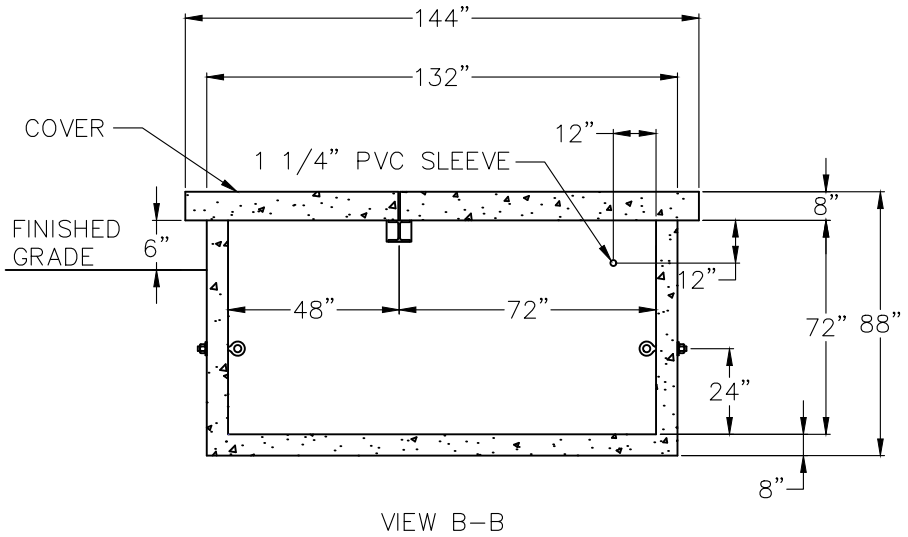
	LIVE FRONT SWITCH	DEAD FRONT SWITCH
A	60"	68"
B	12"	8"
C	25"	31"

NOTES

1. PAD AND WELL TO BE CONSTRUCTED TO MEET REQUIREMENTS OF LOADING SPECIFICATION H-20 AND SUPPORT A SWITCH WEIGHT OF 4,000 LBS.
2. PRIMARY CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY BED.
3. CONCRETE PAD SHALL HAVE A 3/4" CHAMFER ON ALL SIDES.
4. ACCESS COVER (30" X 60"), MEETING ANSI/SCTE 77-2007 TIER 22, TO BE PROVIDED BY BED.
5. PULLING EYE QUANTITY AND LOCATIONS DETERMINED BY BED. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

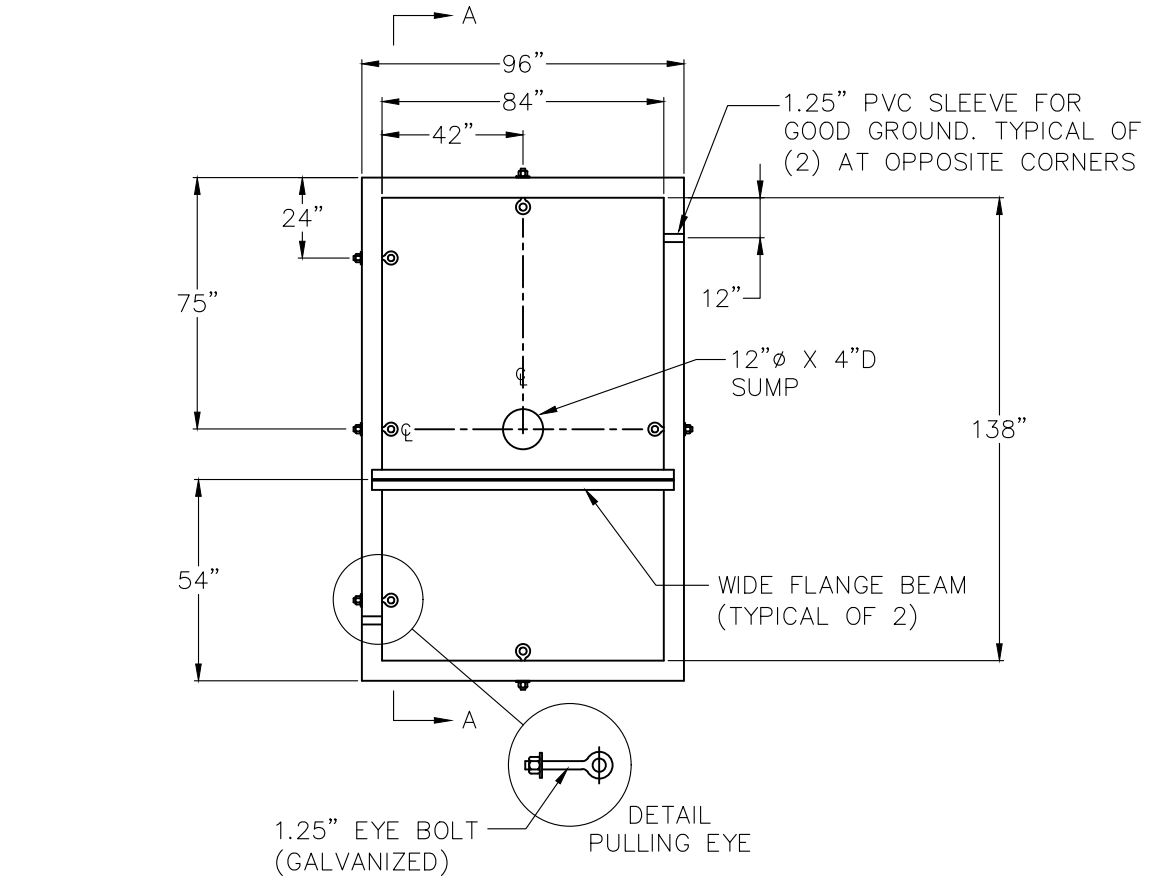
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø SWITCH PAD CONCRETE	
DATE: 05/22/23	**DWG. NO.:** 161401
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2



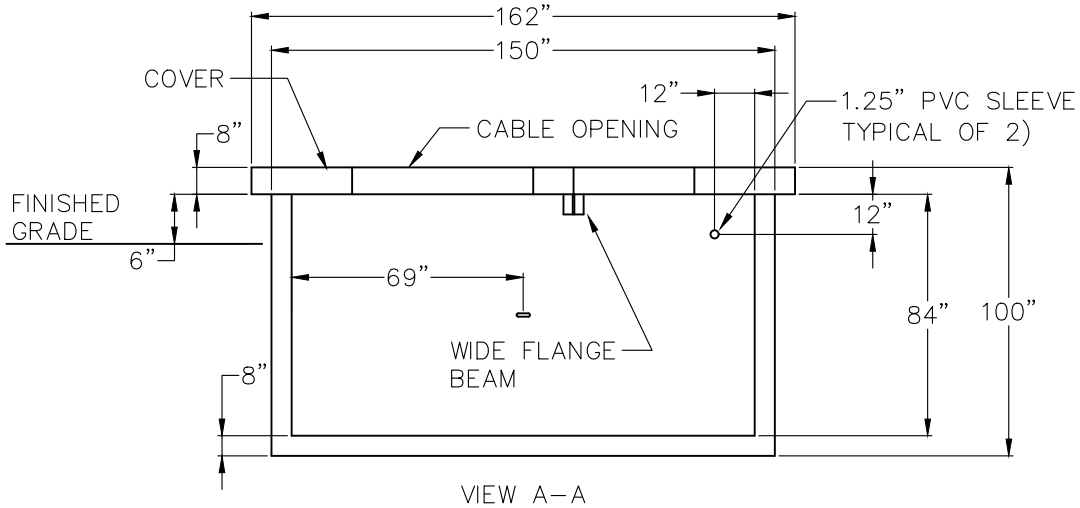


VIEW B–B

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø SWITCH PAD CONCRETE	
DATE: 10/08/19	DWG. NO.: 161402
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2

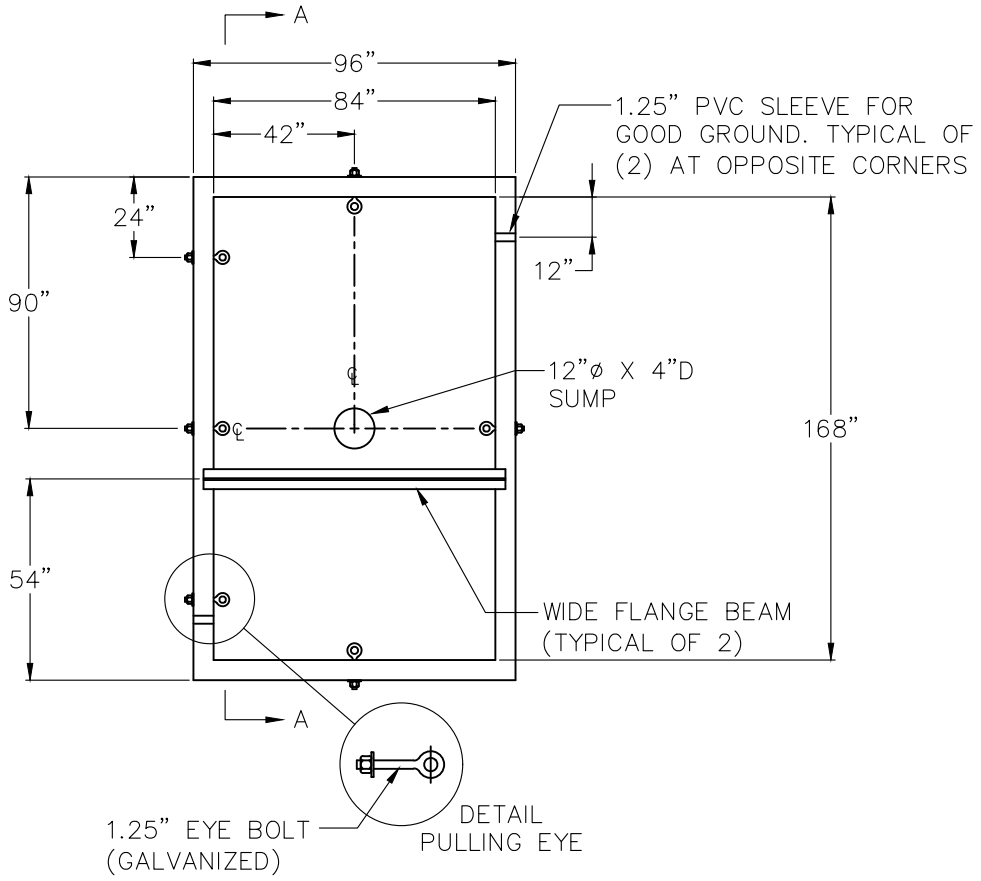


VIEW LOOKING AT FLOOR

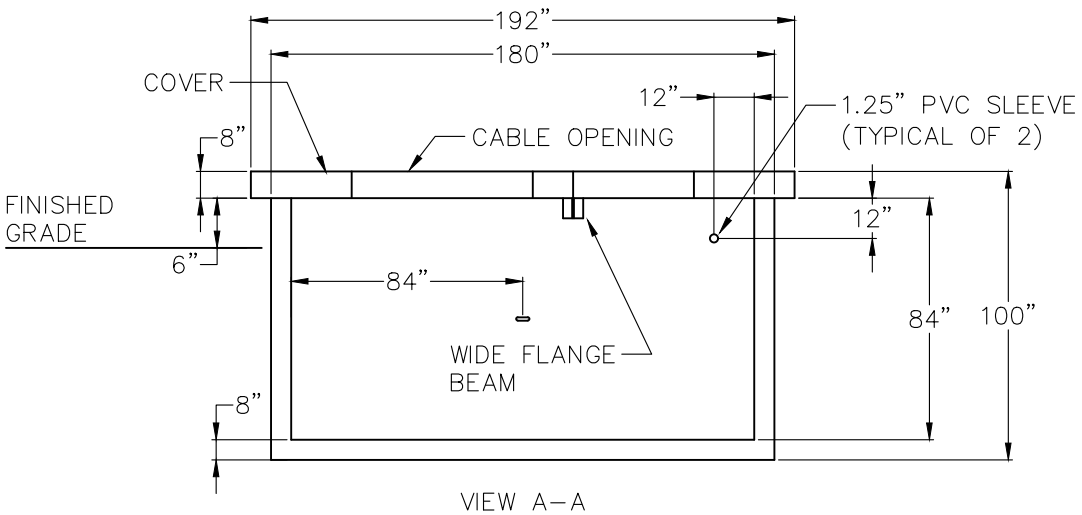


VIEW A–A

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø 4-WAY SWITCH CONCRETE PAD	
DATE: 10/08/19	**DWG. NO.:** 161402B
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 2 **OF** 2



VIEW LOOKING AT FLOOR



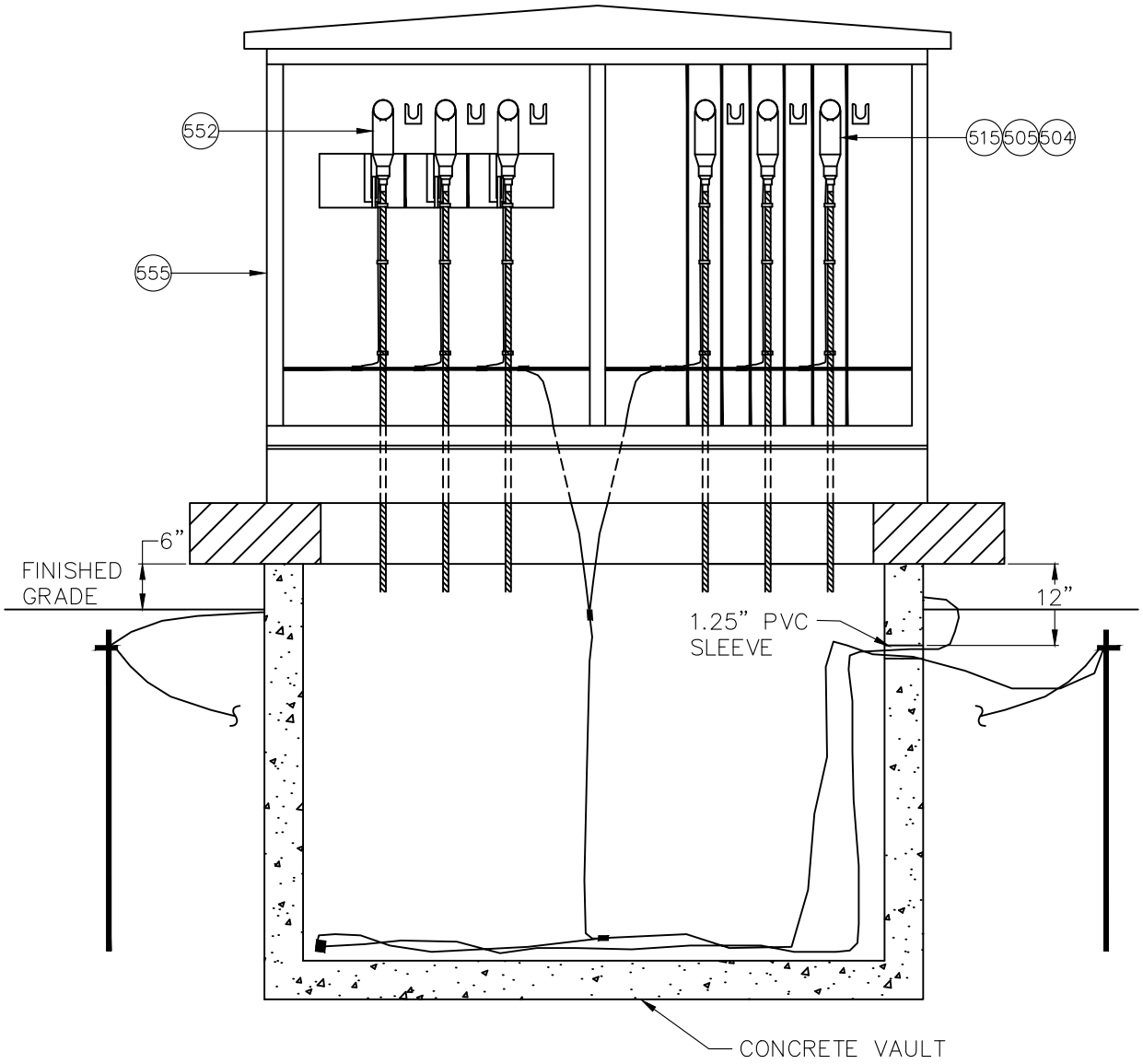
VIEW A–A

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø 5-WAY SWITCH CONCRETE PAD	
DATE: 10/08/19	DWG. NO.: 161402C
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2

TYPICAL 600 AMP SWITCH COMPARTMENT

TYPICAL 200 AMP SWITCH COMPARTMENT

(DOORS NOT SHOWN FOR CLAIRITY)



NOTES

1. INSTALL ARRESTER PER STANDARD 0703.
2. SEE STANDARD 1614 FOR VAULT SPECIFICATIONS.
3. SEE STANDARD 1609 FOR VAULT GROUNDING.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø PADMOUNTED SWITCH DEAD FRONT	
DATE: 08/13/19	DWG. NO.: 161601
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1

MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
504	AS REQUIRED	200 AMP LOADBREAK ELBOW - #1/0	DEF	ELB	00170
		200 AMP LOADBREAK ELBOW - #2	DEF	ELB	00040
552	AS REQUIRED	600 AMP NON-LOADBREAK ELBOW	DEF	ELB	00010
505	AS REQUIRED	COLD SHRINK SEALING SLEEVE, #2 - 4/0	DEF	SEA	00010
515	AS REQUIRED	SWITCH MODULE	DEF	BUS	00010
555	1	PAD MOUNT SWITCH, DEAD FRONT	-	NON	STOCK

OPTIONAL EQUIPMENT

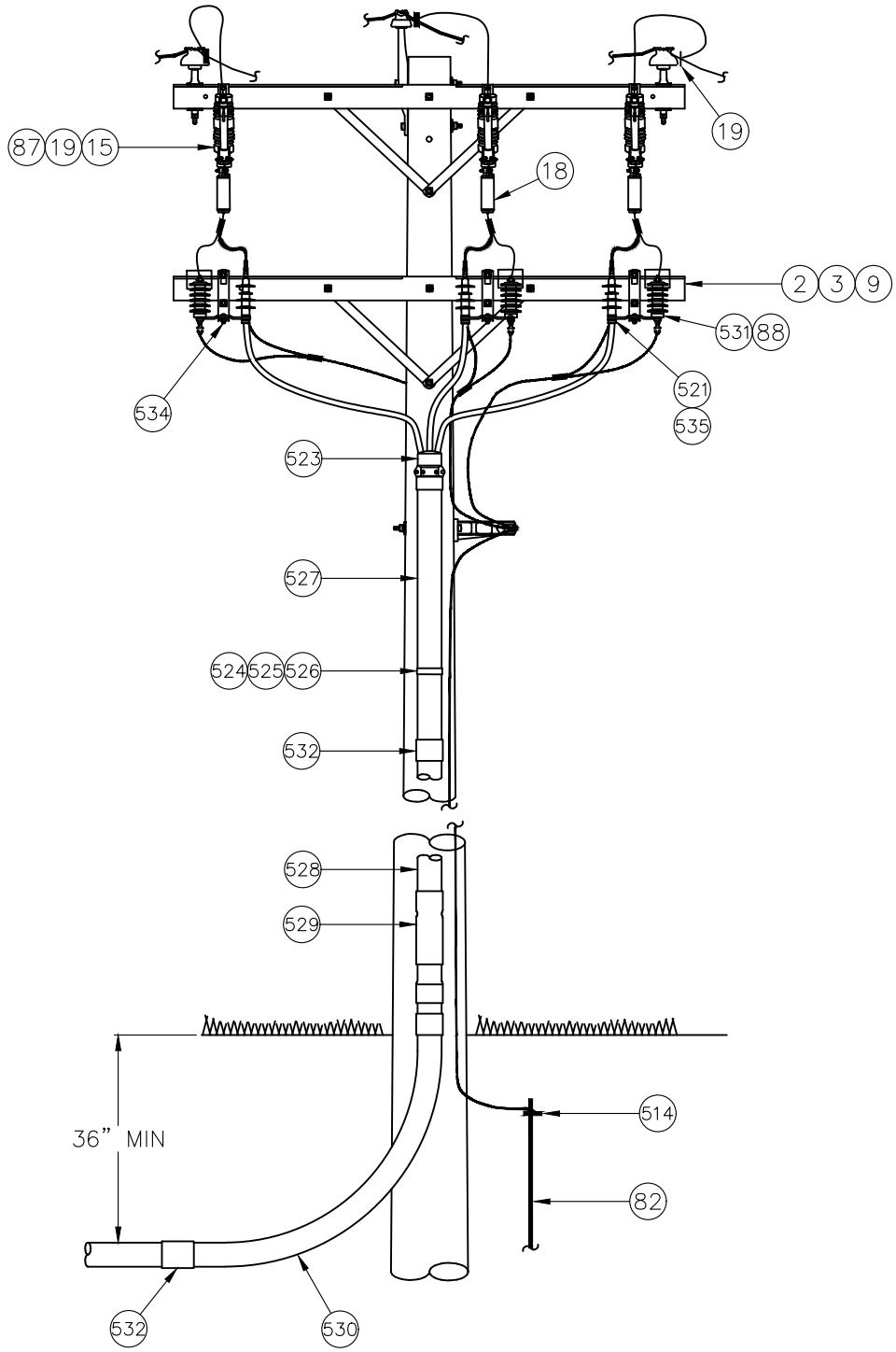
ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
507	AS REQUIRED	ELBOW ARRESTER	ARR	ELB	00020
508	AS REQUIRED	BUSHING ARRESTER	ARR	ELB	00040
509	AS REQUIRED	PARKING STAND ARRESTER	ARR	ELB	00040
510	AS REQUIRED	INSULATED PARKING BUSHING	DEF	PLU	00020
511	AS REQUIRED	INSULATED CAP	DEF	INS	00010
547	AS REQUIRED	POWER FUSE, 400A	FUS	SMH	00010
553	AS REQUIRED	REDUCING TAP WELL	DEF	RED	00010

BURLINGTON ELECTRIC DEPT.

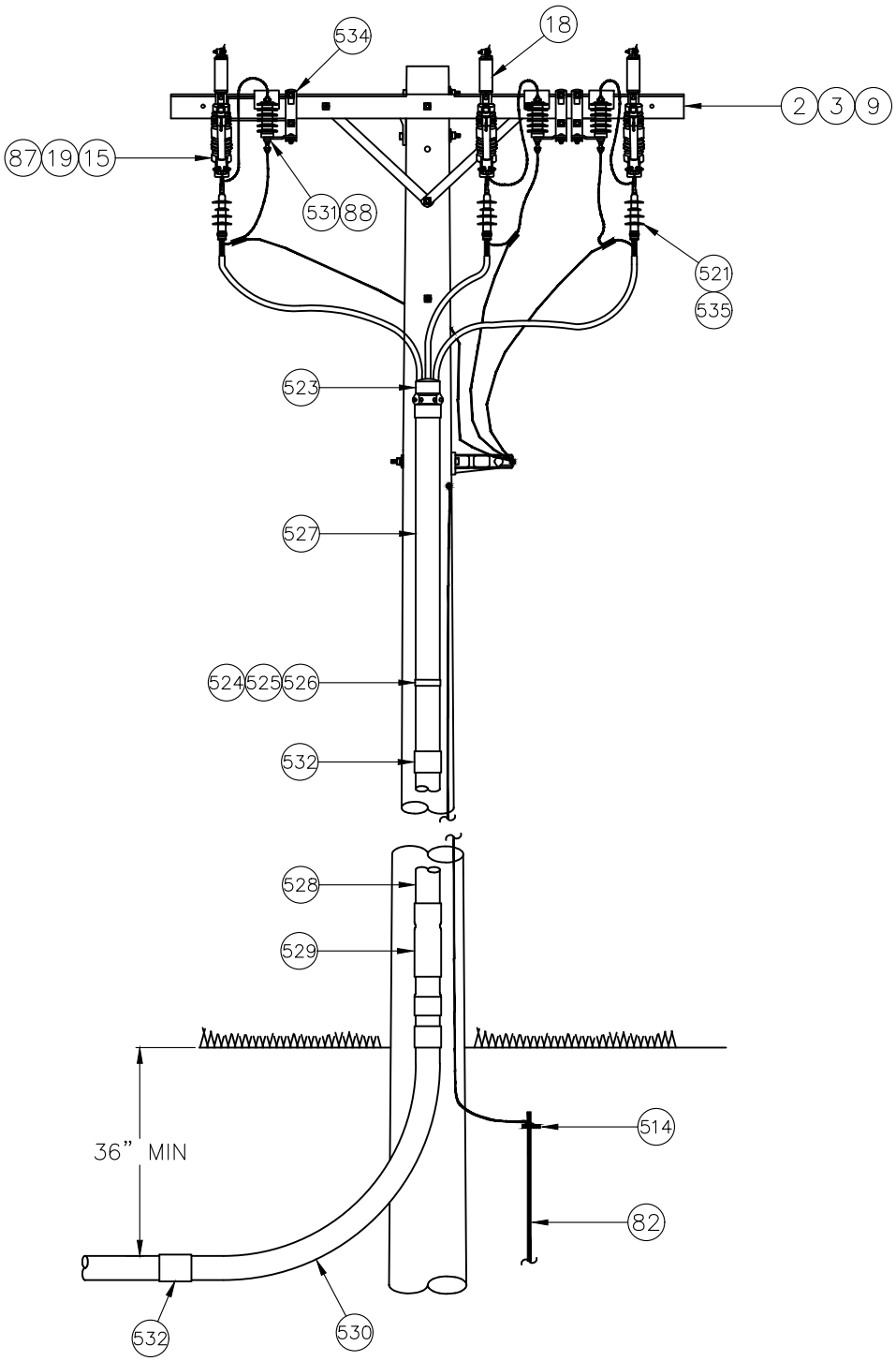
DISTRIBUTION STANDARDS

THREE Φ PADMOUNTED SWITCH DEAD FRONT

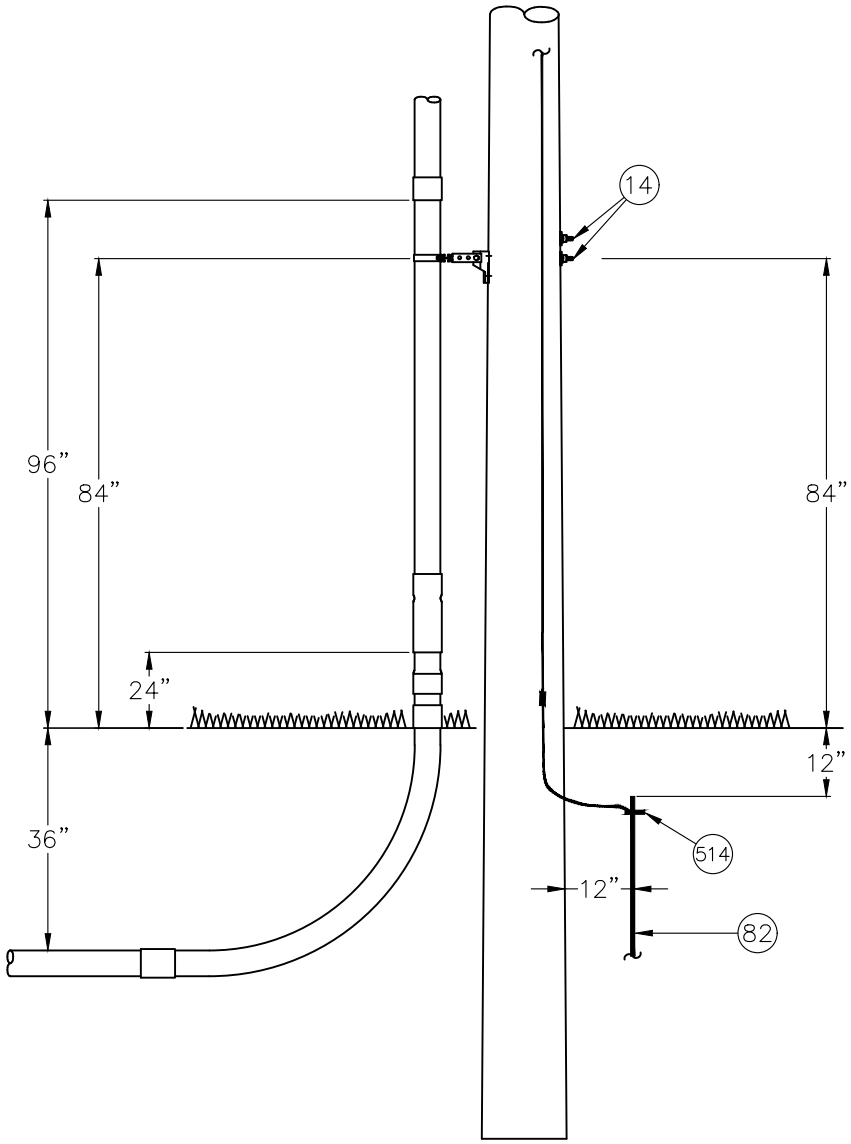
DATE: 08/13/19	DWG. NO.:161602
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2



BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø PRIMARY RISER POLE	
DATE: 08/13/19	DWG. NO.: 161701
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 2



BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø PRIMARY RISER POLE	
DATE: 09/05/19	DWG. NO.: 161701a
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1



NOTES

1. MINIMUM 2.5" NEMA APPROVED PVC SCHE 80 SHALL BE USED TO 8' ABOVE GRADE. SCH 40 TO BE USED ABOVE 8'.
2. ATTACH CONDUIT ON SIDE OF POLE AWAY FROM TRAFFIC WHEN POSSIBLE.
3. INSTALL LOWEST STANDOFF BRACKET AT 7' ABOVE GRADE. SPACE REMAINING STANDOFF BRACKETS APPROXIMATELY 10' APART.
4. POLES SHORTER THAN 40' OR OLDER THAN 30 YEARS SHOULD BE REPLACED PRIOR TO ATTACHING A RISER.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø PRIMARY RISER POLE	
DATE: 08/13/19	**DWG. NO.:** 161702
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 2 **OF** 2

MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
2	1	CROSSARM, 8 FOOT	PLH	XAW	00030
3	2	CROSSARM BRACE - 28" STEEL	PLH	BRS	00010
9	2	1/2" LAG BOLT & SPRING WASHER	-	GENERAL	STOCK
13	AS REQUIRED	3/8" CARRIAGE BOLT COMBO	-	GENERAL	STOCK
14	AS REQUIRED	5/8" MACHINE BOLT COMBO	-	GENERAL	STOCK
15	3	FUSED CUTOUT	SWI	CUT	00070
18	3	CURRENT LIMITING FUSE (40CLF)	FUS	CLF	00050
		CURRENT LIMITING FUSE (25CLF)	FUS	CLF	00060
		CURRENT LIMITING FUSE (12CLF)	FUS	CLF	00040
19	3	HOT LINE CLAMP (3/0 - #6)	CLA	HLC	00010
		HOT LINE CLAMP (1/0 - #8)	CLA	HLC	00030
		HOT LINE CLAMP (>3/0)	CLA	HLC	00040
87	3	CUTOUT ANIMAL GUARD	PLH	WLP	00060
88	3	LIGHTING ARRRESTER ANIMAL GUARD	PLH	WLP	00040
521	3	CABLE TERMINATOR - #2 AL	TER	URD	00020
		CABLE TERMINATOR - 1/0 AL	TER	URD	00120
		CABLE TERMINATOR - 350 CU	TER	SHD	00020
523	1	CONDULATOR (SELECT SIZE)	DUC	COL	-
524	AS REQUIRED	CONDUIT STAND OFF BRACKET, 6"	PLH	BKT	00130
		CONDUIT STAND OFF BRACKET, 9"	PLH	BKT	00110
525	AS REQUIRED	STRUT	PLH	BAR	00010

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

THREE Φ PRIMARY RISER POLE

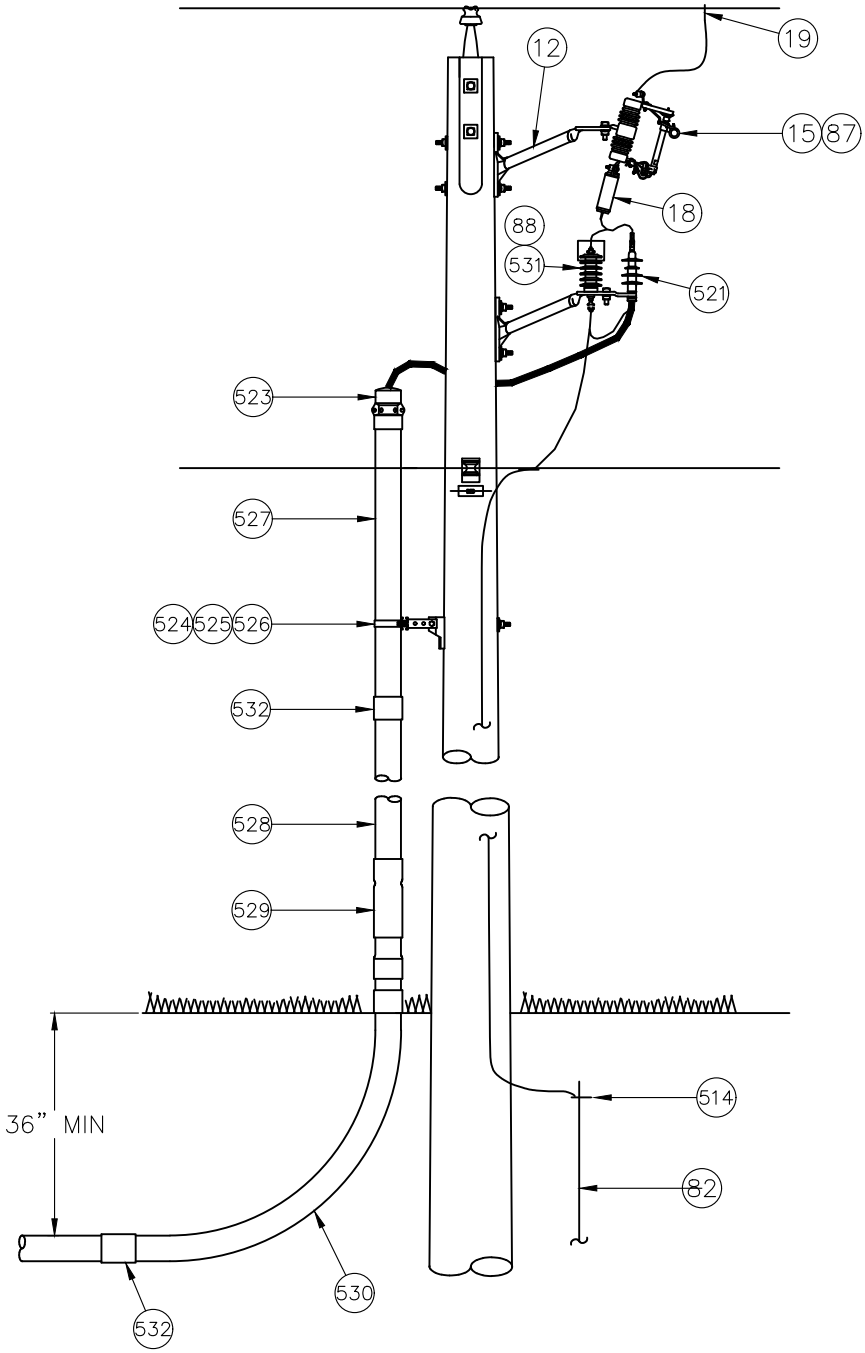
DATE: 09/05/19	DWG. NO.:
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 2 OF 3

1617

MATERIAL LIST

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
526	AS REQUIRED	STRAP (SELECT SIZE)	DUC	STR	-
527	AS REQUIRED	CONDUIT, SCHEDULE 40 (SELECT SIZE)	DUC	PVC	-
528	10'	CONDUIT, SCHEDULE 80 (SELECT SIZE)	DUC	PVC	-
529	1	EXPANSION COUPLING (SELECT SIZE)	DUC	PFS	-
530	1	CONDUIT SWEEP, 36" RADIUS (SELECT SIZE)	DUC	PEL	-
531	3	LIGHTING ARRESTER, RISER POLE	ARR	RIS	00030
532	AS REQUIRED	COUPLING, PVC	DUC	PCP	-
534	3	COMBO BRACKET	PLH	BAR	00020
535	3	CABLE SUPPORT	PLH	BKT	00100

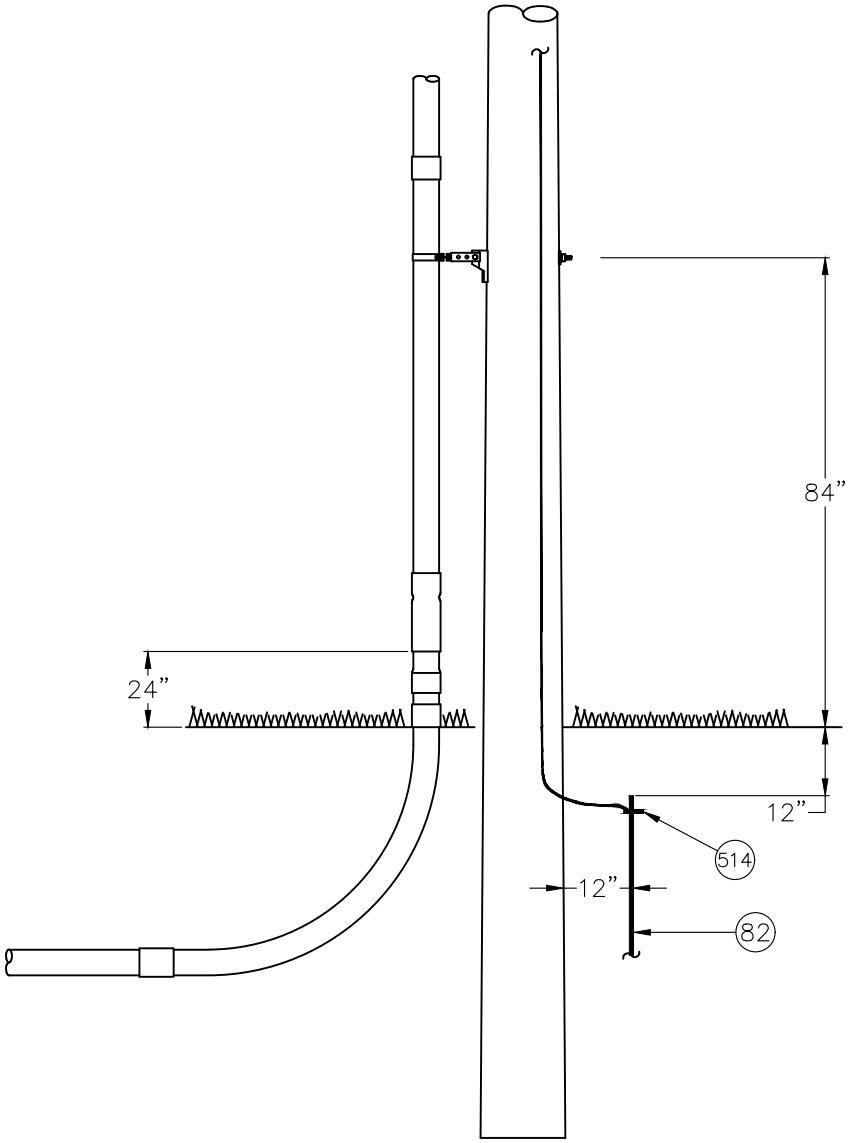
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Φ PRIMARY RISER POLE	
DATE 09/05/19	DWG. NO.:
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 3 OF 3



NOTES

1. FIELD CONDITIONS WILL DETERMINE POSITION OF CLOVERLEAF ARMS.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SINGLE Ø PRIMARY RISER POLE	
DATE: 08/23/19	DWG. NO.: 161801
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 2



NOTES

1. MINIMUM 2.5" NEMA APPROVED PVC SCH 80 SHALL BE USED TO 10' ABOVE GRADE. SCH 40 TO BE USED ABOVE 10'.
2. ATTACH CONDUIT ON SIDE OF POLE AWAY FROM TRAFFIC WHEN POSSIBLE.
3. INSTALL LOWEST STANDOFF BRACKET AT 7' ABOVE GRADE. SPACE REMAINING STANDOFF BRACKETS APPROXIMATELY 10' APART.
4. POLES SHORTER THAN 40' OR OLDER THAN 30 YEARS SHOULD BE REPLACED PRIOR TO ATTACHING A RISER.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SINGLE Ø PRIMARY RISER POLE	
DATE: 03/26/97	DWG. NO.: 161802
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2

MATERIAL LIST (FOR RISER ONLY)

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
12	2	CLOVERLEAF ARM	PLH	BKT	00030
14	AS REQUIRED	5/8" MACHINE BOLT COMBO	-	GENERAL	STOCK
15	1	FUSED CUTOUT	SWI	CUT	00070
18	1	CURRENT LIMITING FUSE (40CLF)	FUS	CLF	00050
		CURRENT LIMITING FUSE (25CLF)	FUS	CLF	00060
		CURRENT LIMITING FUSE (12CLF)	FUS	CLF	00040
19	1	HOT LINE CLAMP (3/0 - #6)	CLA	HLC	00010
		HOT LINE CLAMP (1/0 - #8)	CLA	HLC	00030
		HOT LINE CLAMP (>3/0)	CLA	HLC	00040
87	1	CUTOUT ANIMAL GUARD	PLH	WLP	00060
88	1	LIGHTING ARRRESTER ANIMAL GUARD	PLH	WLP	00040
521	1	CABLE TERMINATOR - #2 AL	TER	URD	00020
		CABLE TERMINATOR - 1/0 AL	TER	URD	00120
523	1	CONDULATOR (SELECT SIZE)	DUC	COL	-
524	AS REQUIRED	CONDUIT STAND OFF BRACKET, 6"	PLH	BKT	00130
		CONDUIT STAND OFF BRACKET, 9"	PLH	BKT	00110
525	AS REQUIRED	STRUT	PLH	BAR	00010
526	AS REQUIRED	STRAP (SELECT SIZE)	DUC	STR	-

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SINGLE Φ PRIMARY RISER POLE	
DATE: 08/23/19	DWG. NO.: 161803
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 3 OF 4

MATERIAL LIST (FOR RISER ONLY)

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
527	AS REQUIRED	CONDUIT, SCHEDULE 40 (SELECT SIZE)	DUC	PVC	-
528	10'	CONDUIT, SCHEDULE 80 (SELECT SIZE)	DUC	PVC	-
529	1	EXPANSION COUPLING (SELECT SIZE)	DUC	PFS	-
530	1	CONDUIT SWEEP, 36" RADIUS (SELECT SIZE)	DUC	PEL	-
531	1	LIGHTING ARRESTER, RISER POLE	ARR	RIS	00030
532	AS REQUIRED	COUPLING, PVC	DUC	PCP	-

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SINGLE Φ PRIMARY RISER POLE	
DATE 08/23/19	DWG. NO.: 161804
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 4 OF 4

PADMOUNTED OIL INSULATION EQUIPMENT
LOCATION AND MECHANICAL PROTECTION

GENERAL: PADMOUNTED OIL INSULATED EQUIPMENT (SUCH AS TRANSFORMERS, TRANSCLOSURES, SWITCHES, ETC) SHOULD BE INSTALLED SO AS TO BE ACCESSIBLE NOT CONSTITUTE A FIRE HAZARD, AND SHOULD BE PROTECTED FROM DAMAGE. IN URD AREAS, TRANSFORMERS INSTALLED AT RESIDENTIAL FRONT LOT LINES ARE NOT SUBJECT TO THE REQUIREMENTS OF THIS STANDARD.

LOCATION: THE PADMOUNTED EQUIPMENT SHOULD BE INSTALLED AT A LOCATION ADJACENT TO A PAVED AREA SO THAT PERMANENT ACCESS WILL BE ASSURED FOR FUTURE OPERATION AND MAINTENANCE AS WELL AS TO PERMIT INSTALLATION, REPLACEMENT, AND REMOVAL OF THE EQUIPMENT BY MEANS OF A WINCH TRUCK WITH THE BOOM UP. WHERE NOISE MAY BE A PROBLEM, CAREFUL CONSIDERATION SHOULD BE GIVEN WHEN SELECTING A LOCATION. AREAS SUBJECT TO FLOODING SHOULD BE AVOIDED. THE BUILDING OWNER'S AND/OR TENANT'S FIRE INSURANCE CARRIER MAY RESTRICT THE PROXIMITY OF THE EQUIPMENT TO DOORS, WINDOWS, OR COMBUSTIBLE MATERIALS. SUCH REQUIREMENTS ARE THE RESPONSIBILITY OF THE CUSTOMER SUBJECT TO THE REQUIREMENTS OF BURLINGTON ELECTRIC. IN THE ABSENCE OF OTHER REQUIREMENTS, IT IS SUGGESTED THAT THE EQUIPMENT BE LOCATED WITH THE FOLLOWING MINIMUM CLEARANCES FROM VARIOUS BUILDING FACILITIES:

	MINIMUM DISTANCE		
ITEM	IN FRONT OF	TO SIDE OF	BELOW
DOOR	20'	10'	--
AIR INTAKE	10'	10'	25'
WINDOW	10'	3'	5'
FIRE ESCAPE	20'	20'	--
COMBUSTIBLE WALL	6'	--	--
NON-COMBUSTIBLE WALL	3'	--	--

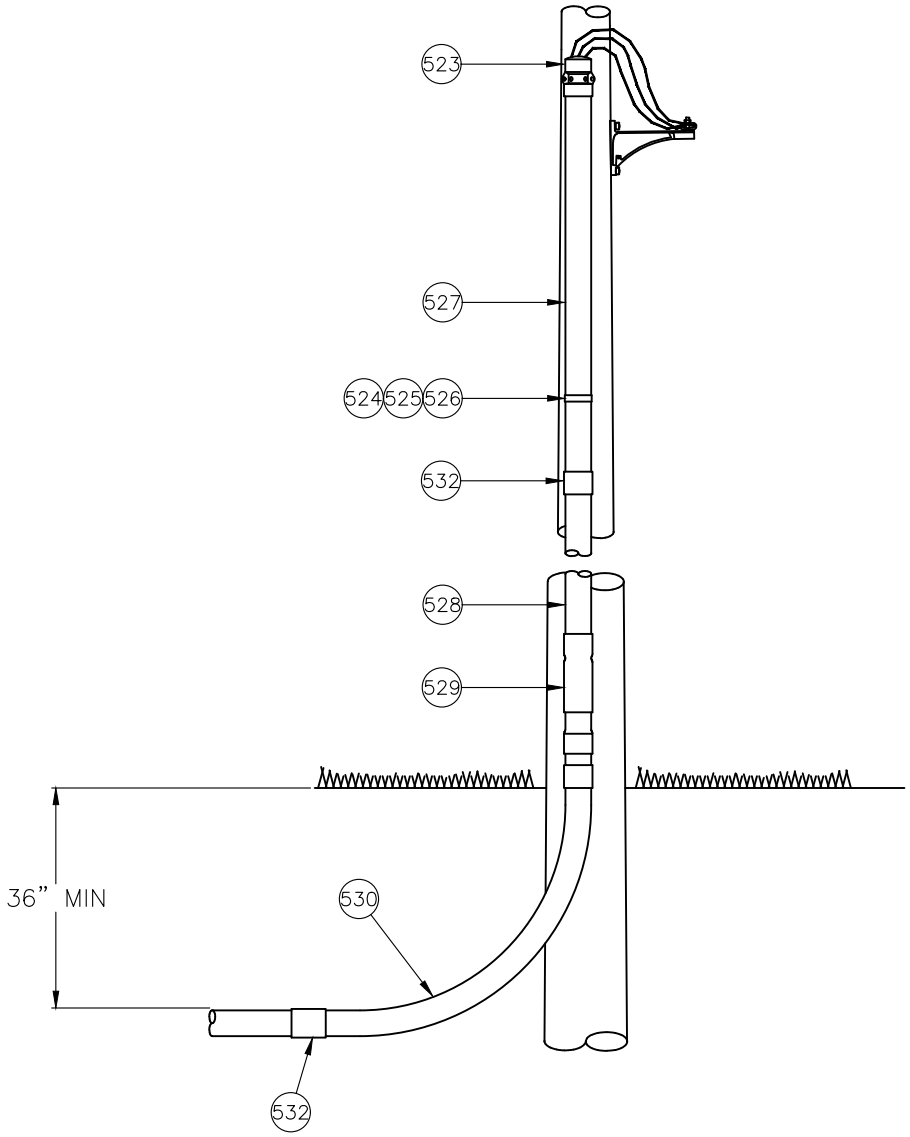
NOTE: IF THE ABOVE MINIMUM CLEARANCES CANNOT BE MET, THE BUILDING OWNER/TENANT MAY BE REQUIRED TO INSTALL ADDITIONAL FIRE PROTECTION.

OIL SUMP: IF THE SURROUNDING GRADE PITCHES TOWARD CRITICAL AREAS, IT IS RECOMMENDED THAT AN OIL SUMP BE PROVIDED. THIS SHOULD CONSIST OF 3/4" TRAP ROCK FILL UNDER AND AROUND THE EQUIPMENT PAD ADEQUATE TO CONTAIN THE QUANTITY OF OIL IN THE EQUIPMENT TO BE INSTALLED AT THE GIVEN LOCATION.

ADDITIONAL FIRE PROTECTION: IF THE BUILDING OWNER'S AND/OR TENANT'S COMBUSTIBLE FACILITIES ADJACENT TO THE EQUIPMENT REQUIRE FIRE PROTECTION BEYOND THAT PROVIDED BY OIL SUMP, IT SHALL BE THEIR RESPONSIBILITY TO PROVIDE SUCH PROTECTION IN THE FORM OF SPACE SEPARATION, FIRE RESISTANT BARRIERS, AUTOMATIC SPRAY SYSTEMS, OTHER OIL CONTAINMENT FACILITIES, OR OTHER MEANS APPROVED BY THEIR FIRE INSURANCE COMPANY.

EQUIPMENT PROTECTION: SEE STANDARD 1628 FOR PROTECTIVE BOLLARDS FOR PADMOUNTED EQUIPMENT.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
PAD TYPE EQUIPMENT LOCATIONS & PROTECTION	
DATE: 07/01/19	DWG. NO.: 161901
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1



NOTES

1. CONDULATORS ARE REQUIRED FOR ALL SECONDARY OR SERVICE RISERS.

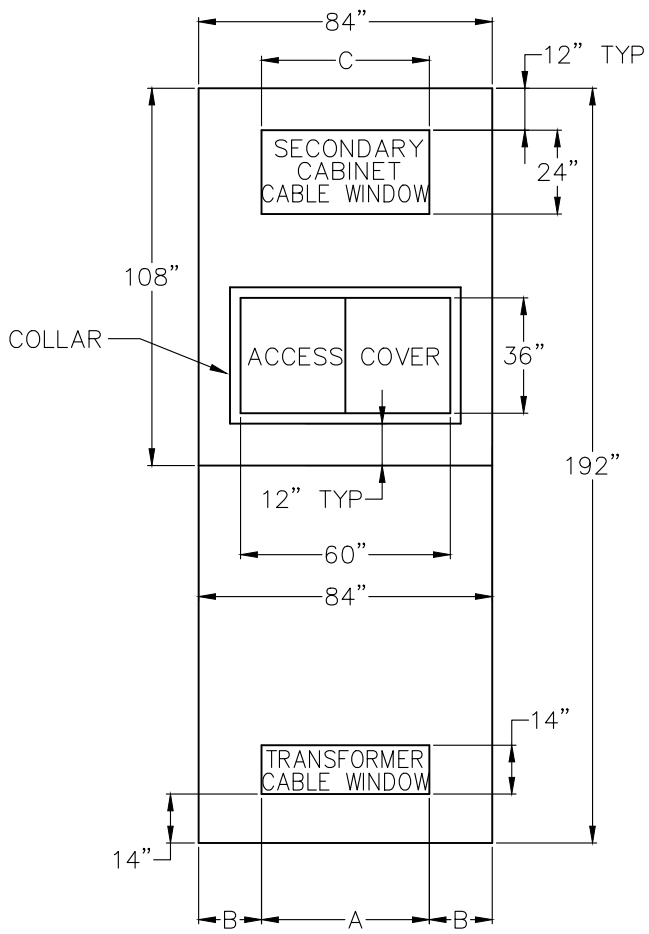
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SECONDARY RISER POLE	
DATE: 07/01/19	DWG. NO.: 162001
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1

MATERIAL LIST (FOR RISER ONLY)

ITEM	QUANTITY	DESCRIPTION	STOCK CODE		
14	AS REQUIRED	5/8" MACHINE BOLT COMBO	-	GENERAL	STOCK
523	1	CONDULATOR (SELECT SIZE)	DUC	COL	-
524	AS REQUIRED	CONDUIT STAND OFF BRACKET, 6"	PLH	BKT	00130
		CONDUIT STAND OFF BRACKET, 9"	PLH	BKT	00110
525	AS REQUIRED	STRUT	PLH	BAR	00010
526	AS REQUIRED	STRAP (SELECT SIZE)	DUC	STR	-
527	AS REQUIRED	CONDUIT, SCHEDULE 40 (SELECT SIZE)	DUC	PVC	-
528	10'	CONDUIT, SCHEDULE 80 (SELECT SIZE)	DUC	PVC	-
529	1	EXPANSION COUPLING (SELECT SIZE)	DUC	PFS	-
530	1	CONDUIT SWEEP, 36" RADIUS (SELECT SIZE)	DUC	PEL	-
532	AS REQUIRED	COUPLING, PVC	DUC	PCP	-

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SECONDARY RISER POLE	
DATE: 07/01/19	DWG. NO.: 162002
DWN BY: CC	APP. BY:
SCALE: NONE	SHEET 2 OF 2

COVER DETAIL



WINDOW DIMENSION TABLE

	kVA	
	75 500	750 1500
A	48"	55"
B	18"	14.5"

SECONDARY CABINET DIMENSION TABLE

CABINET WIDTH	C
36"	30"
48"	42"

NOTES

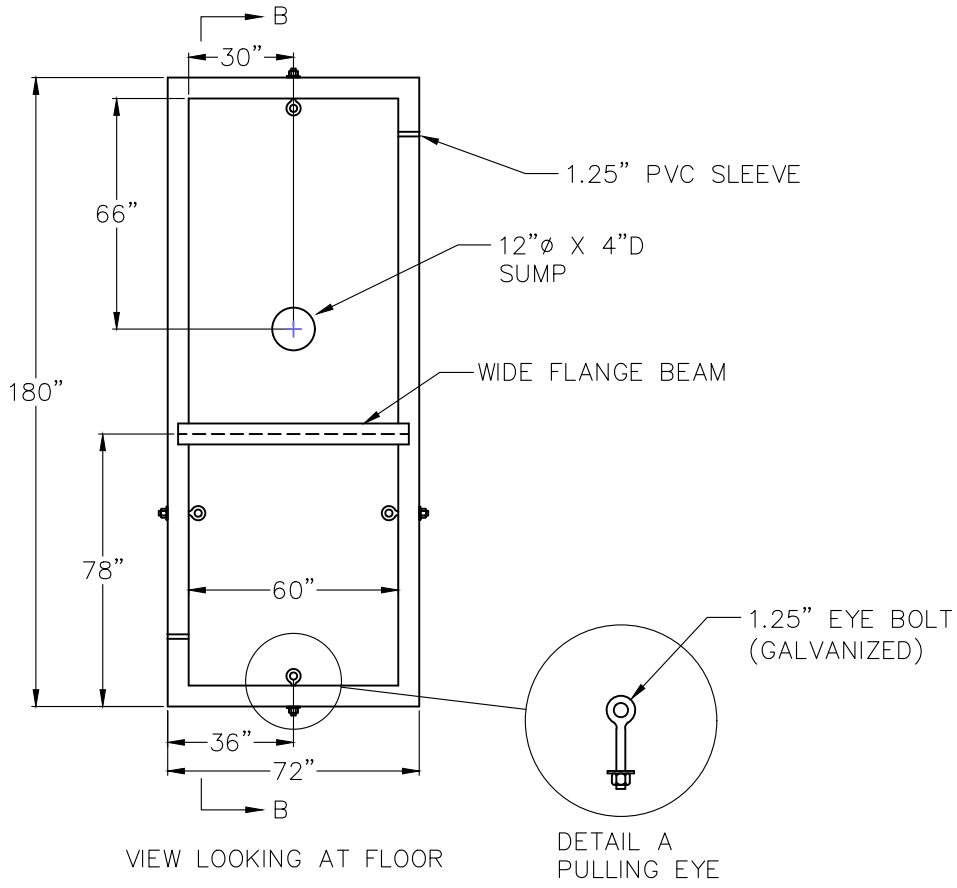
1. PAD AND WELL TO BE CONSTRUCTED TO MEET REQUIREMENTS OF LOADING SPECIFICATION H-20 AND SUPPORT A TRANSFORMER WEIGHT OF 16,000 LBS.
2. SECONDARY CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY CUSTOMER BASED ON BED STANDARD 1603.
3. PRIMARY CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY BED.
4. CONCRETE PAD SHALL HAVE A 3/4" CHAMFER ON ALL SIDES.
5. ACCESS COVER (36" X 60"), MEETING ANSI/SCTE 77-2007 TIER 22, TO BE PROVIDED BY BED.
6. STONE BASE FOR VAULT TO BE 12" OF 3/4" CRUSHED STONE.
7. FINAL VAULT DRAWINGS MUST BE APPROVED BY BED ENGINEERING.

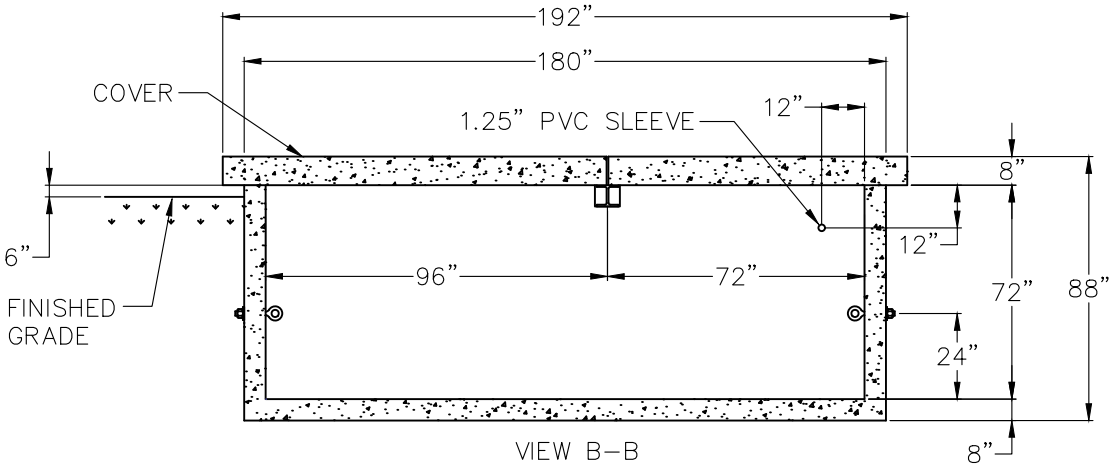
BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

3Ø TRANSFORMER CONCRETE PAD WITH SECONDARY CABINET

DATE: 07/01/19	DWG. NO.: 162101
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 2

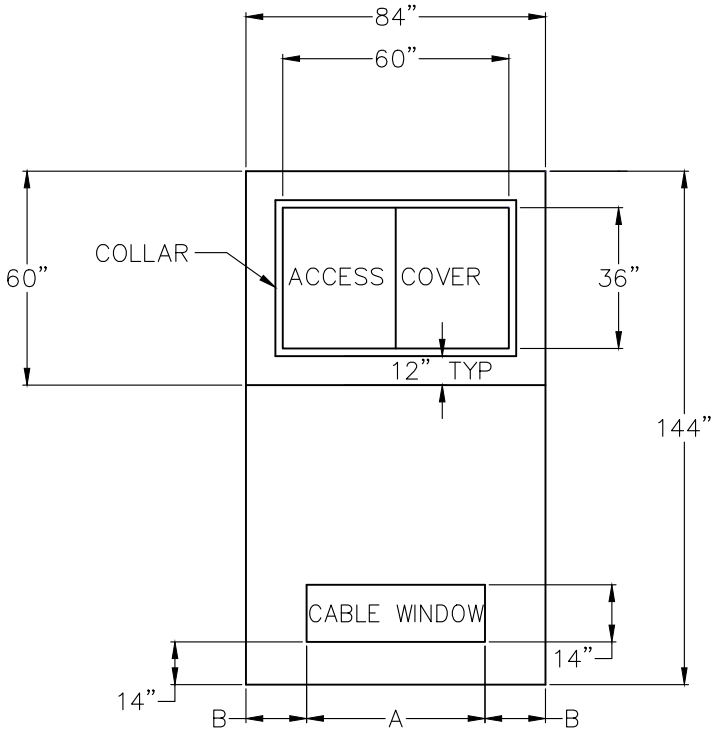




NOTES

1. PULLING EYE LOCATIONS SHOWN ARE TYPICAL LOCATIONS, FINAL LOCATION/AMOUNT TO BE DETERMINED BY BED ENGINEERING. MASTIC IS TO BE PLACED BETWEEN WASHER AND VAULT WALL TO PREVENT WATER SEEPAGE. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
3Ø TRANSFORMER CONCRETE PAD WITH SECONDARY CABINET	
DATE: 05/22/23	DWG. NO.: 162102
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2



COVER DETAIL

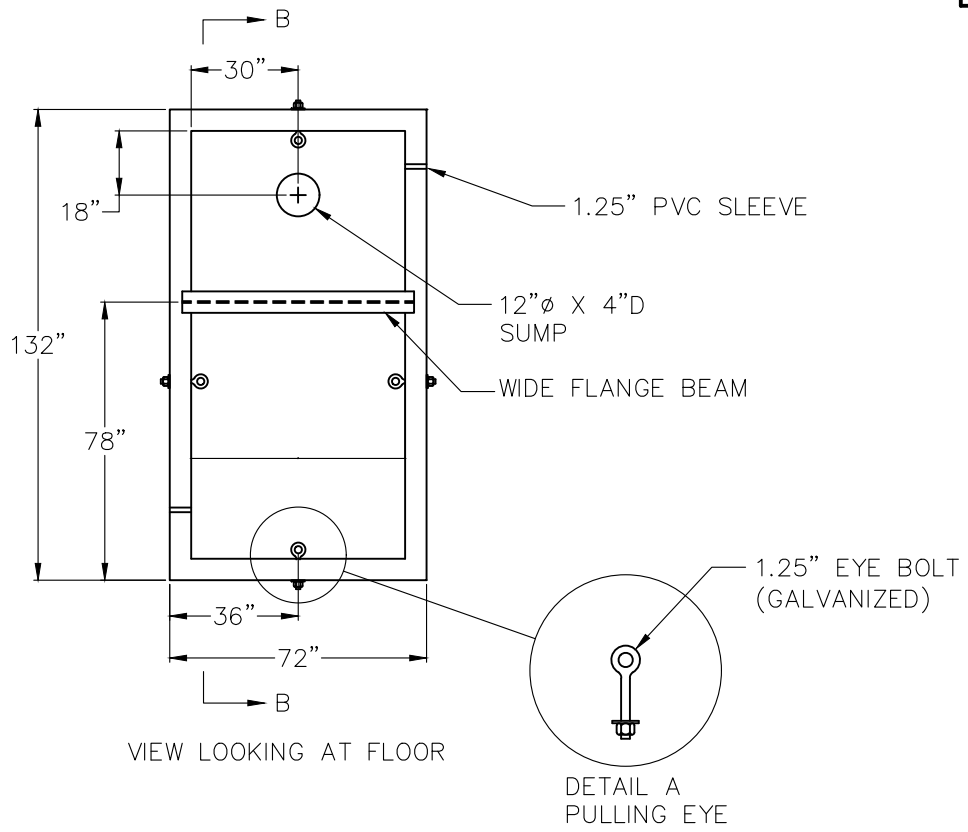
WINDOW DIMENSION TABLE

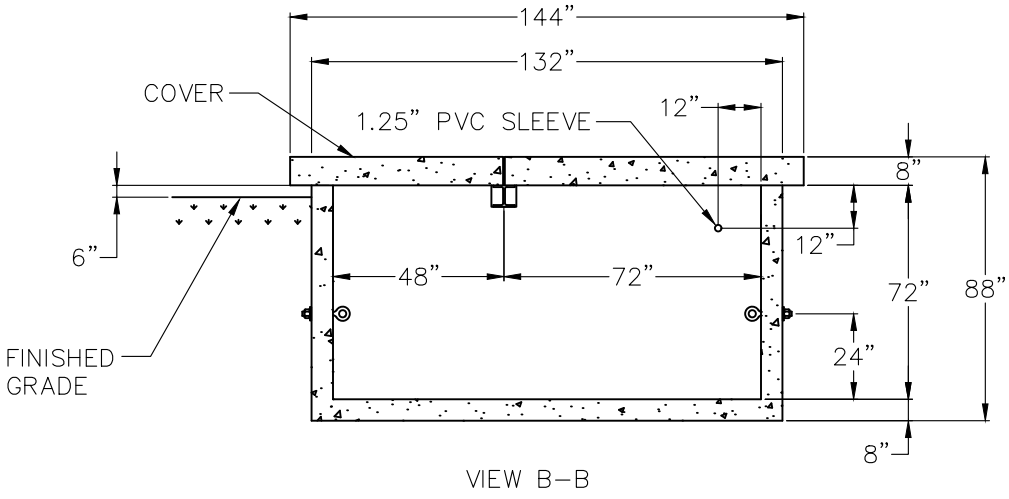
	kVA	
	75 500	750 2500
A	48”	55”
B	18”	14.5”

NOTES

1. PAD AND WELL TO BE CONSTRUCTED TO MEET REQUIREMENTS OF LOADING SPECIFICATION H–20 AND SUPPORT A TRANSFORMER WEIGHT OF 16,000 LBS.
2. SECONDARY CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY CUSTOMER BASED ON BED STANDARD 1603.
3. PRIMARY CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY BED.
4. CONCRETE PAD SHALL HAVE A 3/4” CHAMFER ON ALL SIDES.
5. ACCESS COVER (36” X 60”), MEETING ANSI/SCTE 77–2007 TIER 22, TO BE PROVIDED BY BED.
6. STONE BASE FOR VAULT TO BE 12” OF 3/4” CRUSHED STONE.
7. FINAL VAULT DRAWINGS MUST BE APPROVED BY BED ENGINEERING.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø TRANSFORMER CONCRETE PAD	
DATE: 10/16/14	**DWG. NO.:** 162201
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2



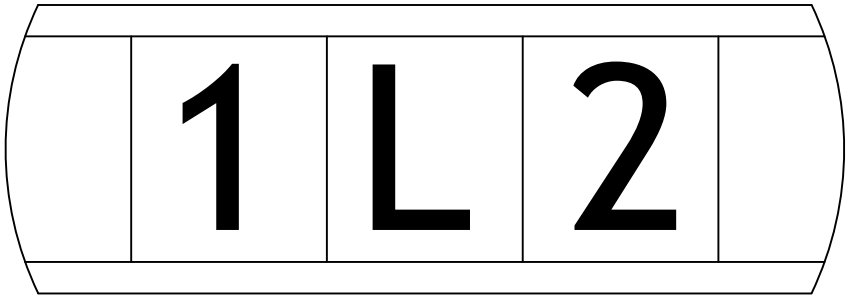


NOTES

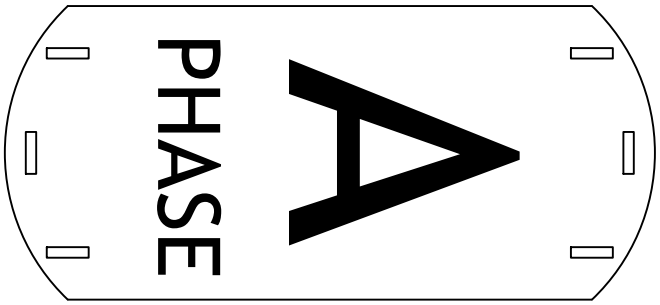
1. PULLING EYE LOCATIONS SHOWN ARE TYPICAL LOCATIONS, FINAL LOCATION/AMOUNT TO BE DETERMINED BY BED ENGINEERING. MASTIC IS TO BE PLACED BETWEEN WASHER AND VAULT WALL TO PREVENT WATER SEEPAGE. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
THREE Ø TRANSFORMER PAD	
DATE: 05/22/23	DWG. NO.: 162202
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2

CIRCUIT MARKING

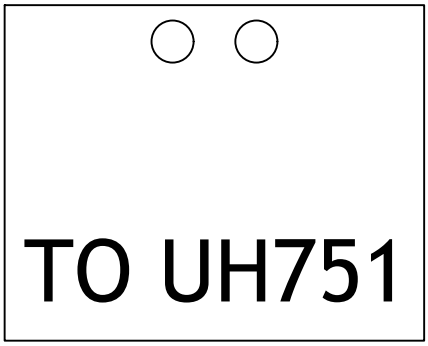


PHASE MARKING (PRIMARY ONLY)



SERVICE MARKING

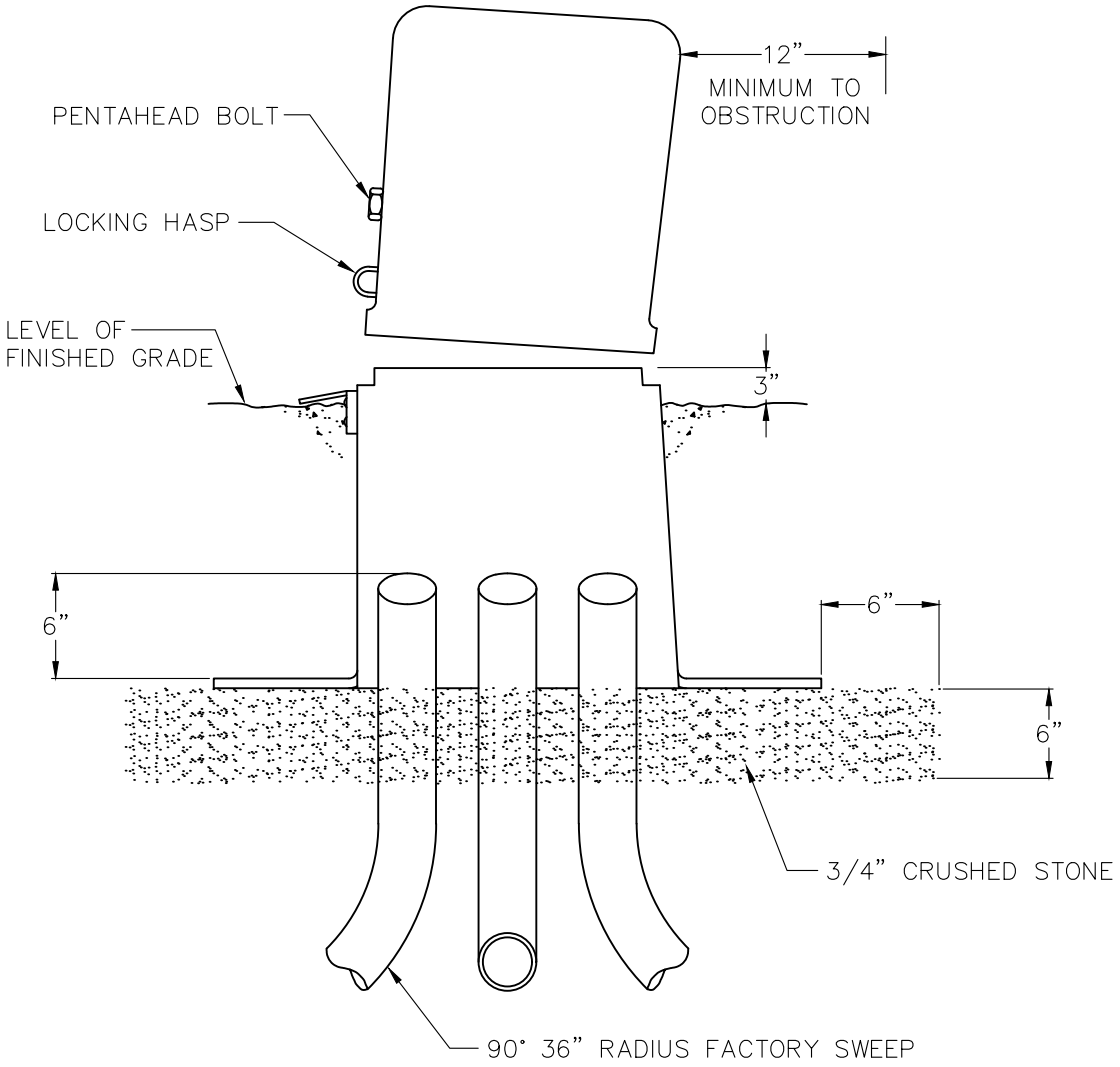
DESTINATION MARKING



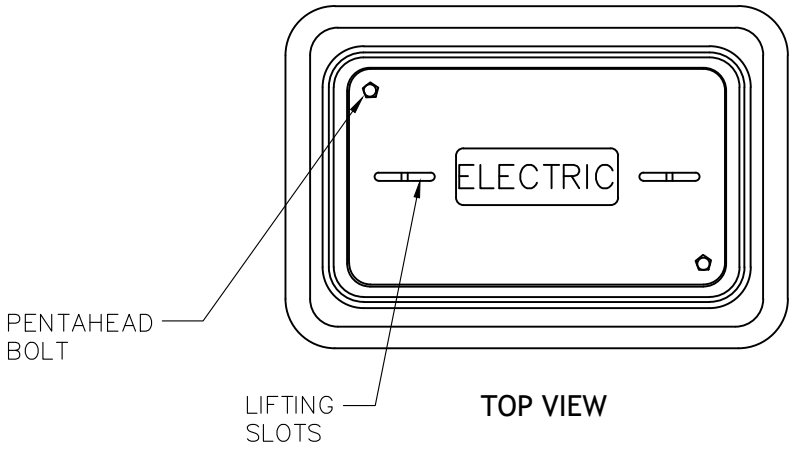
NOTE

1. TAGS SHALL BE SECURELY ATTACHED TO CABLE(S) USING CABLE TIES.
2. PLACE TAGS TO BE EASILY READ FROM ABOVE UTILITY HOLE COVER TO HELP REDUCE NEED TO ENTER UTILITY HOLE.

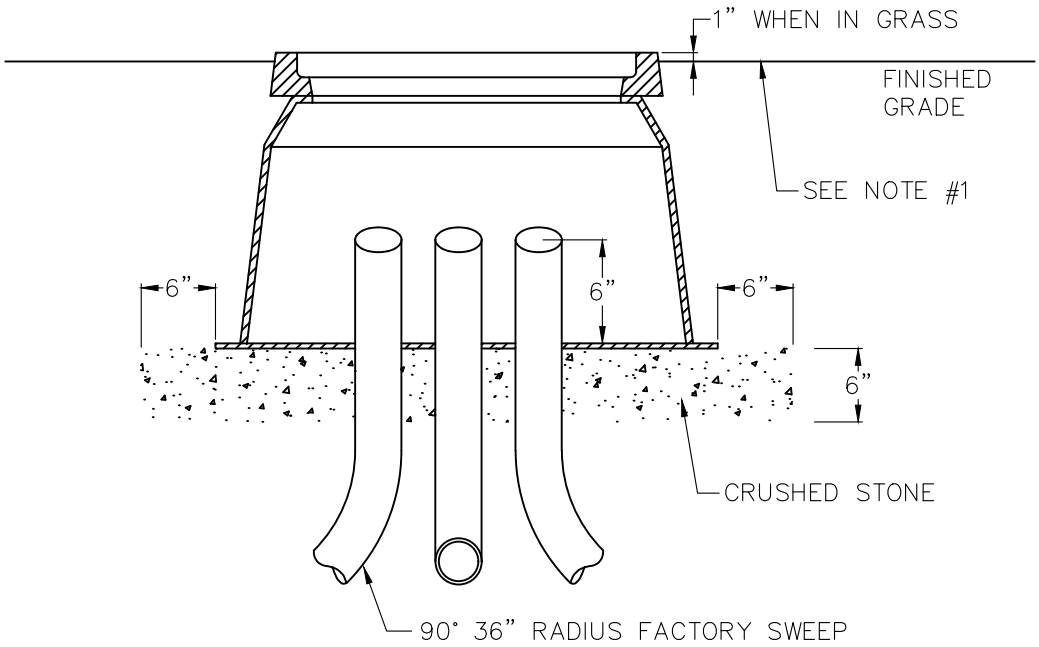
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UNDERGROUND CABLE MARKING	
DATE: 07/01/19	DWG. NO.: 162301
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1



BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SECONDARY PEDESTAL INSTALLATION DETAILS	
DATE: 06/13/97	DWG. NO.: 162401
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1



TOP VIEW



NOTE

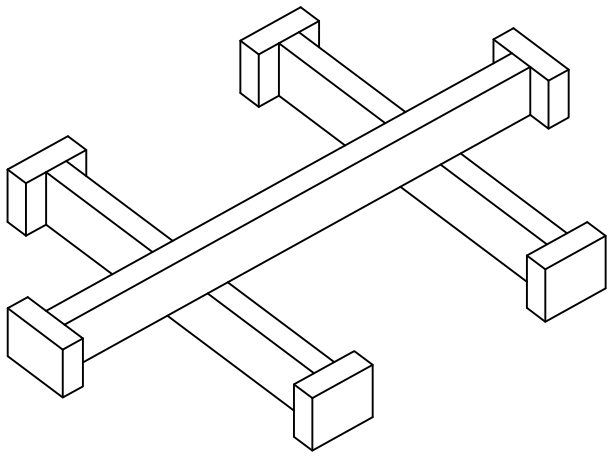
1. WHEN INSTALLED IN PAVEMENT OR SIDEWALKS, COVER SHALL BE FLUSH WITH FINISHED GRADE.

* SEE SHEET 2 FOR SPECIFICATIONS

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UNDERGROUND ENCLOSURES/HANDHOLES	
DATE: 07/01/19	**DWG. NO.:** 162501
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2

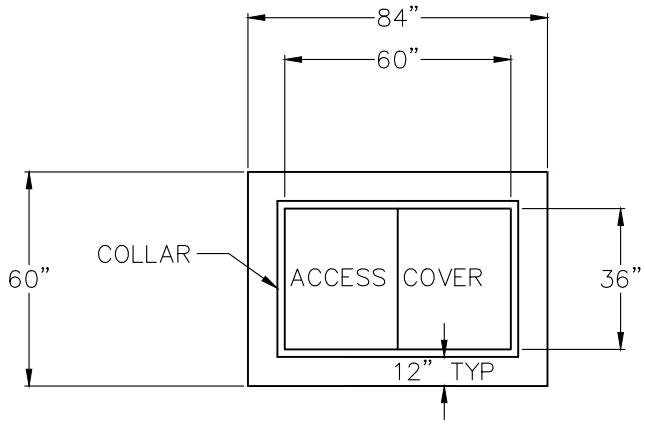
SPECIFICATIONS

1. ALL UNDERGROUND ENCLOSURES AND COVERS (CDR STYLES) INSTALLED IN THE GREENBELT/SIDEWALK (SIZED 12"X12", 17"X30", 24"X36", AND 30"X60") SHALL MEET ANSI/SCTE77 2007 "Specifications for Underground Enclosures Integrity" TIER 22 (DRIVEWAY, PARKING LOT, AND OFF ROADWAY APPLICATIONS SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC). THE CDR BOXES AND COVERS SHALL BE PROVIDED BY BED.
2. ALL UNDERGROUND ENCLOSURES AND COVERS INSTALLED IN THE GREENBELT/SIDEWALK, SIZED LARGER THAN 30"X60", SHALL MEET AASHTO FULL H-20 LOADING (DELIBERATE VEHICULAR TRAFFIC APPLICATION), BE DESIGNED AND PROVIDED BY THE CONTRACTOR. DESIGN TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER. CDR STYLE ENCLOSURES SHALL NOT BE USED.
3. ALL UNDERGROUND ENCLOSURES AND COVERS (ANY SIZE) INSTALLED IN THE STREET SHALL MEET AASHTO FULL H-20 LOADING, BE DESIGNATED AND PROVIDED BY THE CONTRACTOR. DESIGN TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER. CDR STYLE ENCLOSURES SHALL NOT BE USED.
4. THE TOP OF EACH UNDERGROUND ENCLOSURE IN THE GRASS SHALL BE ONE INCH ABOVE FINISHED GRADE.
5. THE TOP OF EACH UNDERGROUND ENCLOSURE IN THE PAVEMENT/SIDEWALK SHALL BE FLUSH WITH FINISHED GRADE.
6. CONDUIT ENTRY INTO THE UNDERGROUND ENCLOSURES SHALL BE MADE BY USE OF CONDUIT SWEEPS.
7. EACH UNDERGROUND ENCLOSURE SHALL BE LEVEL AND REST ON A BEDDING OF COMPACTED CRUSHED STONE SIX INCHES IN DEPTH AND SHALL EXTEND A MINIMUM OF SIX INCHES BEYOND THE EDGE OF THE UNDERGROUND ENCLOSURE IN EACH DIRECTION PER BED STANDARD 1633.
8. THE CONTRACTOR SHALL CUT OFF THE TOPS OF THE SWEEPS INSIDE THE UNDERGROUND ENCLOSURES 6" ABOVE THE TOP OF THE STONE.
9. INTERNAL BRACING SHALL BE USED DURING THE INSTALLATION OF UNDERGROUND ENCLOSURES SIZED 30"X60" IN THE SIDEWALK AND GREENBELT. BRACING SHOULD BE 2X4'S HELD AT MID-DEPTH DURING THE INSTALLATION, COMPACTION, AND BACKFILLING TO ENSURE MINIMAL SIDEWALL DEFLECTIONS.



2X4 BRACING FOR 30"X60"
UNDERGROUND ENCLOSURE

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UNDERGROUND ENCLOSURES/HANDHOLES	
DATE: 07/02/19	**DWG. NO.:** 162502
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 2 **OF** 2

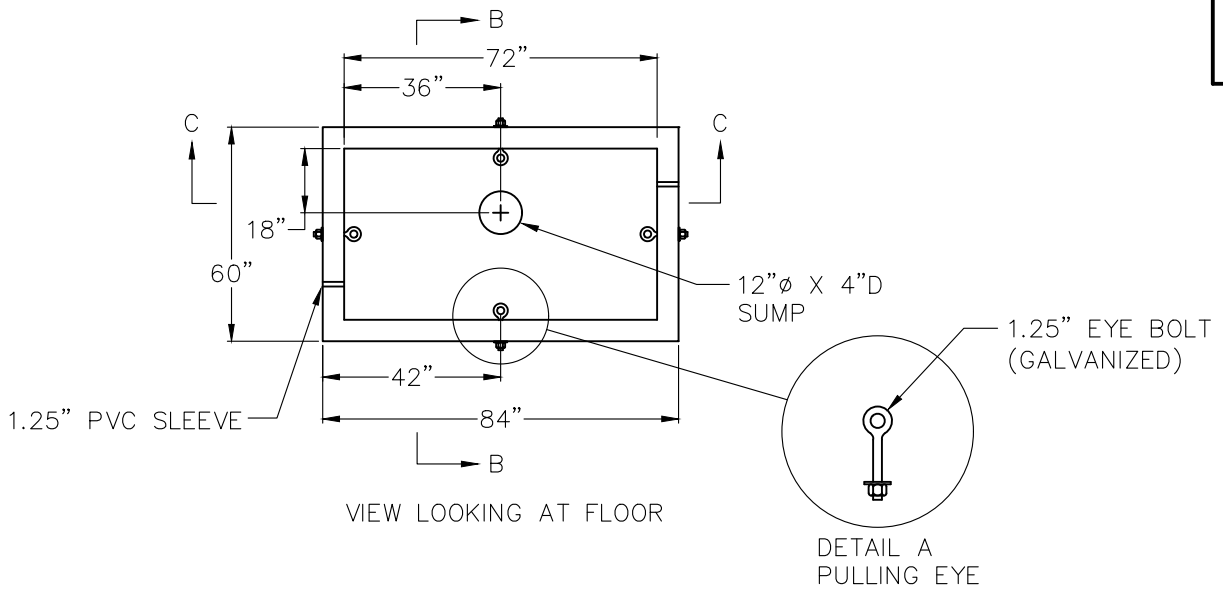


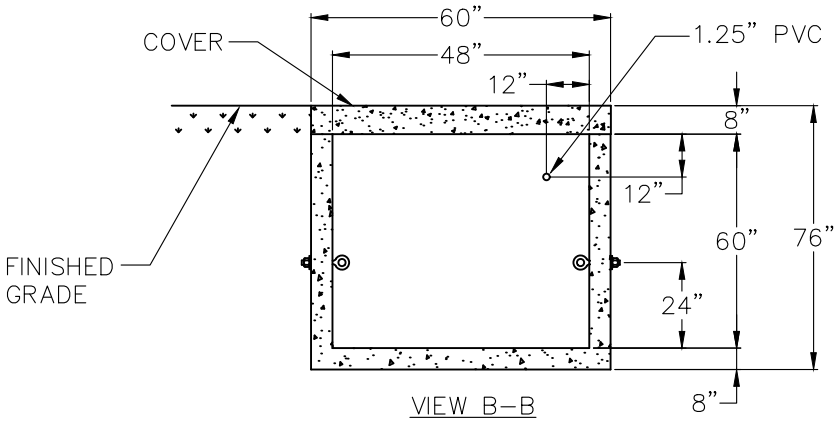
COVER DETAIL

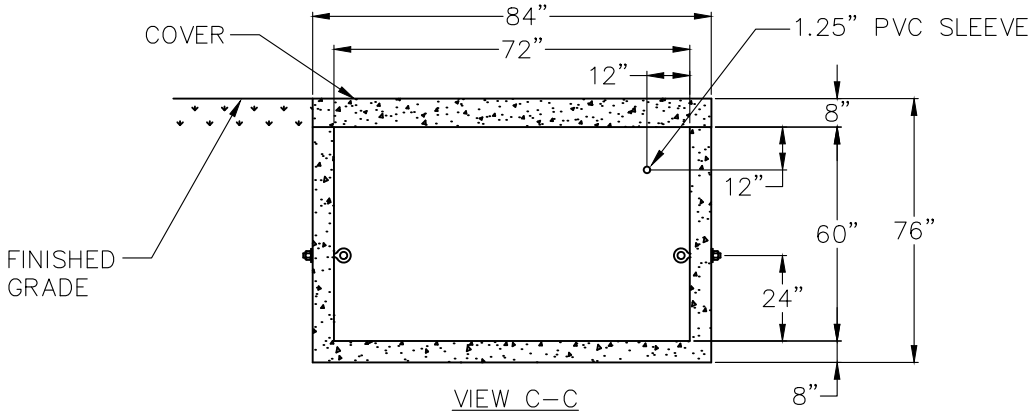
NOTES

1. PAD AND WELL TO BE CONSTRUCTED TO MEET REQUIREMENTS OF LOADING SPECIFICATION H–20.
2. CONDUIT QUANTITY AND SIZE TO BE DETERMINED BY BED.
3. ACCESS COVER (36” X 60”), MEETING ANSI/SCTE 77–2007 TIER 22, TO BE PROVIDED BY BED.
4. STONE BASE FOR VAULT TO BE 12” OF 3/4” CRUSHED STONE.
5. FINAL VAULT DRAWINGS MUST BE APPROVED BY BED ENGINEERING.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SMALL VAULT	
DATE: 07/16/21	**DWG. NO.:** 162601
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 2







NOTES

1. PULLING EYE LOCATIONS SHOWN ARE TYPICAL LOCATIONS, FINAL LOCATION/AMOUNT TO BE DETERMINED BY BED ENGINEERING. MASTIC IS TO BE PLACED BETWEEN WASHER AND VAULT WALL TO PREVENT WATER SEEPAGE. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SMALL VAULT	
DATE: 05/22/23	DWG. NO.: 162602
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2

120/240 1Ø			
kVA	AMPS	WIRE LEADS	# OF CONDUCTORS
25	104.17	1/0	1
37.5	156.25	1/0	1
50	208.33	4/0	1
75	312.50	4/0	1
100	416.67	350	1
167	695.83	500	1
250	1041.67	500	2
333	1387.50	500	2

CU XHHW WIRE

SPECS @ 90c	
SIZE	AMPACITY
#2	190
1/0	260
2/0	300
4/0	405
350	570
500	700

kVA		120/208 3Ø		
1Ø	3Ø	AMPS	WIRE LEADS	# OF CONDUCTORS
25	75	208.33	1/0	1
37.5	112.5	312.50	4/0	1
50	150	416.67	350	1
75	225	625.00	500	1
100	300	833.33	500	2
167	500	1391.67	500	2
250	750	2083.33	500	3
333	1000	2775.00	500	4

kVA		277/480 3Ø		
1Ø	3Ø	AMPS	WIRE LEADS	# OF CONDUCTORS
25	75	90.25	1/0	1
37.5	112.5	135.38	1/0	1
50	150	180.51	1/0	1
75	225	270.76	4/0	1
100	300	361.01	4/0	1
167	500	602.89	500	1
250	750	902.53	500	2
333	1000	1202.17	500	2

NOTES

1. ALL SECONDARY WIRING TO BE MADE UP WITH COPPER XHHW 600V CABLE.
2. ALL SECONDARY CONNECTIONS MUST BE TAPED AND INSULATED FROM CONTACT.
3. CUSTOMER/SECONDARY CIRCUIT CONNECTIONS ARE TO BE MADE IN SUBMERSIBLE CONNECTORS.
4. CABLE AMPACITY BASED ON NEC 310.15 (B)(17) SINGLE INSULATED CONDUCTORS IN FREE AIR WITH 30°C AMBIENT TEMPERATURE.

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

SUBMERSIBLE TRANSFORMER

DATE: 09/05/19	DWG. NO.: 162701
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 2

SUBMERSIBLE TRANSFORMERS

GENERAL

ALL NEW SUBMERSIBLE TRANSFORMERS ARE INTERNALLY FUSED ON THE PRIMARY SIDE WITH BAY-O-NET AND BACK-UP CLF. FUSING BASED ON COOPER POWER SYSTEMS PUBLICATIONS 240-98 BASED ON YEAR OF MANUFACTURING. CURRENT SUBMERSIBLE FUSING CAN BE FOUND IN STANDARD 2403.

SINGLE PHASE USE OF 120/240V SHALL NOT USE A SUBMERSIBLE OVER 100kVA.

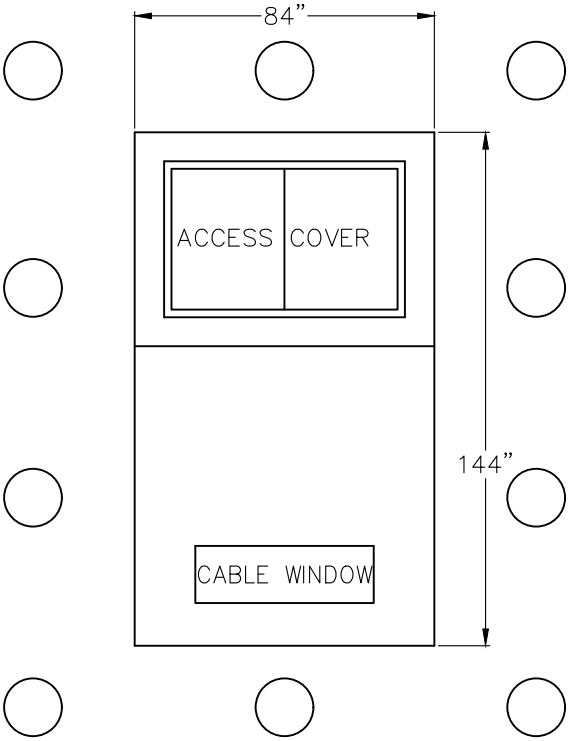
FOR FURTHER INFORMATION SEE MATERIAL SPECIFICATIONS PAGE S0112.

STANDARD SUBMERSIBLE SIZES

120/240V SINGLE ø (4 SECONDARY BUSHINGS)
25kVA, 37.5kVA, 50kVA, 75kVA, 100kVA, 167kVA, 333kVA

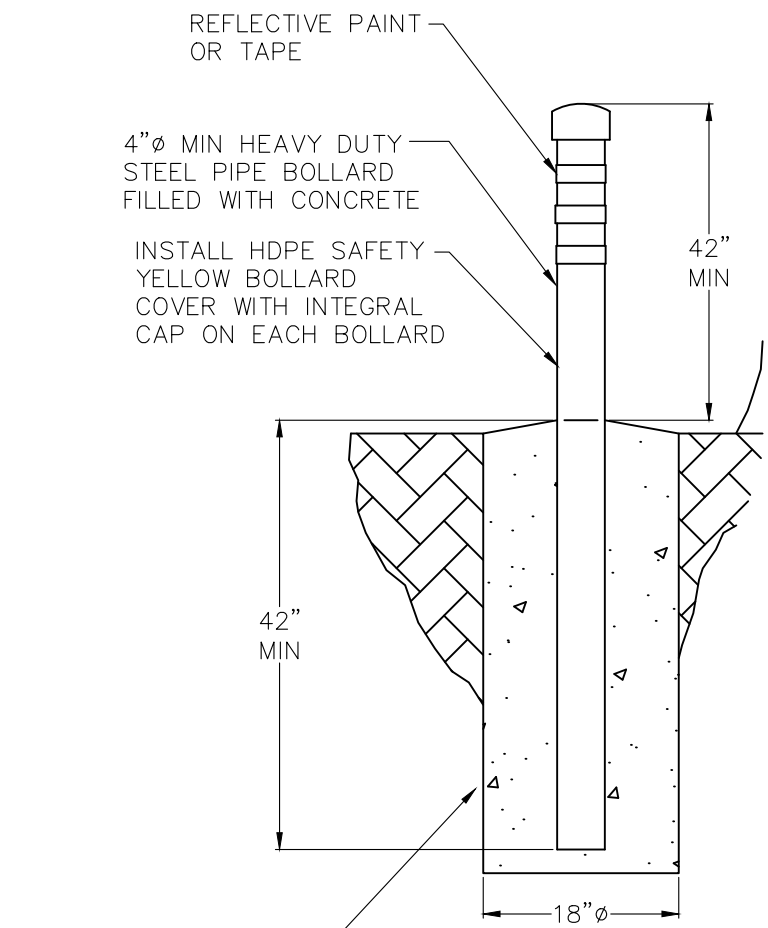
277 SINGLE ø (2 SECONDARY BUSHINGS)
50kVA, 167kVA, 250kVA, 333kVA

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SUBMERSIBLE TRANSFORMER	
DATE: 07/01/19	DWG. NO.: 162702
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 2



PLAN VIEW

BOLLARD LOCATIONS ARE TYPICAL LOCATIONS. SEE NOTES #4 & #5.

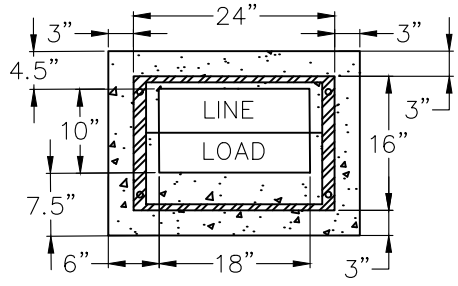


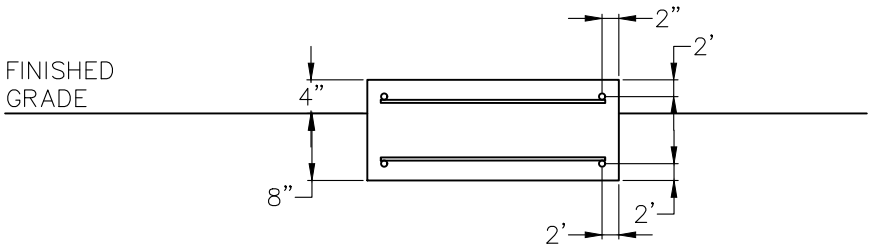
SECTIONAL VIEW

NOTES

1. WHERE PAD MOUNTED EQUIPMENT WOULD BE EXPOSED TO POSSIBLE DAMAGE BY VEHICULAR TRAFFIC, PROTECTIVE BARRIERS ARE TO BE INSTALLED BY THE OWNER ON EXPOSED SIDES.
2. STEEL PIPES SHALL BE A MINIMUM DIAMETER OF 4" AND CONCRETE FILLED. SUCH PIPES SHALL EXTEND A MINIMUM OF 42" ABOVE AND BELOW GRADE. HEAVIER BARRIERS, SET DEEPER, SHALL BE USED WHERE PAD MOUNTED EQUIPMENT IS EXPOSED TO HEAVY TRUCKS OR TRAFFIC.
3. BARRIERS SHALL BE 42" MINIMUM FROM THE OPERATING SIDES OF THE EQUIPMENT OR PAD, WHICHEVER PROJECTS FURTHER. THE MINIMUM SPACING FROM NON-OPERATING SIDES OF THE EQUIPMENT PAD SHALL BE 12". THE MAXIMUM SPACING BETWEEN BARRIERS ON EXPOSED SIDES SHALL BE 60".
4. BOLLARD LOCATIONS SHOWN ARE TYPICAL LOCATIONS. FINAL LOCATION/AMOUNT TO BE DETERMINED BY BED ENGINEERING AND FIELD INSPECTOR.
5. LOCATION OF BOLLARDS SHALL NOT IMPEDE OPENING OF A DOOR 180° OR IMPEDE ELBOW OPERATION.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
BOLLARD INSTALLATION	
DATE: 05/12/15	**DWG. NO.:** 162801
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 1





NOTES

1. MOUNTING BASE TO BE INCASED IN CONCRETE SLAB, WITH TOP FLANGE OF BASE FLUSH WITH TOP OF PAD. WHEN CASTING, LEAVE MOUNTING HARDWARE INSTALLED IN MOUNTING BASE.
2. CONCRETE PAD TO EXTEND 8" BELOW GRADE AND A MINIMUM RISE 4" ABOVE GRADE.
3. STONE BASE FOR PAD TO BE 12" OF 3/4" CRUSHED STONE.
4. 36" MINIMUM CLEARANCE REQUIRED FOR FRONT OF METERING PEDESTALS PER NEC 110–16.
5. CABINET TO BE SECURED WITH STANDARD BED PADLOCK.
6. METER BREAKERS ARE LIMITED TO 14kA AIC RATING. SEE TABLE BELOW FOR PROPER CONDUCTOR LENGTH AND SIZE TO MEET AIC RATING.
7. INSTALL BOLLARDS PER BED STANDARD 1628 WHEN INSTALLED IN LOCATIONS NEAR VEHICLE TRAFFIC.
8. METER PEDESTAL SHALL HAVE (2) 8' GROUND RODS SEPARATED 6' APART AND CONNECTED WITH A CONTINUOUS RUN OF #4 STRANDED CU PER NEC STANDARDS.
9. CONCRETE PAD SHALL HAVE A 3/4" CHAMFER ON ALL SIDES.
10. CONCRETE PAD TO BE REINFORCED WITH (2) #6 REBAR RINGS AT 2" DEPTH FROM TOP AND BOTTOM OF PAD.

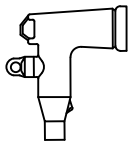
480Y/277V	MINIMUM CABLE LENGTH OF 1/0 AL (DISTANCE FROM TRANSFORMER TO METER CABINET)		
3Ø kVA	OH XFMR BANK	PADMOUNT XFMR	SUBMERSIBLE XFMR BANK
75	NO MIN	NO MIN	NO MIN
112.5	NO MIN	NO MIN	NO MIN
150	NO MIN	NO MIN	NO MIN
225	30'	35'	30'
300	55'	60'	55'
500	–	80'	80'
750	–	25'	65'
1000	–	45'	80'
1500	–	70'	90'

BURLINGTON ELECTRIC DEPT.

DISTRIBUTION STANDARDS

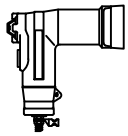
3Ø PAD MOUNTED METER PEDESTAL

DATE: 08/27/24	DWG. NO.: 162901
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1



200A LOADBREAK ELBOW

504

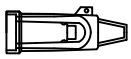


ELBOW ARRESTER

507

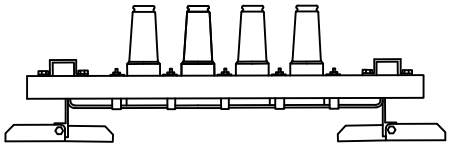
INSULATED PARKING BUSHING

510



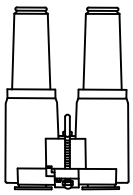
INSULATED CAP

511



MULTI-TAP, 200A LOADBREAK (4-WAY)

513



INSULATED FEED-THRU PARKING BUSHING

517

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UNDERGROUND COMPONENTS	
DATE: 08/26/19	DWG. NO.: 163101
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 1

SPECIFICATIONS

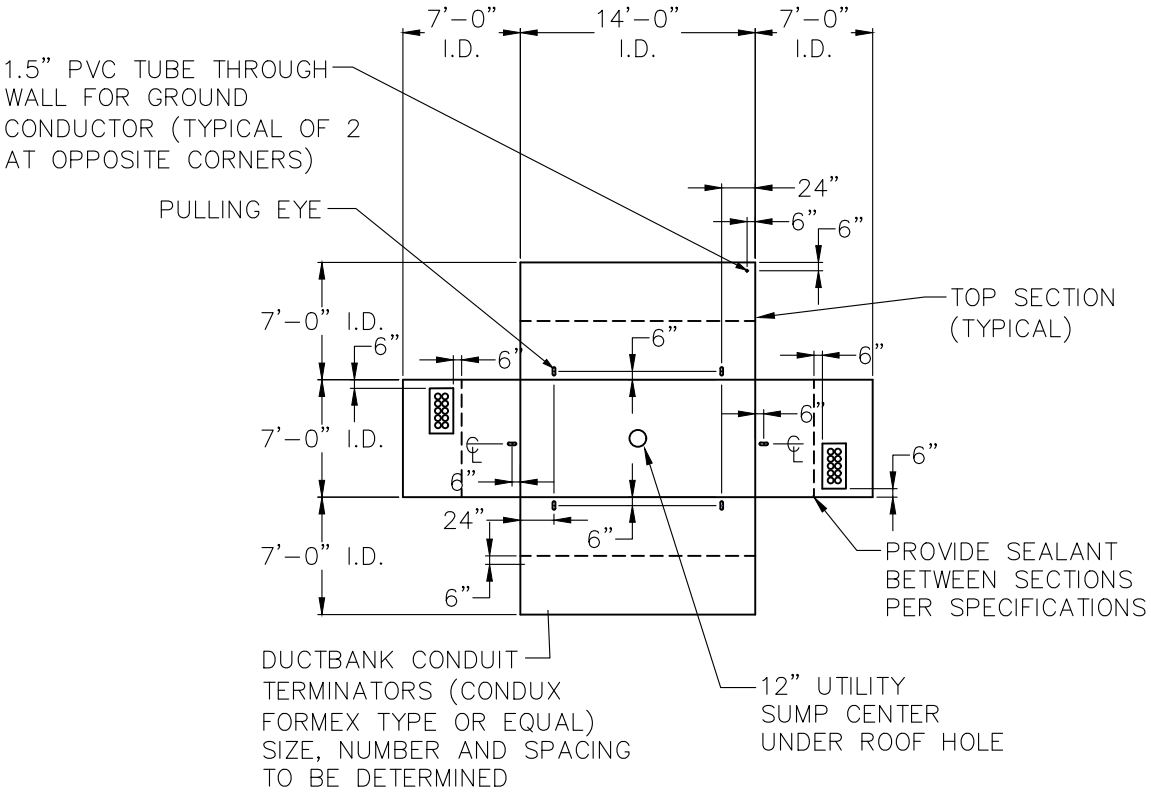
1. PRIOR TO PLACING GRANULAR FILL, ALL ORGANIC MATERIAL, TOPSOIL, DEBRIS, AND ANY OTHER DELETERIOUS MATERIAL SHALL BE REMOVED.
2. GRANULAR FILL SHALL BE APPROVED, WELL GRADED BANK RUN, OR CRUSHER RUN GRAVEL MEETING THE REQUIREMENTS OF THE FOLLOWING TABLE:

SIEVE DESIGNATION	% PASSING
1"	100
3/4"	90 TO 100
3/8"	0 TO 55
NO. 4	0 TO 10
NO. 8	0 TO 5

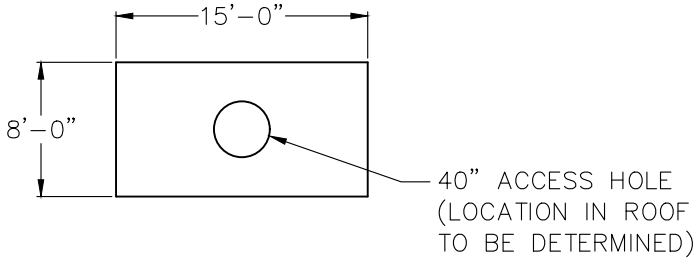
3. THE MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY 1STM D-1557, MODIFIED PROCTOR.
4. THE CONTRACTOR WILL EMPLOY AN APPROVED INDEPENDENT TESTING FIRM TO TAKE (4) DENSITY TESTS ON EACH COMPACTED FILL LIFT. IF THE MATERIAL TESTS LESS THAN 95%, CORRECTIVE ACTION AND ADDITIONAL TESTING WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.
5. MATERIALS SHALL BE PLACED IN SUCH A WAY AS NOT TO DAMAGE EXISTING STRUCTURES, EXISTING UTILITIES, AND CONCRETE FOUNDATIONS AND FOOTINGS.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, FROM A TESTING FIRM APPROVED BY BED, A SIEVE ANALYSIS AND A LABORATORY MOISTURE-DENSITY CURVE FOR THE PROPOSED GRANULAR FILL. THE PROCEDURE SHALL BE REPEATED UNTIL A MATERIAL MEETING THE SPECIFICATION IS PROVIDED.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
GRANULAR FILL UNDER SLABS AND FOOTINGS	
DATE: 11/16/11	**DWG. NO.:** 163301
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 1 **OF** 1

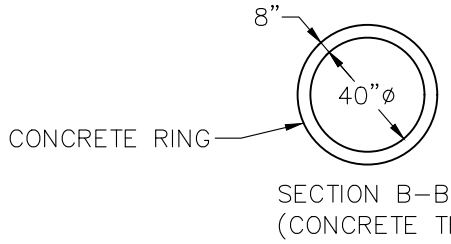


UTILITY HOLE TAKE-OFF DETAIL

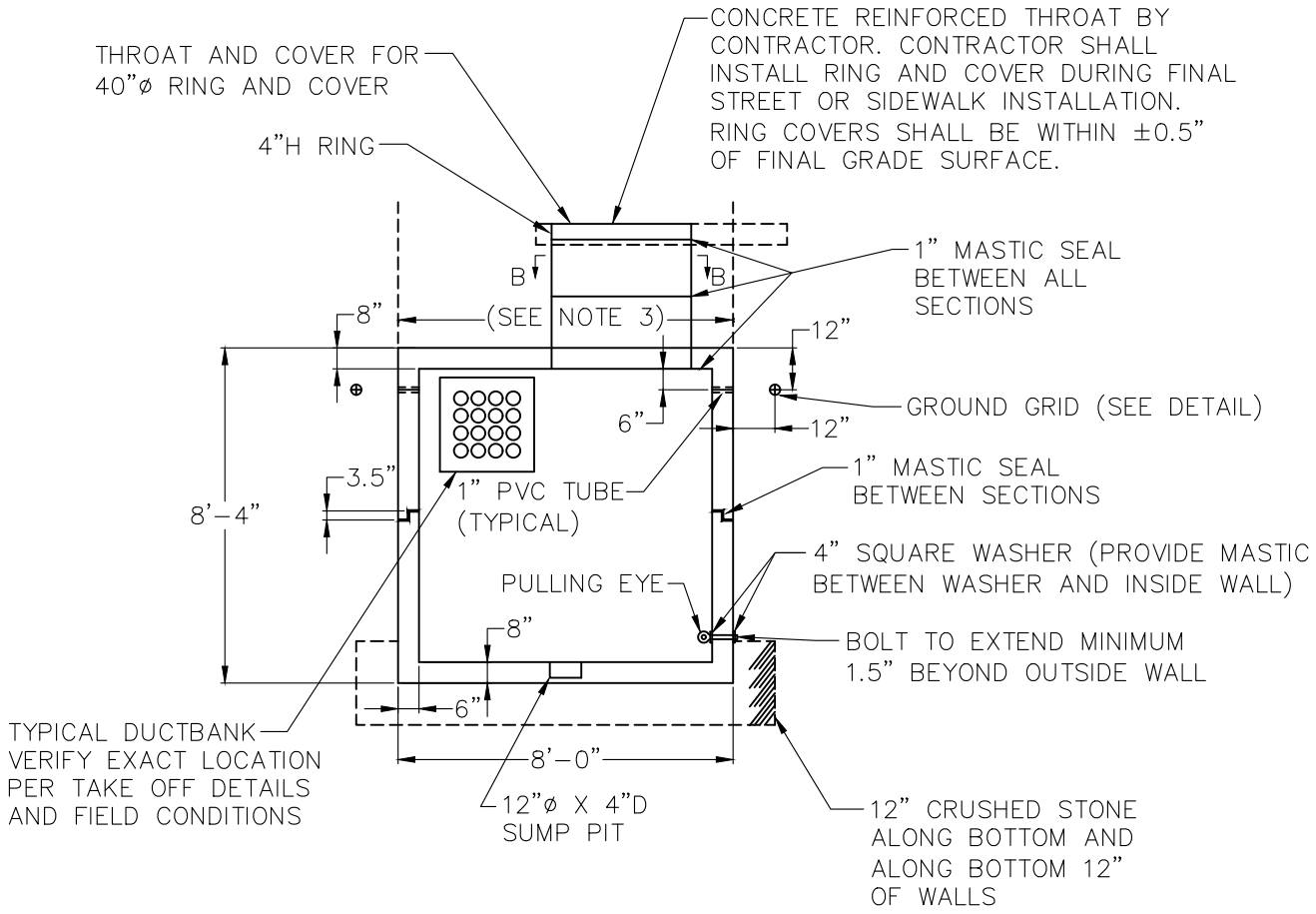


UTILITY HOLE TOP VIEW

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
TYPICAL UTILITY HOLE DETAILS	
DATE: 10/22/14	DWG. NO.: 163401
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 5



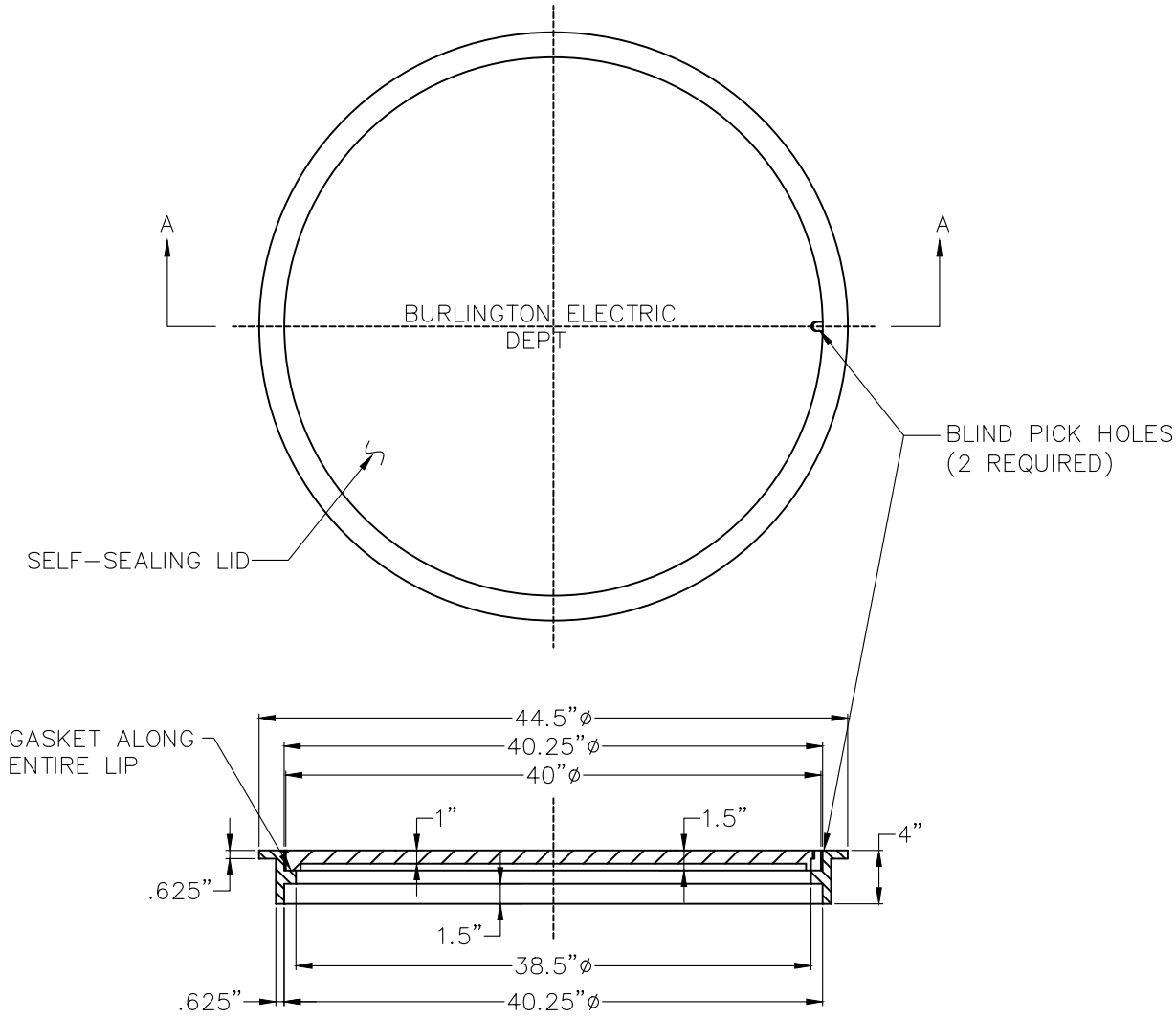
SECTION B–B
(CONCRETE THROAT)



NOTES

1. DEPTH MINIMUM 12", MAXIMUM 18" BELOW GRADE, EXCEPT AS NEEDED TO ACCOMMODATE STREET SUB–BASE.
2. UTILITY HOLE SHALL BE ORIENTED SUCH THAT 40" DIA RING AND COVER IS LOCATED FULLY WITHIN SIDEWALK OR PAVEMENT, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF UTILITY HOLE PRIOR TO FORMING TOP.
3. NO OTHER UTILITIES SHALL PASS ABOVE VAULT.
4. THROAT SHALL BE CAST–IN–PLACE CONCRETE SECTIONS (2" MIN) FROM UTILITY HOLE TO RING: SEE SECTION B–B. COORDINATE EXACT HEIGHT BASED ON FINISHED GRADE. SET RING WITH FINAL SIDEWALK OR ASPHALT SETTING. PROVIDE MASTIC SEAL BETWEEN ALL SECTIONS.
5. UTILITY HOLE SHALL MEET AASHTO H–20 LOADING REQUIREMENT.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
TYPICAL UTILITY HOLE ELEVATION	
DATE: 07/11/22	DWG. NO.: 163402
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 5



SECTION A-A

NOTES

1. THIS RING CAN BE USED EITHER SIDE UP.
2. COVER RAISED DIAMOND DESIGN WITH 1.5" LETTERING.
3. 40" CAST IRON COVER AND FRAME (NEENAH FOUNDRY CO. CATALOG #R-5900-J) TO BE PROVIDED BY BED. COVER SHALL BE INSTALLED BY CONTRACTOR AT FINISHED GRADE.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UTILITY HOLE CAST IRON RING AND COVER	
DATE: 10/21/14	**DWG. NO.:** 163403
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 3 **OF** 5

UTILITY HOLE SPECIFICATIONS

1. DESIGN CRITERIA:
   A) MINIMUM CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI @ 28 DAYS.
   B) ENTRAINED AIR: 5% MINIMUM.
   C) STEEL: ASTM A615 GRADE 60.
   D) SIZE; 7'W X 14'L X 7'H, I.D.; 6" WALLS AND 8" BASE MINIMUM.
   E) OTHER REFERENCES: ASTM A153, A569, A48, A123, C857, C890, AC1301, AC1318, AC1347, CRSI, OTHERS AS APPLICABLE.

2. THE CONTRACTOR SHALL PROVIDE THE PRE-CAST UTILITY HOLES. THE PRE-CAST UTILITY HOLES SHALL MEET THE FOLLOWING CRITERIA:
   A) ASTM C857 AND ASTM C890 TO SUPPORT FULL H-20 LOADING.
   B) HYDROSTATIC LOADING ASSUMING GROUND WATER TO SURFACE.
   C) THE VAULT SHALL BE DESIGNED FOR NO MORE THAN 2 SECTIONS (A TOP SECTION AND A BOTTOM SECTION). THE BOTTOM SECTION SHALL BE CAST MONOLITHICALLY WITH THE BASE SLAB.
   D) PULL ANCHOR FORCES AS DETAILED IN THIS SPECIFICATION.

3. CONDUIT PENETRATION KNOCKOUTS SHALL BE PROVIDED AS SHOWN ON CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL COORDINATE CONDUIT PENETRATION KNOCKOUT LOCATIONS WITH THE PRE-CAST UTILITY HOLE VENDOR.

4. EACH UTILITY HOLE SHALL HAVE ADDITIONAL REINFORCEMENT AT OPENINGS OVER 24"ø AND AT ALL CORNERS. THE REINFORCEMENT SHALL BE BOTH VERTICAL AND HORIZONTAL, USING #4 BARS, MINIMUM.

5. EACH UTILITY HOLE SHALL BE BUILT AND INSTALLED IN TWO SECTIONS – TOP AND BOTTOM.

6. THE JOINT BETWEEN THE TOP AND BOTTOM SECTIONS SHALL BE CONSTRUCTED AS A SHIPLAP OR A "TONGUE AND GROOVE" (THE "TONGUE" SHALL BE BUILT INTO THE LOWER SECTION AND THE "GROOVE" SHALL BE BUILT INTO THE UPPER SECTION). THE JOINT SHALL BE SUFFICIENTLY STRONG TO PREVENT THE TWO SECTIONS OF THE UTILITY HOLE FROM MOVING IN RELATION TO EACH OTHER UNDER NORMALLY EXPECTED CONDITIONS (FROST, VIBRATION FROM VEHICLES, ETC).

7. MASTIC SHALL BE APPLIED BETWEEN THE TOP AND BOTTOM SECTIONS DURING INSTALLATION TO SEAL THE JOINT AGAINST WATER PENETRATION.

8. EACH UTILITY HOLE SHALL HAVE (6) 1.25" GALVANIZED STEEL SHANK PULLING EYES WITH A 2" EYE AND A 4" GALVANIZED STEEL SQUARE WASHER AS IN LOCATIONS DETAILED IN THIS SPECIFICATION. PULLING EYES SHALL BE SUITABLE FOR 15,200 LBS @ 180° PULL, AND 3,800 LBS @ 90° PULL, MINIMUM. BED TO SPECIFY IF ADDITIONAL PULLING EYES ARE REQUIRED. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

9. THE UTILITY HOLE SHALL HAVE A 40"ø OPENING IN THE ROOF.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UTILITY HOLE SPECIFICATIONS	
DATE: 05/22/23	**DWG. NO.:** 163404
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 4 **OF** 5

UTILITY HOLE SPECIFICATIONS (cont.)

10. THE CONTRACTOR SHALL PROVIDE ALL SEALING COMPOUNDS AND OTHER ACCESSORIES NECESSARY FOR COMPLETE INSTALLATION OF THE UTILITY HOLE.

11. THE UTILITY HOLE SHALL HAVE A 4"D, 12"ø SUMP CENTERED UNDER THE OPENING IN THE ROOF.

12. THE UTILITY HOLE SHALL BE LEVEL AND REST ON A BEDDING OF CRUSHED STONE 12" IN DEPTH AND A MINIMUM OF 12" BEYOND THE EDGE OF THE UTILITY HOLE IN EACH DIRECTION MEETING THE SIEVE REQUIREMENTS BELOW:

SIEVE DESIGNATION	% PASSING
1"	100
3/4"	90 TO 100
3/8"	0 TO 55
NO. 4	0 TO 10
NO. 8	0 TO 5

13. THE SETTING DEPTH OF EACH UTILITY HOLE WILL BE SUCH THAT THE TOP OF EACH UTILITY HOLE WILL BE A MINIMUM OF 12" AND MAXIMUM OF 18" BELOW FINISHED GRADE, EXCEPT AS NEEDED TO ACCOMMODATE STREET SUB-BASE.

14. A 40" CAST IRON COVER AND FRAME (NEENAH FOUNDRY CO. CATALOG #R-5900-J), PROVIDED BY BED, SHALL BE INSTALLED BY THE CONTRACTOR AT FINISH GRADE, CENTERED ABOVE THE OPENING IN THE ROOF OF EACH UTILITY HOLE. THE CONTRACTOR SHALL INSTALL THE COVER AND FRAME AND THE THROAT, EXTENSIONS, ETC TO ACCOMMODATE THE DISTANCE FROM THE TOP OF THE UTILITY HOLE TO THE SURFACE.

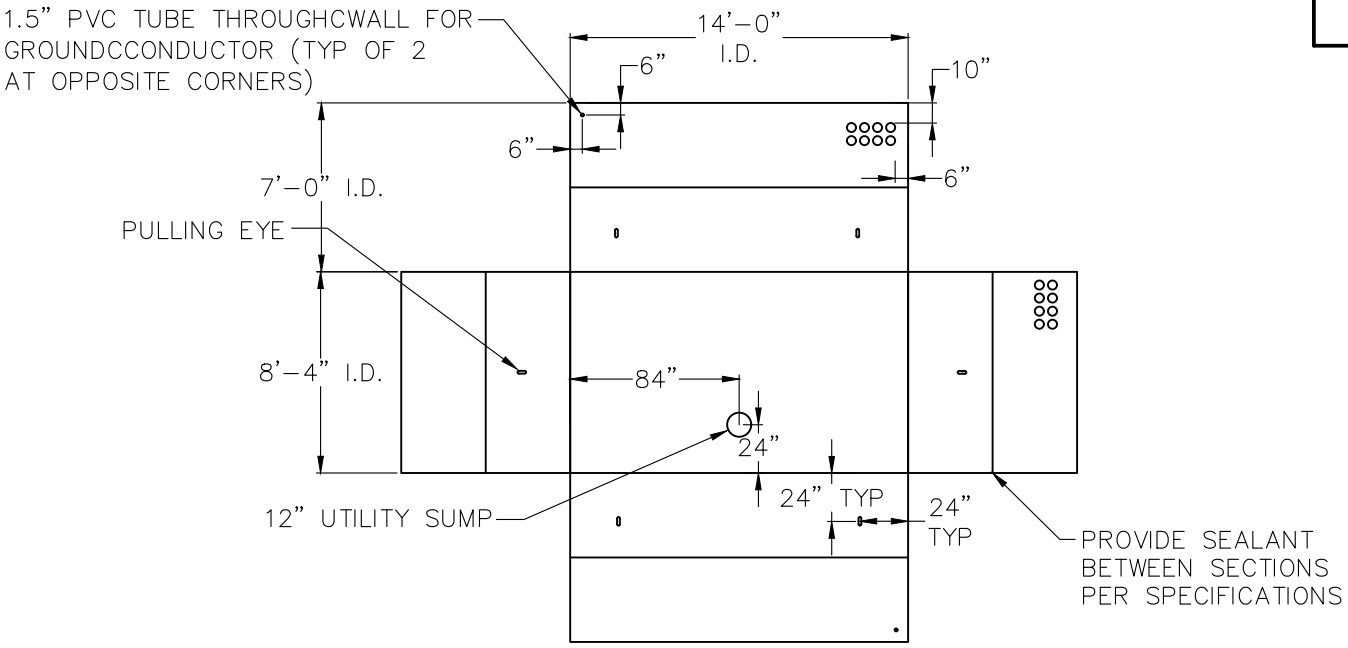
15. THE OPENING IN THE ROOF OF THE UTILITY HOLE, THE THROATS/EXTENSIONS, AND THE OPENING IN THE CAST IRON FRAME SHALL BE ALIGNED.

16. THE THROAT SHALL BE PRE-CAST CONCRETE SECTIONS (2" MINIMUM) FROM UTILITY HOLE TO RING. THE CONTRACTOR SHALL INSTALL THE RING AND COVER DURING FINAL STREET OR SIDEWALK INSTALLATION. THE RING AND COVER SHALL BE WITHIN 0.5" OF FINAL GRADE SURFACE. BRICK AND MORTAR SHALL NOT BE USED FOR THROAT EXTENSIONS UNLESS APPROVED BY BED.

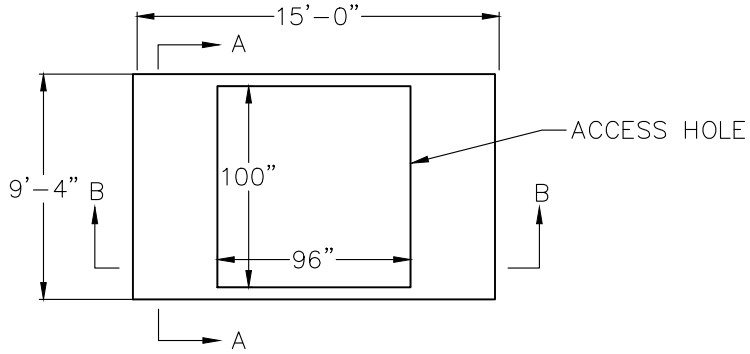
17. THE THROAT FROM TOP OF THE UTILITY HOLE TO THE CAST IRON RING AND COVER SHALL BE MADE UP OF THE CONCRETE RING SECTIONS WITH A 40"ø INSIDE OPENING AND MINIMUM 8" THICK WALLS, RATED H-20 LOADING. THE CONTRACTOR SHALL PROVIDE MASTIC SEALANT BETWEEN THE UTILITY HOLE ROOF AND BOTTOM RING SECTION, BETWEEN RING SECTIONS, AND BETWEEN THE TOP RING SECTION AND THE CAST IRON FRAME. THE NUMBER OF SECTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE A MINIMUM 2"H.

18. FINAL UTILITY HOLE DRAWINGS MUST BE APPROVED BY BED ENGINEERING.

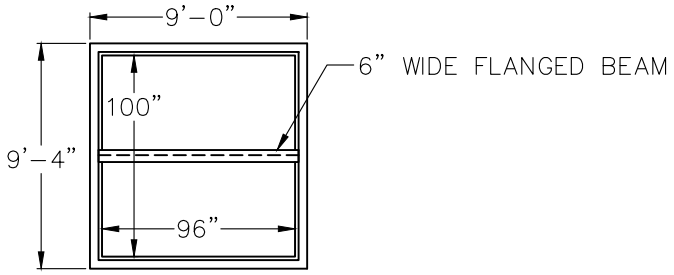
BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
UTILITY HOLE SPECIFICATIONS	
DATE: 10/31/14	**DWG. NO.:** 163405
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 5 **OF** 5



UTILITY HOLE TYPICAL DETAIL

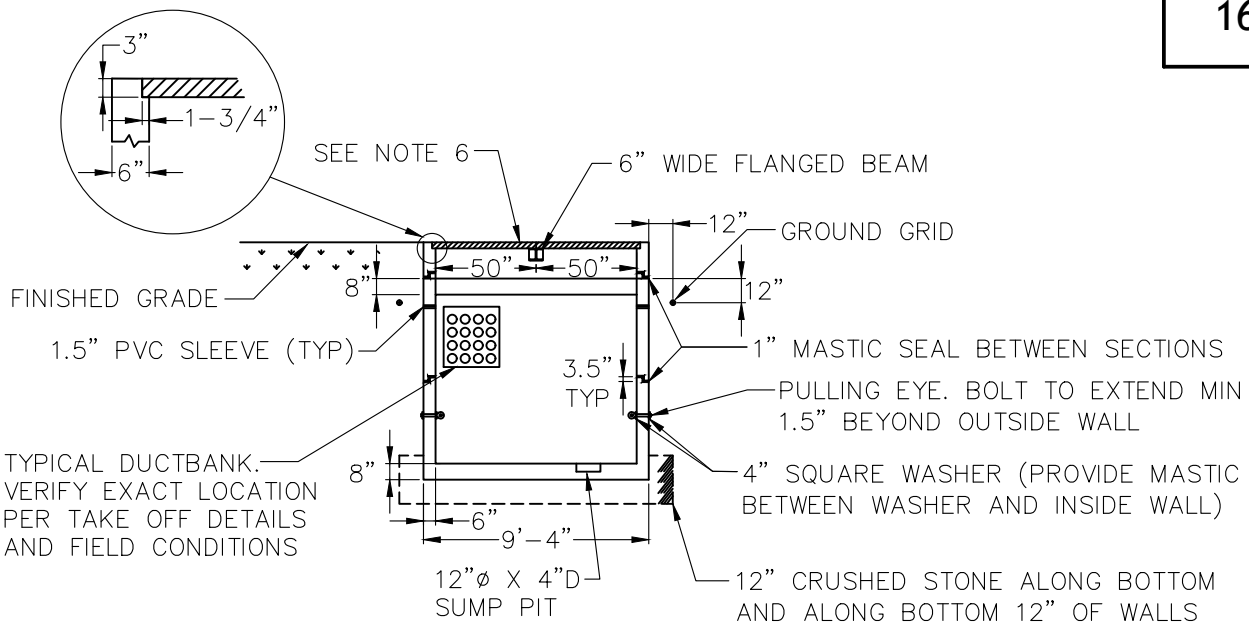


TOP OF UTILITY HOLE SECTION (TOP VIEW)

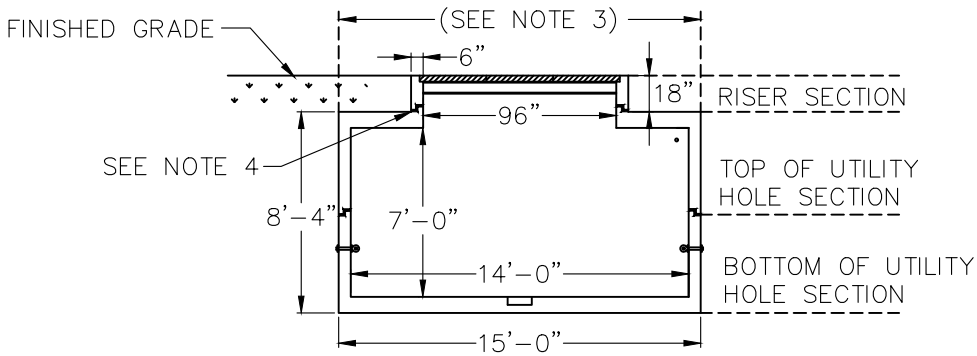


RISER SECTION (TOP VIEW)

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
TYPICAL SUBMERSIBLE SWITCH VAULT DETAILS	
DATE: 04/18/23	DWG. NO.: 163501
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 1 OF 3



VIEW A-A



VIEW B-B

NOTES

1. DEPTH MINIMUM 12", MAXIMUM 18" BELOW GRADE, EXCEPT AS NEEDED TO ACCOMMODATE STREET SUB-BASE.
2. UTILITY HOLE SHALL BE ORIENTED SUCH THAT THE COVER IS LOCATED FULLY WITHIN SIDEWALK AND/OR GREENBELT, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF UTILITY HOLE PRIOR TO FORMING TOP.
3. NO OTHER UTILITIES SHALL PASS ABOVE VAULT.
4. RISER SECTION MAY BE CAST-IN-PLACE AND AFFIXED VIA REBAR TO THE TOP UTILITY HOLE SECTION. RISER MAY BE OFFSET TO ALLOW SLOPE IN THE DIRECTION ALONG THE STEEL BEAM TO BETTER ALIGN WITH FINAL GRADE. GRADE TOLERANCE IS SUBJECT TO TYPE OF SWITCH: TYPICAL 5-WAY SWITCH ALLOWS FOR +/-1.6% GRADE, TYPICAL 4-WAY SWITCH ALLOWS FOR +/-17% GRADE. FINAL GRADING SUBJECT TO ENGINEERING APPROVAL PRIOR TO CONSTRUCTION.
5. UTILITY HOLE SHALL MEET AASHTO H-20 LOADING REQUIREMENT.
6. (2) 99-3/8" X 51-3/8" COVER (HUBBELL QUAZITE CATALOG #C1C4896507) TO BE PROVIDED BY BED.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
TYPICAL SUBMERSIBLE SWITCH VAULT ELEVATION	
DATE: 04/18/23	DWG. NO.: 163502
DWN BY: RG	APP. BY:
SCALE: NONE	SHEET 2 OF 3

UTILITY HOLE SPECIFICATIONS

1. DESIGN CRITERIA:
   A) MINIMUM CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI @ 28 DAYS.
   B) ENTRAINED AIR: 5% MINIMUM.
   C) STEEL: ASTM A615 GRADE 60.
   D) SIZE; 8'–4"W X 14'L X 7'H, I.D.; 6" WALLS AND 8" BASE MINIMUM.
   E) OTHER REFERENCES: ASTM A153, A569, A48, A123, C857, C890, AC1301, AC1318, AC1347, CRSI, OTHERS AS APPLICABLE.

2. THE CONTRACTOR SHALL PROVIDE PRE–CAST UTILITY HOLES UNLESS APPROVED BY BED. THE PRE–CAST UTILITY HOLES SHALL MEET THE FOLLOWING CRITERIA:
   A) ASTM C857 AND ASTM C890 TO SUPPORT FULL H–20 LOADING.
   B) HYDROSTATIC LOADING ASSUMING GROUND WATER TO SURFACE.
   C) THE VAULT SHALL BE DESIGNED FOR NO MORE THAN 2 SECTIONS (A TOP SECTION AND A BOTTOM SECTION). THE BOTTOM SECTION SHALL BE CAST MONOLITHICALLY WITH THE BASE SLAB.
   D) PULL ANCHOR FORCES AS DETAILED IN THIS SPECIFICATION.

3. CONDUIT PENETRATION KNOCKOUTS SHALL BE PROVIDED AS SHOWN ON CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL COORDINATE CONDUIT PENETRATION KNOCKOUT LOCATIONS WITH THE PRE–CAST UTILITY HOLE VENDOR.

4. EACH UTILITY HOLE SHALL HAVE ADDITIONAL REINFORCEMENT AT OPENINGS OVER 24"ø AND AT ALL CORNERS. THE REINFORCEMENT SHALL BE BOTH VERTICAL AND HORIZONTAL, USING #4 BARS, MINIMUM.

5. EACH UTILITY HOLE SHALL BE BUILT AND INSTALLED IN THREE SECTIONS – TOP, BOTTOM, & RISER.

6. THE JOINT BETWEEN ALL THREE SECTIONS SHALL BE CONSTRUCTED AS A SHIPLAP OR A "TONGUE AND GROOVE" (THE "TONGUE" SHALL BE BUILT INTO THE LOWER SECTION AND THE "GROOVE" SHALL BE BUILT INTO THE UPPER SECTION). THE JOINT SHALL BE SUFFICIENTLY STRONG TO PREVENT THE SECTIONS OF THE UTILITY HOLE FROM MOVING IN RELATION TO EACH OTHER UNDER NORMALLY EXPECTED CONDITIONS (FROST, VIBRATION FROM VEHICLES, ETC).

7. MASTIC SHALL BE APPLIED BETWEEN ALL THREE SECTIONS DURING INSTALLATION TO SEAL THE JOINT AGAINST WATER PENETRATION.

8. THE RISER SECTION MAY BE CAST–IN–PLACE AND AFFIXED VIA REBAR TO THE TOP UTILITY HOLE SECTION. THE RISER SECTION MAY BE BUILT WITH AN OFFSET TO ALLOW SLOPE IN THE DIRECTION ALONG THE STEEL BEAM TO BETTER ALIGN WITH FINAL GRADE. GRADE TOLERANCE IS SUBJECT TO TYPE OF SWITCH: TYPICAL 5–WAY SWITCH ALLOWS FOR +/– 1.6% GRADE, TYPICAL 4–WAY SWITCH ALLOWS FOR +/–17% GRADE. FINAL GRADING SUBJECT TO ENGINEERING APPROVAL PRIOR TO CONSTRUCTION.

9. EACH UTILITY HOLE SHALL HAVE (6) 1.25" GALVANIZED STEEL SHANK PULLING EYES WITH A 2" EYE AND 4" GALVANIZED STEEL SQUARE WASHER AS IN LOCATIONS DETAILED IN THIS SPECIFICATION. PULLING EYES SHALL BE SUITABLE FOR 15,200 LBS @ 180° PULL, AND 3,800 LBS @ 90° PULL, MINIMUM. BED TO SPECIFY IF ADDITIONAL PULLING EYES ARE REQUIRED. PULLING EYES MAY NOT BE RECESSED INTO THE WALL.

BURLINGTON ELECTRIC DEPT.	
DISTRIBUTION STANDARDS	
SUBMERSIBLE SWITCH VAULT	
DATE: 04/18/23	**DWG. NO.:** 163503
DWN BY: RG	**APP. BY:**
SCALE: NONE	**SHEET** 3 **OF** 3