

FORM APPROVED COUNTY COUNSEL  
 BY: H. Victor 5/2/13  
 DATE: \_\_\_\_\_  
 MARSHAL VICTOR

**SUBMITTAL TO THE BOARD OF SUPERVISORS  
 COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**



**FROM:** TLMA - Transportation Department

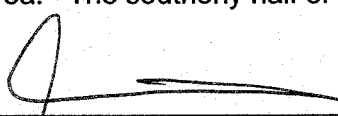
**SUBMITTAL DATE:**  
 April 18, 2013

**SUBJECT:** Authorization for Payment to the Imperial Irrigation District (IID) for the undergrounding of existing aerial primary electric facilities, Fred Waring Drive, Port Maria Rd. to approximately 700 ft. westerly

**RECOMMENDED MOTION:** That the Board of Supervisors authorize the payment of \$156,389 to the Imperial Irrigation District as payment for IID costs for the undergrounding of existing aerial primary electric facilities.

**BACKGROUND:**

The Transportation Improvement Program provides for the widening of Fred Waring Drive, from Adams Street to Port Maria Road, in the La Quinta area. The southerly half of the road is

  
 \_\_\_\_\_  
 Juan C. Perez  
 Director of Transportation and Land Management

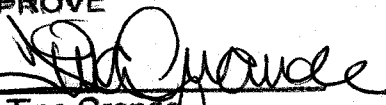
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<b>FINANCIAL DATA</b>	Current F.Y. Total Cost:	\$ 156,389	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	No
	Annual Net County Cost:	\$ 0	For Fiscal Year:	2012/2013

<b>SOURCE OF FUNDS:</b> Palm Desert Financing Authority (100%)	Positions To Be Deleted Per A-30	<input type="checkbox"/>
	Requires 4/5 Vote	<input type="checkbox"/>

There are no General Funds used for this project.

**C.E.O. RECOMMENDATION:**

**APPROVE**  
 BY:   
 Tina Grande


County Executive Office Signature

Dep't Recomm.:  Consent  Policy   
 Per Exec. Ofc.:  Consent  Policy

**MINUTES OF THE BOARD OF SUPERVISORS**

On motion of Supervisor Ashley, seconded by Supervisor Benoit and duly carried, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Jeffries, Tavaglione, Benoit and Ashley  
 Nays: None  
 Absent: Stone  
 Date: May 14, 2013  
 xc: Transp.

Kecia Harper-Ihem  
 Clerk of the Board  
 By:   
 Deputy

Prev. Agn. Ref. | District: 4/4 | Agenda Number:

**3-29**

The Honorable Board of Supervisors

RE: Authorization for Payment to the Imperial Irrigation District (IID) for the undergrounding of existing aerial primary electric facilities, Fred Waring Drive, Port Maria Rd. to approximately 700 ft. westerly

April 18, 2013

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within the City of La Quinta, and the work is being coordinated with the City. The project requires the relocation of 7 power poles that are owned by the Imperial Irrigation District, and which provide electricity to adjacent homes.

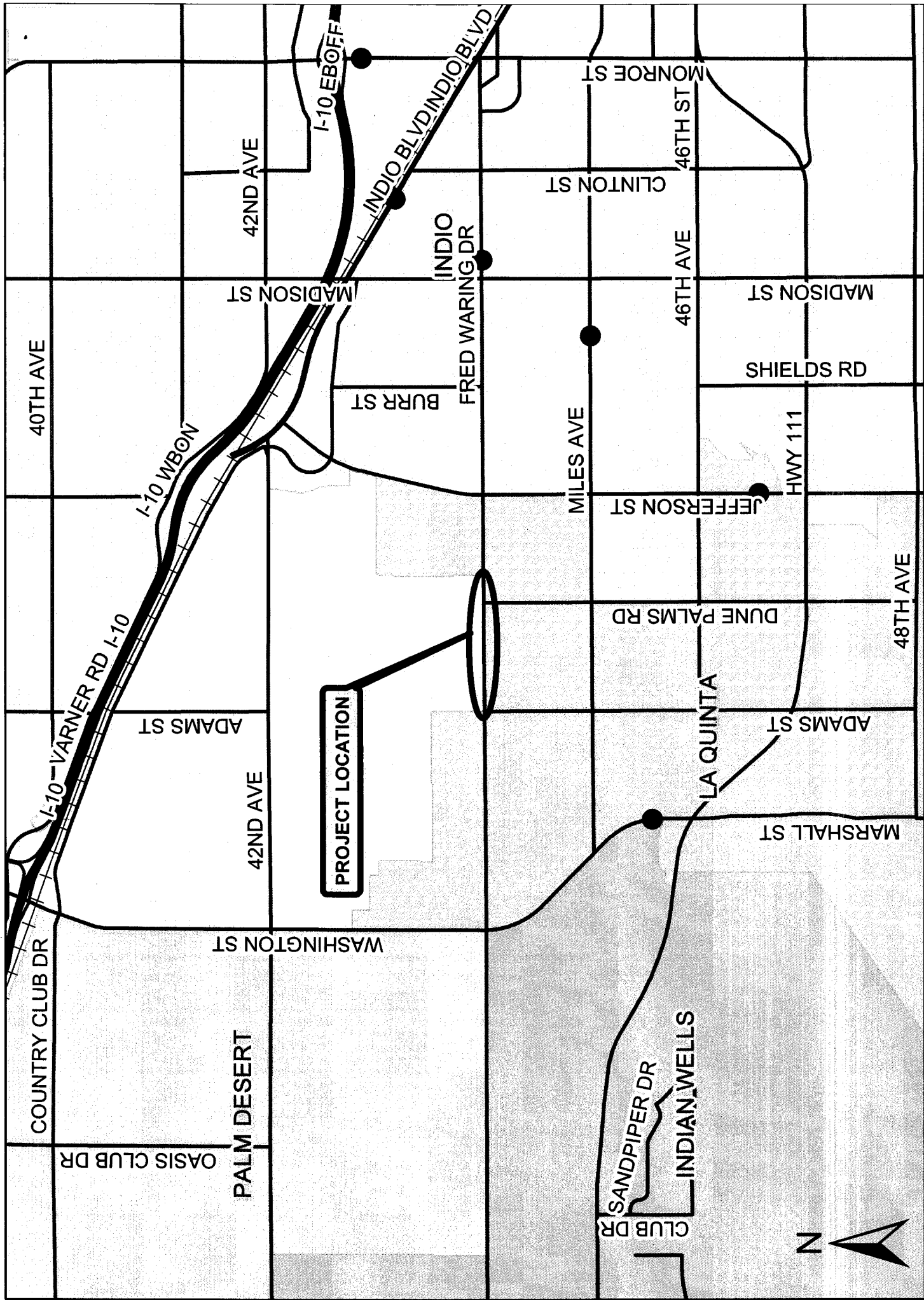
The undergrounding of the conductors, and removal of the poles, is a practical alternative to the relocation of the power poles for this project. This benefit is primarily due to the limited right-of-way available for the project. The undergrounding conversion will avoid the need to obtain right-of-way from each of the property owners. Additionally, relocation of the poles would place power poles closer to each of the homes, which would likely result in protests from the homeowners. The undergrounding conversion will result in aesthetic enhancement that will compliment the project and the neighborhood.

The project is specifically designed to avoid right-of-way acquisitions, especially the full acquisition of the homes and property on the north side of Fred Waring Drive, which is a project savings of \$10 to \$12 Million. Because the time-frame and the nature of the project only allow for very limited easement acquisitions, the undergrounding of the aerial electrical system is appropriate for this project.

The full cost of the undergrounding of the IID power system is the responsibility of the project. The submitted invoice provides for the work that will be performed by IID. Conduit installation and minor structures will be installed by the County's contractor during construction.

Project no. B5-0689

# FRED WARING DRIVE VICINITY MAP





CUSTOMER OPERATIONS  
81-600 AVENUE 58  
LA QUINTA, CA 92253

Date: April 05, 2013.

Customer Acct. # 3346720

COUNTY OF RIVERSIDE TRANSP DEPT  
2950 WASHINGTON ST  
RIVERSIDE CA 92504

CSP # 4014837

FRED WARING DR  
BERMUDA DUNES CA 92203

**Subject: OH TO UG EXISITING FACILITIES**

IID Energy thanks you for giving us the opportunity to serve your electrical needs. To ensure your project is successfully processed, payment in full is required for the balance due. Please send payment to 81-600 AVENUE 58 - LA QUINTA, CA 92253.

Regulation Charges	Amount Quoted	Balance Due
Engineering Fee	\$ 5,000.00	
TOPS N' Barricades	\$ 5,000.00	\$ 5,000.00
Comm UG Actual (\$156389.05-\$1000Eng Fee)	\$ 151,389.05	\$ 151,389.05
<b>Total Charges</b>	<b>\$ 161,389.05</b>	<b>\$ 156,389.05</b>

Our Goal is to provide excellent customer service from design to construction. Please ensure requirements 1 & 2 are accomplished or contact Project Manager at 760-398-5841 if you have questions about your project.

**Requirements**

1. Project is paid in full
2. IID inspections are passed

Call your Project Manager once requirements 1 & 2 are accomplished. This allows us to efficiently plan and commit necessary resources to complete your project.

**Important**

1. Failure to acknowledge this quote by **10/02/2013** results in cancellation.
2. After Payment is made in full, actual construction date is subject to material availability (10-16 weeks).
3. Design changes caused by the customer may increase regulation charges.
4. Failure to fulfill payments and IID inspections will result in project delays.
5. Guarantee deposit is also required for **new commercial accounts**.

Sincerely,

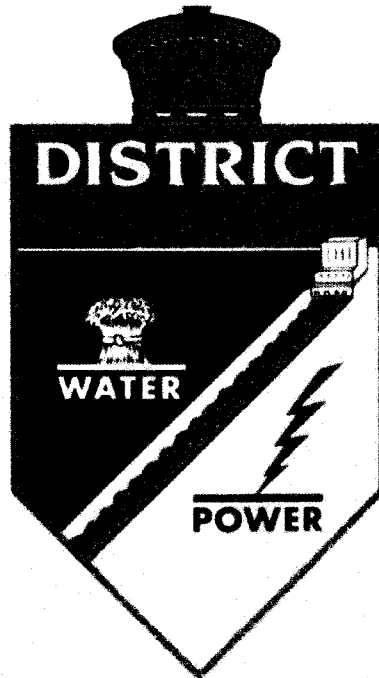
  
Mr. Carlos Puente  
Project Manager

Imperial Irrigation District  
Coachella Valley  
Power Division

**COUNTY OF RIVERSIDE TRANSP. DEPT  
FRED WARING/EAST OF ADAMS  
BERMUDA DUNES, 92203**

Service Notification: 4014837  
Service Order: 60077999

Contact Name: STAN DEVY  
Phone Number: (951)315-5502



Project Estimator: Mr. Jason Hernandez  
Project Manager: Mr. Carlos Puente

## OVERVIEW

As a Developer or Contractor (collectively "Developer") involved in today's new residential and/or commercial developments, you are well aware of how timing can make the difference between the success or failure of any project. The importance of establishing and adhering to realistic construction schedules is equally as important to the success of a project as project funding.

With current and projected demands increasing for residential and commercial units within the District's service area, it is important for Developers to establish a comprehensive development plan for the successful marketing of their projects. The District likewise must also set schedules to keep pace with the demands for electrical service. In that regard, the following information is provided as a guide to assist the Developer in the planning and scheduling of projects.

Upon receipt of the criteria in sections I - XI below, the District will provide a proposed construction schedule. The District's commitments and quoted costs are valid for six months.

### I. REQUIREMENTS FOR ELECTRIC SERVICE

1. Complete and sign all applicable forms in the Customer Information Packet located in the back of this document. Please contact your Customer Service Project manager with questions or assistance in completing the forms.
2. A nonrefundable advance design fee payment (applied as a credit toward the construction costs).
3. Collection of construction costs according to IID Regulation No. 15.
4. An AutoCAD electronic file along with the requirements listed in Section XI will expedite your proposed project.

### II. ADVANCE DESIGN FEES

An advance design fee must be paid to IID before a commitment will be granted. The advance fee will be determined as follows:

1. Design fees will be determined by the Customer Service Project Manager in accordance with I. Requirements for Electric Service, number 3 of section I above.
2. Switch and/or feeder work design.
3. The Advanced Design Fee will be paid to begin engineering a project and will be applied as a credit toward the IID cost of the project if it goes to completion. If the project is cancelled, the Advanced Design Fee is non-refundable. Any design changes that result in the redesign of project and therefore alters prior scheduled IID commitments will require an additional non-refundable Advanced Design Fee. Please contact a Customer Service Project Manager for appropriate design fee costs. District office locations and contact numbers are listed on page 3.

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### III ELIGIBILITY FOR ENGINEERING DESIGN

The District's Distribution Engineering Section prioritizes the preparation of the job package preparation based on receipt of all required customer information and the expected start of developer construction.

Job preparation will not begin until job is placed on the engineering schedule. To be placed on the engineering schedule, the developer must complete and submit the following:

1. Completion of all related IID forms found in the Customer Information Packet located at the end of this document
2. Payment of advance design fee
3. Plans, drawings and load data

### IV JOB PACKAGE PREPARATION

The time required to prepare a job package for construction will vary depending upon the size of job, complexity of work, and right-of-way access, environmental or permit requirements.

The District will provide and mail a billing letter to the responsible party as shown in Customer Information Packet located at the end of this document.

### V JOB PACKAGE RELEASE

The job will be released for construction scheduling when the conditions contained within the Customer Information Packet have been met and the District's job package has been approved.

### VI CONSTRUCTION SCHEDULE

Based upon the estimated request date for electricity, the job package is released and placed on the District's construction schedule. Schedule may be obtained from Customer Service Project Manager.

The District's goal is to provide timely and economical electric service. In order to achieve this goal the developer should promptly provide the information requested and keep the Customer Service Project Manager informed of project status.

### VII UNDERGROUND FACILITIES

When underground facilities are to be included, the District will provide a complete set of underground duct, vault, transformer pad and riser pole system installation drawings and associated specifications for each project or phase. It is the responsibility of the developer to provide and install, at developer's expense, the complete underground conduit and vault system, including any street lighting systems required by the city, county or other governing agency having jurisdiction. Lighting systems must be approved in advance of installation by the governing agency having jurisdiction. The District will provide point of service.

The District will provide an underground power inspection during the installation of conduit and vault systems with the exception of street light systems. Any request for inspections on a project must be scheduled with the District a minimum of 48 business hours in advance. Failure to schedule and/or obtain an inspection and approval for any portion of the lighting or underground power system may result in the total rejection of the system. Attachment A contains the Underground Distribution Standard Specifications, which include details and District products used.

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## VIII. LIABILITY

To eliminate any misunderstandings concerning the District's assumption of liability for personal injury or property damage prior to or following the completion of the underground duct and vault system by the Developer, the Developer will be required to acknowledge in writing that the District assumes no responsibility for safety, maintenance, repair or corrections for any on-site or off-site electrical distribution system equipment or facilities until the system and facilities are occupied by the District. This acknowledgement will be done through the completion of the Indemnification Agreement (Form IID-700C 6-07) which is required prior to obtaining electrical power service for the development project. Those persons executing the statement must be legally authorized by the developer to execute the statement, which shall be binding on all parties having ownership of, or contractual interest in, the land and/or development project. This will allow the application to be placed on the engineering schedule.

## IX. OCCUPATION OF FACILITIES

It is the responsibility of the developer to supply and maintain all necessary safeguards and to ensure a safe working environment during and after the construction and/or installation of the underground power system. It is the District's policy to occupy only those portions of the system for which a service request has been made and all line extension charges and connect fees have been paid.

Only those portions of the system which are actually occupied by the District will be released from the Developer's responsibility. The Developer shall continue to be responsible for the maintenance, repairs, safety, corrections and the liability for the balance of the unoccupied and deenergized portions of the power system, until such time that the District takes possession.

Any portion of an existing underground system installed in advance of service needs of the Developer that is not occupied by the District shall require a full and complete re-inspection. The District will not establish construction and/or cable installation schedules in advance of the requirement.

Upon completion of the duct and vault system and acceptance of the installation as meeting the District's standards for installation conformance only, the District will assume ownership of all such facilities, except conduits, vaults and enclosures that are on, within or a part of a building or structure or that are not occupied by the District.

## X. SPECIAL SERVICE CONDITIONS

During the initial review of any project, the District may determine that special service conditions exist due to one or more of the following conditions:

1. Existing distribution and/or transmission facilities do not have the capacity to serve the project.
2. Special or additional rights-of-way or easements may be required to serve the project.
3. Special voltage and/or load demands could be imposed on existing facilities by the project.
4. All rights-of-way determined necessary to extend electrical service to any project shall be the sole responsibility of the customer to acquire. (Contact Real-Estate Section: Imperial Valley (760) 339-9239 or Coachella valley (760) 391-5950.

Under these conditions the Developer will be required to:

1. Provide a two-acre substation site at a location determined by the District.
2. Provide any additional rights-of-way or easements that the District determines necessary to provide electrical service to said project.

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### XI. PLANS, DRAWINGS AND LOAD DATA

The District requires the developer to provide the following to the District's Customer Service Operations

1. Approved street lighting plan

Note In the District's Riverside County service area, the Developer shall submit lighting proposals first to the county of Riverside and then to the District's Customer Service Operations for service points

2. Water, sewer and drainage plans
3. Street improvement plans
4. Precise grading and landscaping plans
5. Plot plans with building shown
6. Parcel and overall project map with phasing
7. Graphic scales on all AutoCAD drawings
8. All parcel map property corners or tract map boundary corners shall be tied to section or 1/4 section corners
9. One hard copy of total connected electrical loads for each building style or floor plan.
10. Items to be included into their own separate layers are as follows

- Land Parcel Layer
- Right of Way Layer
- Centerline layer including Street Centerline Annotation
- Public Utility Easement Layer (P U E.)

Items 1 through 8 (above) shall be provided for proposed residential subdivisions, commercial projects and apartment projects. All land base or base map data must first be acquired from either the county of Imperial or the county of Riverside (as appropriate). The land base information will include NAD-83, zone 6 state plane coordinates, the appropriate existing parcel map, street, road and any other known right-of-way boundaries. Known surveyed benchmark locations and/or GPS data points should also be included, wherein they are available. Basically the proposed project should be designed inside the county area of the submittal and only in AutoCAD digital form. Acceptable media is an electronic file.

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## CONTRACTORS NOTES

### CONTRACTOR RESPONSIBILITY

These specifications cover the requirements for furnishing and installing certain portions of electrical underground distribution facilities not detailed in the attached Contractors Drawings

Whenever a manufacturer's material or equipment is referred to by name, type, or catalog number, this material or equipment is satisfactory. "or approved equal" requires that other manufacturer's material or equipment will be acceptable only if it is of equal quality and approved by the District before purchase

It will be the responsibility of the contractor to conform to local regulations and obtain any necessary permits in the performance of these specifications and comply with all District drawings and documents in their entirety

inspection service will be provided by the District. Materials and workmanship shall at all times be open to inspection by the District Inspector.

**(Inspection schedules are subject to a minimum 48 hour advance notice and are by appointment only – La Quinta (760) 398-5828; Imperial (760) 482-3300).**

Any work failed/rejected by the District Inspector shall be corrected in a matter satisfactory to the District Inspector prior to the continuation of work. The District Inspector shall have final authority to pass, fail or approve corrected measures. Work will not continue until the District Inspector has inspected and passed the electrical system.

The required material and work includes furnishing and installing the following:

1. Excavations, trenching and backfills
2. Conduit encasement and concrete requirements
3. Boring
4. Underground conduits, ducts, conduit fittings, and sealing compound
5. Transformer pads, junction pads, precast vaults, junction sleeves
6. Marking tape over conduit
7. Secondary pullboxes
8. Copperweld ground rods 5/8" x 10'
9. Guard posts
10. Pulling rope
11. Stub outs
12. Slopes
13. Retaining Walls
14. Clearances

All work shall follow the best modern practice both in the manufacture and the installation of underground facilities. All work shall be done by artisans skilled in their various trades.

All rights-of-way determined necessary to extend electrical service to any project shall be the sole responsibility of the customer to acquire. For information regarding all real estate and right-of-way matters please contact the IID Real Estate Section: Imperial Valley (760) 339-9239 or Coachella Valley (760) 391-6960.

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**Reference Tables:**

Table 1 Common Steel Casing and Conduit Sizes - **Section 3 Boring**

Table 2 Conduit Index - **Section 4 Underground Conduits**

Table 3 Conduit Rope/Measured Rope Requirements - **Section 10 Pulling rope**

Table 4 Conduit Radius Index (Horizontal) - **Section 4 Underground Conduits**

Table 5 Conduit Rise/ Sweep Radius Index (Vertical) - **Section 4 Underground Conduits**

Table 6 Stub Out Marker - **Section 11 Stub outs**

Table 7 Encasement Criteria - **Section 2 Conduit encasement**

Table 8 Retaining Wall Slope Elevations - **Section 13 Retaining Walls**

**Drawing Reference:**

Drawing 1 Vault side view, Conduit reduction - **Section 4 Underground Conduits**

Drawing 2 Stub out detail - **Section 11 Stub outs**

Drawing 3 Retaining Wall, slope falling toward I/D equipment - **Section 12A Slope**

Drawing 4 Retaining Wall, slope falling away from I/D equipment - **Section 12B Slope**

Drawing 5 Typical Boring 2 - 5" Detail - **Section 3 Boring**

Drawing 6 Typical Boring 2 - 8" Detail - **Section 3 Boring**

Drawing 7 Typical Boring 4 - 6" Detail - **Section 3 Boring**

Drawing 8 Typical Boring 6 - 3" Detail - **Section 3 Boring**

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## 1. Excavations, trenching and backfills.

- A. It shall be the responsibility of the installation contractor to establish all grades (rough and final), bench marks, property corners, ties, fence lines, walls, property lines or other field references as required to install and verify the installation and location of power facilities.
- B. It shall be the responsibility of the installation contractor to establish the location and depth of all existing power system facilities and foreign substructures within the work area. The contractor shall also call the USA dig alert and keep up to date the one call ticket.
- C. Contractor/Developer shall review plans as soon as received from IID for possible conflicts or problems on locations of IID structures. Any revisions to original IID design will require additional engineering time and might cause additional delays to the project. It is the responsibility of the contractor to contact the appropriate IID Customer Service Project Manager.
- D. The installation contractor shall bear the responsibility for returning all excavated areas to at least 90% compaction. All testing to ensure 90% compaction and restoration of the work area to its former condition is the sole responsibility of the installation contractor. **(Refer to 2F)**
- E. Excavation for vaults, junction pads, secondary pullboxes and conduits shall be made to the proper depth **(Refer to 4B)**. After proper installation and inspection have been completed, compacted backfill shall be made to the finished level. All surplus excavation shall be disposed of in a satisfactory manner.
- F. Street light circuits, CATV, and telephone may be installed in the same trench; however, their relative position must be verified with each serving agency and installed to their specifications **(Refer to Standard 100.41)**
- G. The contractor shall take due caution to keep from damaging other utility systems that have been installed and shall collaborate with other utilities that may be doing work in the same area **(Refer to 1B)**.
- H. All other utilities shall maintain no less than a 12" clearance from sub structures and underground equipment **(Refer to Standard 100.41) (Refer to 2K)**
- I. Joint utility trench will be a minimum of 24" wide to ensure adequate separation between Power and Gas facilities. **(Refer to Standard 100.41)**
- J. Whenever possible Gas facilities will occupy the opposite side of the trench and be 12" above the power facilities. **(Refer to Standard 100.41) (Refer to 1H)**

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**Excavations, trenching and backfills Continued:**

- B Developer/contractor will be responsible for coordination of inspections while trench has IID utilities exposed **(Refer to Joint Trench Indemnity Agreement IID-700E (6-07))**(Inspection schedules are subject to a minimum 48 hour advance notice and are by appointment only – La Quinta (760) 398-5828; Imperial (760) 482-3300).
- L The developer shall be responsible for filling out and signing IID form 700E 6-07 Joint Trench Indemnity Agreement, contact the appropriate IID Customer Service Project Manager. **(Refer to Joint Trench Indemnity Agreement IID-700E 6-07)**

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2. Conduit encasement and concrete requirements:

- A. All Encasement of power ducts will require an on site inspector at the time of encasement. **(Inspection schedules are subject to a minimum of 48 hour advance notice and by appointment only La Quinta (760) 398-5828; Imperial (760) 482-3300.)**
- B. The term encasement as used herein shall mean a 3" envelope around all sides of one or more ducts
- C. Utilize plastic spacers that provide 3" separation. Plastic spacers shall be used on conduit runs to be concrete encased both as single or banked installations and on duct banks not encased, spacers are placed every six feet (6") **(Refer to Table 7)**
- D. Concrete encasement of conduits at street crossings shall be a three (3) sack sand slurry or 1800 – 2000 psi mix
- E. Backfills at street crossings maybe a three (3) sack sand slurry from top of encasement to street sub-grade. If the contractor utilizes any quick cure chemical product additives to the concrete the contractor shall take full responsibility for concrete quality. **(Refer to 2D), (Refer to 2H), (Refer to Table 7)**
- F. Backfills at street crossings that are other than a three (3) sack sand slurry backfill shall observe the following
  - a. Contractor shall wait a minimum of 24 hours before backfilling roadbase and compacting over concrete encased conduit
  - b. The contractor is responsible to ensure a compaction of 90%
  - c. The contractor assumes the responsibility of providing the IID with the compaction test verification. **(Refer to 1D), (Refer to 1G)**
- G. Backfill Material when used above concrete encasement shall be a standard roadbase material properly compacted, unless otherwise specified on the drawings or by the IID Customer Service Project Manager. **(Refer to 1D), (Refer to 1F)**
- H. IID concrete encasement, backfill, etc. requirements will be followed unless the City, County, State Agency, Property Owners, or Authority having jurisdiction has requirements that are more strict, the highest requirements will be followed.
- I. Encasement shall be sand slurry below streets, parking lots and commercial driveways. **(Refer to Trench Detail standard 100.3, Page 42), (Refer to Table 7)**
- J. Concrete encasement for all other locations shall be no less than a 2 sack or 1500 psi sand slurry mix

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**Conduit encasement, and concrete requirements Continued:**

- K. The layers between the adjoining utilities will be in compliance with G O 128 and have a minimum of 12" separation. That separation may be reduced with concrete encasement. **(Refer to 1H) (Refer to Standard 100.41)**
- L. Conduit encasement criteria is as follows in Table 7.

Feeder Type	Number of Runs	Size	Amperage
Back bone	2 or more	6"	600 Amp
Lateral	4 or more	5"	200 Amp

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**Underground conduits, ducts, conduit fittings, and sealing compound:**

- A. Conduit runs shall not cross each other when on the same level and/or plane
- B. Primary conduits shall be buried a minimum depth of four feet (4'). Secondary and service conduits shall be buried a minimum depth of two and one half feet (2½')
- C. Sizes and arrangements of conduits shall be as shown on the drawings
- D. Where the external diameter of the conduit is smaller than the diameter of the opening in the vault wall, the reduction in conduit diameter shall take place two feet (2') from the external wall of the vault. **Refer to Drawing # 1**

**Refer to Drawing 1 Vault side view, conduit reduction**

- E. The maximum obtainable separation between power facilities and all other substructures shall be maintained at all times, 12" minimum when paralleling and 12" minimum when crossing encased in concrete (12" minimum refers to compacted backfill)
- F. Conduit shall be PVC heavy wall schedule 40 for below ground installation and schedule 80 for above ground installation. **(See conduit index table 2)**
- G. Conduit sweeps in duct runs shall not have less than a 12'-6" horizontal radius unless shown otherwise on the plans. **(See radius index (horizontal) table 4)**
- H. Conduit sweeps in vertical runs (pole risers and equipment risers) shall be installed in accordance with table 5.
- I. All 2", 3" service and/or secondary conduit (vertical) risers which enter buildings, service panels, secondary boxes, transformer pads, meter pedestals, etc., shall have a minimum 2'-0" radius, see riser sweep radius index (vertical) table 5.
- J. All 4" primary conduit (vertical) risers which enter transformer pads, primary metering panels, underground switch gear panels and pole risers shall have a 4'-0" Radius for 4" duct, see riser sweep radius index (vertical) table 5.
- K. All 5", 6" primary conduit risers which enter transformer pads, primary metering panels, underground switch gear panels and pole risers shall have a minimum of 4'-0" radius for 5" duct and 5'-0" radius for 6" duct, see riser sweep radius index (vertical) table 5. Contact your IID Customer Service Project Manager for further instructions or questions.

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**Underground conduits, ducts, conduit fittings, and sealing compound continued:**

- K. The installation contractor shall mandrel all conduit runs to and including service duct. IID shall provide the mandrel and inspector. **(Inspection schedules are subject to a minimum 48 hour advance notice and are by appointment only - La Quinta (760) 398-5828; Imperial (760) 482-3300).**
  
- L. The installation of the conduit system will be conducted by a single contractor or other entity to give the project continuity, reducing the possibility of deviations from the C.O. 128 regulations.

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## TABLES

Table 2 (Conduit Index)

CONDUIT INDEX Table 2								
CONDUIT DIAMETER	STRAIGHT BELOW GROUND	SWEEPS HORIZONTAL BELOW GROUND	POLE RISER SWEEP	STRAIGHT ABOVE GROUND	EQUIP SWEEP	TRANS PAD	SECONDARY BOXES	METER PANELS
1"	SCH 40	SCH 40	SCH 80	SCH 80	SCH 40	SCH 40	SCH 40	SCH 40
2"	SCH 40	SCH 40	SCH 80	SCH 80	SCH 40	SCH 40	SCH 40	SCH 40
3"	SCH 40	SCH 40	SCH 80	SCH 80	SCH 40	SCH 40	SCH 40	SCH 40
4"	SCH 40	SCH 40	SCH 80	SCH 80	SCH 40	SCH 40	SCH 40	SCH 40
5"	SCH 40	SCH 40	SCH 80	SCH 80	SCH 40	SCH 40	SCH 40	SCH 40
6"	SCH 40	SCH 40	SCH 80	SCH 80	SCH 40	SCH 40	SCH 40	SCH 40

Table 4 (Conduit Radius Index -Horizontal-)

CONDUIT RADIUS INDEX (HORIZONTAL) Table 4			
PRIMARY			
CONDUIT DIA.	RADIUS	CONDUCTOR SIZE	PVC SCHEDULE
4"	12.5' Radius	1-1/0 Conductor	40
5"	12.5' Radius	3-1/0 Conductors	40
6"	25' Radius Typical	3-750 MCM Conductors	40
8"	50' Radius as Specified	3-750 MCM Conductors	40

Contact your IID Customer Service Project Manager for instructions.

Table 5 (Riser Sweep Radius -Vertical-)

RISER SWEEP RADIUS INDEX (VERTICAL) TABLE 5						
SECONDARY Conduit Dia.	Radius	Pole Riser PVC SCH	Equip. Riser PVC SCH	Trans. Pad PVC SCH	Secondary PVC SCH	Meter Panels PVC SCH
2"	24" Radius	N/A	40	40	40	40
3"	36" Radius	80	40	40	40	40
4"	36"-48" Radius	80	40	40	40	40
PRIMARY Conduit Dia.	Radius	Pole Riser PVC SCH	Equip. Riser PVC SCH	Trans. Pad PVC SCH	Secondary PVC SCH	Meter Panels PVC SCH
4"	48" Radius	80	40	40	N/A	N/A
5"	48"-60" Radius	80	40	40	N/A	N/A
6"	60" Radius	80	N/A	N/A	N/A	N/A

Contact your IID Customer Service Project Manager for instructions.

N/A = Not Applicable

CSP/NOTIFICATION # \_\_\_\_\_

SERVICE ORDER # \_\_\_\_\_

SHEET **14** OF \_\_\_\_\_

5. Transformer pads, junction pads, precast vaults, junction sleeves

- A. All conduit entering transformer pads shall be cut off 0" to 1" (inch) from above the top of the pad
- B. All conduit entering secondary pull boxes or splice boxes shall be cut off 0" to 9" (inches) above the pea gravel
- C. Single phase transformer pads installed adjacent to roads shall have the primary conduits installed closest to the road, and secondary conduits installed away from the road. (Contact the appropriate IID Customer Service Project Manager)
- D. Transformer pads, pull boxes, manholes, vaults, and switch pad installations shall be installed 3" above final grade (where not installed along sidewalks) and flush with final sidewalk for those types of installations. In areas with sloping contours greater than 1/4" to the foot, the top edge shall be set as shown below highest point of slope. (In no case shall there be more than 1/2" of slope in 1' (foot) of horizontal measurement.)
- E. Transformer Pad inspection, when the contractor receives or installs a Transformer Pad that has a continuous crack across three sides (side, top, and inside window) this pad will be rejected by the IID inspector. When a crack is non-continuous and the crack exceeds 1/32" (.032) wide, the contractor may make appropriate repairs to the crack with a manufacture approved epoxy equal to CIA-GEL 7000. The contractor will inform the IID inspector of any crack repair to be made before repair is made.
- F. Contractor is responsible for permanent and waterproof markings on all interior vault knockouts, any and all conduits, conduit runs, and stub outs, with the conduit number corresponding to the number shown on the plans.
- G. Contractor shall seal or grout around seams, lid sections, and ducts entering vaults and pullboxes to prevent soil and water entering at joints or openings.
- H. Where the external diameter of the conduit is smaller than the diameter of the opening in the vault wall, the reduction in conduit diameter shall take place two feet (2') from the external wall of the vault. Refer to Section 4D  
Refer to Drawing # 1
- I. Contractor/Developer shall keep all debris away from IID's transformer pads, primary vaults, secondary pull boxes, and other IID equipment to give IID personnel access during the duration of the project.

CSP/NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET 15 OF 02 \_\_\_\_\_

**Transformer pads, junction pads, precast vaults, junction sleeves**  
**Continued:**

- I. The district will provide an underground energy inspector during the actual installation of conduit and vault systems. Any request for inspection on a project must be scheduled with the IID 24 hours prior to actual need. Failure on the part of the owner(s) developer(s) or contractor to schedule and/or an inspection and approval for any portion of the lighting or underground power systems, may result in the total rejection of the newly installed systems. **(Inspection schedules are subject to a minimum 48 hour advance notice and are by appointment only – La Quinta (760) 398-5828; Imperial (760) 482-3300).**
- K. No other utility will be allowed to occupy the area under a transformer pad.
- L. Commercial Transformer Pads will not be installed until compaction report has been received and reviewed by IID inspector.
- M. Commercial Transformer Pad compaction will be performed 2' beyond pad size on all sides – no bridging will be allowed including sprinkler systems within the compacted area.

CSP NOTIFICATION # \_\_\_\_\_  
SERVICE ORDER # \_\_\_\_\_  
SHEET 16 OF \_\_\_\_\_

6. **Marking tape over conduit**

- A. Contractor shall install 2" line guard III tape red in color with black lettering  
CAUTION BURIED ELECTRIC LINE BELOW **(See Standard 100.5)**
- B. Contractor will install a caution tape 12" above the power faults **(See Standard 100.5)**

7. **Secondary pullbox:**

Secondary pullboxes must be as shown on the drawings.

Surface secondary pullbox utilized in all Imperial Irrigation District secondary construction. Reference Standard **181.1 - 181.11**

8. **Copperweld ground rods 5/8" x 10':**

- A. To comply with General Order 128 rule 21.5A, the contractor is required to provide and install a minimum of two (2) 5/8" x 10' Copperweld ground rods shall be installed at each transformer pad and junction pad, and primary vault **(See Standards in 8C for detail)**
- B. The developer will be responsible for driving any and all ground rods in the system that is a joint trench. This will be predetermined and completed before IID construction crews arrive on the job.
- C. Trench and pad grounding  
Single phase transformer reference Standard **190.2-190.21**  
Three phase transformer reference Standard **190.3-190.31**  
Single phase sector reference Standard **190.4-190.41**  
Three phase sector reference Standard **190.5-190.51**

9. **Guard posts:**

- A. Guard posts shall be 4" diameter pipe schedule 40 black cold rolled steel painted high visibility yellow.

See Standard **181.6** for concrete fill/foundation requirements and typical location of posts around IID equipment.

CSP NOTIFICATION # \_\_\_\_\_  
SERVICE ORDER # \_\_\_\_\_  
SHEET 17 OF \_\_\_\_\_

**10. Pulling rope:**

A. In all duct runs, the installation contractor is to furnish and install the following.

**Table 3 (Conduit Rope/Measured Rope Requirements for Primary Pulls)**

CONDUIT ROPE/MEASURED ROPE REQUIREMENTS PRIMARY PULLS			
Rope Type	Conduit Length	Conduit which will contain Wire	Spare Conduits
a) Polyester 1/4"	501' - 1000'	No Splices	Splices Ok
b) Measuring Rope 1/4"	1' - 1000'	No Splices	Splices Ok

- a) Polyester rope usually yellow in color is acceptable
  - b) Measuring rope will have one foot (1') increments clearly marked
- IID representative/inspector has final decision on type of rope to be utilized in conduit pulls
- Spare conduits may be filled with polyester rope with splices if pulling wire at a later date (any time after construction) Contractor is responsible and required to pull in new rope that has no splices
- N/A = Not applicable

**11. Stub outs:**

Contractor shall obtain and install stub out markers comparable to the stub out marker indicated in Table 6.

Stubout conduit shall be a minimum of 10'. Refer to the job drawing for specific Stubout lengths

Refer to Drawing 2 Stub out Detail

**Table 6 (Stub Out Marker)**

STUB OUT MARKER Table 6		
MANUFACTURE	PHONE NUMBER	PART NUMBER
ELECTROMARK	800-295-8247 ext. 222	POST-LX-1A-66R IMP065-G-RE-B41 IMP066-G-RE-RB1



Stub out Marker  
66" x 4.25"



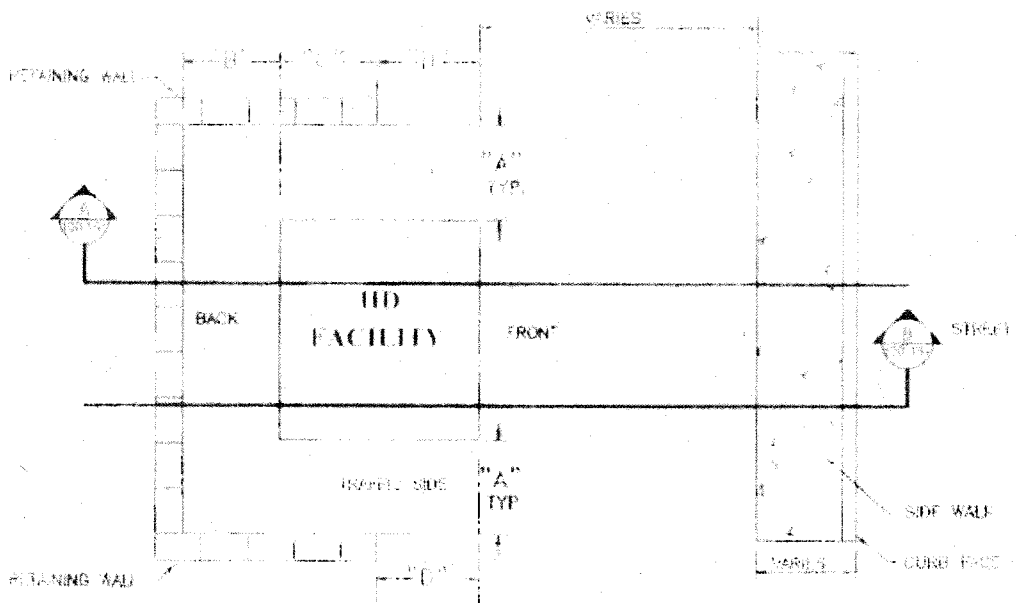
Front View  
Top Portion



Back View  
Top Portion

CSP/NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET 18 OF \_\_\_\_\_

Retaining Walls Continued:



**SYMBOLS**



CROSS SECTION

PLAN VIEW  
N.T.S.

RETAINING WALL

RETAINING WALL INDICATING HD FACILITY LOCATION				
TYPE OF STRUCTURE	"A"	"B"	"C"	"D"
3' X 6' PRIMARY SMALL PULLBOX	3'	5'	2'	1/2'
4' X 6' PRIMARY MEDIUM PULLBOX	5'	3'	2'	2'
6' X 8'-6" PRIMARY VAULT WITHOUT CABINET	3'	8'	3'	3'
6' X 8'-6" PRIMARY VAULT WITH CABINET	5'	10'	5'	3'
ALL TRANSFORMER PAD (SINGLE & THREE PHASE)	3'	2'	VARIES	VARIES

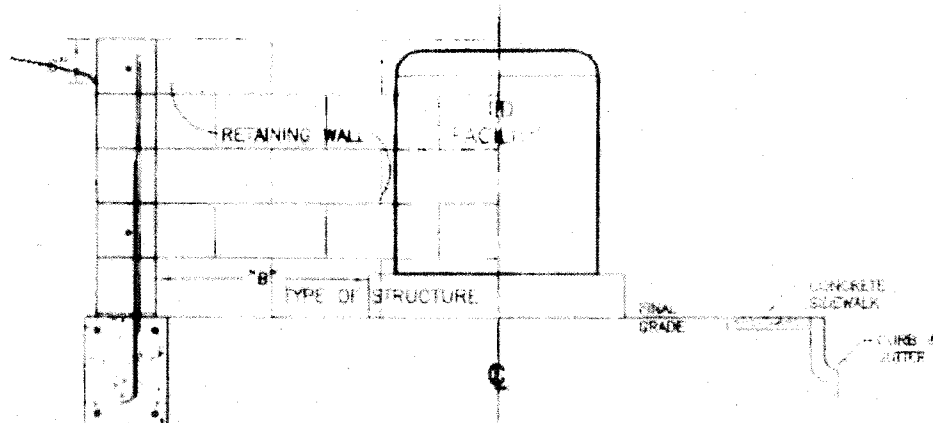
Notes:

- The chart above indicating the spacing will be an approximate and not a guarantee of equipment safety with retaining walls.
- Retaining wall sides will end at the center of all transformer pads (See plan views).
- Refer to Standard 166.51-166.155 for Retaining Wall construction.

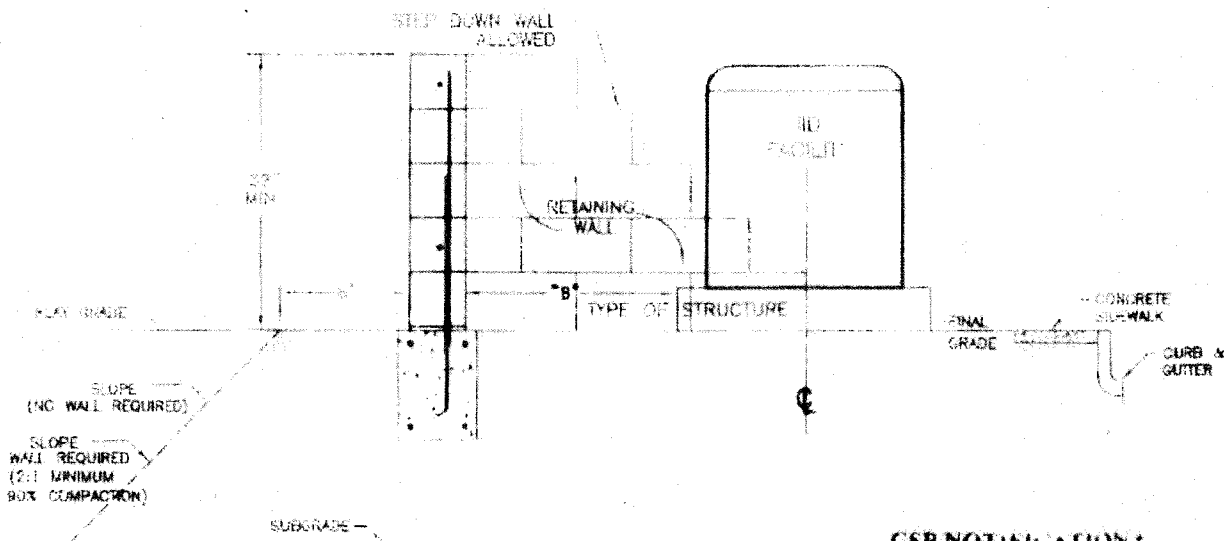
CSP NOTIFICATION # \_\_\_\_\_

SERVICE ORDER # \_\_\_\_\_

SHEET **19** OF \_\_\_\_\_



**A** RETAINING WALL  
N.T.S.



**B** REVERSE SUBGRADE RETAINING WALL  
N.T.S.

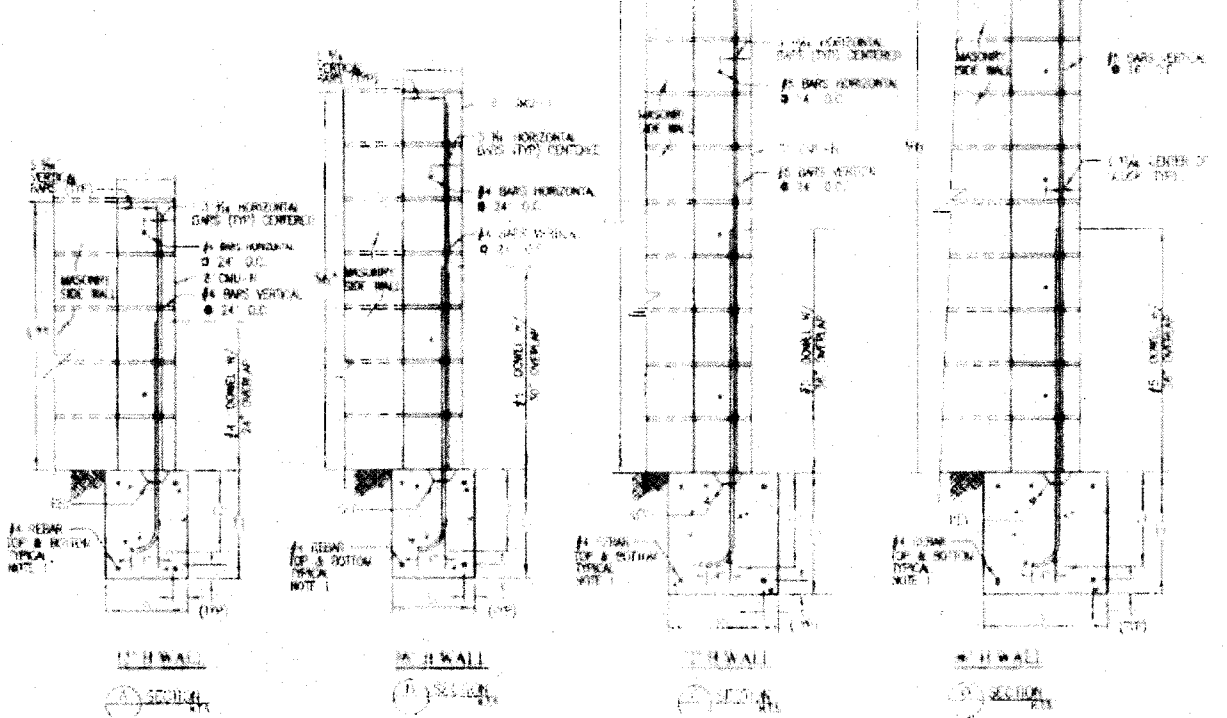
CSP/NOTIFICATION # \_\_\_\_\_  
SERVICE ORDER # \_\_\_\_\_  
SHEET **20** OF \_\_\_\_\_

(D) UNDERGROUND DISTRIBUTION STANDARDS <b>RETAINING WALL SECTIONS</b> <b>CROSS SECTION ELEVATIONS</b>						
N.T.S.	REV 0	04-20-08	M. GAPPINGER	T. KING		
SCALE	REV. No.	DATE	CHAIRMAN/STANDARDS	APPROVED		



**NOTES:**

1) ALL STANDARD SHOW RETAINING WALL FOR 10' HGT AND SLOPE SHOULD BE MAINTAINED UNLESS NOTED OTHERWISE.  
 2) CONSULT LOCAL PLANNING DEPARTMENT FOR PERMITS.




WALL HEIGHT	WALL TYPE (C)	WALL REINFORCEMENT		WALL THICKNESS (W)	WALL FOUNDATION (W x H)
		HORIZONTAL	VERTICAL		
12'-0"	SPW 100 BLOCK	#4 REBAR ON 12" CENTER	#4 REBAR ON 24" CENTER	8" MIN	12" x 12"
16'-0"	SPW 100 BLOCK	#4 REBAR ON 12" CENTER	#4 REBAR ON 24" CENTER	8" MIN	12" x 12"
20'-0"	SPW 100 BLOCK	#4 REBAR ON 12" CENTER	#4 REBAR ON 24" CENTER	8" MIN	12" x 12"
24'-0"	SPW 100 BLOCK	#4 REBAR ON 12" CENTER	#4 REBAR ON 24" CENTER	8" MIN	12" x 12"

**NOTES:**

- HORIZONTAL STEEL (#4 BARS) SHALL BE PLACED VERTICALLY IN THE TOEING AS SHOWN.
- SLOPE OF RETAINED EARTH HORIZONTAL RUN TO VERTICAL RISE 1 TO 1.
- CONSULT LOCAL PLANNING DEPARTMENT FOR PERMITS.

MASONRY MORTAR (TYPE) MASONRY SIDE WALL REINFORCING STEEL (TYPE) FOUNDATION (TYPE)
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**CSP NOTIFICATION**  
**SERVICE ORDER #**  
**SHEET 2 OF 07**



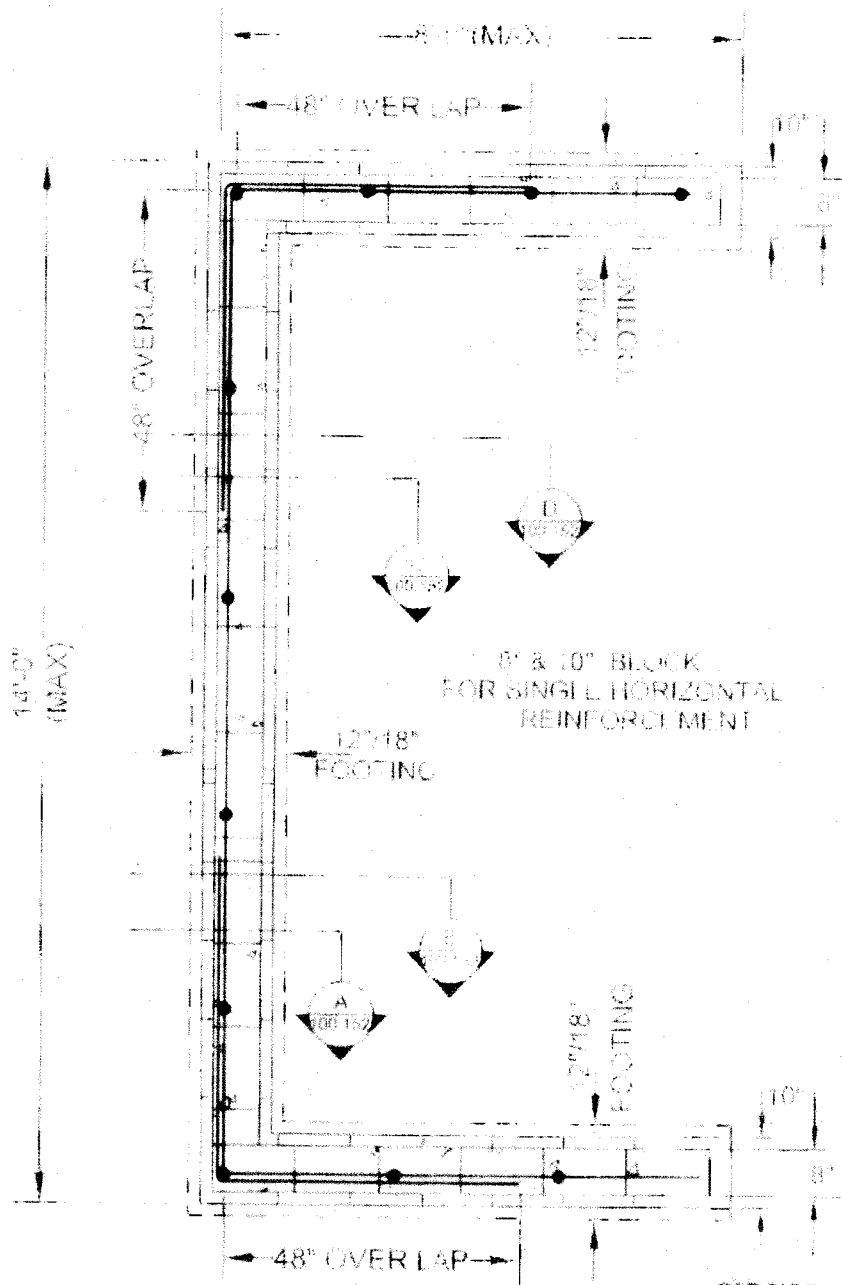
INCORPORATING DISTRIBUTION STANDARDS

**RETAINING WALL SECTIONS**

**FOUNDATION AND CROSS SECTION ELEVATIONS**

**AND CONTRACTORS' NOTES**


T. KING APPROVED	<b>TK</b>	M. GAPPINGER CHAIRMAN/STANDARDS	11-04-09 DATE	REV 0 REV. NO.	N.Y.S. SCALE
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6" & 10" BLOCK  
FOR SINGLE HORIZONTAL  
REINFORCEMENT

CSP NOTIFICATION #  
SERVICE ORDER #  
SHEET **22** OF

**FOUNDATION PLAN**  
N.T.S.

30' UNDERGROUND UTILITY STANDARD <b>RETAINING WALL SECTIONS</b> <b>FOUNDATION PLAN</b>					
N.T.S.	REV 0	04-09-09	M. GAFFINGER	TRC	
SCALE	REV No	DATE	CHIEFMAN/STANDARD	APPROVED	

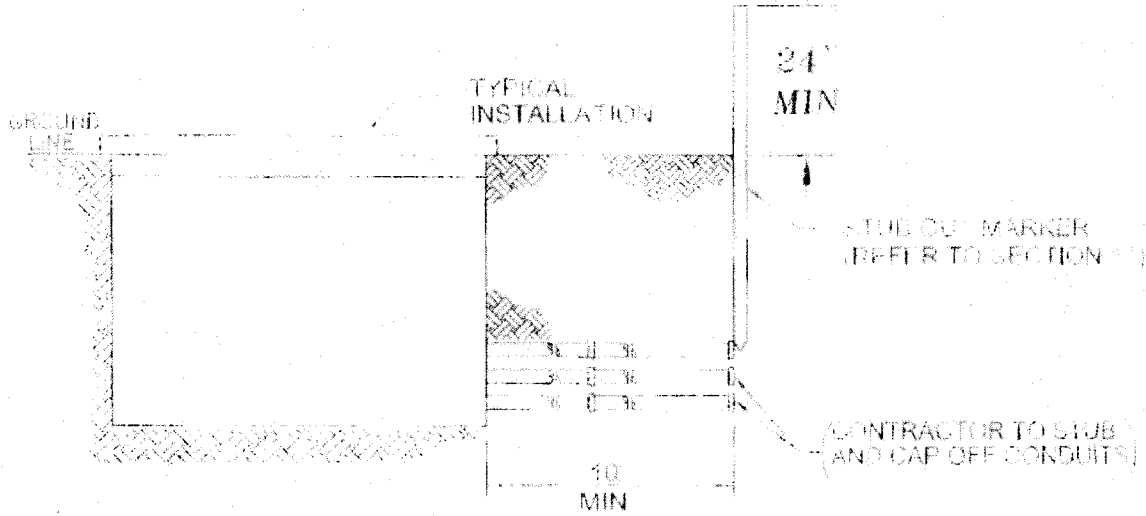
Drawings



**SIDE VIEW**

Scale N.T.S.

Drawing 1: Vault side view (conduit reduction) Refer to section 40




Refer to section 11 for Stub Out marker information.

NOTES:

1. ENCASMENT STOPS 10' FROM VAULT.
2. NO CONCRETE TO BE POURED WITHIN 10' OF ANY CONDUIT ENTRANCE OR EXIT WALL OF VAULT.

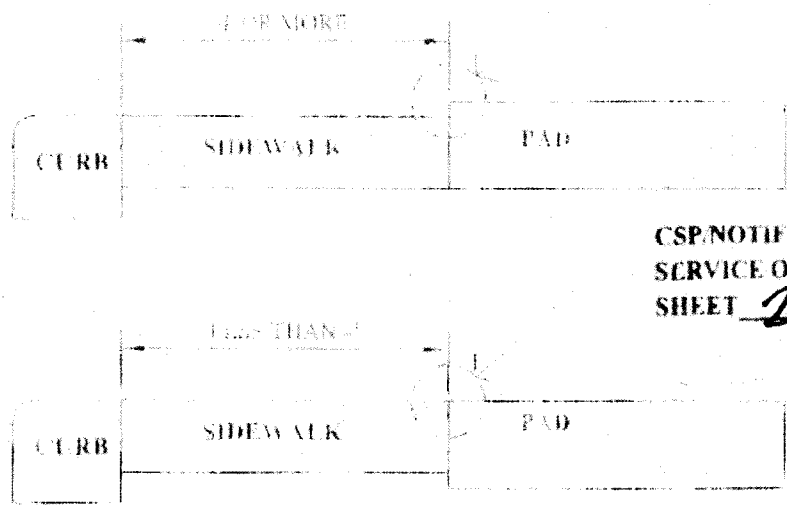
**CSP NOTIFICATION**  
**SERVICE ORDER #** \_\_\_\_\_  
**SHEET 23** OF \_\_\_\_\_

Drawing 2: Stub out detail Section 11 Stub out  
 Scale N.T.S.

	IIS UNDERGROUND DISTRIBUTION STANDARDS <b>CONDUIT REDUCTION &amp;                  STUB OUT MARKER                  DETAILS</b>				
	T. KING <i>TK</i> APPROVED	M. GAPPINGER <i>MG</i> CHAIRMAN/STANDARDS	11-19-06 DATE	REV 05 REV. No	N.T.S. SCALE

14. Clearances:

- A. Clearances shall be maintained from all above ground objects (refer to Structural Notes).
- B. Clearances are required at the street (see 8.0-1) for substructure, mid-rail, and equipment (see HD pull boxes) and transformer pads. Transformer pads shall be installed within the sidewalk area providing three foot (3') clearance for planting around pads and larger substructures to allow access for utility equipment crews can do their work. Provide ten feet (10') clearance on working side of Imperial Irrigation District equipment. Working side is side of access hole(s) to equipment.
  - "Noncombustible" Building surfaces or materials approved by the uniform building code as having a minimum fire rating one hour include but are not limited to: Steel studded drywall, steel studded stucco or other materials on steel stud, having minimum fire rating one hour, brick, clay tile, concrete, iron, steel, and stone. HD equipment requires three feet (3') clearance.
  - "Combustible" Building surfaces or materials include but are not limited to: Wood studded stucco and wood studded drywall. HD equipment requires three feet (3') clearance.
- C. For equipment installation, all end connections to room combustible buildings, clearance shall not be less than ten (10') from finishing windows and doors.
- D. Pads are permitted in the sidewalk provided the walk is wider than 4 feet (4') and not stuffing the curb. A four foot (4') usable walkway (not including curb) must be provided for wheelchair access. Do not install in trails such as bike, jogging, walking, equestrian, etc. **(Top of transformer pad when installed in sidewalk when less than four feet (4') must be level with finished sidewalk to eliminate tripping hazard.)**



CSP/NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET 24 OF \_\_\_\_\_

TRANSFORMER BANKS

- UNDERGROUND TRANSFORMER, 480
- UNDERGROUND TRANSFORMER, 240/120
- SUBMERSIBLE

CONTROL EQUIPMENT

- SECTOR CABINET
- PEDISTAL
- WIRE RACK
- TRANSCLASURE
- CIRCUIT BREAKER
- SWITCH AND CAPACITOR PAD

UNDERGROUND STRUCTURES

- SECONDARY PULLBOX
- VAULT, SMALL
- VAULT, MEDIUM
- VAULT, LARGE

SWITCH CABINETS

- SWITCH CABINET
- UNDERGROUND SWITCH
- ELBOW/T-BODY ELBOW (SCALED 1/2)

UNDERGROUND BUSES

- UNDERGROUND BUS
- UNDERGROUND BUS WITH GROUND TAP

PRIMARY CONDUCTOR

- SINGLE PHASE PRIMARY UNDERGROUND
- TWO PHASE PRIMARY UNDERGROUND
- THREE PHASE PRIMARY UNDERGROUND
- THREE PHASE PARALLEL PRIMARY UNDERGROUND
- BUS BAR

SECONDARY CONDUCTOR

- SINGLE PHASE SECONDARY UNDERGROUND
- THREE PHASE SECONDARY UNDERGROUND
- UNDERGROUND SERVICE
- UNDERGROUND MULTIPHASE CONDUCTOR

POLE

- WOOD POLE
- H-FRAME, 2 POLE
- H-FRAME, 3 POLE
- NON-WOOD POLE
- SI STANDARD
- VERTICAL POLE
- STEEL TOWER

LINE

- OVERHEAD LINE

MISCELLANEOUS FEATURE

- RISER
- FAULT INDICATOR
- REMOTE CURRENT SENSOR

MISC NETWORK DEVICES

- OPEN POINT
- DOUBLE DEAD END LAMP

OVERHEAD TRANSFORMER BANKS

- OVERHEAD TRANSFORMER, 480 AND 240
- OVERHEAD TRANSFORMER, 240/120
- OVERHEAD TRANSFORMER, 480
- STEP TRANSFORMER

OVERHEAD BANKS

- OVERHEAD CAPACITOR
- SECONDARY ON POLE/STREET
- STEEL TOWER ON STEEL SECONDARY
- STREET/RURAL LINE ON WOOD POLE

DYNAMIC OVERHEAD BANKS

- CIRCUIT BREAKER
- RECLOSER
- SECTIONALIZER

REGULATOR BANK

- REGULATOR BANK

SWITCH

- OVERHEAD SWITCH GEAR & NON-GEAR
- OVERHEAD SWITCH GEAR
- OVERHEAD SWITCH GEAR WITH GEAR
- AUTOMATIC TRANSFER
- SUBSTATION SWITCH

OTHER EQUIPMENT

- SIGNAL POINT
- PRIMARY METER

SUBSTATION

- SUBSTATION

INDICATOR

- SWR
- PHOTO WATCH
- SOLAR
- WIND

DOWN GUY

- DOWN GUY, SINGLE DOWN GUY
- DOWN GUY, TWO DOWN GUY
- DOWN GUY, THREE DOWN GUY
- SIDEWAY GUY
- SPAN BAR, X SYMBOL REPRESENTS 4 OR MORE

PRIMARY OVERHEAD CONDUCTOR

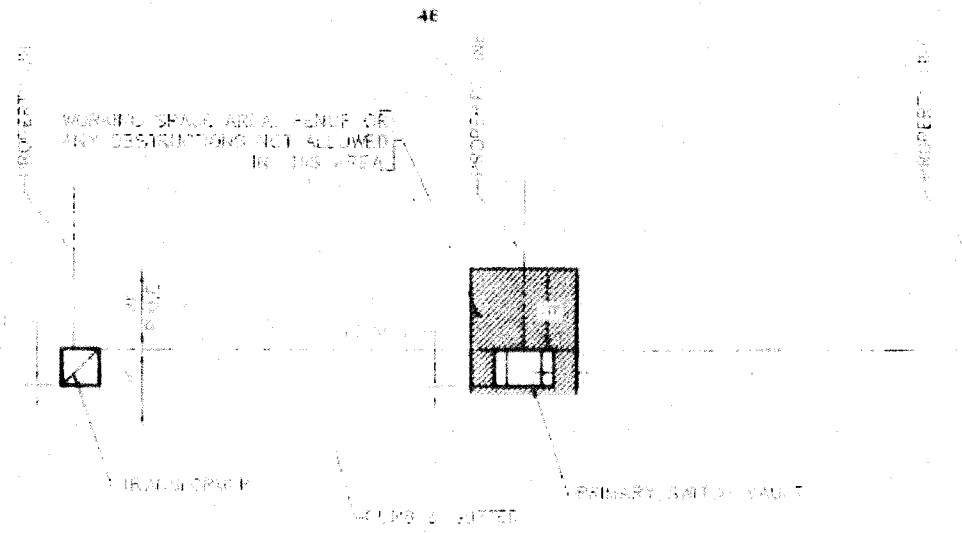
- SINGLE PHASE PRIMARY OVERHEAD
- TWO PHASE PRIMARY OVERHEAD
- THREE PHASE PRIMARY OVERHEAD
- SUBSTATION BUS BAR

SECONDARY OVERHEAD CONDUCTOR

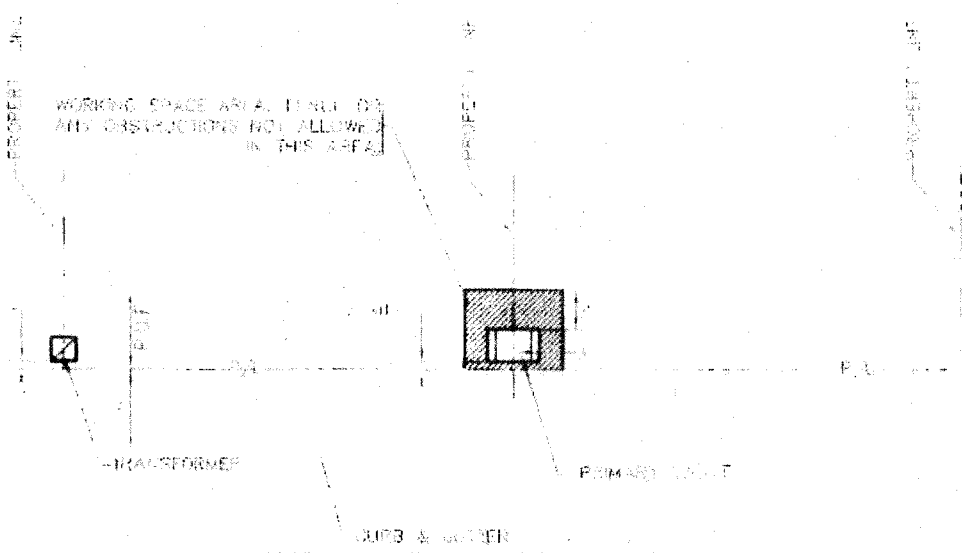
- SINGLE PHASE SECONDARY OVERHEAD
- THREE PHASE SECONDARY OVERHEAD
- OVERHEAD STREET
- OVERHEAD STREETLIGHT CONDUCTOR

HD UNDERGROUND DISTRIBUTION STANDARDS					
<b>HD ELECTRIC SYMBOL LEGEND</b>					
N.T.S.	REV 4	04-16-00	M. GAFFINGER <i>MVB</i>	C. KING	<b>CS&amp;NOTIFICATION</b> <b>SERVICE ORDER #</b> <b>SHEET 25 OF</b>
SCALE	REV. No.	DATE	CHAIRMAN/STANDARDS	APPROVED	





**CURB GUTTER SIDEWALK PARKWAY**



**CURB GUTTER PARKWAY SIDEWALK**

**NOTES:**

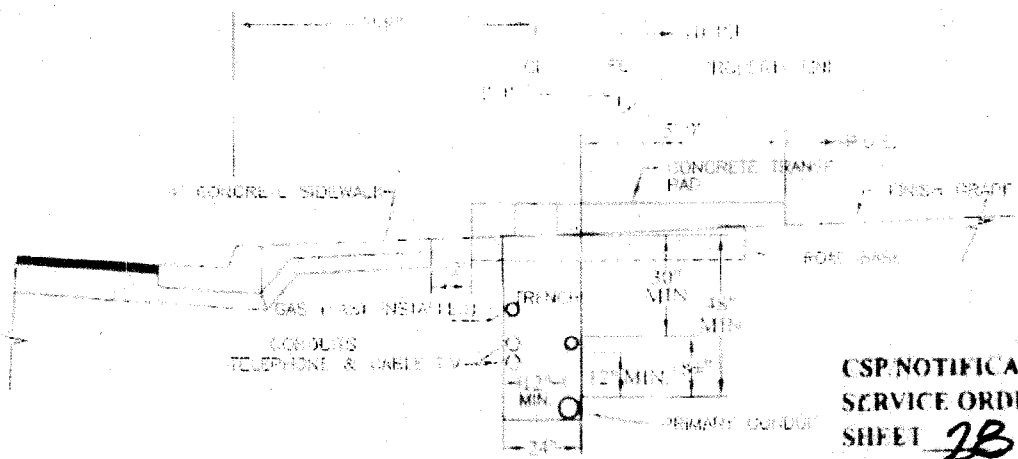
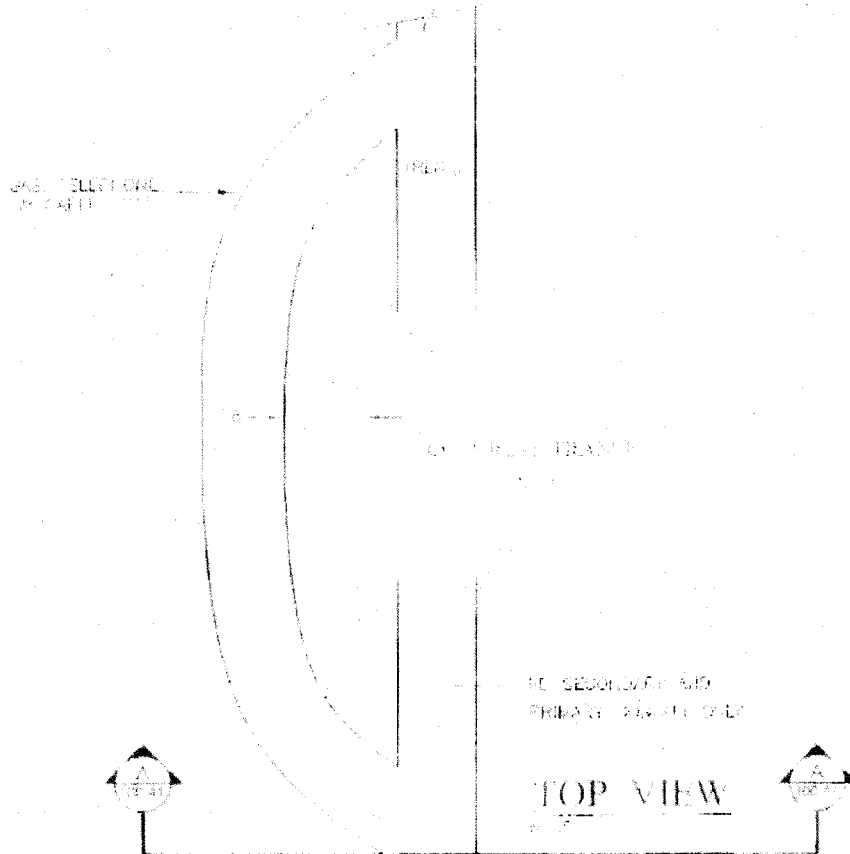
1. Any/All installations of ID facilities within any public street right-of-way shall be done via endorsement permit from a jurisdiction agency, i.e. City, County, etc.
2. Any/All installations of ID facilities within a designated Public Utility basement (P.U.B.) shall be made in accordance with P.U.B. as shown on said (a division) map, i.e. 10' P.U.E. adjacent to public street right-of-way, etc.
3. Any/All installations of ID facilities within private property shall be done via Assentment or other satisfactory authorization from vested owner of said property.

Please consult ID Neo-Estrala section for clarification concerning the above. CL (750)539-9239.

ID UNDERGROUND DISTRIBUTION STANDARDS <b>ID FACILITY                  INSTALLATION</b>						
1"=20'	REV 03	11 19 09	M. GAPPENGER <i>MGB</i>	E. KING <i>TK</i>		
SCALE	REV. No.	DATE	DRYMAN/STANDARDS	APPROVED		

CSP NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET **27** OF \_\_\_\_\_

100.41



CSP NOTIFICATION #  
 SERVICE ORDER #  
 SHEET **2B** OF

SECTION VIEW A-A

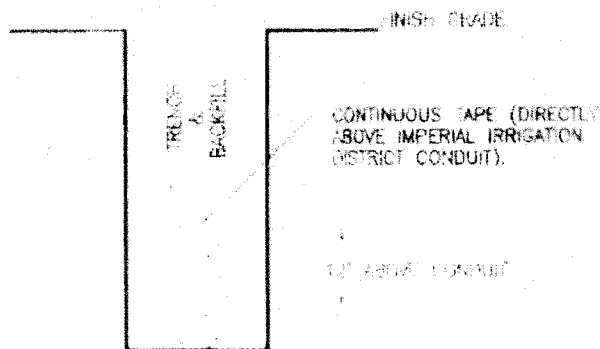
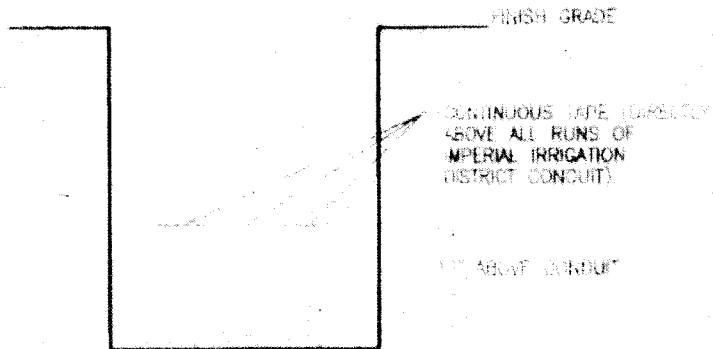


IID UNDERGROUND DISTRIBUTION STANDARDS  
**JOINT UTILITY (GAS INCLUDED)-TRENCH DETAIL,  
 CURB, GUTTER, SIDEWALK,  
 10FT. PARKWAY WITH 10 FT. P.U.E.**

T. KING APPROVED	M. GAPPIONE CHAIRMAN/STANDARDS	11-02-09 DATE	REV. DB REV. NO.	1/6-1-1 SCALE
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100.5




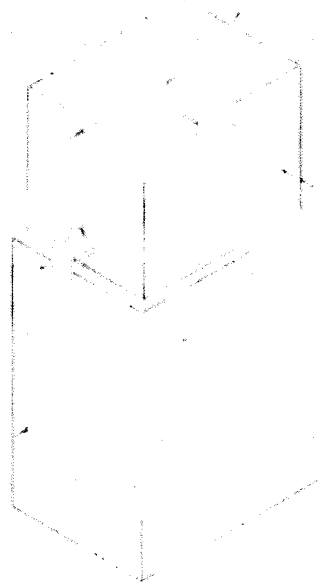
TYPICAL TRENCH DETAIL  
W/ LINE GUARD III TAPE OR EQUAL

NOTE:


1. INSTALL LINE GUARD III TAPE (RED, MINIMUM 2" WIDE).  
**"CAUTION: BURIED ELECTRIC LINE BELOW"**.  
TAPE TO BE FURNISHED & INSTALLED BY CONTRACTOR.
2. TAPE INSTALLED 12" ABOVE HIGHEST PRIMARY OR SECONDARY IMPERIAL IRRIGATION DISTRICT CONDUIT TRENCH.

CSP NOTIFICATION # \_\_\_\_\_  
SERVICE ORDER # \_\_\_\_\_  
SHEET 29 OF \_\_\_\_\_

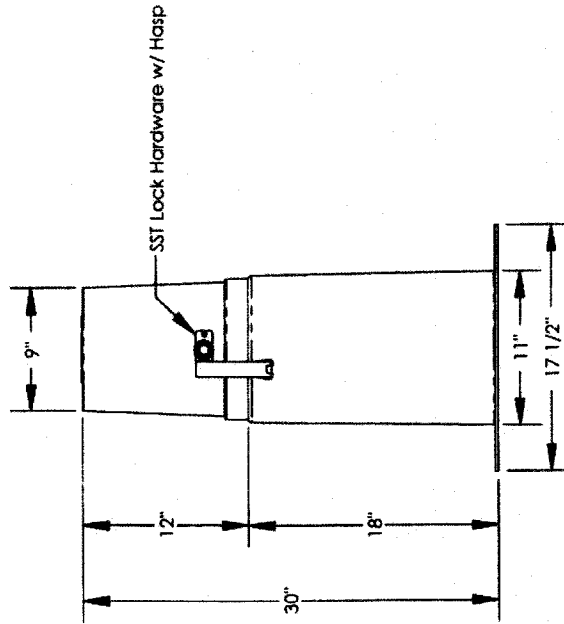
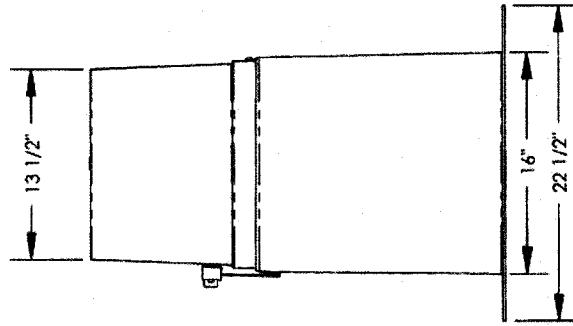
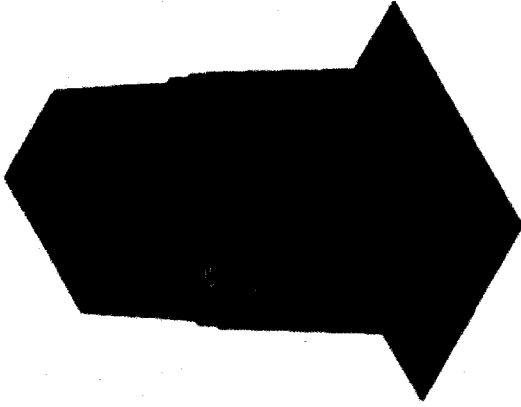
	IID UNDERGROUND DISTRIBUTION STANDARDS			
	<b>LINE GUARD III TAPE</b>			
T. KING APPROVED	<i>TK</i>	M. GAPPINGER CHAIRMAN/STANDARDS	12-07-09 DATE	REV 04 REV. No.
				1/4" = 1'-0" SCALE



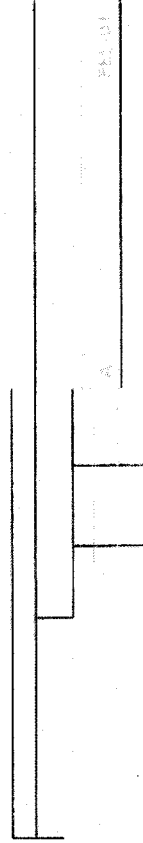
CSP NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET 36 OF \_\_\_\_\_

	ID UNDERGROUND DISTRIBUTION STANDARDS <b>SECONDARY PULLBOX          DETAIL DRAWING          CONNECTORS ABOVE GROUND LEVEL</b>			
	T. KING APPROVED <u>TK</u>	M. GAPPINGER <u>Wk</u> CHAIRMAN/STANDARDS	04-20-10 DATE	REV 04 REV. No.

REVISIONS		
REV.	DESCRIPTION	DATE
REL-01		2/1/2006
		APPROVED



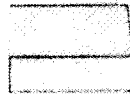
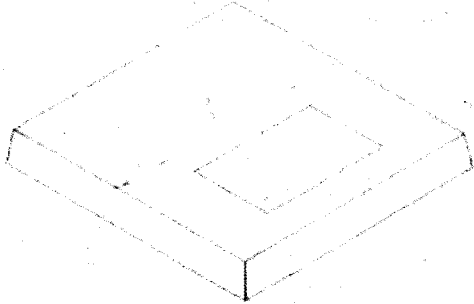
Nordic Fiberglass Inc




10/27/05 10:00 AM

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Sheet: 31



CSP/NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET 32 OF \_\_\_\_\_

	ID UNDERGROUND DISTRIBUTION STANDARDS <b>PRECAST CONCRETE PAD DETAIL FOR          SINGLE-PHASE TRANSFORMER          15KVA TO 167KVA</b>			
	T. KING <u>TK</u> APPROVED	M. GAPPINGER <u>MG</u> CHAIRMAN/STANDARDS	03-16-07 DATE	REV 00 REV. No.

CONSTRUCTION NOTES:

1. A PRECAST CONCRETE PAD SHALL BE USED

2. APPROVED MANUFACTURERS AND STRUCTURES:

SINGLE PHASE 15KV-167KV TRANSFORMER PAD IMPERIAL			
MANUFACTURER	PHONE No.	STRUCTURE No.	DIMENSIONS FRONT/SIDE THICKNESS
HLR RYERSON	(760)352-4341	3491 HLR	48"(F) X 48"(S) X 6"(T)
JENSON PRECAST	1-800-257-2100	PC4446-T8-25	48"(F) X 48"(S) X 6"(T)
D. D. CASPER	1-800-626-7880	4446-08TP	48"(F) X 48"(S) X 6"(T)
U.S. CONCRETE	(618)448-0516	3421ATP-80	48"(F) X 48"(S) X 6"(T)

(F) = FRONT                      (S) = SIDE                      (T) = THICKNESS


3. CONTRACTOR TO PROVIDE TWO 5/8" X 1/2" COPPERWELD  
GROUND RODS FOR PAD GROUNDING BY CONTRACTOR4. SIZE AND NUMBER OF CONDUITS IN EACH PAD TO BE AS  
SHOWN ON CONDUIT LAYOUT5. ANCHORAGE TO BE SET BY ALL WHEN TRANSFORMER IS  
INSTALLED6. CONTRACTOR SHALL PROVIDE & INSTALL 6" OF ROADBASE  
MATERIAL UNDERNEATH TRANSFORMER PAD, AND COMPACT  
ALL ROADBASE UNDERNEATH TRANSFORMER PAD TO A  
MINIMUM COMPACTION OF 90% AND A MAXIMUM OF 95%  
SEE STANDARD SPEC7. CONDUITS TO TERMINATE 12" ABOVE TOP OF TRANSFORMER  
PAD

CSP NOTIFICATION # \_\_\_\_\_

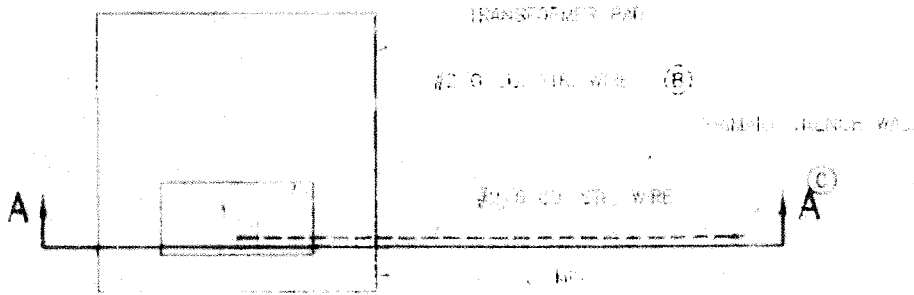
SERVICE ORDER # \_\_\_\_\_

SHEET **33** OF \_\_\_\_\_

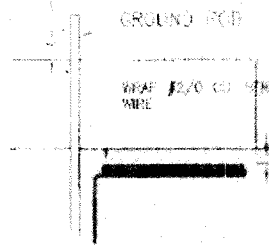
II UNDERGROUND DISTRIBUTION STANDARDS					
PRECAST CONCRETE PAD DETAIL FOR					
SINGLE-PHASE TRANSFORMER					
15KVA TO 167KVA					
A. P. S.	REV. 02	08-04-08	M. CAPPINGER	T. GIBB	TK
REV. 01	REV. 01	08-01-08	CHAIRMAN/STANDARDS	APPROVED	



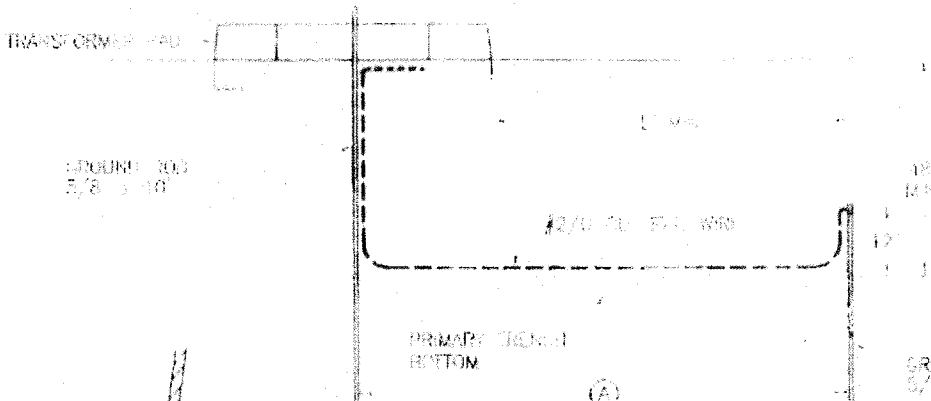
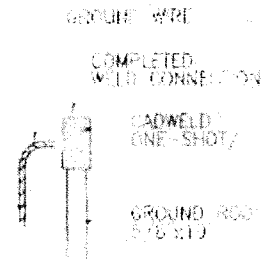
6" MIN. ALLOWED SPACE FOR GROUND ROD.



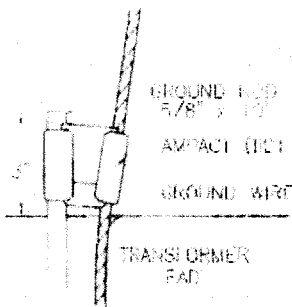
**PLAN VIEW**



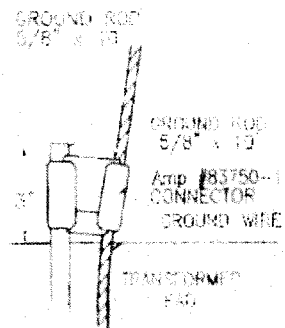
**BY CUSTOMER**




**SECTION A-A**



**BY I.I.D.**



CSP/NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET **34** OF \_\_\_\_\_


	I.D. UNDERGROUND DISTRIBUTION STANDARDS <b>TRENCH GROUND WIRE FOR SINGLE PHASE TRANSFORMERS PAD (BY CUSTOMER)</b>				
	T. KING APPROVED <b>T.K.</b>	M. GAPPINGER <b>M.G.</b> CHAIRMAN/STANDARDS	10-16-08 DATE	REV 08 REV No.	N.T.S. SCALE

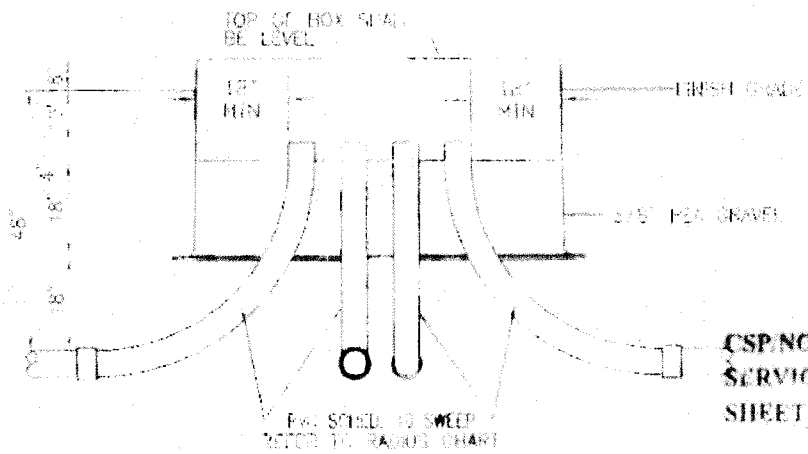
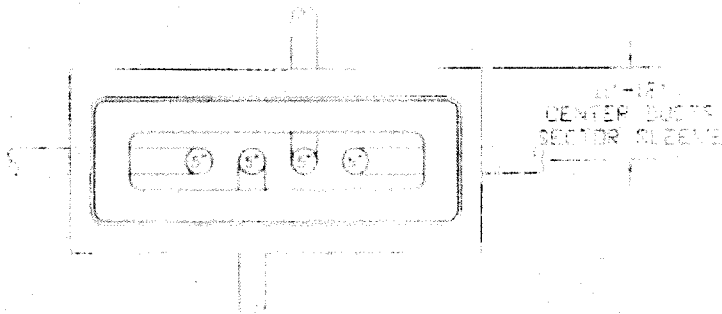
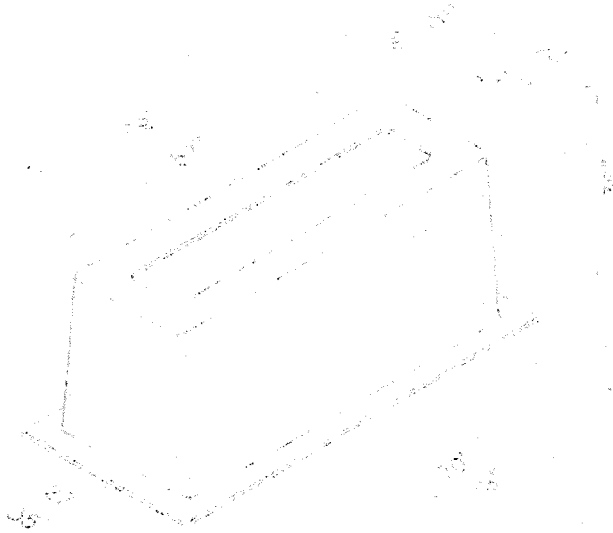
CONSTRUCTION NOTES:

- (A) \_\_\_\_\_
- (B) \_\_\_\_\_
- (C) LOCATE GROUND RODS SO THEY DO NOT TOUCH CONDUITS.



NOTES:

CSP NOTIFICATION # \_\_\_\_\_  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET 35 OF \_\_\_\_\_

IED UNDERGROUND DISTRIBUTION STANDARDS <b>TRENCH GROUND WIRE FOR          SINGLE PHASE TRANSFORMERS PAD 50KVA TO 167KVA          (BY CUSTOMER)</b>				
N.T.S.	REV 04	12-18-06		
SCALE	REV. No.	DATE	M. GAPPENBER <u>WV</u> CHAIRMAN/STANDARDS	T. KING <u>TK</u> APPROVED



CSP NOTIFICATION  
 SERVICE DISTRICT  
 SHEET **36** OF

	IID UNDERGROUND DISTRIBUTION STANDARDS <b>SUBSTRUCTURES</b> <b>THREE PHASE SECTOR SLEEVE</b> <b>PAD INSTALLATION</b>					
	T. KING APPROVED	 M. GAPPINGER CHAIRMAN/STANDARDS	07-14-06 DATE	REV 06 REV. No.	N.T.S. SCALE	




**CONSTRUCTION NOTES:**

1. COMPACT ALL MATERIAL FOR EXCAVATION UNDER SECTOR SLEEVE TO 50% BEFORE CONCRETE BOX PAD INSTALLATION.
2. CONTRACTOR SHALL PROVIDE & INSTALL 3/8" PE# GRAVEL MATERIAL UNDERNEATH SLEEVE SLOTTED INSIDE OF BOX PAD SUPPORT AND CHARGE.
3. CONTRACTOR TO PROVIDE TWO 3/8" x 10" GALVANNEED GROUND RODS PER SLEEVE SLOTTED INSIDE OF CONTRACTOR.
4. SIZE AND NUMBER OF CONDUITS TO BE DETERMINED BY SURVEY TO BE AS SHOWN ON DRAWING 10000.
5. CONDUITS NEED TO BE IDENTIFIED IN UNDERGROUND WAY.
6. ALL PRIMARY SLEEPS TO BE 1/2" SUB (30" x 36" RADIUS).
7. GUARD POSTS MAY BE REQUIRED AT DISCRETION OF THE INSPECTOR.
8. ANCHORAGE TO BE SET FORTH WITH TRANSCLOSURE TO BE INSTALLED.
9. APPROVED MANUFACTURERS AND SPECIFICATIONS:

MANUFACTURER	TYPE NO.	STRUCTURE NO.
HILTI	(780) 380-1011	FD-25-88-38
ELECTRIMOLD	(781) 885-1001	EF80-256730-1000-140

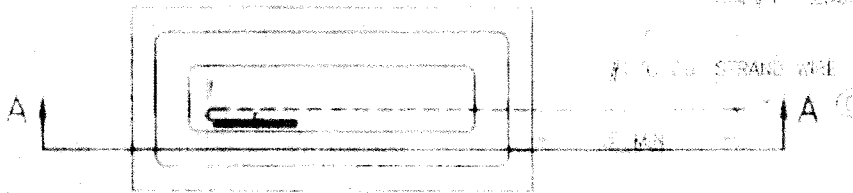
CSP/NOTIFICATION  
 SERVICE ORDER # \_\_\_\_\_  
 SHEET **37** OF **46**

IID UNDERGROUND DISTRIBUTION STANDARDS <b>SUBSTRUCTURES</b> <b>THREE PHASE SECTOR SLEEVE</b> <b>PAD INSTALLATION</b>					
N.T.S.	REV 05	07-08-08	M. GAPPNER <i>MG</i>	T. KING <i>TK</i>	
SCALE	REV. No.	DATE	CHAIRMAN/STANDARDS	APPROVED	

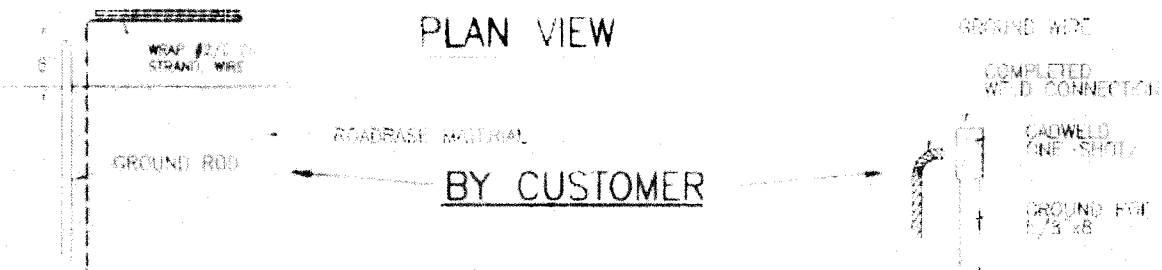
6" ± ALLOWED SPACE FOR GROUND ROD

#2/0 CU. STRAND WIRE TO EXPOSED POINT (S)

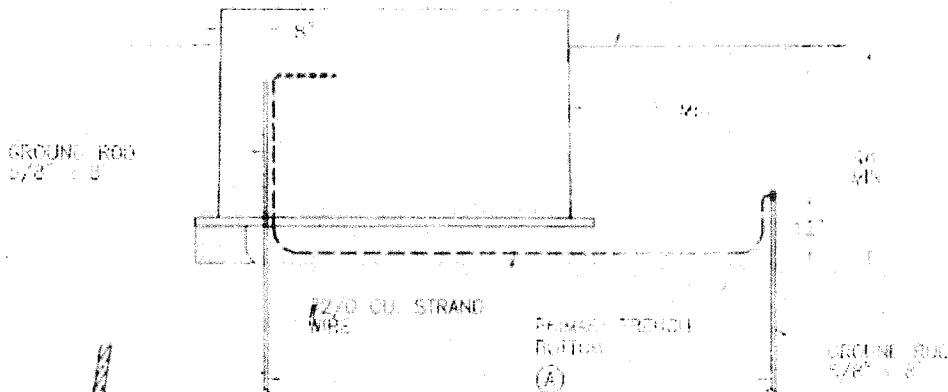
MINIMUM 10" WALL



PLAN VIEW



BY CUSTOMER



SECTION A-A

BY I.I.D.

CSP NOTIFICATION / SERVICE ORDER # SHEET 38 OF 45



IID UNDERGROUND DISTRIBUTION STANDARDS

THREE PHASE SECTOR SLEEV  
GROUNDING DETAIL  
(BY CUSTOMER)

T. KING APPROVED	M. GAPPINGER CHAIRMAN/STANDARDS	07-06-08 DATE	REV 06 REV. No.	N.T.S. SCALE
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**CONSTRUCTION NOTES:**

- (A) GROUND RODS TO HAVE A 6" MINIMUM SEPARATION
- (B) WRAP 6" OF WIRE (EXPOSED TAILOUT)
- (C) LOCATE GROUND RODS SO THEY DO NOT TOUCH CONDUITS (GENERAL ORDER FOR REWORKING GROUND RODS TO BE DRIVEN)

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	SHEET NO.	PAGE NO.
1	1	SECTOR SLEEVE SEE STANDARD 174.2		
2	1	CADWELD ONE-SHOT/ Amp #8750-1 CONNECTOR	40003365	
3	20'	WIRE - COPPER #2/0 STRAND, SOFT DRAWN BARE	40004022	
4	2	GROUND ROD, 5/8" x 6', COPPERWELD	40003613	

NOTES:


THE SERVICE PREMISES IS FOR PRIVATE PROPERTY, AND BELONGS TO THE CUSTOMER. SERVICES TO THE GROUNDING WIRE SHOULD NOT BE INSTALLED BY THE CUSTOMER. THANKS

CSP NOTIFICATION #

SERVICE ORDER #

SHEET 39 OF 40

40

IED UNDERGROUND DISTRIBUTION STANDARDS <b>THREE PHASE SECTOR SLEEVE                  GROUNDING DETAIL                  (BY CUSTOMER)</b>					
N.T.S.	REV 06	07-08-00	M. GAPPENGER <i>MVG</i>	T. KING <i>TK</i>	
SCALE	REV. No.	DATE	CHAIRMAN/STANDARDS	APPROVED	