

Precast Concrete Vaults

A-UG-1150

Application

Precast concrete vault descriptions, applications and accessories used in Tacoma Power's underground system.

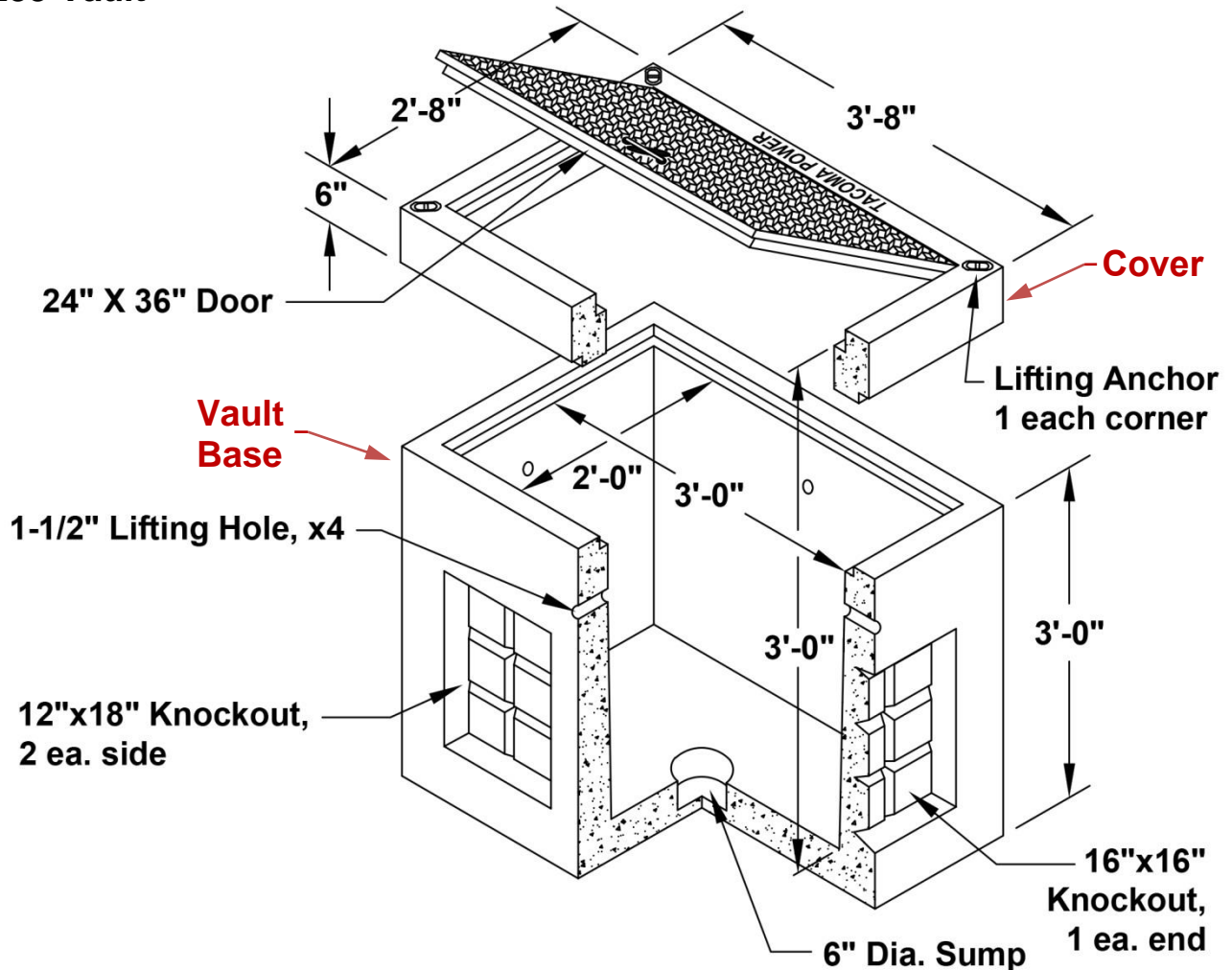
Vault Applications

	Vault Type											
Application	233	444	554	684	687	774	810	5106	814	818	10X20	E3
Commercial Secondary Service	■	■	■			■						■
1Ø Junction Box		■										
3Ø Junction Box			■									
1Ø PM Tfmr 25 to 75 kVA		■										
1Ø PM Tfmr 100 to 167 kVA			■									
3Ø PM Tfmr, 45 to 300 kVA			■									
3Ø PM Tfmr 500 to 2500 kVA						■						
1-position in & out vacuum switch cabinet			■									
3Ø Primary Metering Cabinet						■						
Secondary Service Cabinet						■						
Feeder Splice Vault, Single Circuit				■								
Feeder Splice Vault, Multiple Circuits					■		■					
Switchgear Vault, Padmount							■					
Urban Junction Box								■				
Feeder Junction Box									■	■		
Switchgear Vault, Submersible											■	
Feeder Pull Vault, Multiple Circuits										■	■	
Maintenance Only												■

General Notes

- **All vault dimensions and weights shown/listed are approximate only. Contact vault supplier for drawings with dimensions and weights.**
- All vaults and covers (*except for 233 and E3 vaults*) shall be self-grounding (internally grounded), concrete-encased electrodes with grounding/bonding inserts, meeting all the provisions of NESC Rule 094B6.
- All vault bases, covers (*except for E3 covers and 554 H30 vaults*), doors and risers shall be constructed to AASHTO H20 traffic loading or better.
- All doors (hatches) rated for off-street/incidental (unintentional) traffic locations only.
- Only 687, 814, 818, and 10x20 vaults with manhole covers can be placed in traffic locations.

233 Vault

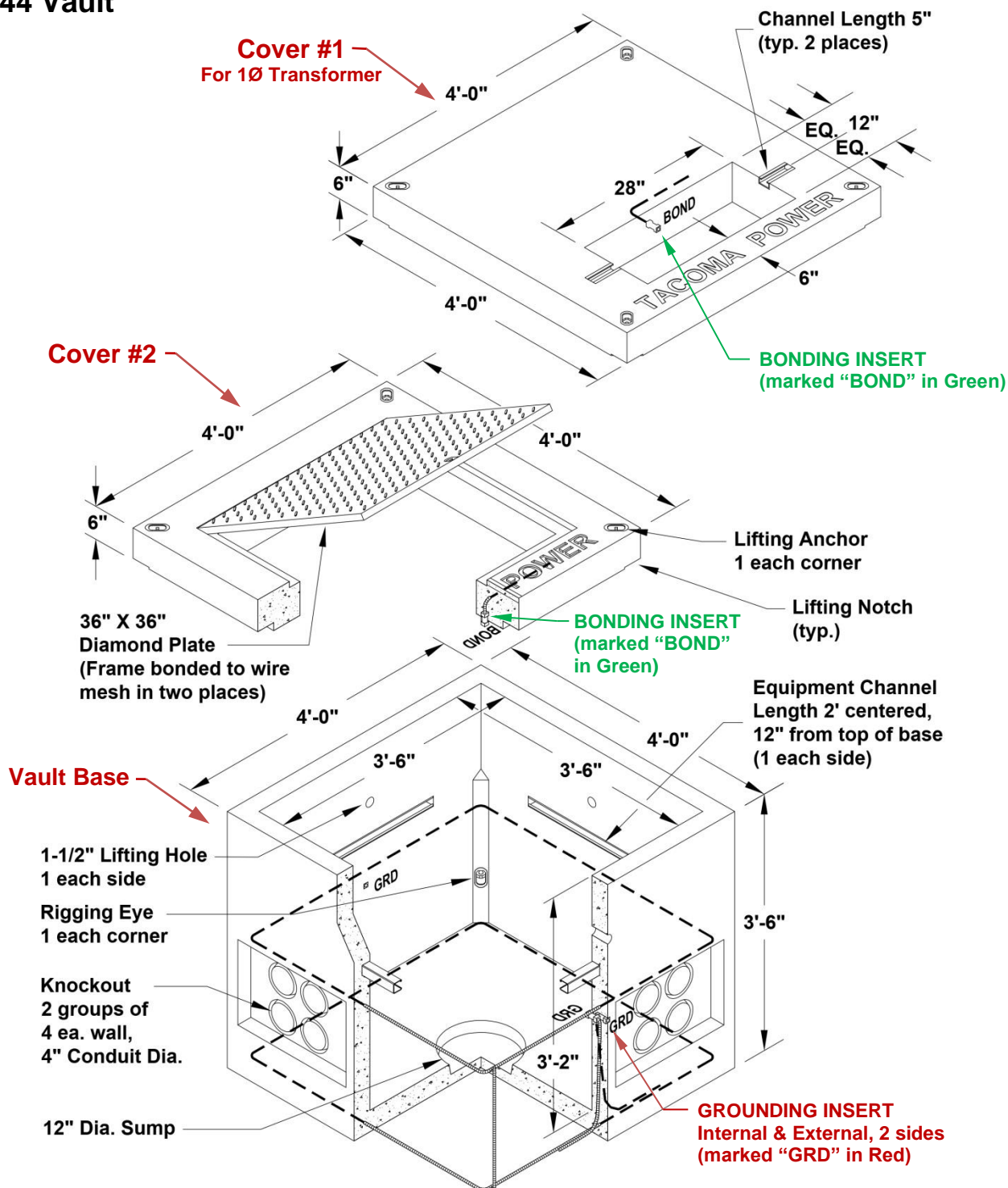


DESCRIPTION: Vault, concrete, type 233, 3ft-8in x 2ft-8in x 3ft base, cover is 2ft- 8in x 3ft-8in x 6in with 24in x 36in hinged diamond plate aluminum door, knockouts shall be minimum 16in x 16in each end and minimum 12in x 18in – two sets each side

Material	MID#
233 Vault Base (2,000 lbs)	35057
233 Vault Cover Standard (450 lbs)	34669
233 Vault Cover Non-skid (450 lbs)	34671
233 Riser, 6in (290 lbs)	39828
233 Riser, 4in (200 lbs)	79985

APPLICATION: Secondary Service Box

444 Vault



DESCRIPTION: Vault, concrete, type 444, 4ft x 4ft x 3ft-6in base, junction box cover #2 is 4ft x 4ft x 6in with 3ft x 3ft hinged diamond plate aluminum door, transformer cover #1 is 4ft x 4ft x 6in with 12in x 28in blockout opening

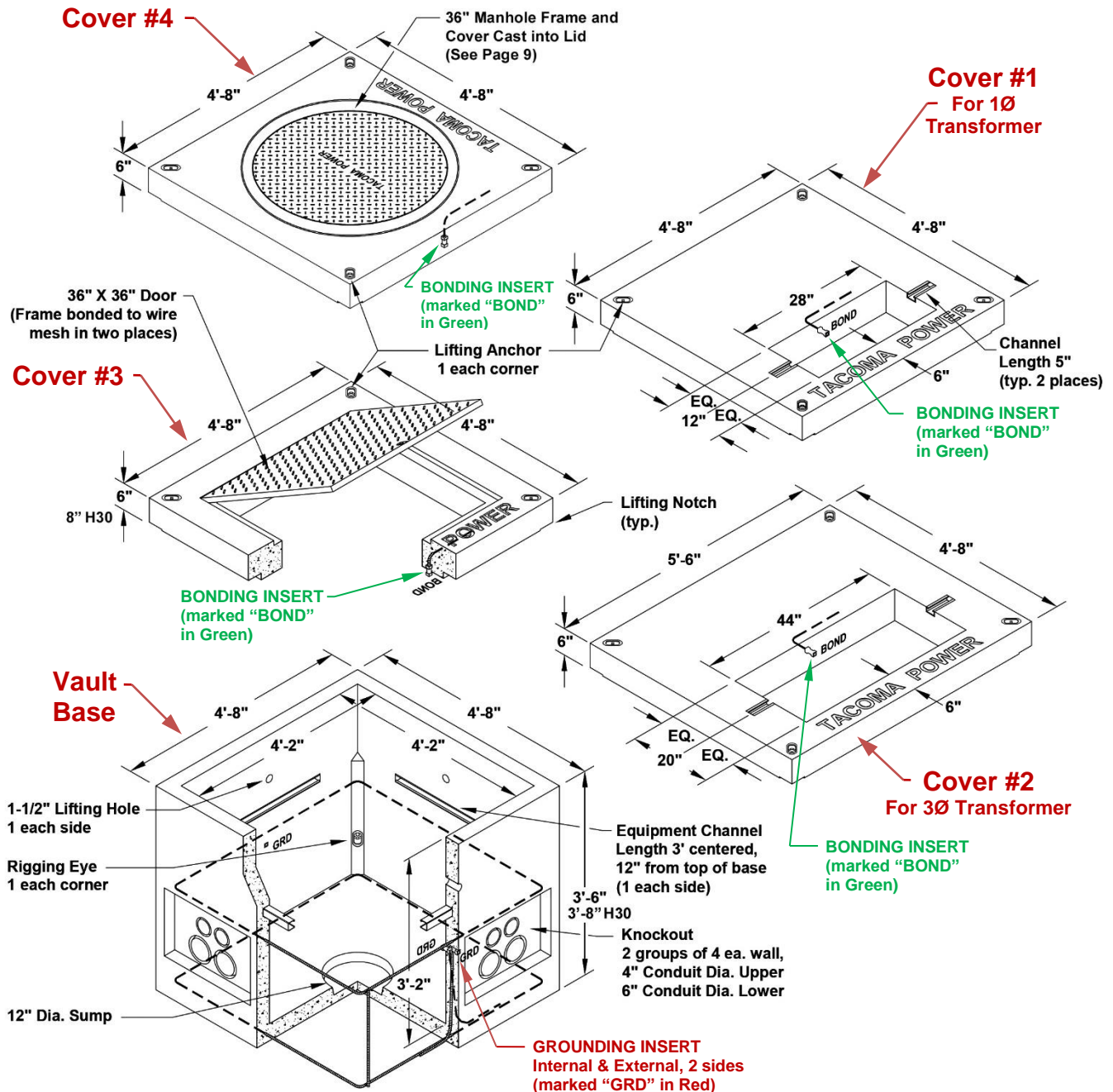
444 Vault *(continued)*

Material	MID#
444 Vault Base (4,000 lbs)	21163
444 Transformer Cover #1 (for 1Ø Transformers 25 to 75 kVA) (900 lbs)	19451
444 Transformer Cover #1 (for 1Ø Transformers 25 to 75 kVA), Blockout Opening Formed as a Knockout ^[1] (900 lbs)	46371
444 Junction Box Cover #2 Standard (900 lbs)	19447
444 Junction Box Cover #2 Non-Skid (900 lbs)	19449
444 Riser, 6in (440 lbs)	39970
444 Riser, 12in (1100 lbs)	43252
444 Riser, 4in (280 lbs)	79986

^[1] Special order only

APPLICATION: 1Ø Junction Box, Small 1Ø Padmount Transformers (25 kVA to 75 kVA), Commercial Secondary Service Box

554 Vault



DESCRIPTION: Vault, concrete, type 554, 4ft-8in x 4ft-8in x 3ft-6in base, (3ft-8in base for H30), single-phase transformer cover #1 is 4ft-8in x 4ft-8in x 6in with 12in x 28in blockout opening, three-phase transformer cover #2 is 5ft-6in x 4ft-8in x 6in with 20in x 44in blockout opening, junction box cover #3 is 4ft-8in x 4ft-8in x 6in (8in for H30) with 3ft x 3ft hinged diamond plate aluminum door, junction box cover #4 is 4ft-8in x 4ft-8in x 6in with integral 36in manhole frame and cover

554 Vault *(continued)*

Material	MID#
554 Vault Base (4,000 lbs)	21165
554 Transformer Cover #1 for 1Ø Transformers 100 to 167 kVA (1,630 lbs)	19457
554 Transformer Cover #2 for 3Ø Transformers 45 to 300 kVA and 1-Position In & Out Vacuum Switch Cabinet (1,550 lbs)	19459
554 Junction Box Cover #3 Standard (1,400 lbs)	19453
554 Junction Box Cover #3 Non-skid (1,400 lbs)	19455
554 Junction Box Cover with 36in Manhole Frame and Cover #4 (1,250 lbs) ^[1]	64807
554 Riser, 6in, H20 and H30 rated (540 lbs)	39972
554 Riser, 12in, H20 and H30 rated (1,100 lbs)	43254
554 Riser, 4in, H20 and H30 rated (400 lbs)	79987
554 Vault Base, H30 Loading Rated (3,940 lbs)	79664
554 Junction Box Cover, H30 Loading Rated (1,750 lbs)	79665
554 Junction Box Cover, H30 Loading Rated Non-skid (1,750 lbs)	79666

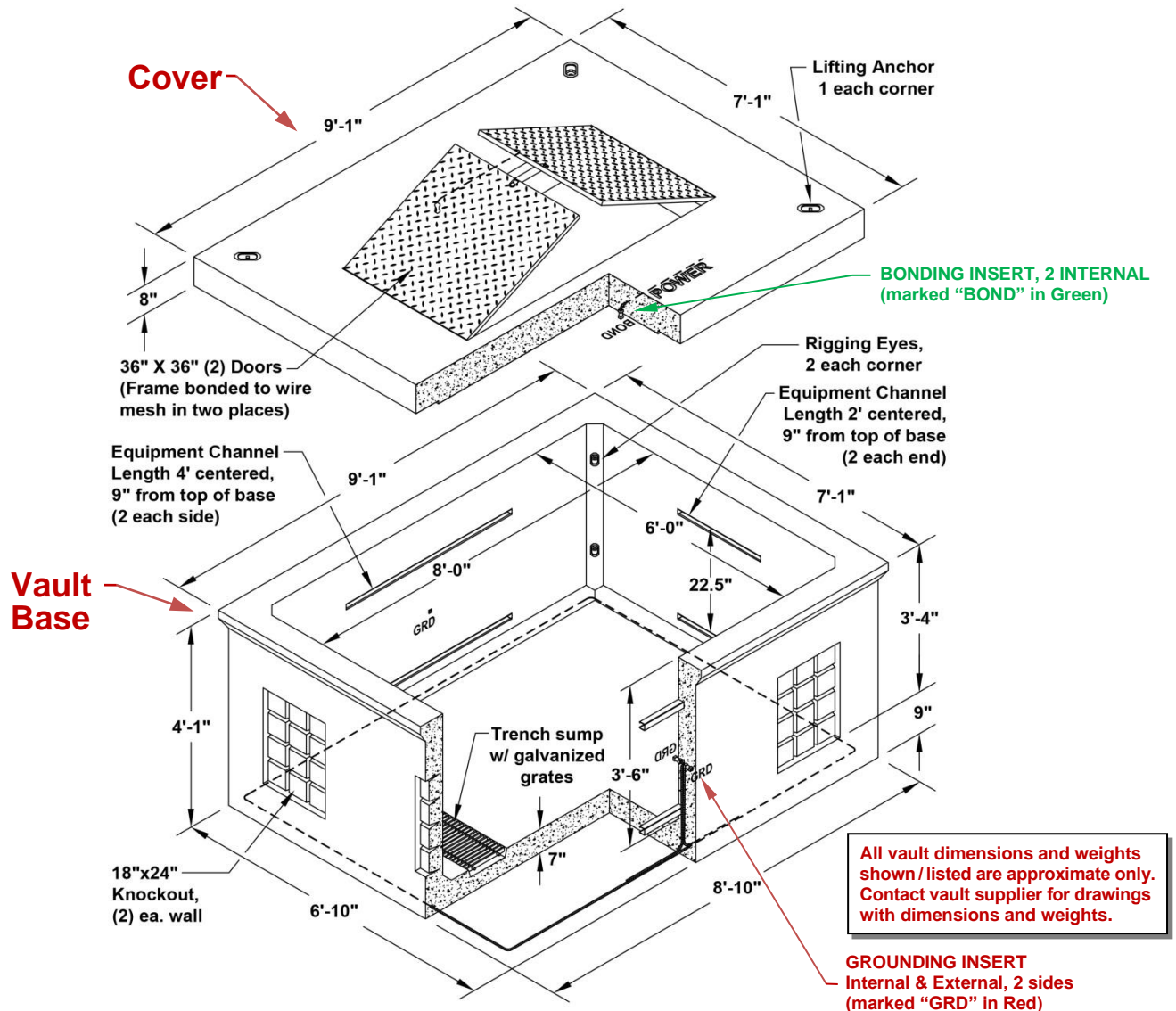
^[1] 554 vault with 36in manhole cover not intended for traffic locations. Place in parking lot, driveway or alley way locations only.

APPLICATION: 3Ø Junction Box, Large 1Ø Transformers (100 kVA to 167 kVA), Small 3Ø Transformers (45 kVA to 300 kVA), 1-Position In & Out Vacuum Switch Cabinet, Commercial Secondary Service Box

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684 Vault



DESCRIPTION: Vault with cover, concrete, type 684, 9ft-1in x 7ft-1in x 4ft-9in, two 3ft x 3ft hinged diamond plate aluminum doors in cover

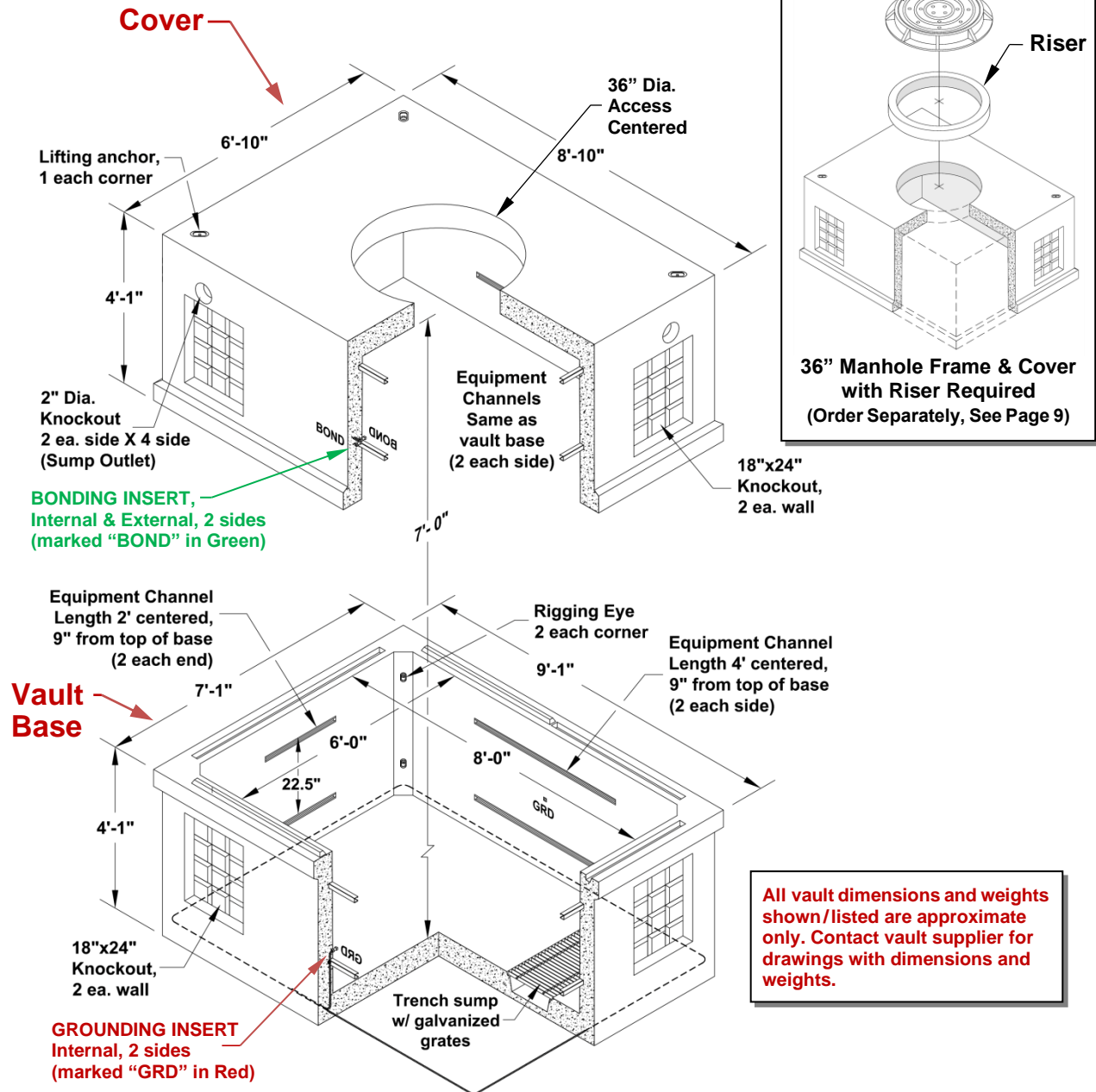
Material	MID#
684 Vault Base (11,000 lbs)	21169
684 Cover Standard (5,000 lbs)	63355
684 Cover Non-Skid (5,000 lbs)	21171
684 Riser, 6in, (1245 lbs)	81332

APPLICATION: Feeder splice/pull-box for single circuit for off-street/incidental (unintentional) traffic locations

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687 Vault



DESCRIPTION: Vault with cover, concrete, type 687, 9ft-1in x 7ft-1in x 8ft-2in, 36in manhole access

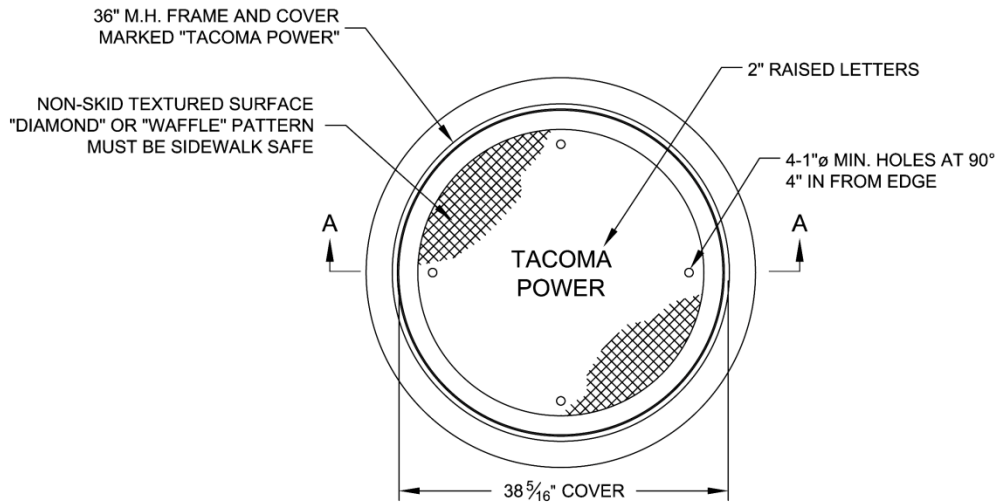
Material	MID#
687 Vault Base (10,000 lbs)	39978
687 Vault Cover with 36in Manhole Access (10,000 lbs)	63356

APPLICATION: Feeder splice/pull-box for multiple circuits in traffic locations

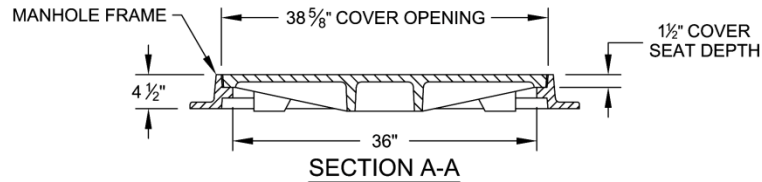
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Manhole Frame and Cover, 36in, H20 Traffic Loading



36" M.H. FRAME W/COVER STD H20 LOADING



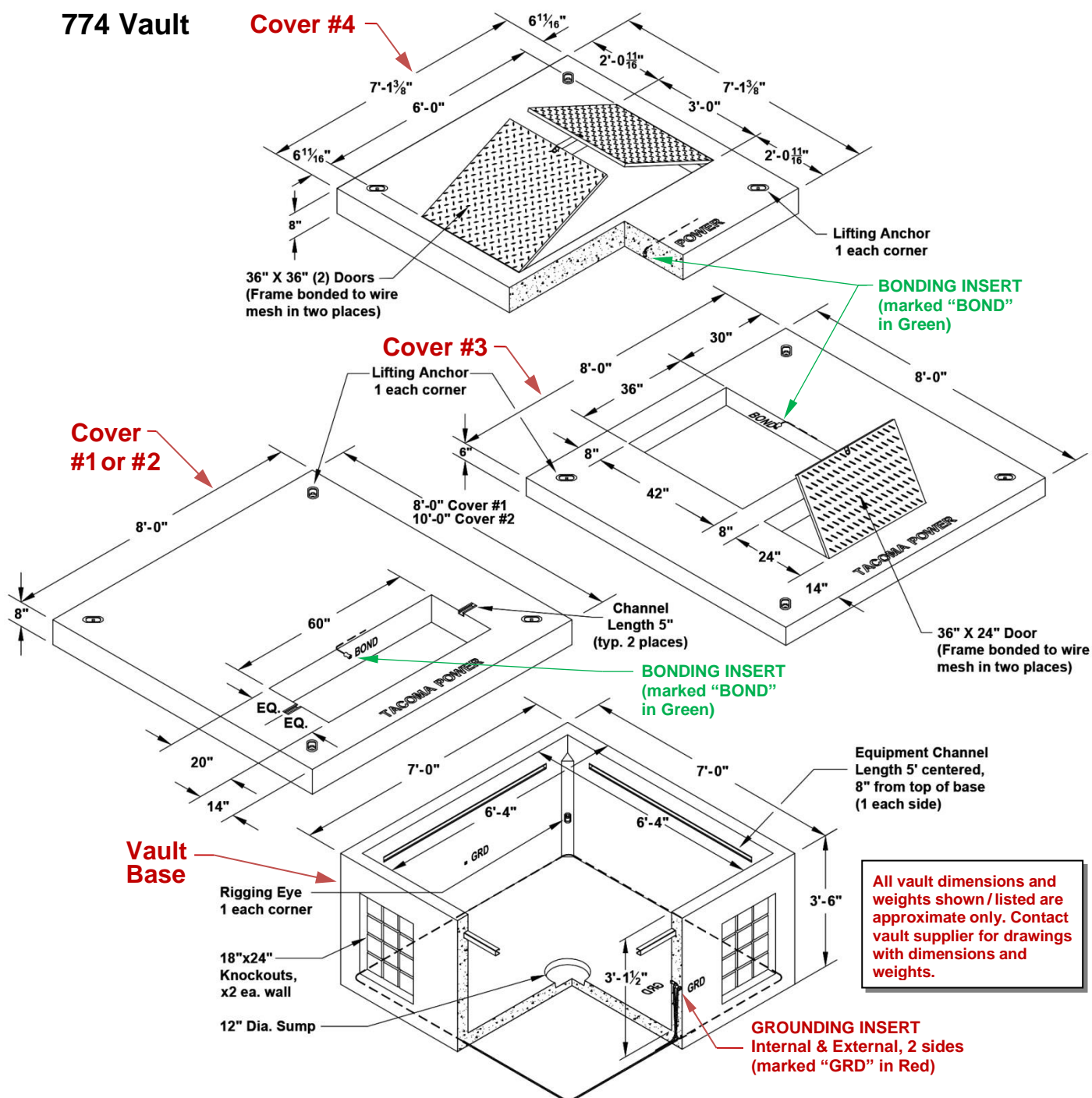
DESCRIPTION: Frame and cover, manhole, 36in, rated for H20 traffic loading, to meet AASHTO Designation M306-10, cover is 38-5/16in diameter, ductile iron, to have four 1in dia. lifting holes, lettered "TACOMA POWER" in 2in raised letters, frame is gray iron, all such castings are to be the EJ 1581 series or approved equal

Material	MID#
Manhole Frame and Cover, 36in, H20 Loading (550 lbs)	20558
Manhole Cover only, 36in, H20 Loading (375 lbs)	19426
Riser, 4in ^[1] (340 lbs)	39976

^[1] Also available in 6in and 12in from vendor

APPLICATION: Manhole access cover for 687 vaults in traffic locations.
554 vault with 36in manhole frame and cover not intended for traffic locations.
Placement in parking lot, driveway or alley way locations is acceptable

774 Vault



DESCRIPTION: Vault, concrete, type 774, 7ft x 7ft x 3ft-6in base, 3Ø transformer/primary metering cabinet cover #1 is 8ft x 8ft x 8in with 20in x 60in blackout opening, 3Ø transformer cover #2 is 8ft x 10ft x 8in with 20in x 60in blackout opening, secondary service cabinet cover #3 is 8ft x 8ft x 6in with 3ft x 2ft hinged diamond plate aluminum door and 36in x 42in blackout opening, secondary service box cover #4 is 7ft-1in x 7ft-1in x 8in with two 3ft x 3ft hinged diamond plate aluminum doors

774 Vault *(continued)*

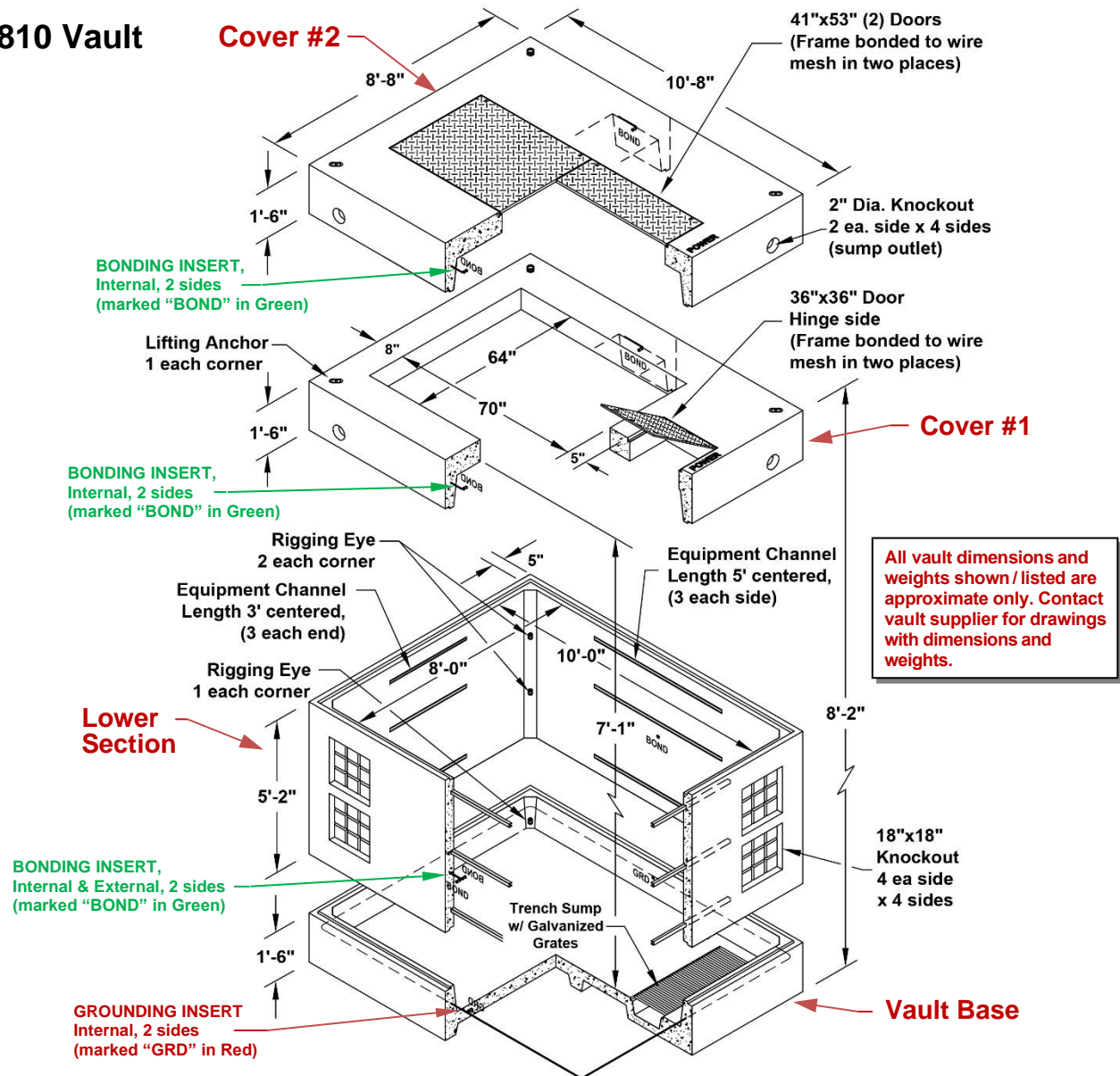
Material	MID#
774 Vault Base (7,500 lbs)	21167
774 Transformer (500 kVA to 1500 kVA) or Primary Meter Cabinet Cover #1, 8ft x 8ft (5,600 lbs)	19461
774 Transformer (2000 kVA to 2500 kVA) Cover #2, 8ft x 10ft (7,200 lbs)	19463
774 Secondary Service Cabinet Cover #3 (5,000 lbs)	50893
774 Secondary Service Box Cover #4 Standard (4,000 lbs)	67541
774 Secondary Service Box Cover #4 Non-skid (4,000 lbs)	67540
774 Riser, 6in (1,200 lbs)	39974
774 Riser, 12in (2,000 lbs)	43256

APPLICATION: Large 3Ø Transformers (500 kVA to 2500 kVA), 3Ø Primary Metering Cabinet, Secondary Service Cabinet, Commercial Secondary Service Box

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810 Vault

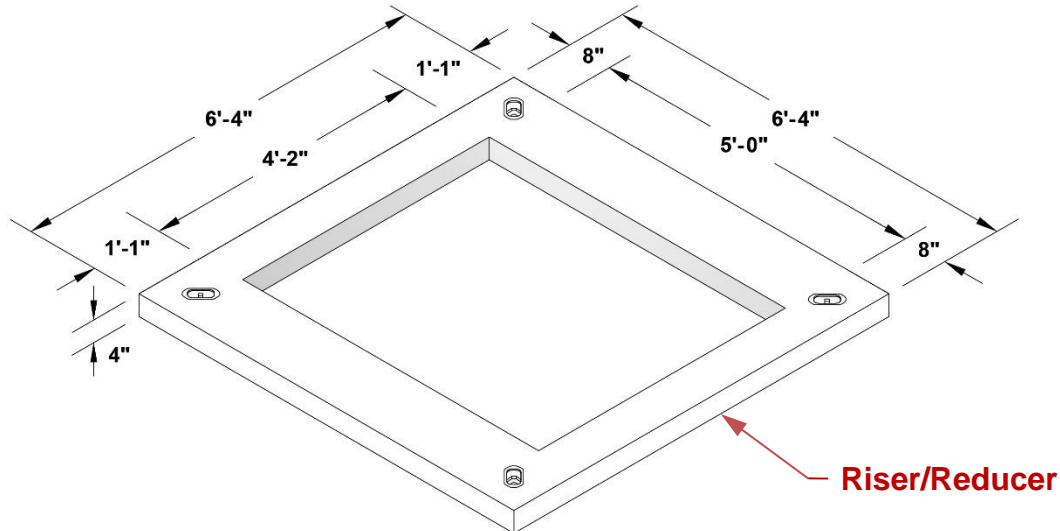


DESCRIPTION: Vault with cover, concrete, type 810, 10ft-8in x 8ft-8in x 8ft-2in, padmount switchgear cover #1 is 8ft-8in x 10ft-8in x 1ft-6in with 3ft x 3ft hinged diamond plate aluminum door and 70in x 64in blockout opening, splice vault cover #2 has two 41in x 53in hinged diamond plate doors

Material	MID#
810 Vault (Vault Base 10,200 lbs / Lower Section 9,200 lbs)	60564
810 Switchgear Cover #1 Standard (9,200 lbs)	63354
810 Switchgear Cover #1 Non-Skid (9,200 lbs)	60566
810 Splice Vault Cover #2 Non-Skid (7,900 lbs)	39980
76in x 70in x 6in slab (temporary cover over Cover #1 blockout as needed) (2,800 lbs)	79773

APPLICATION: Padmount Switchgear or Feeder splice/pull-box for off-street / incidental (unintentional) traffic locations

810 Riser/Reducer – Use with Type 10 Padmount Switchgear



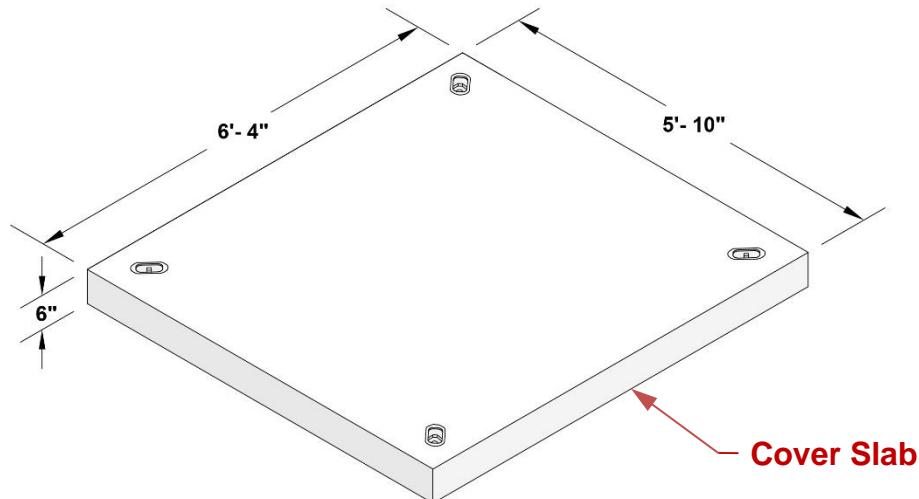
DESCRIPTION: Riser/Reducer, 6ft-4in x 6ft-4in with 5ft x 4ft-2in blockout

Material	MID#
810 Riser/Reducer (1,000 lbs)	70489

APPLICATION: Place riser/reducer on top of cover #1 blockout when need to place Type 10 padmount switchgear onto 810 vault

810 Cover Slab – Use with 810 Vault Cover #1 Blockout

XXXXXX



DESCRIPTION: Cover Slab, 6ft-4in x 5ft-10in x 6in

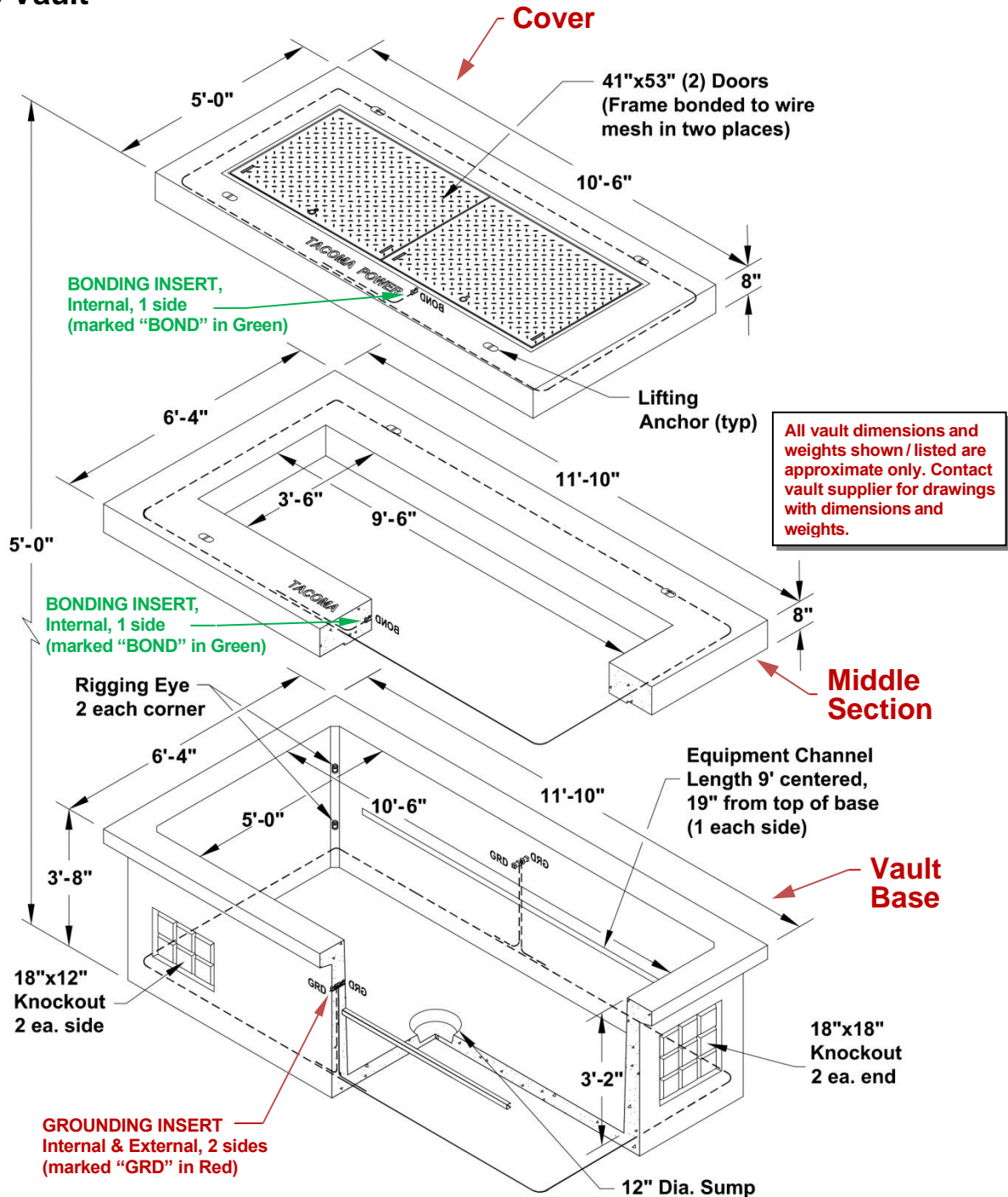
Material	MID#
810 Cover Slab (2,800 lbs)	79773

APPLICATION: Temporary Cover to cover 810 vault Cover #1 blockout as needed

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5106 Vault



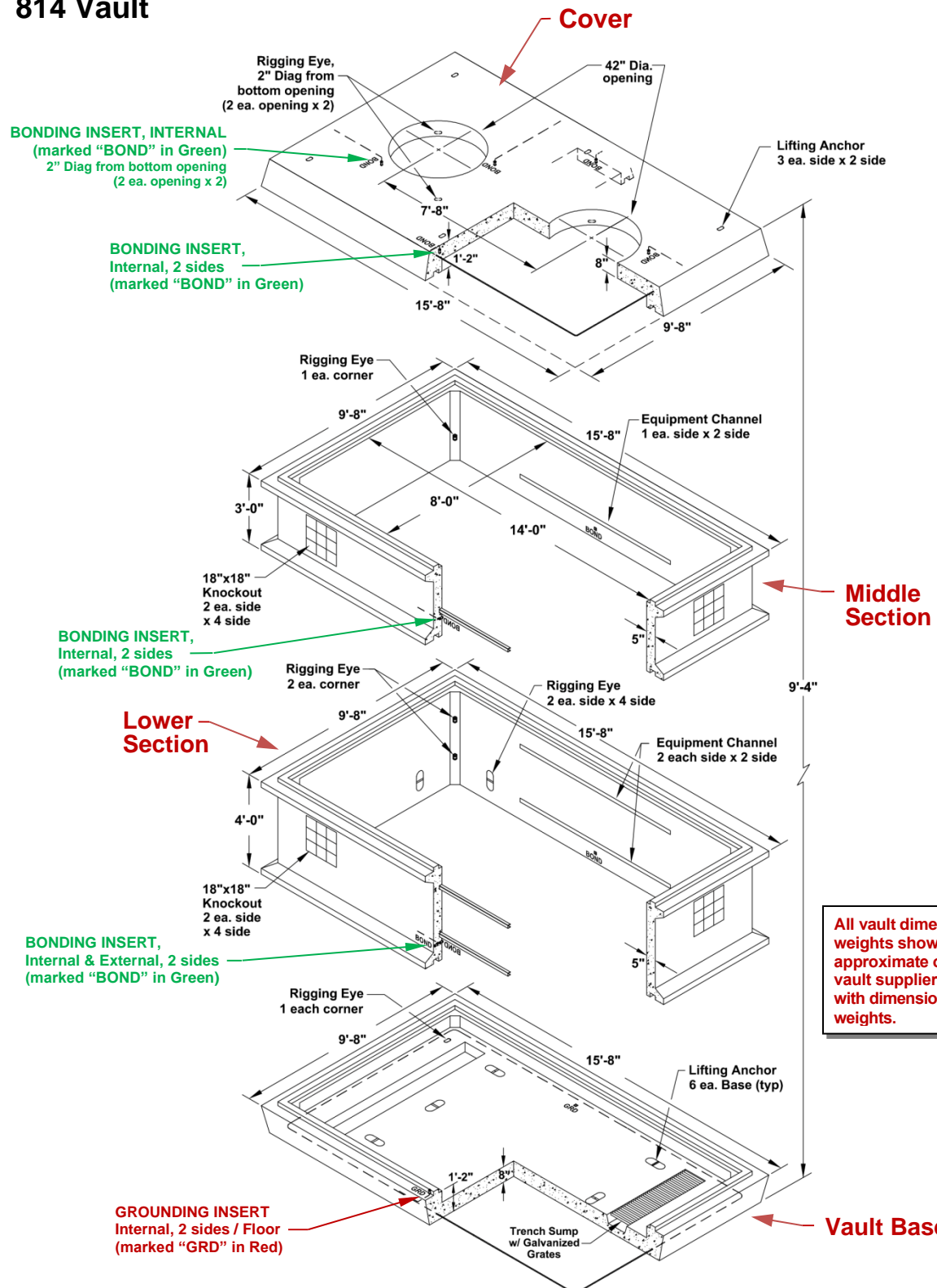
DESCRIPTION: Vault base with cover and middle section, concrete, Type 5106, 11ft-10in x 6ft-4in x 3ft-8in base with 11ft-10in x 6ft-4in x 8in riser and 10ft-6in x 5ft x 6in cover, cover has two 41in x 53in hinged diamond plate aluminum doors

5106 Vault *(continued)*

Material	MID#
5106 Vault Base (10,000 lbs) with Cover Non-Skid (3,500 lbs) and 8in Middle Section (3,500 lbs)	48250

APPLICATION: Used in urban sidewalks for high load density areas (i.e. multi-floor buildings and/or numerous commercial and residential customers) where outage coordination for a new service installation would be difficult. All three tap boxes placed on same sidewall providing enough working room to pull new customer cables into an energized junction box avoiding outages to existing customers

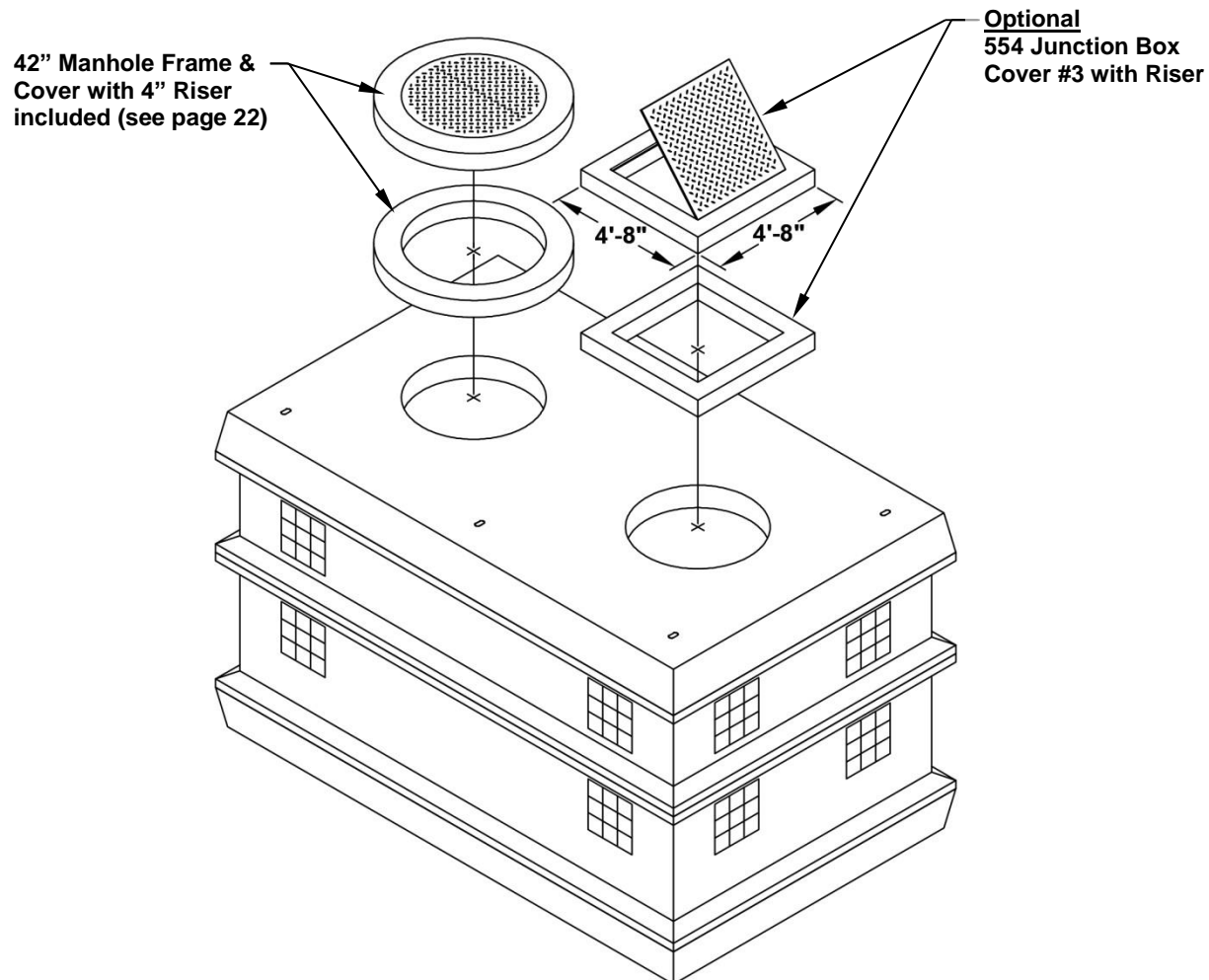
814 Vault



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814 Vault (continued)

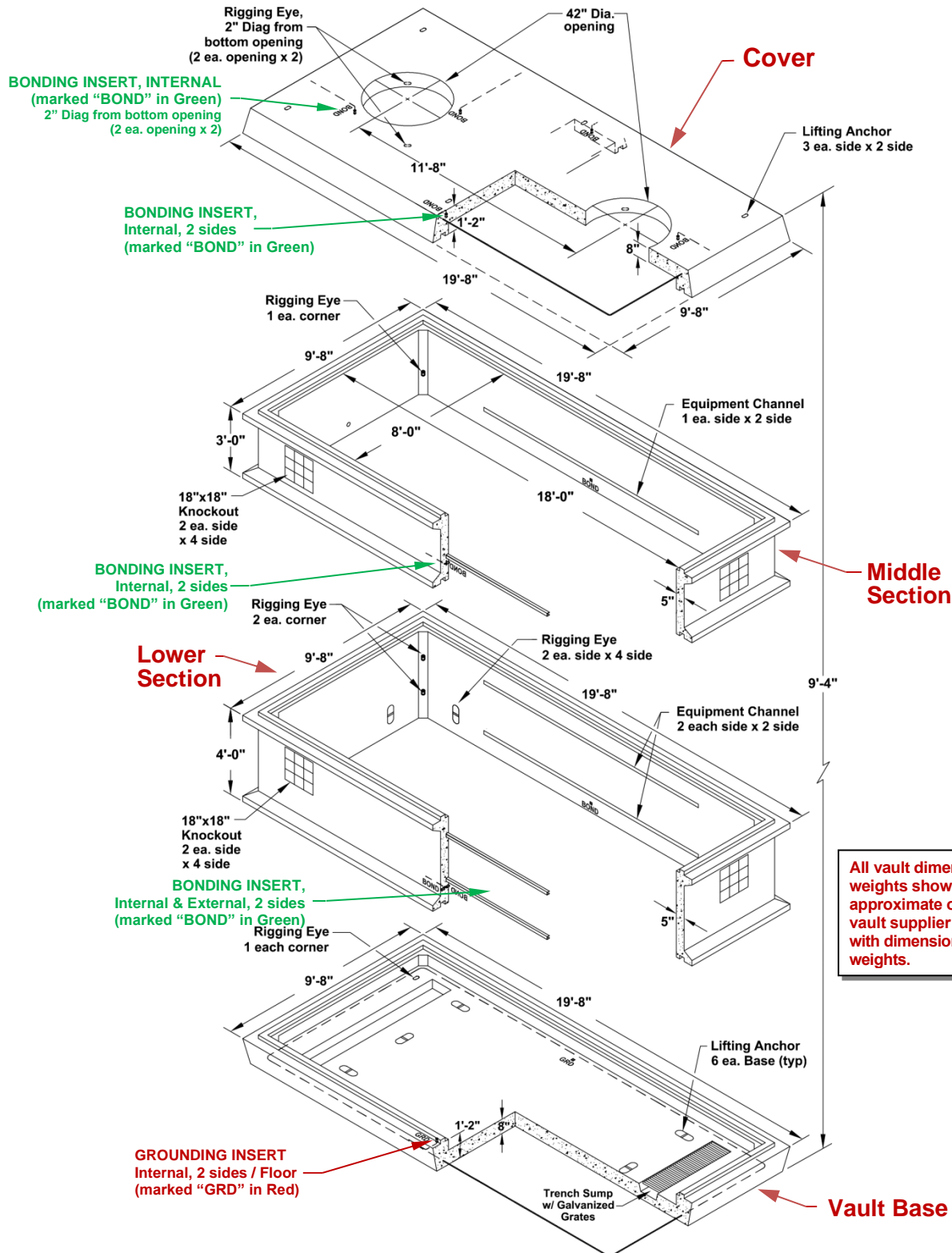


DESCRIPTION: Vault with cover, concrete, type 814, 15ft-8in x 9ft-8in x 9ft-4in, with two 42in manhole access in cover, two 42in manhole frame and cover and 4in concrete riser included

Material	MID#
814 Vault (Vault Base 17,000 lbs / Lower Section 11,700 lbs / Middle Section 9,200 lbs) and Cover (16,000 lbs) with two 42in manhole access, two 42in manhole frame and cover and 4in concrete riser included	48256

APPLICATION: 600A UG feeder junction box or feeder pull vault for multiple circuits. For off-street / incidental (unintentional) traffic locations, use 554 Junction Box Cover #3 (standard MID 19453 or non-skid MID 19455) with 554 riser(s) (6in MID 39972 or 12in MID 43254). In traffic areas, use the 42in manhole frame & cover (MID 67978) with 4in riser(s) (MID 68010). Risers are used to set the vault deep enough to allow for future street and sidewalk grinding/grade adjustment

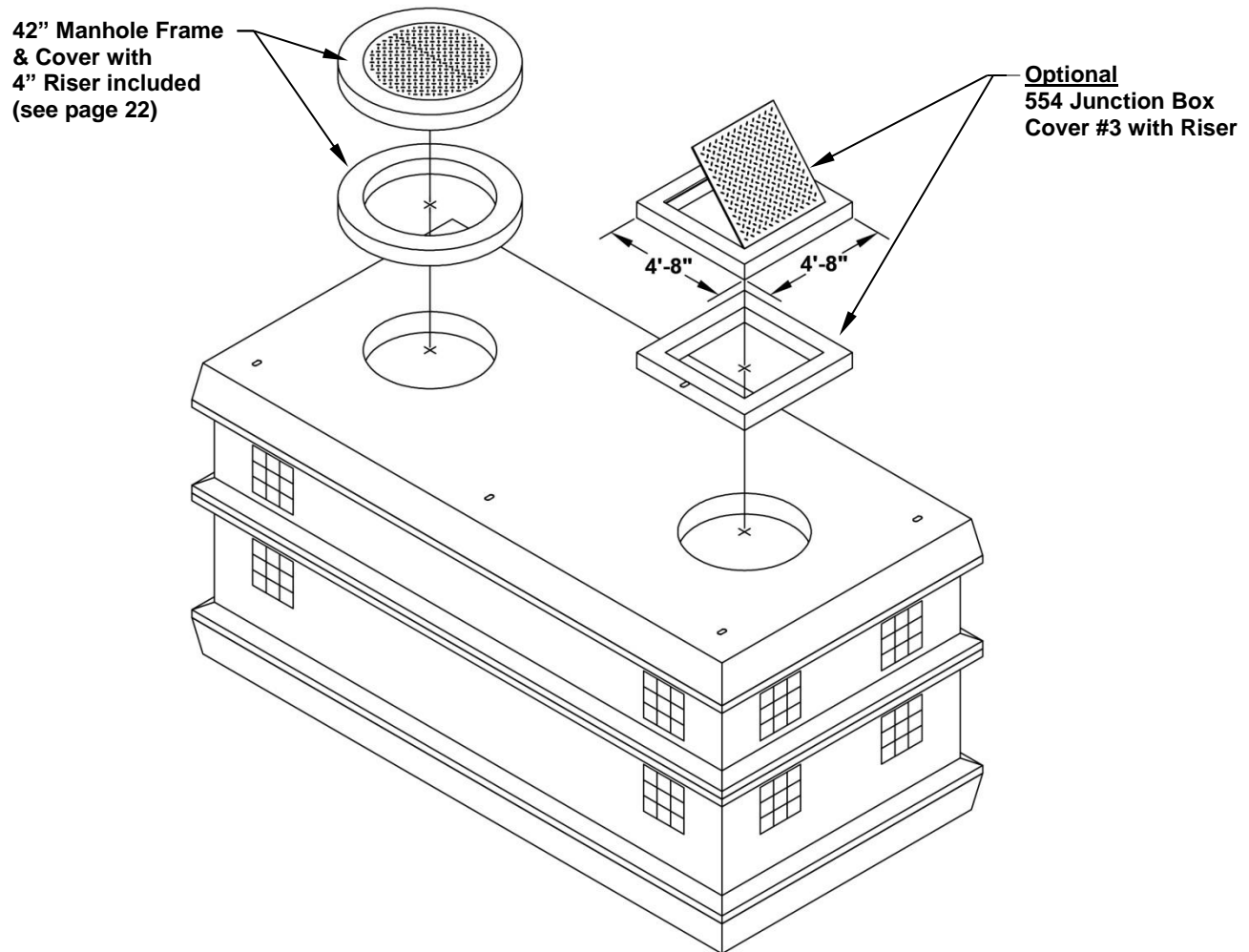
818 Vault



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818 Vault *(continued)*

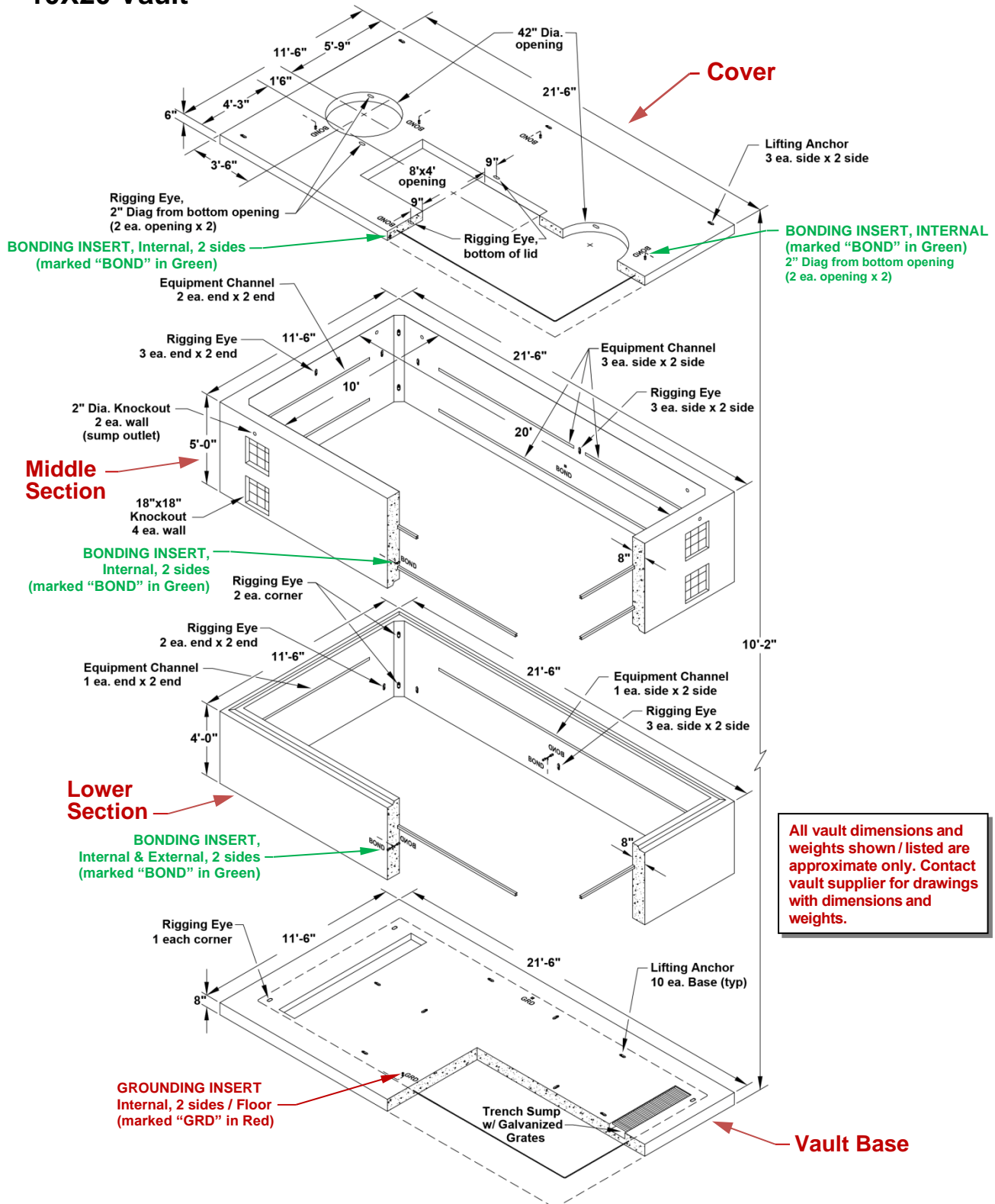


DESCRIPTION: Vault with cover, concrete, type 818, 19 ft – 8 in x 9 ft – 8 in x 9 ft – 4 in, with two 42in manhole access in cover, two 42in manhole frame and cover and 4in concrete riser included

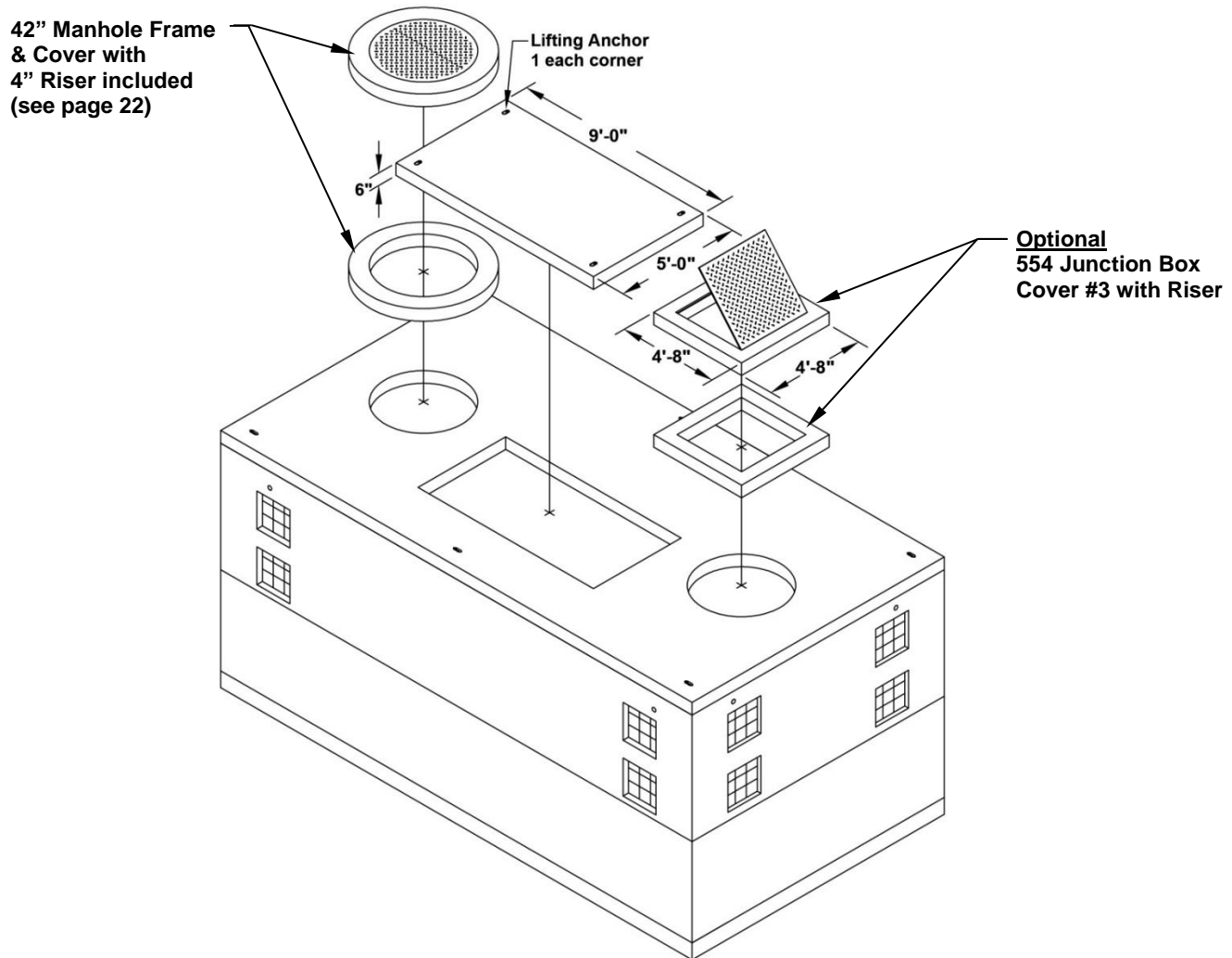
Material	MID#
818 Vault (Vault Base 16,700 lbs / Lower Section 11,700 lbs / Middle Section 9,200 lbs) and Cover (16,000 lbs) with two 42in manhole access, two 42in manhole frame and cover and 4in concrete riser included	48387

APPLICATION: 600A UG feeder junction box or feeder pull vault for multiple circuits. For off-street / incidental (unintentional) traffic locations, use 554 Junction Box Cover #3 (standard MID 19453 or non-skid MID 19455) with 554 riser(s) (6in MID 39972 or 12in MID 43254). In traffic areas, use the 42in manhole frame & cover (MID 67978) with 4in riser(s) (MID 68010). Risers are used to set the vault deep enough to allow for future street and sidewalk grinding/grade adjustment

10X20 Vault



10X20 Vault (continued)

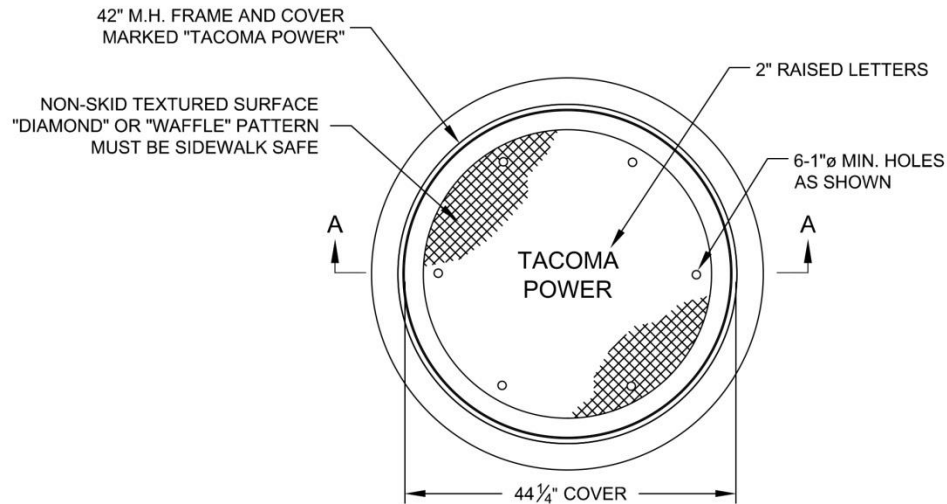


DESCRIPTION: Vault, panel, with cover, concrete, type 10' x 20', 21ft-6in x 11ft-6in x 10ft-6in, with two 42in manhole access and 8ft x 4ft blackout in cover, with 9ft x 5ft cover for blackout, two 42in manhole frame and cover and 4in concrete riser included

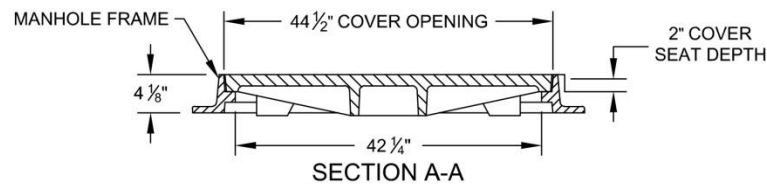
Material	MID#
10' X 20' Vault (Vault Base 24,800 lbs / Lower Section 28,350 lbs / Middle Section 35,400 lbs) and Cover (14,700 lbs) with two 42in manhole access, two 42in manhole frame and cover and 4in concrete riser included	48257

APPLICATION: Submersible switchgear vault with multiple feeder circuits. For off-street/incidental (unintentional) traffic locations, use 554 Junction Box Cover #3 (standard MID 19453 or non-skid MID 19455) with 554 riser(s) (6in MID 39972 or 12in MID 43254). In traffic areas, use the 42" manhole frame & cover (MID 67978) with 4in riser(s) (MID68010). Risers are used to set the vault deep enough to allow for future street and sidewalk grinding/grade adjustment

Manhole Frame and Cover, 42in, H20 Traffic Loading



42" M.H. FRAME W/COVER STD H20 LOADING



DESCRIPTION: Frame and cover, manhole, 42in, rated for H20 traffic loading, to meet AASHTO Designation M306-10, cover is 44-1/4in diameter, ductile iron, to have six 1in dia. lifting holes, lettered "TACOMA POWER" in 2in raised letters, frame is gray iron, all such castings are to be the EJ 1843/1845 series or approved equal

Material	MID#
Manhole Frame and Cover, 42in, H20 Loading (650 lbs)	67978
Manhole Cover only, 42in, H20 Loading (450 lbs)	67979
Riser, 4in ^[1] (340 lbs)	68010

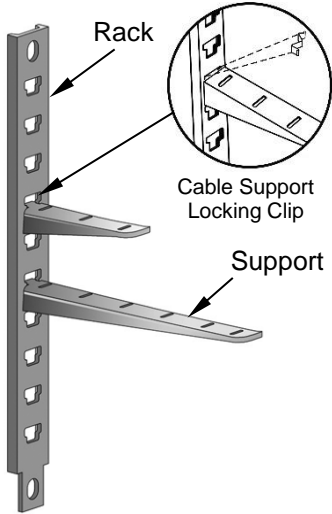


^[1] Also available in 6in and 12in from vendor

APPLICATION: Manhole access cover for 814, 818, and 10' x 20' vaults in traffic locations

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Vault Accessories

Item	Description	MID#
	<p>Cable racks and supports are used for supporting cable runs in vaults.</p>	<p><u>Rack</u> 24" – 52143 55" – 52144</p> <p><u>Support</u> 7" – 52145 14" – 52146 18" – 52147</p>
	Spring nut (exempt)	34872
	Cable Support Locking Clip	81180

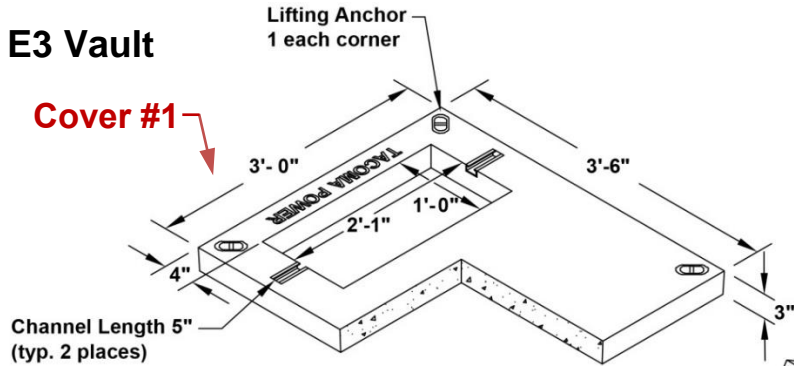
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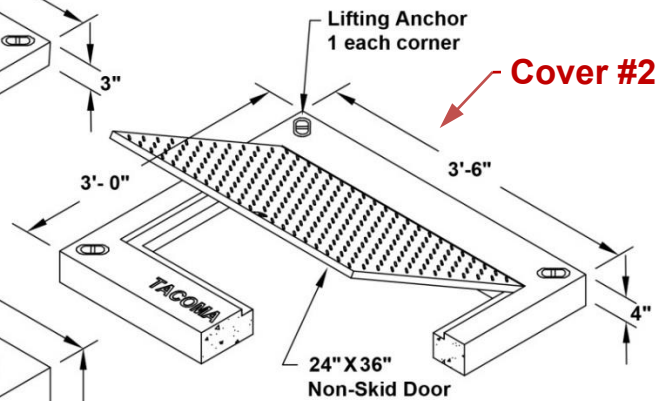
FOR MAINTENANCE ONLY

E3 Vault

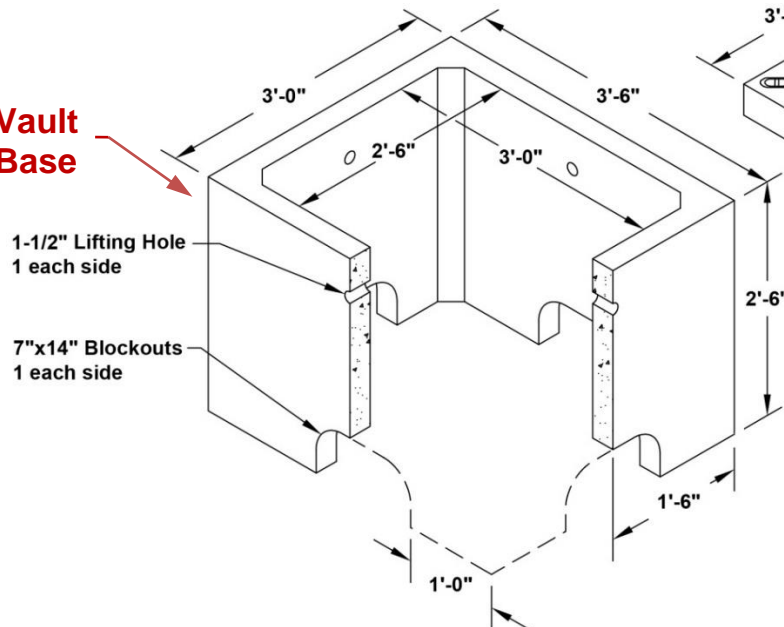
Cover #1



Cover #2



Vault Base



DESCRIPTION: Vault, concrete, E-3, 3ft x 3ft-6in x 2ft-6in base, open bottom, 7in x 14in blockout openings centered on each 3ft end, 7in x 14in blockout openings on each 3ft-6in side offset 1ft from end of base, transformer cover #1 is 3ft x 3ft-6in x 3in cover with 1ft x 2ft-1in blockout opening centered 4in from end, junction box cover #2 is 3ft x 3ft-6in x 4in cover with 2ft x 3ft hinged aluminum door

Material	MID#
E3 Vault Base (1,200 lbs)	43824
E3 Vault Transformer Cover #1 (700 lbs)	43825
E3 Vault Junction Box Cover #2 Non-skid (800 lbs)	67985

APPLICATION: For maintenance only, use for 1Ø padmount transformer or 1Ø junction box in areas with existing underground cable/conduit. Can be used as a secondary service box (SSB). Vault is not self-grounding, must bond to existing grounding

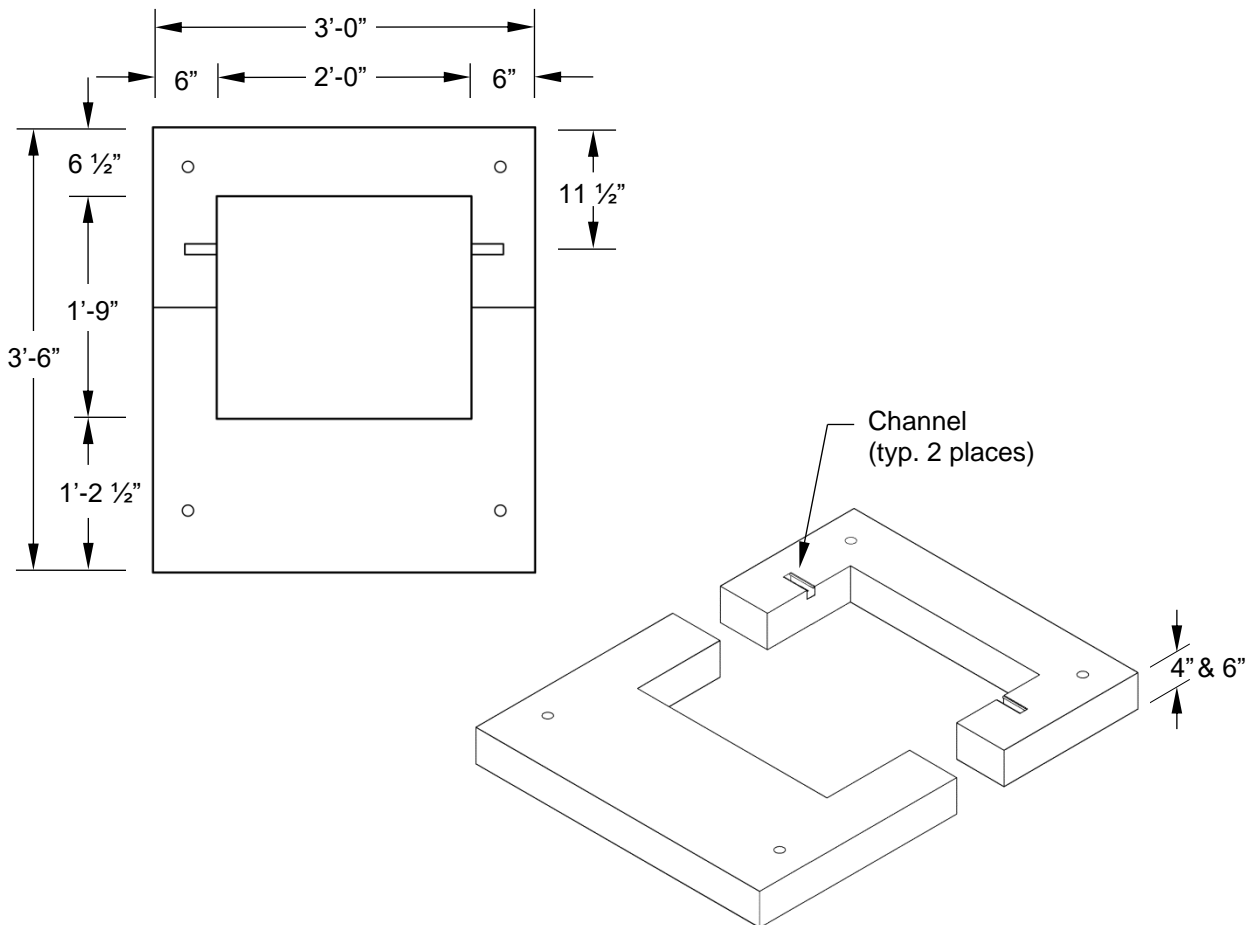
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or install separate grounding electrode. E3 vaults and covers are rated for pedestrian loads only; not rated for off-street/incidental (unintentional) traffic

FOR MAINTENANCE ONLY

Split Riser



DESCRIPTION: Riser, Concrete, two piece split, 3ft x 3ft-6in, with 2ft x 1ft-9in blockout opening when fit together

Material	MID#
Two Piece Riser, 4in, Two-Piece ^[1] (400 lbs)	60729
Two Piece Riser, 6in, Two-Piece (500 lbs)	50896

^[1] Special order only

APPLICATION: For maintenance only, used to provide concrete pad for existing 1Ø padmount transformers, where the original pad has failed or is too low, without having to disconnect the UG primary and secondary cables