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**Southern California Gas Company  
East Cat Canyon Brooks Project  
Preliminary Draft  
Project Description**

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**February 2013**

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**TABLE OF CONTENTS**

**PROJECT DESCRIPTION ..... 1**

1.0 Introduction..... 1

1.1 Route Description ..... 1

1.2 Project Components ..... 1

1.3 Land Requirements ..... 9

1.4 Construction Methods..... 10

1.5 Hazardous Materials And Non-Hazardous Waste ..... 18

1.6 Construction Noise..... 18

1.7 Workforce and Schedule..... 20

1.8 Operation and Maintenance ..... 20

1.9 Required Approvals and Authorizations..... 20

**LIST OF FIGURES**

Figure 1: Project Vicinity Map ..... 3

Figure 2: Typical Valve Drawing ..... 5

Figure 3: Typical Meter Set Assembly ..... 7

**LIST OF TABLES**

Table 1: Valve Locations and Dimensions ..... 2

Table 2: Staging Areas..... 9

Table 3: Construction Equipment ..... 11

Table 4: Hazardous Materials List..... 19

Table 5: Noise Levels of Typical Construction Equipment..... 19

Table 6: Potential Permits and Authorizations ..... 21

**LIST OF ATTACHMENTS**

Attachment A: Alignment Sheets



## PROJECT DESCRIPTION

### 1.0 INTRODUCTION

The East Cat Canyon Brooks Project involves the expansion of oil extraction at Aera Energy's (Aera's) existing East Cat Canyon oil facility. As part of this project, Southern California Gas Company (SoCalGas) will construct, operate, and maintain an 8-inch-diameter natural gas transmission pipeline (project) that will carry natural gas from SoCalGas's existing Line 1010 to the Cat Canyon Crude Oil Processing Plant.<sup>1</sup> In addition to the pipeline, SoCalGas will construct and maintain appurtenant facilities, including two aboveground valves, four underground valves, and a metering station at the terminus of the pipeline. Details regarding the transmission pipeline and associated facilities are provided in the following subsections.

### 1.1 ROUTE DESCRIPTION

The project involves the installation of an approximately 14-mile-long, 8-inch-diameter pipeline in Santa Barbara County, California. As shown in Figure 1: Project Vicinity Map, the project will be installed primarily within existing roadways and road shoulders. The project begins at SoCalGas's existing Divide Station and traverses north on Graciosa Road for approximately 2.65 miles, where it turns into Orcutt Road. The pipeline route continues along Orcutt Road for approximately 0.57 mile, then turns east on Clark Avenue and continues within Clark Avenue for approximately 5.02 miles until the roads ends at Dominion Road. At Dominion Road, the pipeline route heads south and east as the road approaches Palmer Road, approximately 3.5 miles from the intersection of Clark Avenue and Dominion Road. At this point, the pipeline route travels east within Palmer Road and Cat Canyon Road for approximately 2.18 miles before veering from the road and traveling across open space for approximately 0.1 mile to the terminus at Aera's Cat Canyon facility.

### 1.2 PROJECT COMPONENTS

The proposed natural gas transmission pipeline will be installed using conventional trenching, as well as horizontal directional drill (HDD), slick bore, and jack-and-bore techniques. In addition to the pipeline, SoCalGas will construct two permanent, aboveground valves; four underground valves; and a metering station.

#### 1.2.0 Pipeline

The majority of the approximately 14-mile-long underground pipeline will consist of steel pipe designed for a Maximum Allowable Operating Pressure (MAOP) of 970 pounds per square inch (psi), with a design level of 975 psi. The outside diameter of the pipe will be 8.625 inches with a minimum wall thickness of 0.344 inch.

The pipeline will be designed, constructed, operated, and maintained in accordance with all applicable requirements included in the United States (U.S.) Department of Transportation

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<sup>1</sup> For the purposes of this document, the term "project" represents the SoCalGas natural gas transmission pipeline and associated facilities defined herein, and not the larger East Cat Canyon Brooks Project.

(DOT) regulations in Title 49 of the Code of Federal Regulations (CFR) Section 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. Further, this project will be subject to California Public Utilities Commission (CPUC) standards as embodied under General Order 112-E.

The pipeline will be installed within a trench approximately 42 inches below the ground surface, as described in Section 1.4 Construction Methods. Workspace requirements to install and operate the pipeline are described in Section 1.3 Land Requirements.

### 1.2.1 Valves

Three valves will be installed along the pipeline to shut down the flow of gas during operation and maintenance activities or emergency situations. An aboveground valve will be located at the delivery point and will be designed with an automatic shut-off and supervisory control and data acquisition equipment. Two underground valves will be installed—one at Divide Station and one at approximate milepost 8.20. Both of the underground valves will also have automatic shut-off capabilities, which will require an aboveground automatic actuator at each site. The locations and the dimensions of the valves are shown in Table 1: Valve Locations and Dimensions. Figure 2: Typical Valve Drawing depicts the layout of a typical aboveground valve.

**Table 1: Valve Locations and Dimensions**

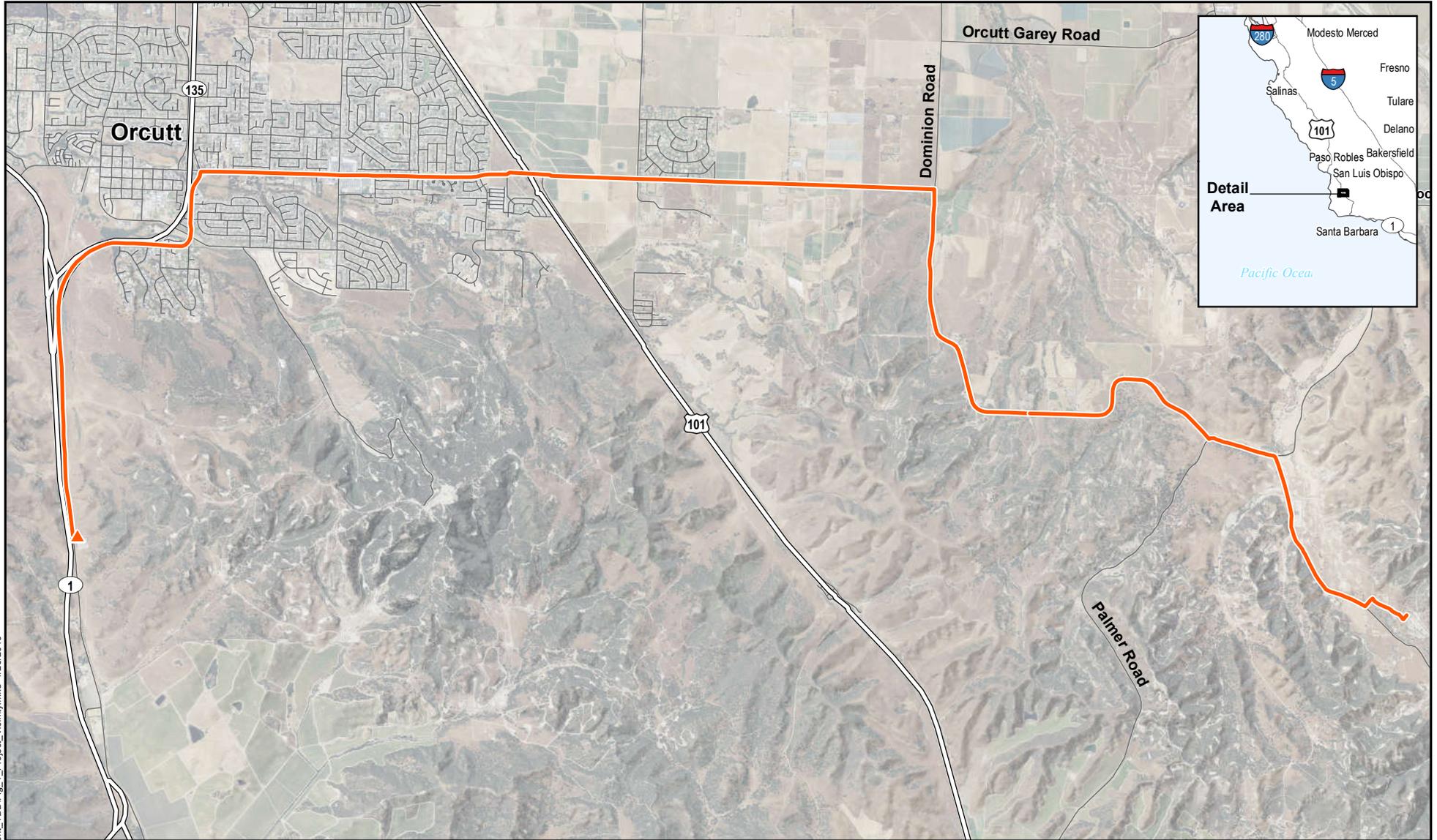
Approximate Milepost	Approximate Dimensions (feet) <sup>2</sup>	Location	Assessor's Parcel Number
0.00	Not Applicable	Divide Station (below ground)	101-020-019
8.20	10 feet by 20 feet	Clark Avenue at Dominion Road (below ground)	105-060-005
13.94	60 feet by 120 feet	Delivery Point (one aboveground and one below ground)	101-040-019

The underground valves will be located entirely below the surface, with the exception of an approximately 8-inch access hole with a steel lid and the actuator. The actuator will be protected by a cage, fenced enclosure, and/or bollards measuring approximately 10 feet by 20 feet. In addition, a small control box will be installed outside the fence line. At the Divide Station, all of the equipment will be located within the existing fenced limits. The aboveground valve at the delivery point will require a graveled, fenced enclosure that measures approximately 60 feet by 120 feet. The actual number of valves and their locations is contingent on the final alignment and pipeline design.

### 1.2.2 Metering Equipment

In addition to the valves described in Section 1.2.1 Valves, one meter set assembly will be installed at the terminus of the pipeline. A typical meter set assembly is shown Figure 3: Typical Meter Set Assembly.

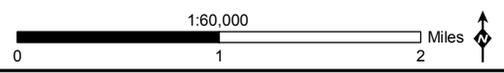
<sup>2</sup> The dimensions are equivalent to the fenced line that will be installed around the equipment. No dimensions are shown at Divide Station since all new equipment will be installed within the existing facility.



**Figure 1: Project Vicinity Map**

**East Cat Canyon Brooks Project**

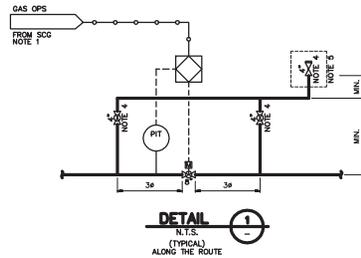
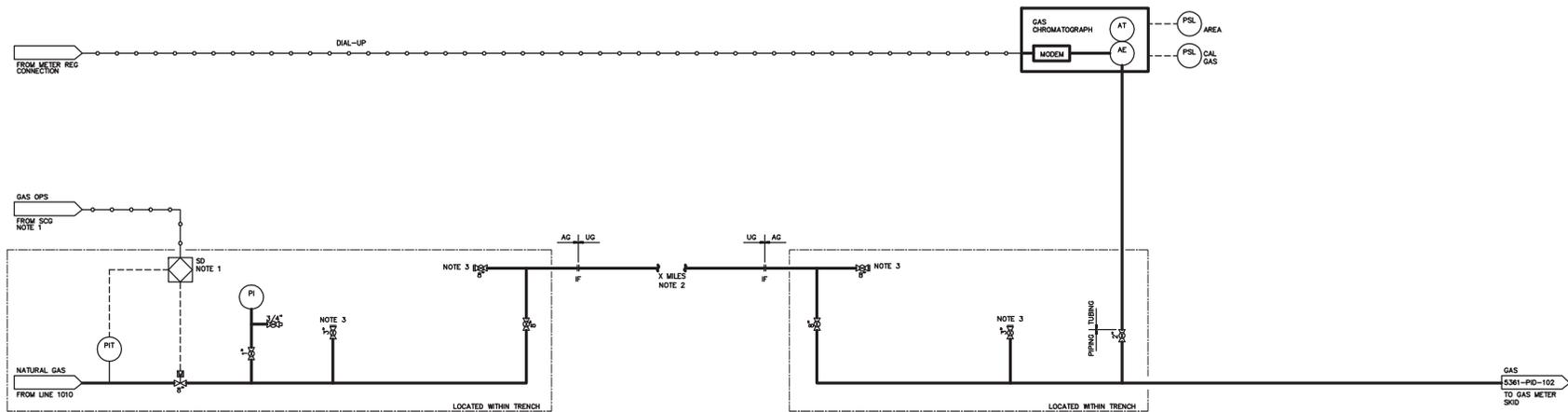
- ▲ Divide Station
- Proposed Pipeline Route
- Highway
- Other Road



Z:\Projects\SCG\_Cat\_Canyon\MXDs\Document\_TBD\Fig\_1\_Project\_Vicinity.mxd 1/28/2013

Data Sources: SCE, 2012; Insignia, 2012





**NOTES:**

1. SHUT DOWN ON LOW PRESSURE AND/OR SIGNAL FROM SCG.
2. TAKE-OFF LOCATION AND DISTANCE DEPENDENT UPON ROUTE. IN-LINE SHUT-OFF VALVES TO BE LOCATED ALONG ROUTE AS DETERMINED. (SEE DETAIL 1)
3. FOR POTENTIAL PIGGING OPERATIONS (AS NECESSARY).
4. MIN. 4"
5. 12" ALUMINUM VAULT OR 24"x48" BOX FOR UNDERGROUND VALVES. NO VAULT OR BOX FOR ABOVEGROUND VALVES.

**ISSUED FOR REVIEW  
FEBRUARY 21, 2013**

**SPEC SERVICES** SPEC Services, Inc.  
17101 Bushard Street  
Fountain Valley, CA 92708  
(714) 963-8277  
5361\_PFD-101.1

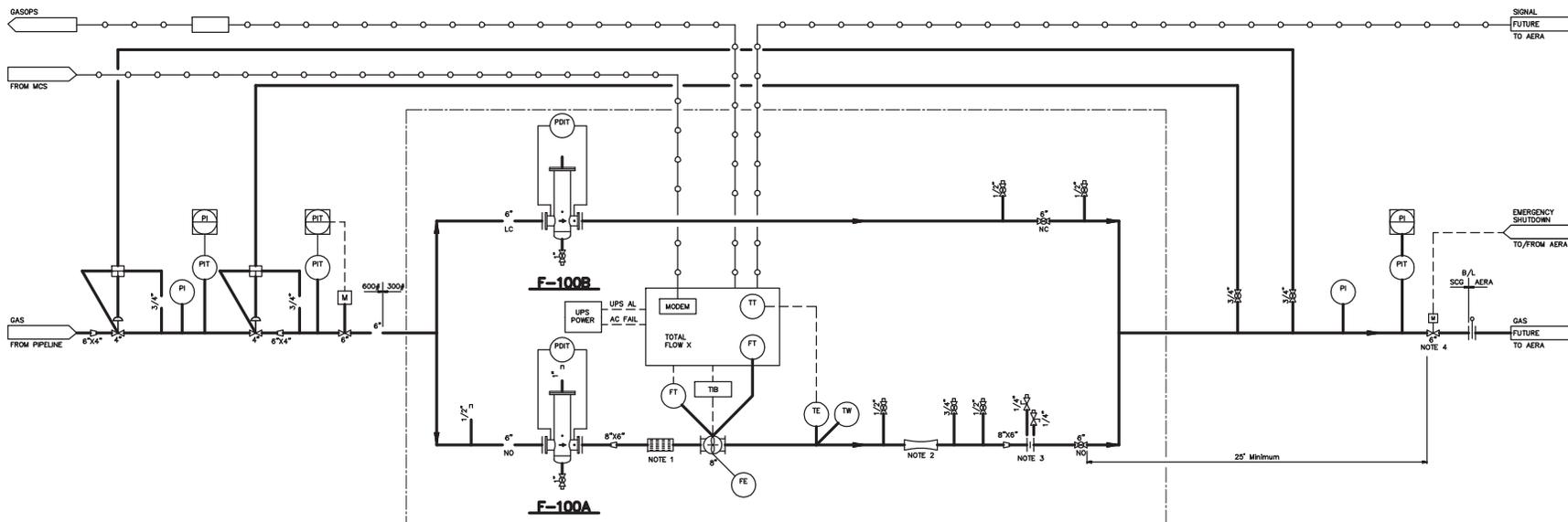
BY	DATE	CONTRACTOR NAME & PROJECT NUMBER	DESCRIPTION
DESIGNED G.LILLUSTON	10-10-12	Southern California Gas Company GAS ENGINEERING LOS ANGELES	AERA CAT CANYON GAS TAP FACILITY PFD/P&ID
DRAWN K.LEON	10-10-12		
CHCKD.		The Gas Company	SCALE NONE DRAWING NO. 5361-PID-101 REV. B
APPRD.			
JOB FILE NO.			
W.O.A.			
DIST.			
CLASS			



Figure 2: Typical Valve Drawing



**F-100A/B**  
6" DRY GAS FILTERS



**NOTES:**

1. FLOW STRAIGHTENING VAIN. NOT REQUIRED FOR QUOTED METER.
2. VENTURI TUBE FOR METER PROVING.
3. FLOW ORIFICE FOR METER PROVING.
4. EMERGENCY SHUTDOWN.
5. OVERPRESSURE PROTECTION.
6. WORKER & SAFETY VALVES TO ENSURE ADEQUATE PRESSURE DROP.

**ISSUED FOR  
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FEBRUARY 21, 2013**

**SPEC SERVICES**  
SPEC Services, Inc.  
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DESIGNED	G.LILLISTON	DATE	10-10-12
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CHK'D.			
APPR'D.			
JOB FILE NO.			
W.O.A.			
DIST.			
CLASS			

REV. NO.	DESCRIPTION	JOB FILE NO.	DATE
1	ISSUED FOR REVIEW		02-21-13
2	ISSUED FOR REVIEW		10-31-12

CONTRACTOR NAME & PROJECT NUMBER		Southern California Gas Company GAS ENGINEERING LOS ANGELES	
BY		DATE	
DESIGNED		DATE	
DRAWN		DATE	
CHK'D.			
APPR'D.			
JOB FILE NO.			
W.O.A.			
DIST.			
CLASS			

SCALE	NONE	DRAWING NO.	5361-PID-102	REV.	B
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Figure 3: Typical Meter Set Assembly





## 1.3 LAND REQUIREMENTS

The project will require the use of a temporary construction right-of-way (ROW), ranging in width from 30 to 50 feet along the entire alignment. The majority of the pipeline will be installed within county road ROWs requiring franchise lease agreements; however, approximately 1 mile of pipeline will occur across private lands and, thus, will require permanent easements.

### 1.3.0 Temporary (Construction)

#### Right-of-Way

Construction will occur within the paved roadways and unpaved road shoulders adjacent to the roadways. The typical temporary construction ROW will be approximately 40 feet wide, increasing in width to as much as 50 feet where additional temporary workspace is available adjacent to the road shoulder to accommodate trench spoil or specialized construction techniques and/or to avoid existing underground utilities. The ROW is depicted in Attachment A: Alignment Sheets.

#### Extra Workspaces

Additional workspace will be required to facilitate specialized construction techniques, such as HDD, horizontal bores, and drainage crossings. The extra workspace will be used to store spoil and equipment needed to complete construction in areas where specialized techniques are required. Extra workspace is shown on the alignment sheets included in Attachment A: Alignment Sheets.

#### Staging Areas

SoCalGas has identified the need for approximately three staging areas to store pipe and provide a location for the contractor to stage equipment and materials during construction. The staging areas will be located in previously disturbed areas to the extent feasible. The size of each yard will be contingent on available land, but will generally be kept to the minimum size necessary to facilitate construction of the project. The location of each staging area is shown in Table 2: Staging Areas.

**Table 2: Staging Areas**

Staging Area	Approximate Size	General Location	Nearest Station Number
A	1 acre	Corner of Orcutt Road and Clark Avenue	170+00
B	1 acre	West of Dominion Road on the north side of Clark Avenue	424+00
E	1 acre	North side of Dominion Road	590+00

### **1.3.1 Permanent (Operation and Maintenance)**

#### **Right-of-Way**

For portions of the pipeline installed within county road ROWs, SoCalGas has existing franchise agreements for the construction, operation, and maintenance of the new pipeline. SoCalGas will obtain permanent easements where the pipeline is not located within the road or road shoulder; however, the only private parcel that will be crossed that is not within the roadway is at the terminus of the pipeline within Aera's facility.

## **1.4 CONSTRUCTION METHODS**

Installation of the pipeline using conventional trenching methods will be used for the majority of the project. HDD methods will be used for the Highway 101 crossing, while a jack-and-bore method will be used to install the pipeline under roads and waterbody crossings where HDD and/or open-cut crossing techniques are not applicable. The sequence of construction activities for the project is described in the following subsections. Typical equipment necessary for these activities is listed in Table 3: Construction Equipment.

### **1.4.0 Notifications**

All property owners and tenants within 300 feet of the project boundary (or as determined for compliance with the California Environmental Quality Act [CEQA]) will be notified by delivery of handout notifications at least 1 week prior to the start of construction activities. Other notifications will be made through various means, including placing signs at road crossings in advance of construction. Emergency response providers (i.e., police and fire departments) serving the proposed route areas will be notified at least 30 days in advance and will be provided construction locations, road closure schedules, and potential alternate routes in accordance with the encroachment permit conditions. A detailed Traffic Control Plan will be developed and included with the encroachment permit for the project within public roadways.

The construction contractor will also notify Underground Service Alert, which will then alert service providers of the intended construction. Known utility corridors will then be marked so they can be avoided during construction, thus minimizing damage to existing utilities and any service disruptions to utility customers.

### **1.4.1 Mobilization and Staging**

Mobilization activities include the installation of temporary construction trailers and temporary security fencing and the delivery of materials and equipment to the job site. Prior to construction, the contractor will establish a staging area for materials and equipment storage as previously described in Section 1.3 Land Requirements. Temporary power will be supplied to the staging area by portable generators or through connections to nearby electrical lines, if available. In addition to the staging area, pipe material will be strung along the pipeline ROW, as needed, just prior to installation. Construction equipment will be staged along the route and will progress with the pipe installation.

**Table 3: Construction Equipment**

<b>Equipment</b>	<b>Approximate Number</b>	<b>Use</b>
Asphalt grinder	1	Remove pavement
Backhoe	6	Excavate and backfill
Boom truck	3	Deliver and load/unload materials and equipment
Boring machine	1	Install casing under roadways and/or waterways
Bulldozer	1	Strip topsoil and move spoils and other materials
Coating rig	2	Apply coating to pipe welds
Crane	2	Load/unload pipe and other materials
Ditching machine	1	Dig trench
Dump truck	7	Haul spoils and import backfill
Flatbed trucks, 1.5 ton	4	Haul shoring, plates, and construction materials
HDD drill rig, baker tanks, pumps, and shaker	1	Drill under Highway 101
Motor grader	1	Remove topsoil and grade the ROW
Pickup truck	15	Transport project personnel and materials
Pipe trucks	5	Transport pipe sections
Pipe-bending machine	2	Bend pipe sections
Pneumatic hammer and air compressor	2	Break pavement and excavation; dewater pipeline using air compressors
Radiograph truck	2	X-ray welds
Sideboom tractor	7	Lower pipe into open trenches and bore pits
Street sweeper	2	Control dust and clean up roads
Trackhoe	3	Excavate trench
Tractor trailer	2	Haul materials and equipment
Utility tool truck	3	Store tools
Vacuum truck	2	Remove water, mud, and other materials from excavations and the ROW
Water truck	4	Control dust and fire
Welding trucks	10	Weld pipe

### 1.4.2 Access

The project will be accessed by existing public roadways and dirt roadways that intersect paved roadways adjacent to the route. Once the ROW is graded, if needed, vehicles and equipment will also travel along the ROW. No new roads will be constructed as part of this project and no existing roads will be graded or improved.

### 1.4.3 Surveying, Staking, and Flagging

SoCalGas will mark the centerline at line-of-site intervals, at points of intersection (including offset stakes marking the edges of the ROW), and at all known underground facilities. Other utilities will be identified through the use of pipeline locators and other appropriate means. SoCalGas will also clearly mark any sensitive biological, cultural, paleontological, or hydrological resources, where appropriate, to restrict construction activities and equipment from these areas. Staking will be installed to delineate any temporary work area or ROW boundary. Once the fencing and flagging has been installed, the contractor will begin potholing along the ROW.<sup>3</sup>

### 1.4.4 Clearing and Grading

The construction ROW will utilize the roadway, road shoulder, and adjacent temporary work area, which will vary between 30 and 50 feet in width. Where necessary, clearing will begin with the removal of brush and other materials, which will then be windrowed along the ROW or disposed of in accordance with instructions from the jurisdictional agencies or landowners. When present and required, topsoil will be removed during clearing and grading operations and segregated from subsoil. At a minimum, the uppermost 4 to 8 inches of surface topsoil, where present, will be stripped across the entire ROW. The topsoil will be preserved and stored separately from subsoil for subsequent ROW restoration activities. In some areas where topsoil segregation will occur, the topsoil will be stored along the edge of the temporary construction easement. Some areas along the ROW will then be graded to create a suitable work surface for construction vehicles and heavy equipment. Minimal grading and topsoil removal is anticipated because the majority of the temporary construction easement occurs along the previously disturbed road shoulders.

All survey monuments, including U.S. Geological Survey monuments, will be identified and protected during construction activities. If monuments are accidentally damaged or disturbed, SoCalGas will report the incident to the appropriate agency and will be responsible for the restoration of the monument at its original surveyed location.

### 1.4.5 Hauling and Stringing

The pipe will be hauled by truck to one of the staging areas. Cranes will then unload the pipe at the staging area, from which it will then be loaded onto stringing trucks to be delivered to the construction ROW and strung along the trench just prior to installation. Once on the ROW, sideboom tractors will unload the joints of pipe, placing them along the trench line for future line-up, welding, and installation.

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<sup>3</sup> Potholing is the exposure of existing underground utilities, such as natural gas, oil, and water pipelines; electrical transmission lines; and phone lines in order to avoid damaging these structures during construction.

### 1.4.6 Trenching

The typical trench will be approximately 5 feet deep and approximately 2 feet wide, or 5 feet wide where bell holes are required. At crossings of existing pipelines and other substructures, excavations will generally be deeper and wider, as necessary, to accommodate shoring and to clear the existing substructures, which are located at various depths. The pipeline will meet or exceed the minimum depth of cover required by the U.S. DOT, which is typically 36 inches.

The trench will be excavated using rubber-tired backhoes, ditching machines, and track excavators. Substructures will be exposed by potholing before using excavating equipment. Blasting of rock or very hard soils is not anticipated.

Excavated soils will typically be preserved and used as backfill materials at the site of origin. Spoil piles will be placed along the trench in areas where a temporary construction easement is available or along the roadway or road shoulder. Pre-approved sections of the public roadway will be closed and detours established in accordance with SoCalGas's Traffic Control Plan to accommodate staging of the spoil within the roadway. Along narrower sections of roadway, excavated soils will be hauled away in dump trucks to the staging area and returned for backfill once the pipe installation has been completed. Materials deemed unsuitable for backfill will be disposed of off site in accordance with all applicable regulations.

Trench dewatering will be required if groundwater infiltrates the pipeline trench. Discharge of trench water will be conducted according to all applicable laws, ordinances, and regulations. Potential discharge locations include using the trench water as a means for dust control and fire prevention and/or discharging the trench water overland in a well-vegetated area. All trench water will be discharged in a manner that controls the rate of discharge and minimizes erosion in accordance with applicable permits.

### 1.4.7 Construction within Roadways

The pipeline will be located within the paved roadway and road shoulder. During construction within and across these roadways, traffic control will be implemented in accordance with SoCalGas's Traffic Control Plan and the applicable road encroachment permits. Surface preparation will include removing pavement with concrete saws and/or grinding equipment. The broken debris will be hauled to an approved landfill sites or will be stockpiled and reused during pavement restoration. Excavation will follow, as described in Section 1.4.6 Trenching. SoCalGas will use a temporary ROW width in accordance with the encroachment permit and the Traffic Control Plan and as allowed by the available temporary work area adjacent to the roadway to accommodate the trenching and excavation activities.

Traffic control, temporary road closures, and detours will be in accordance with the local encroachment permit requirements. Local and emergency access will be maintained at all times. "Detour and "Road Closed" signs will be posted in advance of construction, and construction will be completed as soon as possible to re-open roadways as the pipeline installation progresses.

### 1.4.8 Horizontal Directional Drilling

HDD is a highly specialized boring technique that will be used to install the pipe beneath Highway 101. It involves drilling along a vertical arc that will pass beneath the freeway. The

HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit will initially be adjusted to the proper design angle for the particular drill. The first step will be to drill a fluid-filled pilot bore. The first and smallest of the cutting heads will begin the pilot hole at the surveyed entry point in the entry pit. The first section of the drill stem has an articulating joint near the drill-cutting head that the HDD operator can control. Successive drill stem sections will be added as the drill head bores under the crossing. The drill head will then be articulated slightly by the operator to follow a designated path under the crossing and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger cutting heads and reamers will be pulled and pushed through the bore hole until it is the appropriate size for the 8-inch pipeline. Using this method, the pipeline will be installed a minimum of 35 feet under Highway 101 for a length of approximately 1,650 feet.

An entry pit and an exit pit are required for each HDD to contain the drilling mud. In general, the work area required on the entry site will be approximately 50 feet by 200 feet, while the exit site will require a work area of approximately 50 feet by 100 feet. In addition, an approximate 10 foot by 1,650 foot temporary work area on the exit side of the drill will be required to string and weld the pullback pipe. Lubrication containing water and bentonite clay—referred to as drilling mud—will be used to aid the drilling, coat the walls of the bore hole, and maintain the opening. During the bore, drilling fluid will be pumped under high pressure through the drill stem to rotate the cutting head and return the soil cuttings to a pit at the surface entry point. No additives considered hazardous according to state and federal laws will be used during the HDD process. The drilling mud will be received in a pit measuring approximately 15 feet by 40 feet.

The drilling mud returned back through the bore-drilled hole will be pumped from the entry and exit pits to a processing/shaker unit where the soil cuttings are removed, allowing the drilling mud to be reused. It is anticipated that the majority of the drilling mud will be recycled by the drilling contractors and used on subsequent projects. Any excess clean drilling mud will be disposed of at an appropriate waste facility.

During the HDD process, pipe sections to be pulled through the crossing will be strung on pipe supports down the ROW or within temporary extra workspace areas. The pipe sections will be welded together and examined with an X-ray, and a protective epoxy coating will be applied to the joints. A hydrostatic pre-test of the pipe section will then be performed to insure integrity prior to pulling. Once the bore hole reaches the correct diameter, a pulling head will be welded on the end of the pipeline section and the pipe will be pulled through the bore hole until it surfaces on the other side. Sidebooms or excavators with slings or roller cradles will support the pipe as it is slowly pulled through the bore hole. The completed drilled crossing will then be connected to the new pipeline, and the entry and exit pits will be backfilled.

As part of the drilling design process, geotechnical surveys of subsurface conditions will be conducted to determine the underlying geologic strata along the bore path. Infrequently, the geologic strata above the bore may be weaker than anticipated and/or unconsolidated. As the HDD passes under these locations, the high pressure of the drilling mud may result in a fracture of these strata, allowing drilling mud to rise to the surface. This situation is termed a “frac-out” and is usually resolved by reducing the mud system pressure or increasing the mud viscosity. If a frac-out occurs, the boring operation will be assessed to determine whether the bentonite needs

to be contained. If the frac-out occurs in a sensitive resource area, such as a creek, drilling operations will be immediately halted and a frac-out contingency plan will be implemented to contain and remove the drilling mud.

#### **1.4.9 Horizontal Boring**

Horizontal boring is a technique that can be used to install the pipeline beneath waterbodies or road crossings without disturbing the surface of the area being crossed. Horizontal bores require entry pits measuring approximately 15 feet by 40 feet and receiving pits measuring approximately 10 feet by 15 feet to complete the crossing. Typically, bore pits are approximately 10 feet deep, and the bottom of the pit is stabilized with gravel prior to lowering in the boring machine. If groundwater is encountered, it is pumped into a temporary holding tank, such as a Baker tank, for analysis prior to being discharged in accordance with federal, state, and local regulations. Since the pipeline alignment is within an existing roadway, no horizontal boring is anticipated to cross existing waterbodies. Roads will be crossed using the conventional trenching and traffic control methods.

#### **1.4.10 Pipe Bending, Welding, and Coating**

The pipe gang and a welding crew will be responsible for welding.<sup>4</sup> Typically in locations along the trench with no substructures, six to eight approximately 40-foot-long pipe joints are welded into one 240- to 320-foot-long piece. Longer sections of pipe may be welded where topographical and/or existing conditions allow open trenches for prolonged periods. The pipe gang will use sidebooms to pick up each joint of pipe, align it with the adjacent joint, and make the first part (i.e., pass) of the weld. The pipe gang will then move down the line to the next section, repeating the process. The welding crew will follow the pipe gang to complete each weld. All field welding will be performed by qualified welders in accordance with the American Pipeline Institute Standard 1104 (Welding Pipe Lines and Related Facilities) and 49 CFR 192. In areas that require crossing substructures, individual pipe lengths will vary to accommodate existing field conditions.

All new pipeline welds will be inspected both visually and radiographically (via X-ray) by certified weld inspectors and coated. Although the pipe will be coated prior to delivery to the project site, all coated pipe has an uncoated area 3 to 6 inches from each end to prevent the coating from interfering with the welding process. Once the welds are made, the field joint (i.e., the area around the weld) will be coated with an epoxy coating, such as Fusion Bonded Epoxy or Protal 7200. New pipeline segments will be inspected to locate and repair any faults or voids in the pipeline coating prior to being lowered into the trench.

The pipe will be bent in the field utilizing track-mounted pipe-bending equipment, which will progress with the pipe installation. Once the trench is excavated, any bends that are required—to avoid substructures or changes in the alignment—can be determined, measured, and completed for installation.

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<sup>4</sup> Welding is the process that joins the various sections of pipe together into one continuous length.

#### **1.4.11 Lowering-in, Backfill, and Compaction**

The welded pipe segments or individual pipe lengths will be lifted and lowered into the trench by sideboom tractors. Cradles with rubber rollers or padded slings will be used so the tractors can lower the pipe without damaging the pipe's protective coating. If rock conditions are encountered during trench excavation, the trench bottom will first be padded with a layer of imported rock-free sand.

In most situations, the native material excavated from the pipeline trench will be hauled off site to an approved landfill, and clean, engineered fill will be imported for backfill. In addition, sand and rock-free soil may be imported to pad or shade the pipe prior to backfilling. These materials will come from a commercially available, local source.

Once backfilling has been completed in public roads and streets, the backfill material will be compacted with compaction rollers and/or hydraulic tampers. It will then be compaction-tested to ensure that all trench locations are compacted in accordance with standard engineering practices and permit requirements. In areas where topsoil segregation is required, the topsoil will then be restored to its original grade and contour.

#### **1.4.12 Aboveground Equipment Installation**

The majority of aboveground equipment will be pre-fabricated at a staging area and then transported to the respective locations for final assembly and tie-in to the pipeline facilities. The aboveground equipment that will be appurtenant to the pipeline is described in the following subsections.

##### **Valves**

Below-ground valves will be installed within the ROW and no additional workspace will be required. Installation will be similar to other tie-ins within the trench and will involve excavation of a bell hole to allow workers room for welding. Once the valve is installed, it will be fitted with an actuator that extends aboveground. The trench will then be backfilled and the surface will be either paved or graveled, depending on the location. A cage, fencing, and/or bollards will be installed around the actuator and will measure approximately 10 feet by 20 feet depending on the final design. The aboveground valve will be installed in a similar manner and will be installed within the ROW limits. The aboveground valve site will be graded flat and trenches will then be excavated to the approximate depth of 6 to 8 feet. Crews will then weld the pipe section with a pre-tested, full-opening ball valve with blow-offs and bypasses. No pig launchers or receivers will be installed; however, equipment to which pig launching and receiving facilities can be attached and installed for future inspection efforts will be located at each end of the pipeline. After installation, all above-grade piping and equipment will be painted and the valve will be enclosed by a chain-link fence. The permanent footprint of the valve will measure approximately 60 feet by 120 feet, as listed in Table 1: Valve Locations and Dimensions. No lighting will be installed at the valve.

##### **Meter Set Assembly**

A meter set assembly will be installed on the pipeline to measure the volume of gas passing the delivery point. The metering equipment will be installed aboveground and welded to the pipeline

when the trench is exposed. The equipment will be in the same fenced area as the aboveground valve, which will be graveled after the trench is backfilled.

#### **1.4.13 Hydrostatic Testing**

In accordance with U.S. DOT standards, the entire pipeline and the HDD segment will undergo hydrostatic testing prior to operation using water obtained from a local water source. The hydrostatic test water will be pumped into the test sections, pressurized to design-test pressure, and maintained at that pressure for a minimum of 8 hours. Up to 150,000 gallons of water will be required to test the pipeline. The actual volume of water will be dependent on the number of test sections and the sequence of the test. The pipeline will likely be divided into two to three test segments. Once the test has been completed on the first segment, the water will be transferred into the second segment of pipe. Once the second segment (or third if three segments are used) test has been completed, the water used will be analytically tested and discharged, as approved by the Regional Water Quality Control Board and landowners. All hydrostatic testing water will be discharged in a manner to minimize erosion and in accordance with all applicable permits.

#### **1.4.14 Pigging**

Pipeline pigs are devices that are inserted into and travel throughout the length of a pipeline driven by a product flow. There are two types of pigs that will be used on this pipeline—smart pigs and utility pigs. Utility pigs are used to perform functions, such as cleaning or dewatering. Smart pigs (also called in-line inspection tools) provide information on the condition of the line, as well as the extent and location of any problems. After the pipeline has been hydrostatically tested and dewatered, the contractor will run several utility pigs of various types to remove as much water as possible and any remaining small debris from within the pipeline. Debris is expected to be minimal; any remaining residue will be removed from the pipe during this procedure. All residual water or material will be collected in a tank and disposed of in accordance with local and state dewatering requirements.

#### **1.4.15 Cleanup and Restoration**

For trench areas along roadways, restoration activities will generally commence within approximately 14 days of trench backfilling. All construction material and debris will be removed and disposed of at appropriate landfills. Within public roads, restoration of the paved surface will be completed in a timeframe and manner as required by the encroachment permit. Valve stations, as well as HDD and bore locations, will require approximately 6 to 8 weeks to complete. In upland areas, the ROW will be regraded to its approximate pre-construction contour and restored to pre-construction conditions, as specified by the property owner and in compliance with all relevant permits.

All staging areas and temporary extra workspaces will be recontoured to pre-construction conditions and will be restored in accordance with prearranged landowner requirements. Soil will be decompacted and reseeded in accordance with the landowners' requests and applicable permits. All paving repairs will be made in accordance with current city and/or county requirements.

As a final step, the route within unpaved portions of the roadway shoulder or private ROW will be marked with approximately 5-foot-high line markers placed in accordance with U.S. DOT

standards. These line markers will function as a safety measure and will be located in intervals ranging from 500 to 1,000 feet at all angle points, road crossings, and drain and canal crossings not within the roadway. Signs will be offset from the roadways to avoid interfering with traffic.

## **1.5 HAZARDOUS MATERIALS AND NON-HAZARDOUS WASTE**

### **1.5.0 Construction Waste**

During project construction, some construction-related non-hazardous debris—including asphalt, concrete, rubble from trenching paved areas, packaging material, and spent welding rods—will be deposited in a landfill. When possible, concrete and asphalt rubble generated by the project will be recycled. In either case, the amount of waste material will be limited. The waste will be disposed of at a licensed facility, which is designated for dumping non-hazardous wastes, such as municipal waste.

#### **1.5.1 Potential Pollutants**

On-site storage and/or use of large quantities of materials capable of impacting soil and groundwater are not typically required for a project of the proposed size and type. However, SoCalGas construction crews or licensed contractors—trained and certified in the proper use, storage, and handling of hazardous materials—will handle all such materials.

Construction of the project will involve the use of certain hazardous materials, such as fuels, oils, solvents, and glues, as shown in Table 4: Hazardous Materials List. There is a potential for the inadvertent release of hazardous materials through spills or leaks from construction vehicles and equipment.

However, the volume of hazardous materials to be used during construction is small, and all spills will be immediately controlled and contained. In addition, best management practices for hazardous materials storage, handling, and disposal will be implemented during construction in accordance with SoCalGas's Water Quality Construction Best Management Practices Manual.

#### **1.5.2 Refueling**

Refueling of equipment will be required on a regular basis to keep equipment running uninterrupted throughout the day. In general, a fuel truck will be used to refuel equipment on the ROW each morning. Crew trucks and vehicles will be fueled at commercial facilities. Special precautions will be taken when refueling near waterbodies and drop-inlet structures, including maintaining an approximately 100-foot setback and absorbent materials to recover accidental spills.

## **1.6 CONSTRUCTION NOISE**

Noise associated with the construction phase of the project will be temporary, short-term, and intermittent in nature. Construction activities and associated noise will be limited to the timeframes specified in the Santa Barbara County General Plan. Table 5: Noise Levels of Typical Construction Equipment depicts noise levels that are anticipated during construction.

**Table 4: Hazardous Materials List**

<b>Hazardous Materials</b>	
2-cycle oil (contains distillates and hydrotreated heavy paraffinic)	Battery acid
Fire extinguisher	Canned spray paint
Acetylene gas	Chain lubricant (contains methylene chloride)
Air tool oil	X-ray sealed source, Iridium 92
Automatic transmission fluid	Diesel fuel additive
Oxygen	Antifreeze
Paint thinner	Gasoline treatment
Gasoline	Film development solution for X-ray film
Starter fluid	Lubricating grease
Brake fluid	Safety solvent
Propane	Fusion bond epoxy
Methyl alcohol	Welding rods
Portable toilets	

**Table 5: Noise Levels of Typical Construction Equipment**

<b>Equipment</b>	<b>Range of Noise Level (A-weighted decibels) at 25 yards</b>
Asphalt grinder	80-93
Boring machine	82-84
Backhoe and trackhoe	72-93
Bulldozer	74-96
Crane	74-87
HDD drill rig	82-84
Motor grader	80-93
Pneumatic hammer and air compressor	74-87
Sideboom tractor	74-96
Street sweeper	74-87
Tractor trailer	82-94

Source: U.S. Environmental Protection Agency, 1971

No noise will be generated by normal project operations. In addition, noise associated with the maintenance of the project will be minimal as the pipeline will only require routine inspection and occasional maintenance, which will not generate significant levels of noise.

## **1.7 WORKFORCE AND SCHEDULE**

### **1.7.0 Construction Personnel**

The workforce will depend on the contractor and how many crews are assigned during construction at any given time. It is expected that approximately 70 to 80 construction personnel will work daily, with a peak number of approximately 100. Depending on the construction sequencing, the workforce could increase to approximately 80 to 90 construction personnel, with a peak number of approximately 120. In general, at least one crew will focus on installation of the pipeline at major road and drainage crossings; one crew will work on the HDD; and a main crew will focus on conventional trenching and pipe installation.

#### **1.7.1 Schedule**

Construction is scheduled to begin in late 2014 and is expected to take approximately 5 to 6 months to complete. Construction crews will work approximately 10 hours per day, 6 days per week, typically from 6:00 a.m. to 5:00 p.m. and in accordance with the local noise ordinance. HDD and X-ray activities will require extended operating hours to ensure they can be completed without disruption. All applicable permits and landowner authorizations will be obtained prior to commencing construction.

## **1.8 OPERATION AND MAINTENANCE**

The new pipeline segment will be designed to operate at a maximum of 975 psi; however, the MAOP will be controlled at or below 970 psi. The proposed pipeline and associated aboveground facilities will be operated and maintained in accordance with 49 CFR 192 and CPUC General Order 112.

Existing SoCalGas staff will operate and maintain the new pipeline, perform routine maintenance of the pipeline, valve stations, and other appurtenant facilities, and respond to emergency situations in accordance with SoCalGas's operation and maintenance procedures. These procedures—including emergency planning, on-call response, and incident reporting—provide for prompt, effective responses to significant, irregular conditions detected along the pipeline. Typical testing and inspection procedures conducted by SoCalGas will be in compliance with federal regulations, including the periodical pigging of the line.

## **1.9 REQUIRED APPROVALS AND AUTHORIZATIONS**

SoCalGas is in the process of determining which agency will serve as the lead agency for compliance with CEQA for this project. SoCalGas will obtain other applicable permits for the project from federal, state, and local agencies as required. Table 6: Potential Permits and Authorizations lists the potential permits and approvals that may be required for project construction.

**Table 6: Potential Permits and Authorizations**

<b>Permit/Authorization</b>	<b>Agency</b>	<b>Jurisdiction/Purpose</b>
<b>Federal</b>		
Section 7 Consultation and Biological Opinion	U.S. Fish and Wildlife Service	Authorizes the “take” of federally listed threatened or endangered species or alteration of their habitat
Nationwide Permit 12	U.S. Army Corps of Engineers	Installing the pipeline through Waters of the U.S.
<b>State</b>		
Temporary or Conditional Use Permit	Santa Barbara County	Locating a construction staging/storage yard in an agricultural zone
CEQA	To Be Determined (TBD)	Issuance of a discretionary permit from a state agency
1602 Lake or Streambed Alteration Agreement	California Department of Fish and Wildlife (CDFW)	Crossing or boring under the bed or bank of jurisdictional waters
2081 Incidental Take Permit	CDFW	Issuance of a “take” permit for potential impacts to state-listed threatened or endangered species
National Pollutant Discharge Elimination System—Construction Stormwater Permit	State Water Resource Control Board	Stormwater discharges associated with construction activities disturbing more than 1 acre of land
Encroachment Permit	California Department of Transportation District 5	Construction, operation, and maintenance within, under, or over state highway ROWs
<b>Local</b>		
Encroachment Permit	Santa Barbara County	Work within county roads/road ROWs
Dust Control Plan or Permit	Santa Barbara County Air Pollution Control District	TBD



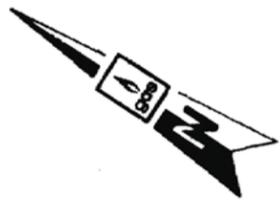
**ATTACHMENT A: ALIGNMENT SHEETS**



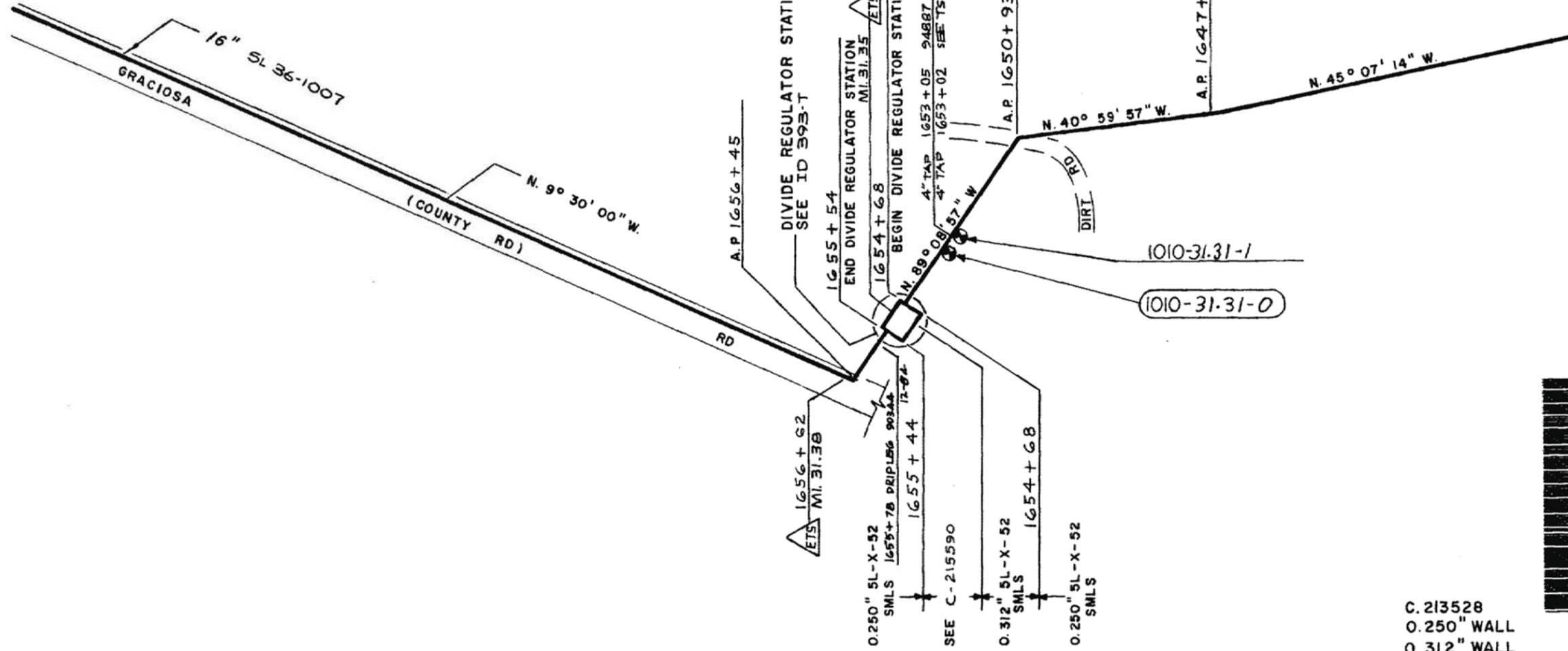
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LINE NO. 1010  
DATE 5/72  
DRAWN E.A.CO. APPROVED

45 - 54

ENGINEERING

LOS ANGELES, CALIFORNIA



C. 213528  
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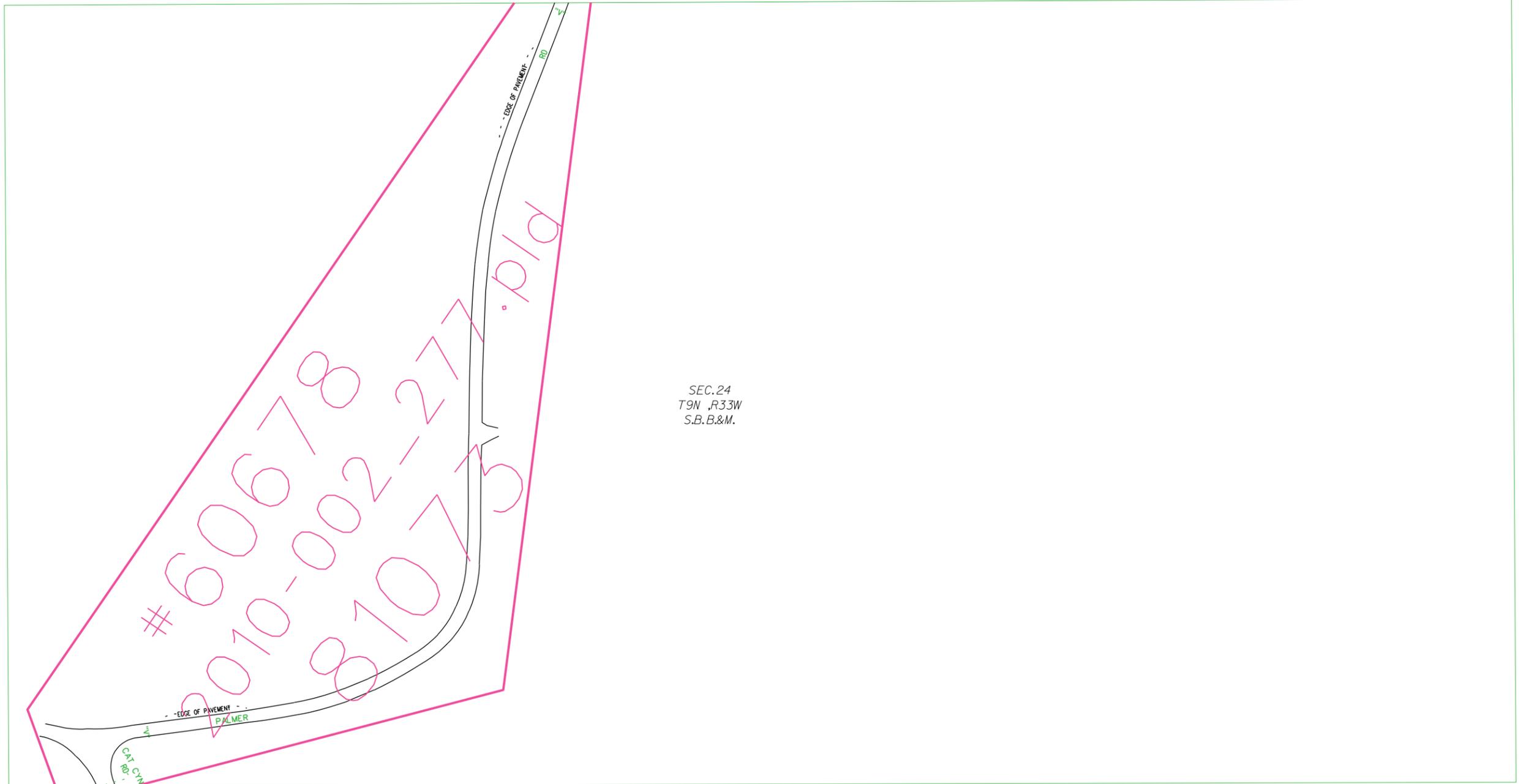
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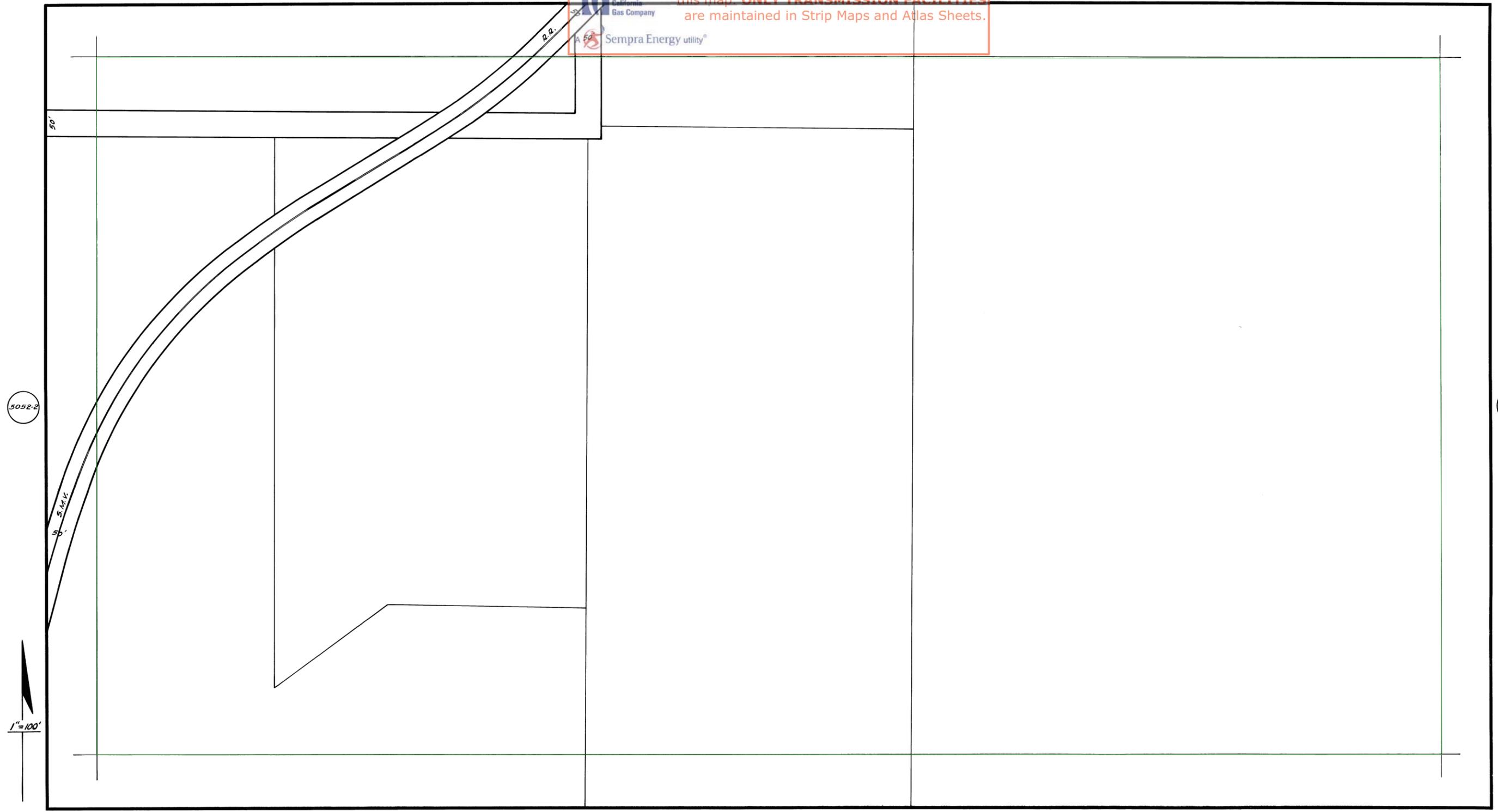
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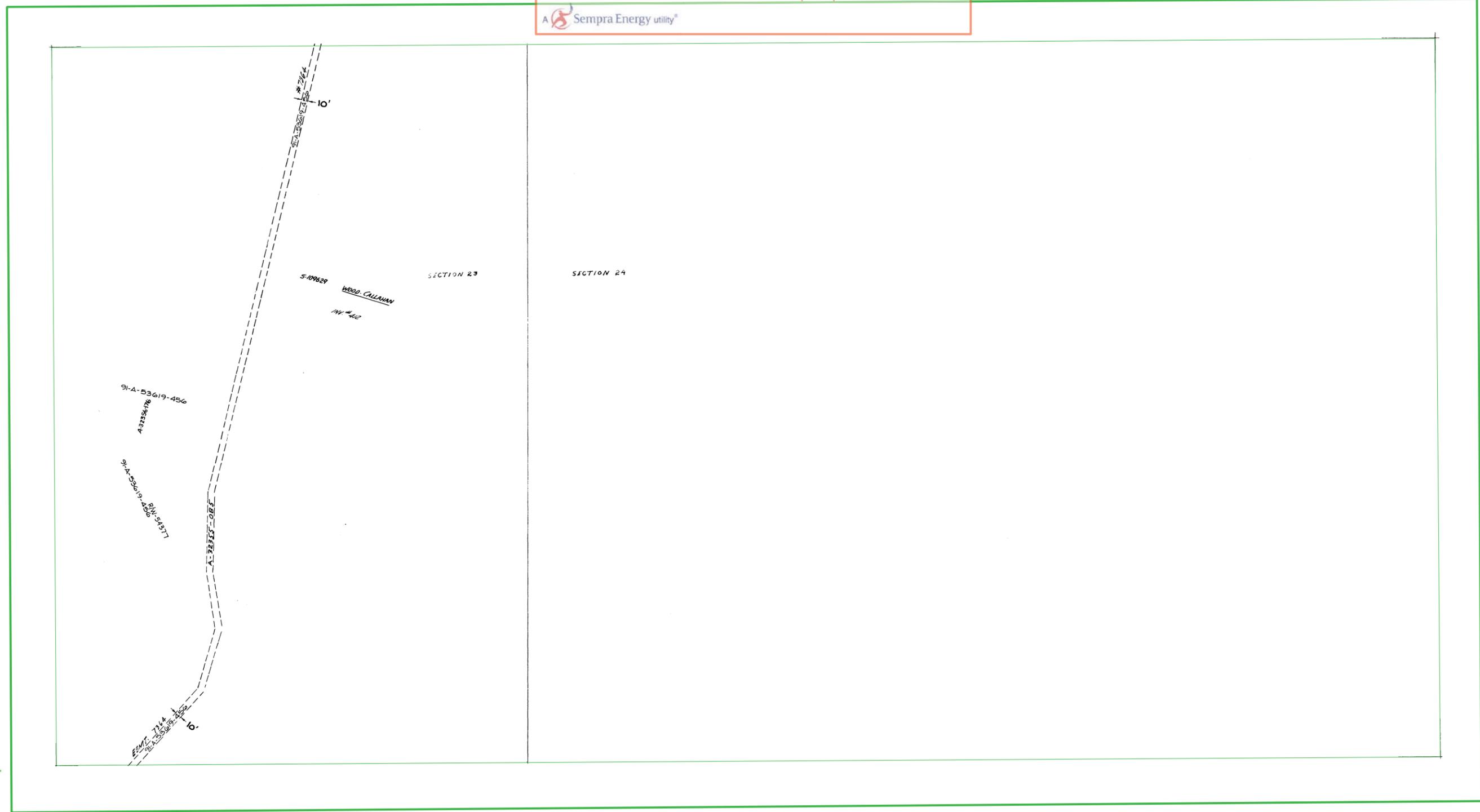

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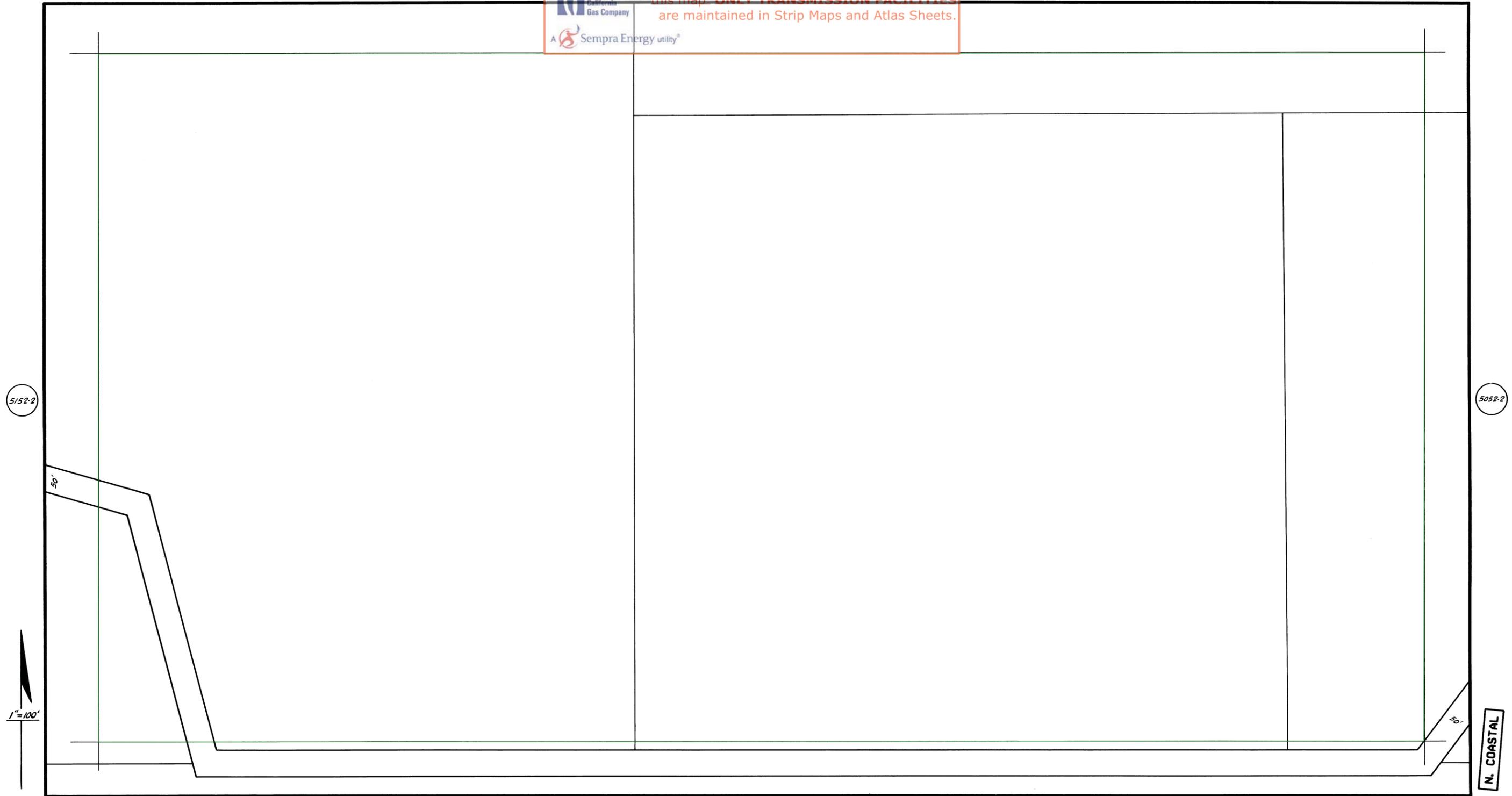
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N. COASTAL

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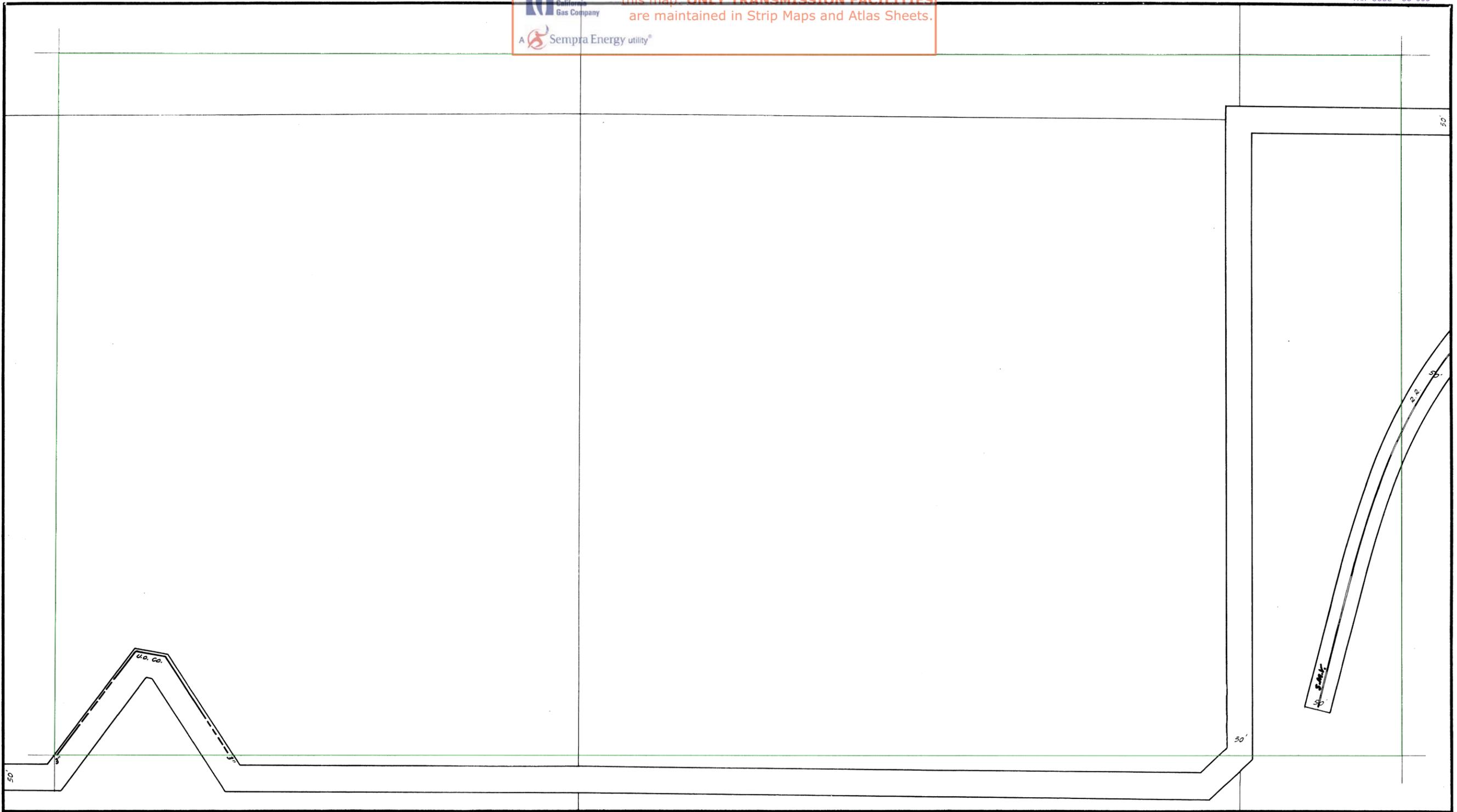


A Semptra Energy utility

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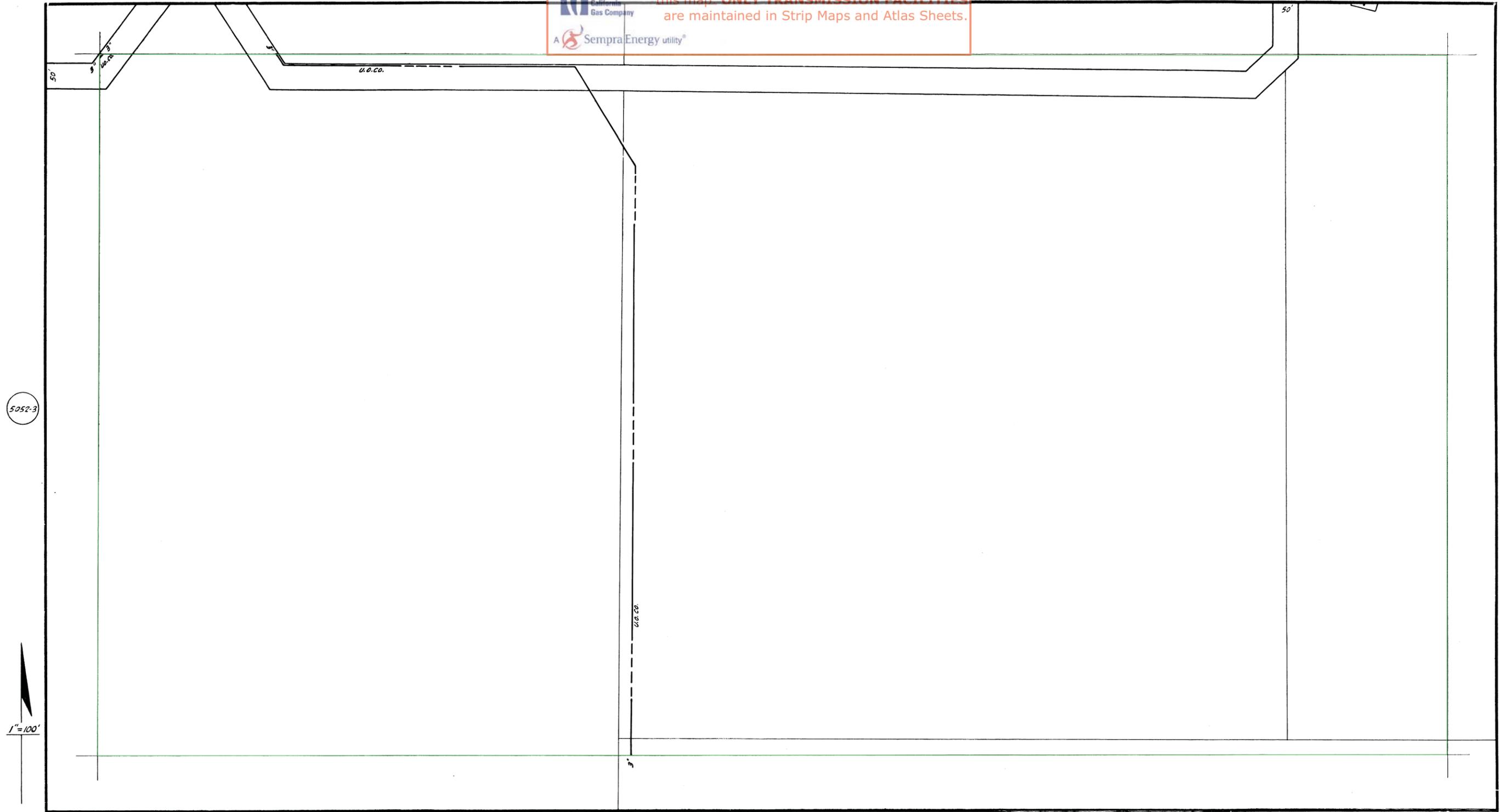
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1-25-52 J.H.F.

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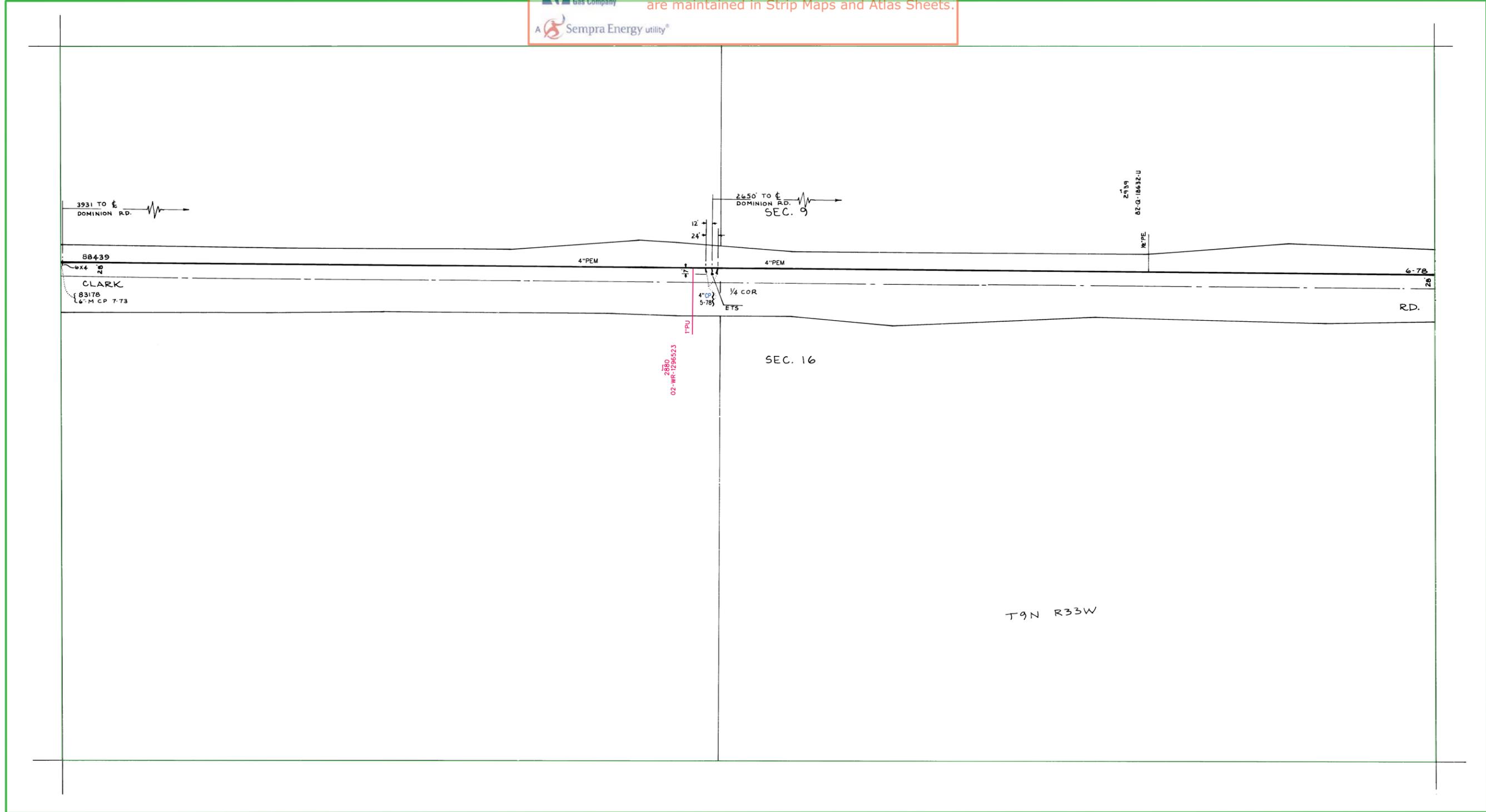
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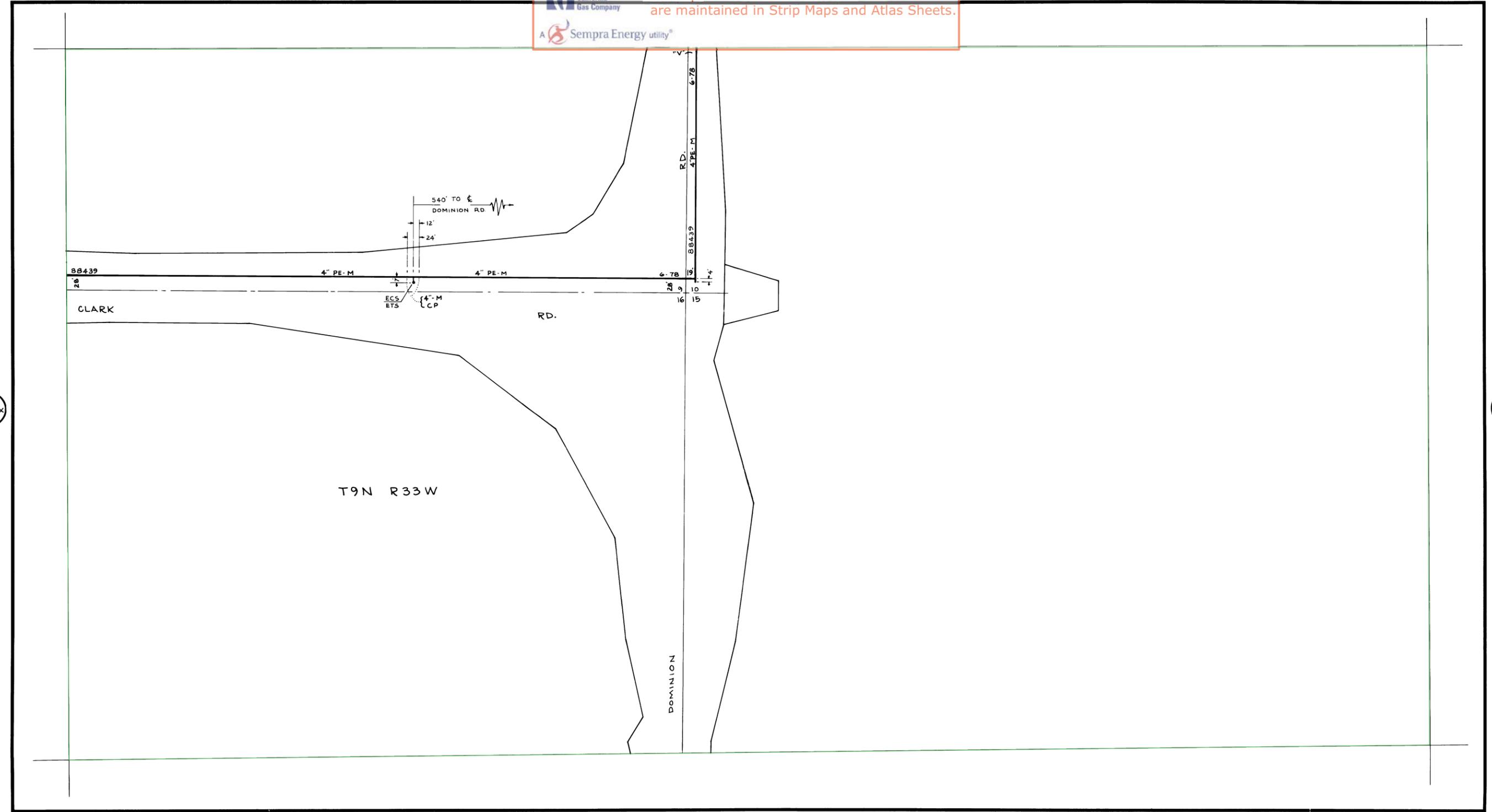
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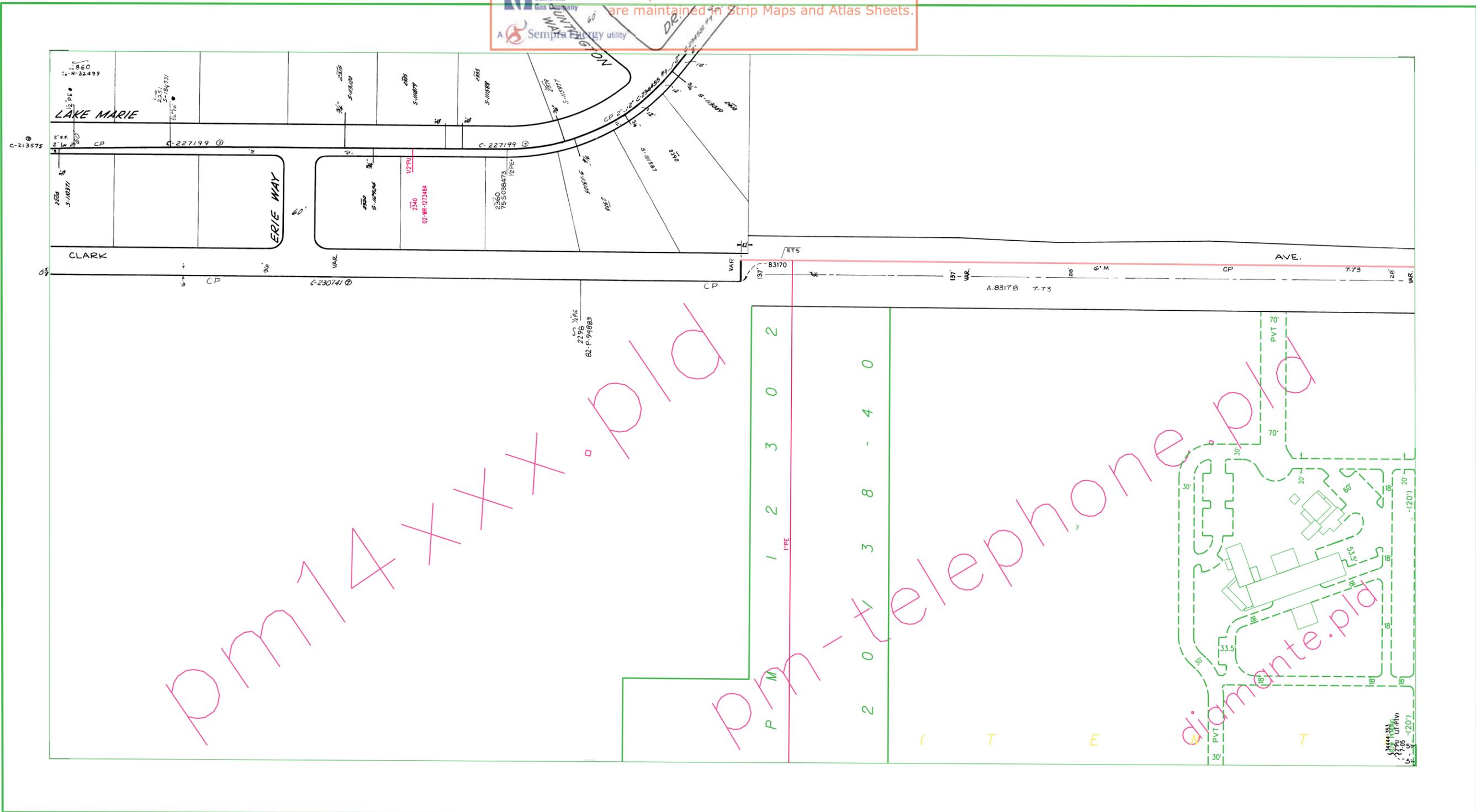
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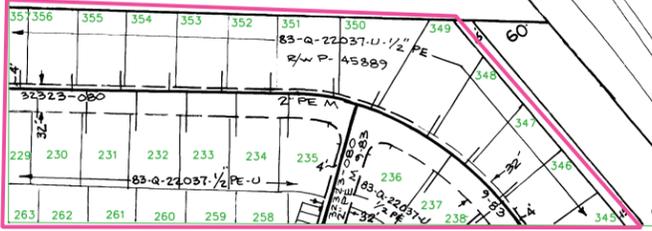
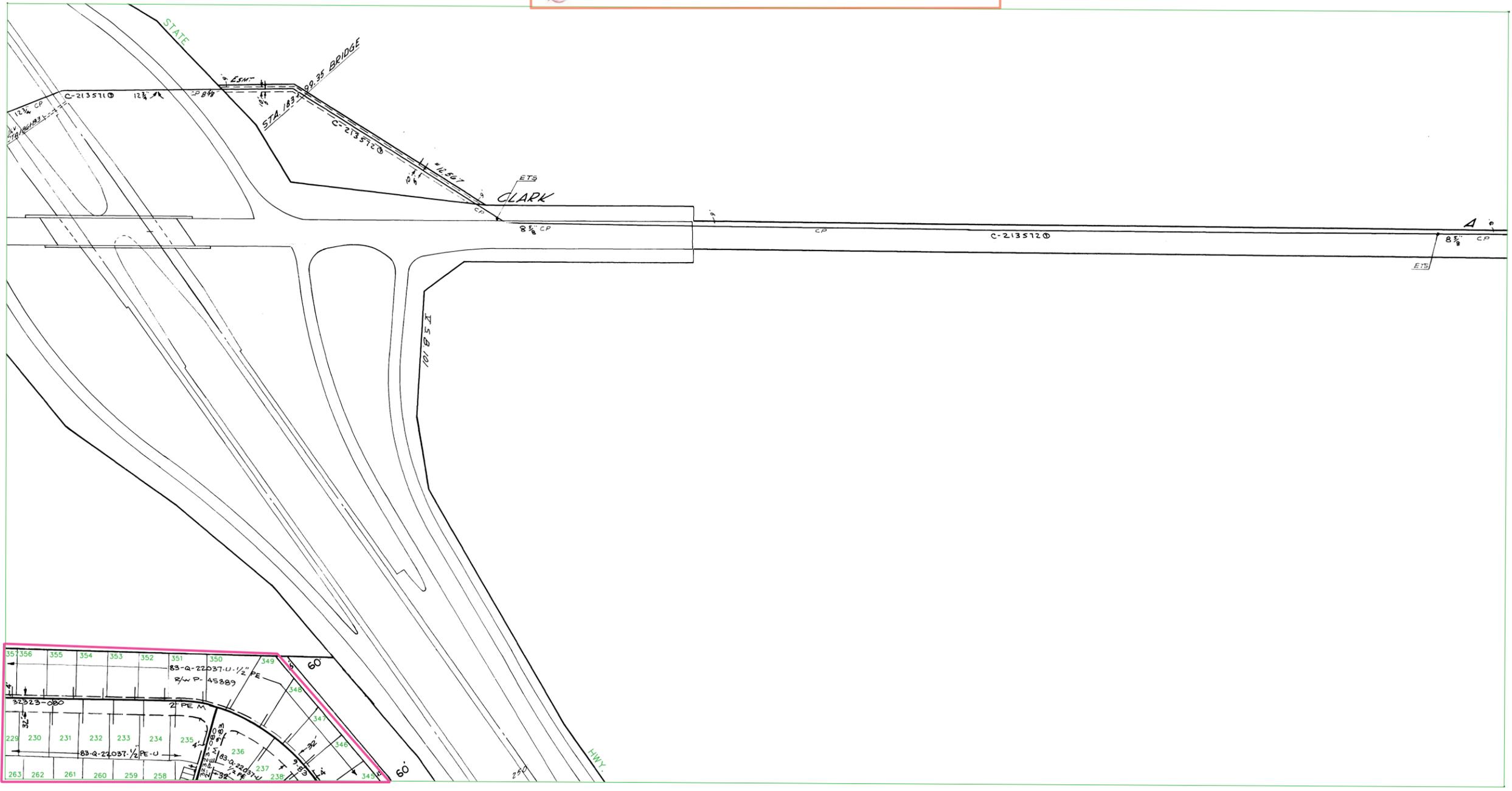
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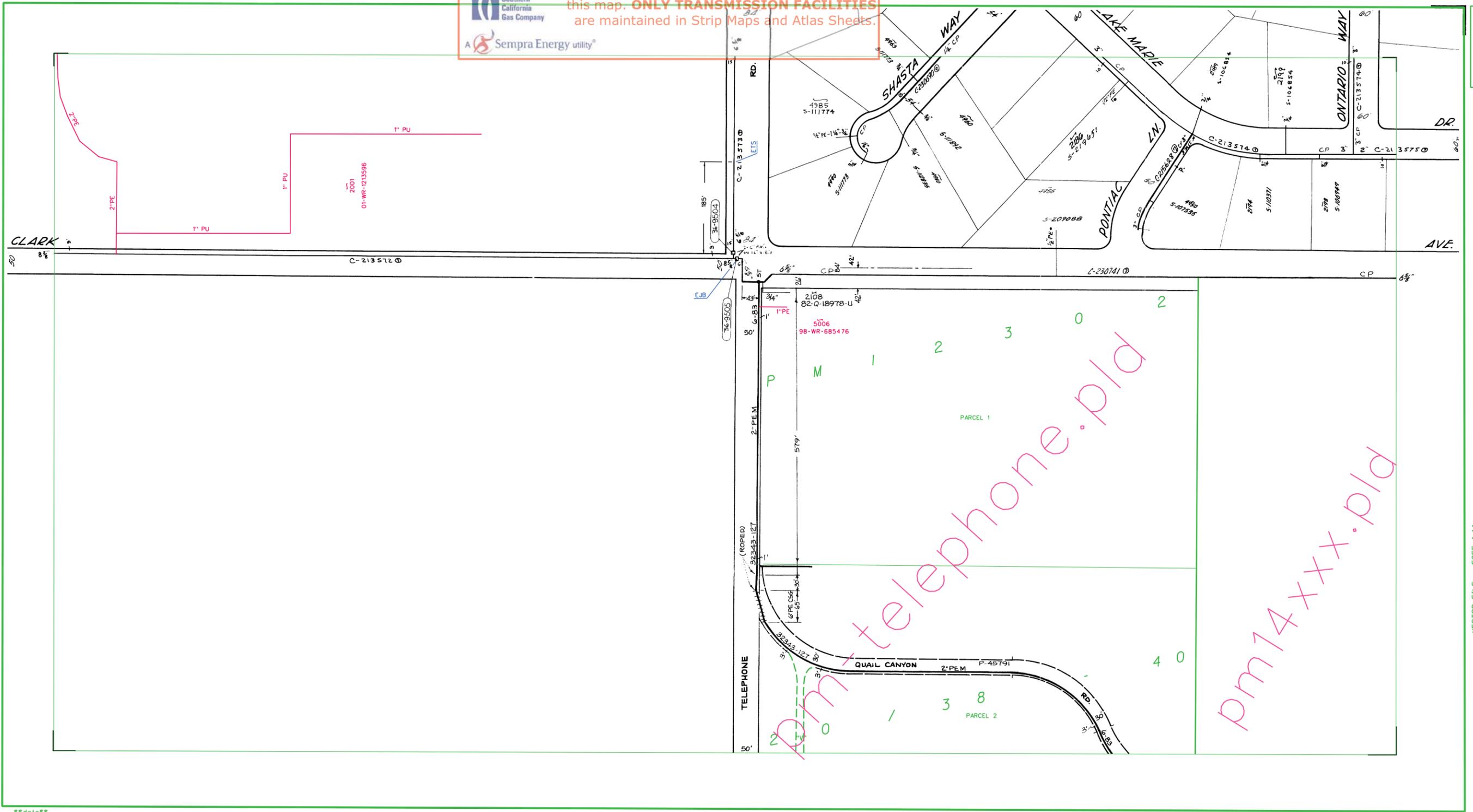
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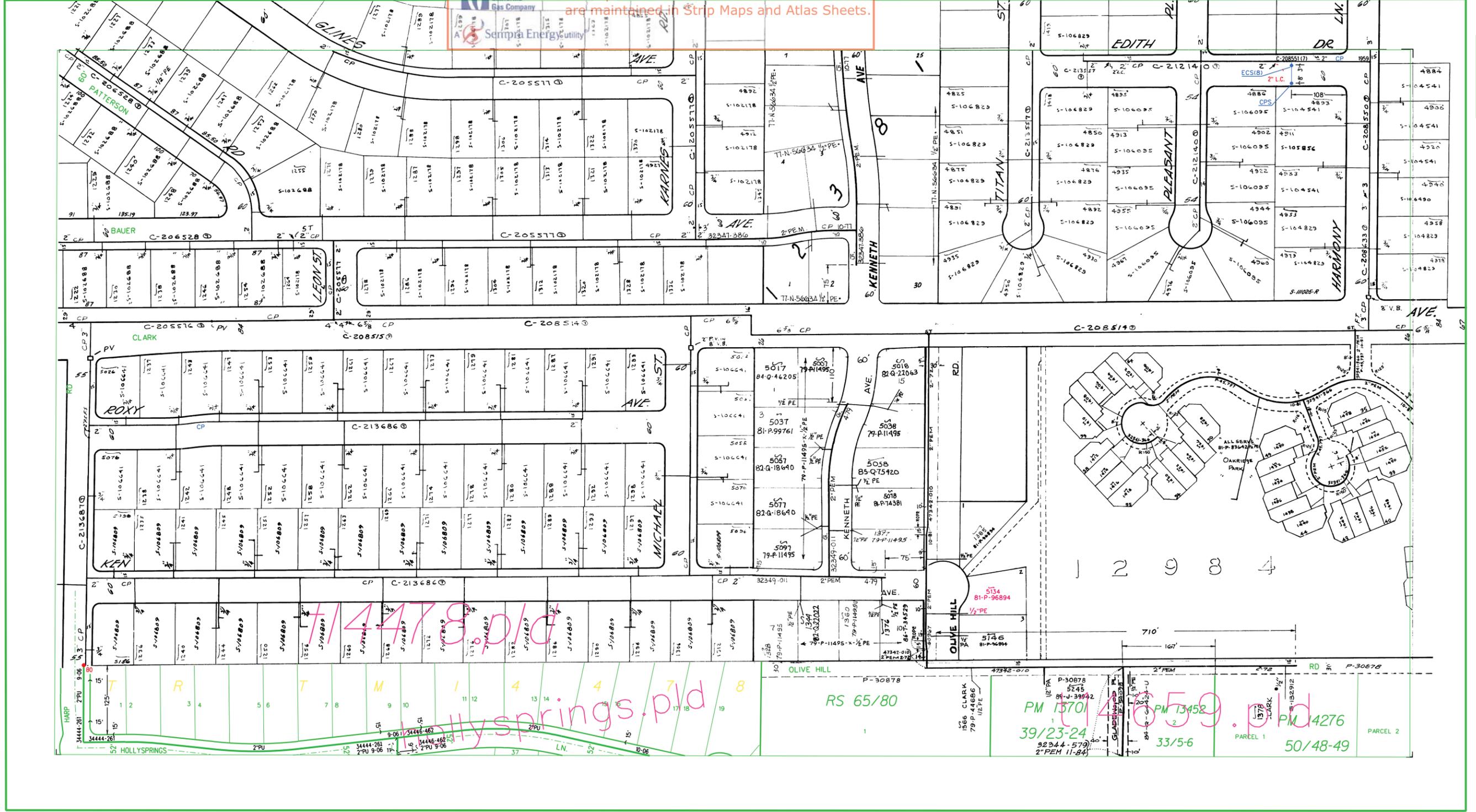
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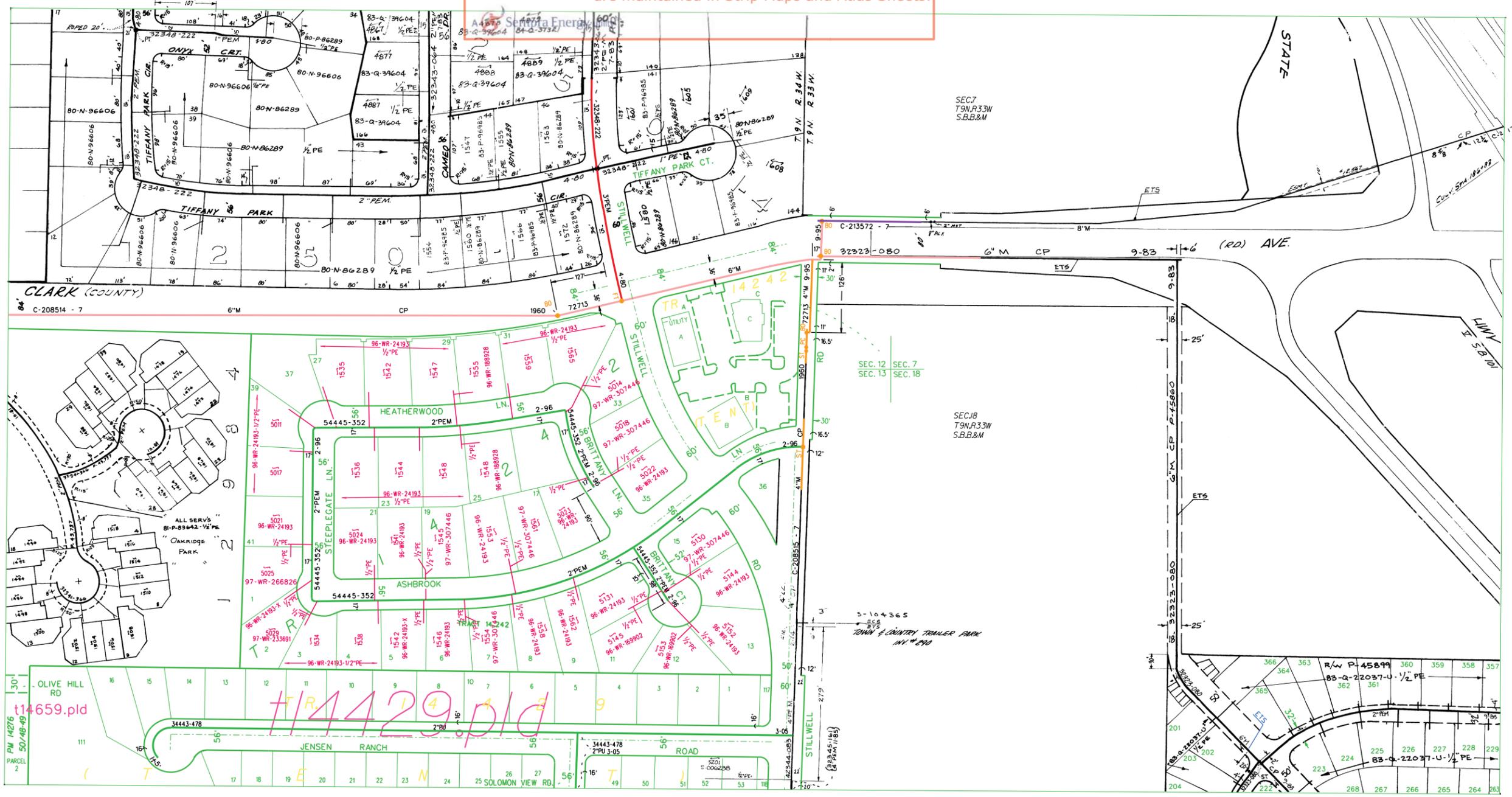
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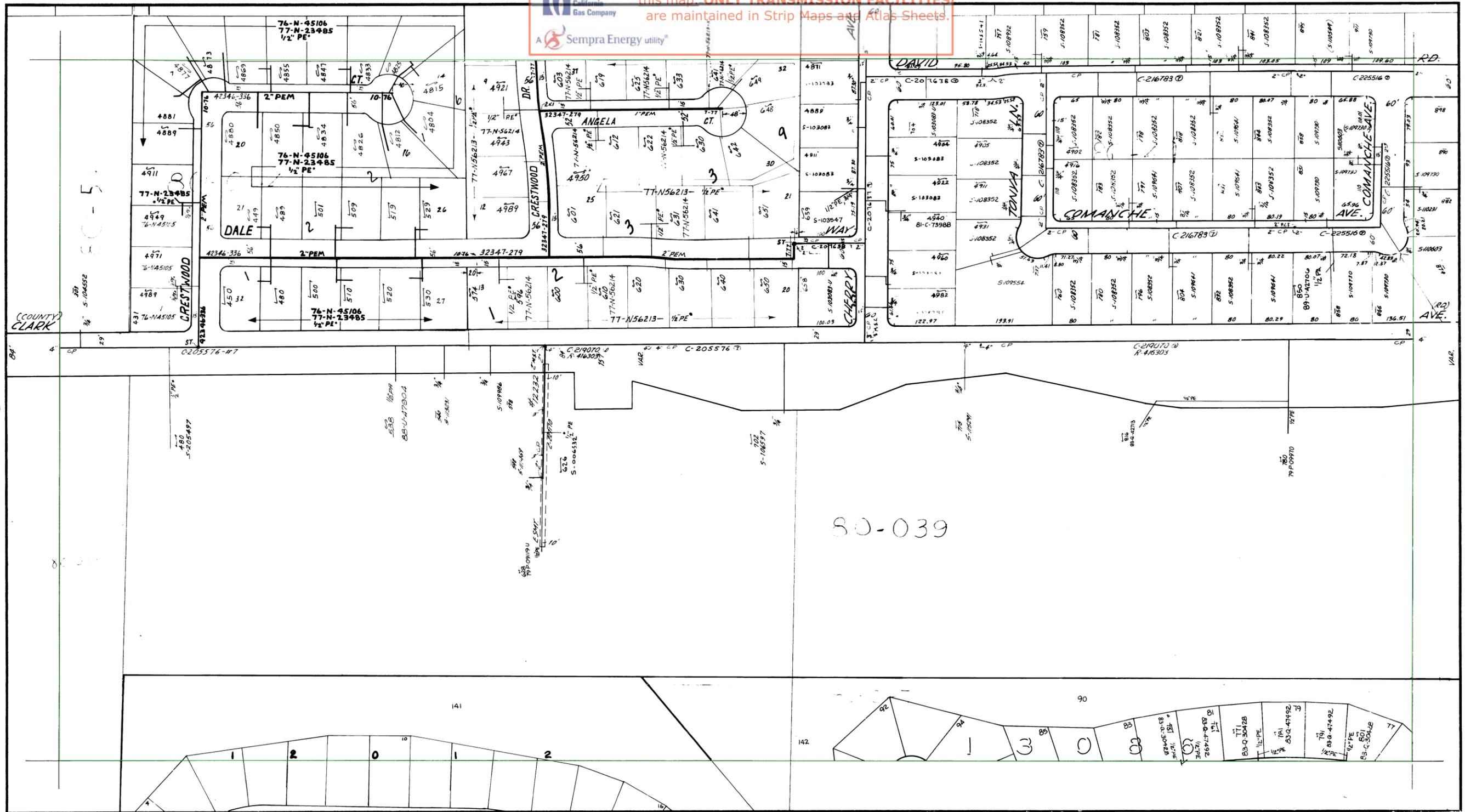
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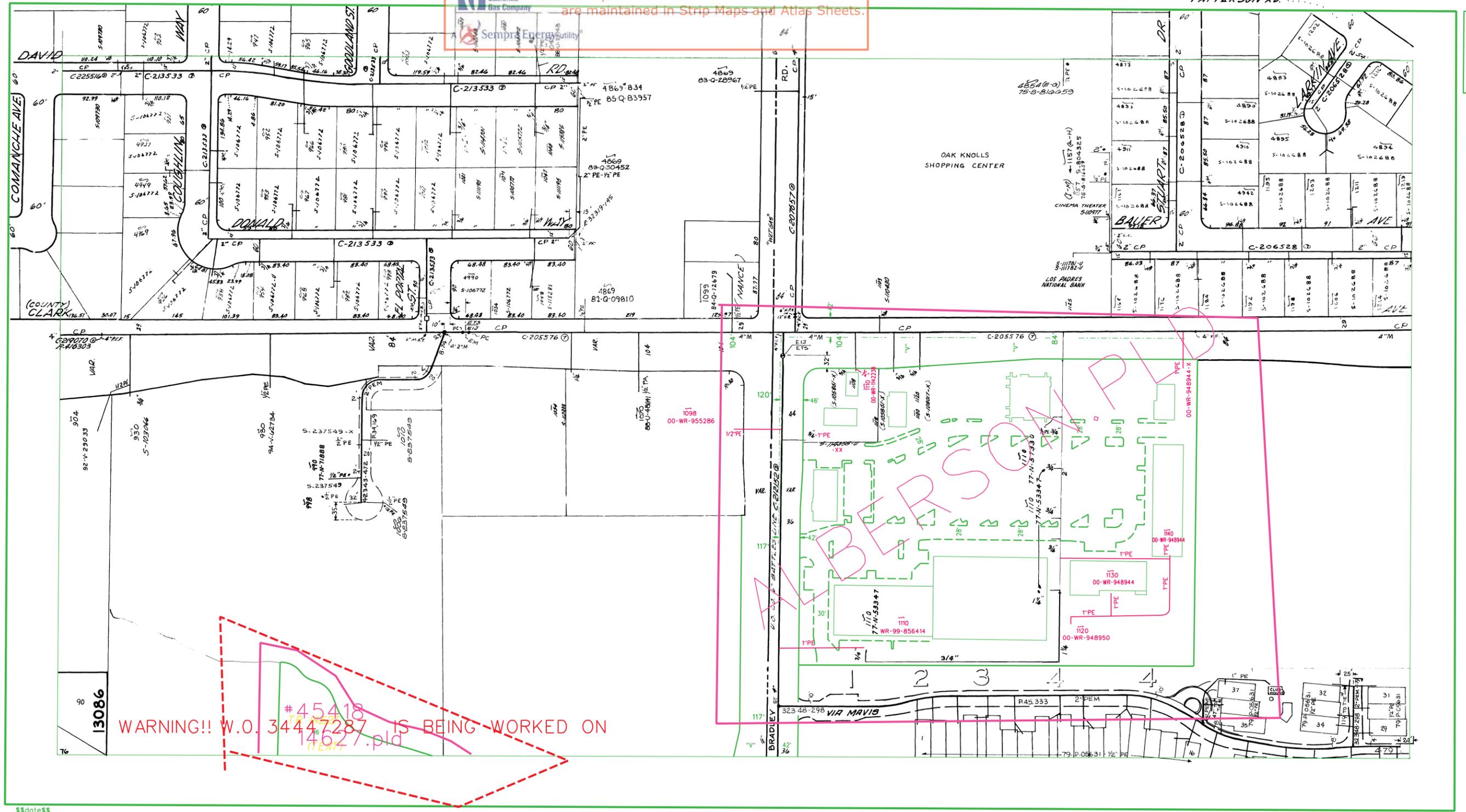
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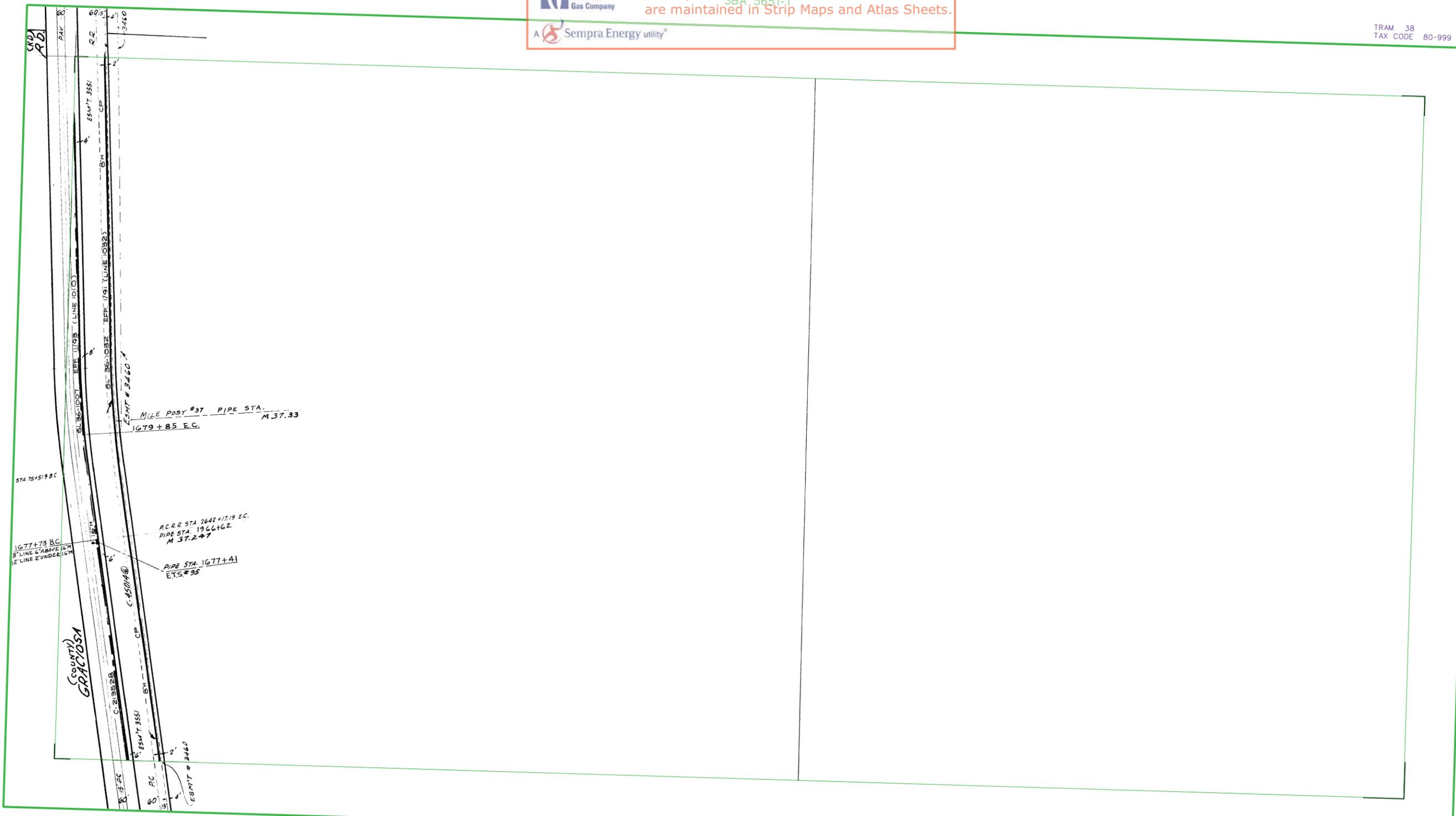
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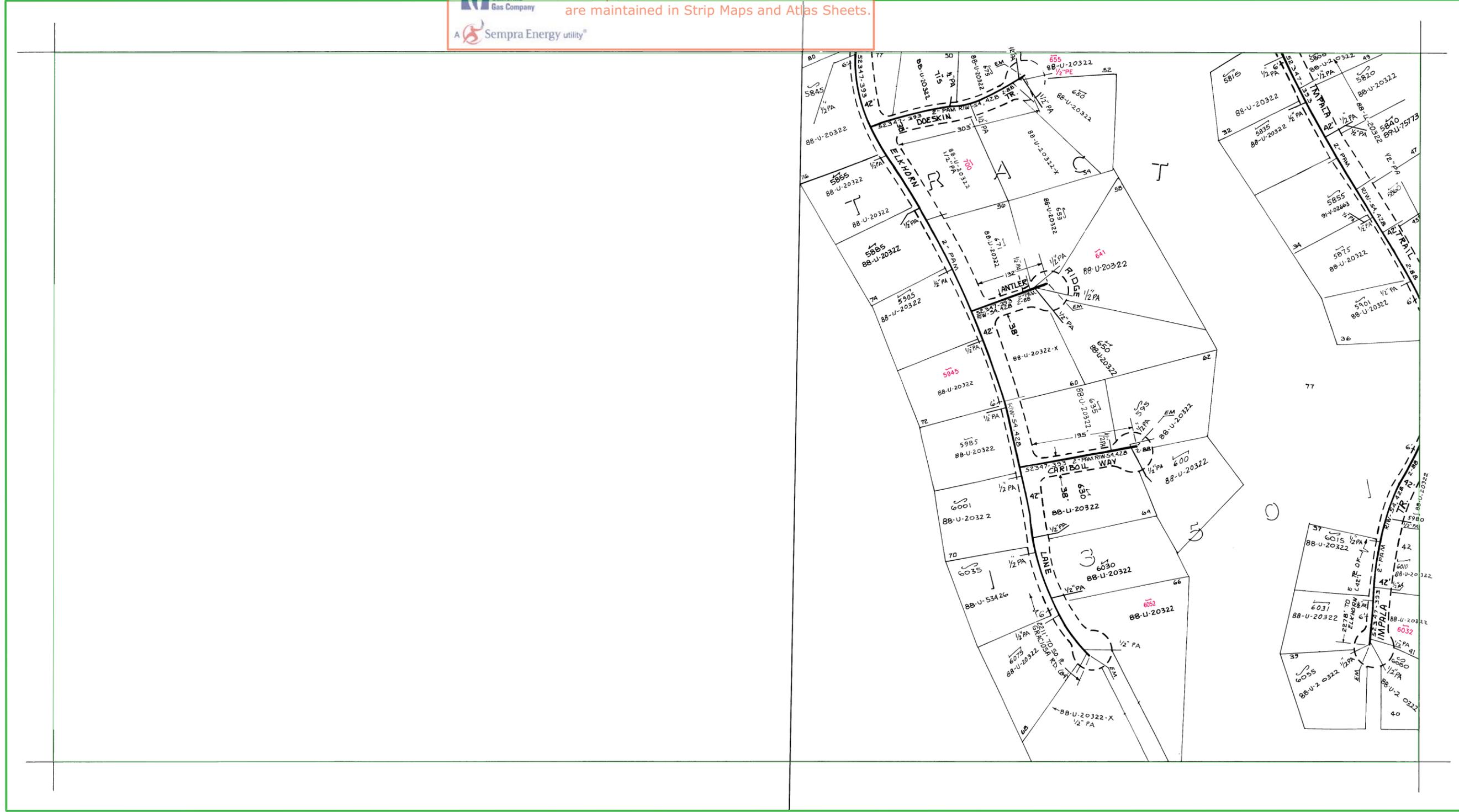


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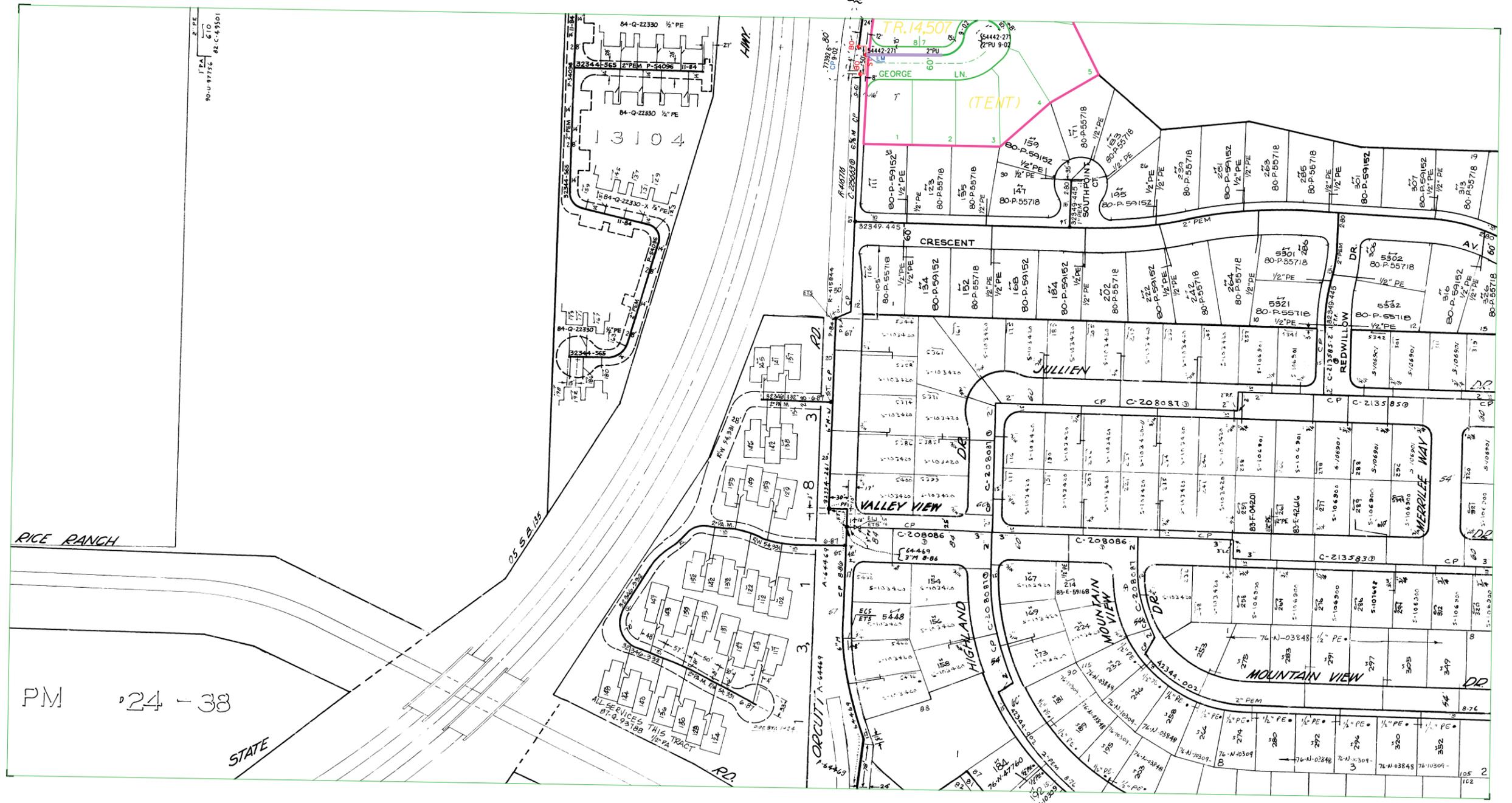
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Southern California Gas Company

Sempra Energy utility

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TAX CODE 80-999

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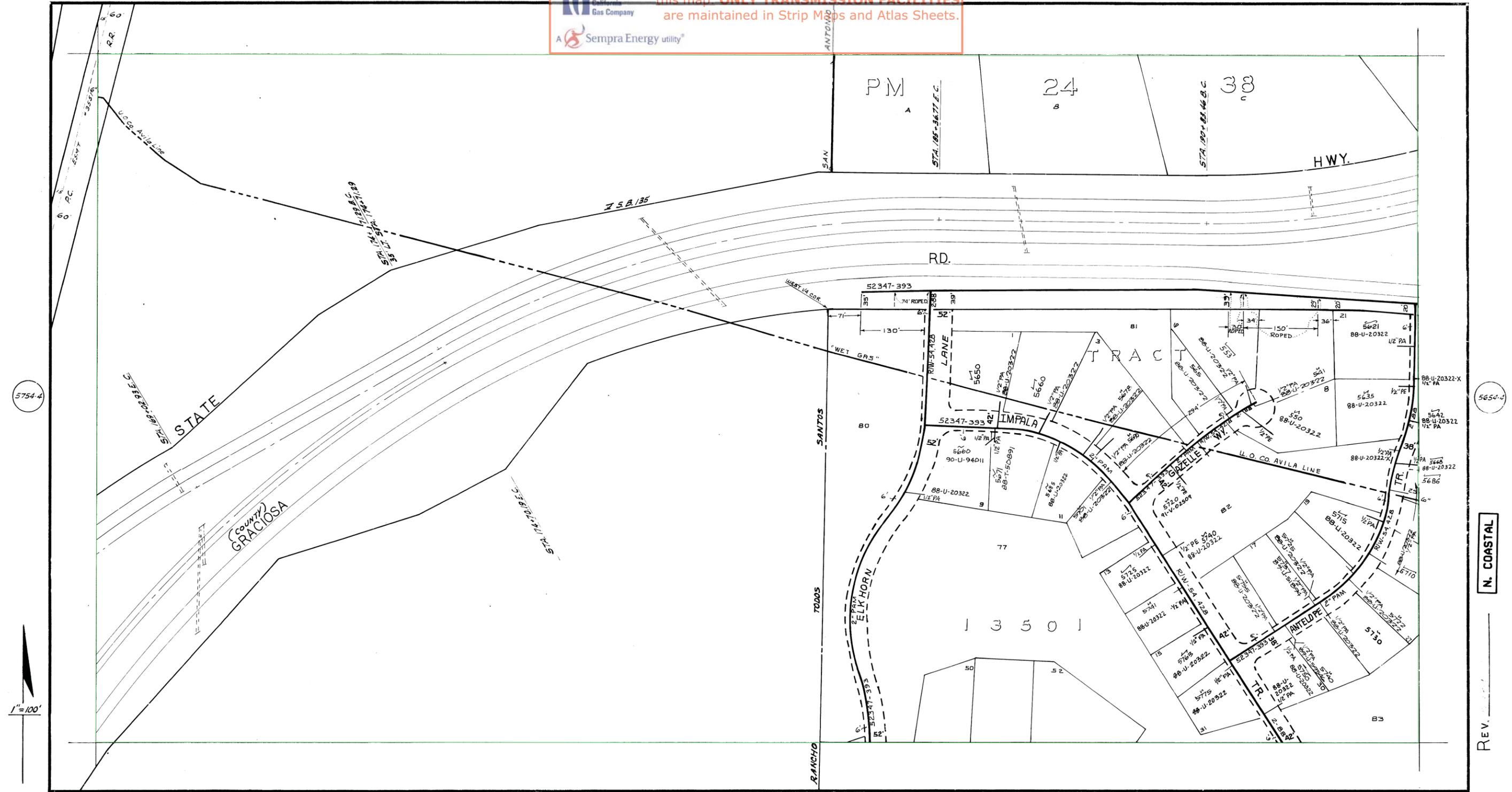
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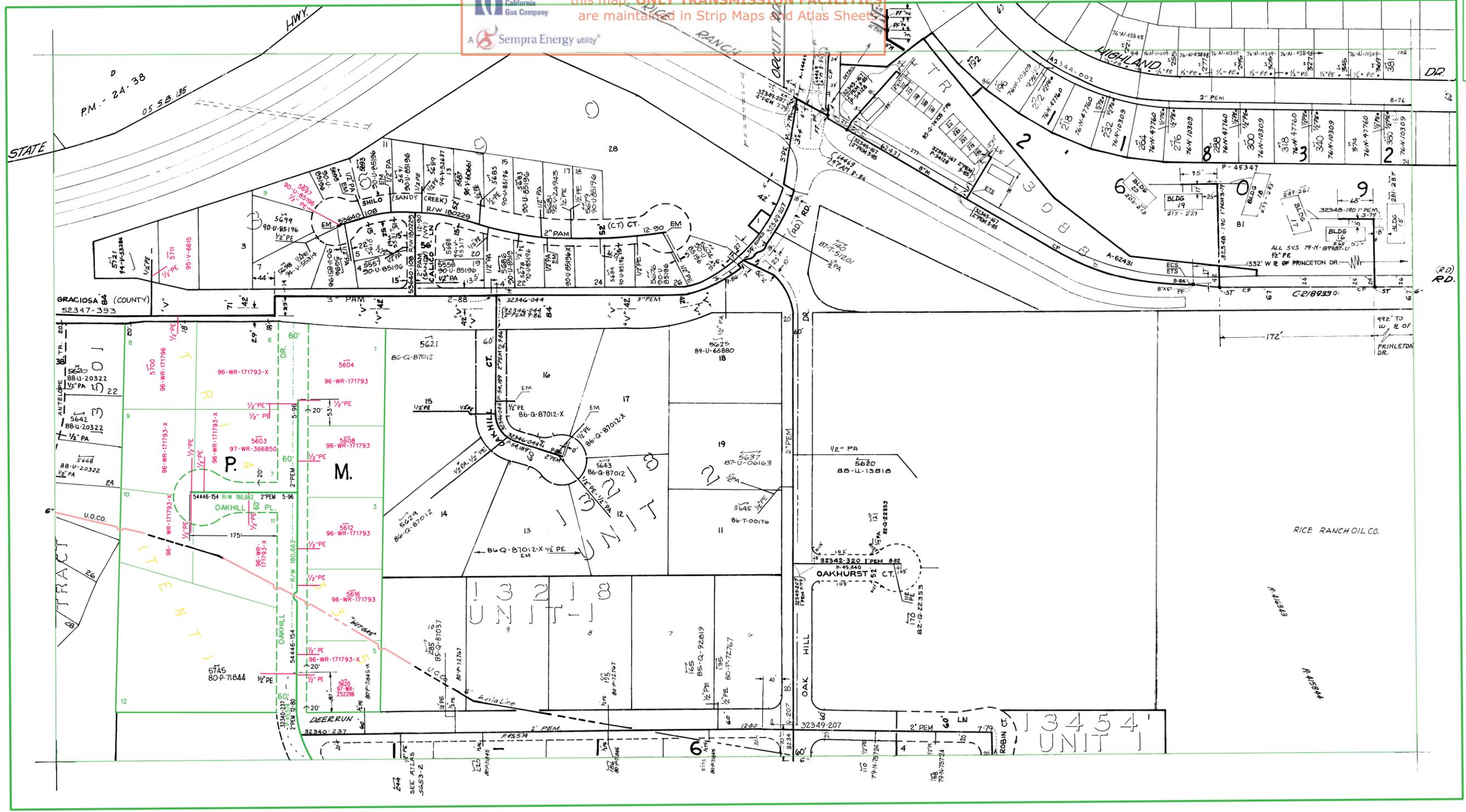
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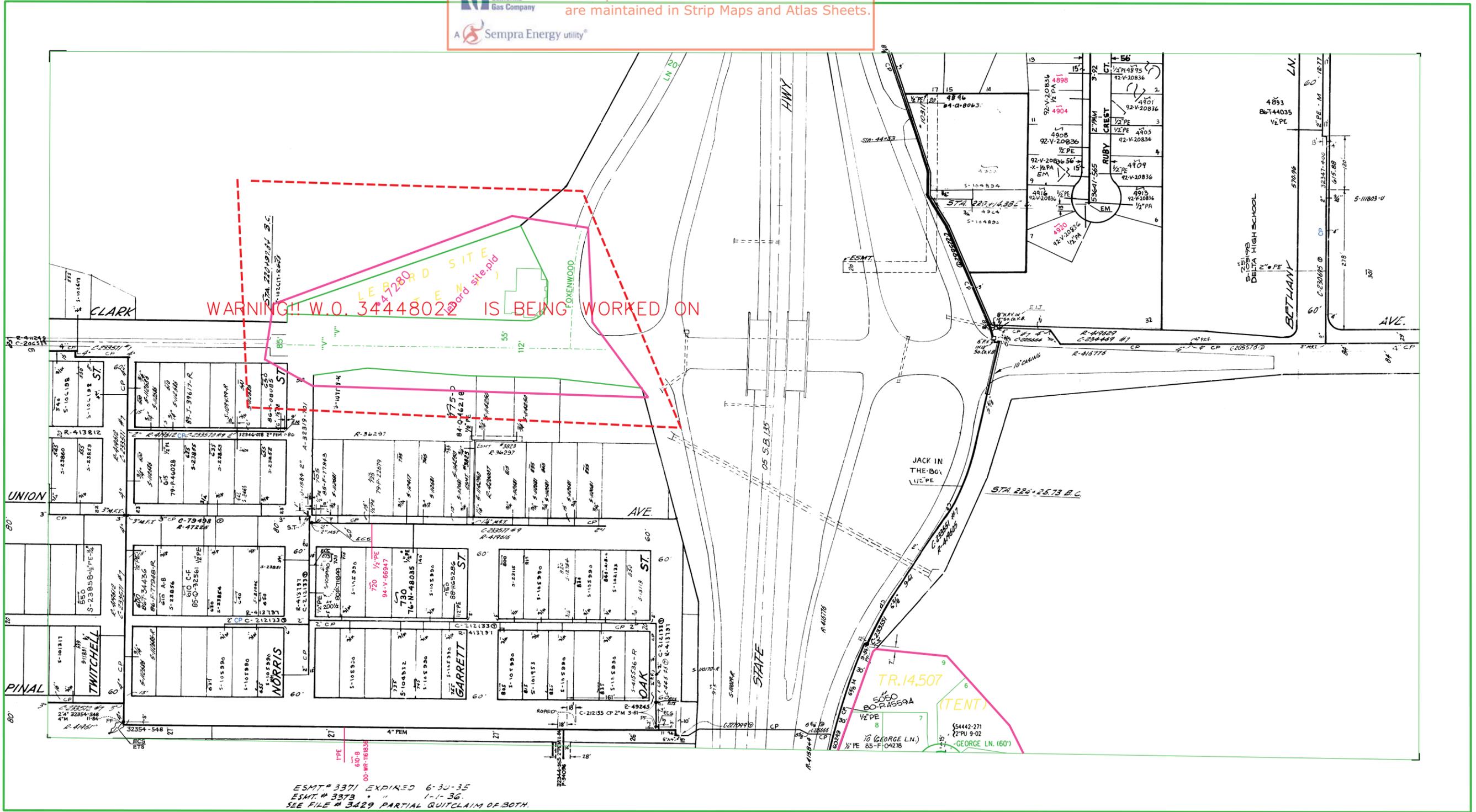
REVISED BY: VFR 7-10-00  
VECTOR CREATED BY: L.C. 3-3-97

SSdateSS

SBA 5653-2

**WARNING!** Distribution Medium and High Pressure Facilities are **NO LONGER** maintained within this map. **ONLY TRANSMISSION FACILITIES** are maintained in Strip Maps and Atlas Sheets.





SBA 5655-3

SBA 5555-3

VECTOR FILE: s05655-4.44  
RASTER FILE: s05655-4.ctb

REVISED BY: MDA 11-28-07  
VECTOR CREATED BY: EMA 8-16-99

**WARNING!** Distribution Medium and High Pressure Facilities are **NO LONGER** maintained within this map. **ONLY TRANSMISSION FACILITIES** are maintained in Strip Maps and Atlas Sheets.



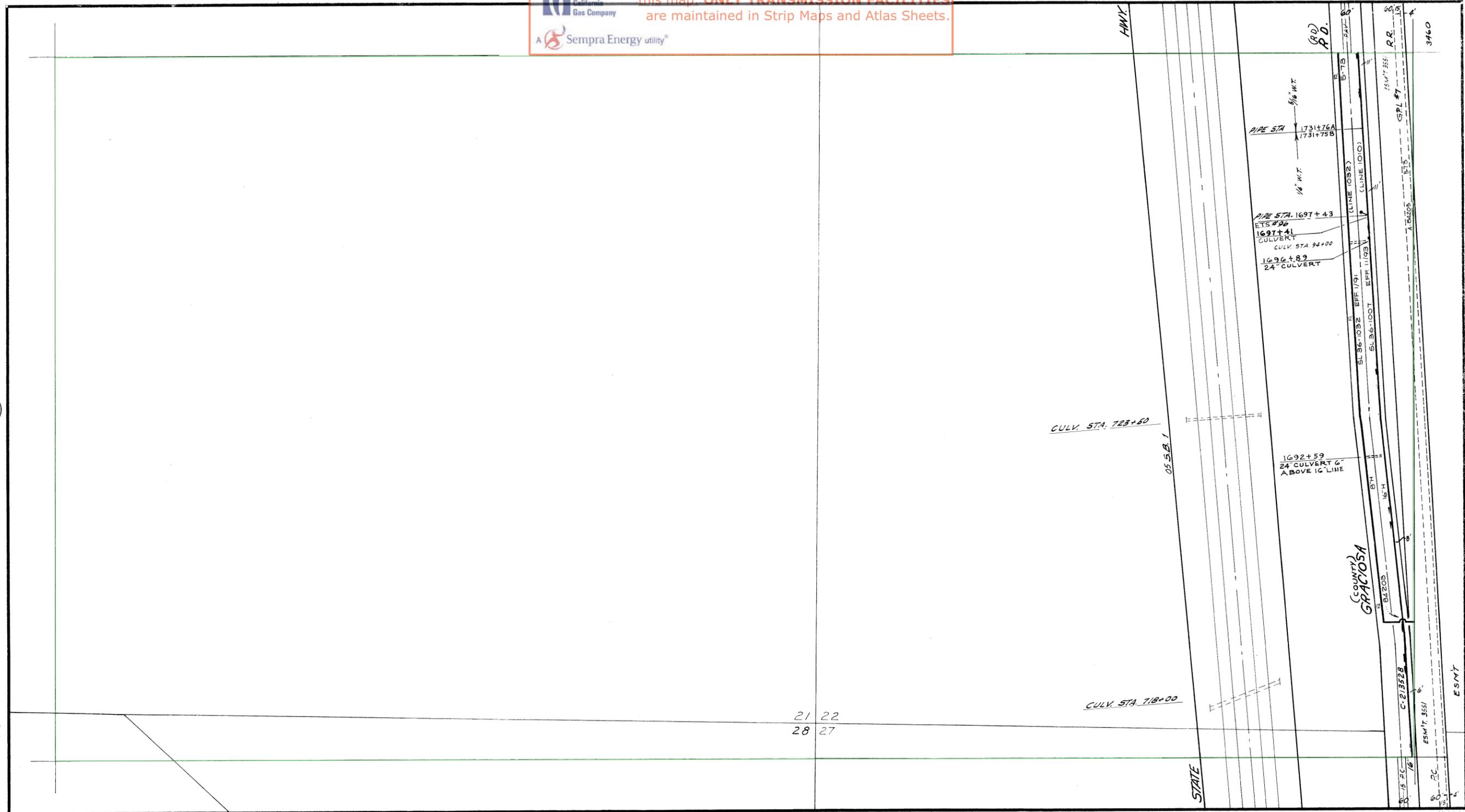
TRAM 38  
TAX CODE 80-999

5751-1

5651-1

1" = 100'

RA 27



21 22  
28 27

CULV. STA. 723+50

05 S.B. 1

CULV. STA. 718+00

COUNTY GRACIOSA

PIPE STA 1731+76A  
1731+75B  
5/16" W.T.  
1/2" W.T.  
PIPE STA 1697+43  
ETS #96  
1697+41  
CULVERT  
CULV. STA. 94+00  
1696+89  
24" CULVERT

1692+59  
24" CULVERT 6"  
ABOVE 16" LINE

3460

N. COASTAL

5751-4

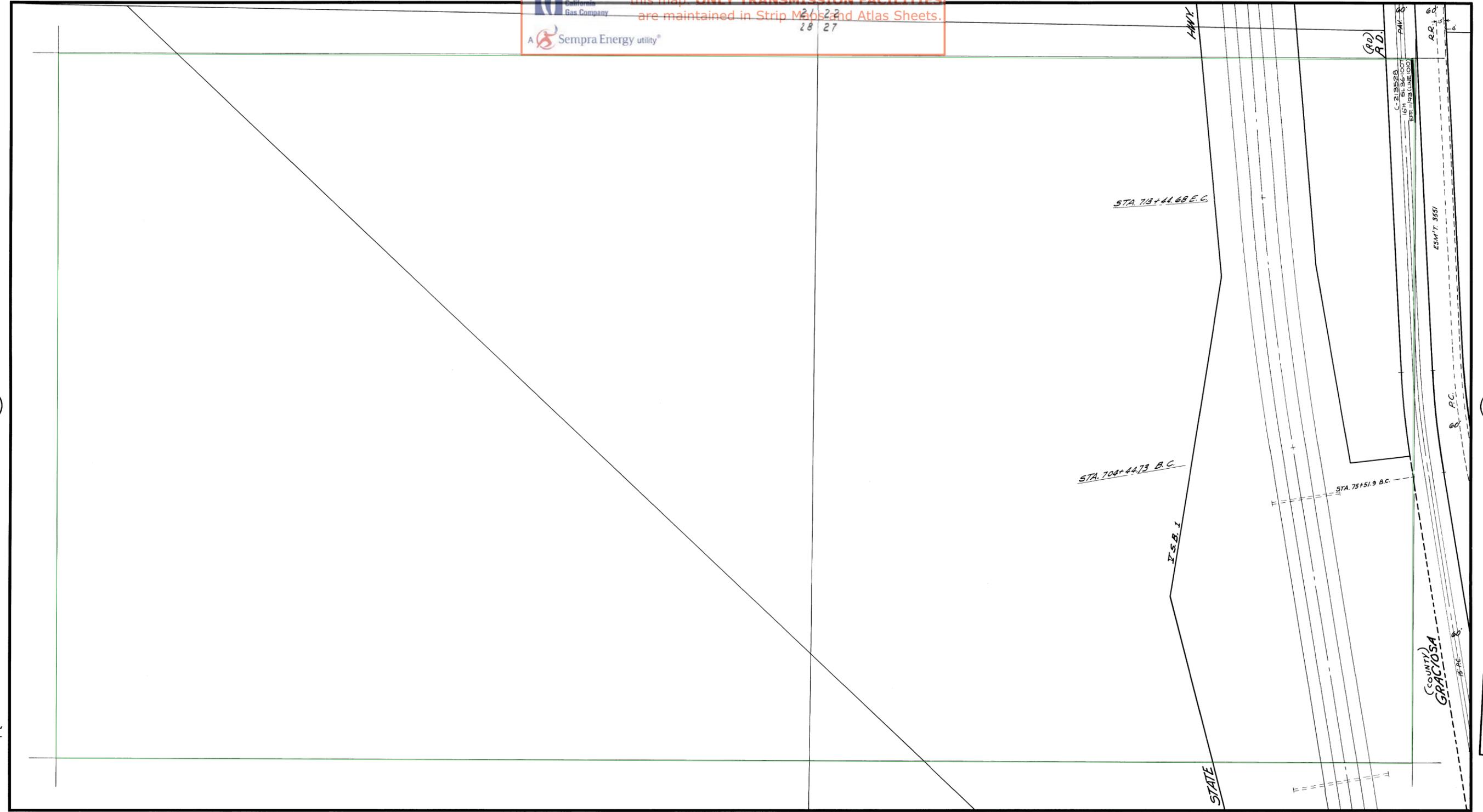
SBA 5751-2

11-1-23 E.C.  
5-8-23 C.W.J.  
12-26-23 R.F.

**WARNING!** Distribution Medium and High Pressure Facilities are **NO LONGER** maintained within this map. **ONLY TRANSMISSION FACILITIES** are maintained in Strip Maps and Atlas Sheets.



TRAM 38  
TAX CODE 80-999



1"=100'

RA 27

5651-3

5750-2

SBA 5751-4  
5-8-63 C.J.W.  
12-21-65 RAC

**WARNING!** Distribution Medium and High Pressure Facilities are **NO LONGER** maintained within this map. **ONLY TRANSMISSION FACILITIES** are maintained in Strip Maps and Atlas Sheets.



A Sempra Energy utility

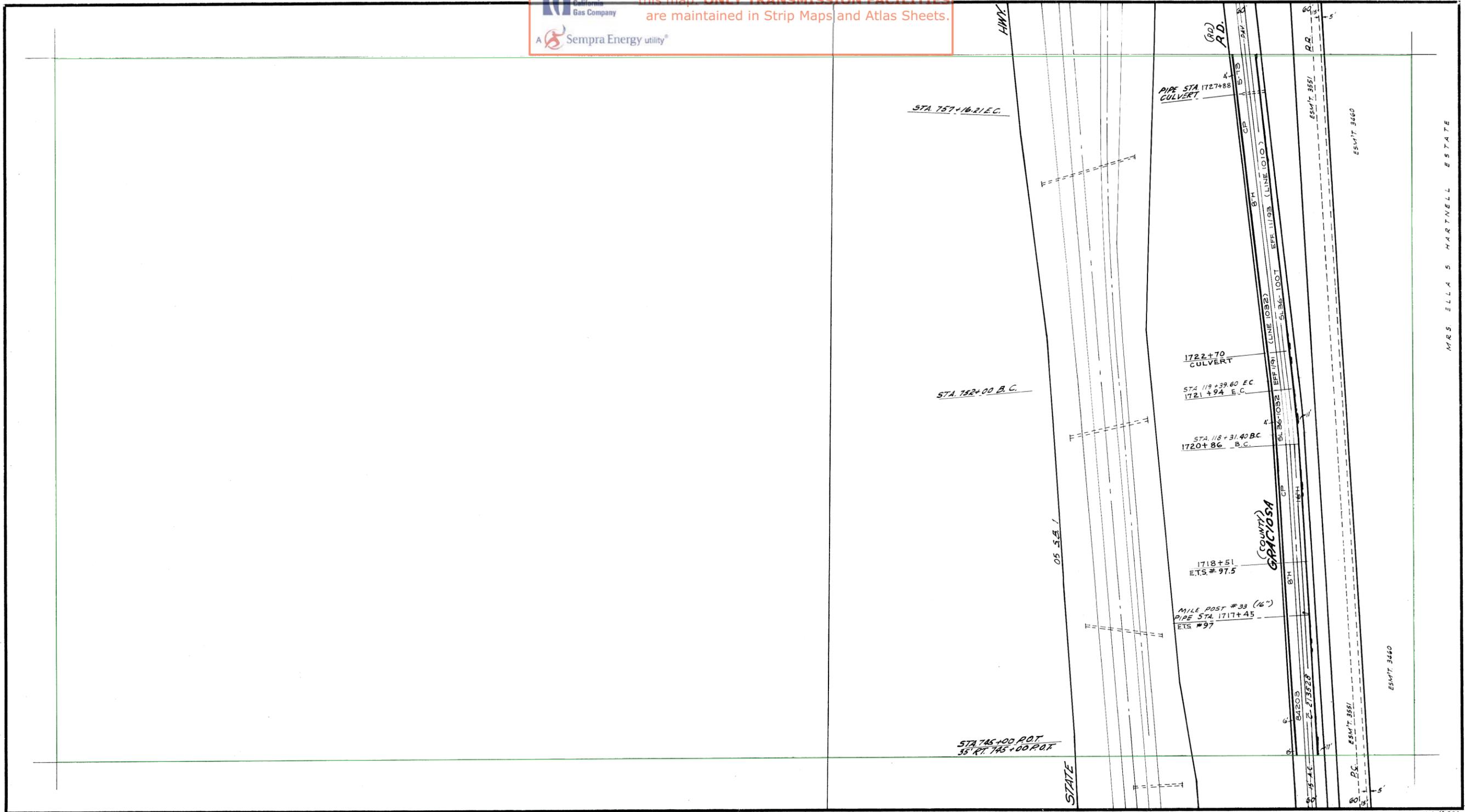
TRAM 38  
TAX CODE 80-999

5752-1

5652-1

1" = 100'

RA 2.7



5752-4

SBA 5752-2

N. COASTAL

11-1-43 E.C.  
5-8-63 C.U.W.  
12-23-45 K.C.F.

**WARNING!** Distribution Medium and High Pressure Facilities are **NO LONGER** maintained within this map. **ONLY TRANSMISSION FACILITIES** are maintained in Strip Maps and Atlas Sheets.



TRAM 38  
TAX CODE 80-999

5752-3

5652-3

1" = 100'

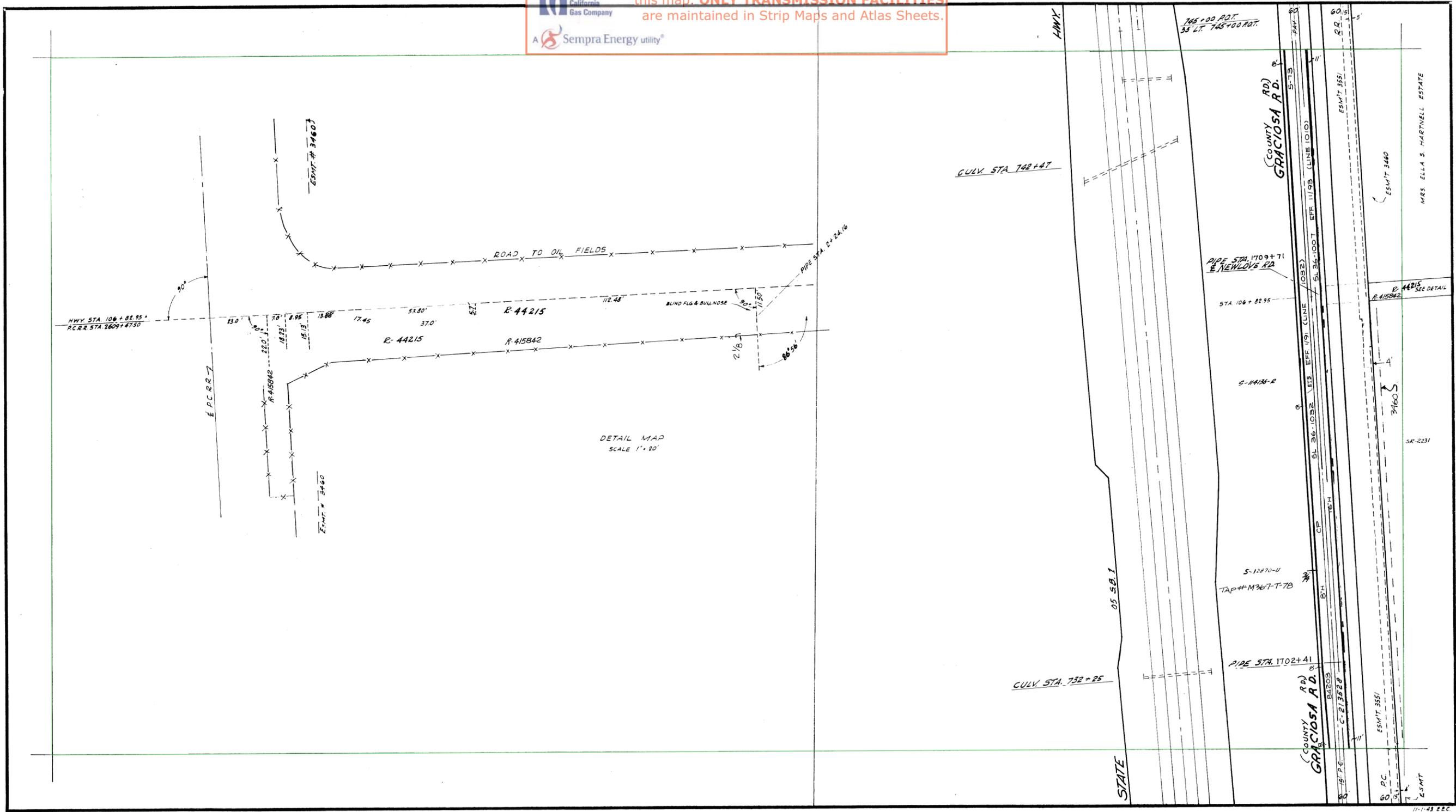
RA 27

DETAIL MAP  
SCALE 1" = 20'

5751-2

SBA 5752-4

N. COASTAL



11-1-43 REC  
S. R. 43 C. 110  
12-23-2017



