Electric Service Requirements

City of Healdsburg Electric Department

Electric Utility Specifications, Standards and Service Application
Rev. 07/01/2014

Lineman Mike Courts, 4/4/2011

Foreman Craig Schmitt, 8/23/2011

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Contact Information

MAILING ADDRESS:	CITY OF HEALDSBURG ELECTRIC DEPT. 401 GROVE ST. HEALDSBURG, CA. 95448
VISIT US:	COMMUNITY DEVELOPMENT CENTER 435 ALLAN CT. HEALDSBURG CA. 95448
TEL:	707.431.3346
OUTAGES:	707.431.3346 (During Business Hours) 707.431.3377 (After Hours, Holidays)
WEBSITE:	www.ci.healdsburg.ca.us/electric
NEW ACCOUNTS & UTILITY BILLING:	707.431.3312
ELECTRIC ENGINEERING:	707.431.3346
TRENCH AND UTILITY INSPECTIONS:	707.431.3341
PANEL SELECTION APPROVAL:	707.473.4455
PANEL PERMIT INSPECTIONS, BUILDING OFFICIAL:	707.431.3346
UNDERGROUND SERVICE ALERT (FREE TO CALLER):	811 or 800.227.2600
ENERGY EFFECIENCY AND PHOTOVOLTAIC PROGRAMS:	707.431.3122

Introduction

This reference will help you undertake a project with Healdsburg's Electric Utility, such as establishing electric service to a new property or modifying an existing service. Please read this reference in its entirety prior to commencing a project. Familiarity with this entire reference will help avoid common mistakes, delays and cost adders. Please report any errors or omissions to us at 707.431.3346.

This version supersedes all previous versions.

Major Policies

Maximum number of services:
In accordance with California Electric Code (Sec. 230.2), the Utility allows a maximum of one service per property. Rarely, exceptions are made for properties with multiple buildings spaced at least several hundred feet apart. In no case will the Utility allow more than one service per building.

Number of meters:
The Utility will allow up to one meter per address (addresses must be recognized by the building department). For properties with multiple meters, metering shall be in one location whenever possible. If you need additional metering beyond what the Utility will allow, you may want to investigate private metering. Please see the *Metering* section for additional meter requirements.

New Service:
Per Healdsburg Municipal Code, all new services shall arrive underground. Projects should reserve space for pad-mounted transformers.

Inspections:
All work must be inspected and approved by the Electric Department and by the Building Department

Laws:
All work must abide by this manual, GO-95, GO-128 and any pertinent laws.

Service point
Please see our *Metering* section for specifications on appropriate metering locations.

Service Demarcation and Maintenance:
For overhead services, the utility will maintain all infrastructure up to the connection outside the entrance to the weatherhead. From there, the property owner will be responsible for all maintenance and repairs.

For underground services, the property line (or sometimes nearest underground box) is usually the demarcation point. Beyond this demarcation, the Utility will provide and install wire to the meter but all conduit and related make-ready work are the responsibility of the property-owner

Connections
Only authorized City of Healdsburg Electric employees are allowed to make and break connections between the customer and the utility.

Level of Accuracy:
Plans created by the Electric Utility are schematic and are not guaranteed for any level of accuracy.

Application for Service & Projects

The following steps outline how to initiate a project with Healdsburg Electric and the typical order of progression.

Application
Submit an application (an application is included in the following pages). Applicants must have all necessary land-rights & permission to pursue work and make permanent improvements in the proposed area. Applicants may need to provide Public Utility Easements. Applicants should reserve space in their plans for utility equipment (transformers, etc.). Please include the following with your application:

- Signed and dated application
- A site plan showing all proposed and existing utilities & structures (including metering location) Elevation, landscaping, single-line and any other information which may be pertinent
- CAD and PDF versions of all plans

Estimate
Estimates may take several weeks. To receive an estimate, please submit a complete application and site plan (a blank application is included in the following pages) including all pertinent information. The Utility does not guarantee any accuracy in its estimates, however, depending on the completeness of the information we receive, we anticipate an accuracy of within 25-50%. Depending on the complexity of the job, the Utility may require an advance deposit commensurate with the time necessary to complete the estimate.

Design
The Utility will continue with and finalize the design for service. Please allow several weeks.

Agreement & Payment
The Utility will produce a construction agreement; the applicant will sign and return it along with full payment for the Utility's portion of the work. Depending on the complexity of the project, payment may be required earlier.

Panel Submittals
Applicants must submit panel drawings to the Utility for approval. Applicants should not purchase any equipment prior to receiving our written approval.

Material Ordering
Any materials not in City inventory will be ordered upon receipt of payment. Please plan for this when you decide when to bring in payment.

Permits
The applicant will acquire all necessary permits from the respective authorities. Undertaking a project with the Electric Department does not waive any other City requirements which may be needed such as an encroachment permit. Please inquire with the respective departments for their requirements.

Easements
Certain projects will need to convey easements to the City. This will typically happen prior to the City establishing service.

Construction
A portion of the job will be performed by the applicant and a portion will be performed by the Utility. Careful coordination is required to avoid mistakes and delays.

Inspections
Portions of the applicant's work such as trenching, conduit, panel choice and installation will require Utility inspection.

Completion
Once the applicant has passed all inspections, and once the Utility has finished its portion of work, the Utility will establish service to the panel.

ELECTRIC SERVICE & PROJECT APPLICATION
City of Healdsburg Electric Department

Contact Info

Site Address _____ Project Name _____

Project Contact's Name _____

Contact's Address (if different) _____

Title _____ Tel. _____

Email _____

Project Info

New construction ☐ Yes ☐ No
Adding load to existing building ☐ Yes ☐ No

Total square footage of all structures upon completion _____S.F.

Site use upon completion (residence, restaurant, etc.) _____

Desired date of service _____

Please describe your project and what you're requesting from the utility; also note if and how your load will change (i.e., "underground conversion, no new load" or, "adding 5-ton HVAC & need to upgrade service from 50A" or, "expanding house and need to relocate existing electric-trench"):

_____

_____

_____

_____

Service Requested

Qty. of EXISTING meters: _____ ADDITIONAL meters requested: _____

Main panel: _____ Amps

Service voltage (choose one):
Note: Not all voltages and service sizes are available in all areas

- □ 120/240V (3-wire, 1-phase)
- □ 120/208V (4-wire, 3-phase)
- □ 277/480V (4 wire, 3-phase)
- □ Primary-voltage service

CONTINUE TO NEXT PAGE.

ELECTRIC SERVICE & PROJECT APPLICATION
City of Healdsburg Electric Department

Load

Will your load be increasing from what it is now? ☐ Yes ☐ No
If not, please skip to the next section

Total connected load (upon completion of project)	1-ph (kVA)	3-ph (kVA)
Lighting		
Appliances		
Receptacles (not including appliances)		
HVAC, max of heat or AC (1 Ton = 1.52 kVA)		
Motors incl. elevators (1 HP ~ 1 kVA)		
Welders		
Other (please explain)		
Other (please explain)		
Other (please explain)		
Total	kVA	kVA

If commercial, hours per day of operation _____hours
Average expected current-draw during operating hours _____Amps per phase

Miscellaneous

Please list any other information which will help us correctly size our infrastructure (improperly sized infrastructure will lead to higher-rates and voltage-quality problems)

_____

_____

_____

To complete this application, please attach a site-plan showing the intended work. Include the desired (and/or existing) meter location, the desired (and/or existing) electric service route, other utilities, structures, landscaping and any other pertinent features.

This Application is accurate and complete to the best of my knowledge:

Print Name _____ Signed _____ Date _____

Please return the completed package to Healdsburg Electric Department, 401 Grove St. Healdsburg CA. 95448.

Fees: Construction & Development

Typical projects must pay for all utility related work in addition to the following capacity fees established under Healdsburg Municipal Code:

MULTIPLE FAMILY DWELLING

2-50 units	$780.00 per unit
51+ units	Refer to HMC § 17C

SINGLE FAMILY DWELLING **NEW SERVICE**

0-125A	$975.00
126-200A	$1,473.00
201-300A	$1,950.00
301-400A	$2,925.00
401+	Refer to HMC § 17C

SINGLE FAMILY DWELLING **SERVICE UPGRADE**

0-200A	$0.00
201-300A	$975.00
301-400A	$1,473.00
401+	Refer to HMC § 17C

COMMERCIAL / INDUSTRIAL SERVICE

Single-ph (600A max service)	$0.00
Three-ph, < 600V	$0.00
Delta-Wye: 480V ≤ 400A	$0.00
Delta-Wye: 208V ≤ 1,000A	$0.00
Other	Refer to HMC § 17C

Division of Responsibilities / Obligations

Applicants / Developers / Customers Responsibilities (Typical)

- Procure and provide all necessary land rights and utility easements, including 8-10' behind sidewalk
- Payment of fees prior to issuance of building permit
- Pre-payment of the utility's portion of labor, materials and any other associated costs (Note: payment must be received before materials can be ordered)
- Acquiring the necessary permits including building permits, encroachment permits, etc.
- Having all existing utilities marked prior to digging
- Provide all necessary surveying and staking and grading (the Utility assumes no responsibility for mistakes made due to improper staking and marking)
- Trenching, excavation, backfill, grading, compaction. Digging will include all street-crossings necessary for connections to joint utility or main-line trenches. All digging, backfill and conduits work must pass Utility inspection. The Utility requests a minimum of 48 hours advance notice for inspections
- Furnish and install all substructure including conduits, pads, boxes, vaults, certain service conductors and other items per City specifications and subject to City inspection. Material provided by the developer should be selected from cross referencing the part numbers on a utility-produced drawing with the approved parts listed in the *Materials* section of this reference. All customer-supplied materials must meet our specifications and approval.
- Coordination with other utilities (phone, cable, gas, water, sewer, storm drain etc.)
- Joint-trench design
- Maintain and repair secondary service for a period of 12 months

Electric Utility Responsibilities (Typical), at other party's expense

- Design of electrical system
- Installation of transformers, primary cable, certain secondary cables, terminations, meters, streetlights etc.
- Off-site improvements necessary to bring power to the site

Additional Notes

- "Engineer" shall refer to the City of Healdsburg Electric Director or his or her designee(s).
- The Engineer and the City have authority to make on-site inspections and observe the construction of facilities at any time.
- The Engineer reserves the right to make changes at any phase of the project to ensure the proper installation of facilities.

- The Engineer has sole-authority over the approval of any design or material changes requested by the owner or contractor.
    - Any material or design changes made without prior approval by the Engineer are done at the owner or contractor's sole risk.
- Any improper installations (not meeting City specifications) or non-engineer-sanctioned changes shall be replaced and properly installed by the contractor or owner at their sole expense.

The following table summarizes the typical division of responsibility. The Utility may, at its option, modify this assignment depending on the job. Not every job requires every item below.

	Utility to provide material and install (both at customer's expense)	**Customer** to provide material and install
Digging / Trenching		•
Conduit		•
Vaults / Boxes		•
1/0 and 4/0 Underground Service Wire		•
All Other Underground Service Wire	•	
Overhead Service Wire	•	
Weatherhead and Wire Inside		•
Terminations	•	
Primary Voltage Wire	•	
Pole Work	•	
Transformer Pad & Substructure		•
Transformer	•	
Streetlights	•	
Main Panel		•
Meter	•	

Easements

It is the applicant's responsibility to procure all land-rights deemed necessary the Electric Utility. Please consult with Electric Engineering to determine where easements may be required for your project.

Typical Instances needing easements
Locations with primary-voltage infrastructure
Infrastructure crossing property lines
8-10 feet behind sidewalk or street frontages

Land needed
Trenches typically require a 10' wide path, centered on the center-line of the trench
Transformers typically need a 10' x 10' easement centered on the transformer pad. The Utility will also need 5-8' behind sidewalk as either right-of-way dedication or easement.

Deliverables
Please submit a legal description and a plat of the area created by a licensed California surveyor. The Electric Utility has standard easement language which your surveyor will need to incorporate. Please consult with the Electric Utility to get the most updated version of our easement language.

Encumbrance
No structure, retaining wall, vegetation, hardscape or other surface is permitted atop an electric utility easement excepting asphalt and concrete.

Typical language
The following language is typical of what we require for most projects. Please consult with Electric Engineering for our most current language and a template which your surveyor can use.

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged:
[Grantor's Name] hereby GRANT(S) TO: City of Healdsburg, A Municipal Corporation, an easement with a right of immediate and unobstructed entry and continued possession to construct, install, inspect, improve, maintain, repair, replace, remove and/or use for the purposes that include, without limitation: transmission and distribution of electricity, gas, telephone, cable television, and network…

Timing
Easements may be provided to the utility at any point during a project but the Electric Utility will not establish electric service prior to having them. Discoveries made during digging may change a trench-route and therefore the path needed in an easement. Applicants may therefore want to wait for their trench-inspection approval before surveying and providing easements.

Metering & Main-Panels

Metering Questions
For approval of a desired meter-location, please contact the Electric Superintendent at 707.431.3341.
For questions about your bill please contact the Finance Department at 707.431.3312.
For all other metering questions please contact our Meter Tech at 707.473.4455.

Installation
Customers will furnish and install all meter panels per the following requirements. The City will provide and install all meters and any necessary CTs and will wire the metering section.

EUSERC Submittals
ALL main service panels must have prior approval by the City of Healdsburg Electric Department. For equipment in the following categories, the utility requires copies of the manufacturer's drawings, cross-referencing their respective EUSERC drawings. *Since our approval is not automatic, we strongly recommend obtaining our approval before making any purchase.*

- All multiple self-contained metering equipment, 0-600 volts
- All instrument transformer rated metering equipment, 0-600 volts
- All standard switchboard service sections, 0-600 volts
- Standard switchboard service sections rated 400 amps and above
- Specially engineered switchboards
- High voltage switchboards

Panel size and NEMA pads
Any panel 400A or greater must accommodate 2-hole NEMA pads (not screw-type connectors).

Meter Ring
The Utility installs a locking-ring around meters. Ring-less panels will not be accepted.

K-Base & Bolt-On Style Meters
The Utility uses socket-type meters. The Utility will not accept or connect to panels with K-base or bolt-on style metering.

Meter Bypass
No panel shall have a mechanism for bypassing the meter.

Test-Bypass Facilities
Residential main-panels should not include test-bypass facilities. Commercial and industrial main-panels should include test-bypass facilities. Exempt from this requirement are single-phase installations less than 300V and a meter switch rating of 125A or less and where short interruptions to the customer are acceptable for testing and maintenance by the City. Examples of exemptions would include temporary power and temporal loads such as parking lots, ball courts etc.

Multiple Meters
The Utility will grant up to one meter per address (no exceptions made for distributed-generation). Please see the Building Department for questions concerning address assignment. Customers seeking additional meters should consider customer owned and monitored meters behind the utility's meter.

Multiple meter installations must:

- Have all meters grouped at one location
- Clearly identify the address for each meter and main-breaker, using weatherproof lettering at least one inch in height
- Include a main breaker when there are more than six meters

Accessibility & Clearance
The Utility requires unimpeded 24-hour access to all metering and main-panels. If any object (gate, door, lock etc.) blocks access to our equipment, the owner must provide the utility with two sets of keys. The utility reserves the right to remove, break or defeat any locks and impediments at the owner's expense.

The Utility requires a minimum of three feet of clearance around all meters and main panels.

Should a customer's meter or main panel be found to be inaccessible or have insufficient clearance, the utility will require the customer to move the equipment to an approved location or to remove the obstructions (all at customer's expense).

Meter Height
Outdoor meter-panels shall be set so that the height of the meter is between 48" and 75", measured from final grade to the meter's centerline. Meters on pedestals or in utility-closets may be set between 36" and 75". Multi-meter commercial panels may have meters below this range, but only after exhausting this space.

Meter Location
The Electric Department must approve of all meter locations. Property owners may choose their meter-locations, subject to the Electric Department's approval. Please submit a site plan to the Electric Utility showing your desired meter location. Absent any preference from the property owner or representative, the Electric Utility will select a location.

General Restrictions. No meter shall be located:

- On any porch, awning, inside of a carport or other area susceptible to future enclosure
- On any floor above or below the ground floor
- Directly over any stairway, ramp or steps, stove or plumbing fixture
- In a doorway, shaft or hatchway, restroom, attic or place not in general use
- In any hazardous location or any place where moisture, fumes, vibration or dust are determined by the utility to be excessive
- At any location lacking the required clearance
- Such that the meter extends onto a sidewalk or public Right-of-Way

Residential Metering Locations

Residential meters shall be located on the exterior, within five feet of either front corner, or on a meter pedestal located between the street and the house. Customers may flush-mount their panels. Conduit entering a panel may be concealed behind siding but may not pass through an attic.

Commercial and Industrial Meter Locations

The preferred metering location is on the exterior. Large commercial and industrial panels may be located inside a utility-room. Utility rooms must have an outside door which opens 90^{o} or greater. In addition, a remote-meter panel(s) will be required (see below).

Remote Meter Panel

In certain situations such as large commercial services or when main-panels are enclosed inside utility rooms, the utility requires separate meter-panel(s) to be located outside. These situations require the following:

- One remote meter socket per each meter
- A 1.25" or larger diameter rigid conduit connecting the main-panel and meter-panel(s), note, for multi-meter configurations, multiple conduits or a larger conduit may be required
- No "L" fittings (LB's, LR's, LL's or condulets)
- The meter-panel(s) must be located within 50' of the main panel
- No more than 270° of curvature in the conduit between main and remote panels
- All panels, (main and meter) will need to meet our EUSERC submittal requirements

Screening

Meter-panels may be screened (such as with a cover) under the following rules:

- Screening must have a door (side-hinged) which opens greater than 90^{o}, exposing the entire meter-panel.
- Screening should have a hole or window exposing the meter for viewing.
- The utility shall not be held liable for damage caused to the screening or enclosure while accessing the metering.

Elevation change

A secondary splice box (meeting City specifications) must be installed at the base of the main-panel when the ground elevation at the panel is lower than the sidewalk or when the base of the main panel is below the conduit from the previous box.

Conduit bends

Any bends in the service conduit entering a panel shall be constructed with sweeps and not "L" fittings (LB's, LR's, LL's or condulets).

Irrigation Service Panels

The following panel has been approved for irrigation services: Metered Tesco Service Pedestal, model 26-000 low profile, type 3 or equal rated at 120V.

Safety

We reserve the right to not work in any panel we believe to be unsafe or lacking approval by the Building Department.

Available Fault Current

Upon request, Healdsburg Electric will calculate the AIC values at your main panel. AIC calculations take into account many variables including the distance between transformer and panel, and are specific to the exact transformer and service wire designated for use at this site, at time of calculation. These and other variables are subject to change at any time, without notice and in a manner that would increase the available fault current. Examples include:

- City infrastructure improvements (i.e. street work) that move the transformer closer to the service
- On-site modifications which move the panel closer to the transformer
- An increase in transformer size
- A decrease in service-wire impedance
- A future replacement transformer with a non-standard impedance

These possibilities should be accounted for when determining the fault-current ratings for your equipment. Please allow several days for your request.

Temporary Service / Construction Power

Temporary service poles shall be furnished, installed and maintained by the customer. Installations are typically rated at 100A. Temporary services shall not remain beyond one year and are restricted to temporary needs such as construction sites or temporary sales locations. Except as noted in this section, temporary installation shall meet the requirements listed in the *Overhead* section of this reference.

Process

To obtain a temporary service:

1. Call the Electric Utility at 707.431.3341 to find or approve of a possible location
2. Call the Finance Department at 707.431.3312 and setup an account
3. Obtain the necessary permits and approvals from Building and Planning.
4. set your temporary pole and panel (please see the *Drawings* section of this reference for the detail of a typical approved temporary pole)
5. Have the building department approve (green-sticker) your panel-permit
6. Call the Electric Utility at 707.431.3341 to request service.

Poles

Poles must be of sufficient height to allow the utility's service wire to meet the required clearances; see the *Overhead* section in this reference as well as CPUC General Order 95 for the overhead clearances required.

Wood Poles

- Poles must be solid and not laminated.
- Square poles must have a minimum cross-section of 6" x 6".
- Circular poles must have a minimum top circumference of 16".
- The pole size and treatment selected by the customer shall fully account for possible future deterioration. Poles shall be of sufficient durability so that any possible deterioration over their period of use does not undermine the pole's structural integrity. Poles may need to be butt-treated or full-length treated.

Metal Poles

Metal poles may be used if they are of equal or better strength than an approved wooden pole, and provided that their base or foundation will provide equal or better resistance to overturning. Use of 4" extra-strong schedule-80 steel pipe set in concrete, or 5" schedule-40 standard steel pipe set directly in ground will typically be sufficient.

Setting Depth

The pole's minimum setting depth should be found by taking 10% of the length of the pole and adding two feet. This depth may increase depending on the soil and the size and length of wire being supported. It is the customer's responsibility to set the pole at an adequate depth.

Overhead service

Per City of Healdsburg Municipal Code and General Plan, all new services must arrive underground (excepting temporary services).

Upgrades
Upgrades to overhead services, may require undergrounding the service on account of wire ampacity, weight, span length, pole loading etc. and will be considered on a case-by-case basis. Panel ratings 400A and above should anticipate undergrounding.

Demarcation
The City will connect service from our infrastructure to the customer's weatherhead or customer owned service pole. With the exception of the meter, all equipment on the customer's side of this connection is the property and maintenance responsibility of the customer. The customer must furnish 18" of service entrance conductors outside the service head.

Maximum Span
Overhead spans cannot exceed 150 feet.

Weatherhead
- Weatherheads and conductors must meet or exceed the highest rated ampacity between the main-panel and disconnect.
- Weatherheads must be rigid-steel.
- Weatherheads shall be a minimum of 1.5" in diameter for services up to 125A and 2" in diameter for services up to 200A.
- Weatherheads must extend at least 18" above the roof.
- Bracing is required for all 1.5" diameter weatherheads taller than 24" and for all 2" diameter. weatherheads taller than 36".
- Service conductor shall be continuous form the Utility's attachment to the meter panel.

Wiring
- Service-entrance conductors, including neutrals, shall be continuous (not spliced) from the Utility's connection into the meter-panel.
- Ground wires shall be #6 or larger for panels rated up to 125A and #4 or larger for panels rated up to 200A.
- Ground wires shall be armor-covered.
- The customer is responsible for bonding and grounding all exposed non-current carrying metal parts in accordance with the City and NEC requirements.

Service Conduit
- All wires between the service head and meter shall be one of the following
  - Galvanized rigid steel conduit
  - Rigid aluminum conduit
  - Electrical metallic tubing
  - Threaded Intermediate (IMC)

  - PVC having a minimum wall thickness of 0.15 inches (schedule-40 for 2" or larger, schedule-80 for 1.5" or smaller or for any location subject to damage)
- All conduits and fittings shall be water tight but may not be water-pipe.
- If an approved metal conduit is used, it shall be enclosed for a minimum of 8' below the lowest open service entrance conductor, fastened to the pole at intervals not exceeding 3'. The enclosing material must be either:
  - ¼" thick fiber conduit
  - 1 ½" thick wood covering
  - PVC "U" shaped molding
- If electrical tubing, rigid steel, or IMC are used, a wood block shall be attached directly over the service head. This will not be required for PVC conduits which do not terminate in grounded terminals or fittings; or on metal poles where the pole is adequately grounded and all metallic conduits are adequately bonded.
- Customers are advised to limit the bends and distance between the weatherhead and panel.

Permanent Service Pole

Service poles must be furnished, maintained and installed by the customer and are only allowed when there are no other practical ways to serve power.

Location

- Poles must be located a minimum of 10' away from City poles and lines and a maximum of 100'.
- Pole locations must allow any attached wire to satisfy the required overhead clearances.

Setting Depth

- The pole's minimum setting depth should be found by taking 10% of the length of the pole and adding two feet. This depth may increase depending on the soil and the size and length of wire being supported. It is the customer's responsibility to set the pole at an adequate depth.

Wood Specs

- Since service poles may have to be climbed by City linemen, they shall meet all pertinent requirements of ANSI 05.1 (latest revision), "Specifications and Dimensions for Wood Poles" and American Wood Preservers Association Treating Standard C4 as described in, "Preservative Treated Wood Poles, Stubs and Anchor Logs for Overhead Lines."
- Customer owned poles shall have a circular-cross section, be class-6 at a minimum and at least 25' in length. A longer pole may be necessary to achieve the required overhead clearances. Please consult with the City before ordering.

Metal Pole

A metal pole may be used provided it is equal or better strength than an approved wooden pole, and provided that its base or foundation will provide equal or better resistance to overturning. All permanent steel poles shall be galvanized. The following poles will typically satisfy these requirements:

- An 11 gauge steel pole, 8.5" minimum diameter at ground, set directly into ground
- A 7 gauge steel pole, 7" minimum diameter at ground, set directly into ground
- A 5" Schedule-80 extra strong steel pipe, set in concrete to obtain an equivalent bearing surface
- A 6" Schedule-40 standard steel pipe, set in concrete to obtain an equivalent bearing surface Guying and Bracing

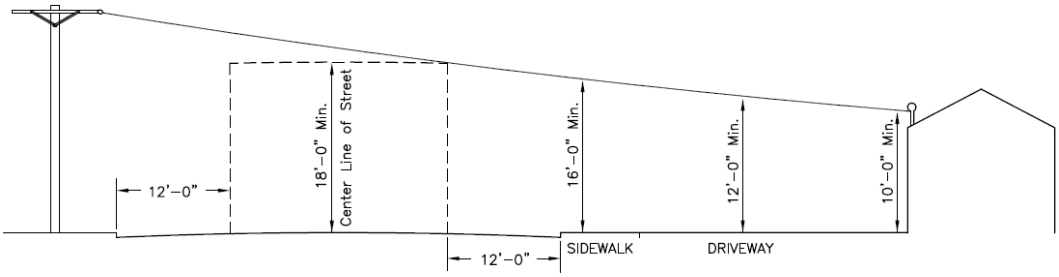
Where conductors cross a street or road, a customer's pole shall be guyed or braced against the pull of conductors as shown in the *Details* section of this reference. Any brace shall be at least 2"x 4" timber, securely bolted to the pole.

Clearance

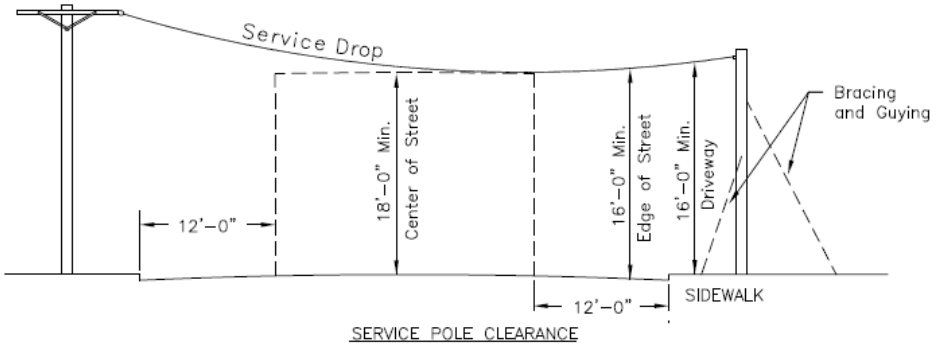
Service conductors must maintain specific clearance above various objects. Weatherhead height must account for these clearances.

The following table is lists requirements for overhead service wire clearances from listed objects. Please refer to the CPUC's General Order 95 (GO-95) for the most up-to-date requirements.

Service Clearance	Minimum	Per
Above center of street	18 feet	GO-95 Table-1, Case 3-B
Above edge of street	16 feet	GO-95 Table-1
Above commercial driveway	16 feet	GO-95 Table-1
Above residential driveway	12 feet	GO-95 Table-1
Above pedestrian-only areas	10 feet	GO-95 Table-1, Case 5-B
Horizontal clearance from buildings	3 feet	GO-95 Table-1, Case 7-B
Vertical clearance for insulated wires above buildings on other premises	8 feet	GO-95 Table-10, Rule 54.8-B, Case 4
For insulated wires above other buildings on same premises	2 feet	GO-95 Table-10, Rule 54.8-B, Case 3
Above pool	12 feet	GO-95 Rule 54.4-A3
Above diving board	16 feet	GO-95 Rule 54.4-A3



OVERHEAD SERVICE CLEARANCE



SERVICE POLE CLEARANCE

Underground Service

The following tables list the typical minimum secondary-voltage conduit and wire requirements. The Utility will determine your specific requirements after receiving your application and may require additional or larger conduits & infrastructure. Please refer to the utility's design for your project's specific requirements.

Projects anticipating future increases in their service size may install larger conduit than we require. If a reducer piece becomes necessary (such as to fit a larger conduit into a smaller-opening in a panel), reducers may be used but must be smooth-walled swedge-type, accessible and exposed above ground.

Note: the Utility will typically install all service wire larger than 4/0 and all primary wire and typically allow contractors to install service-wire 4/0 and smaller. Please review the accompanying information and specifications regarding service wire, conduit and trenching.

TYPICAL minimum RESIDENTIAL service, secondary-side requirements

Main Panel Size	Conduit Qty. & Diameter	Conductor	Number of Conductor Runs
100-200 Amp	1-3"	1/0	1
201-400 Amp	1-4"	4/0	1
401-600 Amp	2-4"	750 MCM	1

TYPICAL minimum COMMERCIAL service, secondary-side requirements, 1-ph & 3-ph

Main Panel Size	Conduit Qty. & Diameter	Conductor	Number of Conductor Runs
200 Amp	1-3"	4/0	1
400 Amp	2-4"	750 MCM	1
600 Amp	3-4"	750 MCM	2
800 Amp	3-4"	750 MCM	2
1,000 Amp	4-4"	750 MCM	3
1,200 Amp	5-4"	750 MCM	4
1,600 Amp	7-4"	750 MCM	6
2,000 Amp	9-4"	750 MCM	8
2,500 Amp	9-4"	750 MCM	8
3,000 Amp	11-4"	750 MCM	10

Please contact the Utility for a primary-service if you need more power than what is listed here.

Service Wire

Requirements for underground secondary cable:

- Stranded
- XLP (cross-linked polyethylene)
- When using three conductor triplex, the neutral must have at least three yellow stripes
- Must meet or exceed all applicable requirement s of ICEA S-66-524 for XLP insulated conductors
- Must meet or exceed UL specification 854

Depending on the project, the utility may supply and install the wire. Please refer to the utility's plan and material cross-reference to determine the service wire size and who will be providing it.

Wire Size	Description	Approved Code-Name
2	3/c, Stranded, XLP, 600V	Stephens YS or Ramapo YS
2	4/c , Stranded, XLP, 600V	Dyke YS
1/0	3/c, Stranded, XLP, 600V	Brenau YS
1/0	4/c , Stranded, XLP, 600V	Notre Dame YS
4/0	3/c, Stranded, XLP, 600V	Sweet Briar YS (if this is not available, the utility will accept Malloy)
4/0	4/c , Stranded, XLP, 600V	Wake Forest YS
750	3/c, Stranded, XLP, 600V	Villanova (If this is not available, the utility will accept two 1/c stranded 750 MCM 600V codename Sewanee XLP and one 1/c stranded 350 MCM codename Rutgers XLP

Digging & Trenching

The following are required for all digging and trenching:

- Applicants must call Underground Service Alert (USA) at least 48-hours prior to digging to have any underground utilities identified. This service is free to the caller.
- Work shall not proceed unless utility trenches are in accordance with Cal OSHA as determined by the City and City requirements.
- Adjacent trenches must maintain at least one foot of native soil and may not be "stepped." This City may require additional separation depending on the size of, type of and length of utility in parallel.
- All excavation must create clean and square bases.
- Whenever possible, water services shall be placed at opposite property corners from the "dry" utilities (power, cable & telephone).
- Applicants must call the Utility at 707.431.3341 for trench-inspections before installing conduit and also prior to backfilling. The Utility requests a minimum of 48-hour notice for inspections.
- Backfill sand shall be No. 4 minimum, salt-free and absent any deleterious material.
- Trenches below roads or other drivable surfaces must add 6" to their otherwise applicable depth.
- Trench routes must not create more than 270 degrees of bends ("three 90's") between boxes. Included in this count are the 90-degree sweeps into boxes / panels.
- Plans created by the electric utility are schematic, call 707.431.3341 to confirm the precise locations for digging/trenching and determine correct riser quadrants.
- The City accepts no liability for any open trenches. The developer and his contractor assume full liability for open trenches and shall provide all proper barricades and safety measures. Any work in the public Right-of-Way requires an encroachment permit.
- The *Drawings* section of this reference contains cross-sections and additional specs for our typical utility trenches.
- The City does not allow construction (including structures, retaining-walls, trees, certain landscaping and most hardscape) atop of electric-utility trenches. Approved improvements include concrete and asphalt.
- Primary voltage trench routes must maintain 5' lateral separation from any trees. Maintaining a distance of 8-10 feet from any trees improves their likelihood of survival.

Conduit

Separation
Per CPUC GO-128, electrical conduits must maintain 12” of separation when in parallel with other utilities and 6” of separation when crossing any other utilities.

Specification
Utility conduit shall be bell-ended PVC, DB-120, P&C, rated for 90° C. per Western Underground Committee Standard 3.1 and NEMA standard TC-8 and ASTM F-512 for 2”, 3”, 4”, 5” and 6”.

Couplings
Couplings shall be DB-120, swedge-type.

Sweeps
Sweeps shall be DB-120, bell-ended. Please refer to the Utility’s drawing for minimum sweep sizes and radii. Absent any other direction from the Utility:

- 2-3” diameter sweeps shall have a 24” radius
- 4-5” sweeps shall have a 36” radius
- 6” sweeps shall have a 48” radius

Reducers
Conduit Reducers must be DB-120 smooth-walled, swedge-type and exposed above ground.

Concrete / Slurry in Bends
Certain conduit bends will require additional reinforcement, to support pulling-wire. For these locations, concrete or slurry must be poured inside the radii, taking care not to encase or breach the conduit with it.

The following locations will always require concrete or slurry. Residential services are often exempt from this requirement, however, the Utility reserves the right to require this for any situation:

- All primary conduits
- Any curves in a conduit run exceeding 200’
- All 6” diameter conduits
- Conduit runs with a high degree of curvature

Solvents
Solvents shall be in accordance with ASTM-2564 for PVC cement.

Maximum Bend
270° is the maximum curvature allowed end-to-end (box-to-box), transformers and certain boxes will expend 90°.

Terminations
Conduits ending in boxes shall be terminated 2” above the bottom of the box.

Pull Ropes
3/8” diam. mule-tape must be installed end-to-end in all conduits, terminating on removable end-caps.

Red Dyed Concrete
In certain situations such as entering a building envelope, the utility will require encasing the conduits in red-dyed concrete.

Mandrel Proving
All conduits must be blown free of water and debris. The Utility will prove all conduits by pulling its mandrel through. Contact us if you would like to examine our mandrel prior to construction.

Inspections
Applicants must call the Utility at 707.431.3341 for trench-inspections before installing conduit, again prior to backfilling and also at each lift. Additional inspections may be required. The Utility typically needs a minimum of 2-business days notice, more notice is preferred.

Vaults and Boxes

Please refer to the Utility's design for the sizes and types of boxes and vaults you will need to install. The *Drawings* section provides specifications for each type of vault. The following are required for vaults:

General Specifications

- All vaults shall have a minimum 7/8" galvanized pulling iron at each end.
- Identification
    - Vaults shall have a total of four drop-in style nameplates on their lids.
    - Boxes should have "Healdsburg Electric" engraved on their lids.

Excavation

- All excavations (for vaults, concrete enclosures and pads) must, without exception, have square and level bottoms of undisturbed earth.
- Over-excavation less than six inches may be filled with approved drain rock. Over-excavation greater than six inches must be backfilled with a slurry-concrete mix.

Setting & Backfill

- Vaults shall be set level and their lids flush with finished-grade (this may require an angled-collar).
- Boxes are not required to be set level, but must be flush with finished-grade.
- Vaults shall be set on a layer of drain rock.
    - All vaults 4' x 8' and smaller must be set on a 12" layer of ¾" drain rock
    - All Vaults larger than 4' x 8' must be set on an 18" layer of ¾" drain rock
- The area around vaults shall be backfilled with #4 sand, free of al deleterious material and compacted to ensure all voids around vaults are filled (water jetting is allowed as a compaction method).

Vault Construction

- Install Unistrut P4000 channel inserts on all four sides between knockout areas with 24" minimum horizontal spacing (unless otherwise specified on the Utility's design).
- All joints between sections of vaults shall have both pliable gasket seals and interior grout sealing.
- Conduit terminations should be cut flush with the interior wall and then mortared.
- Unless vaults are specified with precast duct terminators (such as Carlon Thermaduct Terminators), all unused ducts shall be terminated with duct end bell-type terminators grouted flush with the inside face of vault walls.

Transformers

Projects must reserve the necessary space on-site for transformers, possible other utility infrastructure and for working-space. Transformers of the same capacity are routinely made in different dimensions. For this reason we are unable to provide the exact dimensions of transformers. Transformers should be anticipated to occupy their entire pad and have a radiator extending beyond the rear of the pad.

The Utility will require Public Utility Easements to be conveyed to the City, utilizing our approved language. The typical easement area needed includes a 10 feet wide band centered on the electric utility trench and a 10' x 10' square centered on the transformer pad.

Property owners and contractors may never enter utility transformers, nor install conduits to a live transformer. Details of transformer pads can be found in the rear of this reference.

Installation requirements:

- 3-ph transformers must have a 30" x 48" x 24" box below the transformer pad. The top of transformer pads must be above grade.
- 1-ph transformers will sit on a 60" x 62"box-pad. Box-pads must be set on a 6" minimum, compacted-base. The top of a box-pad must be a minimum of 4" above grade.
- A ¾" diameter, 8' long copper ground rod, housed inside an FL8 box located at least 8' away from the transformer's ground-rod
- The copper wire connecting the ground rods must be at least 2' deep and have solder-less lugs
- Bollards (for more information please refer to the "Bollards" section)

Clearances

- Transformers require a clear working-space of 8' on their front and 3' on all other sides.
- Combustible items (such as vegetation) must remain at least 3' away.
- Non-combustible items (such as small trash bins) must remain at least 2' away.
- Because the transformer in place today may not be the same transformer tomorrow (which may be larger), these clearances are necessary around the transformer pad and also any overhanging parts of the transformer.

Fences / Screening

- Transformers may be visually-screened provided that the screening abides by the above clearances. Any metal screening used must be bonded to the transformer's ground wire.
- Any fences installed across the front-side of a transformer must include a gate with a minimum 10' wide unobstructed opening (centered on the transformer).

Bollards

The Utility requires bollards to be installed in locations where our equipment is susceptible to contact. The specifics of your project will determine where bollards are necessary. Common instances include transformers adjacent to drivable areas.

- Bollards on the front side of equipment shall be removable and lockable.
- The utility will place its own locks on any removable bollards and have sole-authority to remove them.
- Spacing between adjacent bollards should be at most two times the distance to the object being protected. For example, for bollards placed 12 inches from the object being protected, (i.e. the transformer pad), adjacent bollards must be no more than 24" apart.
- A detail of approved bollards can be found in the rear of this reference.

Photovoltaic & Distributed Generation

Please refer to the Electric Department's website for current fees and more comprehensive information: www.ci.healdsburg.ca.us/solar. Building and Fire Departments also have requirements for photovoltaic systems; in some situations the Planning Department may also have requirements.

NEC and other guidelines have a specific way to consider generation entering a main-panel when determining its overall load. When selecting a service size, customers who are interested in installing generation should consider NEC panel-sizing requirements for panels receiving generation so that their main-panel will have sufficient capacity.

Additional notes:

- Systems larger than 10 kW will have a more extensive review; systems under 10 kW will have a quicker review.
- All generation must be behind the property's meters.
- The Utility will exchange the existing meter and install a NET-meter once all the Utility's requirements have been met. Generation will not have separate metering.
- All customers seeking interconnection must have an Interconnection Agreement on file and a 10-yr full system warranty.
- Work performed cannot compromise the UL or other safety ratings of the main panel or any other equipment.
- Three-phase customers must balance their load and generation equally among all phases.

Trees, Vegetation & Hardscape

Vegetation poses a threat to overhead and underground lines and equipment. Issues arising from overgrowth, limb-dropping, falling trees and root penetration include electrocution, fire, power outages and inability to perform maintenance and repairs.

Clearance from Underground Lines
No trees may be planted within 5 feet of a primary or high-voltage conduit. Maintaining a minimum of 8-10 feet between conduits and trees improves a tree's likelihood of survival.

Restrictions Above Trenches
No construction is allowed atop primary electric conduits, including retaining-walls, trees, certain landscaping and most hardscape.

Tree Selection Guidance
Please consult http://selecttree.calpoly.edu prior to planting. This site provides the Public Utility Commission's required clearances for vegetation around power lines and also information on tree hazards and mitigation tips. The site provides a tree-selection tool to find the perfect tree for both owner and utility.

Utility Trimming
The Utility will periodically patrol its lines looking for and trimming any infringing vegetation to maintain proper clearance. Tree cutting must only be done by persons qualified to work around high-voltage.

Materials, Cross-Reference

Description	Healdsburg Part No.	Approved Manufacturer Part No.	
Conduit, 6” P&C, DB 120	285 110 00002	PW Pipe Carlon Cantex	4806001203 68817-020 A55GA42
Conduit, 4” P&C, DB 120	285 110 00003	PW Pipe Carlon Cantex	4804001203 68815-020 A55EA42
Conduit, 3” P&C, DB 120	285 110 00005	PW Pipe Carlon Cantex	4803001203 68813-020 Z55DA42
Conduit, 2” P&C, DB 120	285 110 00006	PW Pipe Carlon Cantex	4802001203 68811-020 A55CA42
Coupling, 6” Swedge DB 120	285 110 00015	PW Pipe	81010600
Coupling, 4” Swedge DB 120	285 110 00018	PW Pipe	81010400
Coupling, 3” Swedge DB 120	285 110 00021	PW Pipe	81030300
Coupling, 2” Swedge DB 120	285 110 00022	PW Pipe Cantex	61010200 6121628
Bend, 90° x 48" Rad., 6" P&C with bell end	285 110 00029	PW Pipe Carlon Cantex	8190480600 PH9HR 5125885
Bend, 90° x 24" Rad., 3" P&C with bell end	285 110 00032	PW Pipe Carlon Cantex	8190240300 PH9DL 5125871
Bend, 90° x 18" Rad., 3" P&C with bell end	285 110 00033	PW Pipe Carlon Cantex	75900300 UA9ALB–CAR 5233846
Bend, 90° X 36" Rad., 4" P&C with bell end	285 110 00036	PW Pipe Carlon Cantex	8190360400 PH9FN 5125876
Bend, 90° x 24" Rad., 2" P&C with bell end	285 110 00039	PW Pipe Carlon Cantex	8190240200 PH9DJ 5125881

All vault and box covers must be marked, “HEALDSBURG ELECTRIC.”
Healdsburg Electric will accept no substitutions from what is specified here.

Description	Healdsburg Part No.	Approved Manufacturer Part No.	
Bend, 45° x 24" Rad., 3" with bell End	285 110 00043	PW Pipe Carlon Cantex	7345240300 PF7DL 5125774
Bend, 45° x 24" Rad., 4" with bell End	285 110 00044	PW Pipe Carlon Cantex	7345240400 PH9DN 5125753
Bend, 11 ¼° x 60" Rad., 4" with bell End	285 110 00048	PW Pipe Carlon Cantex	8111600400 PH3IN 5123719
Bend, 11 ¼° x 60" Rad., 6" with bell End	285 110 00047	PW Pipe Carlon	8111600600 PH3IR
Splice Box, 13"x 24" x 18"	285 180 00004	Armorcast	A6001946PCX18
Splice Box Cover, 13" x 24"	285 180 00005	Quazite Armorcast	PG1324CA00-HE A6001866-HEALD
Splice Box Cover, 13" x 24" Full Traffic	285 180 00006	Quazite Armorcast	PG1324HA00-HE A6001969T-HEALD
Splice Box, 17" x 30" x 18"	285 180 00009	Armorcast	A6001640PCX18
Splice Box Cover, 17" x 30"	285 180 00010	Quazite Armorcast	PG1730CA00-HE A6001643-HEALD
Splice Box Cover, 17" x 30" Full Traffic	285 180 00011	Quazite Armorcast	PG1730HA00-HE A6001947T-HEALD
Splice Box, 24" x 36" x 18"	285 180 00012	Armorcast	A6001974PCX18
Splice Box Cover, 24" x 36"	285 180 00013	Quazite Armorcast	PG2436CA00-HE A6001975-HEALD
Splice Box Cover, 24" x 36" Full Traffic	285 180 00014	Quazite Armorcast	PG2436HA00-HE A6001975T-HEALD
Splice Box, 30"x48" x 24"	285 180 00039	Armorcast	A6001430PCX24
Splice Box Cover, 30" x 48" Two Piece, Full Traffic	285 180 00015	Armorcast	A6001170TA-HEALD
Splice Box Cover, 30" x 48" Two Piece	285 180 00017	Armorcast	A6001470A-HEALD
Splice Box, 2'-6" x 4'	285 180 00019	Utility Vault	

All vault and box covers must be marked, "HEALDSBURG ELECTRIC."
Healdsburg Electric will accept no substitutions from what is specified here.

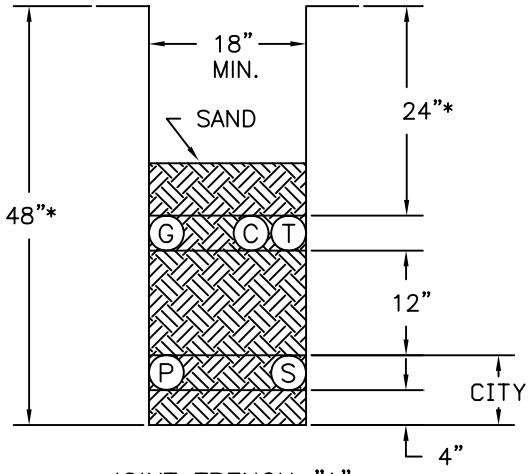
Description	Healdsburg Part No.	Approved Manufacturer Part No.	
Vault, 4'-6" x 8'-6"	285 180 00025	Utility Vault	
Vault, 3' x 5' with 1-12" Extension	285 180 00026	Oldcastle Prec.	Healdsburg-3546
Vault, 6' x 8' x 3.5' With Access Cover	285 180 00028	Utility Vault	
Fiberlyte FL8 Box	285 180 00040	Christy	FL8TBOX
Fiberlyte Lid, Marked "Ground"	285 180 00041	Christy	FL8T
Vault, 6' x 12' With Manhole Entry	285 180 00029	Utility Vault	
Vault, 6' x 12' Transformer With 4'-6" x 8'-6" Entry	285 180 00045	Utility Vault	
Vault, 6'x12' Full Traffic With 4'-6" x 8'-6" Entry	285 180 00046	Utility Vault	
Retaining Wall, Precast	285 080 00042	Utility Vault	RETWALL-1
Transformer Pad, SMUD	285 999 00029	Jensen Precast Utility Vault	SMUD 7750-S-TP
Transformer Box Pad 60" x 62"	285 999 00038	Quazite Armorcast	PB52501528B18 A6001669PC-1
Cable, #2, STR. 3/C 600 A	285 100 00006	Alcan Prysmian Southwire	Ramapo Ramapo Ramapo
Cable, 1/0, STR. 3/C 600 A	285 100 00007	Alcan Prysmian Southwire	Breanau YS Breanau YS Breanau YS
Cable, 4/0, STR. 3/C 600 A	285 100 00008	Alcan Prysmian Southwire	Sweet Briar YS * Sweet Briar YS * Sweet Briar YS *
Cable, 750, STR. 3/C 600 AL	285 100 00026	Alcan Prysmian Southwire	Villanova Villanova Villanova

* If Sweet Briar YS is not available, 4/0 str., 3/c, XLP, 600 volt cable, code name MALLOY will be accepted.

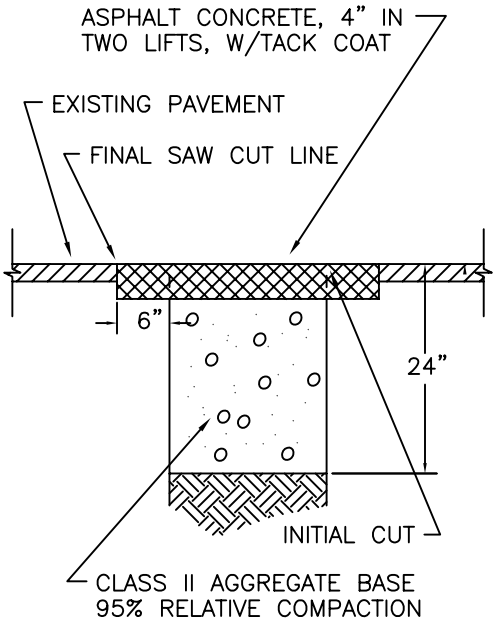
All vault and box covers must be marked, "HEALDSBURG ELECTRIC."
Healdsburg Electric will accept no substitutions from what is specified here.

Drawings

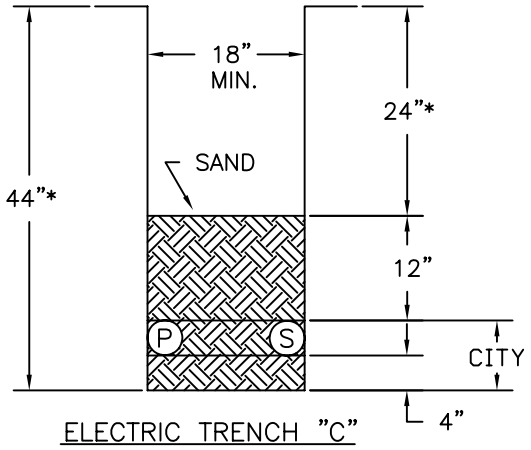
TRENCH CONFIGURATIONS



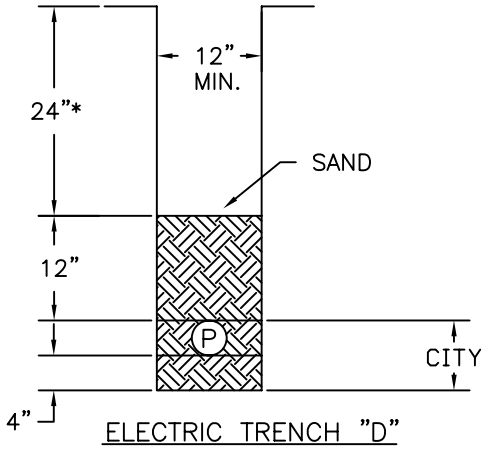
JOINT TRENCH "A"



STREET CROSSING
TRENCH RESURFACING



ELECTRIC TRENCH "C"

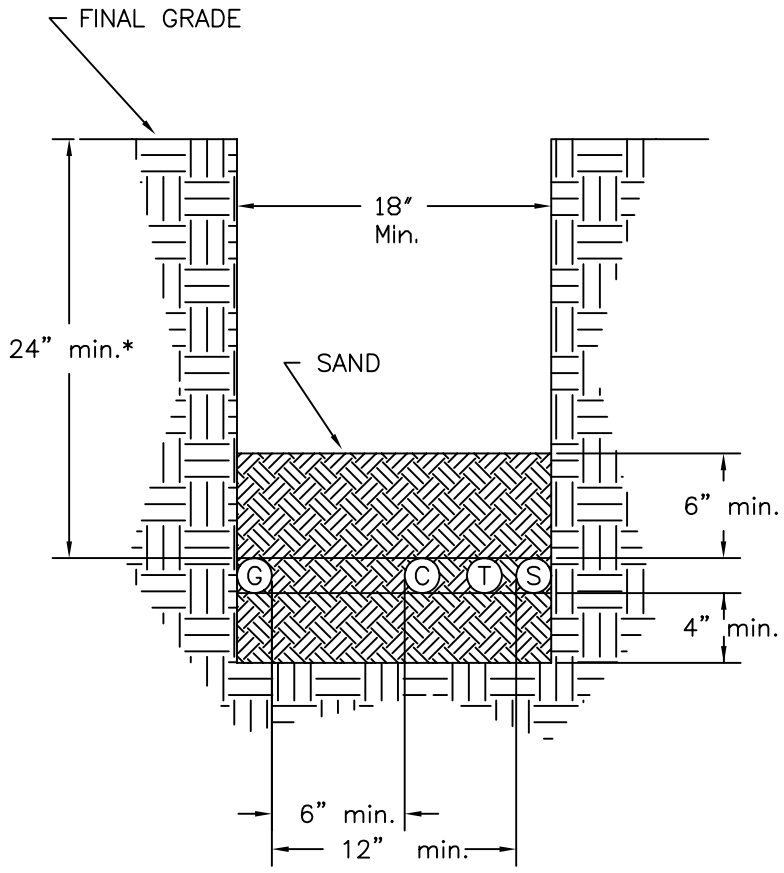


ELECTRIC TRENCH "D"

NOTE:
1. *FOR STREET CROSSINGS, ADD 6".
2. SAND SHALL BE NO. 4 (SALT FREE) MINIMUM, FREE OF ALL DELETERIOUS MATERIAL.
3. NO CONDUIT RUNS SHALL HAVE MORE THAN 270° OF SWEEPS.
4. 90% RELATIVE COMPACTION FOR ALL TRENCHES NOT LOCATED IN THE STREET.
5. ALL MEASUREMENTS ARE MINIMUM.
6. G = GAS
7. C = CABLE TV
8. T = TELEPHONE
9. S = ELECTRIC SECONDARY, 600 VOLTS OR LESS.
10. P = ELECTRIC PRIMARY
11. TO BE USED ONLY IF CITY CONSTRUCTION JOB PROVIDES NO TRENCH DETAIL.
12. CITY TRENCH REQUIREMENTS ARE THAT IT'S CONDUITS ARE ALWAYS PLACED AT THE BOTTOM OF THE TRENCH, WITH MINIMUM DEPTHS AS SHOWN. OTHER AGENCIES REQUIREMENTS MAY APPLY IN THE AREA ABOVE CITY.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD CONSTRUCTION NOTES TYPICAL TRENCH CONFIGURATIONS	REVISIONS 6/22/99 5/18/04	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 2/20/91	NO.: 191

SERVICE TRENCH CONFIGURATION

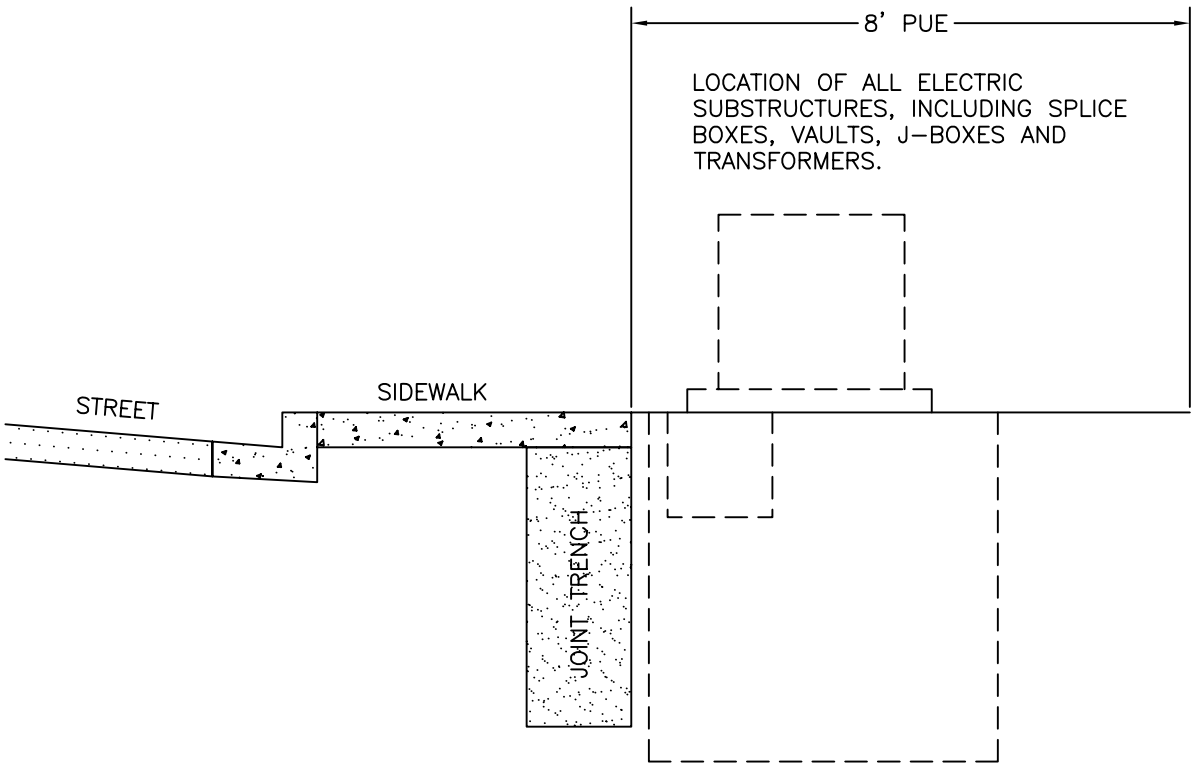


JOINT TRENCH "B"

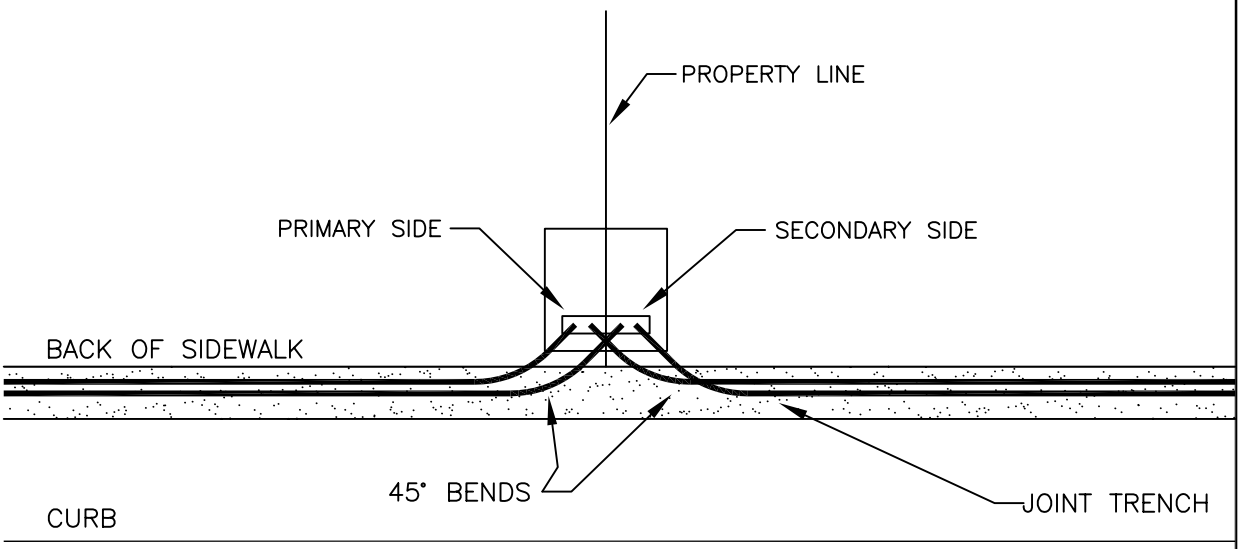
NOTE:

1. *FOR STREET CROSSINGS, ADD 6".
2. SAND SHALL BE NO. 4 (SALT FREE) MINIMUM.
3. NO CONDUIT RUN SHALL HAVE MORE THAN 270° OF SWEEPS.
4. 90% RELATIVE COMPACTION FOR TRENCHES NOT LOCATED IN THE STREET.
5. ALL MEASUREMENTS ARE MINIMUM.
6. G = GAS
7. C = CABLE TV
8. T = TELEPHONE
9. S = SECONDARY ELECTRIC SERVICE IN CONDUIT
10. THE CITY WILL NOT ALLOW SERVICE TRENCHES TO CROSS DRIVEWAYS.
11. TO BE USED IF THE CITY CONSTRUCTION JOB PROVIDES NO TRENCH DETAIL.
12. CITY TRENCH REQUIREMENTS ARE THAT IT'S CONDUITS ARE ALWAYS PLACED AT THE BOTTOM OF THE TRENCH, WITH MINIMUM DEPTHS AS SHOWN. OTHER AGENCIES REQUIREMENTS MAY APPLY AS WELL WITH RESPECT TO THE PLACEMENTS OF THEIR FACILITIES.

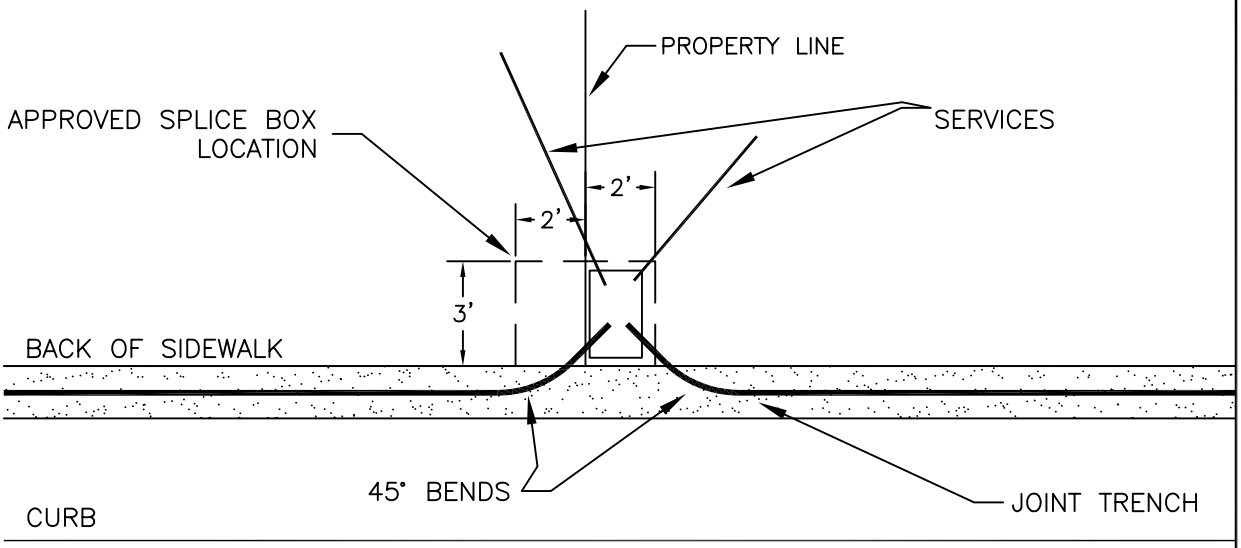
CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD CONSTRUCTION NOTES TYPICAL SERVICE TRENCH CONFIGURATIONS	REVISIONS 5/18/04	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 2/20/91	NO.: 192



CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD TYPICAL TRENCH SPECIFICATIONS SHEET 1 OF 3	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 7-07-97	NO.: 198

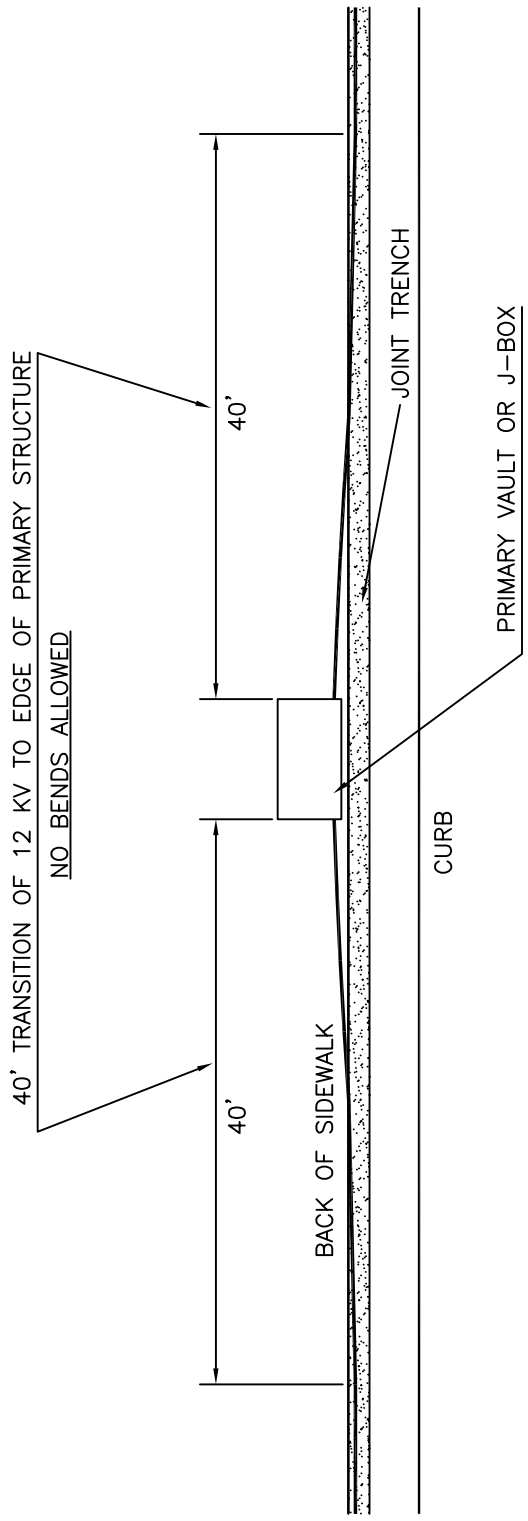


TRANSFORMER DETAIL



SPLICE BOX DETAIL

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD TYPICAL TRENCH SPECIFICATIONS SHEET 2 OF 3	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 7-07-97	NO.: 198

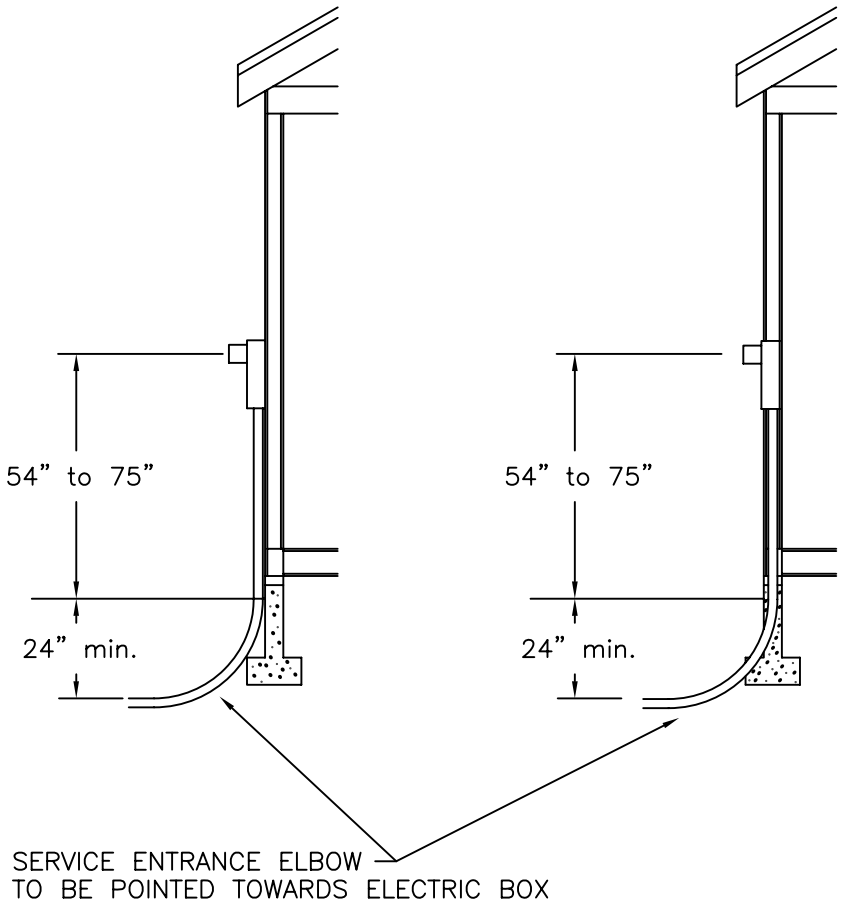


CONSTRUCTION STANDARD

TYPICAL TRENCH SPECIFICATIONS

SHEET 3 OF 3

REVISIONS	DRAWN: P.F.	DESIGN: P.F.
	APPROVED BY:	
	DATE: 7-07-97	NO.: 198



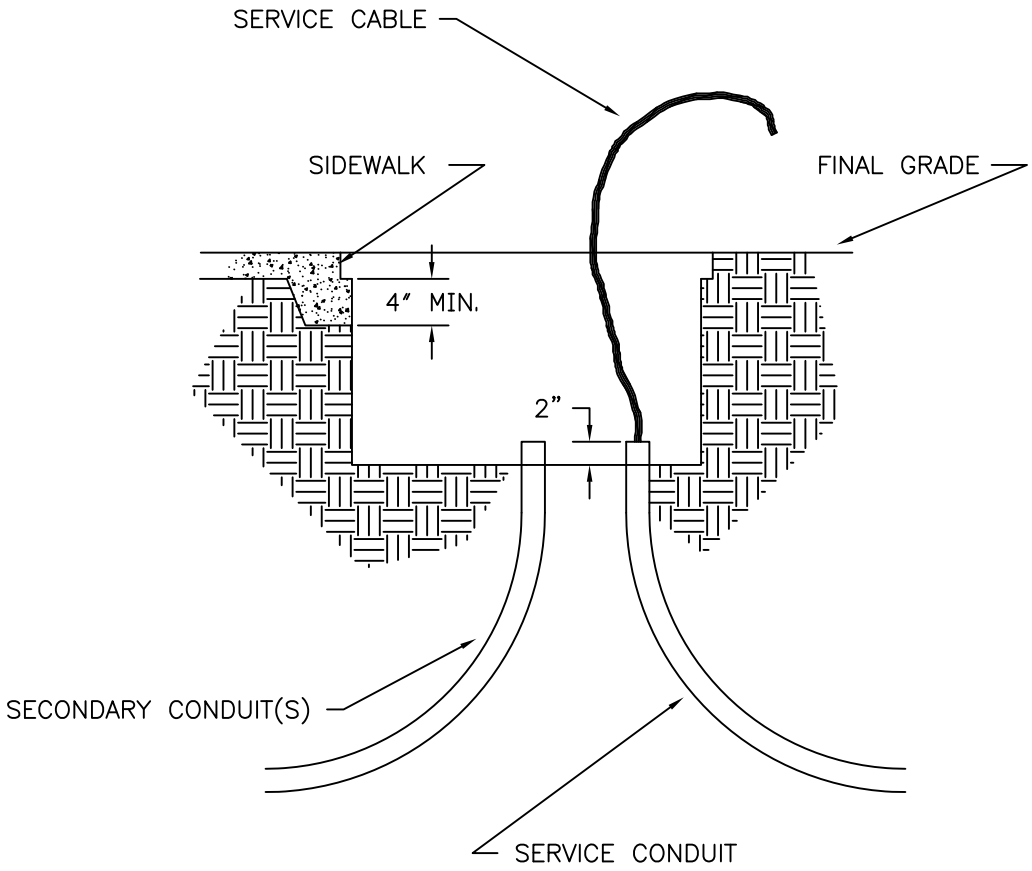
TYPICAL SURFACE MOUNT

TYPICAL FLUSH MOUNT

NOTE:

1. ALL CONDUIT MUST BE ADEQUATELY GLUED AND SET PRIOR TO INSTALLATION OF CABLES. ONLY SWEEPING TYPE OF BENDS ARE ACCEPTABLE. CONDUIT WHICH IS DEFORMED DUE TO HEATING OR OVERSTRESSING DURING INSTALLATION WILL NOT BE ACCEPTABLE.
2. METERS WILL BE FURNISHED AND INSTALLED BY THE CITY OF HEALDSBURG ELECTRIC DEPARTMENT ONCE A FINAL HAS BEEN ISSUED BY THE BUILDING INSPECTOR AND APPLICATION FOR SERVICE HAS BEEN MADE AT CITY HALL.
3. METER LOCATION MUST BE APPROVED BY THE CITY OF HEALDSBURG ELECTRIC DEPARTMENT.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD CONDUIT RUN INTO SERVICE ENTRANCE PANEL	REVISIONS 5/18/04	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 2/06/91	NO.: 196



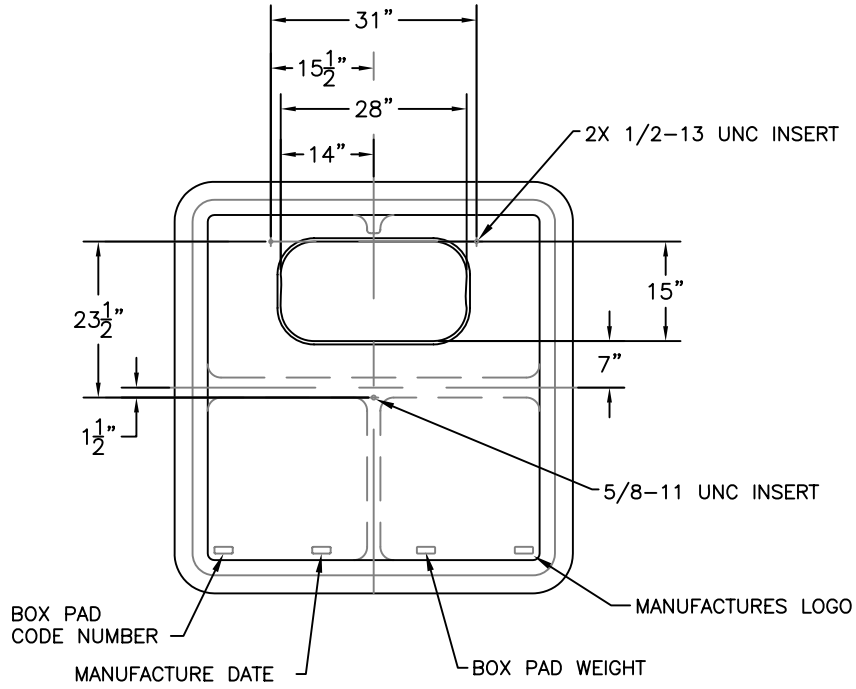
NOTES:

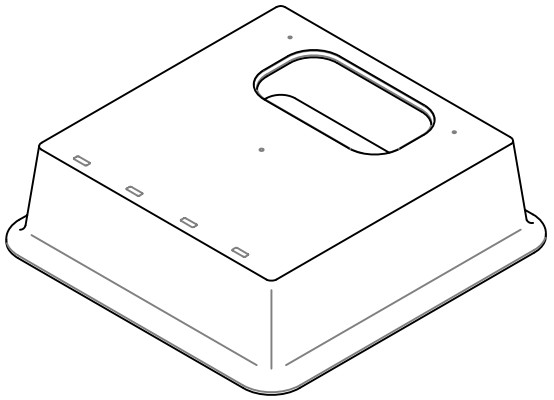
1. BOX TO BE PLACED FLUSH WITH FINAL GRADE.
2. WHEN BOX IS PLACED IN SIDEWALK, INSTALL CONCRETE A MINIMUM 4" BELOW BOTTOM OF LIP.
3. INSERT CONDUIT TWO INCHES INTO SPLICE BOX.
4. LEAVE APPROXIMATELY FOUR FEET OF SERVICE CABLE EXTENDED PAST CONDUIT.

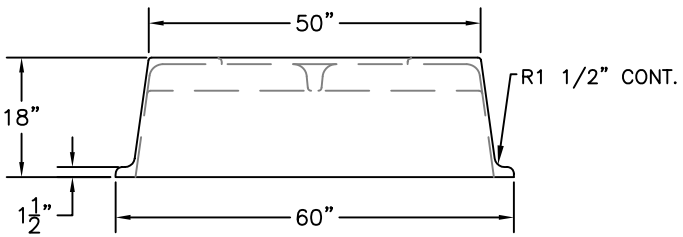
CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD INSTALLATION OF SPLICE BOX AND SERVICE CONDUCTOR	REVISIONS 4/14/05	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 2/05/91	NO.: 197

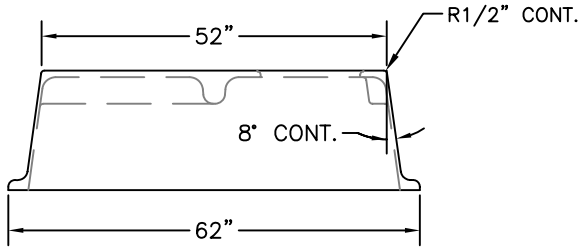
CONSTRUCTION STANDARD

SINGLE PHASE TRANSFORMER BOX PAD SPECIFICATIONS







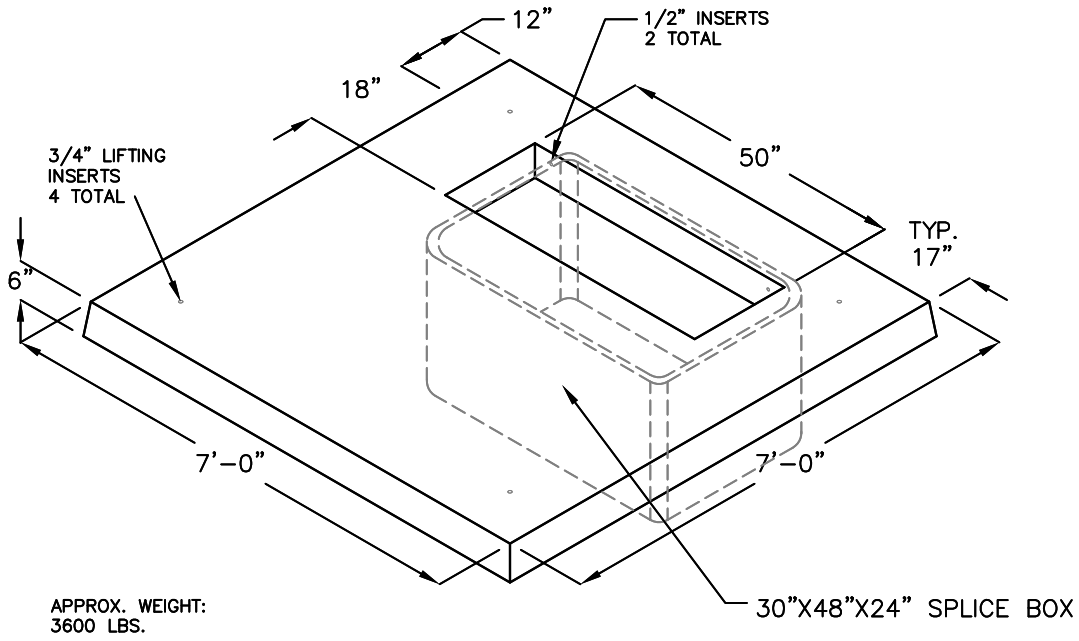


NOTE:
1. PLACE MINIMUM 6" COMPACTED BASE BELOW BOX PAD.
2. PLACE TOP OF BOX PAD A MINIMUM OF 4" ABOVE GRADE.

QUAZITE BOX PAD NO. PB52501528B18

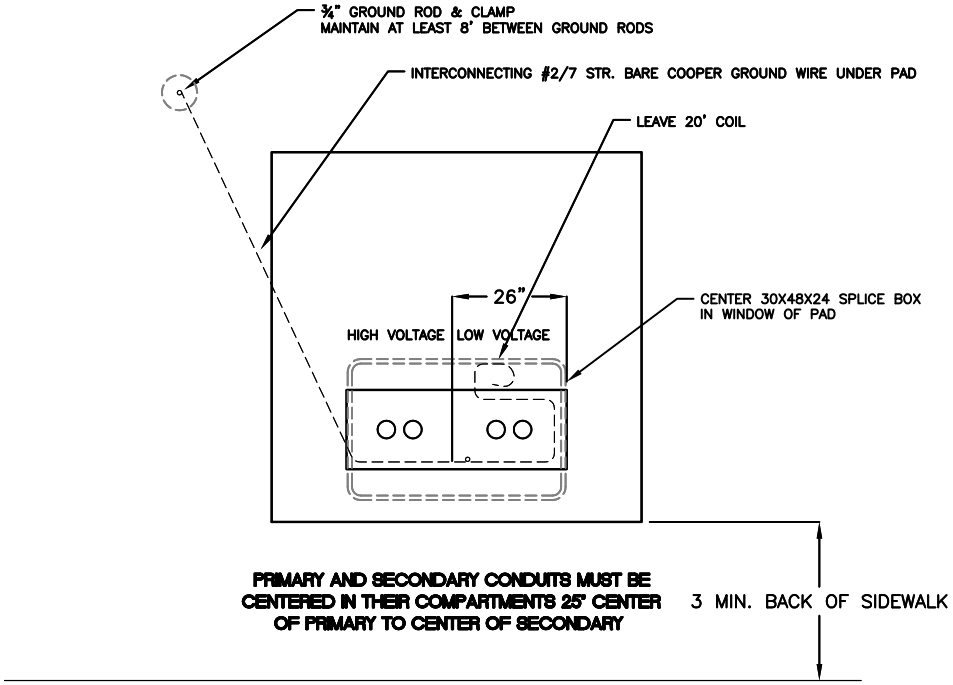
REVISIONS	DRAWN: P.F.	DESIGN: P.F.
6/01/04	APPROVED BY:	
DATE: 12/12/03	NO.: 201	

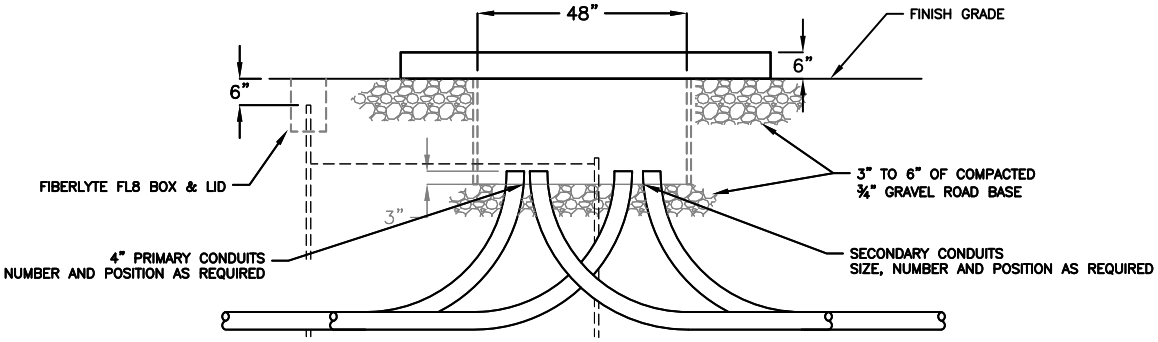
7'–0" W x 7'–0" L x 6" H
PRECAST TRANSFORMER PAD



APPROX. WEIGHT:
3600 LBS.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD PRECAST 3PH PAD FOR PADMOUNT TRANSFORMER INSTALL SHEET 1 OF 5	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 10/19/06	NO.: 205

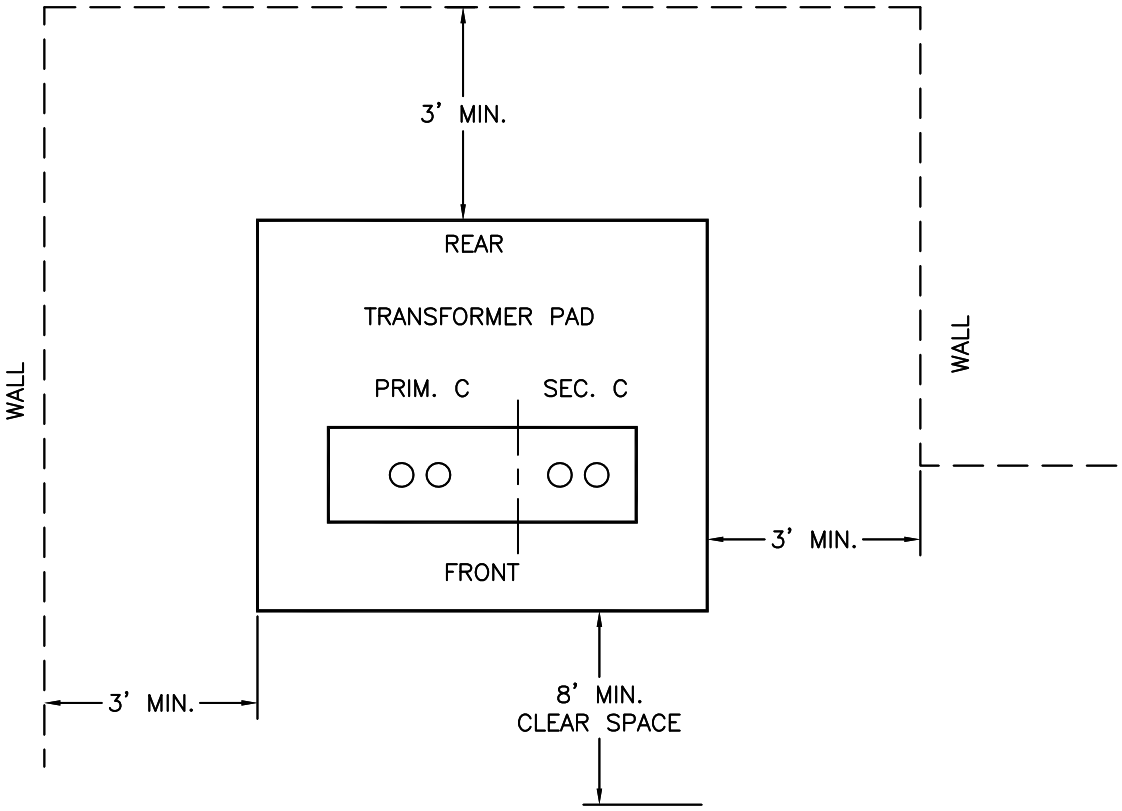




NOTE:

APPROPRIATE EXCAVATION DEPTH SHALL BE PROVIDED SUCH THAT THE STANDARD 36" RADIUS 90° BENDS MAY BE INSTALLED AS SHOWN. CONDUIT BENDS SHALL NOT BE CUT OR OTHERWISE MODIFIED.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD PRECAST 3PH PAD FOR PADMOUNT TRANSFORMER INSTALL SHEET 2 OF 5	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 10/19/06	NO.: 205

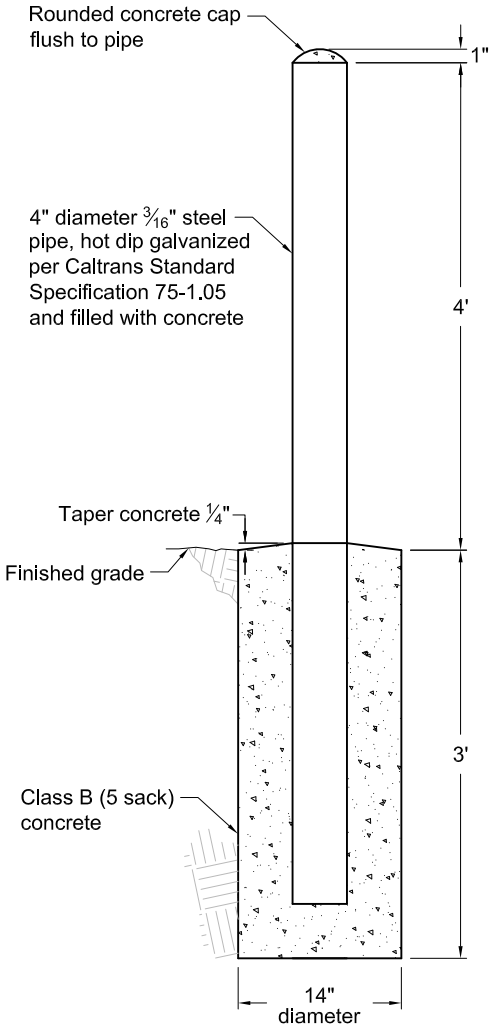


CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD PRECAST 3PH PAD FOR PADMOUNT TRANSFORMER INSTALL SHEET 3 OF 5	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 10/19/06	NO.: 205

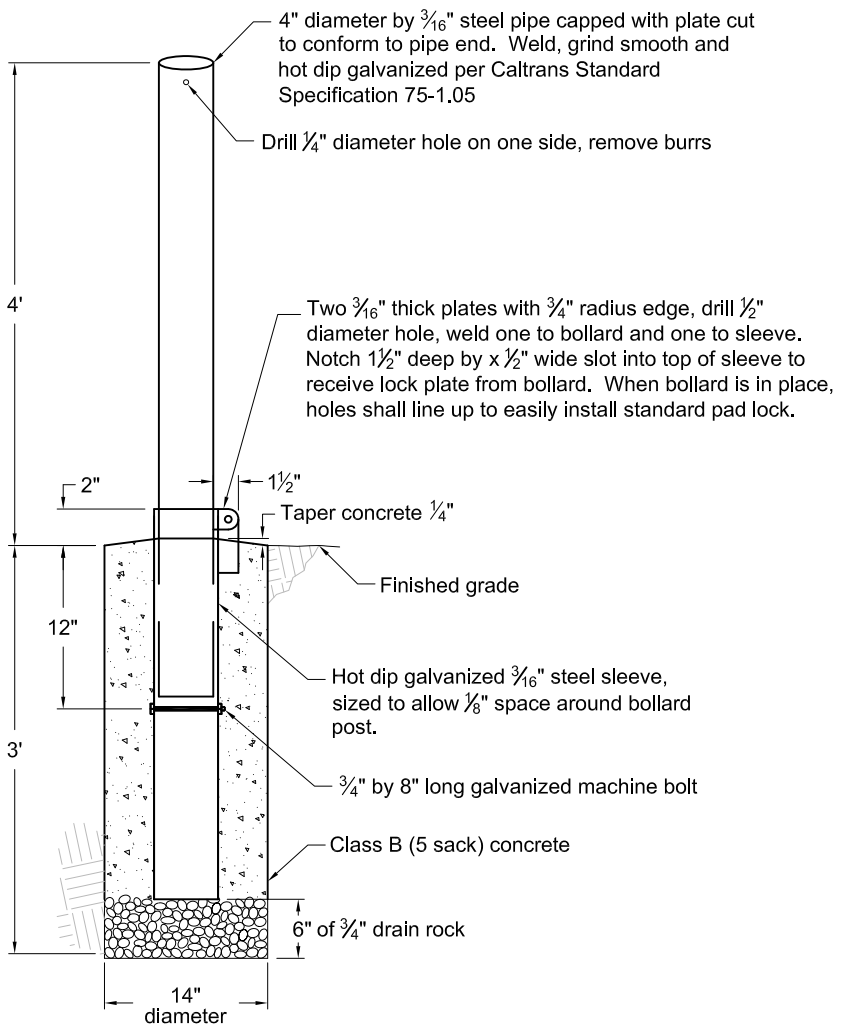
CONSTRUCTION STANDARD

PRECAST 3PH PAD FOR PADMOUNT TRANSFORMER INSTALL

SHEET 4 OF 5



NON-REMOVABLE BOLLARD



REMOVABLE / LOCKABLE BOLLARD

NOTES:

1. Post hole shall be hand excavated if underground utilities are present.

Public Works Standard ST17

REVISIONS	DRAWN: P.F.	DESIGN: P.F.
	APPROVED BY:	
DATE: 10/19/06		NO.: 205

1. General Notes:

   a. This drawing shows construction details for precast concrete pads for 12,000 volt three phase padmount transformers.

2. Construction Notes:

   a. All soil must be compacted under pad and splice box to a minimum 90% relative density.

   b. Temporarily plug or cap conduits.

3. Application notes:

   a. The pad should be located so that there is a minimum of three feet from a building. If the wall is fireproof the minimum clearance shall be reduced to two feet. At least eight feet of clear, level space shall be provided in front of the pad to allow complete opening of transformer cabinet doors and allow city personal sufficient working room for hot–stick work.

   b. The key map, figure no. 2, shows the preferred location of a transformer pad with reference to other construction.

   c. The padmount transformer shall be placed a minimum 3' behind the sidewalk. If there is no sidewalk, the padmount transformer shall be placed a minimum 3' behind the back of curb.

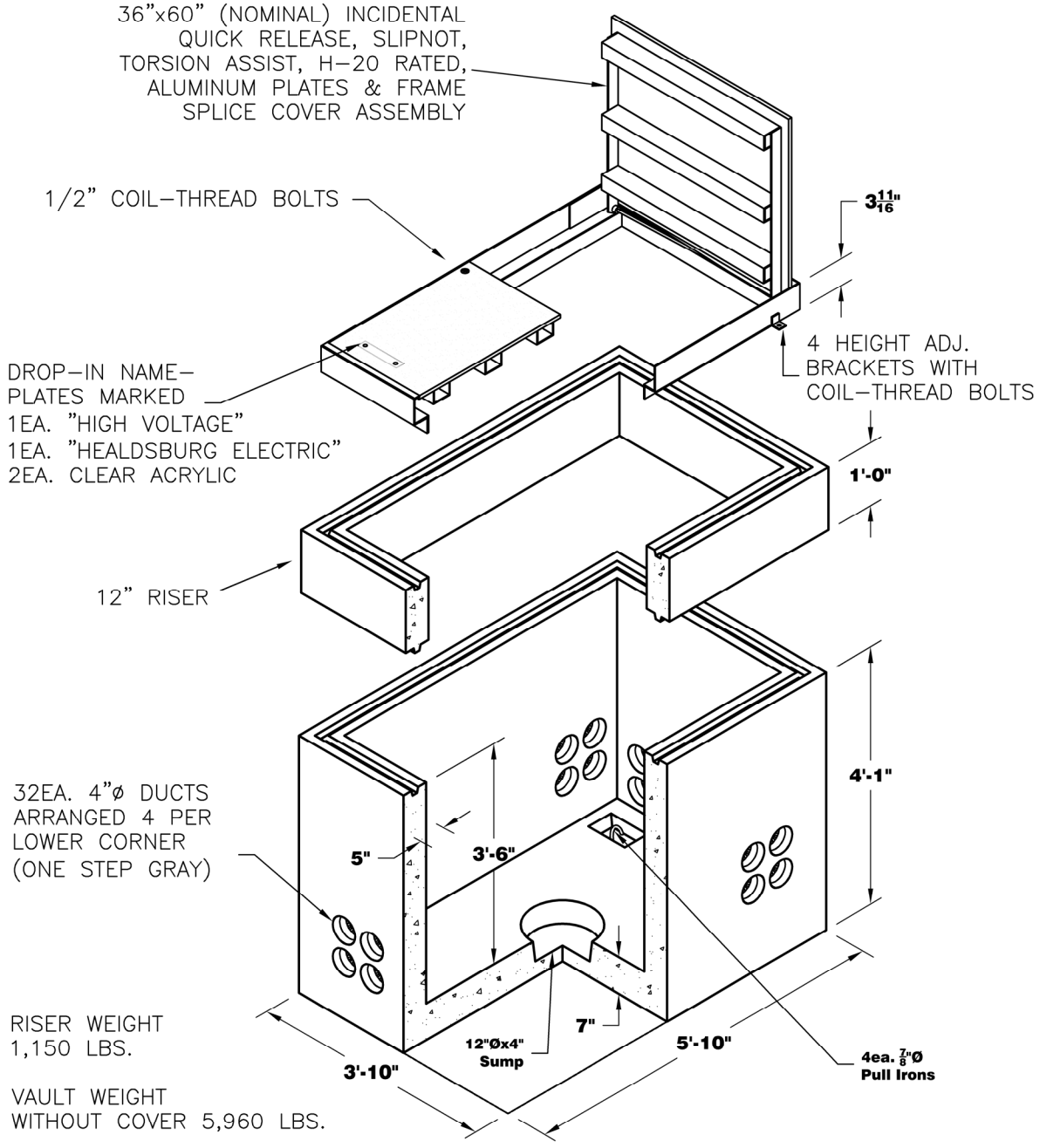
   d. If the padmount transformer cannot be located away from vehicular traffic, or if the padmount transformer cannot be placed a minimum of 3' behind the sidewalk, the customer shall provide suitable barriers for the protection of the transformer. The City of Healdsburg Electric Department shall determine the type, size, number and location of any such barriers required. See figure no. 1.

4. Special transformer notes:

   a. Plants must be kept a minimum of 2' from sides and rear of transformer pad and 8' clearance from the front. 8' clearance from front of transformer must be clear and level.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD PRECAST 3PH PAD FOR PADMOUNT TRANSFORMER INSTALL SHEET 5 OF 5	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 10/19/06	NO.: 205

3'–0" X 5'–0" X 3'–6" I.D.
INCIDENTAL SPLICE ENCLOSURE



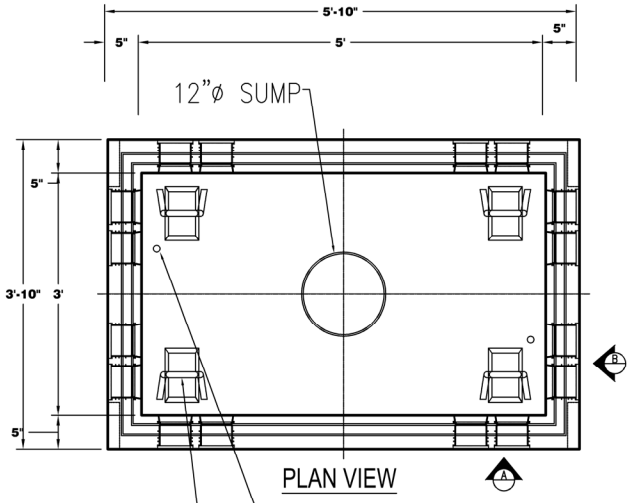
RISER WEIGHT
1,150 LBS.

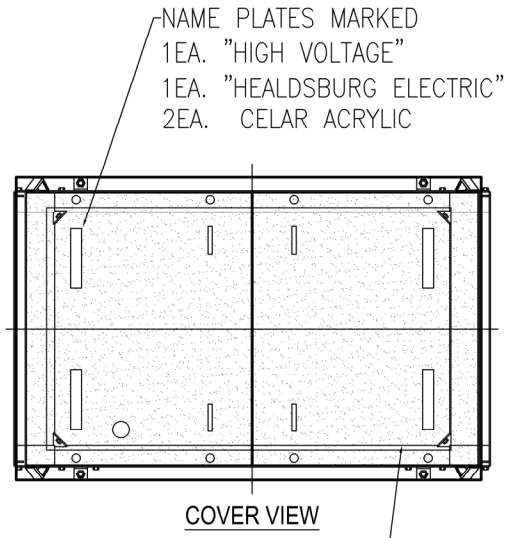
VAULT WEIGHT
WITHOUT COVER 5,960 LBS.

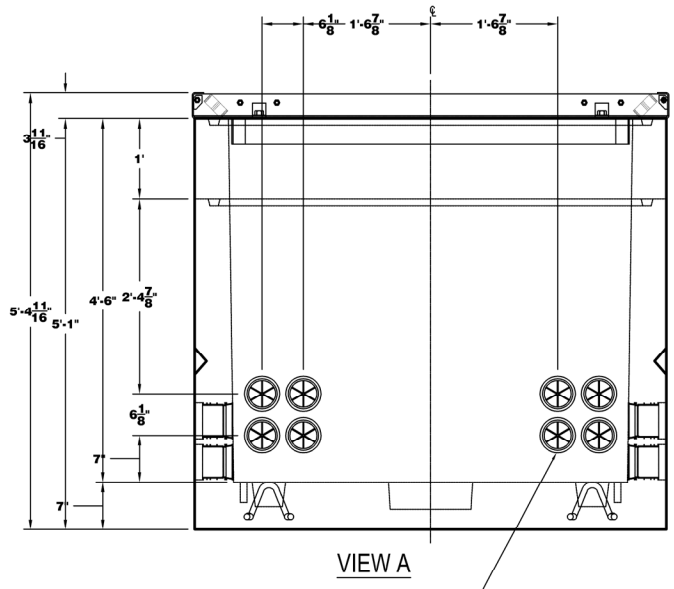
ONE 12" EXTENSION INCLUDED.
ADDITIONAL EXTENSIONS AVAILABLE IN 6", 12", 24"

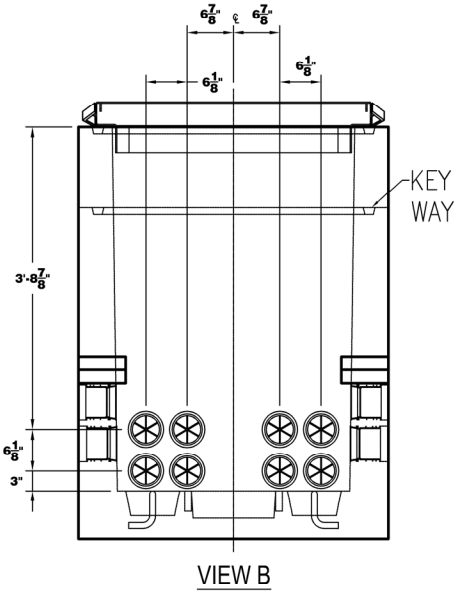
CITY PART NO. 285–180–00026

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD V–9 3'–0" x 5'–0" x 3'–6" (I.D.) VAULT WITH 12" RISER SHEET 1 OF 4 NOT TO SCALE	REVISIONS 10/07/2011 01/08/2013	DRAWN: TC	DESIGN: TC
			APPROVED BY:	
			DATE: 9/28/2011	NO.:



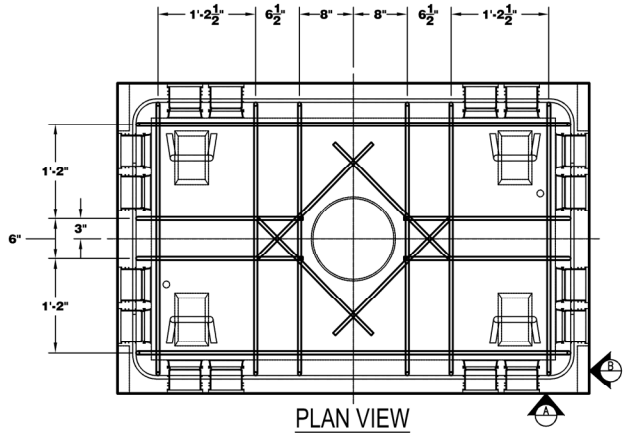




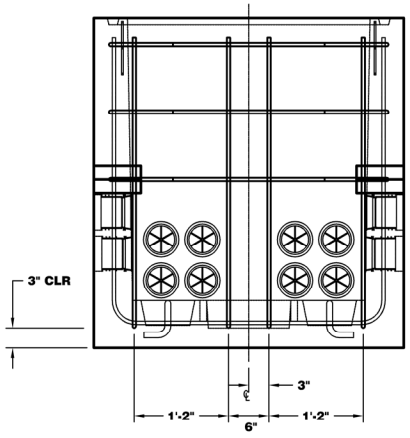


CITY PART NO. 285-180-00026

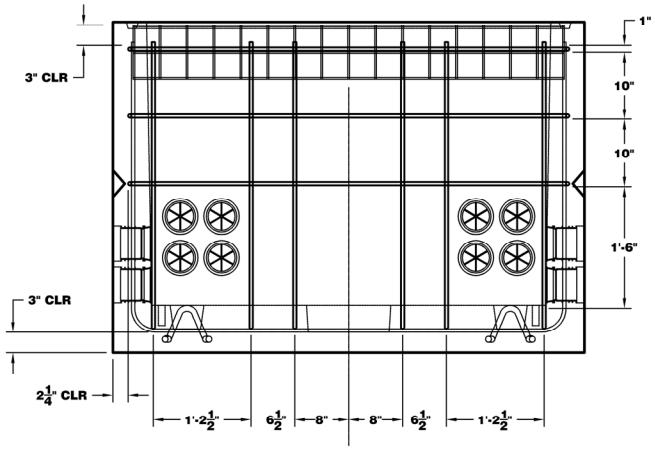
CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD V-9 3'-0" x 5'-0" x 3'-6" (I.D.) VAULT WITH 12" RISER SHEET 2 OF 4 NOT TO SCALE	REVISIONS 10/07/2011 01/08/2013	DRAWN: TC	DESIGN: TC
			APPROVED BY:	
			DATE: 9/28/2011	NO.:



PLAN VIEW



VIEW B

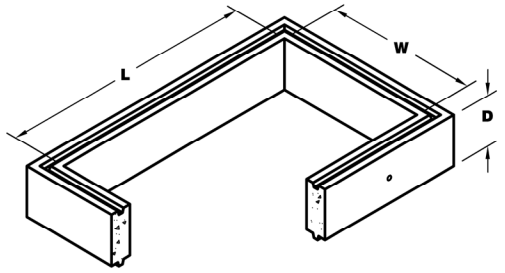


VIEW A

CITY PART NO. 285–180–00026

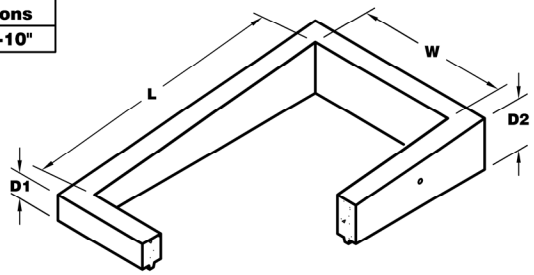
CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD V–9 3'–0" x 5'–0" x 3'–6" (I.D.) VAULT WITH 12" RISER SHEET 3 OF 4 NOT TO SCALE	REVISIONS 10/07/2011 01/08/2013	DRAWN: TC	DESIGN: TC
			APPROVED BY:	
			DATE: 9/28/2011	NO.:

Catalog Number	Code Number	W	L	D	Lbs	Outside Dimensions
35-R06-EXT	04-3197	3'-0"	5'-0"	6"	564	3'-10"x5'-10"
35-R12-EXT	04-3362	3'-0"	5'-0"	12"	1,128	3'-10"x5'-10"
35-R24-EXT	04-3531	3'-0"	5'-0"	24"	2,257	3'-10"x5'-10"



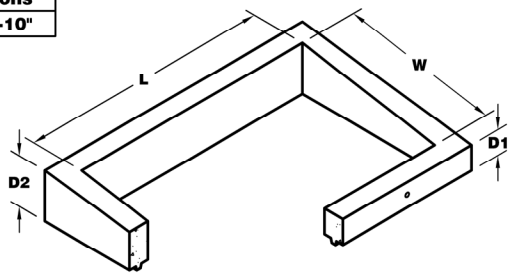
Catalog Number	Code Number	W	L	D1	D2	Outside Dimensions
35-SLW-EXT	---	3'-0"	5'-0"	*	*	3'-10"x5'-10"

*** = Specify Height Of D1 & D2**



Catalog Number	Code Number	W	L	D1	D2	Outside Dimensions
35-SSW-EXT	---	3'-0"	5'-0"	*	*	3'-10"x5'-10"

*** = Specify Height Of D1 & D2**



CITY PART NO. 285–180–00026
INCLUDES ONE 12" FLAT RISER.
DEPENDING ON LOCATION, CITY MAY REQUIRE ADDITIONAL RISERS.

CONSTRUCTION STANDARD V–9

3'–0" x 5'–0" x 3'–6" (I.D.) VAULT WITH 12" RISER

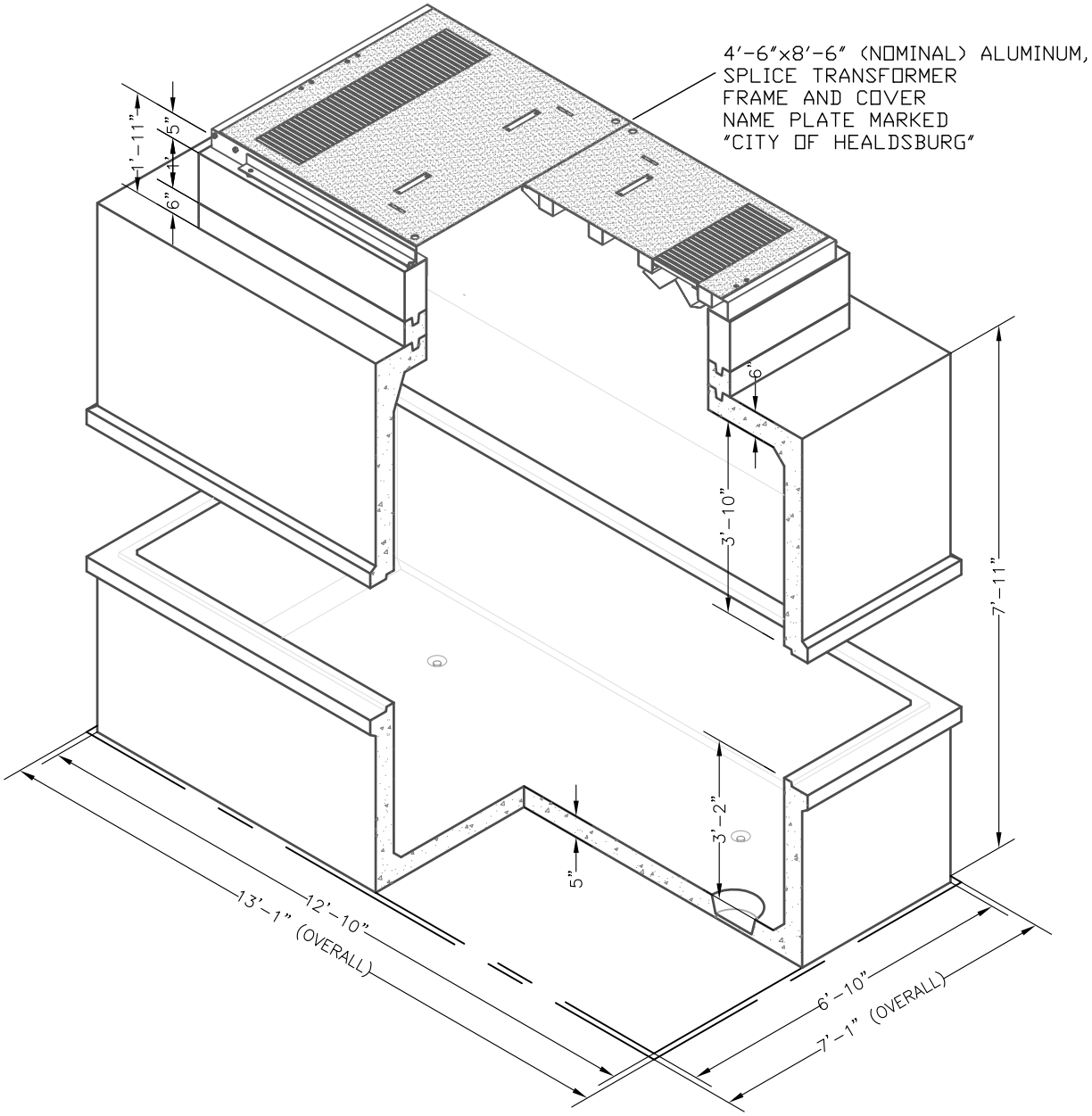
SHEET 4 OF 4 NOT TO SCALE

REVISIONS
10/07/2011
01/08/2013

DRAWN: TC | DESIGN: TC

APPROVED BY:

DATE: 9/28/2011 | NO.:



GENERAL NOTES:

1. CONCRETE: f'c = 5,500 psi ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS.
2. REINFORCEMENT: A. REBAR: ASTM A706, GRADE 60
   B. STRENGTH Fy = 60,000 psi.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
4. STRUCTURE DESIGNED FOR TRAFFIC H-20 LOADING PER ASTM C-857. (16,000 LB. WHEEL LOAD)

City Part No. – 285 180 00045

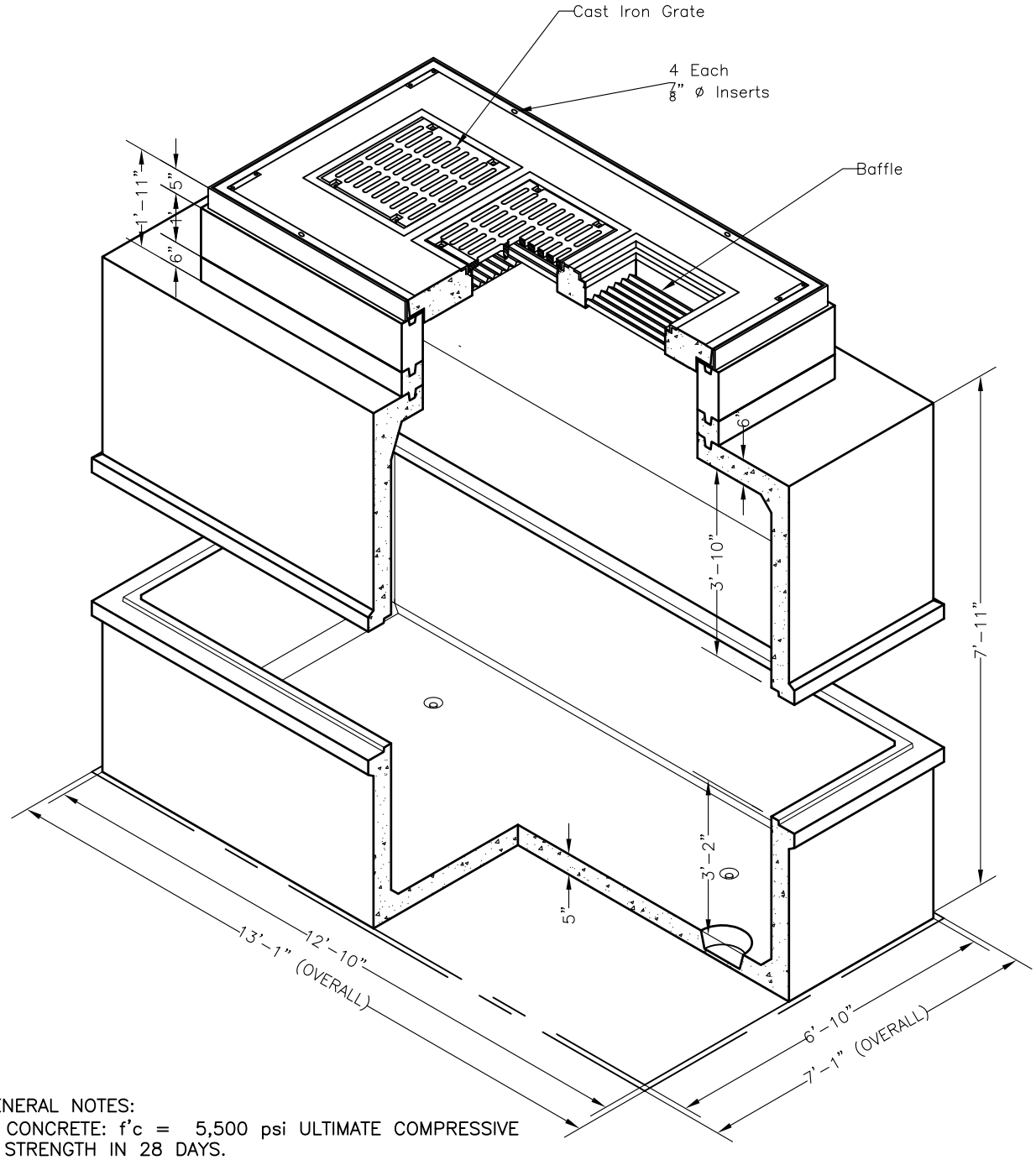
CONSTRUCTION STANDARD

6' X 12' TRANSFORMER VAULT WITH 4'-6" X 8'-6" ENTRY

SHEET 2 OF 4

REVISIONS
1/14/93
5/18/94
5/27/99
8/28/08

DRAWN: P.F.	DESIGN: P.F.
APPROVED BY:	
DATE: SEPT. '88	NO.: 100



GENERAL NOTES:

1. CONCRETE: f'c = 5,500 psi ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS.
2. REINFORCEMENT: A. REBAR: ASTM A706, GRADE 60
   B. STRENGTH Fy = 60,000 psi.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
4. STRUCTURE DESIGNED FOR TRAFFIC H-20 LOADING PER ASTM C-857. (16,000 LB. WHEEL LOAD)

City Part No. – 285 180 00046

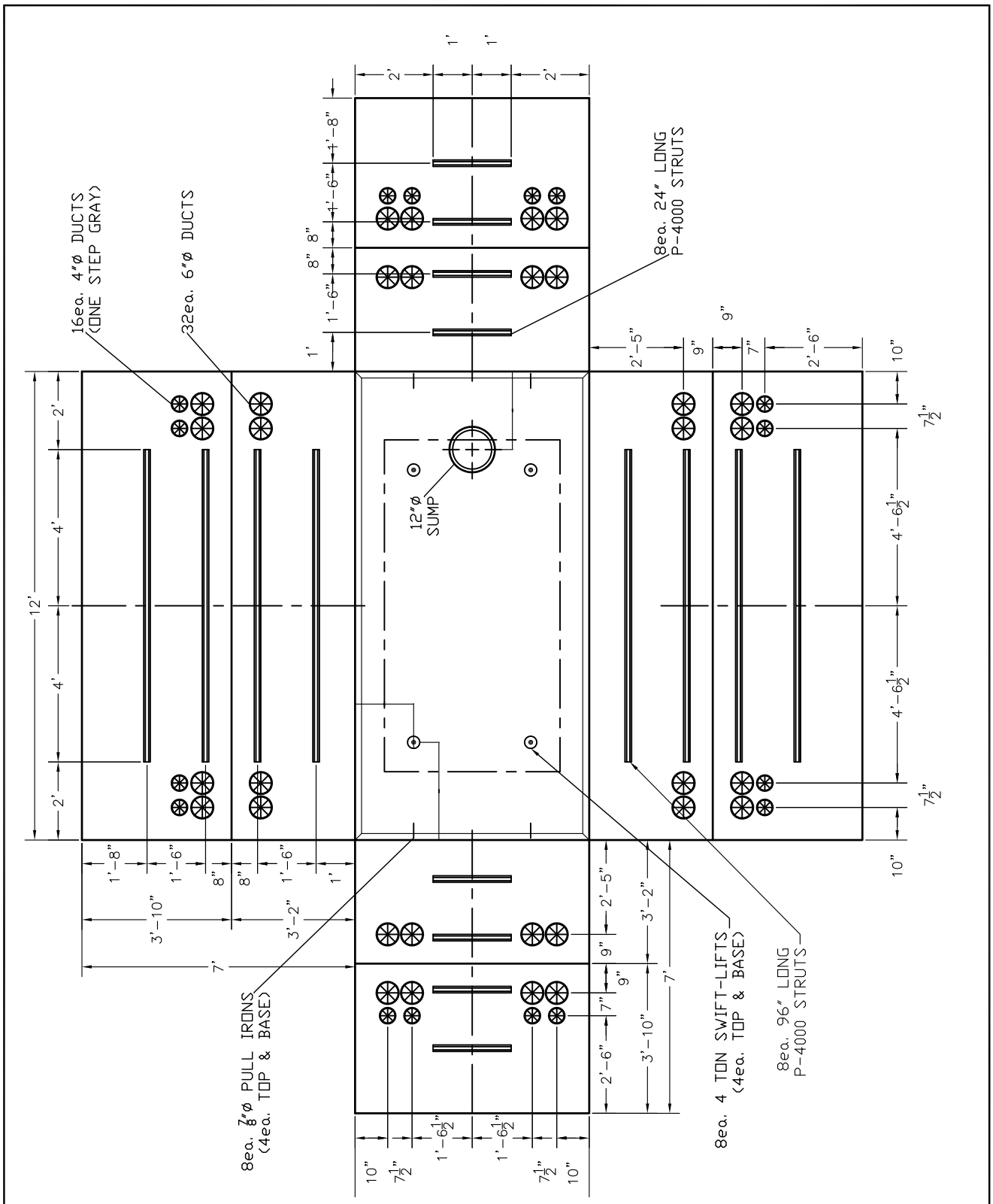
CITY OF HEALDSBURG
CALIFORNIA SINCE 1867

CONSTRUCTION STANDARD

6 'X 12' VAULT WITH 4'-6" X 8'-6" FULL TRAFFIC ENTRY

SHEET 3 OF 4

REVISIONS	DRAWN: P.F.	DESIGN: P.F.
8/28/08	APPROVED BY:	
	DATE: SEPT. '88	NO.: 100



CONSTRUCTION STANDARD

6' x 12' VAULT

SHEET 4 OF 4

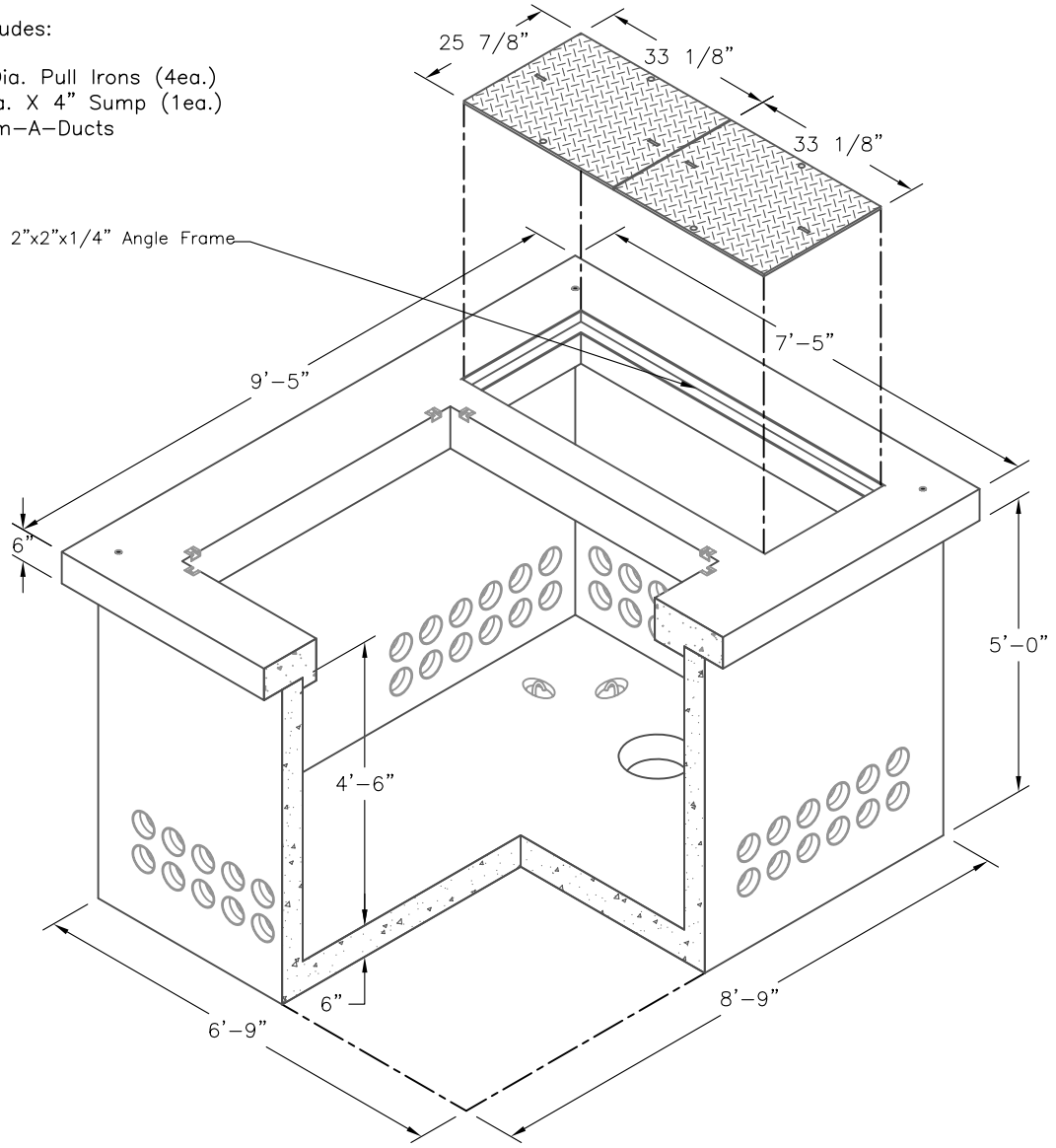
REVISIONS	DRAWN: P.F.	DESIGN: P.F.
06/03/99		
08/28/08	APPROVED BY:	
	DATE: FEB '88	NO.: 100

Top Includes:

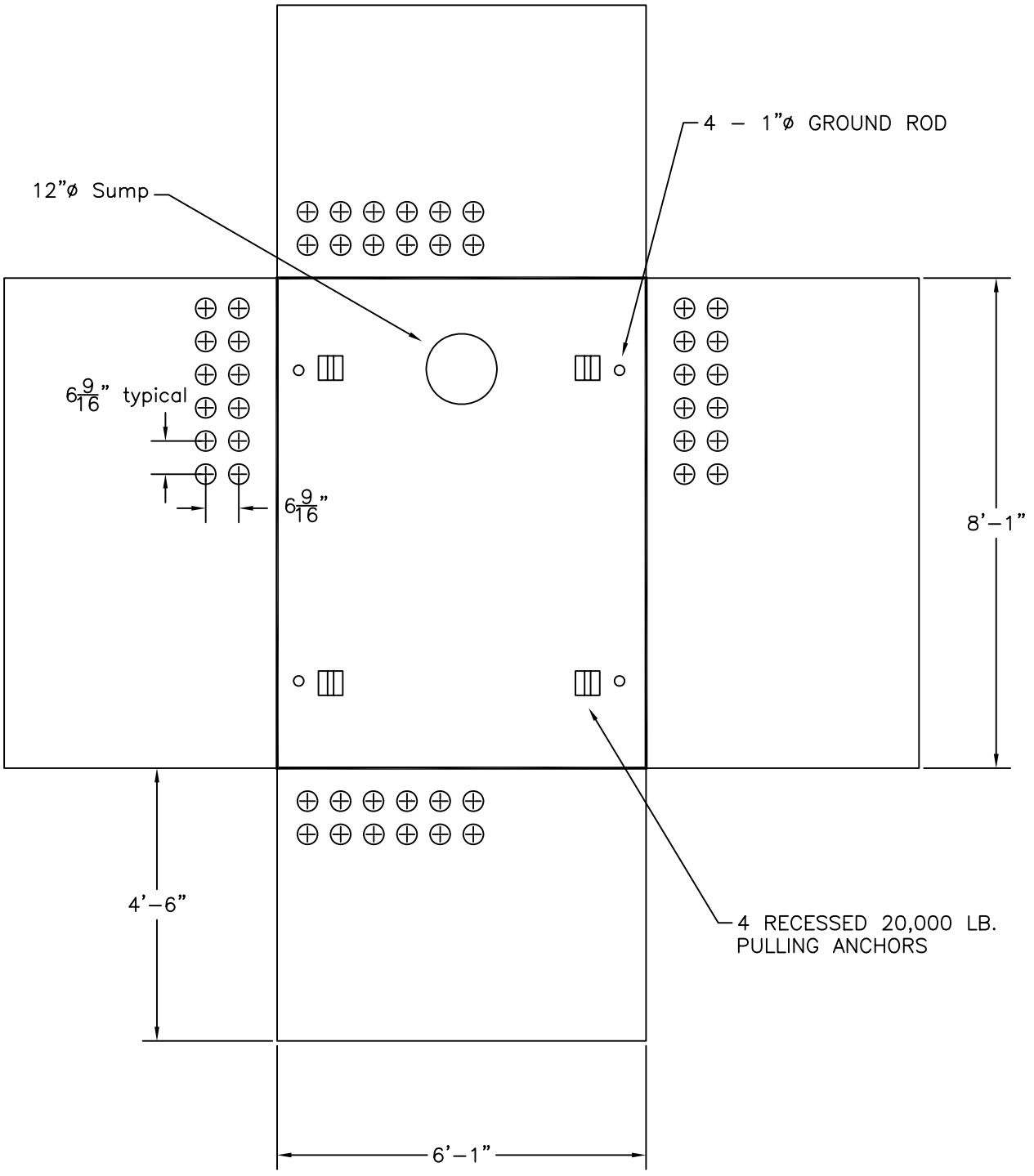
* All Grip Diamond Plate Covers (2ea.)
* Penthead Boltdown
* Angle Frames (2ea.)
* Pad Vault Fillers

Base Includes:

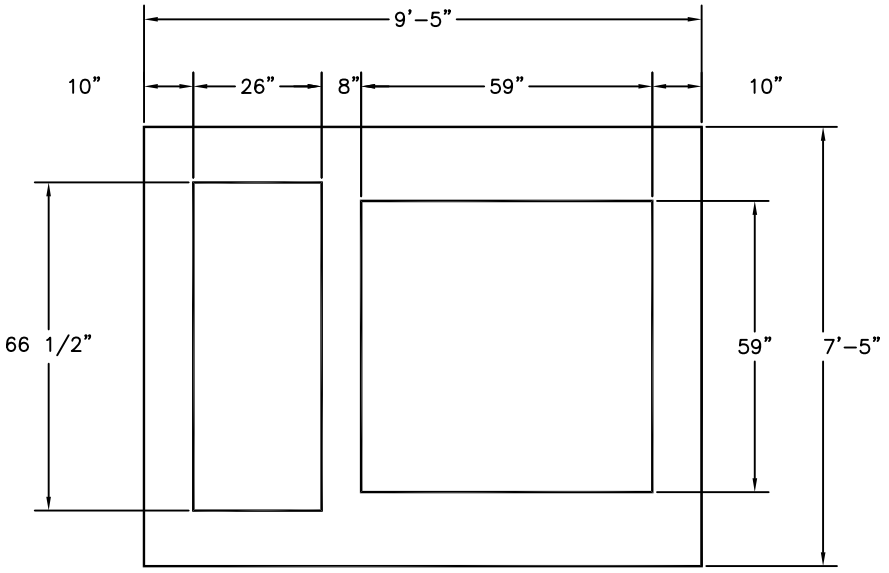
* 7/8" Dia. Pull Irons (4ea.)
* 12" Dia. X 4" Sump (1ea.)
* 4" Term–A–Ducts



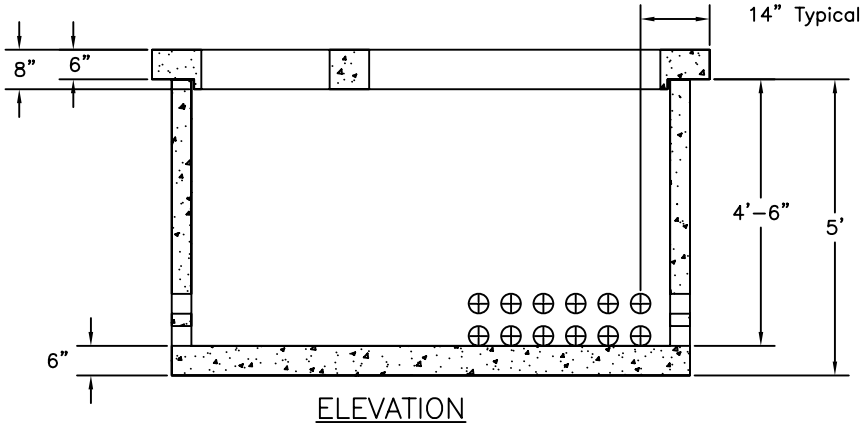
CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD 6'X8' VAULT PAD SHEET 1 OF 3	REVISIONS 6/15/99 5/12/05 6/20/05 5/24/07	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: FEB. '88	NO.: 101



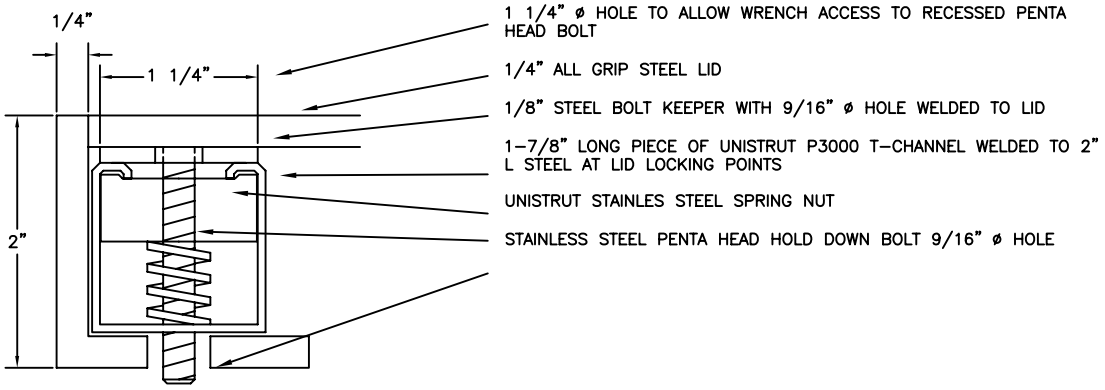
CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD 6' x 8' VAULT PAD SHEET 2 OF 3	REVISIONS 6/15/99 5/12/05 5/24/07	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: FEB. '88	NO.: 101



PLAN VIEW



ELEVATION



CITY OF HEALDSBURG
CALIFORNIA SINCE 1867

CONSTRUCTION STANDARD

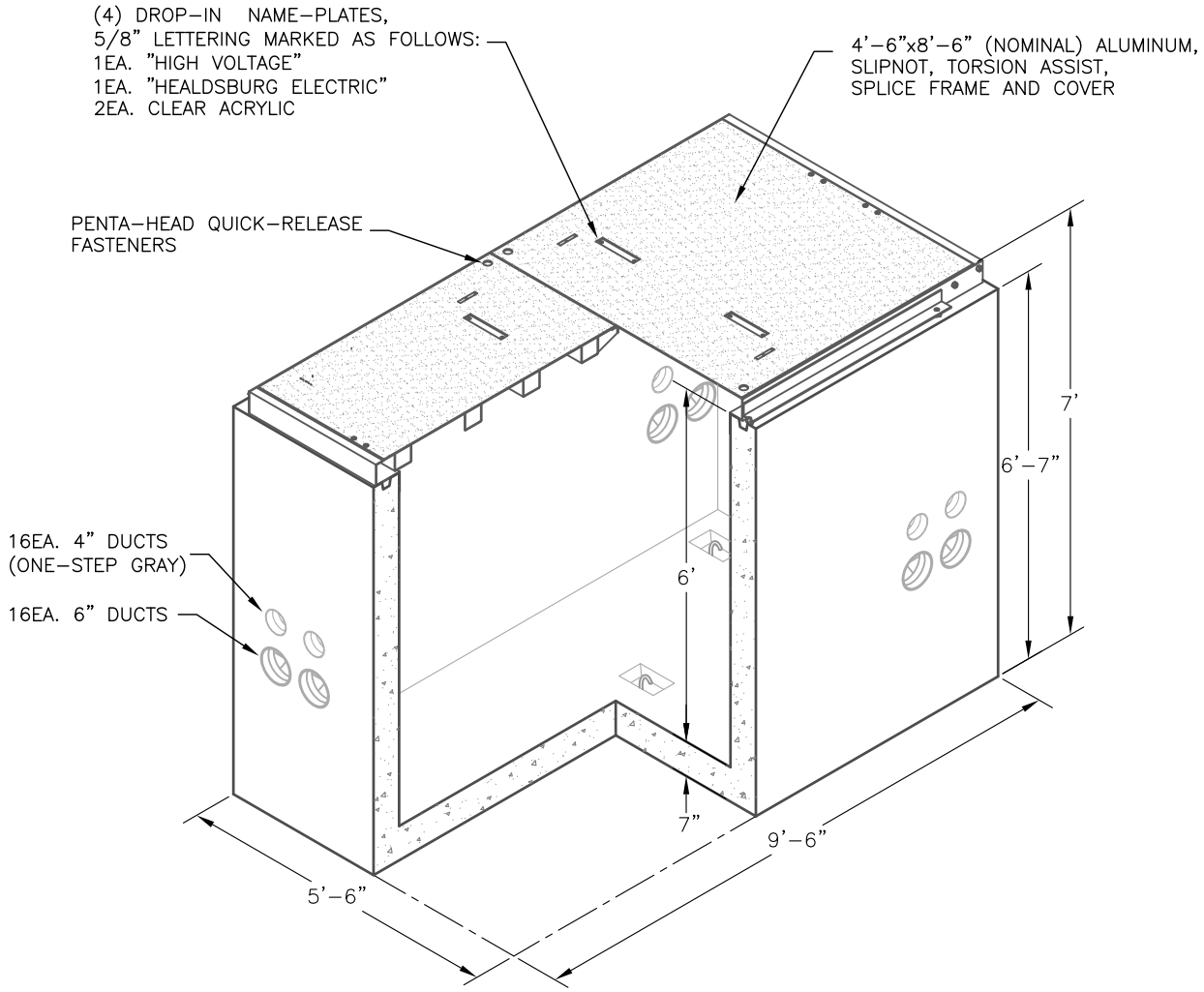
6' x 8' VAULT PAD

SHEET 3 OF 3

REVISIONS
6/18/99
6/20/05
5/24/07

DRAWN: P.F.	DESIGN: P.F.
APPROVED BY:	
DATE: FEB. '88	NO.: 101

4'–6" X 8'–6" X 6' I.D.
600A SPLICE ENCLOSURE

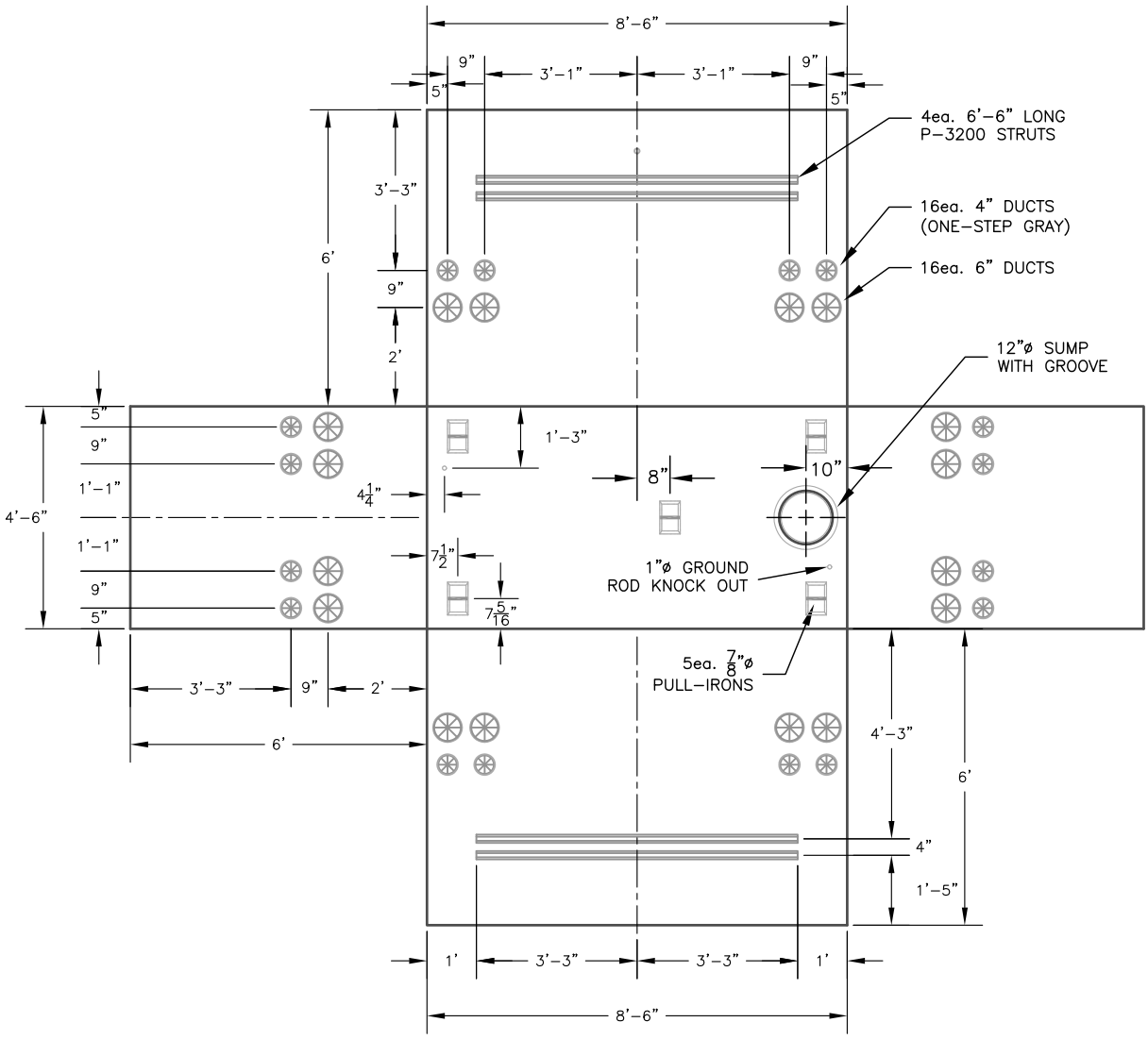


GENERAL NOTES:
1. CONCRETE SHALL BE 6,000 PSI AT 28 DAY COMPRESSIVE STRENGTH.
2. STEEL REINFORCEMENT: REBAR, ASTM A–615 GRADE 60, OR MESH, A–185 GRADE 65.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
4. STRUCTURE DESIGNED FOR TRAFFIC H–20 LOADING PER ASTM C–857. (16,000 lb. WHEEL LOAD).

WEIGHT W/O COVER: 17,520 LBS.

CITY PART NO. 285–180–00025

CITY OF HEALDSBURG CALIFORNIA SINCE 1867 ELECTRIC DEPARTMENT	CONSTRUCTION STANDARD 4'6" X 8'6" VAULT SHEET 1 OF 2	REVISIONS 09/10/90 01/23/92 06/21/99 06/05/07 11/15/13	DRAWN: TC	DESIGN: TC
			APPROVED BY:	
			DATE: MAR.'89	NO.: 105

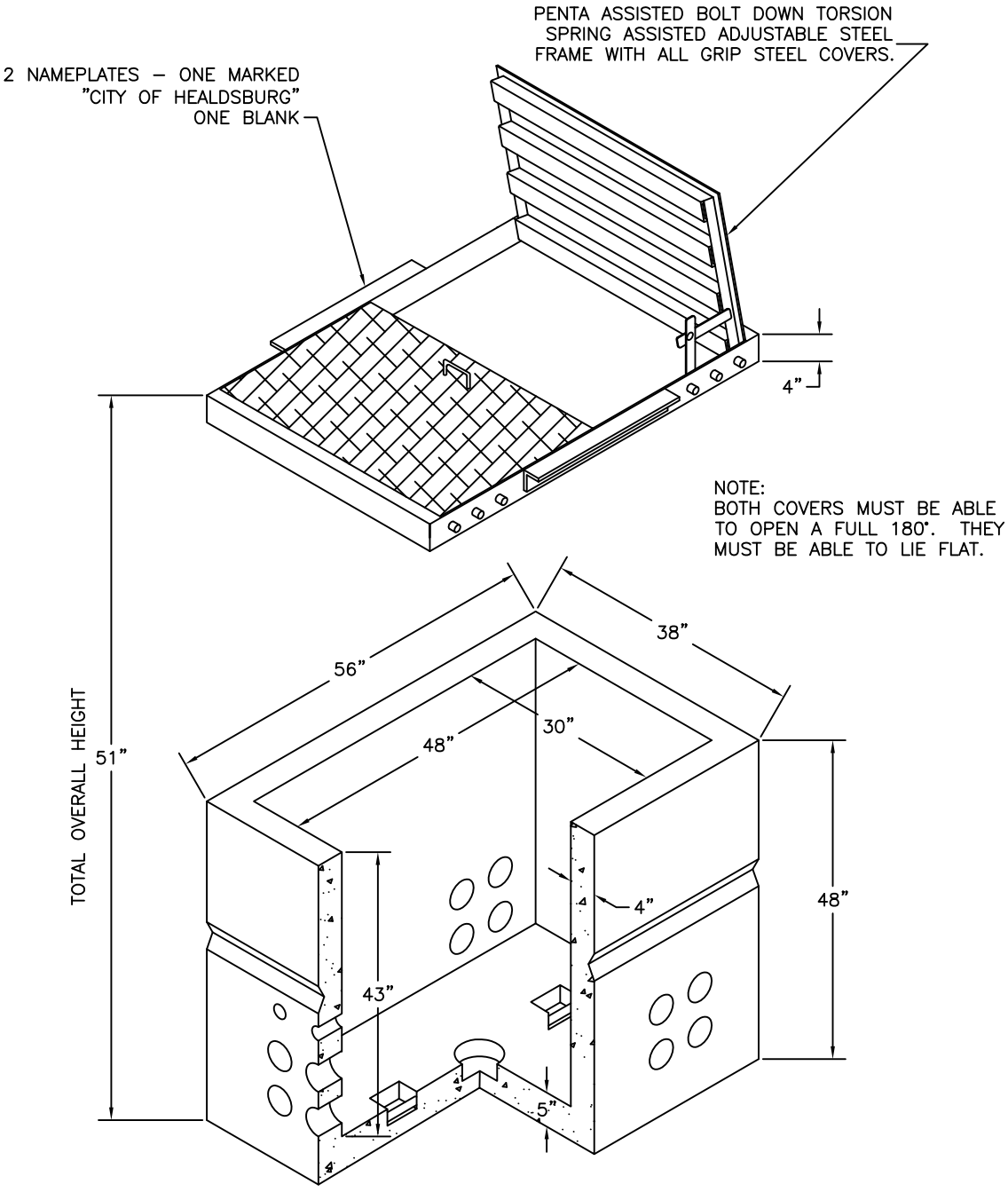


GENERAL NOTES:
1. CONCRETE SHALL BE 6,000 PSI AT 28 DAY COMPRESSIVE STRENGTH.
2. STEEL REINFORCEMENT: REBAR, ASTM A-615 GRADE 60, OR MESH, A-185 GRADE 65.
3. ALL CONCRETE JOINTS TO BE SEALED USING APPROVED JOINT SEALANT UNLESS OTHERWISE NOTED.
4. STRUCTURE DESIGNED FOR TRAFFIC H-20 LOADING PER ASTM C-857. (16,000 lb. WHEEL LOAD).

WEIGHT W/O COVER: 17,520 LBS.

CITY PART NO. 285-180-00025

CITY OF HEALDSBURG CALIFORNIA SINCE 1867 ELECTRIC DEPARTMENT	CONSTRUCTION STANDARD 4'6" X 8'6" VAULT SHEET 2 OF 2	REVISIONS 09/10/90 01/23/92 06/21/99 06/05/07 11/15/13	DRAWN: TC	DESIGN: TC
			APPROVED BY:	
			DATE: MAR.'89	NO.: 105



CONSTRUCTION STANDARD

2'6" X 4' SECONDARY SPLICE BOX

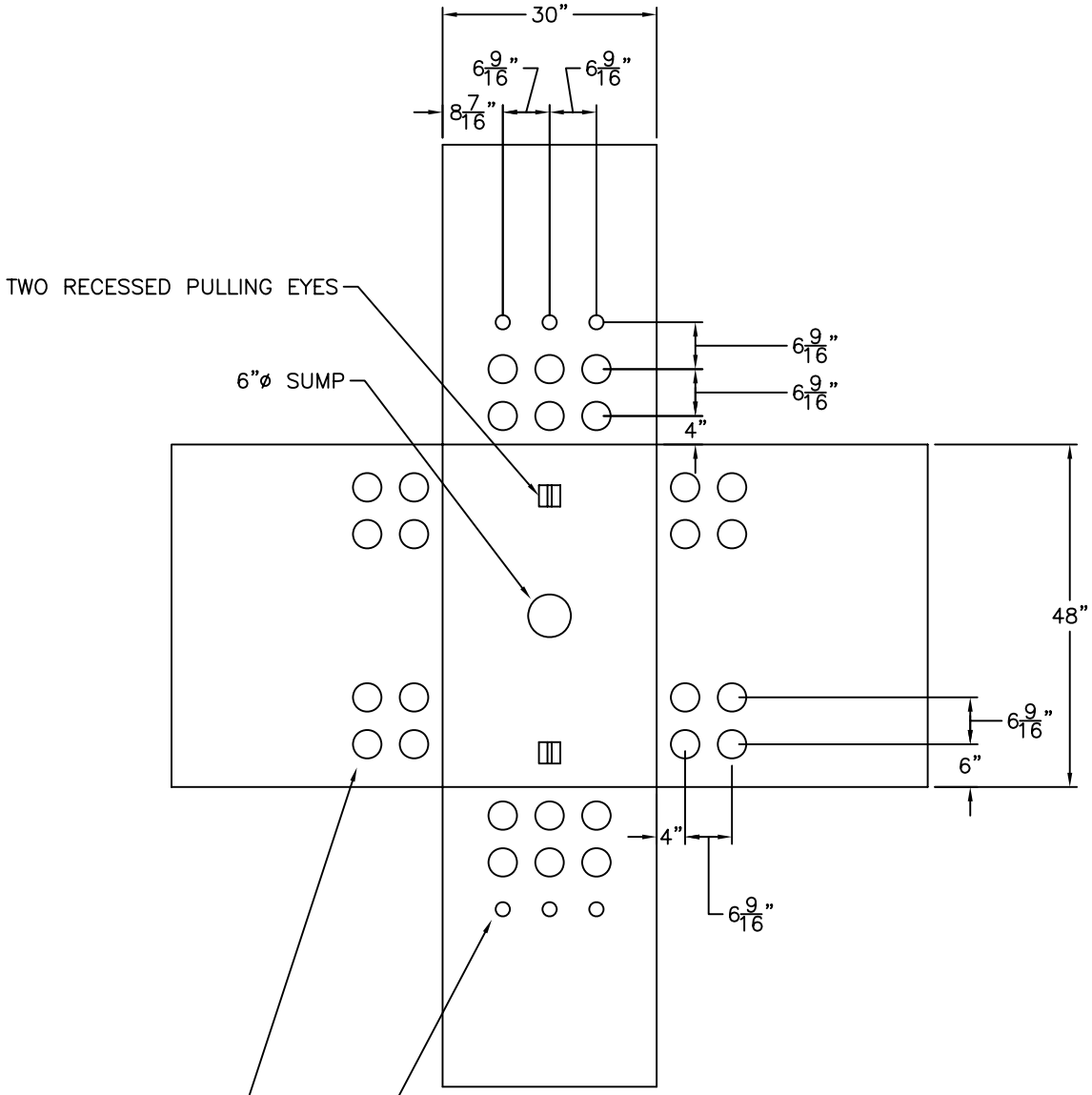
SHEET 1 OF 2

REVISIONS
3/16/93
6/22/99
9/26/00
3/17/08

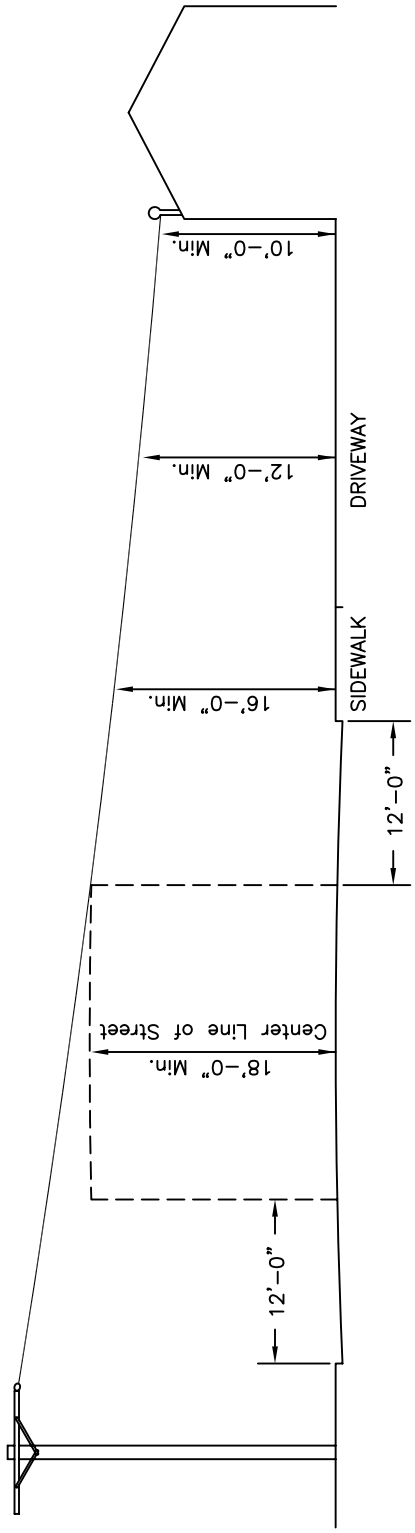
DRAWN: P.F. | DESIGN: P.F.

APPROVED BY:

DATE: SEP.'88 | NO.: 150



CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD 2 6" X 4' SECONDARY SPLICE BOX SHEET 2 OF 2	REVISIONS 09/01/99	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: SEPT '88	NO.: 150



CONSTRUCTION STANDARD

GROUND CLEARANCE FOR TYPICAL OVERHEAD SERVICE

REVISIONS	DRAWN: P.F.	DESIGN: P.F.
	APPROVED BY:	
	DATE: 7-23-96	NO.: 520

MATERIALS TO BE FURNISHED AND INSTALLED BY THE CUSTOMER

ITEMS	DESCRIPTION
1	Pole, 6" x 6" Timber, Class 6 Round, or Equivalent metal – length as required (See Note 2, Page 1)
2	Pole, Wood, or equivalent metal. (See Note 3A, B, and C). (See Table A for approved list of wood pole suppliers).
3	Meter Socket, Main Service Switch.
4	Conduit, Service. (See Note 6A, Page 4).
5	Conduit, Load Side. (See Note 6A, Page 4).
6	Conduit Fitting, Threaded, with Cover and Gasket.
7 ▲	Covering, Wood or Fiber Conduit with Plumber's Tape. (See Page 10).
8 ▲	Wood Block (4"x4"x6" or 2"x4"x6" nailed together).
9	Weatherhead.
10	Service Knob.
11	Wire, Insulated, Size as Required. (18" Minimum Extension from Weatherhead).
12	Eyebolt, 5/8", Length as Required, Galvanized.
13	Washer, 2 1/4" Square, for 5/8" Bolt, Galvanized.
14	Padlock, for Main Service Switch.
15	Guy Cable, 1/4" Minimum Galvanized Steel or equivalent, with Guy Strain Insulator (10,000 lb. Minimum), Anchor and Fittings, as shown Page 10.
16	Push Brace, 2"x4" Minimum Timber. (Securely bolted to pole).
17	Grounded by customer. (See Pages 8 and 9).

MATERIAL TO BE INSTALLED BY THE CITY OF HEALDSBURG

24	Meter, Watthour
25	Wire, Service.
26	Insulator, for Service Wire.
27	Connectors, Service Sleeve.
28	Preformed Grip, Deadend.

TABLE A. APPROVED SUPPLIERS AND TREATING PLANTS FOR PERMANENT TYPE WOOD SERVICE POLES. ITEM 2 ●

J.H. Baxter Company
Dant and Russel, Incorporated
Koppers Company, Incorporated
McFarland Cascade Company
McCormick and Baxter Company
Pacific Wood Treating Corporation
John C. Taylor Lumber Sales, Incorporated
Selma Pressure Treating Company

TABLE B. APPROVED SERVICE POLE TREATMENTS. ◪

SPECIES	TREATMENT						
	CELLON	DOW	OIL PENTA	CCA	AZCA	CU. NAP	CREOSOTE ▲
Western Red Cedar							
Douglas Fir							
Ponderosa Pine							

▲ Omit conduit covering, Item 7, and wood block, on metal pole or on wood pole with plastic conduit. Exception: Wood block is required for wood pole with plastic conduit when weatherhead is metallic and neutral service entrance conductor is uninsulated.

◪ All poles shall be full length treated except that Western Red Cedar may be butt treated with oil Pentachlorophenol.

● Service poles are sold to lumber and hardware companies.

CONSTRUCTION STANDARD

MINIMUM REQUIREMENTS FOR CUSTOMER OWNED SERVICE POLES

SHEET 1 OF 8

REVISIONS	DRAWN: P.F.	DESIGN: P.F.
	APPROVED BY:	
	DATE: 3/19/91	NO.: TEMP2

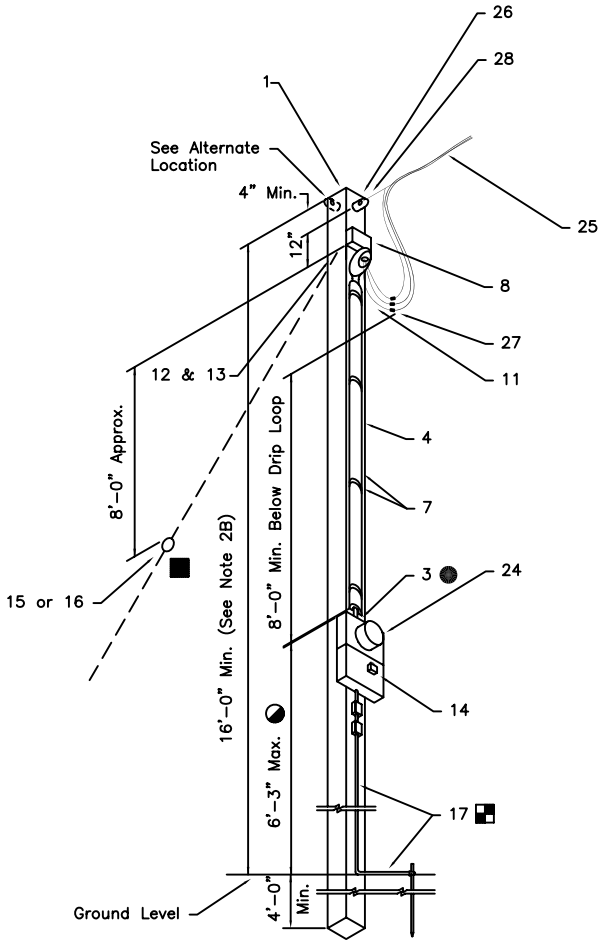


FIGURE 2. SERVICE DROP CABLE TO RECEPTACLES

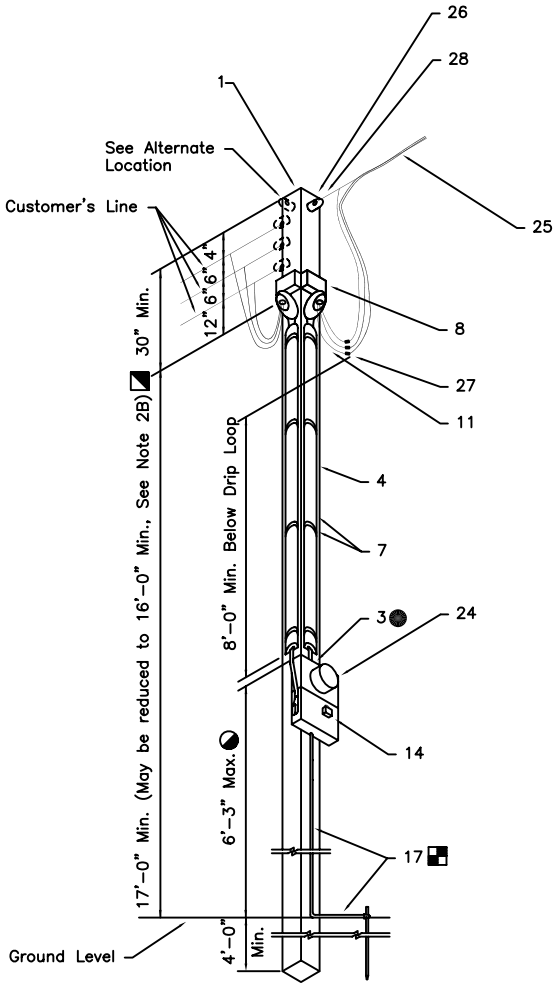
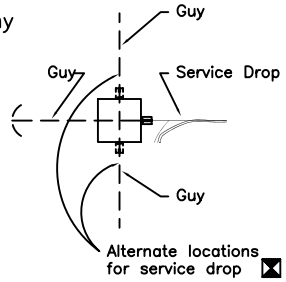


FIGURE 3. SERVICE DROP CABLE TO OVERHEAD LINE

- Locate guy in line with service drop.
- Grounding, by customer, shall be in accordance with NEC and City ordinances, except that the grounding wire shall be protected against mechanical damage by rigid steel conduit; or No. 8 AWG minimum armored copper ground wire any be used.
- Customer's equipment shall not be installed in climbing space. See Note 8 for grounding requirements.
- When metering conduit is steel or 2 1/2" ø PVC Schedule 80, the meter encloser may be reduced, but a 48" minimum meter height must be maintained from the standing surface.
- The guy strain insulator is normally located at a point measured 6' horizontally from the pole and 8' vertically. This may vary due to field conditions, pole height and ground clearance requirements.



CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD MINIMUM REQUIREMENTS FOR CUSTOMER OWNED SERVICE POLES SHEET 2 OF 8	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 4/01/91	NO.: TEMP3

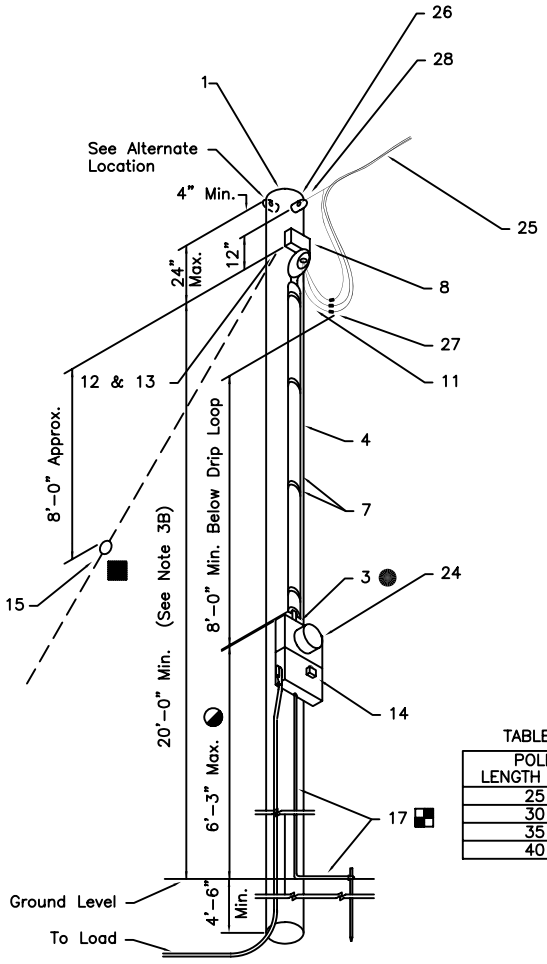


FIGURE 4. SERVICE DROP CABLE TO UNDERGROUND LINE

TABLE 1. POLE DEPTHS

POLE LENGTH (FT.)	DEPTH (FT.) IN FIRM SOIL
25	4 1/2
30	5
35	5
40	5 1/2

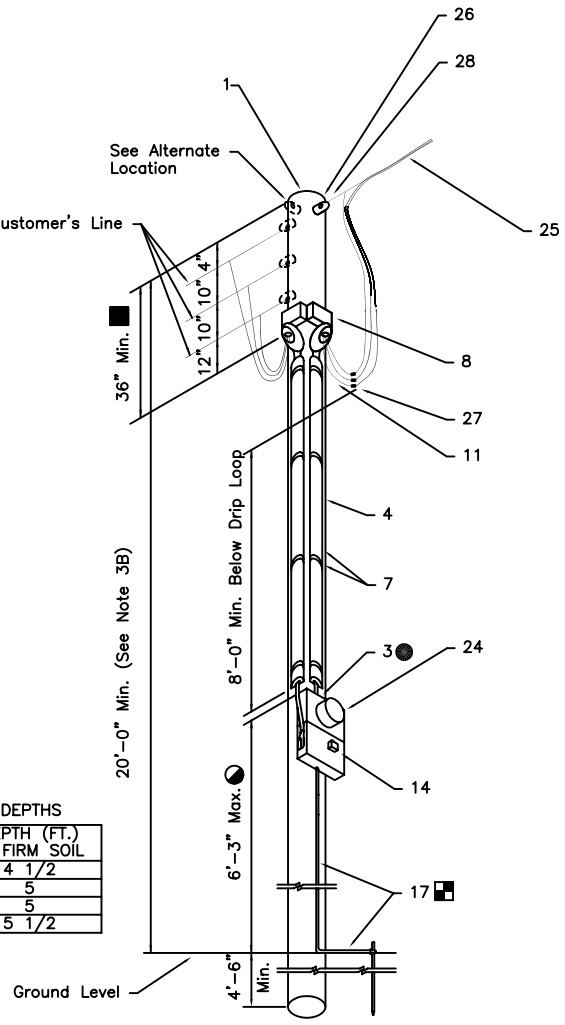
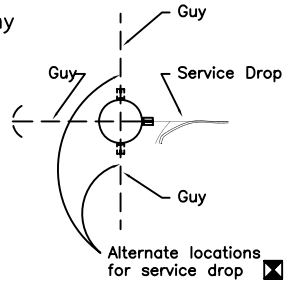


FIGURE 5. SERVICE DROP CABLE TO OVERHEAD LINE

- ⊠ Locate guy in line with service drop.
- ■ Grounding, by customer, shall be in accordance with NEC and City ordinances, except that the grounding wire shall be protected against mechanical damage by rigid steel conduit; or No. 8 AWG minimum armored copper ground wire any be used.
- ● Customer's equipment shall not be installed in climbing space. See Note 8 for grounding requirements.
- ◒ When metering conduit is steel or 2 1/2" ø PVC Schedule 80, the meter encloser may be reduced, but a 48" minimum meter height must be maintained from the standing surface.
- ■ The guy strain insulator is normally located at a point measured 6' horizontally from the pole and 8' vertically. This may vary due to field conditions, pole height and ground clearance requirements.



CITY OF HEALDSBURG CALIFORNIA SINCE 1867

CONSTRUCTION STANDARD

MINIMUM REQUIREMENTS FOR CUSTOMER OWNED SERVICE POLES

SHEET 3 OF 8

REVISIONS	DRAWN: P.F.	DESIGN: P.F.
	APPROVED BY:	
	DATE: 4/02/91	NO.: TEMP4

METHODS OF COVERING METAL CONDUITS ON WOOD POLES

FIG. 6 WOOD BOXING

FIG. 7 REDWOOD MOULDING

FIG. 8 FIBER CONDUIT

FIG. 9 PVC MOULDING

NOTES:

1. Boxing of wood 1 1/2" minimum thickness. The cover shall be nailed to side pieces. Boxing strapped to the pole with galvanized perforated plumbers tape spaced no over 3'–0" apart.
2. Redwood moulding 1 1/2" thick strapped to pole with galvanized perforated plumbers tape spaced not over 3'–0" apart.
3. Fiber conduit of 1/4" wall thickness over rigid conduit strapped to pole with galvanized perforated plumbers tape spaced no over 3'–0" apart. Install pipe below fiber conduit to prevent slipping.
4. Attach PVC moulding to poles with 1/4" x 2 1/2" galvanized washer head lag screws.

METER CONNECTIONS

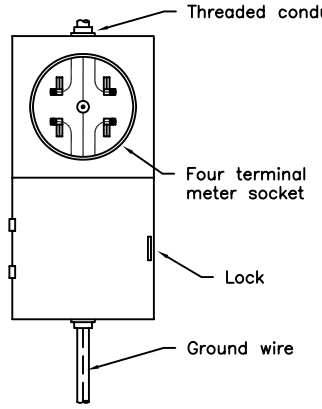


FIG. 10
120/240V, 3 WIRE ■
With WHM Service Switch, and Receptacles in Weatherproof Cabinet

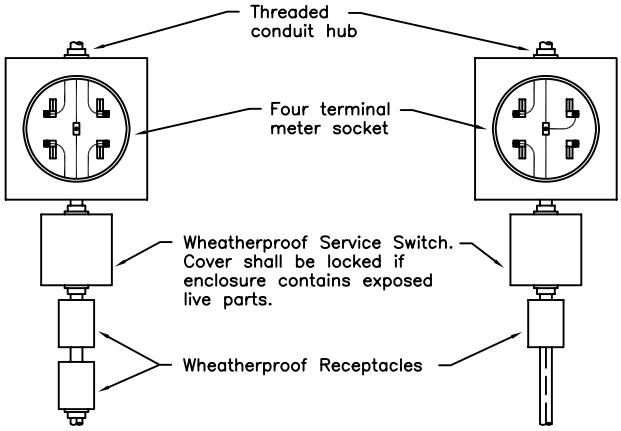


FIG. 11
120/240V, 3 WIRE ■
With WHM Service Switch, and Receptacles in Weatherproof Cabinet

FIG. 12
120V, 2 WIRE ■
With WHM Service Switch, and Receptacles in Weatherproof Cabinet

Four terminal meter socket without circuit closing devices for residential or light commercial application. For commercial services larger than 125 amps, substitute socket with test–bypass facilities. (See Note 11C)

All wiring and material on load side of meter socket must be in accordance with applicable electrical codes and City ordinances and must also comply with the "State Building Standards–Electrical Regulations". Unless threaded connections are used, adequate bonding of all sections of the service equipment shall be provided.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD MINIMUM REQUREMENTS FOR CUSTOMER OWNED SERVICE POLES SHEET 4 OF 8	REVISIONS 1/30/06	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 4/05/91	NO.: TEMP5

DETAILS OF ANCHORS AND BRACE

FIG. 13
LOG ANCHOR

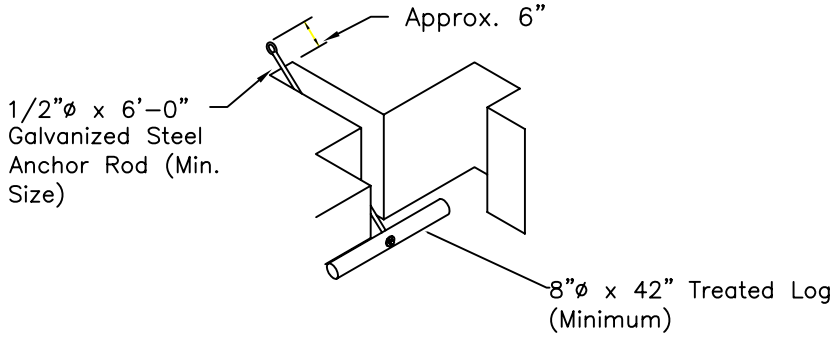


FIG. 14
STEEL ANCHOR

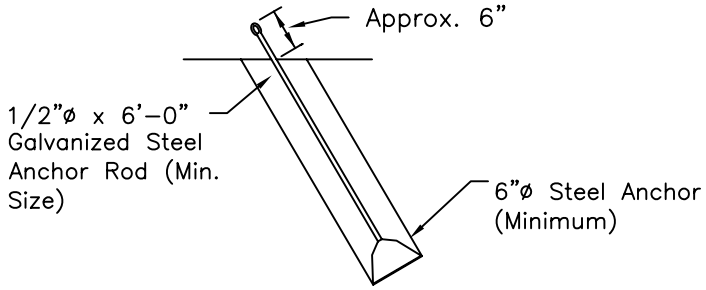
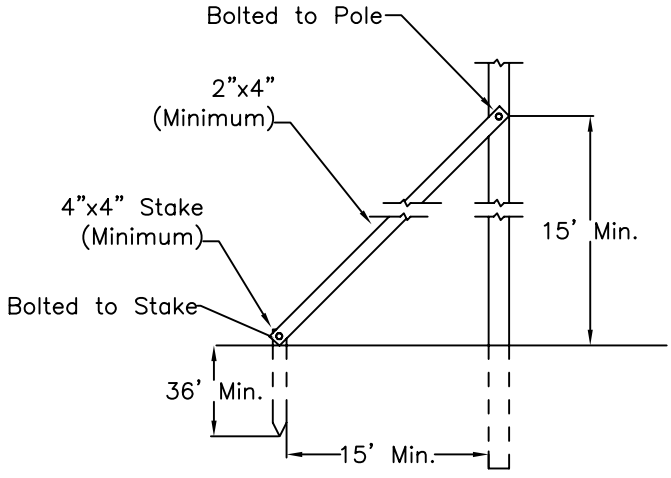
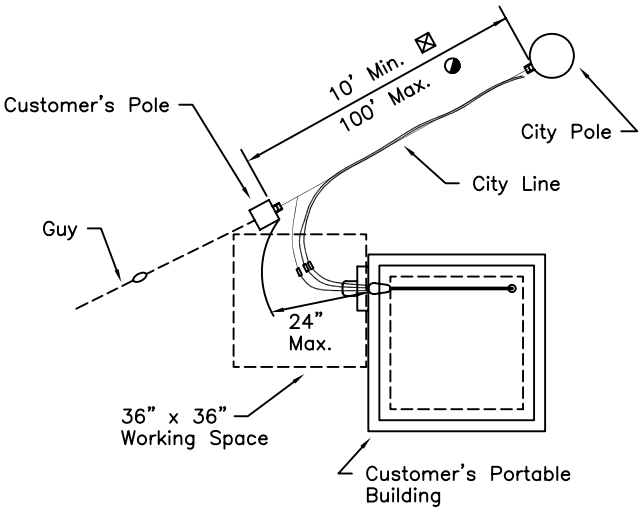


FIG. 15
WOOD BRACE



CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD MINIMUM REQUREMENTS FOR CUSTOMER OWNED SERVICE POLES SHEET 5 OF 8	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 1/30/06	NO.:TEMP5–2



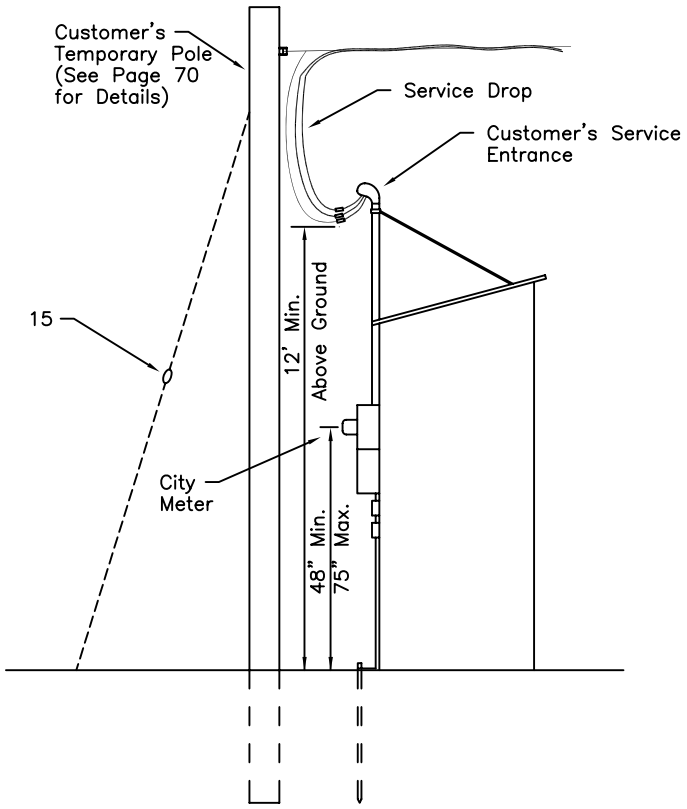


FIG. 16 PORTABLE STRUCTURE
Non–substantial

FOOTNOTES:

○ Distance from the center line of periscope service mast to pole face shall not exceed 24".

⬓ Portable structure shall not obstruct climbing space of temporary pole.

◓ Working space in front of meter shall not be obstructed.

⊠ Minimum distance from surface of City pole is 10'.

◕ Maximum permitted span to City pole is 100'.

NOTES:

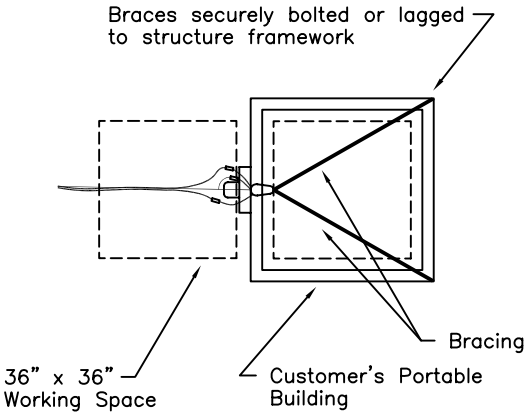
(A) TEMPORARY SERVICE ATTACHMENT: TEMPORARY services will not be directly attached to any structure considered by the City to be of inadequate strength. The structure must in all cases, be substantial (See Note B) and capable of supporting the service span as well as the force of the ladder and workman against the service mast.

(B) PORTABLE BUILDINGS: Portable buildings, such as small sheds, combined office/toilet structures, etc. are not considered to be substantial structures unless staked in place in the manner shown in Fig. 19 of this sheet.

(C) TEMPORARY POLES: Customer owned temporary poles are required for support of City overhead wires if the temporary building to be served is considered by City as not substantial.

(D) METHOD OF SERVING: Non–substantial structures that have been approved for the attachment of metering equipment and service periscopes may be served in the manner shown in Fig. 18. However, if desired, the metering equipment may be removed from the structure and placed on the temporary pole as shown in Fig. 2.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD MINIMUM REQUIREMENTS FOR CUSTOMER OWNED SERVICE POLES SHEET 6 OF 8	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 4/05/91	NO.: TEMP6



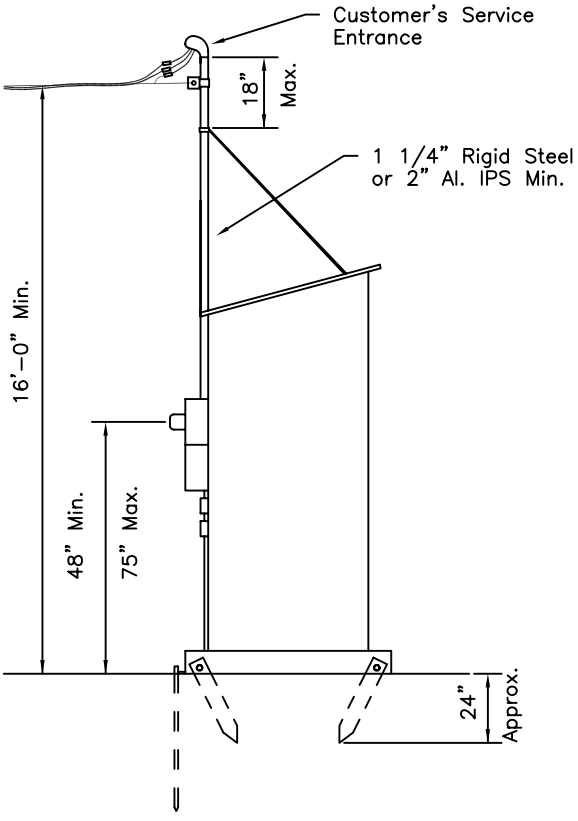


FIG. 17. PORTABLE STRUCTURE
Substantial

FOOTNOTES:

Working space in front of meter shall not be obstructed.

NOTES:

(E) SUBSTANTIAL BUILDING:
See Sheet 11, Note B for explanation of substantial portable building.

(F) STRUCTURE ANCHORING:
To prevent overturning, the structure is required to be securely anchored in place using on of the following:

1. Four 2"x4" min. wood stakes driven a min. of 24" into the ground and attached to the framework of the structure using 1/4" min. bolts or lag screws.
2. Four steel stakes having strength equivalent to 3/4" rigid steel pipe driven a min. of 24" into the ground and attached to the framework of the structure using 1/4" min. bolts or lag screws.
3. Four steel stakes having strength equivalent to 3/4" rigid steel pipe driven a min. of 24" into the ground with a cross member of each stake firmly contacting the upper surface of the timber used as a base or skid for the structure.

NOTE:
Methods 1 and 2 above describe preferred methods of attaching the stakes to the structure framework. However, four 16d common nails per stake may be used in lieu of the bolts or lag screws, providing the wood is in good enough condition to permit a secure attachment.

(G) PERISCOPE MAST BRACING:
Two galvanized steel braces at approx. 90° spread shall be installed. Use 3/4" galvanized rigid steel pipe or 1 1/4"x 1 1/4"x 1/8" galvanized steel angle. (Min. size)

(H) SERVICE DISCONNECTION:
When initial service is disconnected, sufficient service from cable should be left connected to the service entrance cable to permit the future splicing of service cable from the ground level. This practice will limit the need for placement of ladders against the periscope mast when the structure is moved to a new location.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD MINIMUM REQUIREMENTS FOR CUSTOMER OWNED SERVICE POLES SHEET 7 OF 8	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 4/05/91	NO.: TEMP7

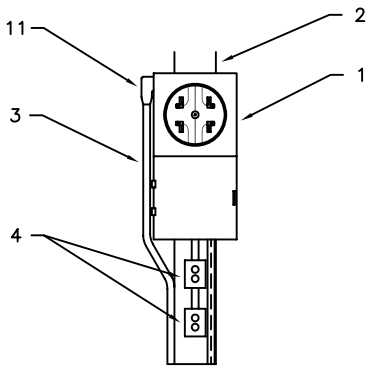


FIG. 19. ALTERNATE METERING
(Using overhead Style Enclosure)

FIG. 18. PREFERRED METERING

MATERIALS TO BE FURNISHED AND INSTALLED BY THE CUSTOMER

ITEM	ITEM
1	Service termination enclosure, combination meter socket panel.
2	Post, min. dim. 4" x 6" x 7'-0" long.
3	Conduit, rigid steel, galvanized or Sch. 80 PVC. 1 1/2" min. I.D. for #2 or 1/0 Al. service cable.
4	Weatherproof outlets
5	Conduit, rigid steel galvanized with pipe strap. For wire ground wire, omit if armor clad wire used.
6	Hub and clamp, grounding to suit Item 5
7	Ground rod
8	Ground wire, copper, bare or armor clad. Size in accordance with applicable electrical codes & local requirements
9	Conduit bushing or bell end as required
10	Servide termination, enclosure, 8" x 12" x 4", rain tight. Circle AW No. R-9007A or equivalent
11	Conduit fitting, threaded with cover and gasket, size to suit Item 3

NOTES:

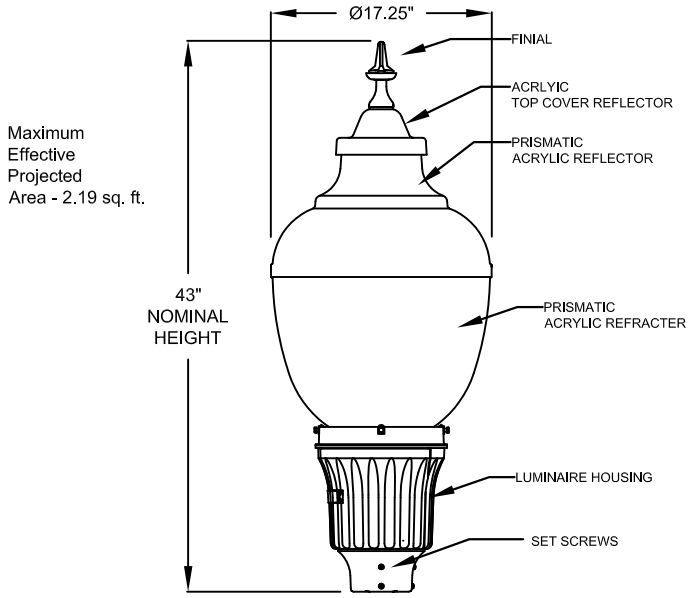
(A) If temporary overhead wires are to be extended from pole, pole shall conform to requirements of G.O. 95 as shown of pages 8 or 9 of "Minimum Requirements for Customer Owned Service Poles."

(B) Customer shall extend his cables into spice box a minimum of 24". City personnel will make connections. Caution, contact the City before inserting cables or conduit into splice box.

(C) City secondary box is normally located adjacent to the sidewalk. Consult City for exact location.

(D) Customer shall install conduit and suitable cable as required by local codes.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867	CONSTRUCTION STANDARD MINIMUM REQUIREMENTS FOR CUSTOMER OWNED SERVICE POLES SHEET 8 OF 8	REVISIONS	DRAWN: P.F.	DESIGN: P.F.
			APPROVED BY:	
			DATE: 4/05/91	NO.: TEMP8



HOLOPHANE PN's:

RESIDENTIAL:	AWDE	40	3K	AS	T	A	6	N	S	A	H	RAL-9017
PARKS, ASYMM. DISTRB:	AWDE	80	4K	AS	T	A	6	N	S	A	H PSC	RAL-9017
PARKS, SYMM. DISTRB:	AWDE	80	4K	AS	T	A	8	N	S	A	H PSC	RAL-9017

- ACRYLIC WASHINGTON POSTLITE II LED UTILITY HOUSING
- SOURCE & WATTAGE BALLAST (LED DRIVER) 80 = 80 W (420mA) 40 = 40 W (215 mA)
- COLOR TEMPERATURE 3K = 3000 K CCT 4K = 4000 K CCT
- AUTO-SENSING VOLTAGE (120 THRU 277 V)
- LEAF STYLE SWING, OPEN DESIGN HOUSING
- COLOR AS SPECIFIED
- 6 = ASYM. LUNAR OPTIC, 8 = SYMM. LUNAR OPTIC
- NO TRIM
- STANDARD FINIAL
- AS SPECIFIED
- H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE; PSC = SHORTING CAP
- FINISH & COLOR

GENERAL DESCRIPTION
The Acrylic Washington Postlite II LED Utility is designed for ease of maintenance with the plug-in electrical module common to each of the luminaires in Holophane's Utility Luminaire Series. The large acorn shaped luminaire, while reminiscent of the 1920's, contains a precision optical system that maximizes post spacings while maintaining uniform illumination.

OPTICAL SYSTEM
The optical system consists of a precisely molded thermal resistant acrylic plastic refractor and top reflector mounted within the decorative aluminum ribs and banding. The top reflector redirects over 50% of the upward light into the controlling refractor while allowing a soft uplight component to define the traditional acorn shape of the luminaire. The lower refractor uses precisely molded prisms to maximize pole spacings while maintaining uniform illuminance. Two distributions are available, designed for asymmetric and symmetric patterns.

LUMINAIRE HOUSING
The luminaire housing, cast of aluminum, provides an enclosure for the plug-in electrical module. Four uniquely designed stainless steel spring clips enclosed in a clear polyvinyl chloride sleeve and adjusted by hex head 1/4-20 bolts securely cradle the prismatic acrylic refractor. The same 1/4-20 bolts support the decorative rib and banding assembly. The slipfitter will accept a 3" by 2-7/8" to 3-1/8" O.D. tenon.

LUMINAIRE HOUSING / DOOR
Cast of aluminum, the housing opens with minimum use of tools and is retained on a hinge. For units with an E.E.I.-N.E.M.A. twist lock photocell receptacle, the housing contains a "window" to allow light to reach the cell.

ELECTRICAL MODULE
The electrical components are mounted on an aluminum plate that is removable with minimum use of tools. A matching five conductor plug connects to the receptacle in the luminaire housing to complete the wiring. For photoelectric operation, the electrical module is provided with an E.E.I.-N.E.M.A. twist lock photocell receptacle.

FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.

WARRANTY
Limited warranty located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

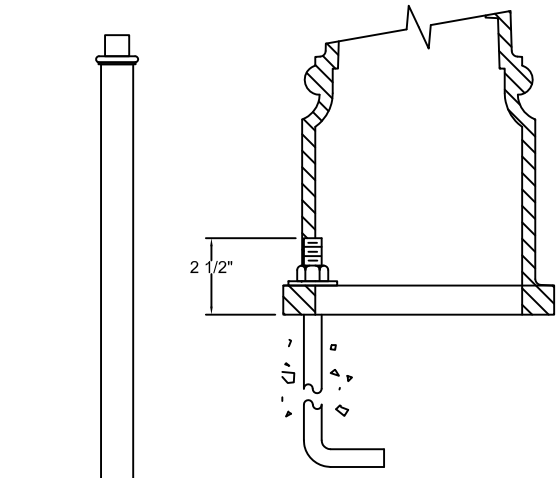
NOTE
Fixture is CSA listed for Wet Locations, and is listed for a 35° C ambient temperature. Luminaire housing is IP55 rated, Optical chamber is IP66 rated.
Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +10% / -10% at operating temperature.
60W 347-480V version wattage may differ by +14% / -14% at operating temperature. Specification subject to change without notice.

CITY OF HEALDSBURG CALIFORNIA SINCE 1867

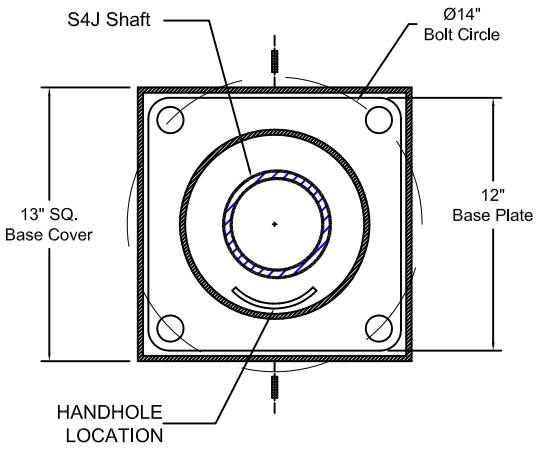
CONSTRUCTION STANDARD
RESIDENTIAL & PATHWAY LIGHTING

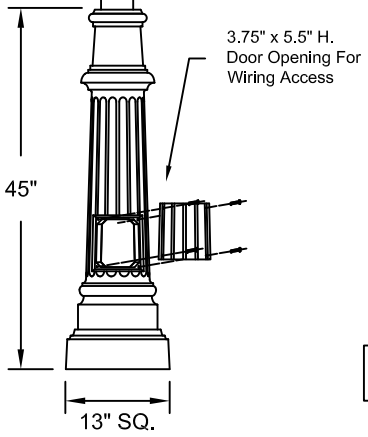
SHEET 1 OF 2

REVISIONS	DRAWN: TC	DESIGN: TC
06/26/2014		
	DATE: JUN. 2014	NO.:



SMA 13"
Ø 3/4"
Hot Dip Galvanized
L-type Anchor Bolts
(4 per Post)





HOLOPHANE PN: SMA14S4J13PO7ABG RAL-9017

SM	A	14	S4J	13	P07	ABG	RAL-9017
Salem Post	Aluminum Material	14' Height	4" DIA. Smooth, .25 Wall, Shaft Style	13" Sqaure Base	3" O.D. X 3" LG., Tenon	Galvanized Steel Anchor Bolts	Finish

DESCRIPTION
The lighting post shall be all aluminum or cast aluminum, one-piece construction, with a classic square base design.

MATERIALS
The base shall be heavy wall, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B-179-95a or ASTM B26-95. The straight shafts shall be extruded from aluminum, ASTM 6061 alloy, heat treated to a T6 temper. The tapered shaft shall be extruded from aluminum, ASTM 6063 alloy, spun to a tapered shape, then heat treated to a T6 temper. All hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dip galvanized.

CONSTRUCTION
The shaft shall be double welded to the base casting and shipped as one piece for maximum structural integrity. The shaft shall be welded inside the base casting at the top of the access door, and externally where the shaft exits the base. All welding shall be per ANSI/AWS

DIMENSIONS
The post shall have a 13" diameter base. The shaft diameter shall be 4". At the top of the post, an integral tenon with a transitional donut shall be provided for luminaire
mounting.

INSTALLATION
The post shall be provided with four, hot dip galvanized L-type anchor bolts. A door shall be provided in the base for anchorage and wiring access. A grounding screw shall be provided inside the base opposite the door.

CONSTRUCTION STANDARD
RESIDENTIAL & PATHWAY LIGHTING

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