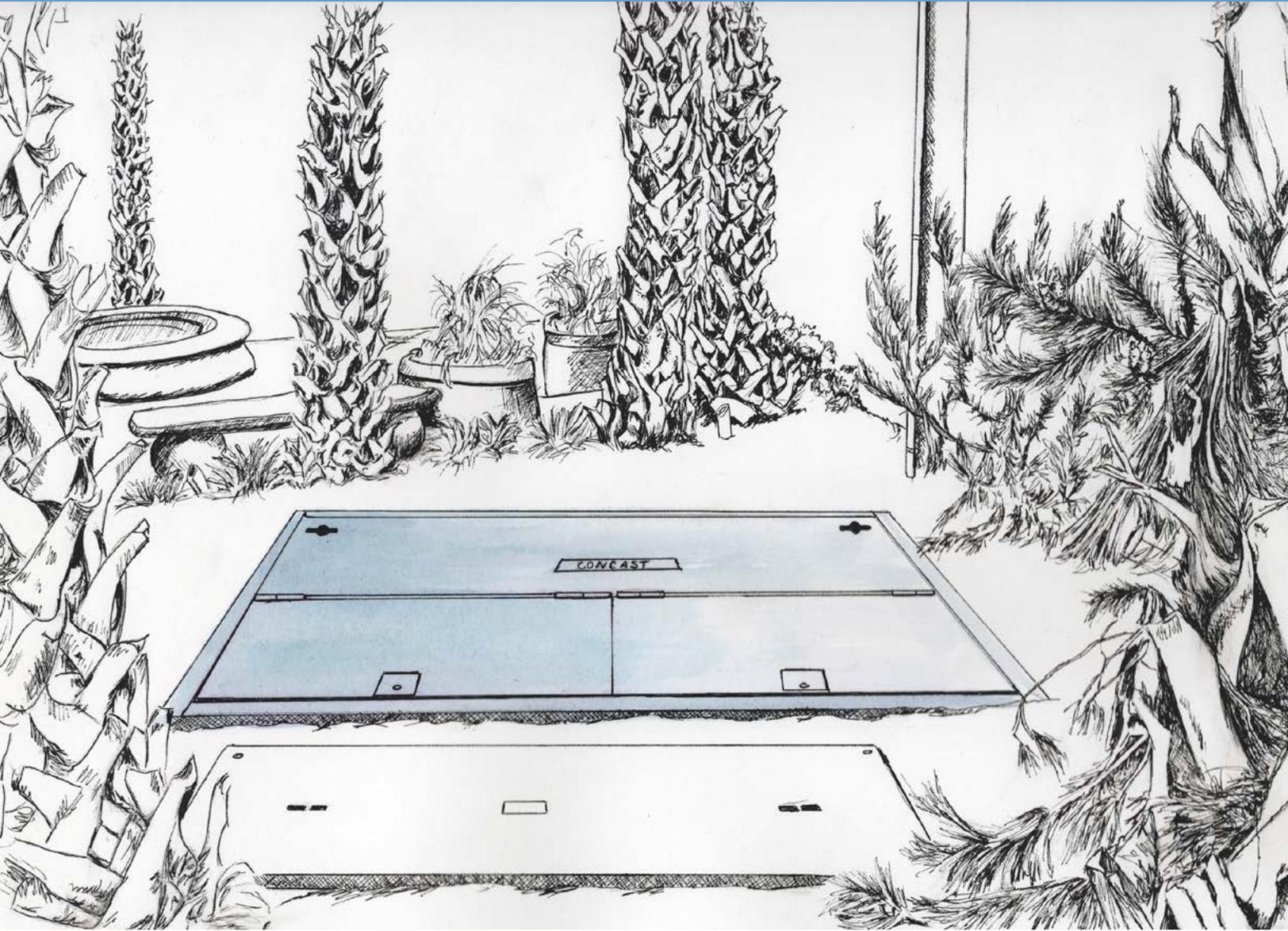




CONCAST

Fibercrete®

PRECISELY ENGINEERED HIGH STRENGTH CONCRETE



VISTA VAULTS



Vista Vault Overview

BENEFITS OF CONCAST VAULTS



FULL HARDWARE PKG.



SIMPLE INSTALLATION



SPRING-ASSISTED COVERS

- Concast vaults provide an enclosure for submersible underground electrical equipment and can have a traffic rating ranging from pedestrian to AASHTO H-20 heavy traffic rating.
- These vaults were originally designed for S&C's Vista Switchgear, and can often be used to support other electrical apparatus.
- Vault packages include steel covers, a ladder, switchgear support, installation platforms, pulling eyes and conduit entry.
- All hardware is either galvanized or stainless steel.
- All covers are galvanized steel with padlock provisions.
- Concast is a leader in providing specialty concrete products to meet individual customer requirements and specifications.
- Concast, Inc. was founded in 1969 by Mr. Ben Tilsen, past owner and president. Ben was a concrete technologist known for his work in lightweight aggregates and fiber reinforced concrete.

Guide Specifications

Vaults shall be constructed with Concast high strength concrete or approved equal. It shall be composed of cement mortar with steel reinforcing throughout.

Complete recommended specifications can be found in this catalog and online at www.concastinc.com/product_specs

Detail Drawings Provided

Concast will provide detail drawings for engineering approval, and to assist the construction crew with installation. Drawings will show overall product size, opening size, weight, and any accessories required such as inserts and knockouts.

You can access the installation guidelines online at www.concastinc.com; keyword "guidelines"



Vista Vault Overview

REDUCE INSTALLATION COSTS WITH CONCAST'S URD UTILITY VAULTS

IN-PLACE COST IS LESS than site-cast concrete, plastic mortars, or fiberglass plastics.



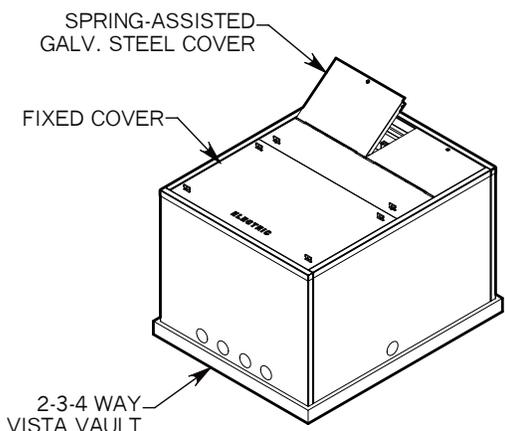
Benefits:

- **HANDLING IS EASY.** All Concast Vaults are supplied with cast-in lifting devices which prevent the need for unsafe slinging procedures.
- **HIGH STRENGTH MATERIAL.** A strong and durable mix design permits a thinner wall than poured-in-place concretes. This also provides a safe and reliable electrical enclosure suitable for numerous applications.
- **LONG LIFE.** Concrete construction results in long product life plus fire and corrosion resistance. Inert mineral composition stands up to temperature extremes, rain, and UV degradation.
- **GOOD RANGE OF SIZES.** Concast offers several different box sizes to fit your needs.
- **TAMPER PROOF.** Utility Vaults can be provided with PentaHead or SureLock bolt-down covers to prevent tampering of equipment or cables. Pad-locking vault covers are also available.
- **NATURAL APPEARANCE.** Smooth, stone-like surfaces blend with natural environment.



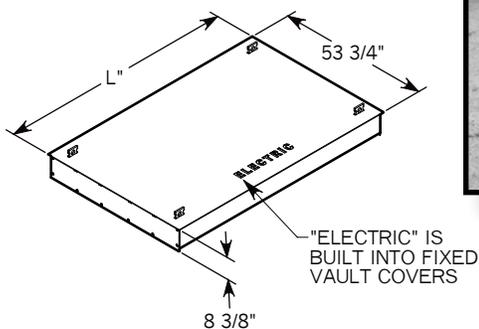


Vista Vault Options

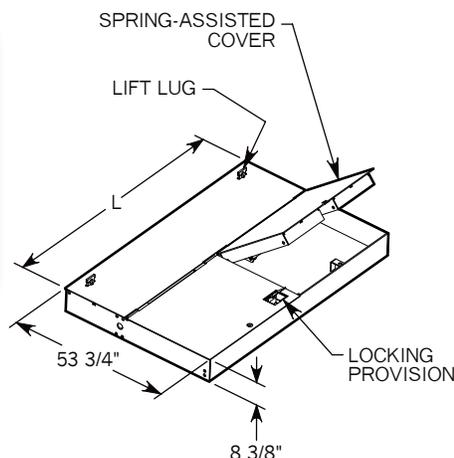


- URD Equipment Vaults are ideal for use with submersible equipment.
- These vaults are also known as Vista Vaults because they are designed for the S&C Vista Switchgear.
- Standard internal galvanized steel hardware can be included and is listed below. Stainless steel internal hardware is also an option.
- A key feature of these vaults is the large flanged base which serves as an anti-floatation bottom.
- Each vault package includes a set of two galvanized steel covers that meet AASHTO-H-20 Heavy Equipment requirement of 32,000 lb./axle load.
- Spring-assisted covers will have stainless steel mechanisms and penta-head bolt-down to make them more secure from vandals..

FIXED VAULT COVER



SPRING-ASSISTED VAULT COVER



Vault Packages include the following hardware:

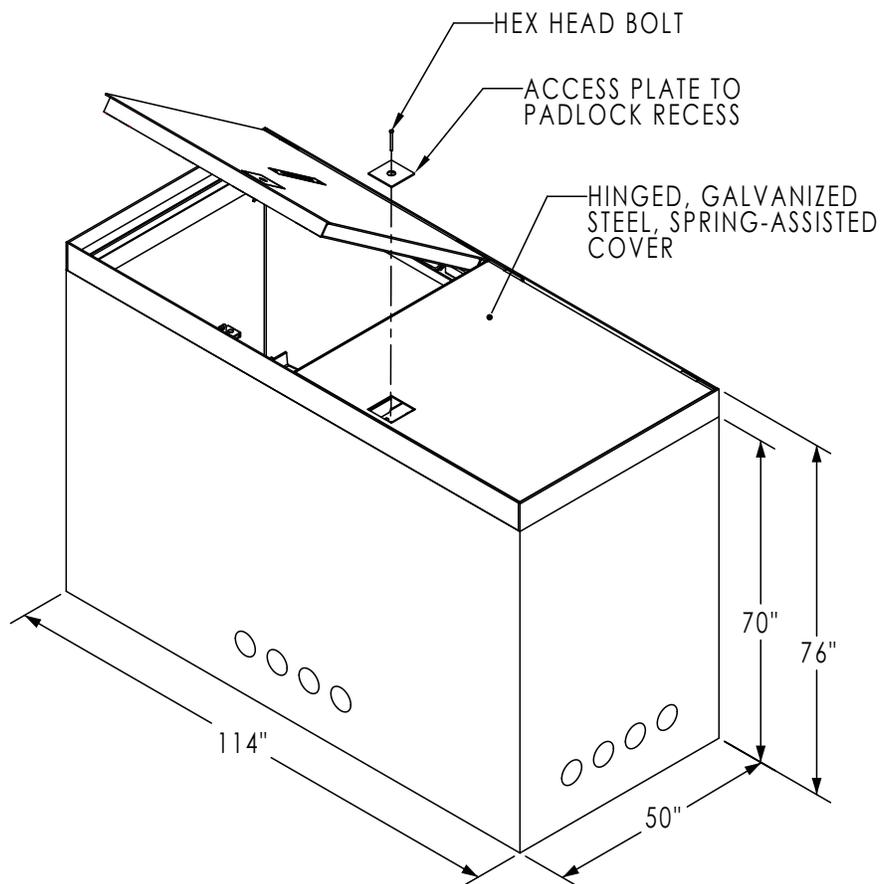
- **2 Steel Covers.** For security.
- **Ladder.** For safe access into the vault
- **Switchgear Support.** To support gear.
- **Lower Platform.** For gear installation.
- **Upper Platform.** For gear operation.
- **Pulling Eyes.** For pulling cables.
- **Lifting Provisions.** 4 lifting points are cast into the vault base for onsite maneuvering.
- **Cable Openings.** For routing cable into the vault.
- **Padlock Provisions.** For extra security. Available in specified packages only. See charts on next page.





2 Way Vista Vault

HEAVY TRAFFIC H-20 RATED 1-2 WAY VISTA VAULT PACKAGE	INTERNAL HARDWARE	INCLUDED ALGRIP STEEL COVERS w/PADLOCK PROVISION INCLUDED
PB-50-114-76-V	Stainless Steel	Two Spring-Assisted Covers

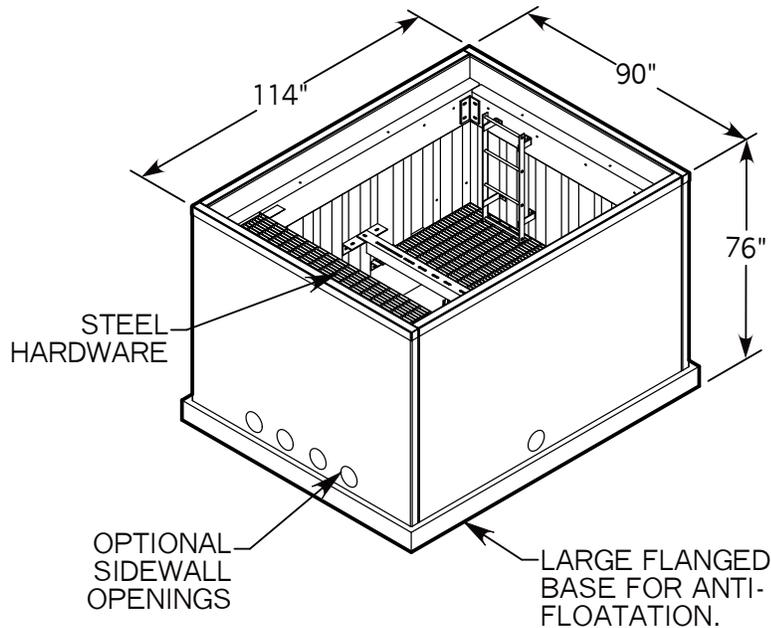


- These assembled vault (with attached covers) weighs approximately 13,315 lbs.
- Designed for standard Vista switchgear. Not intended for Vista SD style switch.
- PDF format vault and cover drawings are online

2-3-4 Way Vista Vaults



PEDESTRIAN RATED 2-3-4 WAY VISTA VAULT PACKAGE	HEAVY TRAFFIC H-20 RATED 2-3-4 WAY VISTA VAULT PACKAGE	INTERNAL HARDWARE	INCLUDED GALVANIZED STEEL COVERS w/PADLOCK PROVISION INCLUDED
FCVP-90-114-76-SG2	FCV-90-114-76-SG2	Galvanized Steel	Fixed Cover and Spring-Assisted Cover
FCVP-90-114-76-SG4	FCV-90-114-76-SG4	Galvanized Steel	Two Spring-Assisted Covers
FCVP-90-114-76-SS2	FCV-90-114-76-SS2	Stainless Steel	Fixed Cover and Spring-Assisted Cover
FCVP-90-114-76-SS4	FCV-90-114-76-SS4	Stainless Steel	Two Spring-Assisted Covers
FCVP-90-114-76-N	FCV-90-114-76-N	Stainless Steel	Fixed Cover and Spring-Assisted Cover
FCVP-90-114-76-NG	FCV-90-114-76-NG	Galvanized Steel	Fixed Cover and Spring-Assisted Cover

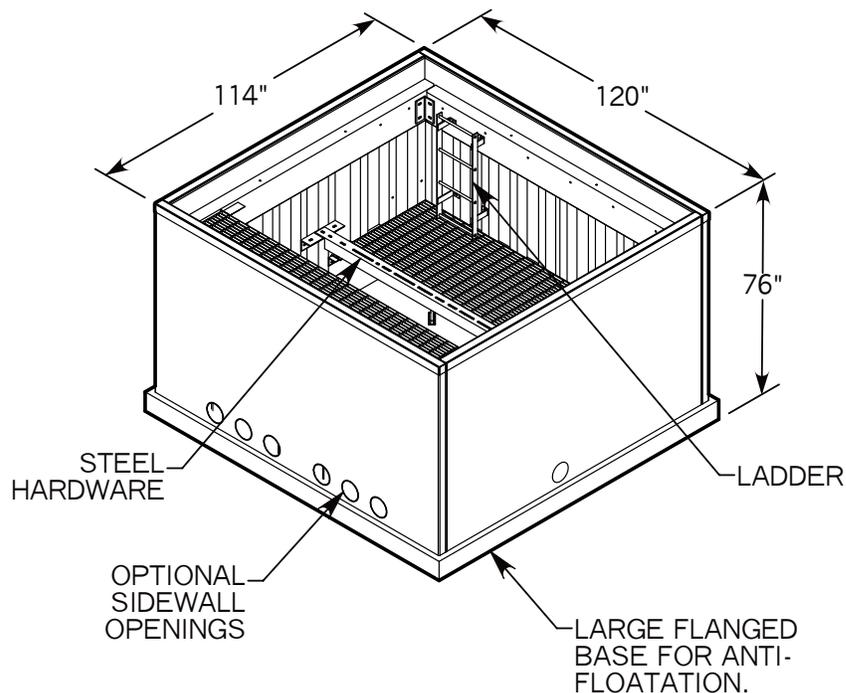


- These assembled vaults (without covers) weigh approximately 18,000 lbs.
- Designed for standard Vista switchgear. Not intended for Vista SD style switch.
- PDF format vault and cover drawings are online



4-5-6 Way Vista Vaults

PEDESTRIAN RATED 2-3-4 WAY VISTA VAULT PACKAGE	HEAVY TRAFFIC H-20 RATED 2-3-4 WAY VISTA VAULT PACKAGE	INTERNAL HARDWARE	INCLUDED GALVANIZED STEEL COVERS w/PADLOCK PROVISION INCLUDED
FCVP-120-114-76-SG2	FCV-120-114-76-SG2	Galvanized Steel	Fixed Cover and Spring-Assisted Cover
FCVP-120-114-76-SG4	FCV-120-114-76-SG4	Galvanized Steel	Two Spring-Assisted Covers
FCVP-120-114-76-SS2	FCV-120-114-76-SS2	Stainless Steel	Fixed Cover and Spring-Assisted Cover
FCVP-120-114-76-SS4	FCV-120-114-76-SS4	Stainless Steel	Two Spring-Assisted Covers
FCVP-120-114-76-N	FCV-120-114-76-N	Stainless Steel	Fixed Cover and Spring-Assisted Cover
FCVP-120-114-76-NG	FCV-120-114-76-NG	Galvanized Steel	Fixed Cover and Spring-Assisted Cover



- These assembled vaults (without covers) weigh approximately 23,000 lbs.
- Designed for standard Vista switchgear. Not intended for Vista SD style switch.
- PDF format vault and cover drawings are [online](#)



Pull Box Accessories

SEALANT



Vulkem polyurethane sealant is colored concrete gray and can be ordered under Concast P/N: 8004. It is delivered in tubes and is designed for use on poured and precast concrete surfaces. Vulkem 116 has demonstrated superior primerless adhesion to porous substrates for over 30 years and is the sealant of choice for commercial industrial expansion joints.

PATCH KITS

PK-1 Patch Kit:

- Used for cosmetic repairs.
- Kit is complete with everything you need for small concrete repairs, including patching compound, bucket, and a trowel.

PK-2 Patch Kit:

- Ideal for patching holes in non-structural concrete sections.
- Kit consists of a large Fibercrete® patch sheet (1/2" thick by 12" sq.) which is cut to size, and then a construction adhesive or concrete screws are used to attach the patch over the hole.

PK-36, PK-69, & PK-912 PatchKwik Kits

- Easy to apply, self-adhesive fiberglass patch that is UV light activated. Available in 3 sizes.
- Spray paint can be ordered from Concast in gray or green. Part numbers are PK-Gray & PK-Green respectively.
- More detail online.
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[PatchKwik Installation Video](#)
[Patch Kit Link](#)

GUIDE POSTS & SAFETY CHAIN

Guide posts and chain provide protection for your pre-cast MGS boxes by blocking off vehicular traffic or defining a road way. A hard, yellow plastic exterior ensures that the color will withstand years of environmental exposure like UV rays and heat. The posts are available either hollow, or concrete filled with steel rebar reinforcement. A 3/8-16 UNC threaded insert is located at the top of each post for securing optional safety chain. See more online.



Post, Rope & Chain Part Numbers	Connection Hardware Part Numbers
8005Y-4F	9001G
8005Y-4H	9001SS
8005Y-7F	9001Z
8005Y-7H	9001G-J
8007	9001SS-J
8007Y-3	9001ACC
8007SG	HHB.38-1.5
ROPE-5-BK	WSR.38-1
ROPE-5-YW	8007SG-CL
	ROPE-CLAMP-625
	SHSS
	SHPY-3



Pull Box Specifications

GENERAL SPECIFICATIONS FOR PULL BOXES & VAULTS

1. TECHNICAL SCOPE

- 1-A.** These specifications cover precast Fibercrete® (G.F.R.C.) Vaults/Boxes manufactured by Concast Incorporated in Zumbrota, Minnesota. The manufacturer must have experience in design and fabrication of these products and also the facilities for fabricating them with the quality specified herein and without delay to the agreed upon schedule.
- 1-B.** The Vault/Box shall be designed and constructed to provide a serviceable life and warranty of 35 years when installed outdoors in full sunlight and without any protection from the weather at any location in the continental United States or Canada.
- 1-C.** The Supplier shall design, construct, perform dimensional and quality control tests, and prepare the Vault/Box for truck shipment. Shipping and delivery responsibilities will be defined in the project specific purchase documents. The Supplier shall provide all necessary documentation as stated in this specification.

2. DIMENSIONS AND DESIGN

- 2-A.** Drawings shall be made available for engineering approval, field installation, and field identification; in PDF, SolidWorks, or AutoCAD format. Standard PDF format component drawings shall also be available online.
- 2-B.** The tolerances of the dimensions of each concrete component shall not exceed $\pm 1/4"$. These tolerances apply to the components when ready for shipping, when set on a flat and level surface with no loads applied to it.
- 2-C.** The manufacturer's design dimensions must be approved by the Purchaser prior to fabrication.
- 2-D.** Provisions, such as cast-in threaded inserts, must be offered for lifting any box/vault. Mounting holes must be adequately reinforced to avoid damaging the box and to provide an ultimate strength of at least 5 times the part weight when it is lifted in accordance with the manufacturer's instructions.
- 2-E.** Bases shall have optional holes for adequate drainage or for attaching sump.
- 2-F.** Conduit/Cable entrances shall be supplied per job requirement, and will be made available in many sizes and configurations depending on the application.
- 2-G.** The vault/box shall be designed and constructed so that it and any related hardware will not trap or hold water when required, and so that it will be able to withstand repeated freeze and thaw cycles.
- 2-H.** The vault/box color shall be a natural concrete gray.
- 2-I.** If required, the vault/box shall be manufactured with cover bolt-down accommodations.
- 2-J.** Boxes/Vaults are all built to meet the heavy traffic requirements of AASHTO H-20 which is 32,000 lbs. axle load. Some of the smaller Pull Box covers can be made available with a pedestrian rating of 200 lbs./ft.
- 2-K.** The precast components are designed to conform to requirements stated in ASTM C857-07 "Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures, ASTM C858-07 "Specifications for Underground Precast Concrete Utility Structures".



3. PERFORMANCE AND MATERIALS

- 3-A.** Cement shall conform to the requirement of ASTM C150 - Type I, II or ASTM C595 - Type IL.
- 3-B.** Course and fine aggregates shall conform to ASTM C33 "Specification for Concrete Aggregates".
- 3-C.** Preparation of concrete shall conform to ASTM A94 "Specification for Ready-Mix Concrete" & ACI 304 "Guide for Mixing, Transporting and Placing Concrete".
- 3-D. MICRO-CONCRETE**
- 3-D.1** Precast solid concrete Vaults/Boxes shall be cast into steel forms using Type I/II Portland Cement.
- 3-D.2** Concrete shall contain 6% entrained air (plus or minus 1%)
- 3-D.3** Shall obtain a minimum compressive strength of 7500 PSI at 28 days of age.
- 3-E. REINFORCEMENT**
- 3-E.1** Steel reinforcing bars shall conform to ASTM A615 "Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement".
- 3-E.2** Steel reinforcing wires shall conform to ASTM A496 "Specification for Steel Wire, Deformed for Concrete Reinforcement".
- 3-E.3** Steel reinforcing weld wire cages shall conform to ASTM A497 "Specification for Steel Welded Wire Fabric, Deformed for Concrete Reinforcement".
- 3-F.** The vault/box must not be affected by asphalt, road salts, fertilizers, oils, other common chemicals, weather, sunlight, or other normal service conditions that it might be exposed to.
- 3-G.** The vault/box must not warp, rust, be UV degradable, or sustain combustion.
- 3-H.** With equipment installed; the vault/box shall be capable of withstanding temperature variations of -40° Fahrenheit to 149° Fahrenheit without cracking, splitting, or otherwise deforming. Material shall have been tested and conform to ASTM C666/C666M-03.
- 3-I.** When required, site-specific, PE stamped, seismic calculations shall be provided.
- 3-J.** Concrete properties will vary depending upon the particular formulation of the concrete mix design. Customized properties can be achieved by using nonstandard ingredients, by changing or adding reinforcements, and by tailoring the overall mix design.
- 3-K. METAL COMPONENT PERFORMANCE**
- 3-K.1** All galvanized steel covers, hardware, and embedments shall meet the following requirements:
- Steel Deck Plating - ASTM A786 | Steel Sheet - A1011 HSLAS Gr 50
 - Steel Angles & Flats - ASTM A-36 | Galvanized Covers - ASTM 123
 - Galvanized Hardware - ASTM 153



Pull Box Specifications

3-K.2 All stainless steel hardware and embedments shall meet the following requirements:

- Stainless Steel Angles & Flats Type 304 - ASTM A276
- Stainless Steel Sheet Type 304 - ASTM A-240

3-K.3 All aluminum covers, hardware, and embedments shall meet the following requirements:

- Aluminum Flats 6061-T6511 - ASTM B221 | Aluminum Sheet Smooth 5052-H32 - ASTM B209
- Aluminum Deck Plating 3003 - ASTM B209 or 6061 - ASTM B632
- Aluminum Angles 6061-T6 - ASTM B308 | Aluminum Channels 6061-T6 - ASTM B308

4. PULL BOXES

- 4-A.** Pull boxes shall have 4 to 6 inch thick walls, optional interlocking extension rings, and removable cover sections assembled to form a completely enclosed unit.
- 4-B.** For boxes with non-standard heights, extension rings shall be stacked vertically on the base ring to meet the desired depth requirement.

5. URD EQUIPMENT/VISTA VAULT

- 5-A.** All vaults shall include platforms, supports, access ladder, two covers, and other miscellaneous hardware required for operating and maintaining switchgear equipment.
- 5-B.** Vaults shall have a wide flanged base to help prevent floatation.
- 5-C.** Vaults shall be supplied with spring-assist covers upon request. These covers can be operated by one person. Standard covers are fixed.

4. INSTALLATION REQUIREMENTS

- 4-A.** When the bottom of the excavation is soft, or where in the opinion of the soils engineer unsatisfactory foundation conditions exist, the contractor shall over excavate to a depth to ensure a proper foundation as directed by the soils engineer. The excavation can then be brought back up to the prescribed grade with a thoroughly compacted granular material.
- 4-B.** All box/vault excavations shall be backfilled to restore pre-existing conditions or to the final grade as specified by the owner.
- 4-C.** All backfill material shall be a granular material as required by the soils engineer. Boxes/vaults shall be designed to have no limitations of backfill height.
- 4-D.** Installation guidelines shall be made available online.



CONCAST

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