

San Diego Gas & Electric Work Order Guidelines

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WORK ORDER GUIDELINES

I. PURPOSE

The SDG&E Work Order Guidelines publication outlines SDG&E’s requirements for uniform preparation of Underground (UG), Overhead (OH), and Gas work orders by Project Management, SDG&E Contractors, and Applicant Designers.

The primary objective of this manual is to provide users with a workable and consistent approach to the preparation, assembly, and required elements of a work order package.

Use this publication in conjunction with other available resources including, but not limited to Underground, Overhead, and Gas Construction Standards, the Electric Distribution Design Manual, the Service Standards and Guide Manual, the 20A/20SD Conversion Guide, the SAP CU/MU search site, Vault Requirements and Specifications, Basic Information Guide, and input from construction personnel.

All printed material must be clear and legible, including requirements about full and reduced sizes, and must meet SDG&E standards.

This document is offered as a general guide and SDG&E assumes no liability as to the accuracy of the information or potential application.

For questions or comments, contact DPM Policy and Compliance.

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II. WORK ORDER PACKAGE

A typical work order package will consist of the following major elements:

A. Folder Folder

When creating the work order folder, follow the procedure for the relevant segment.

For Segment 1 and Segment 2 designs, create a manila folder having the major elements of a work order package filed in chronological sequence. Label the folder with the corresponding work order number.

For Segment 3 designs, assemble multiple job packages in the Procore software so that crews can perform and bill for work separately.

For all design work, maintain the paper or electronic folder according to [Records Retention criteria](#), or as required by the California Public Utilities Commission (CPUC).

Note: DPM is migrating to electronic files for all segments.

B. Face Sheet Face Sheet

The face sheet is a two-page report generated by SAP that identifies a variety of general information associated with a specific project and job, e.g., name of project, location, address, planner, designer, phone numbers, district, budget, capital cost requirements, and notes as well as job approval signatures. See the [Face Sheet](#) section for additional details.

C. Base Map Base Map

The base map is a scaled illustration depicting the right-of-way, easement, and property information associated with or related to a project. Base maps illustrate the geographic location and position of existing utility gas and electric as well as foreign utilities. See the [Base Map](#) section for additional details.

D. Design Sketch Design Sketch

The design sketch is a two-dimensional illustration depicting existing and proposed gas or electric installations associated with or related to a project. Work order design sketches depict the removal, installation, or modification of facilities as drawn on the base map. See the [Design Sketch](#) section for additional details.

E. Design by Location (DBL) Design b

Use compatible units (CU) to order material, labor, and equipment for the work required at each location. See the [Design by Location](#) section for additional details.

F. Cost Reports Cost Reports

The cost report is a multi-page SAP report that generates costing information, based on DBL data entry. Cost reports may include cost report, cost analysis report, and contract appendices. Costing is a proprietary function typically done by SDG&E employees. See the [Cost Reports](#) section for additional details.

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G. One-Line Requirements One-Line Requirements

A one-line is a schematic drawing of the SDG&E primary UG distribution system. Any work involving an SDG&E primary structure requires a one-line. See the [One-Line Requirements](#) section for additional details.

H. Maps Maps

Various maps are associated with the work order package. See the [Maps](#) section for additional details.

I. Releases and Permits Releases and Permits

Review which releases and permits are necessary to complete the job, including, but not limited to city/county permits, traffic control plans, environmental release, and right-of-way. See the [Releases and Permits](#) section for additional details.

J. Route Sheets Route Sheets

A route sheet is an Excel spreadsheet that indicates the documents to be distributed to specific departments for a particular job. There are different route sheets for distinct types of jobs. See the [Route Sheets](#) section for additional information.

K. Supplemental and Supporting Documentation Supplemental and Supporting Documentation

Supplemental Documentation includes miscellaneous information, used to help make decisions for the specific job. Supplemental documentation normally is not issued to Construction. See the [Supplemental and Supporting Documentation](#) section for additional details.

These major elements are discussed in more detail as they pertain to each of the work order disciplines.

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III. FACE SHEET

The face sheet includes proper approvals, approval dates, related right-of-way, permit and traffic control plan information. In addition, the face sheet should include joint construction information, existing facility work order number references, related job, plan, and reference map information with specific construction notes added as required.

Face sheets are required on a route sheet to be issued with jobs.

Face sheets are generated through the design process in conjunction with running costs. Before generating the face sheet, complete the SAP Additional Data tab, Pre-Reqs tab, and Partners tab.

For more information regarding face sheet creation and data entry through SAP, consult SDG&E’s Skills Resource Channel for SAP training materials.

See [Appendix A](#) to review an example of a completed face sheet.

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IV. BASE MAP

A Base map is a scaled drawing depicting right-of-way, easement, and property information associated with or related to a project. Base maps illustrate the geographic location and position of existing and proposed electric and gas installations. For contracted design, the contractor may create the base map required for their design or SDG&E will provide a CAD file or XREF file land base map for subdivisions, commercial/residential developments (with private streets), conversion boundary areas, improvement plans, lot splits/tentative parcel maps, planned communities, and master plans. SDG&E does not provide land base maps for single lot projects.

Comply with the following criteria when creating a base map. For a general example of a base map, see [Appendix B](#) (NB Electric Base Map), [Appendix C](#) (Conversion Base Map), and [Appendix D](#) (Gas Base Map/Blank)

1. Medium

Submit electronic data as an AutoCAD file (DWG) to the requester (Project Management Supervisor). Create the base map using a Project Management base map template without external references. Create land data in model space.

2. Size

Depending on the size and shape of a project, produce base maps with an awareness that horizontal (landscape mode) designs are the most efficient use of space. The 11” vertical by 17” horizontal format is the most common print size. Print sizes and mandatory borders are shown below:

Sheet	Size	Border
B	11” x 17”	¼”
C	22” x 34”	½”

Note: Borders should be free of any drawn or written information to ensure that, when prints are reproduced, no information or portion of the sketch is inadvertently cut off.

3. Scale

All base maps are limited to scales of 10’ intervals between 1” = 10’ through 1” = 100’. Indicate the map scale on the drawing in proximity to the corresponding north arrow. Maps with various or remote locations need not be drawn to scale. In such cases, take great care to identify the absence or localization of scale. Scale for overhead is not required. All drawing information and text must be legible when printed as 11” x 17”.

Note: When base maps are printed at full size, all text heights pertaining to location box notes and callouts should be 1/8” (.125).


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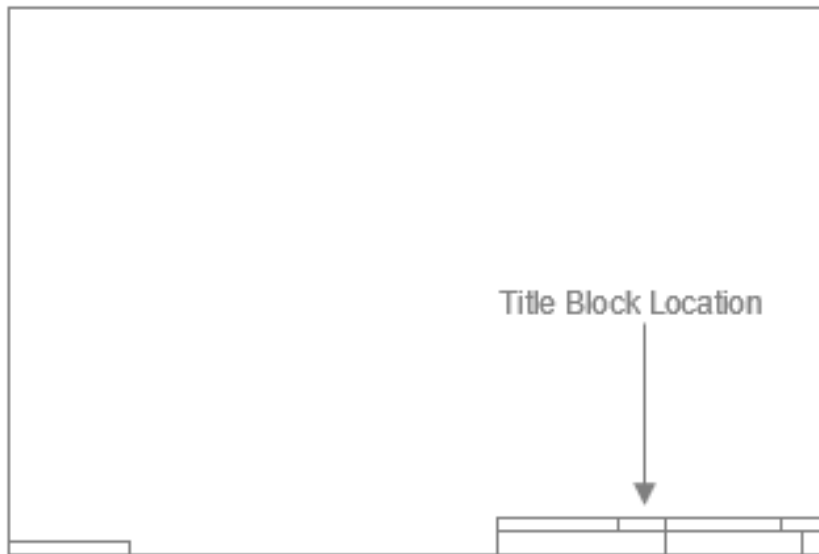
4. Title Block

Create each base map using a Project Management title block template provided by an SDG&E contact. Insert the horizontal title as shown in the lower right-hand sheet corner. When editing files, edit the date to the current date.

The Applicant Designer, Contractor or Subcontractor's firm name is not to appear anywhere on the maps or SAP print outs.

For Applicant Design jobs, if the Designer is not an SDG&E Qualified Applicant Designer (AD), include the Qualified AD's name next to the Designer's name.

 San Diego Gas & Electric Design & Construction Management <small>A Sempra Energy utility</small>	PROJECT NOTIFICATION # 300000336811	
	JOB NOTIFICATION # 300000339007	
PROJECT MGR/PLANNER NAME & PHONE: HEATHER GEORGE (858) 636-3992	DATE: 01/11/21	
DESIGNED BY: JASON SEILER	SHEET BM01 SHT 1 OF 1	FCO ##
REVIEWED BY: REVIEWER NAME		



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The title block should be notated according to the type of design and numbered accordingly.

Example: Base Map, would be noted as BM and the page/sheet number; BM01, BM02, etc.

DESIGN SKETCHES	
UG Electric Design	UD Non-Conversions
OH Electric Design	OD Non-Conversions
Gas Design	GD
Gas Blank	GB
One Line	OL
Base Map	BM
Trench & Conduit	TC
Cable & Connections	CC
4kV to 12kV	CO
SCADA	SC
Cable Pole	CP
OH RFS	ORS
Gas RFS	GRS
UG RFS	URS
Pole Relocations	ODR
UG Relocation	UDR
Gas Relocation	GDR
Mobile Home Park Designs	MHP
Vault Designs	VD
NON-DESIGN SKETCHES	
Traffic Control Plan	TCP
City Streetlights	CS
AT&T	ATT
CATV	CTV
Other COM	OC1
Other COM	OC2

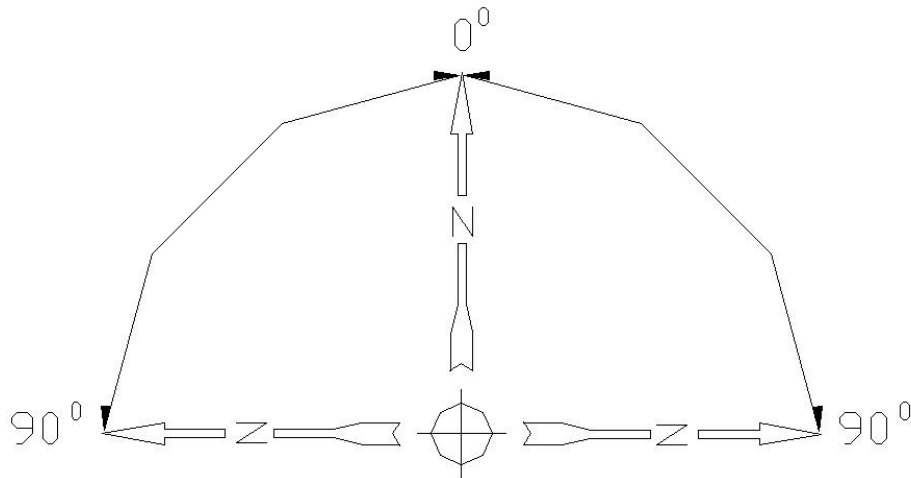
5. North Arrow

Include a north arrow on all base maps, with preference of the north arrow at 0° north. Although some free license may be taken, north arrows should conform to the following standard design:

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Whenever possible, position land base data on the page so that the north arrow complies with the following orientation:



Note: For work order sketches, be sure to align most sheets (if possible) with the north arrow orientation at or above the horizon line.

6. Streets

Capture all dedicated and non-dedicated streets that have facilities in proximity to them on the base map. Show adjacent cross streets. Use the right-of-way to graphically depict the street. Place street names parallel to the corresponding street.

If the design requires multiple sheets, identify the street name on each sheet.

Include municipal approved street names on the work order prior to final sketch.

7. Vicinity Map

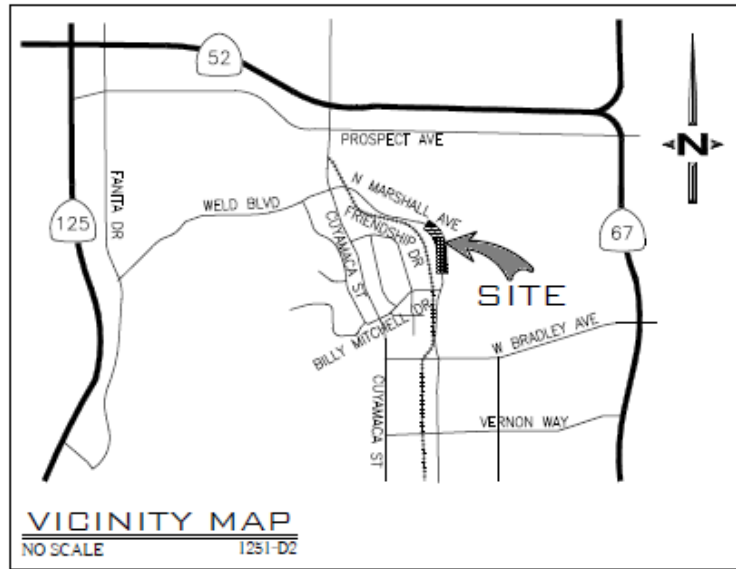
Draw a vicinity map to identify the general work location identified with a large site arrow. Orient the vicinity map north and include a north arrow as well as Thomas Brothers Guide coordinates (page and grid). The vicinity map should show the nearest highway(s), freeway(s), and state route(s) as well as nearby major streets. The Vicinity map has no scale. All text must be legible on an 11" x 17" print.

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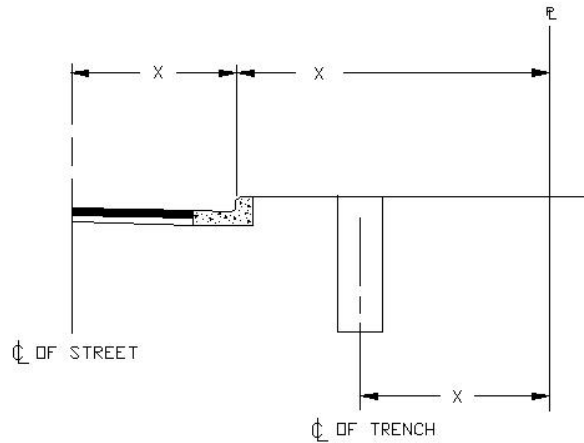
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8. Typical Street Section

Typical street sections indicate trench and substructure location with respect to setbacks, street improvements (curbs/sidewalks), property lines, and street centerlines. Provide street sections on sketches involving new installations, modifications to, and/or removal of underground electric or gas facilities. Refer to UG Construction Standards Section 3300 for more information. See pages 17-18 for a more detailed example.

The typical street section depicts all work being performed in the Franchise street/private street, alleys, and private property.



TYPICAL STREET SECTION

NO SCALE STREET NAME

Notes:

- If street configuration changes, multiple street sections may be required.

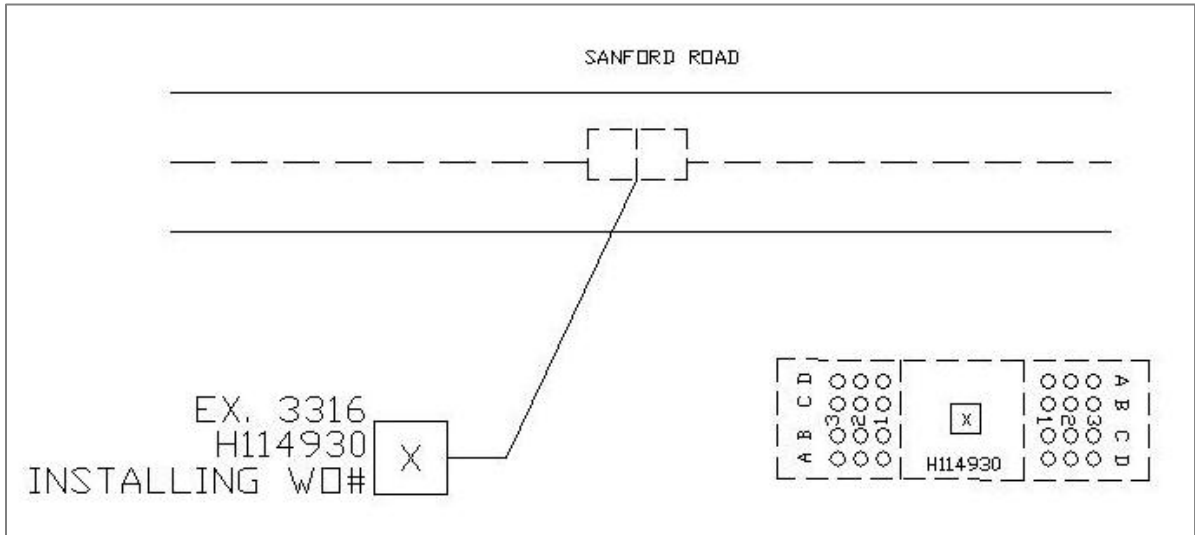
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- Add relative foreign utilities (gas main, water, etc.), particularly those near new trenching or new installations.
- To review typical street section examples for new construction and conversions, refer to UG Construction Standards 3364.1-3.

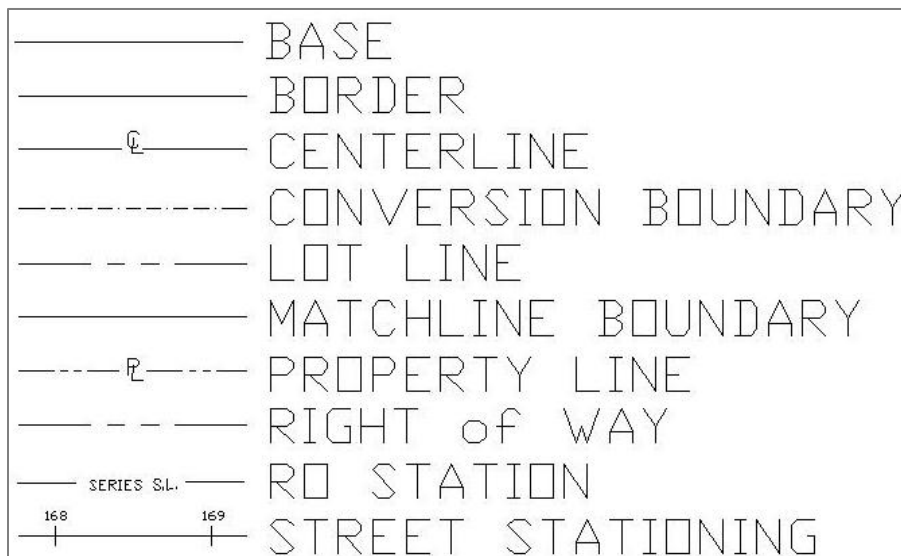
9. Substructure Details for Facilities

Substructure details apply to 3315 and larger handholes, manholes, padmount switches, and fuse cabinets. Place substructure details in the same orientation as the corresponding substructure shown. If possible, the substructure detail should be located on the same sheet as the DBL location for the corresponding facility.



10. Property/Boundary Lines

Capture and represent property/boundary line types in the following manner:



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11. Lot Numbers

Show lot numbers on subdivisions. If lot numbers are not available, use building numbers or addresses to identify service locations.

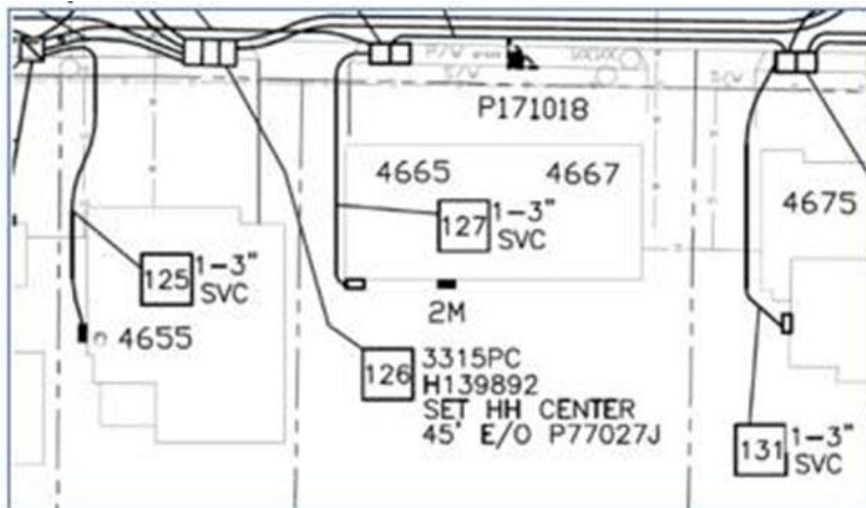
Note: Include APN# (Assessor parcel Number) as required for New Business designs if no other identifying information is present.

12. Buildings/Existing Obstructions

When necessary to facilitate the relative placement and location of facilities, trench paths, and/or metering show new and/or existing building footprints and/or corners.

Draw and label existing obstructions that would impact the installation of proposed work.

Shown is an example of buildings that would need to be added on a base map to allow accurate trench routes.



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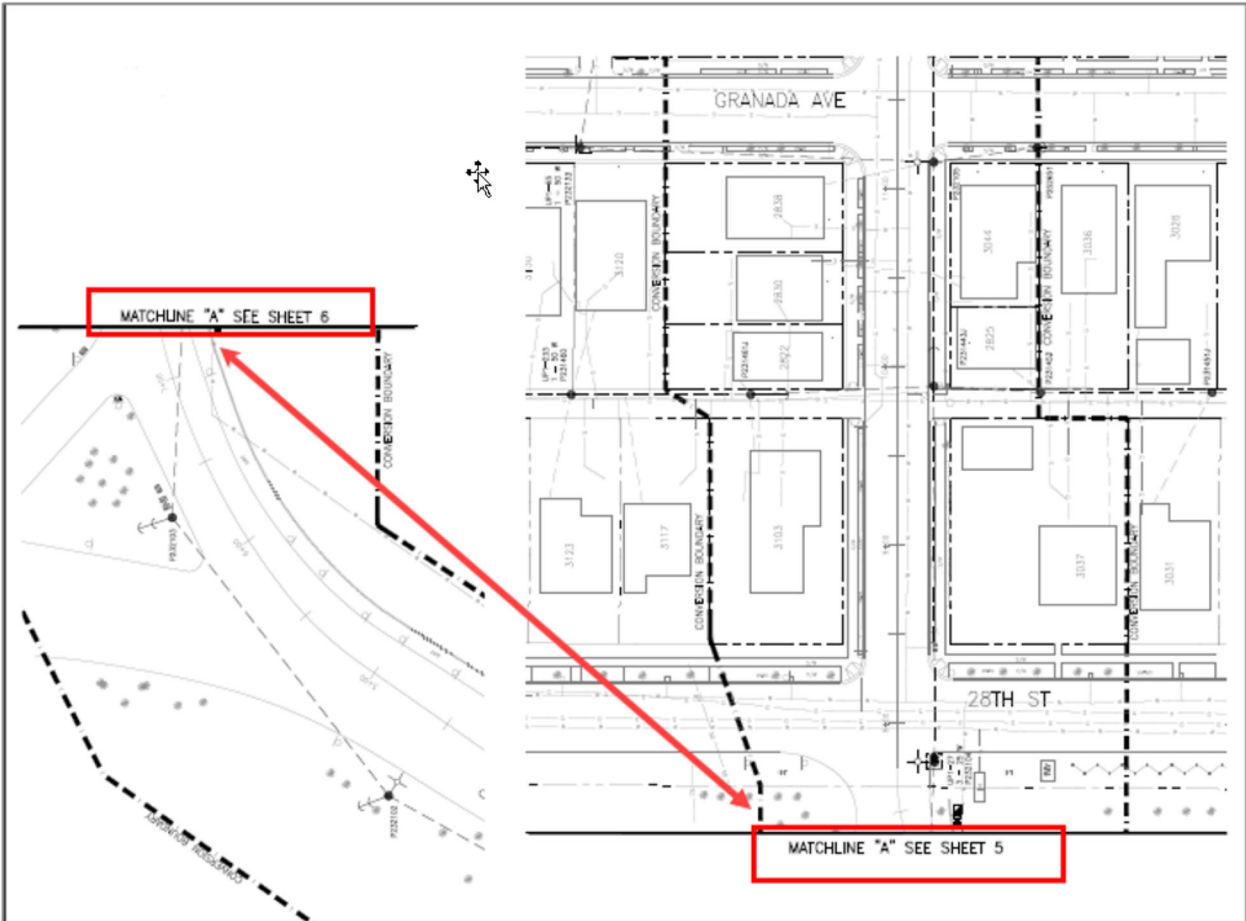
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13. Multiple Page Match-Lines/References

Should the design require the generation of multiple sheets, employ match-lines along with reference indicators. See typical example below.



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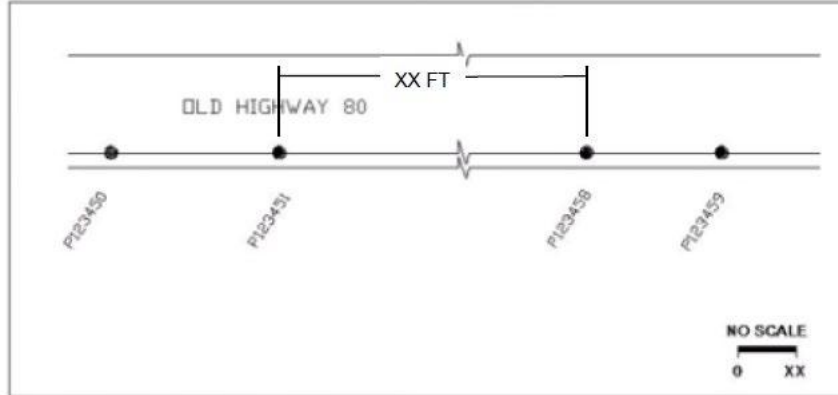
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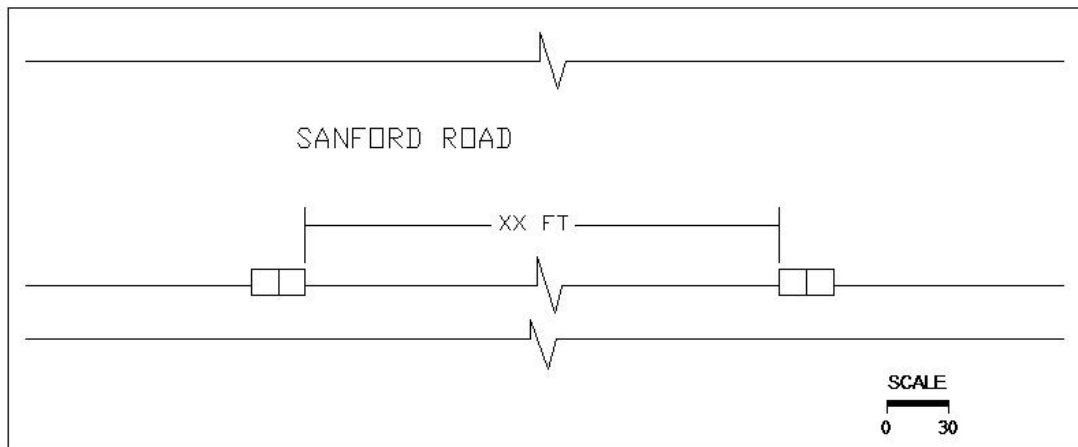
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14. Break-Lines

To minimize multiple pages, use break-lines to shorten long linear street or installation spans. Note the total distance between structures.



OVERHEAD



UNDERGROUND

Note: In the examples above, “XX” = total distance between structures or facilities.

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15. Existing SDG&E and Existing Foreign Utilities

Represent existing SDG&E Gas and Electric as well as and foreign utilities equipment and conduit routes in potential conflict in accordance with the following criteria:

LINETYPE LEGEND	
—————	NEW ELECTRIC/FACILITIES
- - - - -	EX. ELECTRIC/FACILITIES
— ET — ET — ET —	EX. ELECTRIC TRANSMISSION
168 ———— 169	STREET CENTERLINE/STATIONING
—————	CONVERSION BOUNDARY
— P/L — - - - - -	RIGHT OF WAY/PROP. LINE
—— CATV —— CATV —— CATV ——	EX. OH CABLE TV
—— CATV UG —— CATV UG —— CATV UG ——	EX. UG CABLE TV
— T — T — T — T —	EX. OH TELCO/TELECOM
—— UGT —— UGT —— UGT ——	EX. UG TELCO/TELECOM
— — FO — — FO — — FO —	EX. UG SDGE FIBER OPTIC
— G — G — G — G —	EX. GAS
—— FUEL —— FUEL —— FUEL ——	EX. FUEL LINE
—— OIL —— OIL —— OIL —— OIL ——	EX. OIL LINES
— S — S — S — S —	EX. SEWER
— W — W — W — W —	EX. WATER
—— RH2O —— RH2O —— RH2O ——	EX. RECLAIMED WATER
—— SD —— SD —— SD ——	EX. STORM DRAIN
— X — X — X —	EX. FENCE
—— SERIES S.L. —— SERIES S.L. ——	SERIES SL, RO STATION
+ + + + +	TRAIN/TROLLEY TRACKS

16. Miscellaneous Symbols

Represent physical features in potential conflict in accordance with the following criteria:

	Trees
	Fence and Gate
	Well
	Water Tank
	Railroad
	Interstate & Highway Symbols
	Guardrail
	Bridge

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17. SDG&E Base Map Layer Standard

SDG&E BASEMAP LAYER STANDARD			
0	White (7)	CONTINUOUS	AutoCAD Default Layer
BASE	Yellow (2)	CONTINUOUS	Title Block
BLDG OUTLINES	Green (3)	CONTINUOUS	Bldg. Footprints for New Business
BLDG OUTLINES 20A-20SD	Blue (5)	CONTINUOUS	Bldg. Footprints for Conversion Projects
BUSBAR	Red (1)	CONTINUOUS	Existing and proposed busbars
CATV-OH	Blue (5)	CABLE_TV_LINE	OH TV/Communication Lines
CATV-UG	Blue (5)	UG_CATV_LINE	UG TV/Communication Lines
CONVERSION BOUNDARY	Cyan (4)	BORDER2	Conversion/Project Boundary Line
CURB-EXISTING	8	CONTINUOUS	Existing Curb
CURB-PROPOSED	8	CONTINUOUS	Proposed Curb/Street Improvements
Defpoints		CONTINUOUS	Standard system layer used by AutoCAD
DIG-LOGO	Yellow (2)	CONTINUOUS	Dig Alert Logo Block
DRIVEWAY	9	CONTINUOUS	Existing/Proposed Driveway
EASEMENT	White (7)	DASHED	New or existing Easements
ELECTRIC-OH-EX-FACILITIES	Red (1)	EXISTING-S	Existing OH Electric Facilities
ELECTRIC-OH-EX-PRI	Red (1)	EXISTING-L	Existing OH Primary electric distribution lines
ELECTRIC-OH-EX-SEC	Red (1)	EXISTING-S	Existing OH Secondary electric distribution lines
ELECTRIC-OH-EX-SERVICE	Blue (5)	EXISTING-S	Existing OH electric service line
ELECTRIC-OH-HEAD GUYS	Blue (5)	EXISTING-S	Exist and proposed pole top guying
ELECTRIC-OH-LAYOUT	Red (1)	CONTINUOUS	Proposed OH electric design layout
ELECTRIC-TEXT	Green (3)	CONTINUOUS	Electric Location Callouts, Notes, Details, etc.
ELECTRIC-UG-EX	Red (1)	EXISTING-L	Exist. UG primary and secondary electric distribution lines
ELECTRIC-UG-EX-FACILITIES	Red (1)	EXISTING-S	Existing UG electric facilities/structures
ELECTRIC-UG-EX-SERVICE	Blue (5)	EXISTING-L	Existing UG electric service lines
ELECTRIC-UG-LAYOUT	Red (1)	CONTINUOUS	Proposed UG electric design layout
ELECTRIC-UG-TRANSMISSION	White (7)	ELECT_TRANS	Electric UG Electric Transmission lines
FIBER OPTIC	Blue (5)	FIBER_OPTIC	Existing Fiber Optic Lines
FUEL LINE	Blue (5)	FUEL_LINE	Existing Fuel Line Lines
GAS-20A-20SD	Blue (5)	GAS_LINE	Existing Gas Lines for 20A-20SD Sketches
GAS-EXISTING	Cyan (4)	HIDDEN	Existing Gas Lines
GAS-FITTING	Red (1)	CONTINUOUS	New and Existing Gas Fittings
GAS-LAYOUT	Cyan (4)	CONTINUOUS	New/proposed Gas Layout
GAS-MGTO	Yellow (2)	CONTINUOUS	Gas Trench Only for Gas Mains
GAS-SGTO	Yellow (2)	CONTINUOUS	Gas Trench Only for Gas Services
GAS-TEXT	Green (3)	CONTINUOUS	Gas Location Callouts, Notes, Details, etc.
GAS-TRANSMISSION	White (7)	GT LINE	Gas Transmission
GUTTER-EXISTING	9	CONTINUOUS	Existing Gutter
GUTTER-PROPOSED	9	CONTINUOUS	Proposed Gutter/Street Improvements
IMAGE	251	CONTINUOUS	Scanned image reference layer
LANE STRIPES	Blue (5)	CONTINUOUS	Parking stripes, road paint
MATCH LINE	Cyan (4)	CONTINUOUS	Sheet Match Line
MHP SPACES	White (7)	PHANTOM2	Mobile Home Park Spaces
MISCELLANEOUS CONFLICT	Blue (5)	CONTINUOUS	Above ground conflicts (Signs, benches, trees, etc.)
NO-SHOW	White (7)	CONTINUOUS	AutoCAD Default Layer
OIL LINES	Blue (5)	OIL_LINE	20A-20SD to show existing Oil Lines
ONELINE-CENTERLINE	9	CENTER	One-Line Centerline
ONELINE-EXISTING	Red (1)	HIDDEN	Existing Electric Lines, One-Line Schematic
ONELINE-FACILITIES	White (7)	CONTINUOUS	Existing Facilities/Structures
ONELINE-LAYOUT	Red (1)	CONTINUOUS	New Electric Lines, One-Line Schematic
ONELINE-STREET NAME	Red (1)	CONTINUOUS	One-Line Street Name
ONELINE-TEXT	Green (3)	CONTINUOUS	One-Line Text and Callouts
POLES	Red (1)	CONTINUOUS	Existing and proposed SDG&E poles

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17. SDG&E Base Map Layer Standard (Cont'd)

POLES-FOREIGN	Blue (5)	CONTINUOUS	Exist foreign poles (CATV, Telco, etc.)
PROPERTY LINE	White (7)	PHANTOM2	Property lines, Lot lines
RETAINING WALL	Cyan (4)	CONTINUOUS	Used to show retaining walls around utilities.
RIGHT OF WAY	White (7)	PHANTOM2	Identifies Right-of-Way lines and boundaries
RO STATION	Blue (5)	RO_STATION	20A-20SD Series street lighting
SEWER-EXISTING	210	SEWER_LINE	Existing sewer pipes, laterals, manholes etc.
SEWER-PROPOSED	210	SEWER_LINE	Proposed sewer pipes, laterals, manholes, etc.
SHEET LABEL	White (7)	CONTINUOUS	Used for labeling sheets on index page
SIDEWALK-EXISTING	9	CONTINUOUS	Existing Sidewalk
SIDEWALK-PROPOSED	9	CONTINUOUS	Proposed Sidewalk/Street Improvements
SLUDGE LINES	Blue (5)	SLUDGE_LINE	20A-20SD Existing Sludge Lines
STORM DRAIN-EXISTING	71	STORM_DRAIN	Exist. Storm Drain culverts, pipe inlets, manholes, etc.
STORM DRAIN-PROPOSED	71	STORM_DRAIN	Proposed Storm Drain culverts, pipe inlets, manholes, etc.
STREET-CENTERLINE	52	CENTER	Centerline of street
STREET-LIGHT	Green (3)	CONTINUOUS	Exist. And new street lighting, parking lot lighting, etc.
STREET-NAME	Green (3)	CONTINUOUS	Street names
STREET-STATIONING	52	CENTER	Street Stationing
TELCO-OH	Blue (5)	TELCO_LINE	OH telephone lines
TELCO-UG	Blue (5)	UG_TELCO	UG telephone lines
TEXT	Green (3)	CONTINUOUS	General Text
TITLE	Yellow (2)	CONTINUOUS	Title Block Information/Title
TRENCH MAIN_3	140	CONTINUOUS	Used to estimate trench footages
TRENCH MAIN_4	93	CONTINUOUS	Used to estimate trench footages
TRENCH MAIN_5	40	CONTINUOUS	Used to estimate trench footages
TRENCH MAIN_6	24	CONTINUOUS	Used to estimate trench footages
TRENCH ROUTE CHANGE	Yellow (2)	CONTINUOUS	Used to estimate trench footages
TRENCH SERVICE_3	140	CONTINUOUS	Used to estimate trench footages
TRENCH SERVICE_4	93	CONTINUOUS	Used to estimate trench footages
TRENCH SERVICE_5	40	CONTINUOUS	Used to estimate trench footages
TRENCH SERVICE_6	24	CONTINUOUS	Used to estimate trench footages
TROLLEY	Blue (5)	TRACKS	Existing trolley/railroad tracks
VICINITY MAP	Green (3)	CONTINUOUS	All Vicinity Map information
VIEWPORT-NO PLOT	White (7)	CONTINUOUS	Viewport will not plot
VIEWPORT-PLOT	White (7)	CONTINUOUS	Used for paper space dwg.
WATER-EXISTING	Blue (5)	WATER_LINE	Exist. Water mains, laterals, valves, hydrants, etc.
WATER-PROPOSED	Blue (5)	WATER_LINE	Proposed Water mains, laterals, valves, hydrants, etc.
WATER-RECLAIMED	Blue (5)	RECLAIMED_WATER	Exist water reclaimed water lines, etc.
COLOR LINEWEIGHT TABLE			
Red (1)	.53mm	Magenta (6)	.10mm
Yellow (2)	.65mm	White (7)	.35mm
Green (3)	.30mm	9	Use object lineweight
Cyan (4)	.80mm	8	Use object lineweight
Blue (5)	.10mm	251	Use object lineweight
52	.15mm	41	Use object lineweight
191	.10mm	71	Use object lineweight
Use SDGE.lin for loading linetypes			

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18. Base Map Requirements for External Contractors

- Provide a completed base map that is in conformance with SDG&E Standards and Work Order Guidelines.
- Construct New Business base maps according to drawings supplied by applicant and show only information relevant to the utility installation.
- On the base map, add the note “To Remain OH” on any pole location representing any pole within the conversion boundary that will not be removed by the conversion project.
- SDG&E shall be responsible for updates to its GIS land base for New Business designs.
- A base map must provide a detailed NOTES section describing required construction methods and standards relevant to the type of work.
- Provide project folder or electronic copy containing the base map (if available and applicable), a city-supplied boundary map, and/or ASSET/UG maps clearly defining the project boundary and scope.
- Use SDG&E AutoCAD Base Map Standards on all design drawings.

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WORK ORDER GUIDELINES

V. DESIGN SKETCH

Work order design sketches depict the removal, installation, or modification of facilities as drawn on the base map. Produce separate design sketches for the underground, overhead, and gas disciplines. Symbols used on the different work order design sketches adhere to SDG&E standards. For references, symbols for each of the disciplines appear at the end of each sub-section of this section.

A. AutoCAD Filing Criteria

New Business Work Orders

SDG&E established the following guidelines for the storage, consistency, and consolidation of New Business work orders designed in AutoCAD:

1. Place all New Business design drawings in the folder entitled New Business Design Drawings located on the <\\CORP.SE.SEMPRA.COM\CORPDATA> Share Drive
S:_NEW BUSINESS DESIGNERS_NEW BUSINESS DESGIN_DRAWINGS
2. Once a design is in progress, the Designer will place the AutoCAD drawing in the folder titled as such: Job Notification#, then Job Name, then Job Type UG\OH\Gas.
For Example: 300000123456 Main St Apts UG

Notes:

- If an FCO is processed, the drawing will be stored in the S Drive with FCO indicated on the Drawing.
For example:300000123456 Main St Apts UG FCO
 - Each time the design is updated, the Share Drive file is overwritten, ensuring that only one design resides in the folder at a time.
3. Designs submitted by Applicant Designers or Contract Designers are to be titled the same. Job Notification#, then Job Name, then Job Type UG\OH\Gas.
For Example: 300000123456 Main St Apts UG
And will be placed in the Share Drive by either the Applicant Design Checker or the Contracting Supervisor.

WORK ORDER GUIDELINES

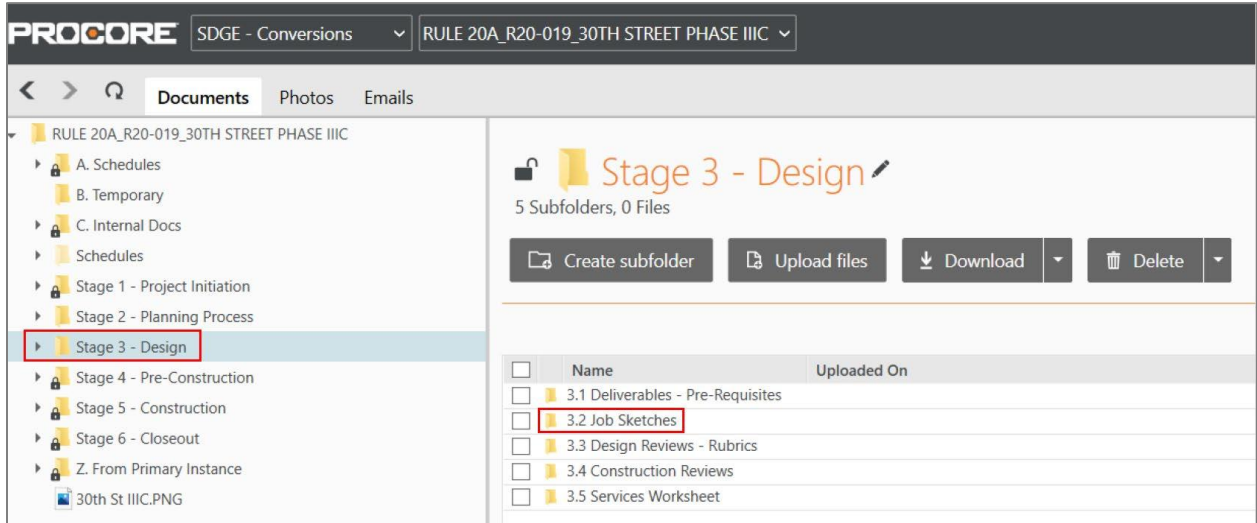
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Franchise Work Orders

SDG&E stores Franchise work orders designed in AutoCAD in the Procore Stage 3 Job Sketch Folder.



The screenshot shows the Procore interface for a project named 'RULE 20A_R20-019_30TH STREET PHASE IIIC'. The left sidebar shows a folder tree where 'Stage 3 - Design' is selected. The main area displays the 'Stage 3 - Design' folder, which contains 5 subfolders and 0 files. The subfolders listed are: 3.1 Deliverables - Pre-Requisites, 3.2 Job Sketches, 3.3 Design Reviews - Rubrics, 3.4 Construction Reviews, and 3.5 Services Worksheet. The '3.2 Job Sketches' folder is highlighted with a red box.

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B. Underground Design Sketch Underground Design Sketch

On the UG design sketch include UG symbols and details necessary to tie down trench and facility positions relative to existing or proposed improvements or land data. For UG design sketches comply with the criteria outlined in this subsection. For general examples of UG design sketches review:

- [Appendix E](#): New Business UG Electric Design Sketch
- [Appendix G](#): 20A Conversion Trench and Conduit Electric Design Sketch
- [Appendix H](#): 20A Conversion Cable & Connectors Electric Design Sketch
- [Appendix I](#): 20A Conversion Cable Pole Electric Design Sketch

Where applicable, include the following components on the UG design sketch:

1. Typical Street Sections

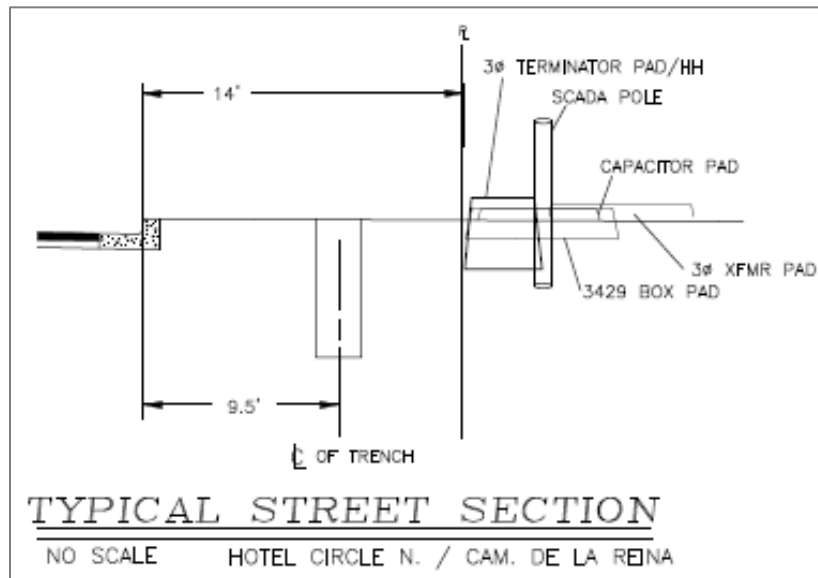
Typical street sections relate the trench and facility position to proposed or existing improvements and removals, property lines, and field conditions.

Typical street sections depict all work being performed in the Franchise or private street locations.

Include typical street sections on UG and gas designs.

To review typical street section examples for new construction and conversions refer to UG Construction Standards UG 3364.1-3

New Business Typical Street Section



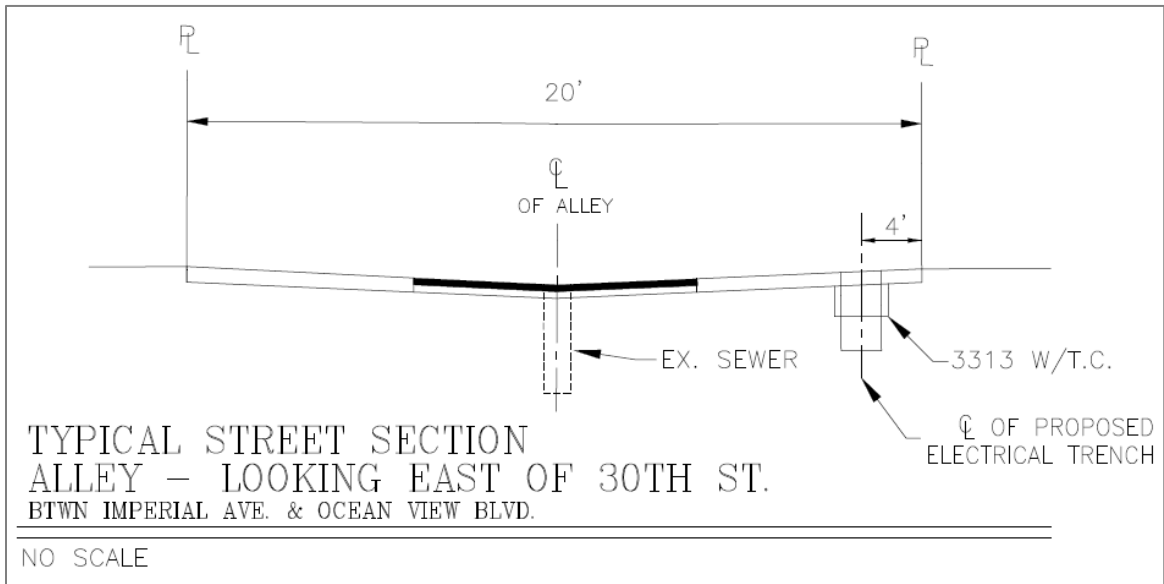
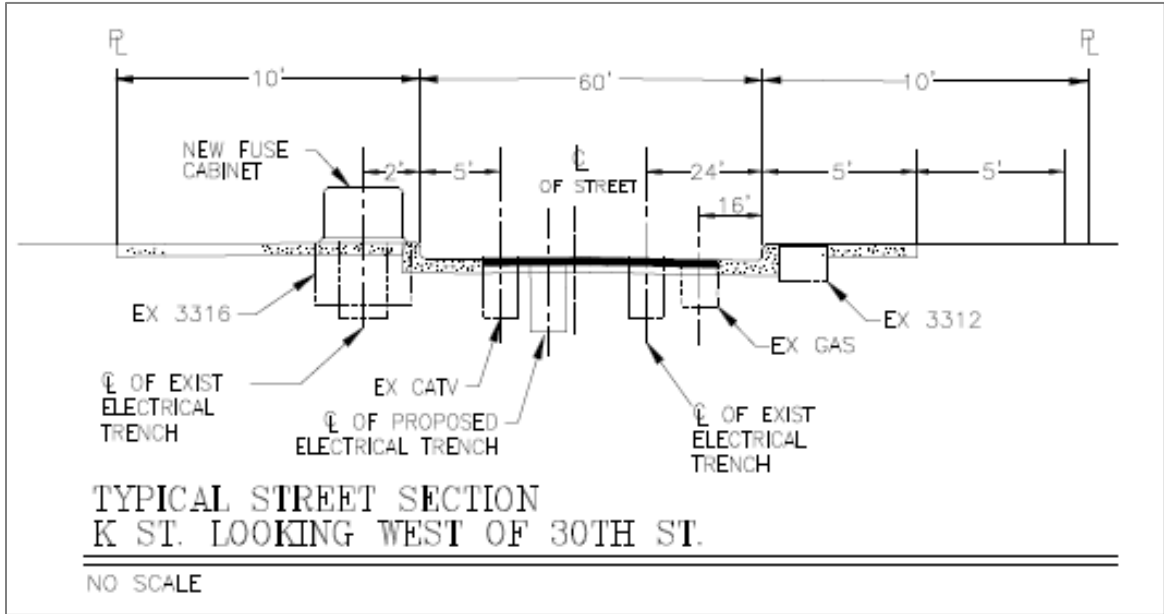
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Conversion Typical Street Sections



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2. Standard Notes

a. New Business

<h1 style="margin: 0;">NOTES</h1>			
<p>CUSTOMER IS RESPONSIBLE FOR:</p> <ul style="list-style-type: none"> *TRENCH, EXCAVATION AND BACKFILL *CONDUIT (INCLUDING REDUCERS & ADAPTERS AT HANDHOLES) *SUBSTRUCTURES *CONCRETE/SIDEWALK BREAK & REPAIR *RETAINING WALLS 			
<p>MAINTAIN A MINIMUM OF 5' WHEN PARALLELING WET UTILITIES 6" WHEN CROSSING AND</p>			
<p>MAINTAIN ____ CLEARANCE BETWEEN TRANSFORMER PADS AND ALL WINDOW OPENINGS</p>			
<p>MAINTAIN ____ CLEARANCE BETWEEN TRANSFORMER PADS AND ALL PADMOUNTED EQUIPMENT</p>			
<p>STANDARD CONDUIT BENDS TO BE USED:</p>			
CONDUIT BENDS (EXCEPT CP)		CP BENDS	
PRIMARY	SECONDARY		
2" 36", 90 DEGREE BEND	24", 90 DEGREE BEND	24", 90 DEGREE BEND	24", 90 DEGREE BEND
3" 36", 90 DEGREE BEND	36", 90 DEGREE BEND	36", 90 DEGREE BEND	36", 90 DEGREE BEND
4" 36", 90 DEGREE BEND	36", 90 DEGREE BEND	48", 90 DEGREE BEND	48", 90 DEGREE BEND
5" 36", 90 DEGREE BEND	36", 90 DEGREE BEND	48", 90 DEGREE BEND	48", 90 DEGREE BEND
<p>*ALL HORIZONTAL BENDS WILL BE MADE WITH 25 FOOT RADIUS SWEEPS AS PER STD. PG.3374 UNLESS OTHERWISE NOTED</p>			
<p>ALL MAIN PANELS ARE ____ A, WHICH REQUIRE ____ SERVICE CONDUIT(S). SEE EXCEPTION BELOW: ____A. MAIN PANELS REQUIRE ____ SERVICE CONDUIT(S)</p>			
<p>ALL SERVICES TO BE _____. SEE EXCEPTION BELOW: BLDG/LOT _____ REQUIRE _____</p>			
<p>SERVICE CABLE PULL CANS/SECTIONS REQUIRING 5" CONDUITS MUST ALLOW A MINIMUM OF 6ft CLEAR & LEVEL WORKING SPACE IN FRONT OF THE PULL CAN/SECTION.</p>			
<p>ALL SERVICES TO BE INSTALLED ON A MASTER SERVICE ORDER TO BE WRITTEN BY THE PLANNER.</p>			
<p>IT IS THE CUSTOMER'S RESPONSIBILITY TO PROVIDE TRENCH AND CONDUIT TO THE ENERGIZED SOURCE. EMPTY CONDUIT STUBS ARE INSTALLED FOR THE FUTURE USE OF THE UTILITY. IF THE STUB IS UNUSABLE, THE CUSTOMER MAY CLEAN OR REPAIR THE STUB, OTHERWISE, INSTALL NEW TRENCH AND CONDUIT TO THE SOURCE.</p>			
<p>24 HOUR LINE TRUCK ACCESS TO SDG&E DISTRIBUTION AND SERVICE FACILITIES REQUIRED.</p>			
<p>CUSTOMER IS RESPONSIBLE TO PROVIDE ALL RED STUB MARKERS AND THE BURIED BALL MARKERS AT EACH SERVICE STUB LOCATION.</p>			
<p>SHELL BLDG - FACILITIES TO BE INSTALLED ARE FOR INITIAL USE ONLY. DEVELOPER TO ADVISE SDG&E WHEN BUILDING IS LEASED. ULTIMATE FACILITIES TO BE INSTALLED UPON SUBMISSION OF TENANT LOADS.</p>			
<p>DESIGN BASED ON ____KW/LOT, ____TON A/C</p>			
<p>ESTIMATED DEMAND ____KVA = ____% CONNECTED KVA ____KVA</p>			
<p>ATTENTION! METERING COMMUNICATIONS REQUIRED ____METER(S) WITH ESTIMATED DEMAND >/= 200KW</p>			
<p>DEVELOPER/OWNER: PHONE: ()</p>			
<p>CUSTOMER REP: COMPANY: PHONE: ()</p>			
<p>SDG&E CUSTOMER PROJECT PLANNER: PHONE: ()</p>			

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b. Conversion Notes

NOTES
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> MAINTAIN A MINIMUM OF 5' SEPARATION WITH 3' OF UNDISTURBED SOIL WHEN PARALLELING WET UTILITIES AND 1' WHEN CROSSING. <input checked="" type="checkbox"/> CLOUDED AREAS IDENTIFY POINT OF INTERCEPT/RE-ROUTE OF EXISTING UNDERGROUND FACILITIES. ALL EXISTING ENERGIZED CONDUIT TO BE IDENTIFIED AND ALIGNED WITH NEW CONDUIT STUB FOR FUTURE INTERCEPTS ON CABLE JOB NO. 3-364248. <input checked="" type="checkbox"/> ALL COMMERCIAL INTERCEPT LOCATIONS TO BE WORKED ON DOUBLE TIME. <input checked="" type="checkbox"/> FINAL STREET REPAIR OF ALL INTERCEPTS RESPONSIBILITY OF CABLE CREW. <input checked="" type="checkbox"/> CAUTION: ELECTRIC STAND BY LINEMAN REQUIRED FOR ALL WORK AROUND ENERGIZED FACILITIES. <input checked="" type="checkbox"/> ALL CROSSED OFF LOCATION BOXES ON THIS JOB HAVE BEEN OMITTED. <input checked="" type="checkbox"/> ALL SERVICE CONDUITS FOR COMMUNICATION COMPANIES TO BE INSTALLED ON THIS JOB AS REQUIRED PER JOINT TRENCH AGREEMENT. <input checked="" type="checkbox"/> ALL NEW UG SERVICE CABLE IS ON THE CONVERSION SERVICE WORKSHEET AND WILL BE INSTALLED AT A FUTURE DATE. <input checked="" type="checkbox"/> EXISTING OH ELECTRIC SERVICES WITHIN CONVERSION BOUNDARY TO BE REMOVED ON JOB NO. 3-364234. <input checked="" type="checkbox"/> REMOVE ALL OH ELECTRIC DISTRIBUTION WIRE WITHIN CONVERSION BOUNDARY UNLESS OTHERWISE NOTED ON JOB NO. 3-364234. <input checked="" type="checkbox"/> ALL CABLE POLE MATERIAL TO BE INSTALLED ON JOB NO. 3-364134. <input checked="" type="checkbox"/> ALL CABLING MATERIAL TO BE INSTALLED ON JOB NO. 3-364248. <input checked="" type="checkbox"/> 3309 SECONDARY HANDHOLES ARE NOT TO BE INSTALLED IN ANY DRIVEN WAY PER UG STANDARDS PG 3309.2, AND IF POSSIBLE SHOULD BE INSTALLED A 5' MINIMUM FROM A DRIVEN WAY <input checked="" type="checkbox"/> T-TRENCH CONSTRUCTION PER REGIONAL STANDARDS WHEN REQUIRED BY MUNICIPALITY. <input checked="" type="checkbox"/> 5' MIN SEPARATION FROM TREE BASE WILL BE MAINTAINED. <input checked="" type="checkbox"/> 3' MIN SEPARATION WILL BE MAINTAINED FROM TRENCH TO CURB FACE. <input checked="" type="checkbox"/> PER CALIFORNIA BUILDING CODE 11B-40.5.1 EXCEPTION 3, A 4' ADA PATH OF TRAVEL SHALL BE MAINTAINED AND CAN BE REDUCED TO 3' DUE TO R.O.W RESTRICTIONS, NATURAL BARRIERS, OR OTHER EXISTING CONDITIONS. <input checked="" type="checkbox"/> 3' HORIZONTAL SEPARATION TO ALL VALVES WILL BE MAINTAINED. <input checked="" type="checkbox"/> 5' HORIZONTAL SEPARATION WITH 3' OF UNDISTURBED SOIL TO STORM DRAINS AND STORM DRAIN STRUCTURES SHALL BE MAINTAINED. <input checked="" type="checkbox"/> 1' HORIZONTAL SEPARATION TO OTHER TELECOM AND GAS UTILITIES WILL BE MAINTAINED AT SERVICES. <input checked="" type="checkbox"/> ALL SURFACES (STANDARD, NON-STANDARD, LANDSCAPE) OR AREAS WITHIN THE ROW BEING DISTURBED SHOULD BE RESTORED TO EXISTING CONDITION AND PER CITY STANDARDS TO THE SATISFACTION OF THE RESIDENT ENGINEER (RE). <input checked="" type="checkbox"/> ALL WORK SHOWN INSIDE PRIVATE PROPERTY FOR REFERENCE ONLY, SHALL NOT BE INCLUDED UNDER CITY R.O.W. PERMIT. <input checked="" type="checkbox"/> PLANS ARE SCALED TO BE PRINTED ON 11" X 17" SHEETS. <input checked="" type="checkbox"/> THESE NOTES ARE FOR THE PURPOSE OF PERMIT CLARIFICATION. SDG&E STANDARDS AND CONSTRUCTIONS STANDARDS SHALL BE MAINTAINED. THESE NOTES SHOULD ONLY APPLY TO THIS SPECIFIC PROJECT. <input checked="" type="checkbox"/> ALL QUESTIONS RELATED TO SERVICE TRENCH SHOULD BE DIRECTED TO THE APPROPRIATE PROJECT MANAGER. NAME <u>KELLY M. FENLEY</u> PHONE <u>619-696-4825</u>

Note: Conversion notes will often require a separate page.

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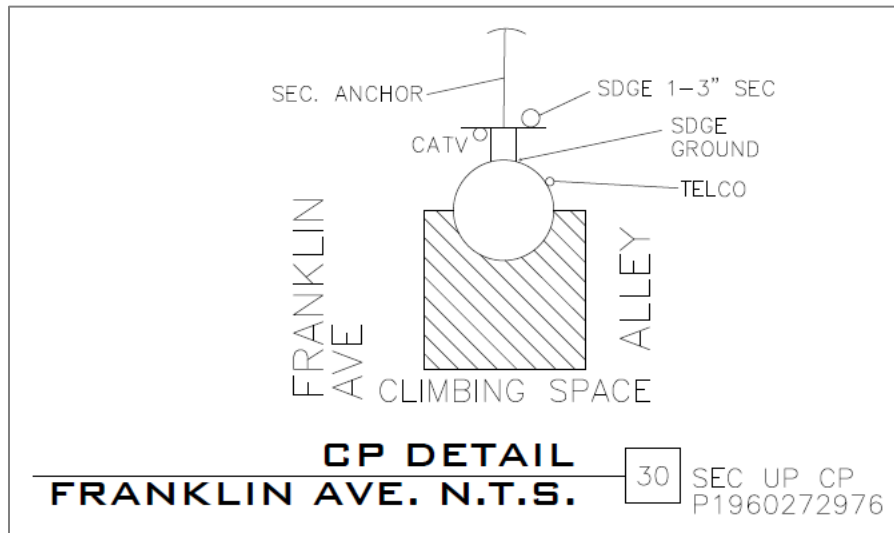
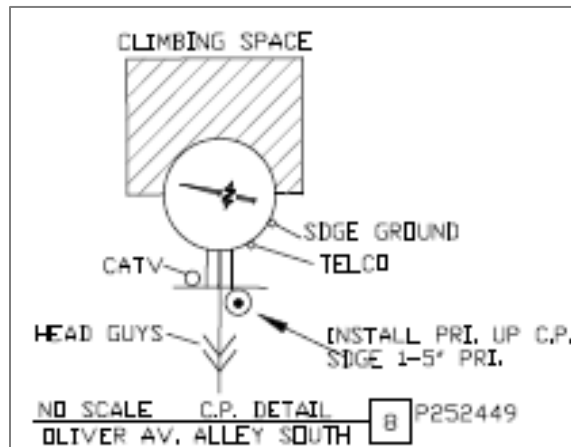
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3. Cable Pole Quadrant Detail

The cable pole quadrant detail is required for all jobs installing or modifying a cable pole riser. Information required includes proposed or existing SDG&E riser position(s), foreign utility (TELCO/CATV) riser position(s), ladder arm requirements, riser size, voltage, underground (primary) cable size and circuit number, number of phases, ground location, climbing space, and overhead wire alignment.

For specific examples of cable pole riser positions for diverse types of jobs, refer to OH/UG Construction Standards 1402/4204. See [Appendix I](#) for Cable Pole Detail samples.

Note: CP detail on OH/UG sketches should always match.



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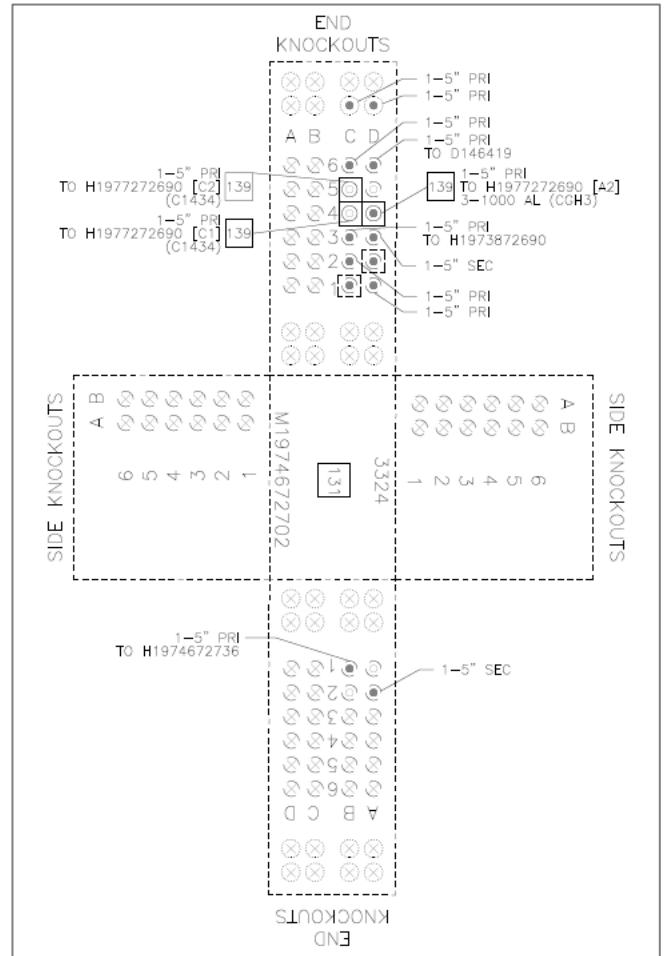
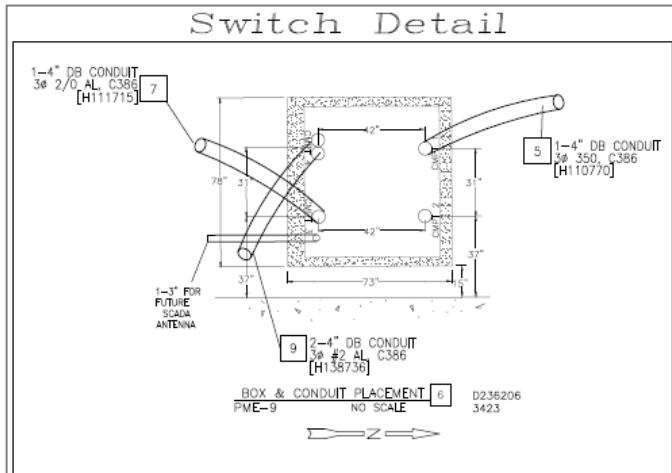
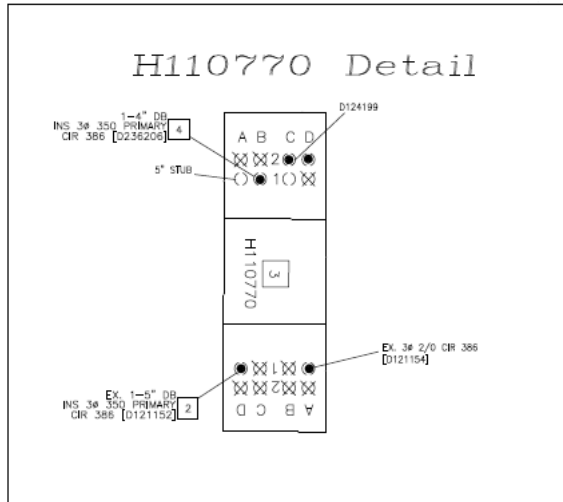
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4. Substructure and Switch Details

Provide substructure details on sketch for all primary handholes larger than 3314, manholes, padmount switches, and fuse cabinets. Fuse cabinets should designate which conduits go to the line side of the cabinet (left side) and which go to the fused side (right side).

For examples of substructure detail criteria, refer to the Electric Distribution Design Manual, DM 5723.



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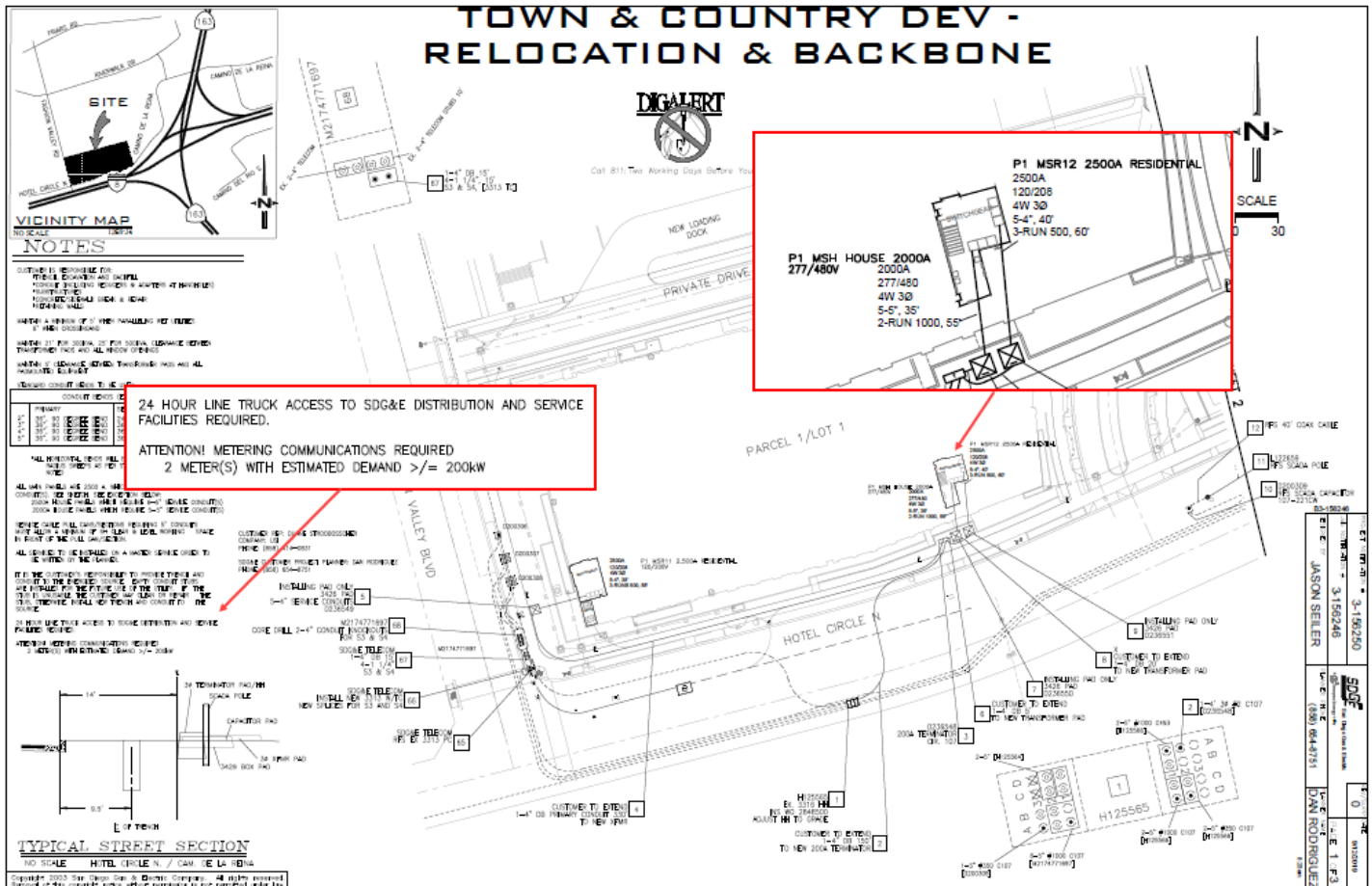
WORK ORDER GUIDELINES

5. Metering Information

Note panel size, service voltage, phase, and number of service wires on the sketch at each buildings service location. Review the Service Standards & Guide for the following information to include:

- SG 015 Line Truck Access Requirements
- SG 601 Medium Voltage Electric Service & Metering Equipment (for required meter room details)

For Conversions, see the Conversion Guide.



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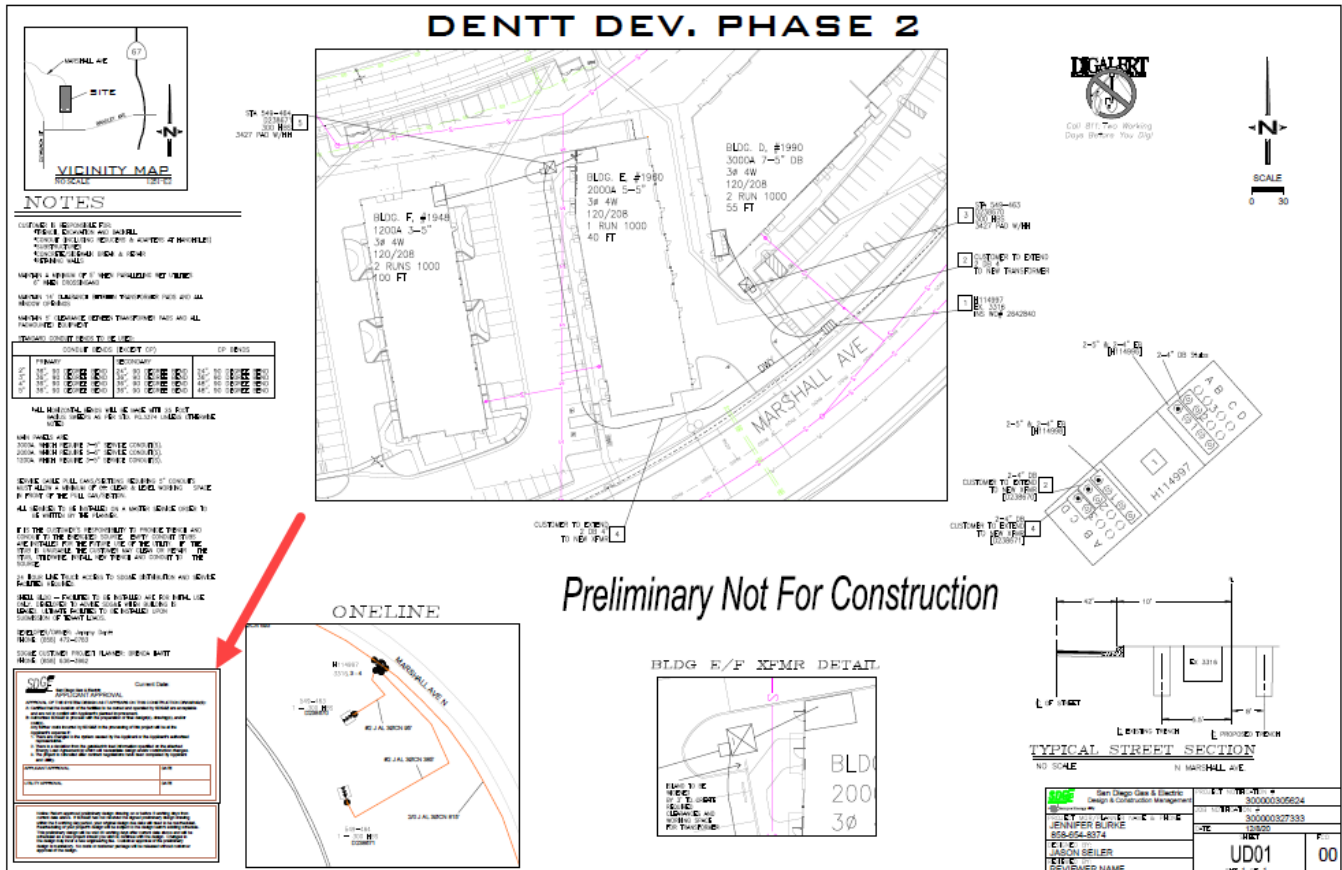
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6. Applicant Approval Stamp

New Business design submits to the customer a preliminary design letter and the preliminary plan sketch with an applicant approval sticker attached.

		Current Date: 01/13/21
San Diego Gas & Electric APPLICANT APPROVAL		
APPROVAL OF THE SYSTEM DESIGN AS IT APPEARS ON THIS CONSTRUCTION DRAWING(S): A: Certifies that the location of the facilities to be owned and operated by SDG&E are acceptable and are not in conflict with Applicant's planned improvement. B: Authorizes SDG&E to proceed with the preparation of final design(s), drawing(s), and/or cost(s).		
Any further costs incurred by SDG&E in the processing of this project will be at the Applicant's expense if:		
1. There are changes to the system caused by the Applicant or the Applicant's authorized representative. 2. There is a deviation from the gas/electric load information specified on the attached Energy Load Agreement(s) which will necessitate design and/or construction changes. 3. The project is cancelled after contract negotiations have been completed by Applicant and Utility.		
APPLICANT APPROVAL	DATE	
UTILITY APPROVAL	DATE	

Stamp the design sketch in a visible location.



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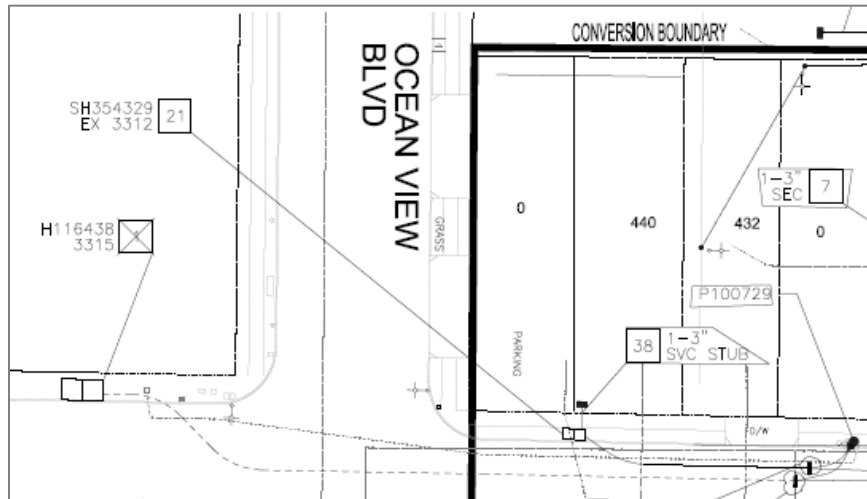
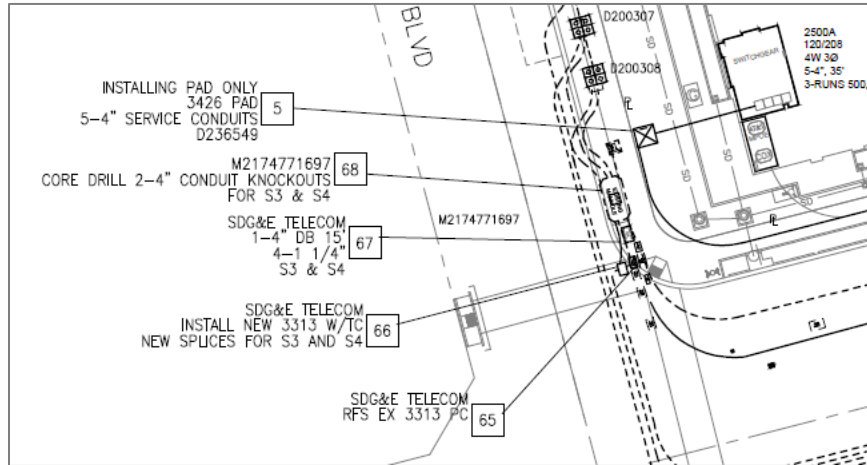
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7. Design by Location (DBL) Callout

Reference each underground facility (substructures, pads, conduit, and cable run) by a unique location number which will be used for material, labor, and equipment ordering through SAP/iCUE.

SDG&E will also show a “SP” (service point) at the DBL location when the customer’s streetlights are shown on the street improvement plans.



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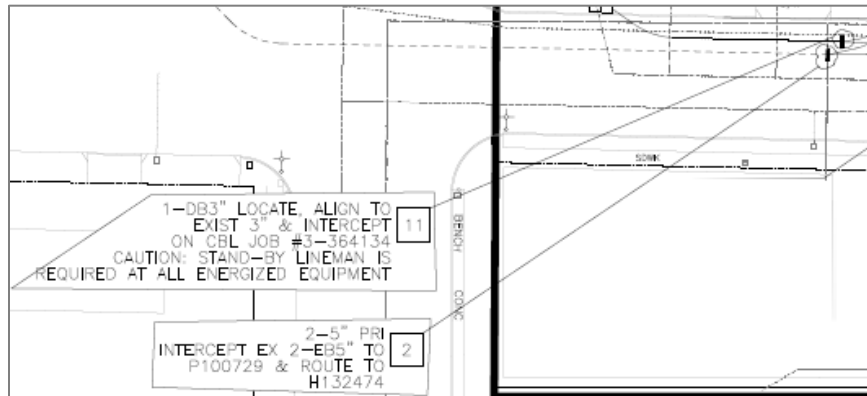
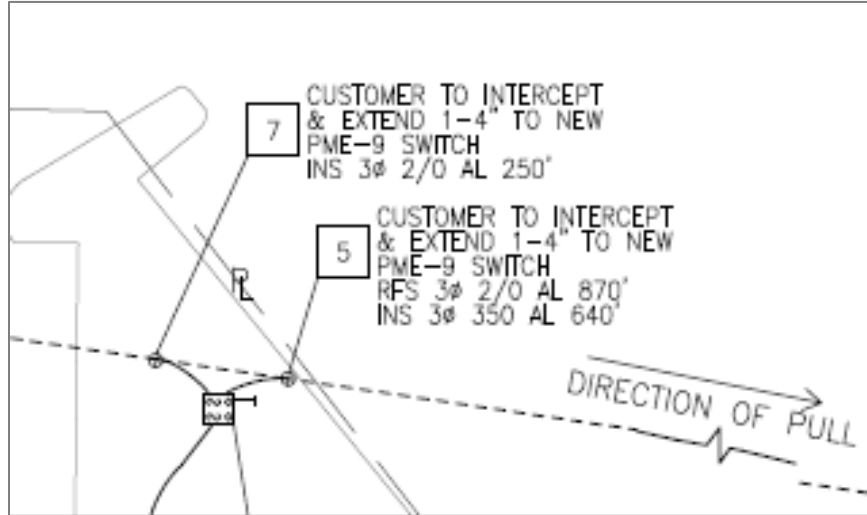
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8. Location Notes

Use location notes to briefly identify work responsibility or set information (tie down of facility street stationing) at a specific location. Identify existing facilities by facility number (tag) as applicable as well as the installing work order number.



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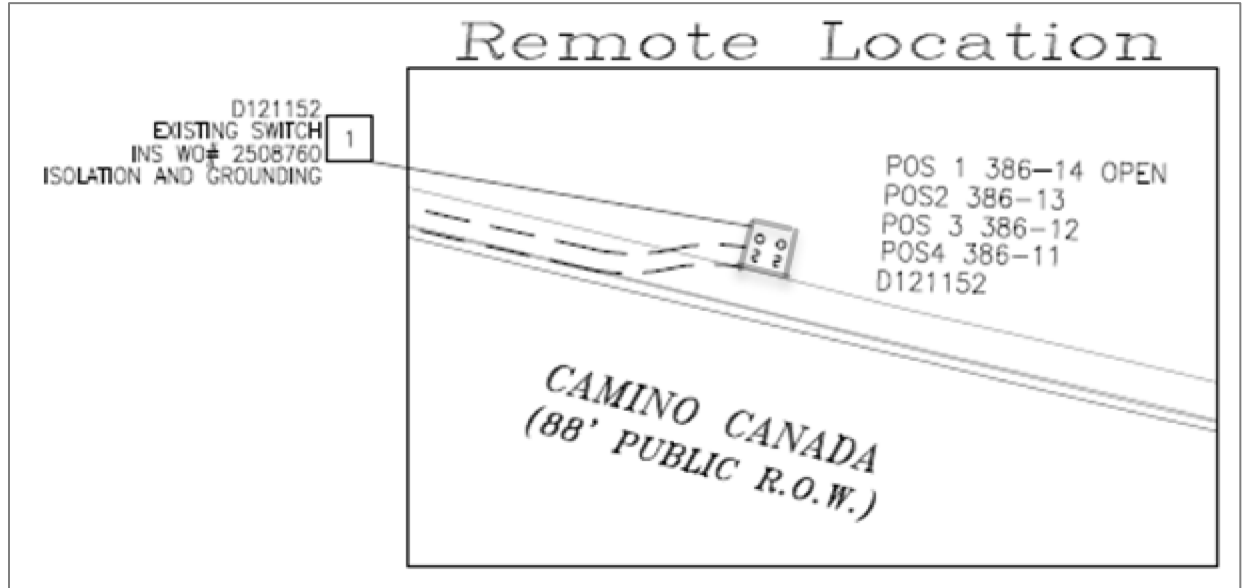
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9. Remote Location

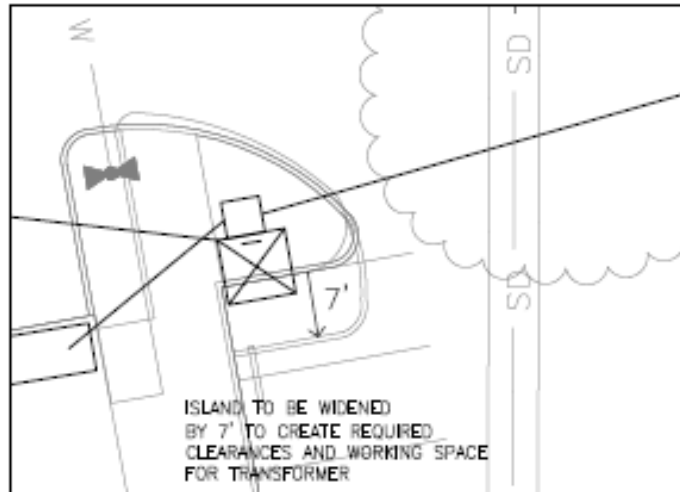
If off-site work is required, such as re-fusing, identify the location on the design sketch with a location number, facility number and geographical position.



10. Detail Drawings

Use detail drawings when the drawing scale provides insufficient drawing space to properly define work at a group of locations.

BLDG G/H XFMR DETAIL



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11. Identify all New and Existing Sources on the Work Order Sketch

On all new electric extensions, the designer notes all new and existing facility take-off locations on the job sketch and the job notification number installing the existing facility. In addition, the designer will identify the existing facility as at least one of the following:

- a. Source – If there is more than one source on the job, then indicate each source and what it feeds (lot, unit, and building numbers). For example:

1	D123456 WO # / JOB # SOURCE TO LOTS 1, 2 & 3
----------	--

2	D345678 WO # / JOB # SOURCE TO LOTS 4, 5 & 6
----------	--

- b. If the existing facility is a tie to the new extension.
c. If it is an empty duct.

12. Sample Design

Refer to the following appendices for examples of underground design sketches:

- [Appendix E](#): New Business UG Electric Design Sketch
- [Appendix G](#): 20A Conversion Trench and Conduit Electric Design Sketch
- [Appendix H](#): 20A Conversion Cable & Connectors Electric Design Sketch
- [Appendix I](#): 20A Conversion Cable Pole Electric Design Sketch

13. One-Line

A one-line is a schematic drawing depicting the changes in circuitry occurring in a job. Examples.:

- [Appendix F](#): New Business Electric One-Line
- [Appendix J](#): 20A conversion Electric One-Line

See [One-Line Requirements](#) of a list of when a one-line is required.

































If space is available include the one-line on the drawing; if space is not available a separate sheet may be required.

WORK ORDER GUIDELINES

14. Symbolology

Use the following symbols on Underground Design sketches.

Note: For a complete listing of all symbols, see OH/UG standards. Summary operating map, UG Operating map, and asset symbols are not the same as Design symbols, however these are found in the standards manuals OH 213 and UG 3113.

UNDERGROUND DESIGN SYMBOLLOGY		
(FOR COMPLETE LISTING OF ALL SYMBOLS, SEE OH/UG STANDARDS) SUMMARY OPERATING MAP, UG OPERATING MAP, AND ASSET SYMBOLS ARE NOT THE SAME AS DESIGN SYMBOLS, HOWEVER, THESE ARE FOUND IN THE STANDARDS MANUALS OH 213 AND UG 3113.		
NEW INSTALLATION	EXISTING INSTALLATION	FACILITY
		3309/3312 HANDHOLE
		3313 HANDHOLE
		3314 HANDHOLE
		3315 HANDHOLE
		3316 HANDHOLE
		3324/3325/3326 MANHOLE
		3417 - 600A TERMINATOR LIVEFRONT TERMINATOR (EXISTING ONLY) 3421 - 200A TERMINATOR (1Ø)
		3410 - 600A TO 200A TERMINATOR FIBERGLASS DEADFRONT CABLE JUNCTION PEDESTAL (EXISTING ONLY) 3416 - 200A TERMINATOR (3Ø)
		FUSE CABINET (1Ø OR 3Ø)
		CAPACITOR STATION
		PME3 SWITCH (MANUAL OR SCADA)
		PME5 SWITCH
		PME9 SWITCH (MANUAL OR SCADA)
		PME10 SWITCH (MANUAL OR SCADA)
		PME11 SWITCH (MANUAL OR SCADA)
		MOLDED VACUUM INTERRUPTER (MVD) MOLDED VACUUM SWITCH (MVS)

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































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14. Symbology (cont'd)

Underground Design sketches.

UNDERGROUND DESIGN SYMBOLOGY		
NEW INSTALLATION	EXISTING INSTALLATION	FACILITY
		4-WAY TRAYER SWITCH (MANUAL OR SCADA) 4-WAY ISG SWITCH (MANUAL OR SCADA)
		5-WAY TRAYER SCADA SWITCH, 5-WAY ISG SCADA SWITCH
		6-WAY ISG SCADA SWITCH
		2-SIDED TRAYER SCADA SWITCH, 2-SIDED ISG SCADA SWITCH
		VISTA 3-WAY SF6 GAS SWITCH (EXISTING ONLY)
		VISTA 4-WAY SF6 GAS SWITCH (EXISTING ONLY)
		VISTA 5-WAY SF6 GAS SWITCH (EXISTING ONLY)
		SERVICE RESTORER
		SINGLE PHASE TRANSFORMER PAD
		THREE PHASE TRANSFORMER PAD
		THREE PHASE TRANSFORMER PAD (W/BOX)
		PRIMARY METERING
		PRIMARY/SECONDARY CONDUIT RUN
		CONDUIT STUBS (SIZE & TYPE)
		POLE
		CABLE POLE
		METER PEDESTAL
		SERVICE POINT

WORK ORDER GUIDELINES

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C. Overhead Design Sketch Overhead Design Sketch

In the overhead design sketch include overhead symbols and details necessary to tie down pole and attached facility positions relative to existing or proposed improvements or land data. For overhead design sketches comply with the criteria outlined in this subsection. For general examples of overhead design sketches review:

- [Appendix K](#): 20A Conversion Oh RFS Electric Design Sketch
- [Appendix L](#): New Business OH Electric Design Sketch

Note: Refer to the Base Map section for required information.

Where applicable, include following components on the overhead design sketch.

1. Standard Notes

NOTES

- CAUTION: ELECTRIC STAND BY LINEMAN REQUIRED FOR ALL WORK AROUND ENERGIZED FACILITIES.
- ALL CROSSED OFF LOCATION BOXES ON THIS JOB HAVE BEEN OMITTED.
- EXISTING OH ELECTRIC SERVICES WITHIN CONVERSION BOUNDARY TO BE REMOVED ON THIS JOB.
- REMOVE ALL OH ELECTRIC DISTRIBUTION WIRE WITHIN CONVERSION BOUNDARY UNLESS OTHERWISE NOTED ON THIS JOB.
- ALL CABLE POLE MATERIAL TO BE INSTALLED ON JOB NO. 3-364134.
- ALL CABLING MATERIAL TO BE INSTALLED ON JOB NO. 3-364248.
- ALL TRENCH AND CONDUIT MATERIAL TO BE INSTALLED ON JOB NO. 3-364270.
- ALL WORK SHOWN INSIDE PRIVATE PROPERTY FOR REFERENCE ONLY, SHALL NOT BE INCLUDED UNDER CITY R.O.W. PERMIT.
- PLANS ARE SCALED TO BE PRINTED ON 11" X 17" SHEETS.
- THESE NOTES ARE FOR THE PURPOSE OF PERMIT CLARIFICATION. SDG&E STANDARDS AND CONSTRUCTIONS STANDARDS SHALL BE MAINTAINED. THESE NOTES SHOULD ONLY APPLY TO THIS SPECIFIC PROJECT.
- ALL QUESTIONS RELATED TO SERVICE TRENCH SHOULD BE DIRECTED TO THE APPROPRIATE PROJECT MANAGER.
NAME KELLY M. FENLEY PHONE 619-696-4825

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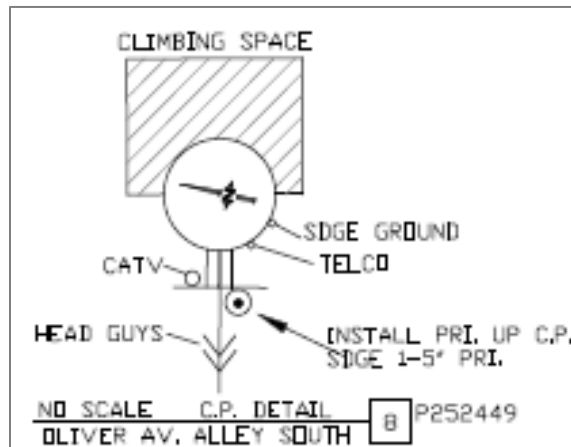
WORK ORDER GUIDELINES

2. Cable Pole Quadrant Detail

The cable pole quadrant detail is required for all jobs installing or modifying a cable pole riser. Information required includes proposed or existing SDG&E riser position(s), foreign utility (TELCO/CATV) riser position(s), ladder arm requirements, riser size, voltage, underground (primary) cable size and circuit number, number of phases, ground location, climbing space, and overhead wire alignment.

For specific examples of cable pole riser positions for diverse types of jobs, refer to OH/UG Construction Standards 1402/4204. See [Appendix I](#) for Cable Pole Detail sample.

Note: Cable Pole detail on OH/UG sketches should always match.



3. Tree Trim Information

If tree trimming is required in the work vicinity, show on the sketch both a symbol representing a tree (at its approximate location) and a note "Tree Trim Required" on the sketch. (See [SPM 483 Tree Trim or Removal](#))

4. Metering Information

Note the panel size, serving voltage, phase, and number of service wires on the sketch at each building's service location. Review the Service Standards & Guide for the following information to include:

- SG 015 Line Truck Access Requirements
- SG 601 Medium Voltage Electric Service & Metering Equipment (for required meter room details)

For conversions, see the Conversion Guide.

See the [Underground Design Sketch](#) section for an example.

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5. Applicant Approval Stamp

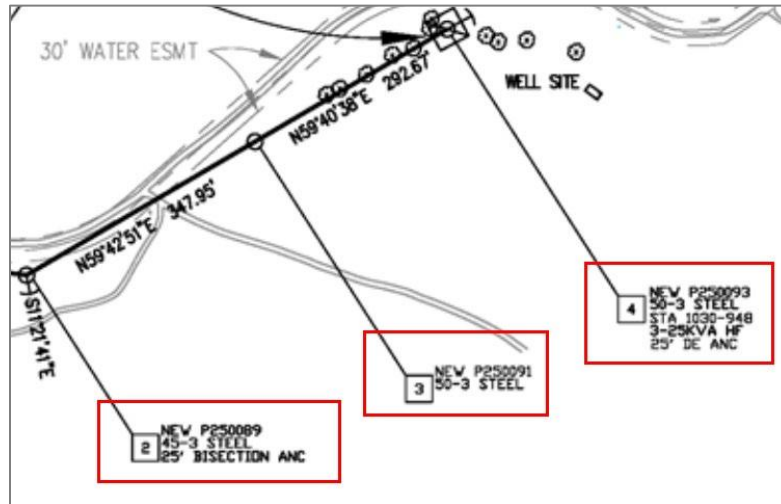
Generally, preliminary plans are not given to customers for overhead design as the customer does not do any of the work. If an applicant approval sticker is required, stamp the design sketch in a visible location.

		Current Date: 01/13/21	
San Diego Gas & Electric APPLICANT APPROVAL			
APPROVAL OF THE SYSTEM DESIGN AS IT APPEARS ON THIS CONSTRUCTION DRAWING(S): A: Certifies that the location of the facilities to be owned and operated by SDG&E are acceptable and are not in conflict with Applicant's planned improvement. B: Authorizes SDG&E to proceed with the preparation of final design(s), drawing(s), and/or cost(s). Any further costs incurred by SDG&E in the processing of this project will be at the Applicant's expense if: 1. There are changes to the system caused by the Applicant or the Applicant's authorized representative. 2. There is a deviation from the gas/electric load information specified on the attached Energy Load Agreement(s) which will necessitate design and/or construction changes. 3. The project is cancelled after contract negotiations have been completed by Applicant and Utility.			
APPLICANT APPROVAL		DATE	
UTILITY APPROVAL		DATE	

6. Design by Location (DBL) Location Callout

Reference each overhead facility (poles and wire spans) by a unique location number, which will be used for material, labor, and equipment ordering through SAP/iCUE.

SDG#E will show a "SP" (service point) at the DBL location when the customer's streetlights are shown on the street improvement plans.



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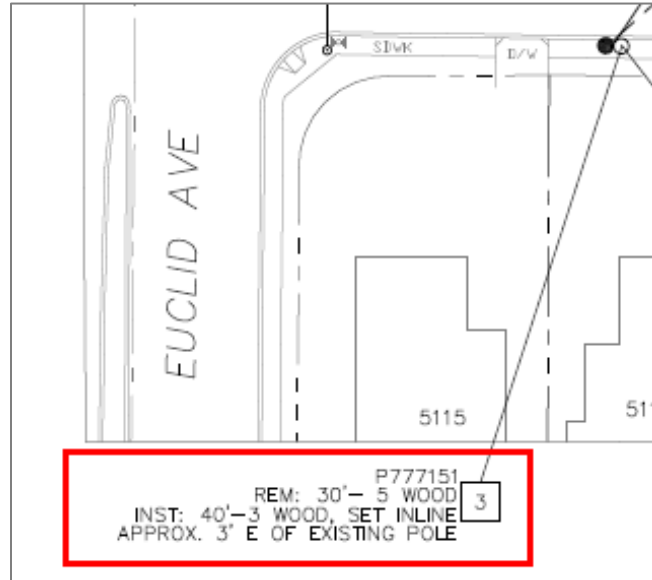
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7. Location Notes

Use location notes to briefly identify work responsibility or set information at a specific location. Identify existing facilities by facility number (tag) as applicable, and the installing work order number.



8. Remote Location

If off site work is required, such as re-fusing, identify the location on the design sketch with a location number, facility number, and geographical position.

See the [Underground Design Sketch](#) section for an example.

9. Detail Drawings

Use detail drawings when the drawing scale provides insufficient drawing space to properly define work at a group of locations.

10. Identify All New and Existing Sources on Work Order Sketch.

Identify all sources on the sketch at the connection point with a note stating the existing work order number.

1 P123456
 WO # / JOB #
 SOURCE TO LOTS 1, 2 & 3

2 P789101
 WO # / JOB #
 SOURCE TO LOTS 4, 5 & 6

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11. Sample Design

Refer to the following appendices for examples of overhead design sketches:

- [Appendix K](#): 20A Conversion Oh RFS Electric Design Sketch
- [Appendix L](#): New Business OH Electric Design Sketch

12. Symbology

Use the following symbols on Overhead Design sketches.

Note: For a complete listing of all symbols, see OH/UG standards. Summary operating map, UG Operating map, and asset symbols are not the same as Design symbols, however these are found in the standards manuals OH 213 and UG 3113.

OVERHEAD DESIGN SYMBOLGY		
<small>(FOR COMPLETE LISTING OF ALL SYMBOLS, SEE OH/UG STANDARDS) SUMMARY OPERATING MAP, UG OPERATING MAP, AND ASSET SYMBOLS ARE NOT THE SAME AS DESIGN SYMBOLS, HOWEVER, THESE ARE FOUND IN THE STANDARDS MANUALS OH 213 AND UG 3113.</small>		
NEW INSTALLATION	EXISTING INSTALLATION	FACILITY
○	●	POLE
⊘	⊙	FOREIGN UTILITY POLE
□	■	STUB POLE
—→	--→	ANCHOR GUY
==→		NEW GUY ON EXISTING ANCHOR
⇒	⇒	ANCHOR WITH TWO GUYS
→	--→	HEAD GUY
↔	↔	POLE TOP OR ARM GUY
↔↔	↔↔	DOUBLE POLE TOP OR DOUBLE ARM GUYS
⊠	⊠	SINGLE PHASE TRANSFORMER
⊠	⊠	THREE PHASE TRANSFORMER, VOLTAGE BOOST/BUCK TRANSFORMER STATION, REGULATOR STATION, THREE PHASE GROUNDING BANK
⊗	⊗	POLE WITH SWITCH
⊤	⊤	CAPACITOR STATION
⊕	⊕	SCADA ANTENNA
⊠	⊠	MOLDED VACUUM INTERRUPTER (MVI)

WORK ORDER GUIDELINES
























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12. Symbology (cont'd)

Overhead design sketches.

OVERHEAD DESIGN SYMBOLOGY		
NEW INSTALLATION	EXISTING INSTALLATION	FACILITY
		CUSTOMER GENERATION
		PRIMARY METERING STATION
		HOOKESTICK SWITCH
		GANG OPERATED SWITCH
		SERVICE RESTORER
		SCADA
		SERVICE POINT
		STREET LIGHT
		SECTIONALIZING CUTOFF
		TRANSMISSION POLE (Z)
		SUBSTATION
		BREAST BLOCK

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D. Gas Design Gas Design

The gas design sketch includes gas symbols and details necessary to tie down trench and facility positions relative to existing or proposed improvements or land data. For gas design sketches, comply with the criteria outlined in this subsection. For a general example of a gas design sketch, see [Appendix M](#) (Gas Design Sketch).

Where applicable, include the following components on the gas design sketch.

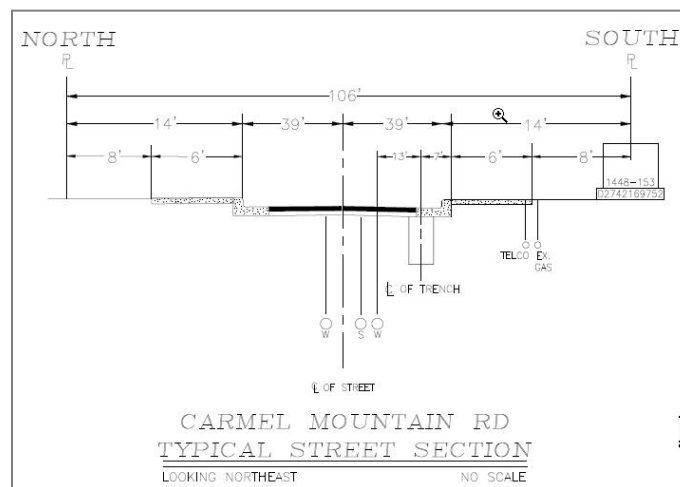
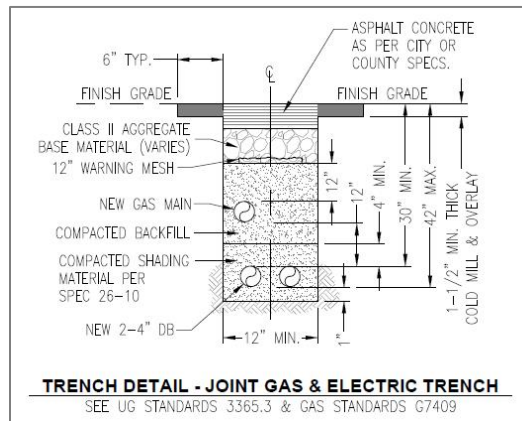
1. Typical Street Section

Typical street sections relate the trench and facility position to proposed or existing improvements and removals, property lines, and field conditions.

Typical street sections depict all work being performed in the Franchise or private street locations.

Include typical street sections on UG and gas designs.

To review typical street section examples for new construction and conversions refer to UG Construction Standards UG 3364.1-3.



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2. Gas Standard Notes

NOTES	WHEN REQUIRED
<input type="checkbox"/> COORDINATE WITH UNDERGROUND WORK ORDER # _____	ON JOBS WITH RELATED UG WORK ORDER
<input type="checkbox"/> CLOUDED AREAS INDICATE GAS TRENCH ONLY (GTO) TO BE PROVIDED BY THE DEVELOPER.	ON ALL JOBS WHERE DEVELOPER IS PROVIDING GAS TRENCH
<input type="checkbox"/> ALL STUBS TO BE 1" (PE) PIPE.	ON ALL DEVELOPED WORK ORDERS
<input type="checkbox"/> THIS EXTENSION OF GAS TO BE INSTALLED BY THE DEVELOPER UNDER APPLICANT INSTALLATION.	ON ALL APPLICANT INSTALLATION WORK ORDERS
<input type="checkbox"/> EXCESS FLOW VALVE, SIZE, TYPE & EXCEPTIONS	ON ALL RESIDENTIAL WORK ORDERS
<input type="checkbox"/> DEVELOPER/OWNER: NAME: COMPANY: PHONE: ()	ON ALL WORK ORDERS (IF APPLICABLE)
<input type="checkbox"/> CUSTOMER REP: NAME: COMPANY: PHONE: ()	ON ALL WORK ORDERS (IF APPLICABLE)
<input type="checkbox"/> ANY OTHER INFORMATION THAT MAY BE PERTINENT TO A SPECIFIC DESIGN	AS REQUIRED
<input type="checkbox"/> FIELD UTILITY SPECIALIST TO SET POSITION AND GRADE FOR SDG&E TRENCH	AS REQUIRED

3. Meter and Header Information

Note the number of gas meters and header information, if applicable, on the sketch at each building's service location.

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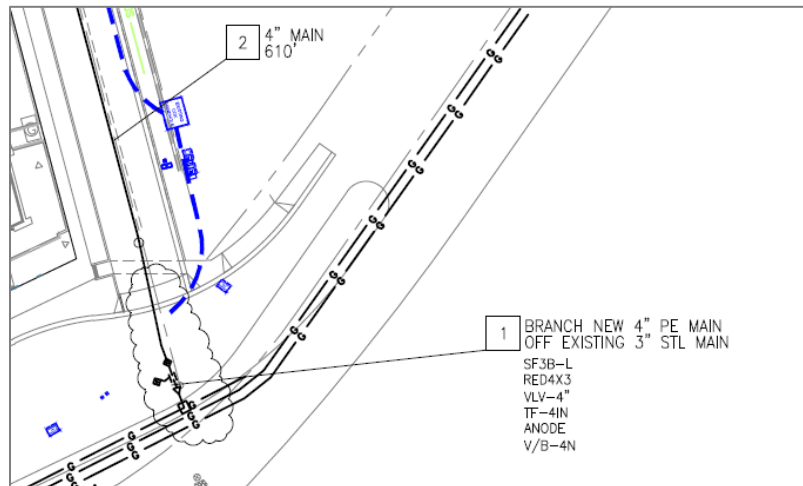
4. Applicant Approval Stamp

When required, New Business design submits to the customer a preliminary design letter and the preliminary plan sketch stamped with an applicant approval sticker in a visible location.

		Current Date: 01/13/21
San Diego Gas & Electric APPLICANT APPROVAL		
APPROVAL OF THE SYSTEM DESIGN AS IT APPEARS ON THIS CONSTRUCTION DRAWING(S): A: Certifies that the location of the facilities to be owned and operated by SDG&E are acceptable and are not in conflict with Applicant's planned improvement. B: Authorizes SDG&E to proceed with the preparation of final design(s), drawing(s), and/or cost(s). Any further costs incurred by SDG&E in the processing of this project will be at the Applicant's expense if: 1. There are changes to the system caused by the Applicant or the Applicant's authorized representative. 2. There is a deviation from the gas/electric load information specified on the attached Energy Load Agreement(s) which will necessitate design and/or construction changes. 3. The project is cancelled after contract negotiations have been completed by Applicant and Utility.		
APPLICANT APPROVAL		DATE
UTILITY APPROVAL		DATE

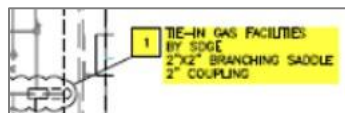
5. DBL Location Callout

Reference each gas facility main branch and tie-in (to existing main) by a unique location number, which will be used for material, labor, and equipment ordering through SAP/iCUE.



6. Location Notes

Use location notes to briefly identify work responsibility at a specific location.



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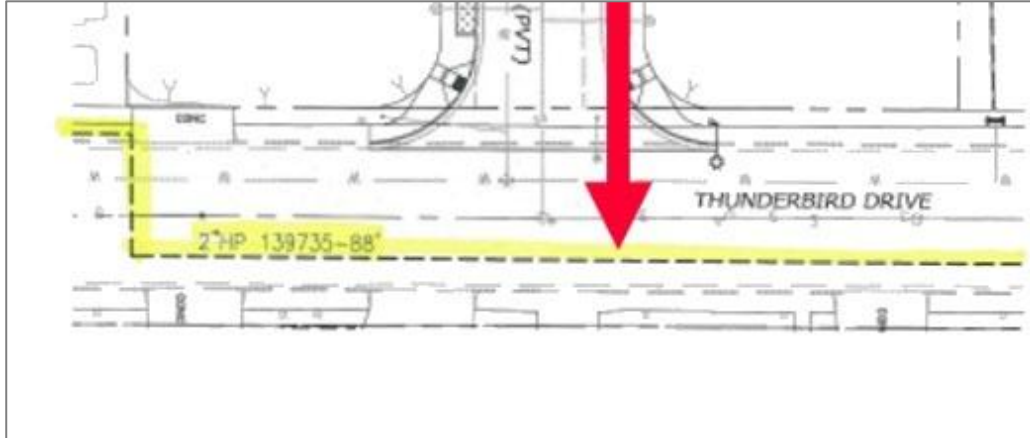
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7. Existing Facilities

Designate existing gas facilities by a broken (dashed) line. Write additional information next to the line(s) including the size and type of gas pipe, work order number, and the year the gas pipe was installed.



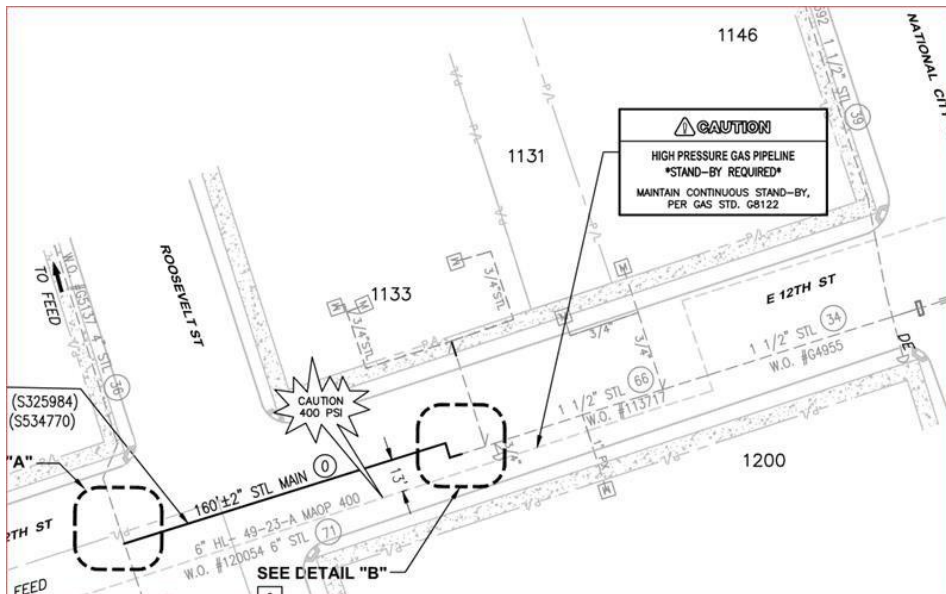
8. Gas Maps

Gas layouts are maps showing existing facilities in a geographical location. Access gas layers in [GIS Webviewer](#). Refer to [Maps](#) section for additional information.

9. High Pressure and Transmission Facilities

On the sketch, show all existing high-pressure gas or transmission lines in the vicinity of the project and identify them by type and size. In addition, include “Special Attention” notes cautioning any work near those lines.

example of notating the sketch:



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10. Pipe and Fittings

Show all pipe and fittings (caps, tees, saddles, etc.) with a description of the pipe/fitting (e.g., 2” ELB, OR 2” pe Cap) written on the sketch near the pipe/fitting.

11. Detail Drawings

Use detail drawings when the drawing scale provides insufficient drawing space to properly define work at a group of locations.

12. Sample Design

Refer to [Appendix M](#) for an example of a gas design sketch.

13. Identifying All New and Existing Sources on All Gas Work Order Sketches

On all new gas extensions, the designer will note at the existing facility location on the job sketch, the job notification number and year of installation of the existing facilities. In addition, the designer will identify the existing facility as at least one of the following:

- Source – if there is more than one source on the job, then indicate what each source feeds.
- Tie.
- GTO (Gas Trench Only) – Indicate area by clouding.

In addition to describing the existing facilities, identify any SDG&E convenience being installed on the new extension by arrows pointing to the start and finish of the convenience installation, along with a note specifying the footage of the convenience pipe to be installed.

14. Gas Relocation Title Block

- a. Gas Technical Services (GTS) must grant permission to SDG&E Planners, Contract Designers, and Applicant Designers prior to the design of the following types of jobs:
 - Gas Main Relocations and RFSs in conjunction with New Rule 15 main extensions.
 - New Rule 15 gas main extensions, which exceed 2-inch steel, 4-inch poly, and a maximum of 60-PSI.

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b. The following Gas Relocation Title Block is used for all gas relocation jobs.

PERMIT NO. <PERMIT NO.>	MCU NO. 4188404			
BUDGET: 501	Tb: 1290 F-1	GAS TECHNICAL SERVICES – MIRAMAR GAS DISTRIBUTION SYSTEM		
CP STATIONS:		RELOC 350'- 2" PE MAIN, 120- 2" STL MAIN & 6 SRVCS 1920 SHIRLEY LN CITY OF LEMON GROVE		
REFERENCE RER#:	DATE			
DRAWN: V.V.	12/9/19			
DESIGNED: V.V.	12/9/19			
SYSTEM PROTECTION: P.S.	12/11/19			
WELDING INSPECTOR:				
PIPELINE OPERATIONS:				
REGION ENGINEERING: A.H.	12/10/19	Job Notification No. 300000306812	Work Order No. 530000205957	Rev. 0
FUS. SUPERVISOR APPROVAL: R.G.	12/17/19	PLOT SCALE: 1:1	SHEET: 1 of 1	

WORK ORDER GUIDELINES






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15. Symbology

The following symbols will be used on Gas Design sketches:

WORK ORDER GUIDELINES GAS DESIGN SYMBOLOGY		
SYMBOL	ABBREVIATION	FACILITY
		5 LB ANODE
		ANSI 300 ISO JT, OPEN
		ANSI 300 ISO JT, CLOSED
		BONDS
		CAP
	CATH TEST STA	CATHODIC TEST STATION
	COND/SLV	CONDUIT SLEEVE
	CPLG	COUPLING, POLYETHYLENE
	ELL OR ELB	ELBOW
	EFI	ELECTROFUSION, POLYETHYLENE
	EF OR EXT FTG	FITTING, EXTENSION
	PCF	FITTING, PRESSURE CONTROL
	PCFBT	FITTING, PRESSURE CONTROL - BOTTOM TAP
	PCF - STOPPER	FITTING, PRESSURE CONTROL - STOPPER
		FITTING, PRESSURE CONTROL VALVE - IN LINE
	TF OR TRN FTG	FITTING, TRANSITION
	STL TF-EFV	FITTING, TRANSITION - EXCESS FLOW VALVE
	BF	FLANGE, BLIND
	WNF	FLANGE, WELD NECK
		METER - NEW
	SN OR S NIP	NIPPLE, SERVICE
		PIPE, EXISTING/PROPOSED
PE	PE	PIPE, POLYETHYLENE
ST	ST	PIPE, STEEL
	RED	REDUCER
		REGULATOR
	R OR D	RISER / DROP IN LINE
	R	RISER, SERVICE
	BS	SADDLE, BRANCHING
		SQUEEZE
		TEE

WORK ORDER GUIDELINES

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















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WORK ORDER GUIDELINES

15. Symbology (Cont'd)

Gas Design sketches

	PT	TEE, STL PUNCH TEE
	EFV-PT	TEE, STL PUNCH TEE, EXCESS FLOW VALVE
	EFV-TT	TEE, POLYETHYLENE, TAP TEE, EXCESS FLOW VALVE
	PE-TT	TEE, POLYETHYLENE, TAP TEE
	INS JT ISO JT	UNION/FLANGE, INSULATING
	BV	VALVE, BALL, FLANGE/WELD
	BO	VALVE, BLOW-OFF
		VALVE WITH BOND - CLOSED
		VALVE WITH BOND - OPEN
		VALVE, CURB
		VALVE, INSULATED
	MUV	VALVE, MUELLER IN LINE
	MU T OR MT	VALVE, MUELLER IN TEE
	PEV	VALVE, POLYETHYLENE BALL
	NV	VALVE, ROCKWELL NORDSTROM PLUG
		VALVE, WELD
		VENT LINE AND RISER
	EFV	VALVE, EXCESS, FLOW

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VI. DESIGN BY LOCATION (DBL)

DBL is the method by which material, labor, and equipment is ordered for the work required at each location. Either the work is done by SDG&E, or it can be the customer’s responsibility. All material required, all labor necessary, and all equipment needed must be called out per design location where that work is being performed. In general, callout locations correspond to structures and work between structures, and/or structures to customer equipment. Examples of UG, OH, and Gas CUs include, but are not limited to the following:

A. Underground Locations

1. Each substructure/pad and related equipment (e.g., transformers, terminators, switches).
2. Conduit and cable.
3. As required to segregate limits of work responsibility (e.g., customer vs. SDG&E).

More specific guidelines:

- All primary and secondary conduit bends.
- Cable pole fuses to be ordered on overhead work order for New Business, and the underground cable job for conversions.
- Ladder arms to be ordered on overhead work order for New Business, and the underground cable job for Conversions.
- All trenching and backfill CUs.
- Operations (e.g., switching).
- See Conversion Guide for instructions on sidewalk repair.

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B. Overhead Locations Overhead Locations

1. Each pole and related equipment (e.g., transformers, terminators, switches).
2. Installation, removal, or rearrangement of a wire span or grouping of spans between the same two poles regardless of the number of wires or voltage levels.

More specific guidelines:

- All conductor materials between poles to be ordered at the related stringing/removal location.
- All related pole facilities such as anchors and guys to be ordered at the pole location.
- Stubs have their own location and related stub facilities such as anchors to be included at this location.
- Cable pole fuses to be ordered on overhead work order for New Business, and the underground cable job for Conversions.
- Ladder arms to be ordered on overhead work order for New Business, and the underground cable job for Conversions.
- Operations (e.g., switching).
- See Conversion Guide for instructions on sidewalk repair.

C. Gas Locations Gas Locations

1. Each gas main branch to include branch fitting and all related service stubs.
2. Each tie-in to existing gas facilities to include tie-in fitting.
3. Excess Flow Valve.

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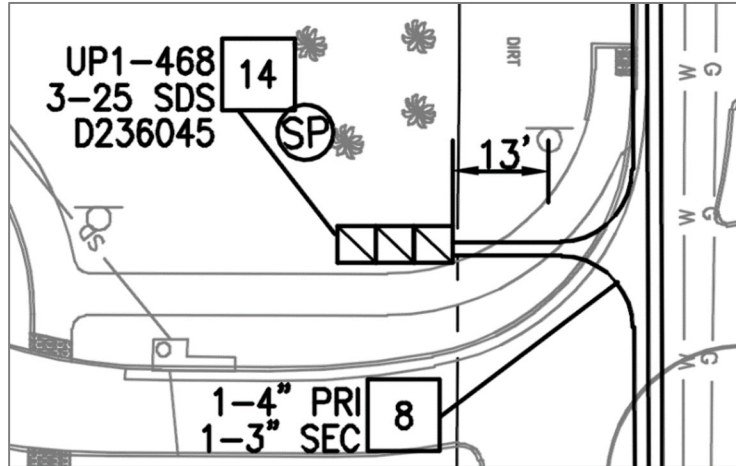
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D. DBL Locations DBL Locations

Within a job, each design by location is assigned a unique number. This number is used to identify the respective location on both the sketch and the corresponding SAP location sheet.

1. Design Sketch



2. SAP Location Sheet – Design Check Copy

02/04/2021 11:08:03		SAN DIEGO GAS AND ELECTRIC DESIGN REVIEW REPORT						PAGE NO 19 DESIGN NUMBER: 80287402							
WORK ORDER: PROJ NOTIF:300000239354 JOB NOTIF:300000254933 JOB TYPE:DV-UD JOB NAME:REDWOOD ST 20A T&C & Cable Ph DESIGN DESCRIPTION: REDWOOD 20A PH1 T&C, C&C STATUS:OSNO DESIGNED BY: CVENTURA PHONE:															
LOCATION: 0014		LOCATION DESCRIPTION: Location 0014				DISTRICT: CMT		NO. OF LOCATIONS:14 OF31							
WRK FUN	CU ID	STOCK	DESCRIPTION	UM	QTY1	QTY2	WRK REQ#	WRK RSP	MAT RSP	ACCT TRMT	CU FUNC AREA	REM CODE	STAD PAGE	CREW TYPE	EST HOURS
I-N-S	CLDELT		MU CLOSE DELTA 3-3421 1PHASE TRANSF PADS	EA	1	1	0001	U	U	CAP	SDE/DIST/UG_CONDUCT_DEVICES				0.0
I-N-S	3311-L	S162662	HANDHOLE 3311 108 IN BOX HANDHOLE, 14" X 14" X 108"	EA	1	1	0001	U	U	CAP	SDE/DIST/UG_CONDUCT_DEVICES		3311	3-AF4	0.5
I-N-S	3421-1	S514240	PAD 3421 1-PHASE TRANSFORMER PAD, TRANSFORMER SINGLE PHASE,	EA	3	3	0001	U	U	CAP	SDE/DIST/UG_CONDUCT_DEVICES		3421.1	3-AF4	1.2
I-N-S	TG-T-R	S603074	TRENCH GRD WIRE W/RODS (TRANS/CAP) ROD 5/8" X 8FT COPPERWELD GROUND	EA	1	1	0001	U	U	CAP	SDE/DIST/UG_CONDUCT_DEVICES		4510.2	2-WF3	0.2
		S812818	WIRE, #2 AWG 7 STRAND BARE SOFT DRAWN	LB	1	1			U						
I-N-S	TRN-DT		TRENCHING/BACKFILL (DUMP TRUCK ASSIST)	HR	3	3	0001	U	U	CAP	SDE/DIST/UG_CONDUCT_DEVICES				
I-N-S	X-XF1P		PAD PREP 3421 PAD (1-PHASE TRANSFORMER)	EA	3	3	0001	U	U	CAP	SDE/DIST/UG_CONDUCT_DEVICES			3SWF3	1.2
I-N-S	X11H-L		EXCAVATE 3311 HANDHOLE 108 IN	EA	1	1	0001	U	U	CAP	SDE/DIST/UG_CONDUCT_DEVICES		3311	3SWF3	0.6
I-N-S	SDS-25	S761520	XFMR SDS 25 KVA STAINLESS STEEL TRANSFORMER, 25KVA, PREFIX SDS	EA	3	3	0001	U	U	CAP	SDE/DIST/XFMERS_UG		3702.2	2WF3S	2.1
			1-4 IN... SLURRY ENC	EA					U	CAP	SDE/DIST...			3-WF3	0.1

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VII. COST REPORTS

Cost reports generate costing information, based on DBL data entry, and are used as a basis for budgeting, cost analysis, and customer contracts. Cost reports and contract appendices are generated through the /N/CUM/DESIGN task code once the following tasks listed below are complete.

- A. Complete the Additional Data tab, the General Data tab, and the Partners screen (IW52).
- B. Construction review of work order is complete, if required, and corrections/additions are made (SAP DBL).
- C. All material, labor, and equipment entries have been made for each location (/N/CUM/DESIGN).
- D. All related accounting information has been added as applicable: For work requests, verify that the billing and/or accounting information is accurate and applied to each location appropriately, and allowances applied if relevant (/N/CUM/DESIGN).
- E. Verify the design has been released in SAP before submitting it for Supervisor approval.

Notes:

- Review iCUE/SAP training for in-depth instructions.
- Refer to [SPM 309](#) for Billing methods and codes.
- If costs are updated after the face sheet has been ordered and before the job is issued to construction, the Planner must reorder the face sheet to capture any cost changes. The job face sheet must match the cost analysis face sheet.
- For projects utilizing Procure, save the generated reports as PDFs, and then upload them into Procure for management review. Once management approves, the job may move forward to be issued to Construction.
- Staff support will generate the work order in SAP. If Procure is utilized, staff support will move required documents into stage 5.

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VIII. ONE-LINE REQUIREMENTS

A one-line is a schematic drawing of the SDG&E primary UG distribution system. One-Line Examples:

- [Appendix F](#): New Business Electric One-Line
- [Appendix J](#): 20A conversion Electric One-Line

EGISS One-Line requirements for UG

1. An UG one-line will be provided with UG New Business/Conversion jobs when any of the following are installed, removed, replaced, modified, or rearranged:

- Handhole, manhole, vault or subsurface enclosure that houses more than one set of connectors and/or cable taps
- More than one Distribution circuit
- More than one handhole, manhole, vault, or subsurface enclosure
- Fused elbow, D&W fuse, or a fuse cabinet
- Terminator, Terminating Cabinet, or cable junction pedestal
- Padmounted or subsurface switch
- Padmounted regulator
- Fault indicator
- Primary meter
- Customer generation
- Padmounted service restorer
- Any SCADA device
- Substation
- Padmounted capacitor
- Open or Open status of device
- Step-Down sub
- Step-Down station
- Auto-Throwover or source transfer switch
- Primary cable pole that feeds two or more primary structures
- Pass-Thru
- Primary Whip
- Phases being rearranged

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2. An UG one-line is not required on the following, however, the primary phase x, y, or z is to be noted on the work order.
 - If extending single-phase UG cable from a single cable tap (1-3 or 1-4) to a single phase UG transformer only.
 - If extending single-phase UG cable from a single 200amp tee-splice (1-TS) to a single-phase UG transformer only.
 - If extending single-phase UG cable from a single-phase UG transformer to a single-phase UG transformer only.
 - If extending single-phase UG cable from a cable pole to a single-phase UG transformer only.
 - If extending single-phase UG cable from a single-phase low profile cable terminating cabinet to a single-phase UG transformer only.
 - If extending single-phase UG cable from a three-phase UG transformer to a single-phase UG transformer only.
 - If extending single-phase UG cable from a three-phase low profile cable terminating cabinet (200A) to a single-phase underground transformer only.
 - If extending three-phase UG cable from a cable pole to a three-phase UG transformer only.
 - If extending three-phase UG cable from a three-phase low profile cable terminating cabinet (200A) to a three-phase UG transformer only.

Whether a one-line is required or not, an UG Operating Map will be provided and for a New Business job the take-off point, or source should be clouded.

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IX. MAPS

Include relevant maps that provide miscellaneous support information to a work order package. Refer to [Maps to be issued with Construction Orders](#) (found in PM Forms) for additional information.

Examples of maps that may be included in the work order package include:

Atlas Pages/Duct Maps provide detailed geographic clarity on the locations of existing vaults and manholes in the Downtown City of San Diego. Also provided are electric connections within these vaults and manholes. This information is primarily useful for New Business jobs. As these Atlas/duct Maps are not maintained or updated, they should only be used as a reference or starting point when no other information is available and field verification should always be done. See [Appendix N](#).

Conversion Boundary Maps are provided by a city or county and include street and parcel details indicating in bold the boundary of the conversion area. The title frequently refers to a street name or block identifier. The map frequently denotes poles being removed by the project and exempt poles (not being removed by the project). Also shown are proposed UG-fed streetlights to be recognized by a design service point (SP). See [Appendix O](#).

Gas Blanks are CAD Gas base maps showing existing gas line(s) as a potential take-off structure for a new gas installation(s) in an area currently void of gas infrastructure. Gas Blanks include existing foreign utilities and lot identification. See [Appendix D](#).

GIS Asset Layer Maps are scaled geographic maps that include information on streets, property lines, addresses, Gas, UG & UG Electric, SDGE Telecom, land rights, environmental boundaries, Fire Threat Zones, C&O Center boundaries as well as additional information. See [Appendix P](#).

SOM Maps are OH and UG electric PRI circuitry diagrams delineating a specific circuit, including sectionalizing devices, TIE switches, OPEN positions, connections, and PRI cable poles overlaid on a GIS geographic map. See [Appendix Q](#).

UG Operating Maps are UG electric PRI circuitry diagrams delineating a specific circuit, including UG sectionalizing devices, UG TIE switches, UG OPEN positions, UG connections, and PRI cable poles overlaid on a GIS geographic map. See [Appendix R](#).

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X. RELEASES AND PERMITS

During the design phase, the following areas should be reviewed and addressed as applicable:

- Prior Rights Research or Easement Requests:

Prior rights research should be done to obtain information regarding existing utility facilities and property rights/ownership. Easement requests are utilized to obtain easements or right of entry permits from all applicable parties. Submit a Land Services request through [Archibus](#).

[SPM 510 Easements & Quickclaims:](#)

[SPM 550 Prescriptive Rights](#)

[SPM 540 Meter Access Easements](#)

- Traffic Control Plans and Permits:

The requirements depending on the type of work, work responsibility, and specific municipalities involved should be identified and appropriate TCP and/or Permit requested. Submit a TCP/Permit request through the [Permits – TCP Request Site](#).

[SPM 530 Traffic Control Plans and Permits](#)

[SPM 535 Storm Water Permitting](#)

[SPM 560 Railroad Right of Entry Permit & Fees](#)

- Environmental Review and Monitoring

Environmental reviews are required for all jobs issued to Construction. This is especially important if SDG&E is responsible for digging on a project. Submit an Environmental request through the [Environmental eTs Forms link](#).

[SPM 537 Environmental Review for Natural and Cultural Resources](#)

- Miscellaneous Considerations:

[SPM 505 Staking Guidelines](#) Utilize for staking on OH & UG jobs.

[SPM 536 Asbestos Procedure](#) Utilize to determine considerations and procedures regarding asbestos containing material.

[Depreciation Worksheet](#) should be completed when applicable for OH Poles being removed on billable jobs.

- Specific considerations for OH jobs:

[SPM 425 Wood Pole Inspection:](#) Intrusive Inspection Request as required for OH pole modeling.

[SPM 300 Aerial Aviation Warning Devices](#) FAA review may be required depending on OH work being done. Review [Aerial Lighting and Marking Policy](#).

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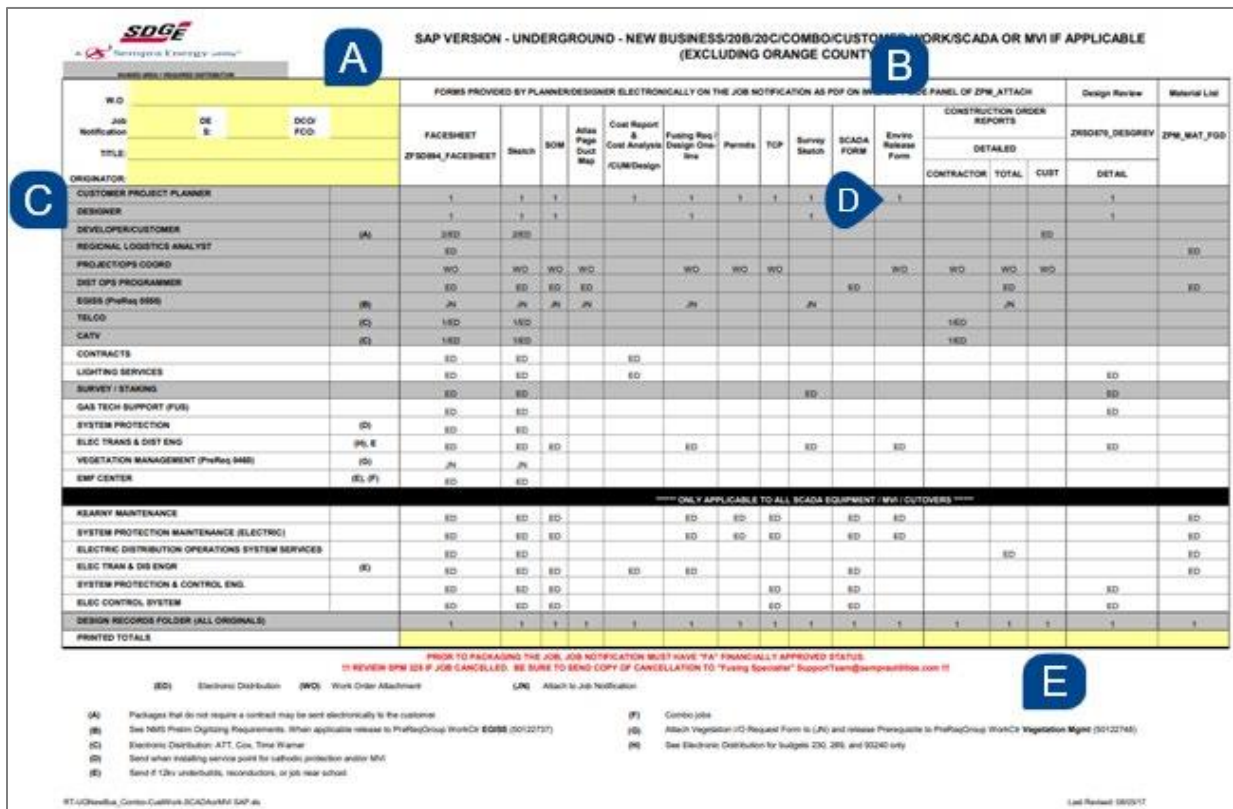
[SPM 538 Avian Protection](#) Avian protection may be required on pole tops, reference Avian layer in GIS.

XI. ROUTE SHEETS

Each route sheet includes a yellow shaded area for job-specific information in the top left. Documents are listed across the top while departments are listed on the left side.

When a department's row is shaded gray, that department must receive the documents indicated in the row. When a department's row is white, the planner must determine whether the department needs to receive documentation for the specific job.

Submit route sheets for every aspect of the design. Review, complete, and include any applicable route sheets. Review examples of [route sheets](#) in DPM Policy and Compliance.



JOB NOTIFICATION		FORMS PROVIDED BY PLANNER/DESIGNER ELECTRONICALLY ON THE JOB NOTIFICATION AS PDF ON THE ATTACH PANEL OF ZPW_ATTACH										Design Review		Material List					
W/O	DE	DCD/																	
Notification	E	FOO	FACESHET	Sketch	SOM	Atlas Page Duct Map	Cost Report & Cost Analysis / OUM/Design	Fueling Req / Design One-ls	Permits	TCP	Survey Sketch	SCADA FORM	Enviro Release Form	CONSTRUCTION ORDER REPORTS			ZPW076_DEGREY	ZPW_MAT_FSD	
TITLE		ZPW076_FACE SHEET												DETAILED					
ORIGINATOR														CONTRACTOR	TOTAL	CUST	DETAIL		
CUSTOMER PROJECT PLANNER			1	1	1	1	1	1	1	1	1	1	1					1	
DESIGNER			1	1	1	1	1	1	1	1	1	1	1					1	
DEVELOPER/CUSTOMER		(A)	1	1	1	1	1	1	1	1	1	1	1					1	
REGIONAL LOGISTICS ANALYST			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
PROJECT OPS COORD			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
DIST OPS PROGRAMMER			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
ES&S (PhReq 048)		(B)	JN	JN	JN	JN	JN	JN	JN	JN	JN	JN	JN					JN	
TELCO		(C)	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED					1ED	
CATV		(D)	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED	1ED					1ED	
CONTRACTS			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
LIGHTING SERVICES			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
SURVEY / STAKING			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
GAS TECH SUPPORT (FUE)			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
SYSTEM PROTECTION		(E)	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
ELEC TRANS & DIST ENG		(F)	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
VEGETATION MANAGEMENT (PhReq 048)		(G)	JN	JN	JN	JN	JN	JN	JN	JN	JN	JN	JN					JN	
SMF CENTER		(H), (I)	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
***** ONLY APPLICABLE TO ALL SCADA EQUIPMENT / MVI / CUSTOMERS *****																			
REARLY MAINTENANCE			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
SYSTEM PROTECTION MAINTENANCE (ELECTRIC)			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
ELECTRIC DISTRIBUTION OPERATIONS SYSTEM SERVICES			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
ELEC TRAN & DIST ENGR		(J)	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
SYSTEM PROTECTION & CONTROL ENGR			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
ELEC CONTROL SYSTEM			ED	ED	ED	ED	ED	ED	ED	ED	ED	ED	ED					ED	
DESIGN RECORDS FOLDER (ALL ORIGINALS)			1	1	1	1	1	1	1	1	1	1	1					1	
PRINTED TOTALS			1	1	1	1	1	1	1	1	1	1	1					1	

PRIOR TO PACKAGING THE JOB, JOB NOTIFICATION MUST HAVE "PA" FINANCIALLY APPROVED STATUS
 !!! REVIEW SPM 538 IF JOB CANCELLED. BE SURE TO SEND COPY OF CANCELLATION TO "Tracing Specialist" SupportTeam@sempraenergy.com !!!

(A) Packages that do not require a contract may be sent electronically to the customer.
 (B) See N015 Printin Digitizing Requirements. When applicable release to PhReqGroup WorkCr: E055 (20122737)
 (C) Electronic Distribution: ATT. Cox. Time Warner
 (D) Send when installing service point for catvds production and/or MVI
 (E) Send if 12kv underground, reconductors, or job near school
 (F) Combo jobs
 (G) Attach Vegetation (C) Request Form to (JN) and release PhReqGroup WorkCr: Vegetation Mgmt (20122748)
 (H) See Electronic Distribution for Subjects 230, 285, and 93240 only

A	Job-Specific Information
B	Documents
C	Departments
D	Send the number of hard copies indicated in the cell
E	Legend for notes in cells

XII. SUPPLEMENTAL AND SUPPORTING DOCUMENTATION

In addition to the major elements that have been addressed, supplemental, support information and documentation, as applicable, should be stored as reference material based on segmentation and work stream.

Examples of supplemental and supporting documentation that do not appear on the route sheets include, but are not limited to the following:

A. Underground and Overhead Work Orders

- Customer Welcome Package which may include:
 - Design Option
 - Customer Payment Option
 - Engineering Fee
 - General Welcome letter (working with SDG&E)
 - Request for Bid
 - Customer Option Declaration
 - Customer Loads
- Depreciation Worksheet (when required)
- FAA Pole Lights
- Fixed Capital Record
- O'CALC Reports that are not issued with the work order
- Related Service and CT Orders
- Rights-of-Way documents (Survey/Easement)
- SCADA Telecommunications Coordination
- Storm Water Pollution Prevention Plan (SWPPP)
- Transformer Load Management (TLM) Forms
- Any additional information the Planner or Designer deems appropriate for legal and or justification purposes.

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B. Gas Work Orders Gas Work Orders

- Customer Welcome Package
 - Design Option
 - Customer Payment Option
 - Engineering Fee
 - General Welcome Letter (working with SDG&E)
 - Customer Option Declaration
 - Elevated Pressure
 - Customer Loads
- Asbestos Review
- Gas Load Study
- Right-of-Way Documentation (Survey/Easement)
- Storm Water Pollution Prevention Plan (SWPPP)
- Supporting emails, videos, and pictures
- Any additional information the Planner or Designer deems appropriate for legal and or justification purposes.

XIII. DESIGN FOLDER

A permanent file will be maintained for each work order (UG, OH, gas). Organize this file in chronological sequence as events that pertain to the work order take place. This file provides SDG&E personnel with historical information that supports future design and legal applications. It will be maintained indefinitely, as required by the CPUC and [SPM 338 Filing Procedures and Records Management for Project Management](#).

For Franchise work, electronic documents are uploaded to the Stage 3-Design folder in Procore.

Items assembled in this file include, but are not limited to the following:

- Customer load submittal
- Engineering Request
- Preliminary research regarding existing facilities, land data, and maps
- Engineering forms such as:
 - Volt Drop & Flicker Calculations
 - Pole Loading/Guy Calculations

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WORK ORDER GUIDELINES

- SAG Information
- Pulling Tension
- Deviations
- Preliminary/Approved Design
- Rule applications
- Misc. Correspondence
- Design Review with Construction Review comments (signed title face sheet and summary of changes)
- Copy of final work order with cost reports and required support information
- Cost option letter
- SWPPP, if required
- Environmental/Natural/Cultural Asbestos Review
- Competitive Bid (SACAC form or Opt Out Letter
Note: Review the [Competitive Bid process](#))
- Approved and Signed wet signature Face Sheet

WORK ORDER GUIDELINES


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XIV. DESIGN CHECKLIST

The following checklists are provided as guides to assure that adequate information is captured during the design development process. This process is under revision. Follow your segment and work stream process. The images below are examples of Design checklists.

A. Outgoing Design Support Checklist



Outgoing Design Support Checklist

Designer: _____ Phone: (____) _____ Date: _____

Note: Highlighted items are required and are to be provided by the Designer.

Required Items for Final Job Package Gas Electric (provide copies for each design folder)

- Completed "Outgoing Design Support Checklist" (**this document**)
- Completed Route Sheet for Overhead (OH), Underground (UG), or Gas (as applicable)
- Completed Face Sheet/Cost Reports
- Final Work Order Drawings/Gas Blank
- Payment / Construction option letter
- TCP/Permits (Attached if complete)
- Maps: SOM, Electric Map, Gas Map
- Pole Loading Calculations (if required)
- Environmental Release completed
- Prior Rights Research results (if applicable)
- Fusing request/Distribution Planning Worksheet
- Completed Gas Sizing & Gas/Electric Load Studies (provided by Planner)
- Completed Conflict Check (provided by Planner)
- Completed SCADA Request (if applicable)
- Depreciation Worksheet completed (if applicable)

Requests and Permits (Copies included in Design Folder)

- Traffic Control Plan (TCP) requested (if applicable)
- Encroachment/Excavation Permits requested (if applicable)
- Right of Way request submitted in Archibus and in SAP (see below)
- Aerial Lighting and Marking (ALM) Form submitted (if required)

System Information (SAP / DPSS)

- Complete following screens (as required): ICUE (Job Info screen), SAP (Additional Data tab), &/or DPSS (MJREF/MJCORD)
- Note: If applicable, circuit footage should be total primary cable being removed for each circuit, if none, then designate "0"*
- Right of Way pre-requisite closed for Off-Site Easements (as applicable)
- Right of Way pre-requisite opened for On-Site Easements (as applicable)
- Jobs with pending on-site easements only may move to the PC Phase.*

Costs and Allowances:

- Run Rule 15 Competitive Bid Costs if applicable
- Check to see Rule 20 OH was related to the R20 UG, 'MDWREL' Screen
- If Rule 20 B OH, was Equivalent Overhead done (Footage/Small Wire or Design/Large Wire)
- If Rule 20C, was Depreciation given?
- Was Excess Allowance Applied, if applicable
- If Payment Option 1 was chosen, make sure Billing Code is 'B'
- Check Rule Interpretation and ensure job is broken into correct work types
- Check Qty 1 / Qty 2 and make sure they match, if not confirm the reason why
- Verify current tax rate populated


Checklist - Outgoing Design Support Checklist Revised Date: 2/14/2018

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B. Incoming Design Support Checklist



Incoming Design Support Checklist

Requesting Planner: _____ Phone: (____) _____ Date: _____

Note: Highlighted items are required and are to be provided by the requesting Planner.

Design Folder Gas Electric (provide copies for each design folder)

- Completed "Incoming Design Support Checklist" (**this document**)
- Completed "Design Support Request Form" (attach to left side of Design Folder)
- Blank copy of "Outgoing Design Support Checklist"
- Folder labeled with Project #, Job #, Work Order Number for DPSS (Upper Right Tab Corner)
- Site and Proposed Source marked on maps: Electric Map (Identify lines to be converted), Underground Operating Map &/or Prelim Underground Operating Map, Gas Map
Attach maps inside folder with site identified (circled, highlighted, etc.)
- Pending Work Orders that will provide a source, if applicable
- Copy of submitted Electric Load Study/Demand Estimating Worksheet request
- Copy of submitted Gas Sizing/Load Study request
- Meter/Stub Locations Approved. Alternate Service Delivery Points: Non-Standard meter locations must be identified along with the accepted standard location for which they are substituted (Additional work types U564, U501 and U502). Planner will request pre-design conference if needed prior to approval.
- Proposed Transformer/Pole Locations (identified on map and site plan), if applicable
- Special Instructions (attached as a separate sheet)**

Plans: May vary with job but will be required if necessary for the type of project

- Electronic Plans (AutoCAD): Save to shared drive or include on CD / flash drive
if plans are not available, see supervisor.
- Improvement Plans Grading Plans Tract Map Plot Plans
- Issued Conflict Check (Provide marked conflict checked plans if there is a conflict)
- Plans issued for Land Digitizing (All Improvement Plans, Tracts, and/or Developments)
- Truck and Meter Access Route Indicated on Plans

System Information (DPSS / SAP / Other)

- Project / Job / all Work levels opened
 - Proper Design Name (e.g. Not "Rule 15 Extension", refer to "Label and Naming Standards" document)
 - Planner Assigned in the appropriate system
 - All Design AU's input on Mast (if DPSS)
 - Customer Contact name, address, and phone number populated in the appropriate system
- For DPSS: Add job work order & MWRACCT filled out (All job Billing Code is "V")
- Prior Rights Research Request submitted in Archibus, if applicable
- Construction Option (include copy in Design Folder)

Activities Performed by Design Support Team

Design Support Supervisor will assign Designer or seek Contract designer to perform the following:

- Obtain any required As-Built information
- Complete and process Distribution Planning Worksheet and Fusing Request
- Design job. Provide Preliminary for Customer Approval and Rule Application
- Make changes requested on Approved Preliminary Design (including coordination of Rule Application with Planner, assign proper work request levels, etc.)
- Process design through SDG&E Construction Review
- Finalize work order; prepare route sheet, cost reports, appendices and maps
- Submit the following requests (as applicable): Environmental Study, Right of Way (ROW), Traffic Control Plan, Permits, Aerial Marking and Lighting, Depreciation, Intrusive Inspection, SCADA, etc.

2018 02 08 Incoming Design Support Checklist Revised Date: 2/14/2018

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XV. APPENDIX

A. Face Sheet

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02/04/2021 11:24:33 SAN DIEGO GAS AND ELECTRIC
CONSTRUCTION ORDER FACE SHEET

MSTR WRK ORDR : 4166879 PROJ NOTIF : 300000083018 JOB NOTIF : 300000272644 NOTIF TYPE : DV NOTIF NAME : LA JOLLA 1-J 20SD CABLE JOB 1 NOTIF STATUS : OSNO PC
LOCATION : CITY : LJ THOMAS BROTHERS : 1227-HS WORK CENTER : CEDU_BCH

DESIGNED BY : Matthew Seiler PHONE : 8586363917 DATE ISSUED : _____
PROJECT MGR : Sarah Powers PHONE : 8586962765

APPROVED BY : _____ DATE : _____ COMBO JOB : N

WORK REQ#	RULE	OPT	ORDER TYPE	QTY	BUDGET %	BUDGET	TOTAL CAPITAL	BILLABLE CAPITAL	%	DEPREC CREDIT	NET CAPITAL	TOTAL O&M	BILLABLE O&M	%	NET O&M	CAL TRANS
0001	E20	A	X	83	0	19213.2	100.0	795403	100.0	795403	795403	0	0	0.0	0	0.0
				TOTAL		100.0	795403	795403	100.0	9493	9493	0	0	0.0	0	0.0

SCHED START DATE : _____ COMPLETED/APPROVED BY : _____ DATE : _____
CONTRACTOR DESIGN : _____ APPLICANT DESIGN : _____

JOINT CONSTRUCTION
UG ELECTRIC : Y
GAS : N
TELCO : Y TELCO ENG : Brendan Lee PHONE : 6192294032
MPOE : N CATV : Y CATV ENG : Ray Harnes PHONE : 6196358286

COMMENTS :
RIGHT-OF-WAY REQUIRED : Y INFO :
PERMITS REQUIRED : Y AGENCY :
TRAFFIC CONTROL REQ : Y PLAN NO :
COMMENTS : STREET RESURFACE MORATORIUM : CUSTOMER OUTAGE REQUIRED :

EXISTING FACILITIES INSTALLED ON : _____

RELATED CONSTRUCTION JOBS

JOB NOTIF #	JOB TYPE	JOB NAME	DESIGN #	PROJ NOTIF #	WORK ORDER #
-----	-----	-----	-----	-----	-----

WORK ORDER GUIDELINES

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WORK ORDER GUIDELINES

A. Face Sheet, page 2

MSTR WRK ORDR : 4168879 PROJ NOTIF : 300000083018 JOB NOTIF : 300000272644 NOTIF TYPE : DV NOTIF NAME : LA JOLLA 1-J 20SD CABLE JOB 1 NOTIF STATUS : OSNO PC

STANDARD CONSTRUCTION NOTES

STAKED BY _____ NO CONSTRUCTION NOTES FOUND

UNLESS OTHERWISE NOTED, ALL TERMINATIONS OF PRIMARY CONDUIT RUNS AND SECONDARY CONDUIT RUNS OTHER THAN 2" IN ABOVE GROUND PADS WILL BE MADE WITH 36" RADIUS 90 DEGREE BENDS. TERMINATION OF 2" SECONDARY CONDUIT RUNS IN ABOVE GROUND PADS WILL BE MADE WITH 24" RADIUS 90 DEGREE BENDS. ALL HORIZONTAL BENDS WILL BE MADE 25' RADIUS SWEEPS UNLESS OTHERWISE NOTED. STANDARD CONDUIT BENDS TO BE USED. THE MINIMUM TERMINATION FOR ANY SERVICE CONDUIT IS A 24" RADIUS 90 DEGREE BEND.

UNLESS OTHERWISE NOTED, IF SERVICES ARE NOT INSTALLED WITH THE MAIN SYSTEM, INSTALL CONDUIT STUBS FROM PADS AND HANDHOLES TO PIL. ALL STUBS REQUIRE CONDUIT STUB AND BALL MARKERS PER UG STANDARD 3377. SERVICE STUBS TO BE _____

APPLICANT NOTES

IN THE EVENT OF CONFLICT BETWEEN THIS DRAWING AND THE GENERAL CONDITIONS, THE GENERAL CONDITIONS SHALL TAKE PRECEDENCE. A COMPLETE SET OF UTILITY CONSTRUCTION SPECIFICATIONS IS AVAILABLE ON REQUEST.

CHECK CONFLICTS IN AREA PRIOR TO ANY EXCAVATION. CALL 'USA' AT 1-800-422-4133 48 HOURS IN ADVANCE OF ANY GRADING OR EXCAVATION IN THE VICINITY OF SDGE FACILITIES. IT IS NECESSARY TO OBTAIN AN EXCAVATION PERMIT FROM THE LOCAL AUTHORITY.

AFTER NOTIFICATION, THAT CONSTRUCTION CAN PROCEED, PHONE NOTIFICATION 48 HOURS PRIOR TO THE START OF CONSTRUCTION MUST BE MADE TO THAT CONSTRUCTION DEPARTMENT AT THE DISTRICT PHONE NUMBER INDICATED ON THE PREVIOUS PAGE.

FOR INSPECTION OF YOUR INSTALLATION AND ANY FIELD CHANGES PHONE SDGE INSPECTOR AT THE DISTRICT OPERATING CENTER.

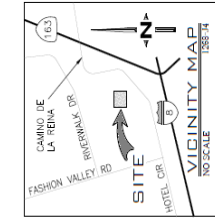
PRECONSTRUCTION CONFERENCE WITH DISTRICT OPERATING DEPARTMENT REQUIRED

TRENCH FOOTAGE - APPLICANT: _____ SDGE: _____

GAS WORK ORDER IS APPLICANT INSTALLATION. WORK# _____

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B. New Business Electric Base Map



NOTES

CUSTOMER IS RESPONSIBLE FOR:
 TRENCH EXCAVATION AND BACKFILL
 STRUCTURES
 SUBSTRUCTURES
 MANHOLES
 METERING WALLS
 MAINTAIN A MINIMUM OF 5' WHEN PARALLELING MET JUNCTIONS
 MAINTAIN 5' CLEARANCE BETWEEN TRANSFORMER PADS AND ALL WINDOW OPENINGS
 5' WHEN CROSSING
 MAINTAIN 5' CLEARANCE BETWEEN TRANSFORMER PADS AND ALL MANHOLE/UTILITY EQUIPMENT
 STANDARD CONDUIT BENDS TO BE USED:

CONDUIT BENDS (EXCEPT CP)	CP BENDS
2" - 35', 90 DEGREE BEND 24", 90 DEGREE BEND	90 DEGREE BEND
3" - 35', 90 DEGREE BEND 24", 90 DEGREE BEND	90 DEGREE BEND
4" - 35', 90 DEGREE BEND 30", 90 DEGREE BEND	90 DEGREE BEND
5" - 35', 90 DEGREE BEND 36", 90 DEGREE BEND	90 DEGREE BEND

*ALL HORIZONTAL BENDS WILL BE MADE WITH 25 FOOT RADIUS SWEEPS AS PER STD. PRACTICE UNLESS OTHERWISE NOTED.

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SERVICE CONTRACT(S) SEE EXEMPTION BELOW. SERVICE CONTRACT(S) TO BE USED: SEE EXEMPTION BELOW.

ALL SERVICES TO BE PROVIDED BY THE PLANNER. A MASTER SERVICE ORDER TO BE WRITTEN BY THE PLANNER.

SERVICE CABLE PULL GAINS/VENTING REQUIRING 5" CONDUITS MUST ALLOW A MINIMUM OF 6" CLEAR & LEAD WORKING SPACE IN FRONT OF THE CABLE CONNECTION.
 ALL SERVICES TO BE PROVIDED BY THE PLANNER. A MASTER SERVICE ORDER TO BE WRITTEN BY THE PLANNER.

IT IS THE CUSTOMER'S RESPONSIBILITY TO PROVIDE TRENCH AND CONDUIT TO THE DESIRED LOCATION. EXCEPT CONDUIT TYPES NOTED IN THIS DOCUMENT, THE CUSTOMER MAY CLEAN OR REPAIR THE TRENCH. THE CUSTOMER SHALL VERIFY TRENCH AND CONDUIT TO THE SOURCE. THE CUSTOMER SHALL VERIFY TRENCH AND CONDUIT TO THE SOURCE. THE CUSTOMER SHALL VERIFY TRENCH AND CONDUIT TO THE SOURCE.

24 HOUR LINE TRENCH ACCESS TO SOURCE DISTRIBUTION AND SERVICE FACILITIES REQUIRED.

CUSTOMER IS RESPONSIBLE TO PROVIDE ALL RED PULB MARKERS (SIGNAL) SHALL WORKERS AT EACH SERVICE POINT LOCATION.

SHELL BLOC - FACILITIES TO BE INSTALLED ARE FOR INITIAL USE ONLY. SHELL BLOC - FACILITIES TO BE INSTALLED MUST BE SUBMITTED TO THE CUSTOMER FOR APPROVAL PRIOR TO SUBMISSION OF TENDANT LEASES.

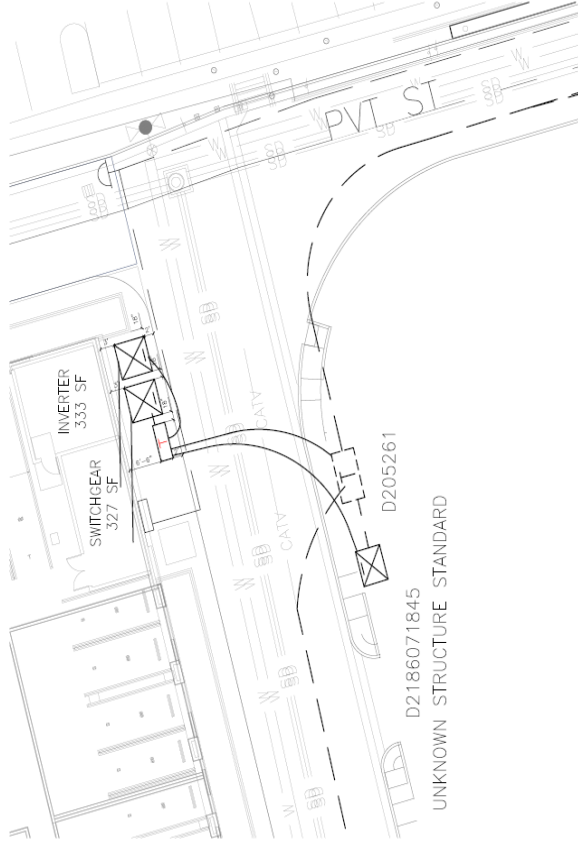
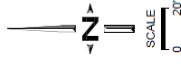
DESIGN BASED ON _____/W/LIT _____/DN A/C
 ESTIMATED DEMAND _____/VA _____% CONNECTED KVA _____/VA
 ATTENTION: METERING COMMUNICATIONS REQUIRED
 _____/ACTEN(S) WITH ESTIMATED DEMAND > 1/4 * 200kW

DEVELOPER/OWNER:
 PHONE () _____
 COMPANY REP:
 PHONE () _____
 PHONE () _____
 PHONE () _____

SOME CUSTOMER PROJECT PLANNERS:
 PHONE () _____

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TOWN & COUNTRY LOT 4



D2186071845

UNKNOWN STRUCTURE STANDARD



San Diego Gas & Electric
 Design & Construction Management
 PROJECT NUMBER: 50000156250
 JOB NUMBER: 3000052925
 DATE: 08/24/21

BRENDA HARTT
 658-636-3862
 JASON SEILER

UD01
 SHEET 00
 REV. 1 OF 1

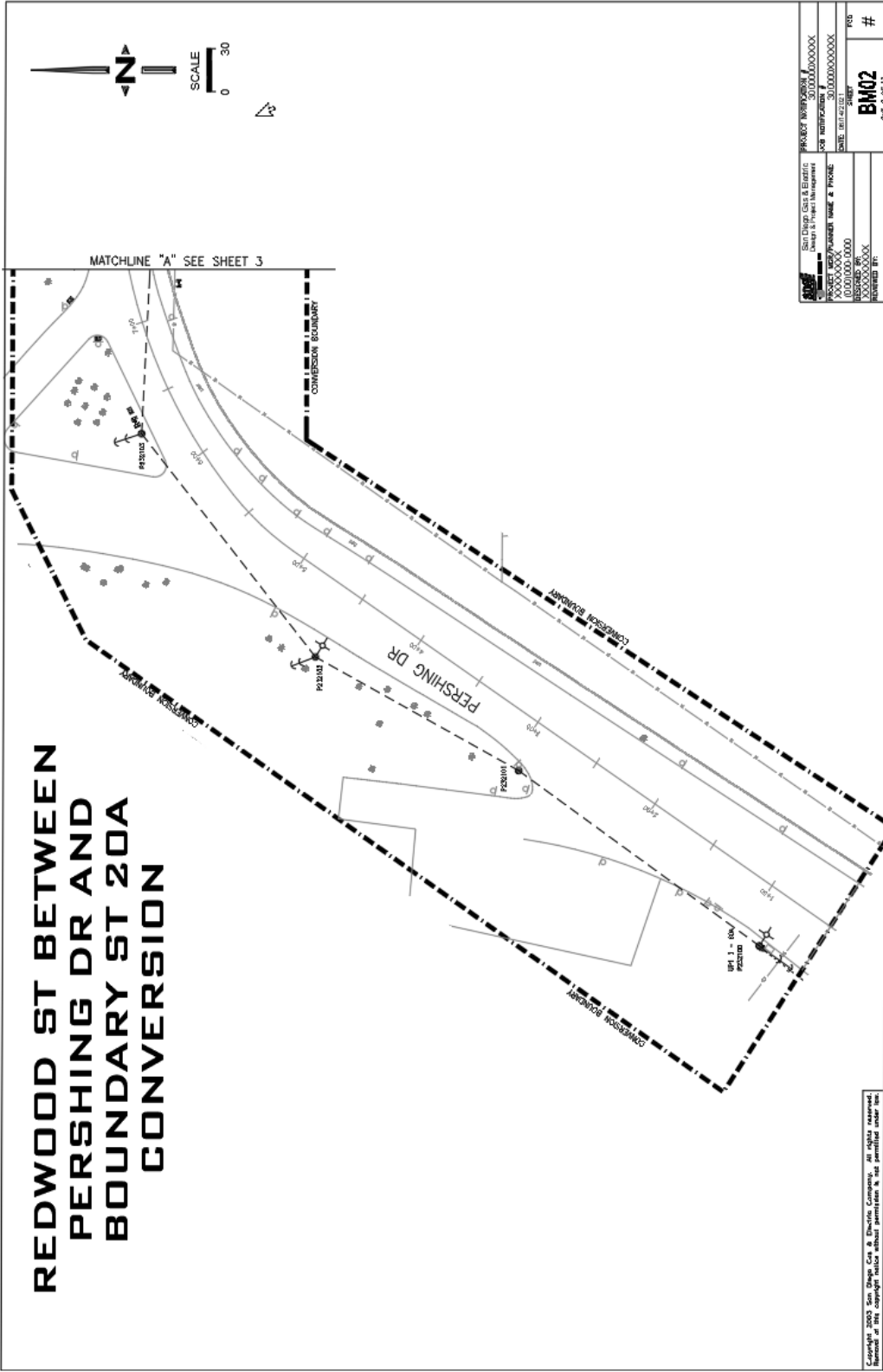
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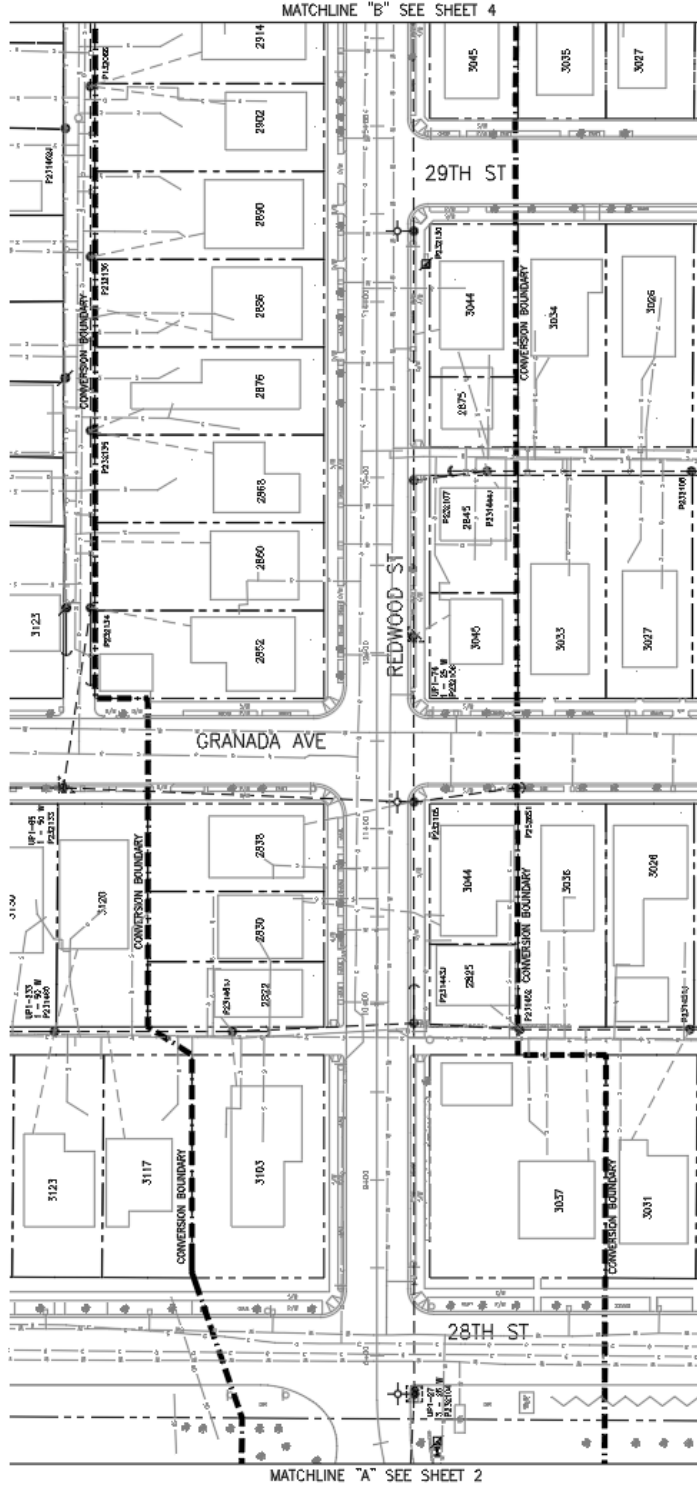
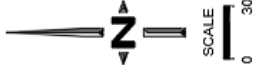
C. Conversion Base Map, Sheet 2



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C. Conversion Base Map, Sheet 3

**REDWOOD ST BETWEEN PERSHING DR
AND BOUNDARY ST 20A CONVERSION**



San Diego Gas & Electric Design & Project Management PROJECT NUMBER: 2021000254534 JOB NUMBER: 2021000254533 DATE: 08/24/21 DRAWN BY: [Name] CHECKED BY: [Name] APPROVED BY: [Name] PROJECT: [Name]		SHEET # BM03 OF 3 OF 11
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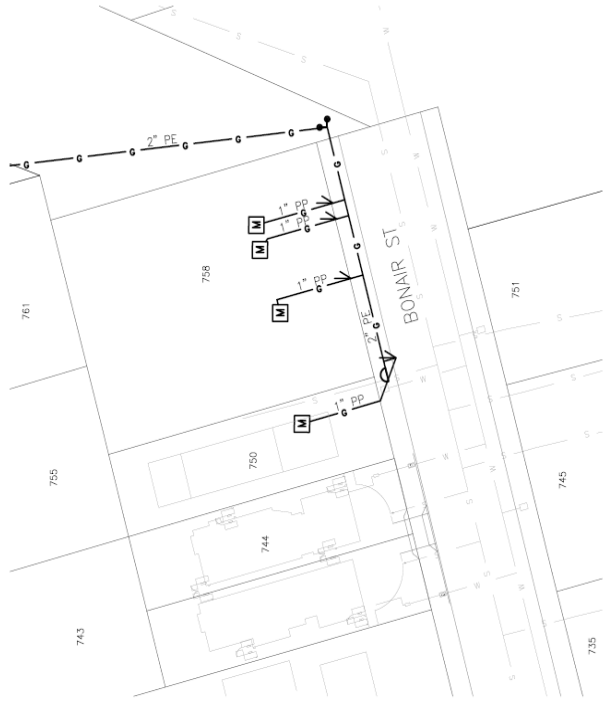
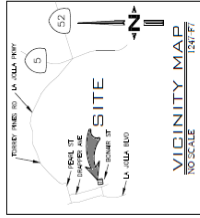
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D. Gas Base Map/Blank

744 BONAIR ST - GAS BLANK



NOTES

- COORDINATE WITH UNDERGROUND WORKSHEET #_____ PROVIDED BY THE DEVELOPER
- CLOURED AREAS INDICATE GAS TRENCH ONLY (OTO) TO BE PROVIDED BY THE DEVELOPER
- ALL STUBS TO BE 1" YELLOW PIPE, EXCEPT AS NOTED
- ALL STUBS TO BE 1/2" YELLOW PIPE, EXCEPT AS NOTED
- THIS SPECIFIC GAS REQUIREMENT IS TO BE INSTALLED BY THE DEVELOPER UNDER APPLICANT INSTALLATION (STAMP REQUIRED)
- DEVELOPER/OWNER: PHONE ()
- CUSTOMER REP: PHONE ()
- COMPANY: SDG&E CUSTOMER PROJECT PLANNER: PHONE ()



SDGE San Diego Gas & Electric Design & Construction Management	PROJECT NUMBER: 30000309518
PROJECT NAME: 744 BONAIR ST	DATE: 08/24/21
DESIGNED BY: JACOBSON	DATE: 08/24/21
DRAWN BY: KOJEK	DATE: 08/24/21
REVIEWER NAME: [Blank]	DATE: 08/24/21

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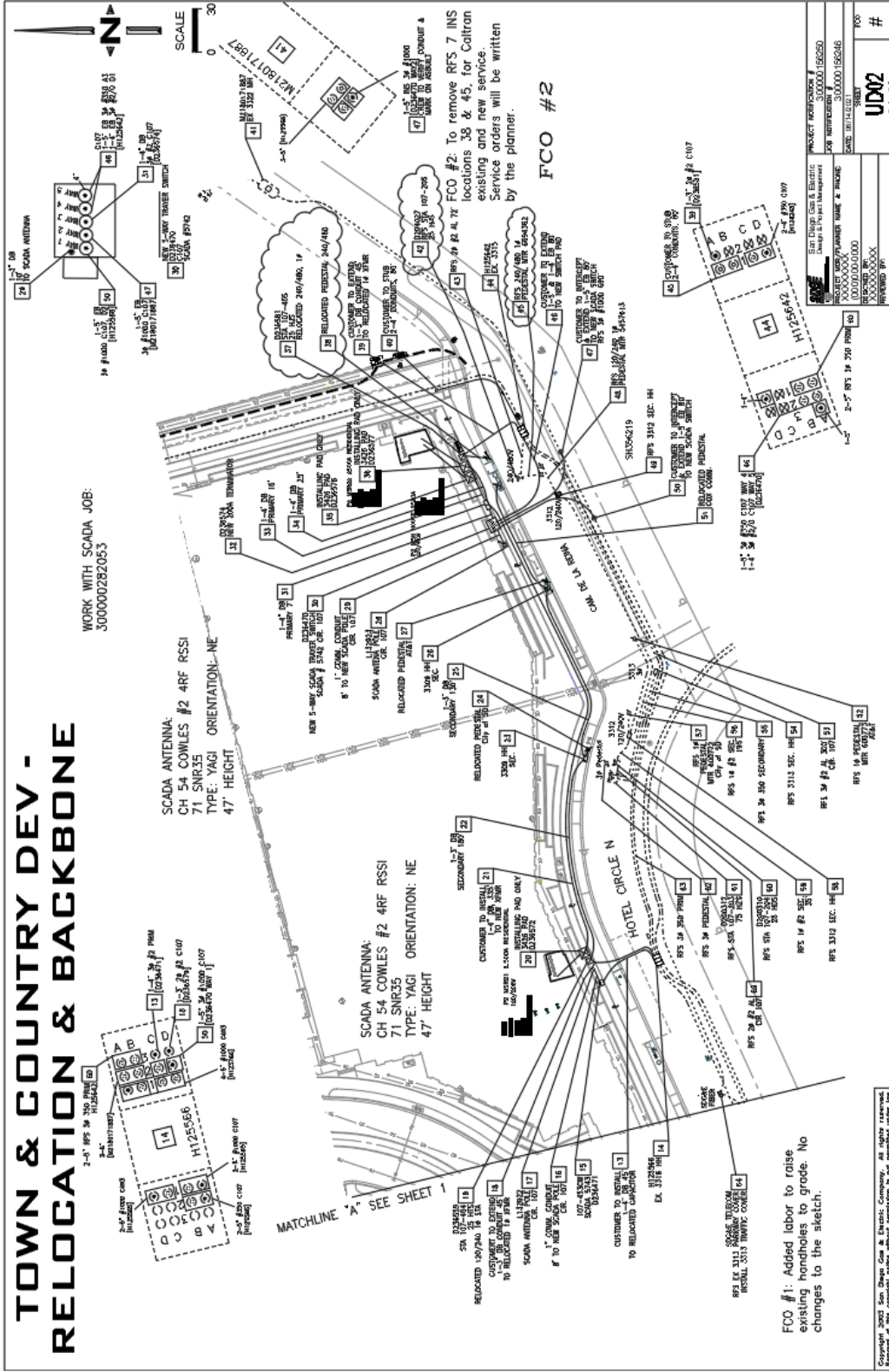
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E. New Business UG Electric Design Sketch

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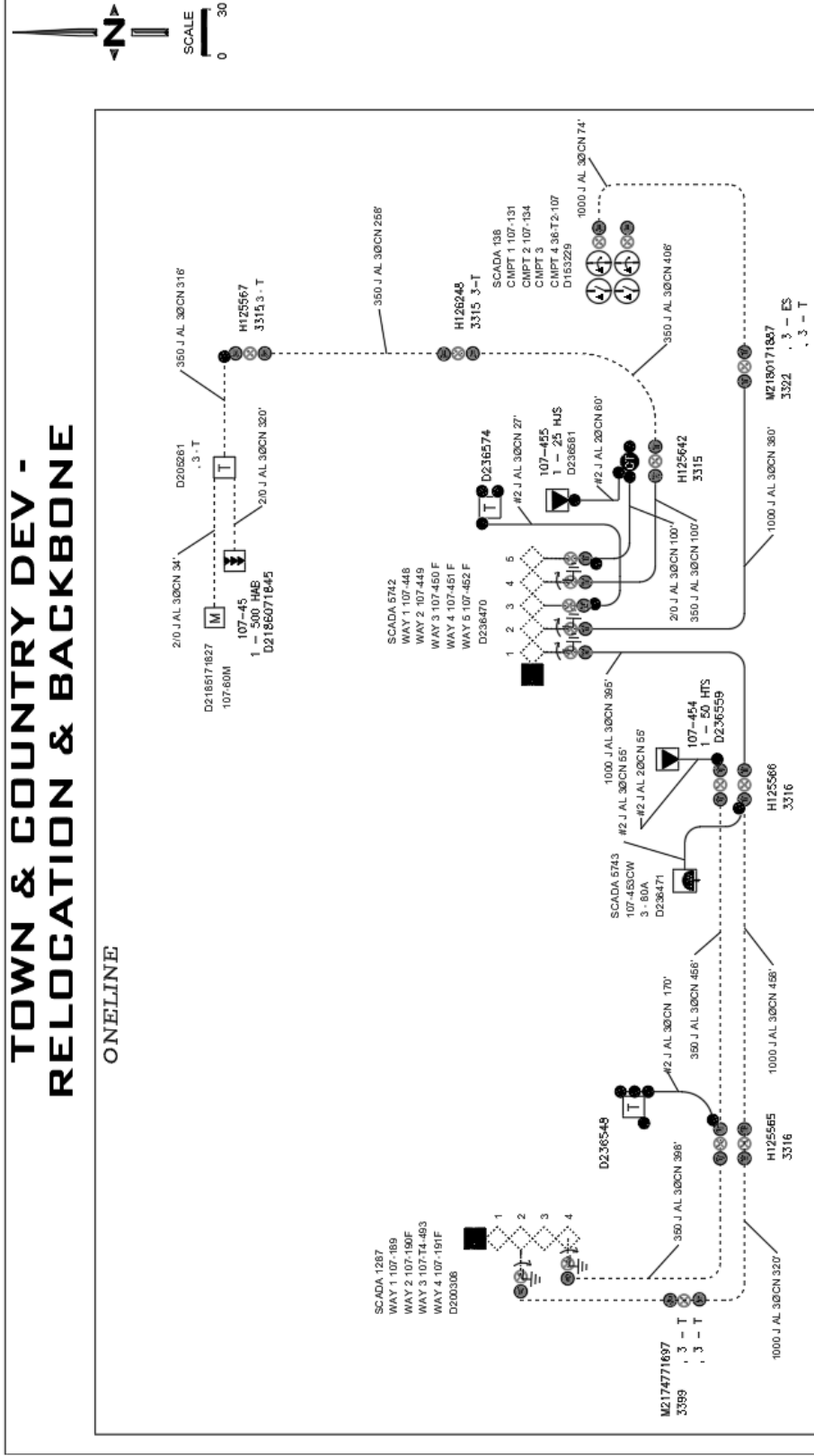
E. New Business UG Electric Design Sketch, page 2



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F. New Business Electric One-Line



SDGE PROJECT INFORMATION SHEET NUMBER: 00001526250 DATE: 08/24/21 PROJECT NAME: F. New Business Electric One-Line		PROJECT NUMBER: 00001526246 SHEET: UD03 OF: 3 OF 3
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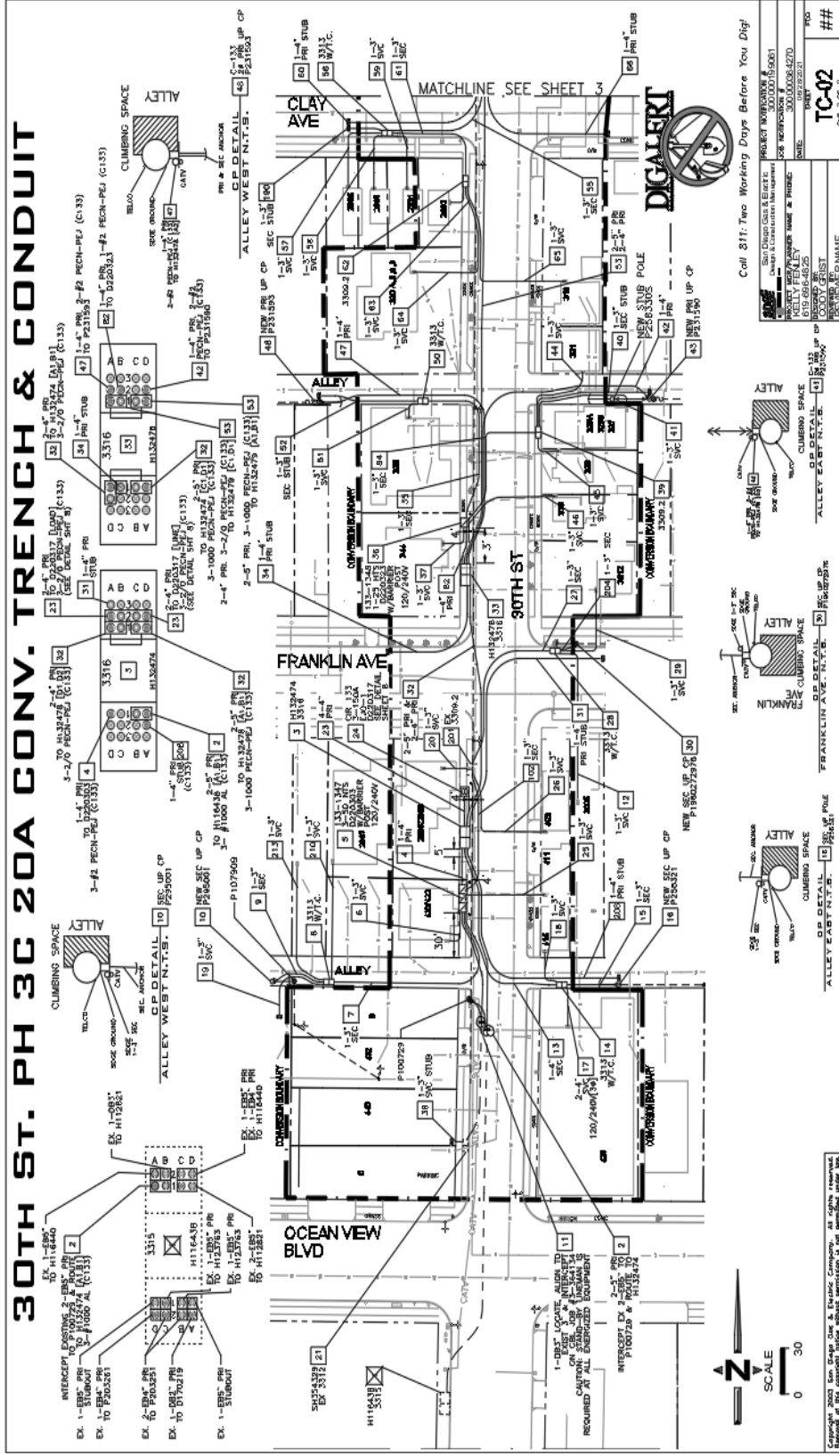
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G. 20A Conversion Trench and Conduit Electric Design Sketch, page 2



WORK ORDER GUIDELINES

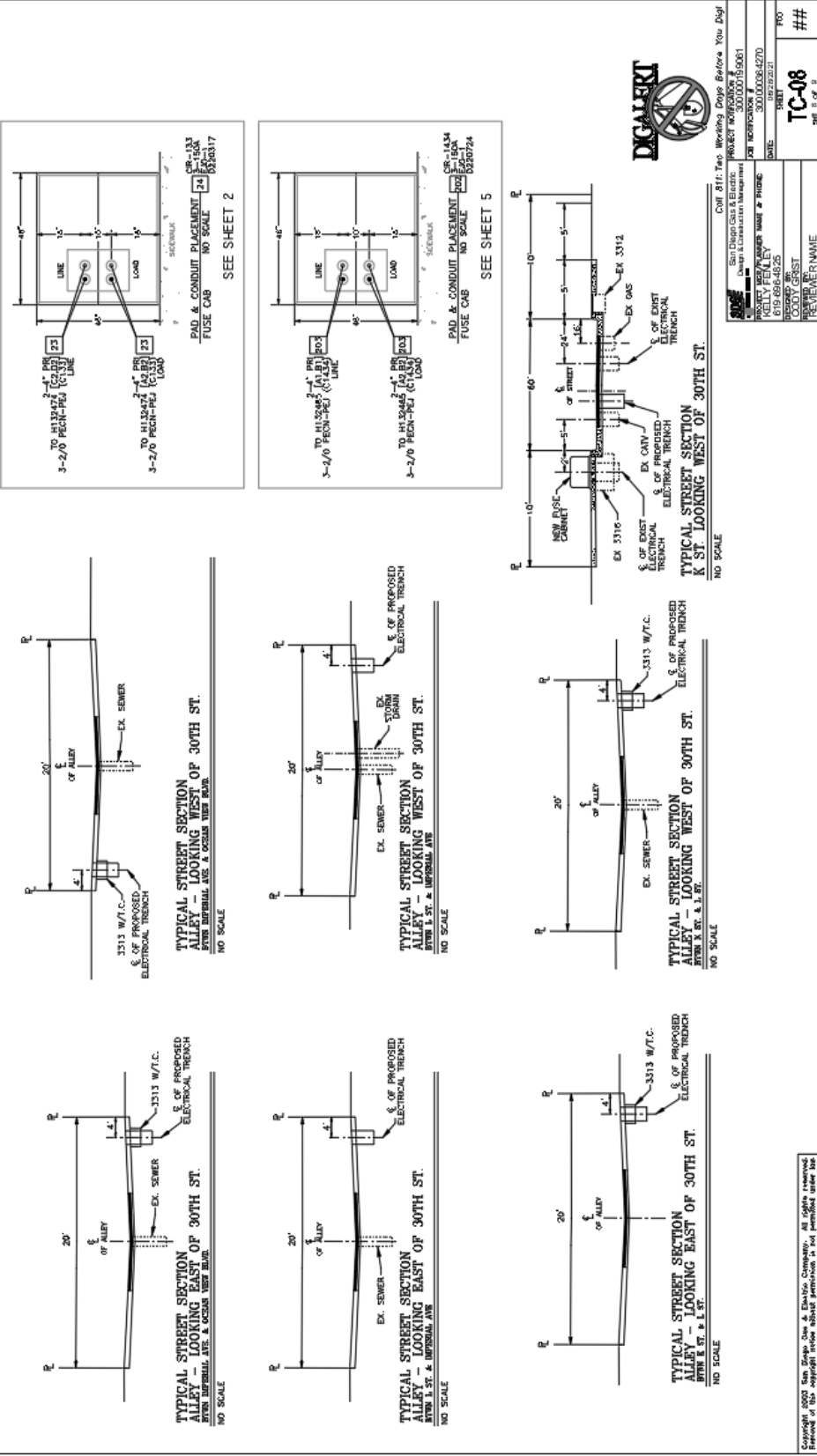
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G. 20A Conversion Trench and Conduit Electric Design Sketch, page 8

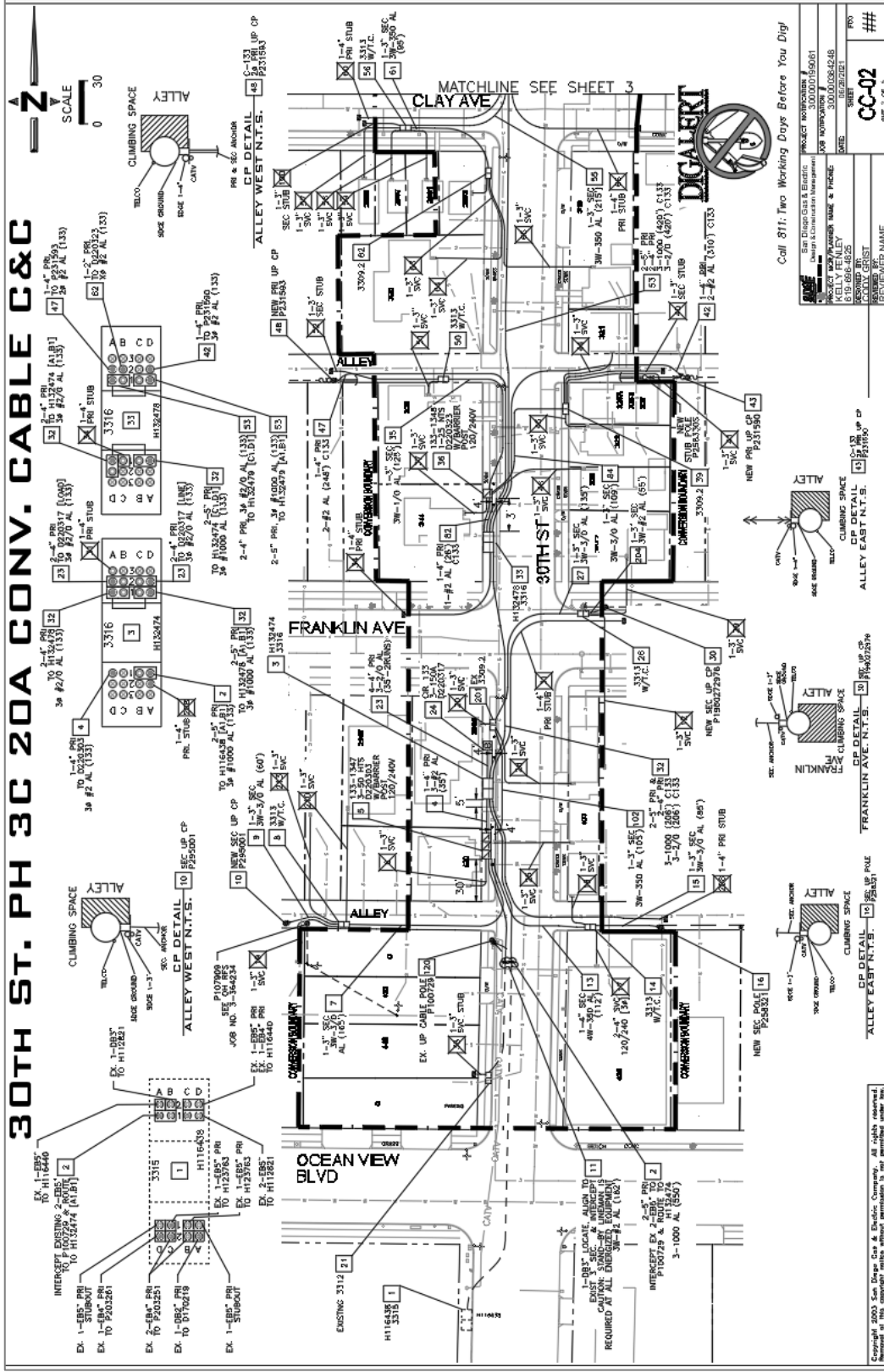
30TH ST. PH 3C 20A CONVERSION TRENCH AND CONDUIT K ST. TO OCEAN VIEW BLVD



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H. 20A Conversion Cable & Connectors Electric Design Sketch, page 2



WORK ORDER GUIDELINES

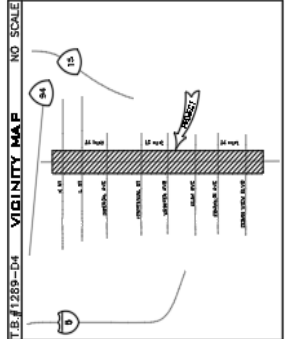
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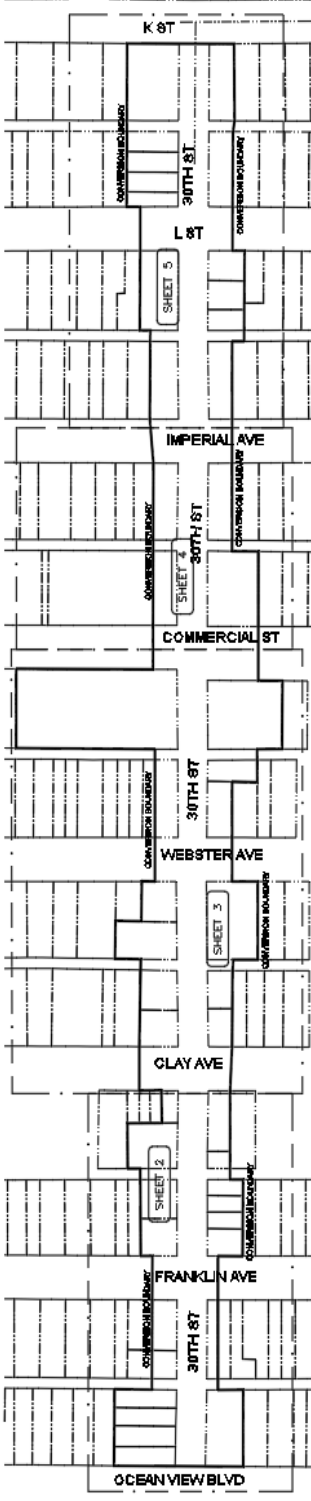
I. 20A Conversion Cable Pole Electric Design Sketch

Note: Below is a sampling of sheets and does not portray the entire project.




T.E.#1289-D4 VIGNITY MAP NO SCALE

30TH ST. PH 3C 20A CONVERSION CABLE POLE



NOTES

- 1. CAUTION: ELECTRIC STAND BY LADDER REQUIRED FOR ALL WORK AROUND ENERGIZED FACILITIES.
- 2. ALL CHANGES TO LADDER BORES ON THIS JOB HAVE BEEN DATED.
- 3. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00417A.
- 4. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00418A.
- 5. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00419A.
- 6. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00420A.
- 7. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00421A.
- 8. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00422A.
- 9. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00423A.
- 10. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00424A.
- 11. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00425A.
- 12. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00426A.
- 13. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00427A.
- 14. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00428A.
- 15. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00429A.
- 16. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00430A.
- 17. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00431A.
- 18. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00432A.
- 19. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00433A.
- 20. ALL CHANGES TO LADDER BORES SHALL BE DATED AND REFERENCED TO SHEET 30-00434A.

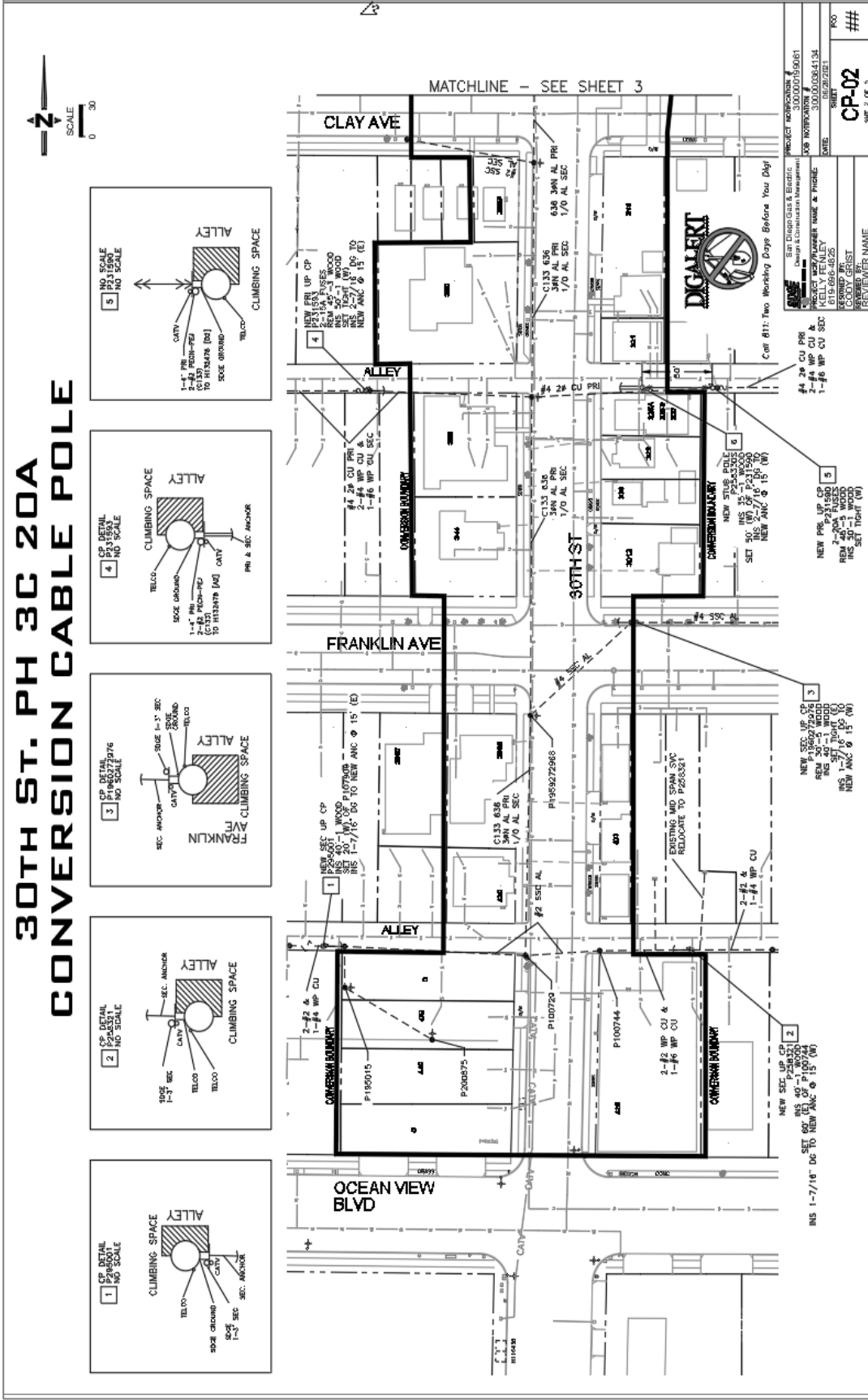


Call 811: Two Working Days Before You Dig!

San Diego Gas & Electric
Project Information
PROJECT NUMBER: 3000000864134
PROJECT NAME: 30TH ST. PH 3C 20A
DATE: 08/24/21
DRAWN BY: [Name]
CHECKED BY: [Name]
REVIEWER NAME: [Name]

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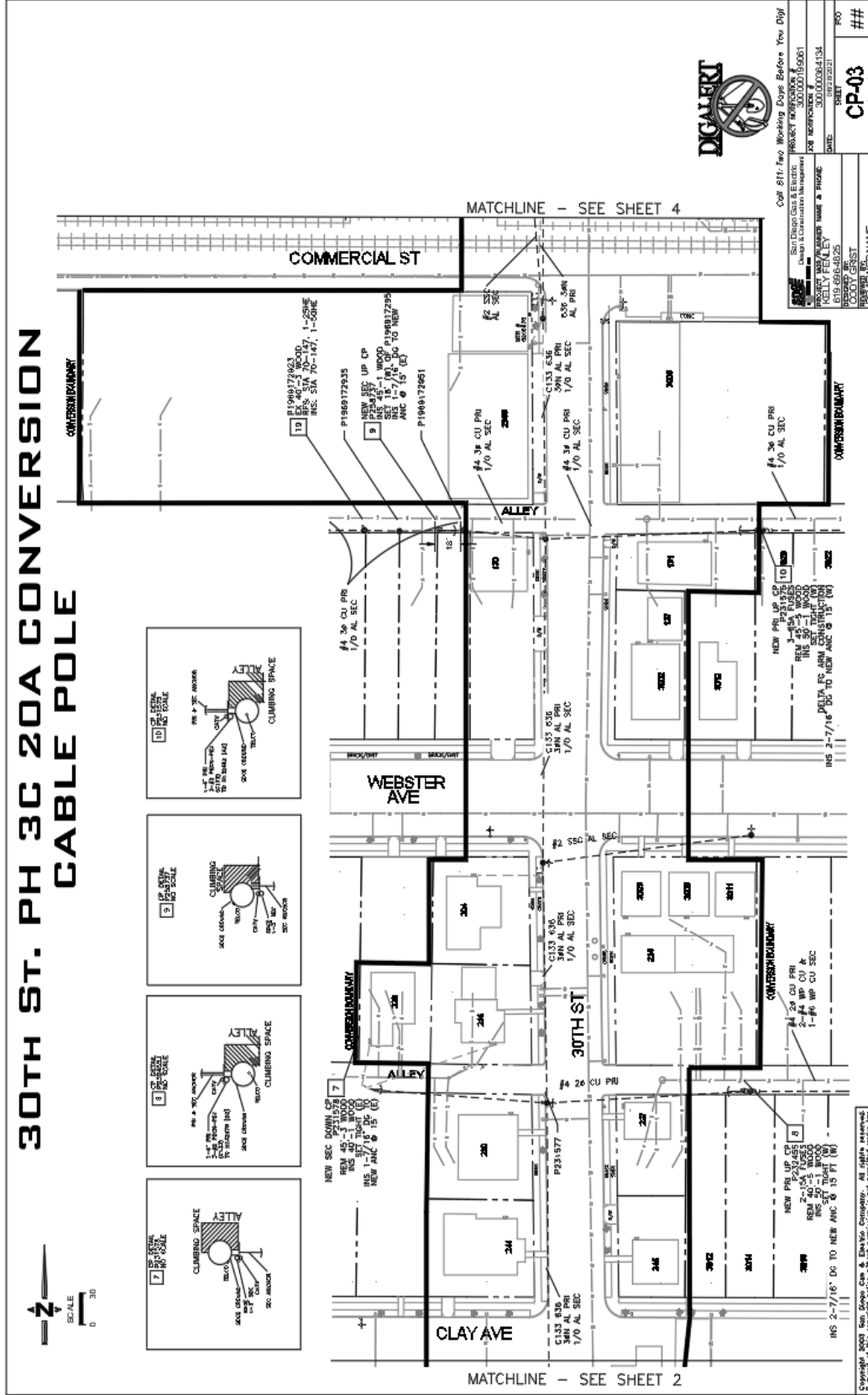
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I. 20A Conversion Cable Pole Electric Design Sketch, Page 3



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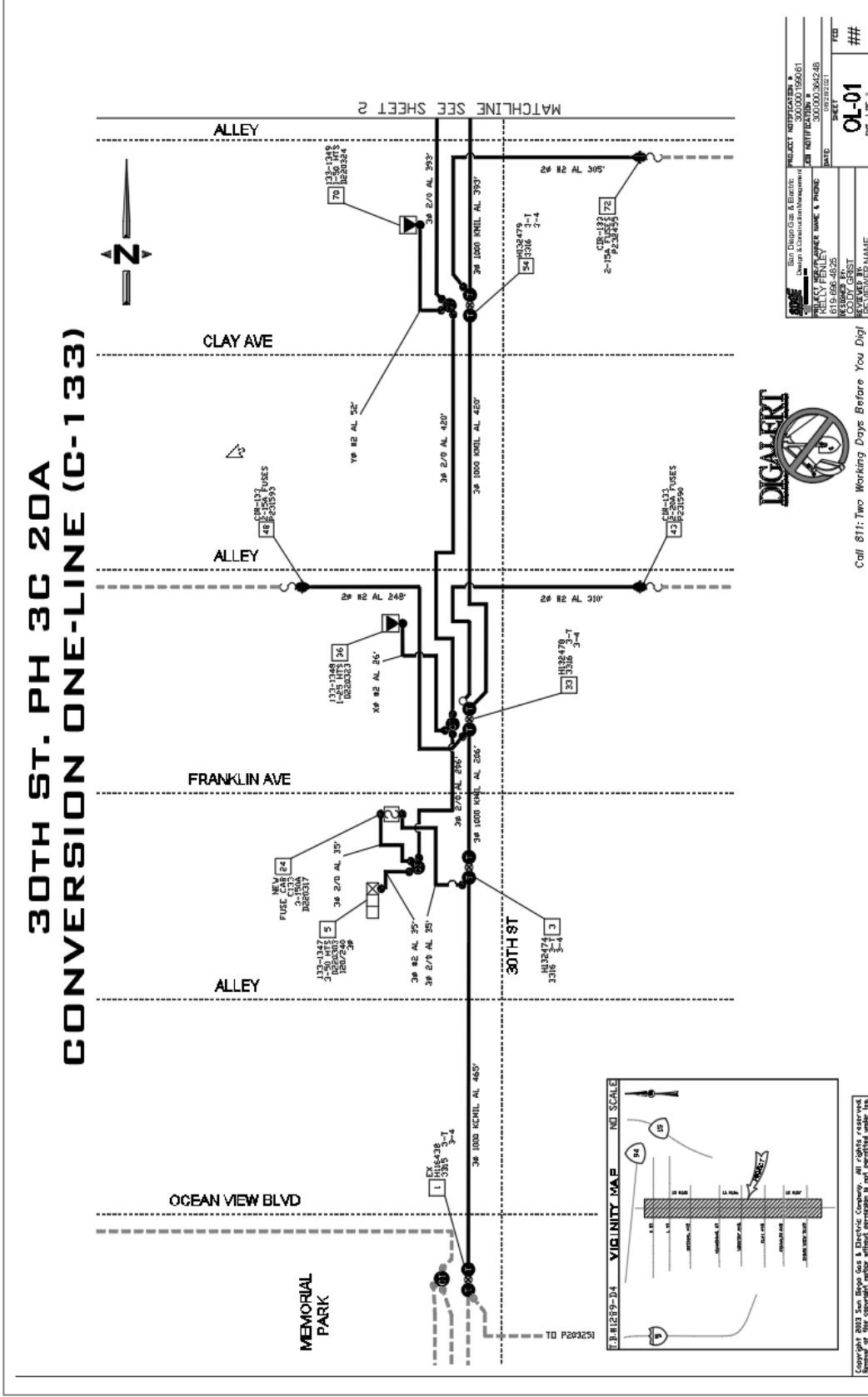
PROJECT MANAGEMENT POLICIES AND COMPLIANCE

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J. 20A Conversion Electric One-Line

Note: Below is a sampling of sheets and does not portray the entire project.



Call 811: Two Working Days Before You Dig!
REVIEWER NAME: CODY GRIST
DATE: 08/24/21

PROJECT NOTIFICATION #	3000001560181
DESIGN & CONSTRUCTION MANAGEMENT	REILLY PENLEY
DATE	08/24/21
PROJECT NAME & PHONE	J. 20A Conversion Electric One-Line (C-133)
DATE	08/24/21
DESIGNER	CODY GRIST
REVIEWER NAME	CODY GRIST

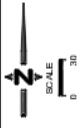
SHEET #
01-01
OF 3

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K. 20A Conversion OH RFS Electric Design Sketch

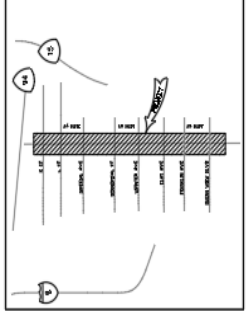
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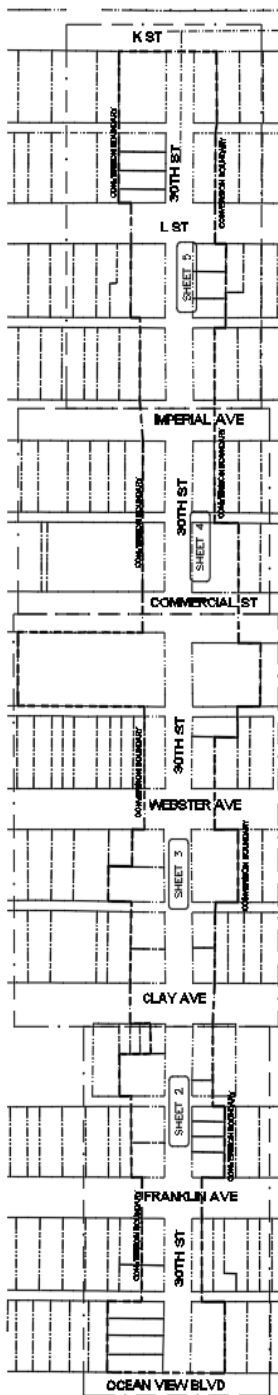


30TH ST. PH 3C 20A CONVERSION OH-RFS

Call 311: Two Working Days Before You Dig







LINEAR FOOTAGE		LINEAR FOOTAGE	
PRIMARY	SECONDARY	PRIMARY	SECONDARY
BS2	WP2	225'	324'
BS4	WP4	3505'	1,322'
BS6	WP6	1285'	1,533'
BS1/0	SSC2	9560'	433'
AD36	SSC1/0		1950'
	3/0 QUAD		295'

SDG&E TELECOM REMOVAL	CIRCUIT FOOTAGE REMOVED
TELECOM	12KV C.1434
	12KV C.133
	4KV CGH3

NOTES

BEFORE ELECTRIC WORK IS BEGUN REVIEW FOR ALL NEW AND/OR EXISTING PROTECTED FACILITIES.

IF ALL CHASES OFT JUNCTION BOXES ON THIS JOB HAVE BEEN OBTAINED.

DEFERRING OR DEFERRING SERVICES WITHIN CONVERSION PERIMETER TO BE REMOVED ON THIS JOB.

IF ANY CHASES ARE NOT OBTAINED, THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER IMMEDIATELY.

IF ALL CHASES ARE OBTAINED, THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER IMMEDIATELY.

IF ALL TRUNKS AND CONDUIT MATERIAL TO BE INSTALLED ON JOB NO. 2-14244.

IF ALL TRUNKS AND CONDUIT MATERIAL TO BE INSTALLED ON JOB NO. 3-14244.

IF ALL TRUNKS AND CONDUIT MATERIAL TO BE INSTALLED ON JOB NO. 3-14244.

IF THESE NOTES ARE FOR THE PURPOSE OF PRIME CONTRACTOR (OWNER) AND CONTRACTOR'S (HANDOVER) SHALL.

IF ALL QUESTIONS RELATED TO EXISTING RECORDS SHOULD BE DIRECTED TO THE APPROPRIATE PROJECT MANAGER.

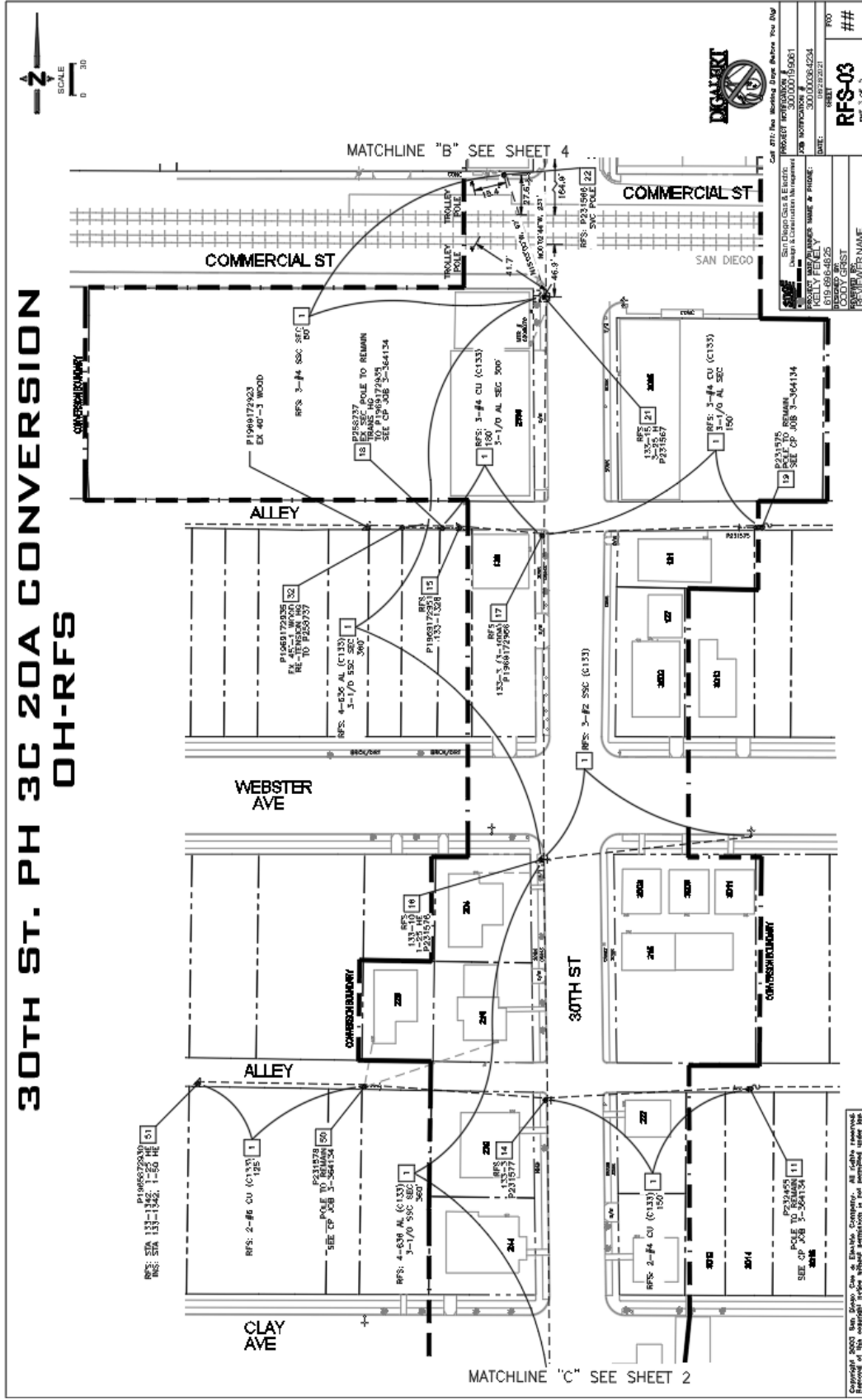
NAME: JESSIE M. BISHOP, PHONE: 619.491.1234

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DATE: 08/24/21
PROJECT NO: 20000156081
JOB NO: 2-14244
JOB TITLE: 30TH ST. PH 3C 20A
JOB TYPE: OH-RFS
JOB STATUS: OPEN
JOB MANAGER: KELLY FERLEY
JOB REVIEWER: JESSIE BISHOP
JOB REVIEWER NAME: JESSIE BISHOP
JOB REVIEWER PHONE: 619.491.1234
JOB REVIEWER EMAIL: JBISHOP@SDGE.COM

WORK ORDER GUIDELINES

K. 20A Conversion OH RFS Electric Design Sketch, page 3



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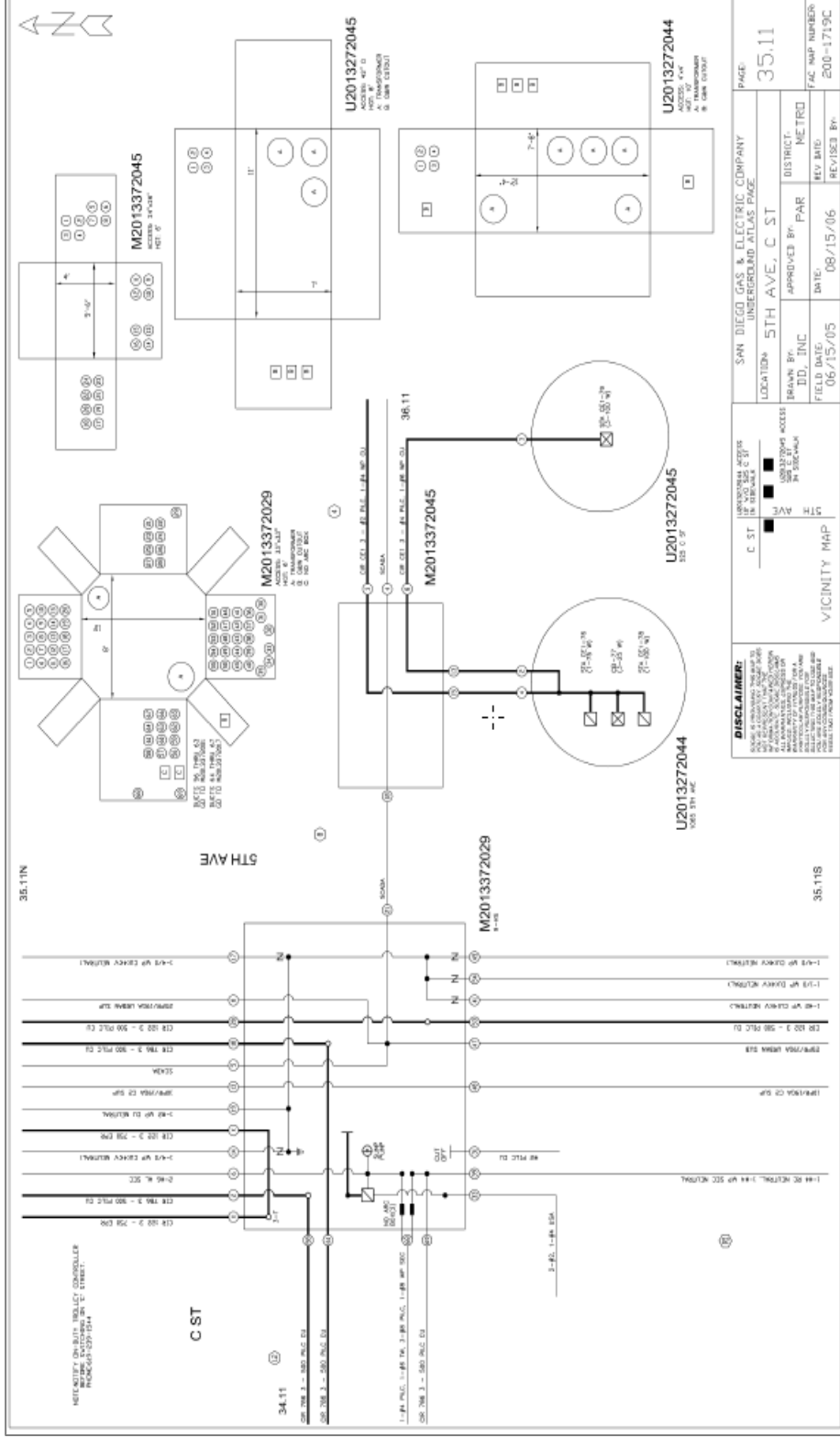
L. New Business OH Electric Design Sketch

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N. Atlas Pages/Duct Maps

Note: this is an outdated template



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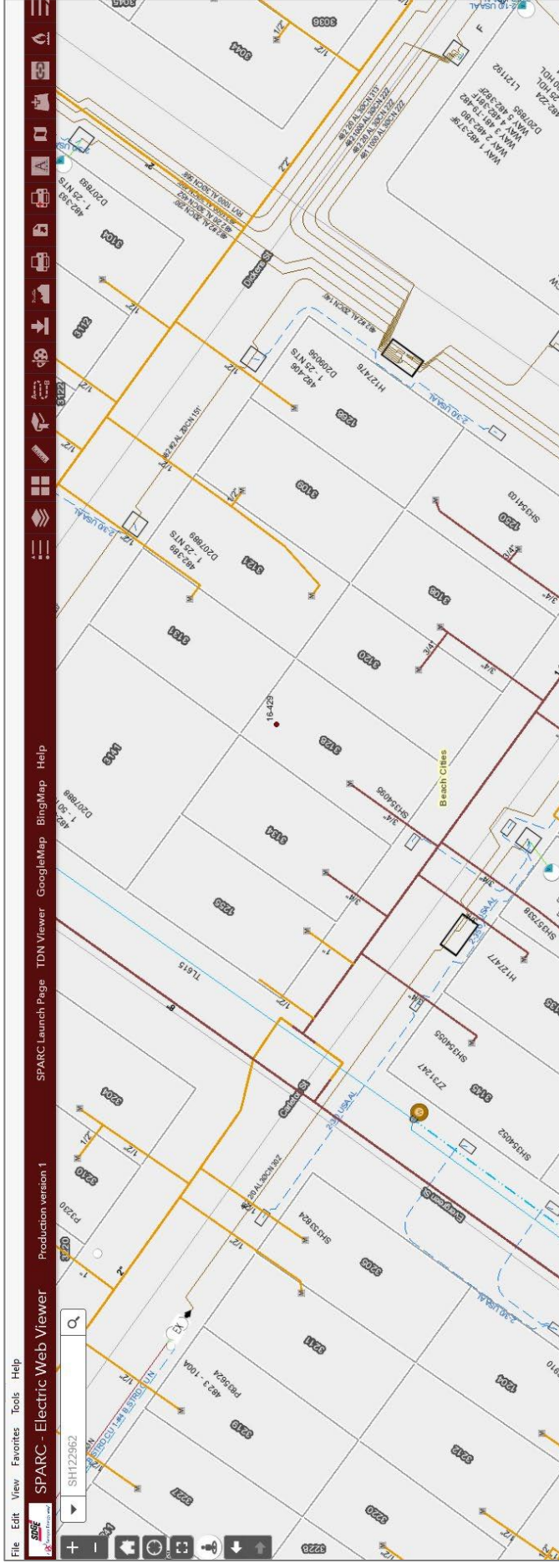


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O. Conversion Boundary Maps

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P. SPARC Asset Layer Maps



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Q. SOM Maps

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