



SAN FRANCISCO PLANNING DEPARTMENT

MEMO

DATE: May 28, 2014

TO: Architectural Review Committee of the Historic Preservation Commission

FROM: Allison Vanderslice, Preservation Planner, (415) 575-9075

REVIEWED BY: Tim Frye, Preservation Coordinator, (415) 575-6822

RE: **Review and Comment at June 4, 2014 Hearing
LightRail Installation - Path of Gold Light Standards along
Market Street from The Embarcadero to Van Ness Avenue
Case No. 2014.0794A**

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

BACKGROUND

The Planning Department (Department) has requested review and comment before the Architectural Review Committee (ARC) regarding the proposed installation of metal utility boxes on the **Path of Gold Light Standards (POG) – Landmark No. 200**, which is listed in Appendix A of Article 10 of the San Francisco Planning Code. The proposed utility boxes will function as LED driver enclosures for the LightRail light art installation project, which will continue through 2018. The current design suspends the LED tubes from the MUNI overhead catenary system and proposes to install the utility boxes on the POG poles. Per Article 10 of the Planning Code, the proposal will require approval of a Certificate of Appropriateness (CofA) by the Historic Preservation Commission (HPC). Before completing the CofA review, the Department is seeking comments from the ARC in order to guide staff's evaluation and recommendations.

PROPERTY DESCRIPTION

The 327 Path of Gold light standards running from 1 Market Street to 2490 Market Street (ending between Castro and Collingwood streets) were designated City Landmark No. 200 in 1991. The 1991 POG Landmark Case Report summarizes the history and significance of the POG:

The 327 handsome Path of Gold street light standards are a significant legacy from the City Beautiful movement of the early 20th century, which also gives us the Civic Center. They have long been the public's favorite street furniture, and their

distinctive color and pattern of light identify Market Street from distant view points. The “Winning of the West” bases by outstanding SF sculptor Arthur Putnam feature three bands of historical subjects: ox-drawn covered wagons with weary pioneer and dog, seated pumas (mountain lions) looking down at a scared jackrabbit and overlooked by an Indian head, and alternating prospectors and mountain Indians. Willis Polk designed the ensemble of the base and pole in 1908 for United Railways’ trolley poles-with-street-lights. The City had required the company to provide “highly ornamental” poles, plus lamps upon them and electricity for them, as the price for permitting the much opposed overhead trolley wires... The tops were designed in 1916 by sculptor Leo Lentelli and engineer Walter D’Arcy Ryan, whose lighting designs for the Panama Pacific International Exposition of 1915 had inspired emulation on the City’s principle thoroughfare. The 1916 installation, from the Ferry Building to Seventh Street, was a cooperative effort by the Down Town Association, Market Street merchants and property owners, the Pacific Gas & Electric and United Railroads... Path of Gold tops were added to the Winning the West bases from Seventh to Valencia in the mid-1920s.

The POG Landmark Case Report further states that the light standards from Embarcadero to Valencia Street were replaced with replicas cast from the originals in the 1970s. The original standards (bases date to 1908 and tops date to 1916-c.1925) were installed in 1983 from Valencia to Castro streets. Identified character-defining features are the tripartite top and triple globes, sculptural detailing in the “Winning the West” naturalistic base panels, the light standard’s color, and the height of the lights standards.

PROJECT DESCRIPTION

The proposed project is to install a subway-responsive LED light installation for 2.1 miles along Market Street from The Embarcadero to Van Ness Avenue. The light installation consists of LED light tubes suspended from the MUNI overhead catenary system. In order to power and control the LED tubes, the project proposes to install utility boxes to house the LED drivers on 83 of 194 POG poles between The Embarcadero and Van Ness Avenue. The boxes are designed to match the profile of the light pole and are proposed to be 11.5” wide, 40” high, and 8” deep. The boxes are proposed to be metal and will be painted to match the poles. The project proposes to drill a 3/4” hole into the pole to run wiring through the interior of the pole and out to the box. The hole will be refilled and repainted as part of the removal of the installation. The project proposes to help with the upkeep and maintenance of the POG including upgrading the wiring to the poles and removing leftover banner materials. The project team also proposes to conduct a conditions assessment of the POG to help DPW in their ongoing maintenance of the POG.

STAFF ANALYSIS

Staff has met with the Project Sponsor to resolve issues regarding design, installation, maintenance and removal of the proposed LightRail installation. There are several components of the proposed project that the Department seeks the advice of the ARC. The Department would like the ARC to consider the following information:

Utility Box Design:

The Department has worked with the Sponsor to review various options in regard to size, placement, and design of the utility boxes. The Sponsor proposes to install utility boxes that will match the POG in color and are roughly the same width as the POG pole in order to minimize visual impact. The boxes will be placed directly below the MUNI line connection and will not directly interfere with the character-defining bases or tripartite tops.

The Department finds the utility box location and design unresolved and in conflict with the Secretary of the Interior's Standards. While the proposed utility boxes are simple metal boxes with a utilitarian design, the Department finds they are not compatible with the stylized POG standards. In addition, the overall number of utility boxes installed on the exterior of the POG standards (83) will result in a cumulative visual change to a significant portion of the POG from the Embarcadero to Van Ness Avenue.

Recommendation:

1. While the design of the utility box aims to recede from view, the utilitarian and strictly rectangular design is visually jarring in contrast with the ornate lamp poles. Staff recommends that the LED driver be housed inside the hollow POG pole or base, reducing the need for an external box.
2. If there are no reasonable means to house the LED driver within the hollow POG pole or base, staff recommends that the sponsor provide a more integrated and compatibly designed utility box. The Sponsor might consider shaping or beveling the edges and corners of the box, or using other methods to significantly reduce its profile. The Sponsor may also propose a design that integrates more specifically with the POG and the theme of the LightRail installation.

Installation of Utility Boxes:

The Sponsor proposes to use metal clamps to attach the utility boxes around the POG poles. In the past there have been issues related to deterioration and corrosion through the use of metal fasteners on the POG. Unless properly installed, the metal fasteners may lead to water collection and eventual damage and corrosion to the POG poles and its finish. Further design work is necessary to ensure that the attachments and the box itself will not damage the pole and will not result in further deterioration.

Recommendation:

3. The Department recommends the Sponsor specify protective measures, such as the installation of a protective material, in order to protect the POG from potential damage and/or corrosion caused by the clamp and utility box.

Conditions Assessment and Maintenance Plan:

The project team proposes to upgrade the interior wiring of the POG, to remove left-over banner materials currently attached to the POG, and to undertake an existing conditions survey of the POG poles. The Department supports the project team in undertaking a Conditions Assessment of the POG.

Recommendation:

4. The Department further recommends that the project team work with DPW and the Planning Department to develop a plan to ensure that the installation minimizes damage and that the POG system is appropriately maintained during the proposed five-year LightRail installation period. At a minimum the plan should include periodic assessment of the installation and a plan for repairing and addressing regular maintenance, vandalism, damage and/or corrosion. The plan should also include staffing responsibilities and contact information for those responsible for the maintenance plan.

Removal of the LightRail Installation:

As proposed with the installation of the 11.5" wide, 40" high, and 8" deep external utility boxes, the project proposes to drill a 3/4" hole in the POG pole to run wires to connect to the utility boxes. The Department understands that hole will be filled in and repaired at the end of the installation. The Department further understands that the installation is designed to be reversible and to cause limited alterations to the POG.

Recommendation:

5. The Department recommends that Sponsor prepare a repair detail for filling and repairing the 3/4" hole drilled in the historic pole.
6. The Department also recommends that the Sponsor's plan anticipate additional repair and restoration, including repainting of the POG, following the removal of the LightRail installation.

REQUESTED ACTION

Specifically, the Department seeks comments on:

- The project concerns raised by staff; and,
- The project recommendations proposed by staff.

ATTACHMENTS

- Path of Gold Landmark Designation
- Path of Gold Light Standard Map
- Project Sponsor architectural plans, May 2014

DESIGNATING THE PATH OF GOLD LIGHT STANDARDS AS A LANDMARK PURSUANT TO ARTICLE 10 OF THE CITY PLANNING CODE.

Be it ordained by the People of the City and County of San Francisco:

Section 1. The Board of Supervisors hereby finds that the Path of Gold Light Standards which span from 1 Market Street through 2490 Market Street, being 327 light standards/trolley poles, has a special character and special historical, architectural and aesthetic interest and value, and that its designation as a Landmark will further the purposes of, and conform to the standards set forth in Article 10 of the City Planning Code. The landmark site shall consist only of each light fixture itself including the ornamental poles and lamp globes.

(a) Designation: Pursuant to Section 1004 of the City Planning Code, Chapter II, Part II of the San Francisco Municipal Code, the Path of Gold Light Standards is hereby designated as a Landmark, this designation having been fully approved by Resolution No. 13049 of the City Planning Commission, which Resolution is on file with the Clerk of the Board of Supervisors under File No. 91.062L and is incorporated herein and made a part of hereof as though fully set forth.

(b) Required Data: The description of the location and boundaries of the Landmark site, of the characteristics of the Landmark which justify its designation, and of the particular features that should be preserved are included in the said Resolution, and incorporated in this designating ordinance as though fully set forth.

APPROVED AS TO FORM:

LOUISE H. RENNE

CITY ATTORNEY

By [Signature]

Deputy City Attorney

RECOMMENDED:

CITY PLANNING COMMISSION

By [Signature]

Dean L. Macris

Director of Planning

Board of Supervisors, San Francisco

Passed for Second Reading
June 17, 1991

Finally Passed
June 24, 1991

Ayes: Supervisors Alioto Gonzalez
Hallinan Hsieh Kennedy Maher
Shelley Ward

Ayes: Supervisors Achtenberg Alioto
Gonzalez Hallinan Hsieh Kennedy
Maher Migden Shelley

Absent: Supervisors Achtenberg
Britt Migden

Absent: Supervisors Britt Ward

I hereby certify that the foregoing ordinance was finally passed by the Board of Supervisors of the City and County of San Francisco

[Signature] Clerk
[Signature] Mayor

File No.
90-91-2

JUN 26 1991
Date Approved

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File No. 91.062L
Path of Gold Light Stds.

SAN FRANCISCO
CITY PLANNING COMMISSION
RESOLUTION NO. 13049

WHEREAS, A proposal to designate Path of Gold Light Standards as a Landmark pursuant to the provisions of Article 10 of the City Planning Code was initiated by the Landmarks Preservation Advisory Board on February 20, 1991, and said Advisory Board, after due consideration, has recommended approval of this proposal; and

WHEREAS, The City Planning Commission, after due notice given, held a public hearing on March 28, 1991 to consider the proposed designation and the report of said Advisory Board; and

WHEREAS, This Commission believes that the proposed Landmark has a special character and special historical, architectural and aesthetic interest and value; and that the proposed designation would be in furtherance of and in conformance with the purposes and standards of the said Article 10;

THEREFORE BE IT RESOLVED, First, That this Commission does hereby recommend APPROVAL of the designation of the Path of Gold Light Standards Landmark;

Second, That the location of the Path of Gold Light Standards spans from 1 Market Street through 2490 Market Street and for purposes of Planning Code Article 10, the Landmark site shall consist only of each light fixture itself, including the ornamental poles and lamp globes;

Third, That the special character and special historical, architectural and aesthetic interest and value of the said Landmarks Preservation Advisory Board Resolution No. 435 as adopted on February 20, 1991 which Resolution is incorporated herein and made a part thereof as though fully set forth;

Fourth, That the said Landmark should be preserved generally in all of its particular exterior features as existing on the date hereof and described and depicted in the photographs, case report and other material on file in the Department of City Planning Docket No. 91.062L.

AND BE IT FURTHER RESOLVED, That this Commission hereby directs its Secretary to transmit the proposal for designation, with a copy of this Resolution, to the Board of Supervisors for appropriate action.

Linda Avery
Secretary

AYES: Commissioners Bierman, Boldridge, Hu, Karasick, Morales and Sewell

NOES: None

ABSENT: Commissioner Engmann

ADOPTED: March 28, 1991

VFM:dn:mj:931

BUILDING NAME: The Path of Gold Light Standards **OWNER:** City and County of San Francisco, CA

BUILDING ADDRESS: 1-2490 Market Street (327 poles, see map) **BLOCK & LOT:** Various lots and blocks

ORIGINAL USE: Trolley poles/light standards **ZONING:** Various zoning districts including C-3-0, C-3-R, C-3-G, N-C-3 and P.

CURRENT USE: Light standards/trolley poles **NO. OF STORIES:** 33 feet high **LPAB VOTE:** 8-0

LANDMARK NO: 200 **EXTERIOR MATERIALS:** Cast iron, glass

STATEMENT OF SIGNIFICANCE: The 327 handsome Path of Gold street light standards are a significant legacy from the City Beautiful movement of the early 20th century, which also gave us the Civic Center. They have long been the public's favorite street furniture, and their distinctive color and pattern of light identify Market Street from distant viewpoints. The (cont.)

EVALUATION CRITERIA

A. ARCHITECTURE

1. Style: Beaux Arts/City Beautiful--San Francisco's best examples in street furniture.
2. Construction Type: Street furniture: hollow cast iron around steel pole core.
3. Construction Date: 1908 (bases, Ferry to Valencia), 1916 (tops to 7th Street), c.1925 (tops to Valencia), c.1972 (all replicated), c.1985 (to Castro).
4. Design Quality: Grand scale appropriate to setting. Relieved by tripartite top and superb sculptural detailing. Naturalistic base panels.
5. Architect: 1908: D.H. Burnham and Company/Willis Polk, Architecture: Arthur Putnam, sculptor. 1916: Walter D'Arcy Ryan, lighting designer; Leo Lentelli, sculptor.
6. Interior Quality: Not applicable.

B. HISTORY

7. Persons: Arthur Putnam, Willis Polk, Patrick Calhoun, Abe Ruef, Leo Lentelli. (cont.)
8. Events: In 1915-16 the Down Town Association put together the coalition which produced the Path of Gold. Market Street (cont.)
9. Patterns of History: City Beautiful movement for design. Nationwide development of street lighting, especially the arc lamp and the (cont.)

C. ENVIRONMENT

10. Continuity: Ties Market Street together, scale fits Market Street width and building heights.
11. Setting: Almost the only historic street furniture along Market and outstanding among all San Francisco's street furniture.
12. Importance as a Visual Landmark: Very high. Globes as identifying Market Street from other vantage points. High enough to clear traffic and trees.

D. INTEGRITY

13. Of the historic 224 standards to Valencia Street during BART construction in the late 1980s.

RATINGS

DCP:
HERE TODAY: 2
SPLENDID SURV.: A (p. 241)
NAT'L REGISTER: Mentioned in Market Street Theater and Loft District
NAT'L LANDMARK:
STATE LANDMARK:

BIBLIOGRAPHY See page 4.

STAFF: Vincent Marsh, Secretary
ADDRESS: Landmarks Preservation Advisory Board
 450 McAllister Street
 San Francisco, CA 94115
PHONE: 558-6345
DATE: February 21, 1991
 Updated March 14, 1991



STATEMENT OF SIGNIFICANCE/EVALUATION CRITERIA (Cont.)

"Winning of the West" bases by outstanding S.F. sculptor Arthur Putnam feature three bands of historical subjects: ox-drawn covered wagons with weary pioneer and dog, seated pumas (mountain lions) looking down at a scared jackrabbit and overlooked by an Indian head, and alternating prospectors and mounted Indians. Willis Polk designed the ensemble of base and pole in 1908 for United Railways' trolley poles with street lights. The City had required the company to provide "highly ornamental" poles, plus lamps upon them and electricity for them, as the price for permitting the much opposed overhead trolley wires. Granting the permit by the corrupt Board of Supervisors, only five weeks after the 1906 earthquake, was linked to graft payments of \$50,000 to then-Mayor Schmitz and \$4,000 to \$15,000 each to 17 of the 18 Supervisors. It became a prime subject of the graft trials of political boss Abe Ruef, United Railroads president Patrick Calhoun, and United Railroads chief counsel Tiley Ford, who had transmitted \$200,000 of the company's money to Ruef, and had apparently agreed with him about the compromise of providing highly ornamental poles. The tops were designed in 1916 by sculptor Leo Lentelli and engineer Walter D'Arcy Ryan, whose lighting designs for the Panama Pacific International Exposition of 1915 had inspired emulation on the City's principle thoroughfare. The 1916 installation, from the Ferry Building to Seventh Street, was a cooperative effort by the Down Town Association, Market Street merchants and property owners, the Pacific Gas & Electric, and United Railroads (now part of Muni). To service the tall poles, PG&E invented an ancestor to the cherry picker. Path of Gold tops were added to the Winning of the West bases from Seventh to Valencia in the mid-1920s. In the 1972-73 Market Street Beautification after BART construction, all the poles and ornaments were replaced with replicas, fitted with new high pressure sodium vapor lamps. In the mid-1980s, original Path of Gold standards were used to extend the system out Market Street to just beyond Castro.

B. HISTORY (Cont.)

7. Persons (cont.) Arthur Putnam (1873-1930), outstanding California sculptor best known for bronzes of pumas and other animals. His works are in the collection of the Legion of Honor and as architectural ornament on several major downtown buildings.

Willis Polk (1865-1924), an originator of Bay Area Tradition architecture, a publicist and designer of San Francisco's City Beautiful movement, architect of the Halliday, Hobart and Kohl Buildings (Landmarks 37, 162 and 161), the Bourne Mansion (Landmark 38), and Jessie Street Substation (Landmark 87). He reconstructed, reinforced or added to Mission Dolores, the Mills and Kohl Buildings, and 465 California. Other outstanding downtown buildings of his include 2 and 298 Post, 433 California, and 425 Mason. Among the residences he designed are 1013-1019 Vallejo (Polk family and Mrs. Virgil Williams), 2662 Jackson (for George W. Gibbs), 2840 and 2880 Broadway (respectively for Julia Welch and Albert Ehrman), 3203 Pacific (for the Porters), 2960 Broadway (for S.I. Naphtaly), and 1969 California (for Constance deYoung Tobin).

Patrick Calhoun (1854-1943), president of United Railroads (a predecessor of Muni), southern aristocrat and grandson of Andrew Jackson's vice president, and arrogant breaker of America's longest and most bitterly contested streetcar strike in 1907, was indicted in the 1907 graft trials for the next-to-largest bribe to the supervisors, \$85,000, for approval of the overhead trolley franchise which included the "highly ornamental" poles on Market that are the Path of Gold bases. After this trial, he did carry out this condition in the franchise.

Abe Ruef (1864-1936), San Francisco's turn-of-the-century political boss who was convicted in 1908 of graft, including receiving \$200,000 from United Railroads for arranging the streetcar franchise, of which he passed \$50,000 to Mayor Schmitz and \$85,000 to 17 of the 18 supervisors. In his memoirs Ruef claimed to have suggested the ornamental trolley-and-light poles.

Walter D'Arcy Ryan (1870-?), electrical engineer, lighting designer of the Panama Pacific International Exposition and the Path of Gold (globes, height, spacing, electrical installation).

Leo Lentelli (1879-?), sculptor for the PPIE, of the Path of Gold tops, of statues on the Main Library facade.

Tirey L. Ford (?-1928), United Railroads chief counsel, former State Attorney General, financial conduit between Ruef and Calhoun, tried twice for bribing supervisors, afterwards member of the State Prison Board.

8. Events: (cont.) owners and merchants contributed money for lighting. The City gave permits, legislation and use of the streets. PG&E installed the fixtures and maintained the tops. United Railroads provided poles. Grand parade and opening on 4 October 1916.

Several of the San Francisco Graft Trials of 1907 concerned the corrupt trolley franchise, granted to United Railroads 24 May 1906, which had called for the erection of "highly ornamental" trolley-and-light poles along Sutter to Van Ness and along Market to Valencia. To get the franchise, United Railroads gave boss Ruef \$200,000, of which he passed \$50,000 to Mayor Schmitz and \$85,000 to the supervisors. United Railroad's Calhoun and Ford (see Persons section) were tried for this bribery, and it formed a large component of the trials of Ruef and Schmitz. After the trials were over, United Railroads went ahead with the ornamental poles, which are the Winning of the West bases to the Path of Gold.

Market Street Beautification in 1972-1973 and 1973-1985.

9. Patterns of History: (cont.) "Great White Way," and the importance of night lighting to retailers.

D. INTEGRITY (Cont.)

13. Integrity: (cont.) 1970s all were replaced with new replica castings from the old standards, the bases on molds commissioned of sculptor Spero Anargyros by the City in 1961. At this time the new standards were not located in exactly the same places as the original ones. For instance, some blocks now have one more or one less than they used to; there were six east of Steuart Street, none now; and where two streets meet at the north side of Market, sometimes the standard used to be located off the line of Market and on the north side of the intersecting east-west street (e.g. Geary), but now it is aligned with Market on the island bounded by the south side of the east-west street, Market, and the other intersecting street.

After 1983, 103 of the original standards were used to bring the Path of Gold out Market to just beyond Castro Street. These were not porcelainized and gold trimmed as the 1970s replicas; they were simply painted blue. The type of lamps inside the globes has changed repeatedly over the years.

Prepared by Anne Bloomfield, Landmarks Board Vice-President, January 26, 1991.

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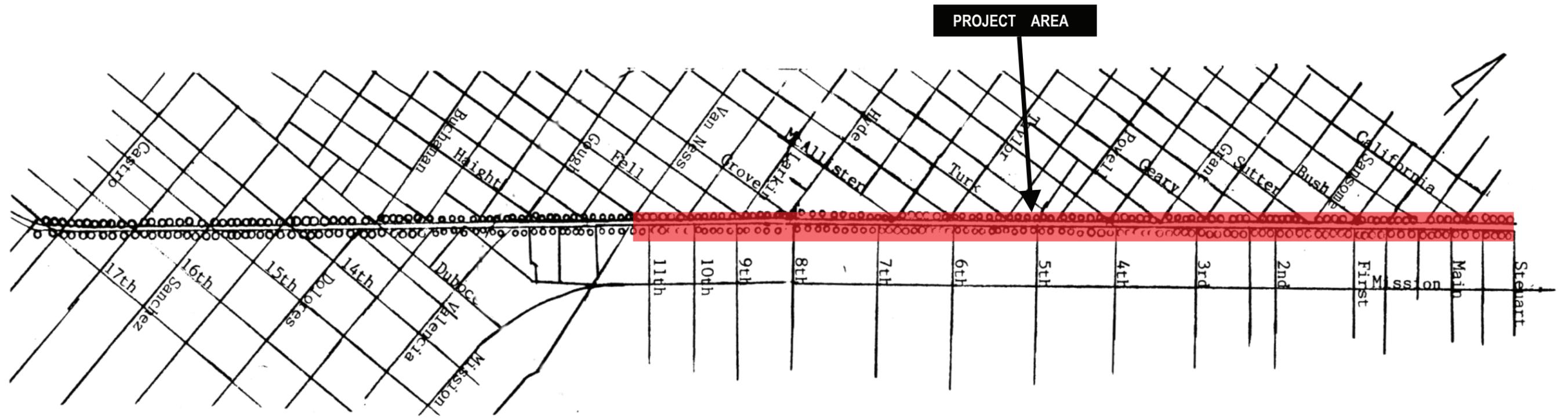
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VFM:mj:919



Project Area Map



PATH OF GOLD LIGHT STANDARDS
SKETCH MAP

- ==== Market Street
- One Path of Gold light standard

Presenters:

Ben Davis, Founder of Illuminate the Arts
George Zisiadis and Stefano Corazza, LightRail Artists
Brady Nadell, Engineer at Parsons Brinckerhoff

Project Overview

LightRail is the world's first subway-responsive light sculpture, illuminating two miles along San Francisco's Market Street, from Van Ness Avenue to The Embarcadero. It is being presented by Illuminate the Arts, the organization that produced THE BAY LIGHTS.

By beautifully visualizing the real-time movement of underground trains, LightRail will transform San Francisco's preeminent thoroughfare--our Champs-Élysées-- into a scene of wonder and awe for millions of people, re-establishing Market Street as a place of destination rather than a mere route of passage. The installation will visually connect Market Street's long-fragmented communities and further fuel efforts aiming to revitalize Market Street--while reinforcing the corridor's historic creative essence. The artwork will be temporary--lasting only through 2018, the year Market Street is slated to be reconfigured to better serve and inspire our city's residents and visitors for generations to come.

In a contemporary nod to Market Street's history of purposeful and beautiful illumination, LightRail mirrors the historic intention of the Path of Gold lights which created vibrancy through illumination more than a century ago. The Path of Gold lights have always served a dual purpose--delivering an inspiring and attractive aesthetic experience while fulfilling the utilitarian task of supporting the overhead catenary system of the electrified Market Street trolley line.

Project Status

After a year of exploring a wide range of possible design solutions, LightRail is in its final planning stage. It has received explicit support from the Mayor's Office, the SF Arts Commission, SFDPW, SFMTA, SFPUC and the business and creative community. Parsons Brinckerhoff, one of the world's leading engineering firms, and the designers of THE BAY LIGHTS, have created the project's technical design.

The installation consists of LED light tubes suspended from the MUNI overhead catenary system (OSC). The installation, a rail of energy-efficient LED lights that travel 2.1 miles up and down the length of Market Street, from One Market to Van Ness, sips power from components contained in small boxes mounted onto 83 of the 194 Path of Gold (POG) poles just below the lights. The entire installation is temporary and reversible. A 3/4" hole must be drilled into the pole near the box to run wiring from underground. This small hole will be refilled and repainted following the installation.

The team recognizes the poles' historical and aesthetic importance and has done everything possible to create as minimal visual impact as possible. The original design suspended the light tubes from cantilevered arms anchored into the POG poles. The team figured out how to not burden the poles and suspend the tubes directly from the OSC instead. After receiving feedback from Tim Frye, the team reworked the electrical design of the installation to reduce and elongate the box size from 20" w x 24" H x 8" D to 11.5" W x 40" H x 8" D to best match the shape of the pole. The boxes will be painted identically to the poles. With pedestrians focused on the moving light beams, the boxes will recede into the overall urban background.

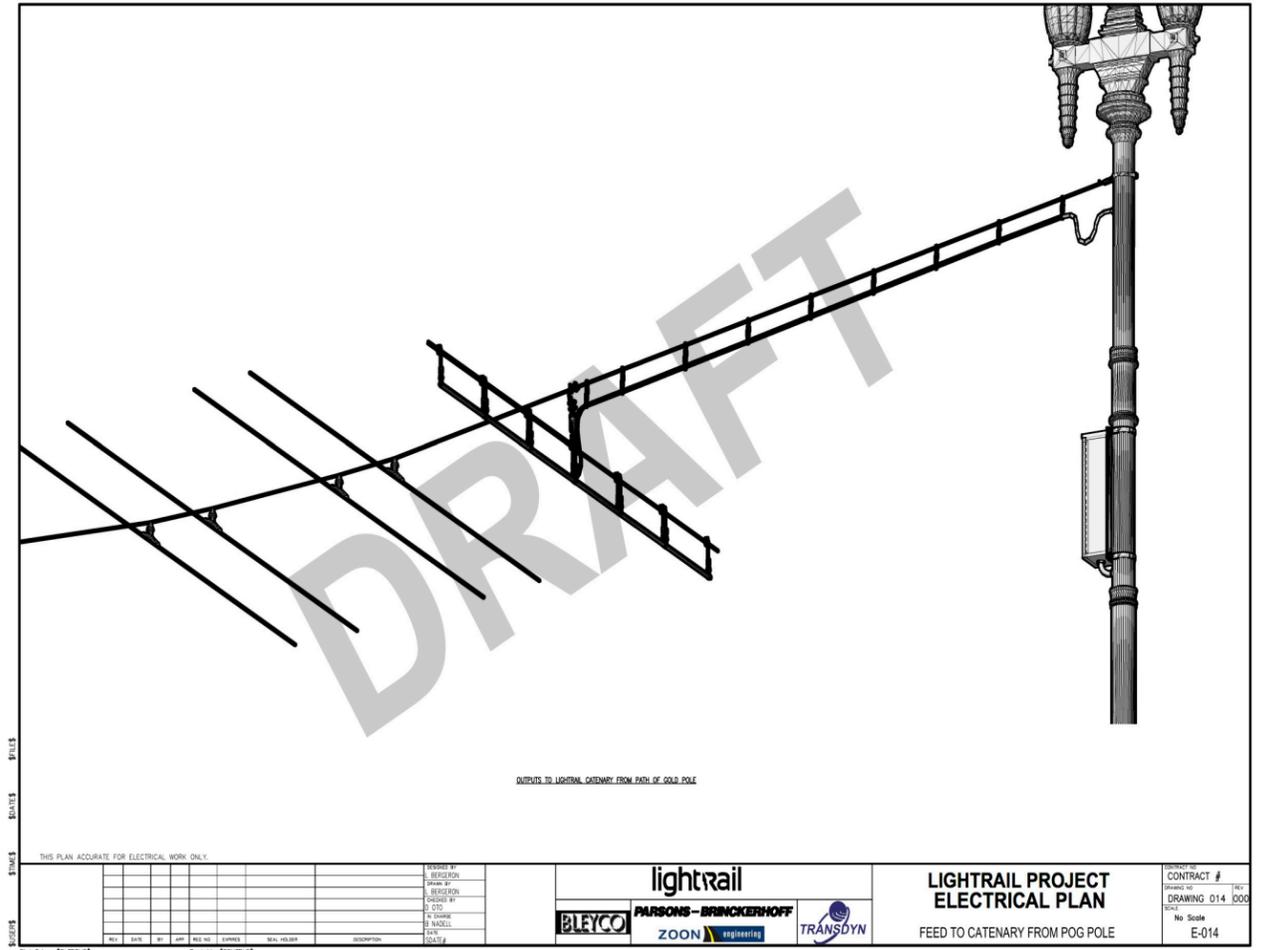
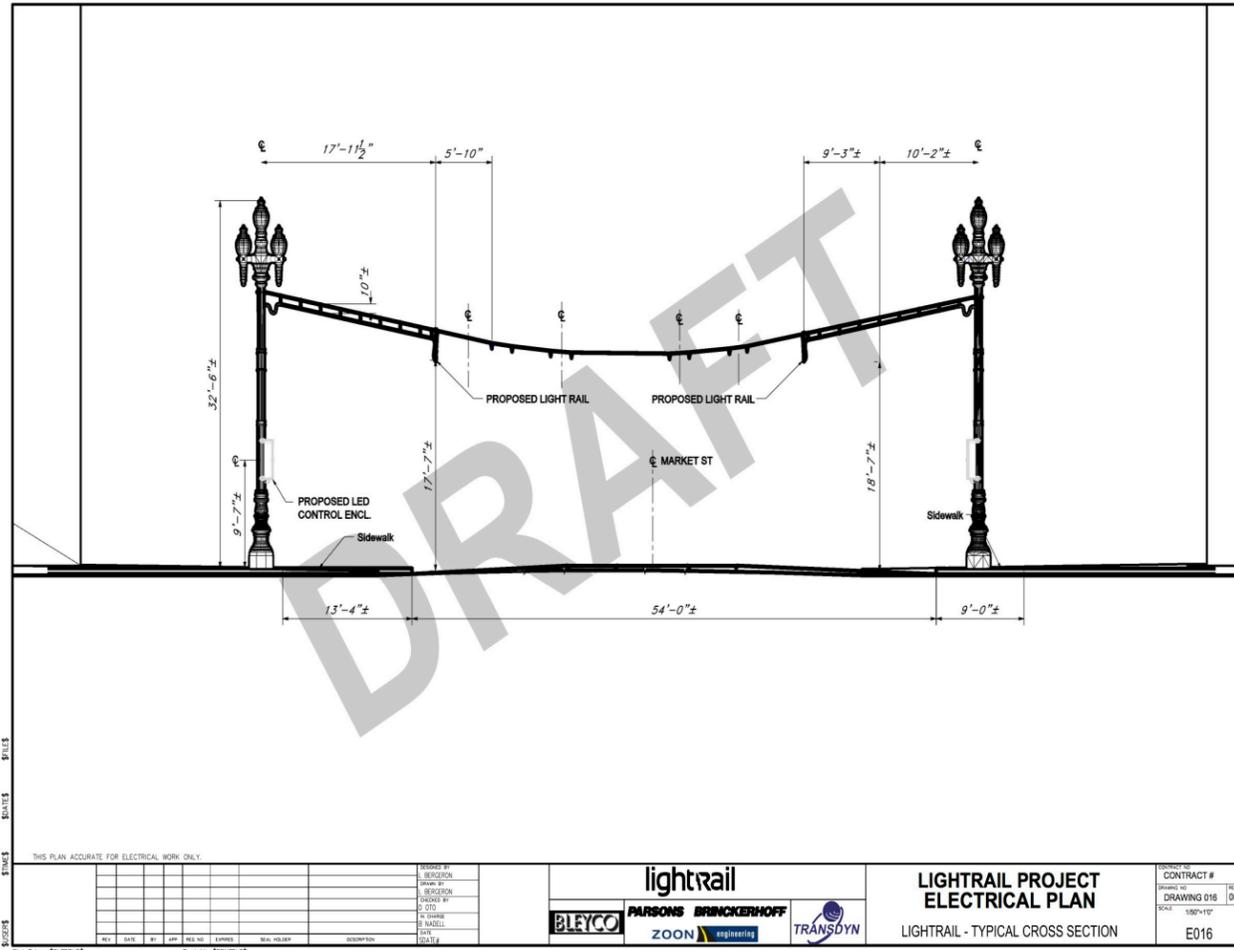
The installation will be an opportunity to benefit the POG poles overall. The interior wiring will be upgraded free-of-charge to the city. Leftover materials from banners will be removed free-of-charge by the installation team. The team will also conduct a survey of the existing state of the poles to help the commission and the DPW in their ongoing maintenance efforts--setting the stage for the Path of Gold's return to health and civic attention in 2018. In order for LightRail to be realized, it seeks the Historic Preservation Commission's affirmative support.

Project Rendering



Technical Plans

Note: Shown for scale only. Actual box placement will be just underneath POG lights, where catenary cable meets pole.

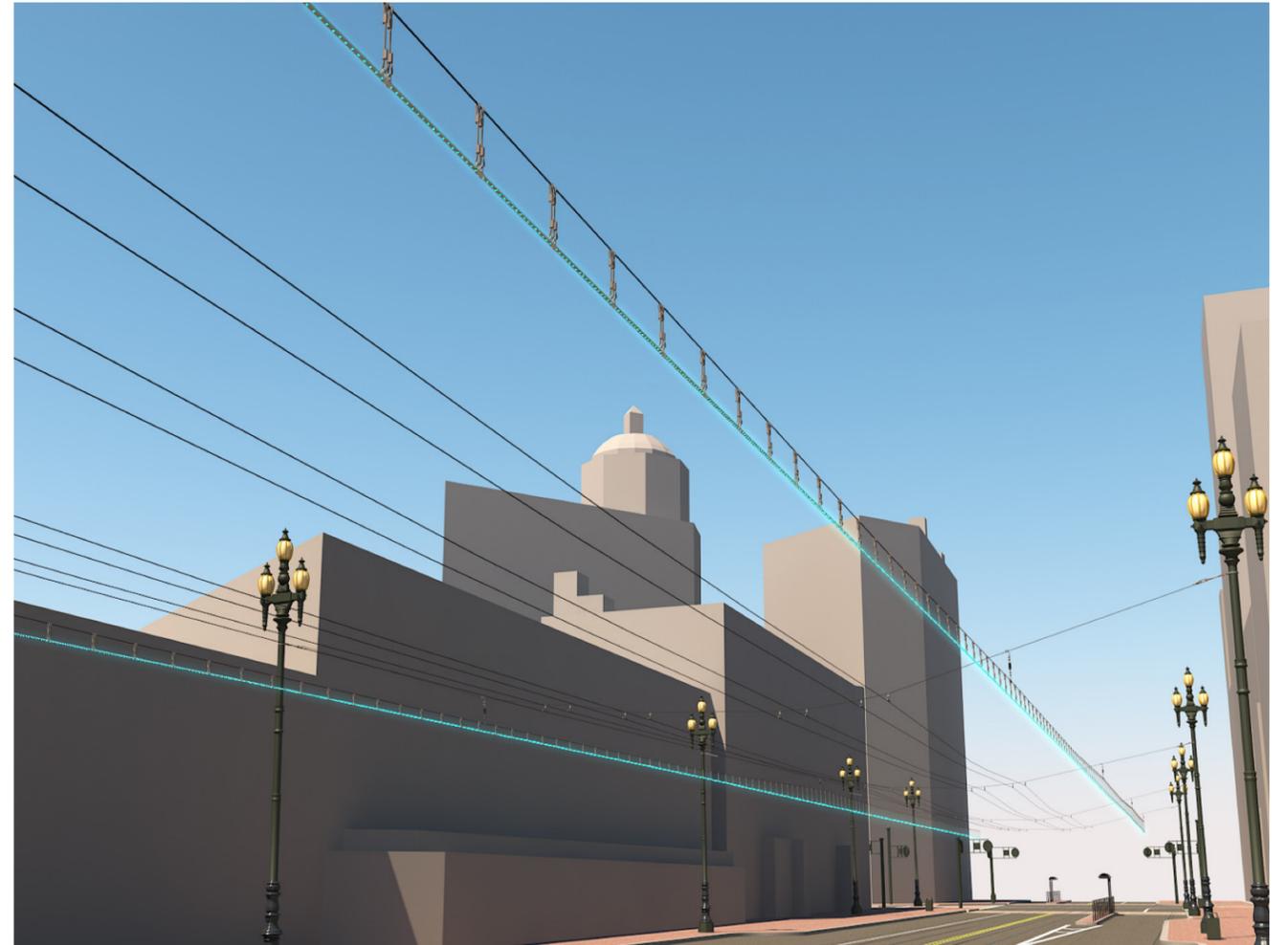


Project Evolution

Original Design: Suspending light tubes from cantilevered arms anchored on POG poles.



Current Design: Suspending light tubes directly from MUNI catenary system.



Project Evolution

Initial Box Design: 20" W x 24" H x 8" D



Current Box Design: 11.5" W x 40" H x 8" D



Project Evolution - Closeups

Initial Box Design: 20" W x 24" H x 8" D

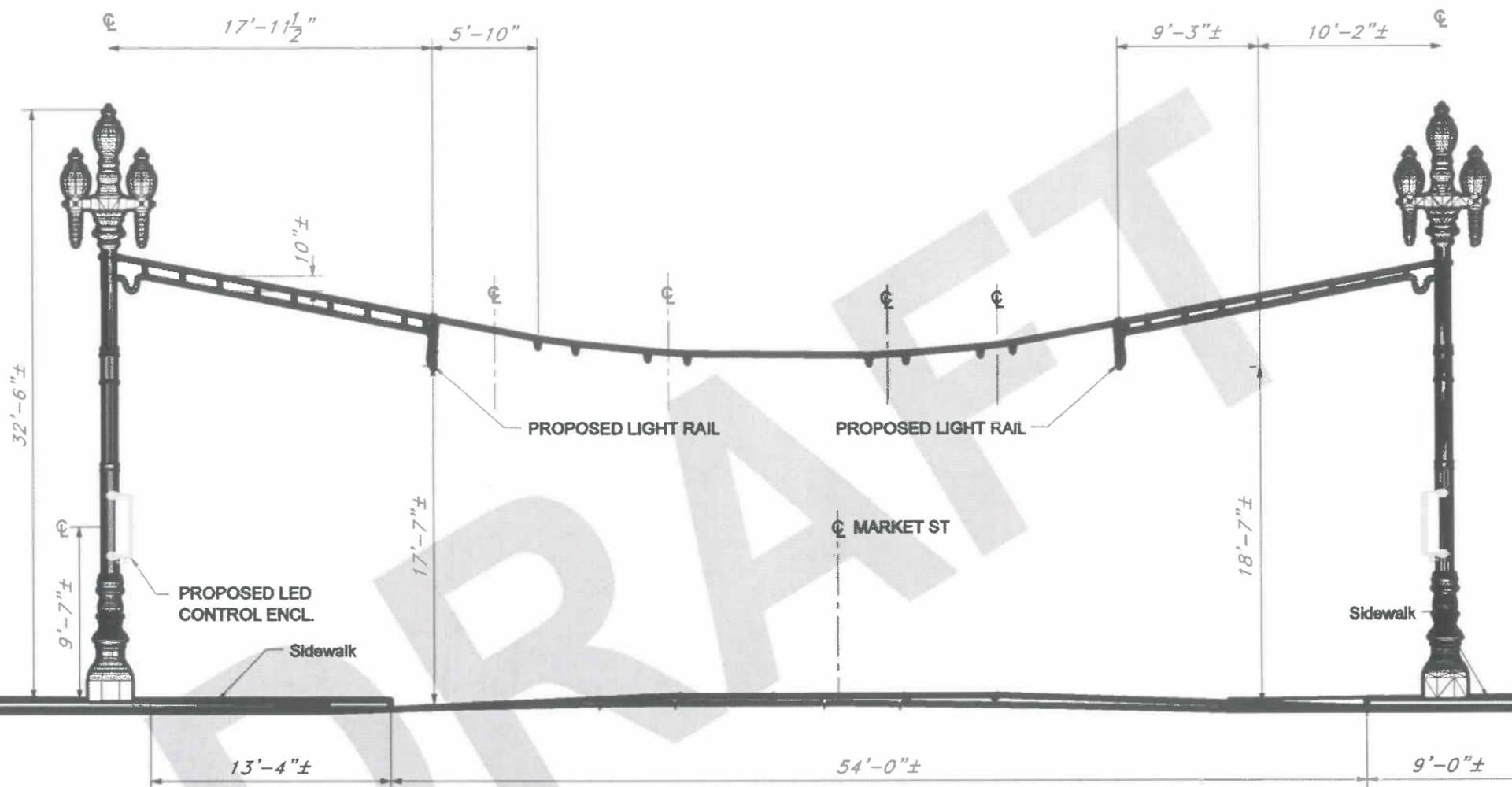


Current Box Design: 11.5" W x 40" H x 8" D



Alternate Investigations of Box Placement.
Deemed Less Desirable.





THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

REV	DATE	BY	APP	REG. NO.	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
E. BERGERON
DRAWN BY
L. BERGERON
CHECKED BY
D. OTO
IN CHARGE
B. NADELL
DATE
SDATE#

lightrail

BLEYCO **PARSONS BRINCKERHOFF** **TRANS DYN**

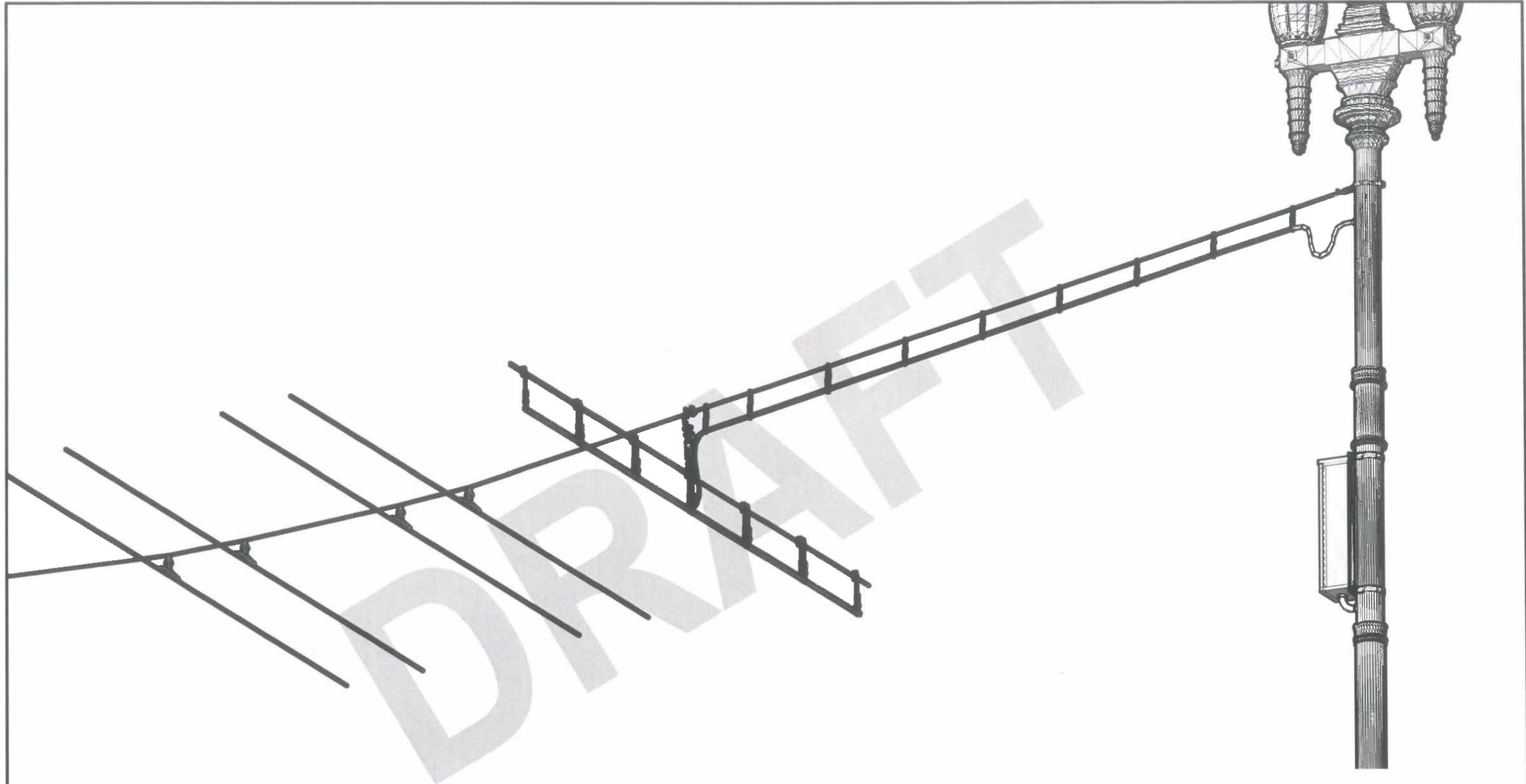
ZOON engineering

**LIGHTRAIL PROJECT
ELECTRICAL PLAN**

LIGHTRAIL - TYPICAL CROSS SECTION

CONTRACT NO.	CONTRACT #
DRAWING NO.	REV
DRAWING 016	000
SCALE	1/50"=1'0"
E016	

\$USER\$ \$TIME\$ \$DATE\$ \$FILE\$
 Plot Driver: D:\TDRVCS Pentabia: DENTRI



OUTPUTS TO LIGHTRAIL CATENARY FROM PATH OF GOLD POLE

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

\$USER\$
 \$TIME\$
 \$DATE\$
 \$FILES\$

REV	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY
 L BERGERON
 DRAWN BY
 L BERGERON
 CHECKED BY
 D CTO
 IN CHARGE
 B NADELL
 DATE
 5/24/08

lightrail

BLEYCO

PARSONS-BRINCKERHOFF

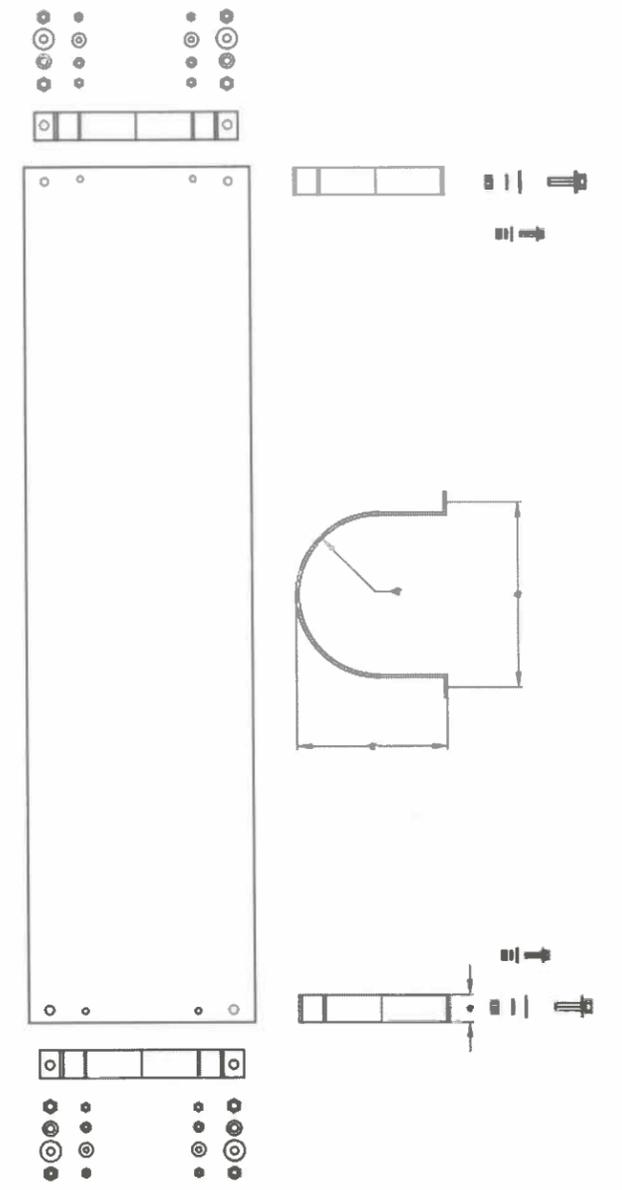
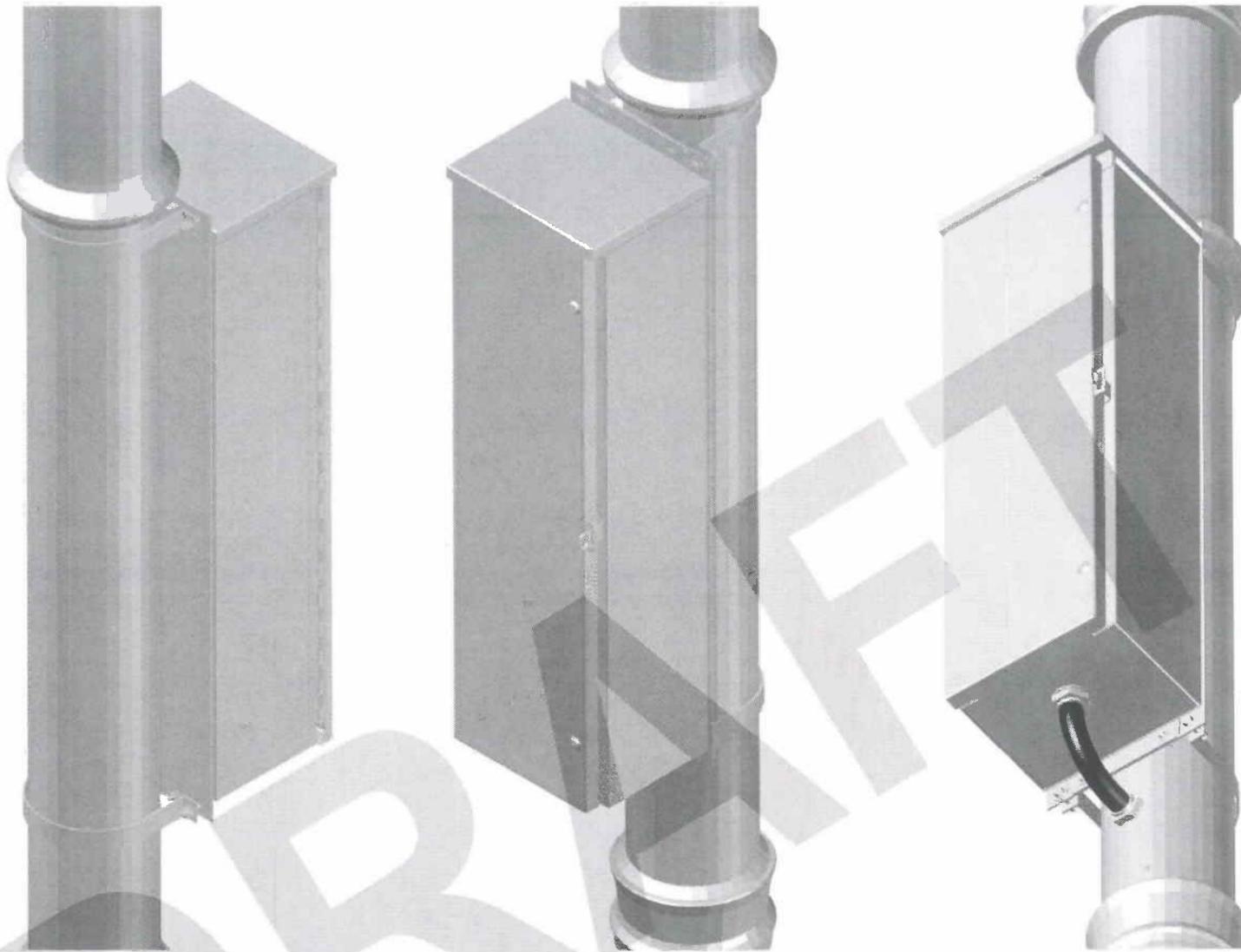
ZOOM engineering

TRANSDYN

LIGHTRAIL PROJECT
ELECTRICAL PLAN

FEED TO CATENARY FROM POG POLE

CONTRACT #	
DRAWING NO	REV
DRAWING 014	000
SCALE	
No Scale	
E-014	



DUAL DRIVER ENCLOSURE FOR 144FT LED LIGHTRAIL SECTION

MATERIALS LIST

- 1 ea Custom Enclosure: A11R408HCR NEMA 3R Hinge Cover Enclosure
- 1 ea Custom Back Panel: A11P40 Mounting Plate
- 1 lot Miscellaneous mounting hardware for LED Drivers and Communications Equipment
- 12 ea Terminals, Wire Clamp, IDEC #BNF
- 1 ea End Plate, Terminal Accessory IDEC #
- 2 ea End Clamp, Terminal Accessory IDEC #
- 1 ea Din Rail, Terminal Accessory IDEC #
- 4 ea 1/4-20 x 1" 316 Stainless Steel Hex Head Bolt
- 4 ea 1/4-20 316 Stainless Steel Hex Nut
- 8 ea 1/4" 316 Stainless Steel Flat Washer
- 4 ea 1/4" 316 Stainless Steel Lock Washer
- 4 ea 3/8-16 x 1-1/2" Stainless Steel hex head Bolt
- 4 ea 3/8-16 316 Stainless Steel hex Nut
- 8 ea 3/8" 316 Stainless Steel Flat Washer
- 4 ea 3/8" 316 Stainless Steel Lock Washer

DUAL DRIVER ENCLOSURE HARDWARE

THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.

REV	DATE	BY	APP	REG NO	EXPIRES	SEAL HOLDER	DESCRIPTION

DESIGNED BY L. BERGERON
DRAWN BY L. BERGERON
CHECKED BY D. OTO
IN CHARGE B. MADELL
DATE 03/20/15

lightrail

PARSONS BRINCKERHOFF

ZOON engineering

BLEYCO

TRANSDYN

**LIGHTRAIL PROJECT
ELECTRICAL PLAN**

LED DRIVER ENCLOSURE MOUNTING DETAILS

CONTRACT NO	
CONTRACT #	
DRAWING NO	
DRAWING 015	REV 000
SCALE	1/4" = 1.0"
	E-015

\$USER\$ \$TIME\$ \$DATE\$ \$FILE\$
 Plot Driver=\$PLTDRVS\$ Pentable=\$PENTBLS\$