THIS PRINT COVERS CALENDAR ITEM NO.: 14

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

DIVISION: Capital Programs and Construction

BRIEF DESCRIPTION:

Authorizing the Director of Transportation to execute Modification No. 13 to Contract No. 1289, Van Ness Corridor Transit Improvement Project, with Walsh Construction Company II, LLC, for direct costs related to various design changes in the amount of $1,240,049.98, for a total Contract amount not to exceed $221,747,266.01, with no time extension.

SUMMARY:

- On July 7, 2015, the SFMTA Board of Directors awarded Contract No. 1289, Van Ness Corridor Transit Improvement Project (the Contract), to Walsh Construction Company II, LLC (Walsh), in an amount not to exceed $800,000 and a term of 300 days, to provide pre-construction services for the Project.
- In August 2016, this Board approved Modification No. 1 for construction services, increasing the Contract to an amount not to exceed $193,827,555, with an overall term not to exceed five years.
- Contract Modifications 2 thru 12 were issued to add $26,679,661.03 and extend the term by 279 days.
- Contract Modification No. 13 is for the direct costs related to various design changes in the amount of $1,240,049.98 and no time extension.

ENCLOSURES:
1. SFMTAB Resolution
2. Contract Modification No. 13
3. Project Budget and Financial Plan
4. Van Ness Corridor Transit Improvement Project Final EIS/EIR: https://www.sfcta.org/projects/van-ness-improvement-project#panel-reports-documents
5. SFMTA Board Resolution No. 13-214: https://www.sfmta.com/sites/default/files/agendaitems/2016/09-17-13--13-214.pdf

APPROVALS:		**DATE**
DIRECTOR		July 28, 2021
SECRETARY		July 27, 2021

ASSIGNED SFMTAB CALENDAR DATE: August 3, 2021

PURPOSE

The purpose of this calendar item is to authorize the Director of Transportation to execute Modification No. 13 to Contract No. 1289, Van Ness Corridor Transit Improvement Project, with Walsh Construction Company II, LLC, for direct costs related to various design changes in the amount of $1,240,049.98, for a total Contract amount not to exceed $221,747,266.01, with no time extension.

STRATEGIC PLAN GOALS AND TRANSIT FIRST POLICY PRINCIPLES

Goal 1: Create a safer transportation experience for everyone
Objective 1.1: Achieve Vision Zero by eliminating all traffic deaths.
Objective 1.2: Improve the safety of the transit system.

Goal 2: Make transit and other sustainable modes of transportation the most attractive and preferred means of travel.
Objective 2.1: Improve transit service.
Objective 2.2: Enhance and expand use of the city's sustainable modes of transportation.
Objective 2.3: Manage congestion and parking demand to support the Transit First Policy.

Goal 3: Improve the environment and quality of life in San Francisco

Objective 3.2: Advance policies and decisions in support of sustainable transportation and land use principles

Objective 3.3: Guide emerging mobility services so that they are consistent with sustainable transportation principles

Transit First Policy Principles:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods
2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile.
3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety
4. Transit priority improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve pedestrian safety.
5. New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments
6. The ability of the City and County to reduce traffic congestion depends on the adequacy of regional public transportation. The City and County shall promote the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system.
7. The City and County shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service

provided by the Municipal Railway.

8. Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.

DESCRIPTION

Background

The Van Ness Corridor Transit Improvement Project (Project) will implement the first bus rapid transit (BRT) service in San Francisco, which will improve transit reliability for the 47 and 49 Muni routes and provide reliable transit connections to transfer routes.The ridership on these lines is historically about 45,000 passengers per day. The transit service and infrastructure changes are expected to reduce transit travel times by over 30%and increase ridership by about 33%.

Van Ness Avenue is a Vision Zero high-injury corridor. To improve safety, the Project will install pedestrian countdown timers, pedestrian bulb-outs, and eliminate the majority of left turns that currently exist along the corridor. In addition, the Project has replaced the City's 100-year-old sewer and water system along the length of the corridor, as well as selected sections of the auxiliary water supply system. The Project will also enhance the urban design of Van Ness Avenue. The project is about 78% completed. All the major underground sewer and water work has been completed. Currently, the contractor is constructing the BRT lanes, sidewalk, and traffic systems. The current project schedule shows substantial completion by the end of 2021.

Prior Contract Modifications

On October 7, 2014, the SFMTA Board of Directors adopted Resolution No. 14-147, which authorized the SFMTA to use a Construction Manager/General Contractor (CM/GC) project delivery method for the Project, to include a team of core trade subcontractors, minimum qualifications for the CM/GC and certain subcontractors; evaluation of the CM/GC primarily on non-cost criteria; and negotiation of a Guaranteed Maximum Price (GMP) with the selected CM/GC.

On July 7, 2015, the SFMTA Board of Directors awarded Contract No. 1289, Van Ness Corridor Transit Improvement Project (the Contract), to Walsh Construction Company II, LLC (Walsh), in an amount not to exceed $800,000 and a term of 300 days, to provide pre-construction services for the Project.

After Walsh and the City agreed to a GMP, the SFMTA prepared Contract Modification No. 1 to add the construction work. In August 2016, this Board approved Modification No. 1, which increased the Contract to an amount not to exceed $193,827,555, with an overall term not to exceed five years.

The following table represents all previous modifications to the Contract. Contract Modifications Nos. 4, 5, and 6 were approved by the Director of Transportation (DOT) under the authority given by SFMTA Board Resolution No. 1800821-115. Contract Modification 3 was approved by the DOT to form a Dispute Resolution Board at no additional cost to the Agency. The DOT approved Contract Modification No. 11 on July 24, 2020, under the authority given by SFMTA Board Resolution No. 191203-153.

MOD No.	Modification Description	Change	Approved By	Resolution No/Date

CM-1	Phase 2 CM/GC - Construction	$ 193,027,555.00	Board	16-110/8-16-2016
CM-2	Historic Street Lights & CIDH Pole Foundation Reinforcement	$ 4,463,160.98	Board	180821-115
CM-3	Formation of Dispute Resolution Board	0	DOT	7/5/2018
CM-4	Revisions to plans and specifications for sewer, water, landscaping, traction power, streetlights and roadway	$ 3,376,341.14	DOT	9/28/2018
CM-5	PCC # 8 - Traffic Signal Modifications to ET Drawings	$ 2,606,043.75	DOT	10/16/2018
CM-6	Payments for extra field work for various items, specification changes to sewer system, amendment of DRB process	$ 4,013,223.96	DOT	4/13/2019
CM-7	Resolution of Claim Nos. 1 and 2	$ 4,819,650.00	Board	190716-092
CM-8	Resolution of Claim No. 3	$ 1,709,201.81	Board	190820-104
CM-9	Additional Out-Of-Sequence Sewer and Roadway Work	$ 633,003.16	Board	2002018-015
CM-10	Miscellaneous additional work	$ 2,187,655.23	Board	200519-047
CM-11	Allowance for Safe Work Practices due to COVID-19	$ 282,000.00	DOT	7/24/2020
CM-12	Pedestrian Monitoring Services	$ 2,589,381.00	Board	201215-112
	Prior Contract Total (including $800K Pre-construction services)	$220,507,216.03		

Contract Modification No. 13 (CM-13)

This contract modification will pay for various design revisions due to field conflicts, traffic signal layout modifications, additional red light cameras, foundation modifications to the San Francisco Art Commision artwork at O'Farrell and Geary Street stations, electrical cover plates for the boarding islands, and modifications to trolley switch installations.

Item	Description	Quantity	Unit	Unit Price	Extension
1	Traffic Signal Changes	1	LS	$410,358.00	$410,358.00
2	Red Light Cameras at Broadway	1	LS	$103,950.00	$103,950.00
3	Traffic Camera Pole Changes at Lombard	1	LS	$14,910.00	$14,910.00
4	San Francisco Art Commission Artwork foundation modifications	1	LS	$101,876.19	$101,876.19
5	Electrical Covers on Boarding Islands	1	LS	$405,413.44	$405,413.44
6	Trolley Related Changes at	1	LS	203,542.35	$203,542.35

Item	Description	Quantity	Unit	Unit Price	Extension
	Union and Eddy				
				CM-13:	**$1,240,049.98**

Walsh, the contractor, sent a letter that they will not agree to the terms of this contract modification since it does not provide a time extension. Since Walsh did not request any specific delay days for the work, and did not submit any time impact evaluation demonstrating delay related to these tasks, the SFMTA elected to issue this contract modification as unilateral for the direct costs, which were verified.

STAKEHOLDER ENGAGEMENT

The details of this contract modification were presented to the Van Ness Community Advisory Committee on May 27, 2021, and made public on the SFMTA website as part of the materials for the meeting. The contract modification was also discussed in the May Public Officials Brief that is sent to approximately 300 public officials and their staff throughout the City and the State.

ALTERNATIVES CONSIDERED

No alternatives are available as the additional work must be performed as part of construction of the Project

FUNDING IMPACT

Contract Modification No. 13, in the amount of $1,240,049.98, will be funded through the existing approved budget for the Project. There are funds available within the approved Funding Sources, as detailed below:

Funding Sources	Amount
FTA 5309 Small Starts	$74,999,999
Active Transportation Program	$4,058,000
California Pacific Medical Center Contribution	$5,000,000
Central Freeway Parcel Revenues	$12,654,135
FTA 5307 Formula Funds	$3,980,000
FTA 5309 State of Good Repair Funds	$23,871,440
FTA Congestion Mitigation and Air Quality	$20,000,000
PPM: Planning, Programming and Monitoring funds	$197,907
Prop B Population based General Fund Set Aside	$8,134,232
Prop K Sales Tax	$44,898,444
PUC Local Funds	$61,543,618
SFMTA Series 2013 Revenue Bonds	$1,765,751
SFMTA Series 2016 Revenue Bonds	$48,000,000

State Highway Operation and Protection Program (SHOPP)	$7,304,868
TOTAL	$316,408,394

This Contract Modification will not likely result in the Project exceeding its total budget of $316.4 million and there are sufficient remaining contingency funds for the Project. However, the December

2020 Risk Register recognized new risks, chiefly the soft costs needed until the anticipated substantial completion by end of 2021of the project. Based on the new information, the project team has revised the estimate at completion (EAC), which is approximately $346M, an increase of $29.5 million. Not included in the EAC are claims under review, including a claim submitted by Walsh for $54.0 million currently under review.

As detailed in the above table, the Project is funded by multiple sources. Final cost share and funding for anticipated increases over the current budget have yet to be identified. In anticipation of needed funds, on January 19, 2021, the SFMTA Board approved the issuance of new revenue bonds, which include $35.0 million for construction projects within the SFMTA Transit Optimization Program which includes the Project described herein. Further, on June 11, 2021, the Federal Transit Administration (FTA) announced an allocation of $21.9 million to the Project described herein from the American Rescue Plan Act of 2021 (ARP). The ARP funds are made available through the FTA Capital Investment Grants (CIG) program which adds $250.0 million in funding to 22 FTA Small Starts projects across the nation.

ENVIRONMENTAL REVIEW

On September 10, 2013, the San Francisco County Transportation Authority (SFCTA), as lead agency under California Environmental Quality Act (CEQA), certified the Final Environmental Impact Statements (EIS)/Environmental Impact Report (EIR) for the Van Ness Corridor Improvement Project under Resolution 14-18, adopted CEQA Findings and a Statement of Overriding Considerations, adopted the Mitigation Monitoring and Reporting Plan, and approved the Locally Preferred Alternative (LPA). The certification of the Final EIS/EIR included incorporating the Vallejo Northbound Station Variant into the Project.

On September 17, 2013, the SFMTA Board of Directors, acting in the capacity as a responsible agency under CEQA, adopted Resolution No. 13-214, approving the Project, analyzed as the LPA in the Final EIS/EIR, including an amendment to include the Vallejo Northbound Station Variant in the approval of the LPA. As part of the resolution, the Board also adopted the CEQA Findings, a Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Plan for the Final EIS/EIR and authorized the Director of Transportation to direct staff to continue with obtaining the necessary approvals to implement the Project.

On December 20, 2013, the Federal Transit Administration issued a Record of Decision for the Project, determining that the requirements of the National Environmental Policy Act have been met through the Final EIS document and process.

Since the adoption of CEQA Findings and the approval of the Project, the San Francisco County Transportation Authority has prepared a memo to file dated July 15, 2014, titled “Van Ness Avenue Bus Rapid Transit Project – Environmental Compliance for the Proposed Parking Removal from Conceptual Engineering Report” (Memo to File), which concludes that the removal of 11 parking spaces more than

assumed in the Final EIS/EIR, as proposed by SFMTA in the Conceptual Engineering Report, would not result in a new significant environmental impact due to parking loss.

As mentioned above, on July 7, 2015, the SFMTA Board of Directors authorized the award of the Contract for Phase 1 (pre-construction services), for a target duration of 300 days, and in an amount not to exceed $800,000. At that time, the Board reviewed and considered the EIS/EIR and record as a whole and found that the Final EIS/EIR was adequate for its use as the decision-making body for the approval of the Contract, found that the actions being taken were within the scope of the EIS/EIR, and incorporated the CEQA findings contained in its Resolution No. 13-214, including the Statement of

Overriding Considerations, and found that no additional environmental review would be required under Public Resources Code Section 21166.

On March 4, 2016, the SFCTA issued an "Addendum to Environmental Impact Report" for the Project, which concludes that removal and replacement of various trees along the Van Ness corridor not previously identified in the Final EIS/EIR would not result in a new significant environmental impact.

The proposed Modification No. 13 to Contract No. 1289 that is the subject of this calendar item would include additional costs related to pedestrian monitoring services. The proposed Contract Modification is within the scope of the Final EIS/EIR.

A copy of the Van Ness Corridor Improvement Project Final EIS/EIR can be found in the records of the Planning Department at https://sfplanning.org/ and 49 South Van Ness Avenue, Suite 1400 in San Francisco, and is incorporated herein by reference.

OTHER APPROVALS RECEIVED OR STILL REQUIRED

The SFMTA Contract Compliance Office continues to monitor the Contract for compliance with the Small Business Enterprise (SBE) participation goals, and concurs with this Modification.

The Contract Compliance Office has established SBE goals for each of the core subcontracts packages:

Paving 25%
Overhead Contact System 20%
Traffic Control 10%

The City Attorney's Office has reviewed this calendar item.

No other approvals are required for this Contract Modification.

RECOMMENDATION

Staff recommends that the SFMTA Board authorize the Director of Transportation to execute Modification No. 13 to Contract No. 1289, Van Ness Corridor Transit Improvement Project, with Walsh Construction Company II, LLC, for direct costs related to various design changes in the amount of $1,240,049.98, for a total Contract amount not to exceed $221,747,266.01, with no time extension.

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. _____

WHEREAS, The Van Ness Corridor Transit Improvement Project (formerly known as the Van Ness Bus Rapid Transit Project) (the Project) will implement the first Bus Rapid Transit (BRT) service in San Francisco, which will improve transit reliability for the 47 and 49 Muni routes and provide reliable transit connections to transfer routes; and,

WHEREAS, On July 7, 2015, the SFMTA Board of Directors adopted Resolution No. 15-108, awarding Contract No. 1289, Van Ness Corridor Transit Improvement Project (Contract), to Walsh Construction Company II, LLC (Walsh) in the amount of $800,000 and a for a term of 300 days, to provide pre-construction services for the Project; and,

WHEREAS, On August 16, 2016, the SFMTA Board of Directors adopted Resolution No. 16-110, authorizing Modification No. 1 to the Contract for construction of the Project in the amount of $193,027,555, for a total contract amount of $193,827,555, with an overall contract term not to exceed five years; and,

WHEREAS, On August 21, 2018, the SFMTA Board adopted Resolution No. 180821-115, approving Contract Modification No. 2 to the Contract for changes to the overhead contact system trolley/light poles and foundations, increasing the Contract amount by $4,463,160.98, for a total Contract amount not to exceed $198,290,715.98, with no extension of time; and authorizing the Director of Transportation to approve up to an additional aggregate of $10,000,000 in future amendments to Contract No. 1289 without further approval of the SFMTA Board; and,

WHEREAS, Contract Modifications Nos. 3 through 6, executed by the Director of Transportation, increased the Contract amount by $9,995,608.85, for a total Contract amount not to exceed $208,286,324.83, with no extension of time; and,

WHEREAS, The SFMTA Board adopted Resolutions Nos. 190716-092, 190820-104, 200218-015, and 200519-047, approving Contract Modifications Nos. 7 through 10, respectively, increasing the Contract amount by $9,349,510.20, for a total Contract amount not to exceed $217,635,835.03, and extending the time to substantial completion by 279 days; and,

WHEREAS, Contract Modification No. 11, executed by the Director of Transportation under Board Resolution No. 191203-153, increased the Contract amount by $282,000, for a total Contract amount not to exceed $217,917,835.03, with no extension of time; and,

WHEREAS, Contract Modification No. 12, executed by the Director of Transportation under Board Resolution No. 201215-112, increased the Contract amount by $2,589,381, for a total Contract amount not to exceed $220,507,216, with no extension of time; and,

WHEREAS, Contract Modification No. 13 will resolve direct costs related to various design changes in the amount of $1,240,049.98, for a total Contract amount not to exceed $221,747,266.01, with no time impact; and,

WHEREAS, On September 10, 2013, the San Francisco County Transportation Authority, as lead agency under California Environmental Quality Act (CEQA), certified the Final Environmental Impact Statement/ Environmental Impacts Reports (EIS/EIR) under Resolution 14-18, adopted CEQA Findings and a Statement of Overriding Considerations, adopted the Mitigation Monitoring and Reporting Plan, and approved the Locally Preferred Alternative (LPA); the certification of the Final EIS/EIR included incorporating the Vallejo Northbound Station Variant into the Project; and,

WHEREAS, On September 17, 2013, the SFMTA Board of Directors, acting in the capacity as a responsible agency under CEQA, adopted Resolution No. 13-214, approving the Project, analyzed as the LPA in the Final EIS/EIR, including an amendment to include the Vallejo Northbound Station Variant in the approval of the LPA; as part of the resolution, the Board also adopted the CEQA Findings, a Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Plan for the Final EIS/EIR, and authorized the Director of Transportation to direct staff to continue with obtaining the necessary approvals to implement the Project; and,

WHEREAS, On December 20, 2013, the Federal Transit Administration issued a Record of Decision for the Project, determining that the requirements of the National Environmental Policy Act have been met through the Final EIS document and process; and,

WHEREAS, On March 4, 2016, the San Francisco County Transportation Authority issued an "Addendum to Environmental Impact Report" for the Project, which concluded that removal and replacement of various trees along the Van Ness corridor not previously identified in the Final EIS/EIR would not result in a new significant environmental impact; and,

WHEREAS, As mentioned above, on July 7, 2015, the SFMTA Board of Directors authorized the award of the Contract for Phase 1 pre-construction services to Walsh, having reviewed and considered the EIS/EIR and record as a whole and found that the Final EIS/EIR was adequate for its use as the decision-making body for the approval of the Contract; the Board also found that the actions being taken were within the scope of the EIS/EIR, incorporated the CEQA findings contained in its Resolution No. 13-214, including the Statement of Overriding Considerations, and further found that no additional environmental review would be required under Public Resources Code section 21166; and,

WHEREAS, The proposed Modification No. 13 to Contract No. 1289 would include direct costs related to various design changes as described above and is within the scope of the Final EIS/EIR; and,

WHEREAS, A copy of the Van Ness Corridor Improvement Project Final EIS/EIR is on file with the Secretary to the SFMTA Board of Directors, and may be found in the records of the Planning Department at https://sfplanning.org/ and 49 South Van Ness Avenue, Suite 1400 in San Francisco, and is incorporated herein by reference; now, therefore, be it,

RESOLVED, That the SFMTA Board has reviewed and considered the Van Ness Bus Rapid Transit Project Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR) and record as a whole, finds that the Final EIS/EIR is adequate for the Board's use as the decision-

making body for the actions taken herein relative to construction of the Project, and incorporates the CEQA findings by this reference as though set forth in this Resolution; and be it further

RESOLVED, That the SFMTA Board further finds that since the Final EIS/EIR was finalized, there have been no substantial Project changes and no substantial changes in Project circumstances that would require major revisions to the Final EIS/EIR due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there is no new information of substantial importance that would change the conclusions set forth in the Final EIS/EIR; and be it further

RESOLVED, That the SFMTA Board of Directors authorizes the Director of Transportation to execute Modification No. 13 to Contract No. 1289, Van Ness Corridor Transit Improvement Project, with Walsh Construction Company II, LLC, for direct costs related to various design changes in the amount of $1,240,049.98, for a total Contract amount not to exceed $221,747,266.01, with no time extension.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of August 3, 2021.

_____

Secretary to the Board of Directors
San Francisco Municipal Transportation Agency

CONTRACT MODIFICATION NO. 13 (UNILATERAL)

San Francisco Municipal Transportation Agency
Contract No. 1289

Contractor:
Walsh Construction Company II, LLC

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

180 Redwood Street, Suite 300

San Francisco, CA 94102

The Contract is modified as follows:

1. Perform the following work: Amount

CM-13.01 **PCC 21 – Traffic Signal Changes due to Traffic Signal Layout Walkthrough** **$410,358.00**

As a result of the Traffic Signal layout walkthrough between the Contractor and SFMTA, all traffic signal work shall be performed in compliance with the revised drawings issued in RE Letter # 1142 (Attachment 1). Furnish all labor, materials, and equipment necessary to perform all work as shown in the revised drawings.

The price paid includes escalation costs of all the poles affected by this change that could not be ordered in a timely manner at the cost quoted by the pole supplier during negotiations of the GMP. The compensation also includes, but is not limited to, costs for additional traffic routing to facilitate installation of all the poles complete in place.

The price also includes emergency repair work performed at the Sutter/Van Ness intersection on December 26, 2019.

The price above **($410,358.00)** is full compensation for the direct costs of the Work described below per negotiations between Walsh and SFMTA on January 13, 2020 and February 21, 2020, as memorialized in RE letter # 1524 and Walsh letter SFMTA-1985.

The changed work is as follows:

Credit due to Deleted Traffic and Pedestrian Signal Post - ($65,392.00)

Various traffic and pedestrian signal posts are changed in accordance with the revised drawings resulting in reduction of poles and signal heads.

- Delete 1 each of (3S12") 3-Section, 12-inch Vehicle Signal Face with Type 1 LED Red, Yellow, and Green (Pay Item ET-1)
- Delete 3 each of (SV-1-T) One Way Side Mounted Vehicle Signal Mounting with Terminal Compartment (Pay Item ET-21)
- Delete 1 each of (TP-1) One Way Top Mounted Pedestrian Signal Mounting (Pay Item ET-30)
- Delete 2 each of Pole Type 1-A (7') with Concrete Foundation (Pay Item ET-33)
- Delete 2 each of Pedestrian Push Button Poles with Concrete Foundations (Pay Item ET- 36)
- Delete 1 each of Transit Signal Push Button Assembly (Pay Item ET-37)
- Delete 2 each of Bollard with Concrete Foundation (Pay Item ET-39)
- Delete 1 each of Type 18-2-100 Pole with 25' Signal Mast Arm, MAS mounting, and Concrete Foundation (Pay Item ET-64)
- Delete 1 each of Type 23-4-100 Pole with 35' Horizontal Signal Mast Arm, MAS mounting, and Concrete Foundation (Pay Item CM-5.10)

Contractor shall be paid 100% of the original contract value for the CM-5.10 item and the various ET Items affected by this change and the credit for all deleted work shall be taken under CM-13.01.

b) Poles in Place Cost $465,250.00

Remove 30 existing pole foundations in their entirety instead of 3 feet below finished grade as required under the Contract, install 19 traffic and pedestrian signal poles at the same location as existing poles that conflict with facilities in the sidewalk. Perform temporary work such as temporary poles for streetlights and signals, temporary wiring, and temporary supports.

- Add 1 each of Type 1-A (13') pole with Concrete Foundation
- Add 1 each of Type 16-1-100 Pole with 10' Signal Mast Arm, MAS mounting, and Concrete Foundation
- Add 2 each of (TV-1-T) One Way Top Mounted Vehicle Signal Mounting with Terminal Compartment (ET-18)
- Add 1 each of (SV-2-TA) Two Way Side Mounted Vehicle Signal Mounting with Terminal Compartment in Configuration A (ET-22A)
- Add 2 each of (SP-1) One Way Side Mounted Pedestrian Signal Mounting (ET-27)
- Additional 19 Poles in Place
- Remove 30 each of pole foundations in their entirety (partial pole foundation removal was part of contract)
- Provide 20 each of temporary work with wiring and/or poles (Temporary Streetlights, Traffic Signals)
- Provide all necessary Traffic Control

c) Relocate Guy Wire $10,500.00

Relocate overhead guy wire at Chestnut Street intersection to accommodate

construction of signal pole at new location.

CM-13.02 **Red Light Cameras at Broadway** **$103,950.00**

Furnish materials for and install pole foundations for red light cameras at the intersection of Broadway and Van Ness Avenue as shown on Contract Drawings ET-123.0 Revision 3, ET-123.1 Revision 3, and ET-123.2 Revision 3 (Attachment 1).

Install City-furnished red light camera poles, cameras, strobes, cabinets, and other ancillary hardware as necessary.

Furnish all labor, materials, and equipment necessary to perform all work as shown in the revised drawings.

The price above ($103,950.00) is full compensation for the direct costs of the Work described above per negotiations between Walsh and SFMTA on January 13, 2020 and February 21, 2020 as memorialized in RE Letter #1524.

CM-13.03 **Traffic Camera Pole Changes at Lombard – Field Memo No. 309** **$14,910.00**

Furnish and install new Pole # J, change Pole # H to type 1-A pole, and install traffic camera on new Pole # J and other ancillary hardware as necessary and as shown in Contract Drawings ET-129.0 Revision 4, ET-129.1 Revision 4, and ET-129.2 Revision 4 (Attachment 2) issued with Field Memo 309R1. Furnish all labor, materials, and equipment necessary to perform all work as shown in the revised drawings.

The price above ($14,910.00) is full compensation for the Work described above per negotiations between Walsh and SFMTA on January 13, 2020 and February 21, 2020 as memorialized in RE Letter #1524. The compensation also includes, but is not limited to, costs for additional traffic routing to facilitate all the work shown in the revised drawings complete in place.

CM-13.04 **PCC 23 – San Francisco Arts Commission Artwork** **$101,876.19**

Furnish and install foundation and electrical infrastructure work associated with the Jorge Pardo Artwork at O' Farrell and Geary Street Stations. The work includes, but is not limited to, the following:

a. Site preparation work for the artwork foundation.
b. Electrical infrastructure work associated with the artwork
    I. Conduit
    II. Wiring
    III. Pull boxes.
        Note: Platform pull boxes to match other platform pull boxes
    IV. Ground rods
c. Furnishing and installing the artwork foundation
d. Preparing submittal as specified.
e. Coordinating and scheduling required special inspections
f. Coordinating and scheduling inspections to be performed by the SFAC or their designated representative. SFAC required the following inspections (minimum 10 Working Day advance notice). No work shall be concealed until the SFAC provides written Acceptance.

i. Site preparation for the artwork foundation (installation of the reinforcing steel, anchor bolts and other related items).
ii. Reinforcing steel and anchor bolts

All work shall be performed as shown in the attached drawings (Attachment 3) and as shown in table below.

Item No.	Drawing No.	Description	Revision No.
1	A1.1	Site Plan	0
2	A2.1	Plan	1
3	A3.1	Elevations	1
4	A3.2	Elevations	3
5	A3.3	Elevations & Sections	0
6	S1	Structural Details	0
7	E0.00	Electrical Legends, Abbreviations, and Drawing List	0
8	E1.00	Site Plan	0
9	E4.00	Electrical Enlarged Plans	0
10	E6.00	Electrical Details	0
11	E6.01	Electrical Details	0
12	E6.02	Electrical Details	0
13	E6.03	Electrical Details	0
14	A6.1	Reference Document Color Palette	0
15	A6.2	Reference Document – 3D Views	0
16	A6.3	Reference Document - 3D Views	0
17	A6.4	Reference Document - 3D Views	0
18	A6.5	Reference Document - 3D Views	2

All work shall be performed as specified in the new Technical Specification Division 26 – Electrical Systems (Attachment 4).

The price above ($101,876.19) is full compensation for the direct cost of furnishing all labor, materials, equipment, and Incidental Work necessary to perform all work as shown in the drawings per agreement between Walsh and SFMTA as memorialized in RE Letter #1659. The compensation also includes, but is not limited to, costs for additional traffic routing to facilitate all the work shown in the revised drawings complete in place and quality control.

CM-13.05 WunderCover **$405,413.44***

Furnish and install 158 each of stainless steel WunderCover HSA54-0197 instead of cast iron Oz-Gedney YU-161208 junction boxes at all boarding islands, and at every electrical, communication, and LED drivers pull box locations as shown in the attached revised and new Contract Drawings (Attachment 5) and as listed

below:

Item No.	Drawing No.	Revision No.	Item No.	Drawing No.	Revision No.
1	AR-01	1	15	AR-15	1
2	AR-02	1	16	AR-16	1
3	AR-03	1	17	AR-17	1
4	AR-04	1	18	AR-18	1
5	AR-05	1	19	AR-19	1
6	AR-06	1	20	AR-19A	0 - New
7	AR-07	1	21	AR-20	1
8	AR-08	1	22	AR-21	1
9	AR-09	1	23	AR-22	1
10	AR-10	1	24	AR-23	1
11	AR-11	1	25	AR-24	1
12	AR-12	1	26	AR-25	1
13	AR-13	1	27	AR-26	0 – New
14	AR-14	1	28	AR-29	4

The price above ($405,413.44) is full compensation for the direct costs of furnishing all labor, materials, equipment, and Incidental Work necessary to complete all work as shown in the AR drawings (including quality control) per agreement between Walsh and SFMTA, as memorialized in RE Letter #1633.

*Includes credit of $127,848.46 for deleted Oz-Gedney YU-161208 junction boxes.

CM-13.06 PCC 18 (Partial) – Trolley Related Changes at Union and Eddy **$203,542.35**

Furnish and install approximately 400 LF of 2-inch and 150 LF of 4-inch galvanized rigid steel conduits at the Union and Eddy Street intersection as shown in the attached drawings (Attachment 6) to accommodate future trolley switches. The work includes, but is not limited to, furnishing and installing necessary pull boxes, elbows, couplings, and pipe caps as shown in the drawings.

The price above is full compensation for furnishing all labor, materials, equipment, and Incidental Work necessary to complete all work as shown in the attached drawings, including traffic control, temporary sidewalk, street base, Hot Mix Asphalt, de-energization of existing OCS and Muni Pole/de-pole, and quality control, per agreement between Walsh and SFMTA on March 3, 2020 and as memorialized in RE Letter #1525.

2. Add and adjust the following Contract Bid Items:

A. For CM-13, following new Pay Items are added:

New Pay Item	Description	Quantity	Unit	Unit Price	Extension
CM-13.01	PCC 21 – Traffic Signal	1	LS	$410,358.00	$410,358.00

New Pay Item	Description	Quantity	Unit	Unit Price	Extension
	Changes				
CM-13.02	Red Light Cameras at Broadway	1	LS	$103,950.00	$103,950.00
CM-13.03	Traffic Camera Pole Changes at Lombard	1	LS	$14,910.00	$14,910.00
CM-13.04	PCC 23 – San Francisco Art Commission Artwork	1	LS	$101,876.19	$101,876.19
CM-13.05	WunderCover	1	LS	$405,413.44	$405,413.44
CM-13.06	PCC 18 (Partial) – Trolley Related Changes at Union and Eddy	1	LS	203,542.35	$203,542.35
				Subtotal CM-13:	**$1,240,049.98**

Contract Modification 13 Total:	**$1,240,049.98**
Previous Contract Total:	**$220,507,216.03**
New Revised Contract Total:	**$221,747,266.01**

Total Contract Time added by this Contract Modification:	**None**
Previous Contract Substantial Completion Date:	07/21/2020
Current Contract Substantial Completion Date:	07/21/2020

3. This Modification is made in accordance with Articles 6 of the Contract General Provisions.
4. Except as provided herein, all previous terms and conditions of the Contract remain unchanged.

Attachments:

1. Attachment 1 – RE Letter # 1142 with revised ET Drawings
2. Attachment 2 – Traffic Camera Change Drawings at Lombard
3. Attachment 3 – PCC 23 Drawings
4. Attachment 4 – PCC 23 Technical Specification – Division 26
5. Attachment 5 – Revised AR Drawings
6. Attachment 6 – Trolley Switch Revision Sketches PCC 18 (Partial)

In Witness Whereof, the SFMTA has executed this Modification in San Francisco, California, as of this date: _____.

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

By:_____

Jeffrey P. Tumlin
Director of Transportation

Authorized By:

San Francisco Municipal Transportation Agency
Board of Directors

Resolution No. _____

Adopted: _____

Attest:

_____
Secretary, SFMTA Board of Directors

APPROVED AS TO FORM:
Dennis J. Herrera, City Attorney

By:_____

Robin M. Reitzes
Deputy City Attorney

Attachment 1

July 25, 2019

RE Letter #1142

Mr. Barry Pihowich
Walsh Construction Company II, LLC
180 Redwood Street, Suite 300
San Francisco, CA 94102

PROJECT: Contract CN-1289, Van Ness Corridor Transit Improvement Project
SUBJECT: Request for Updated Traffic Signal Drawings
Ref: Walsh Letter #SFMTA-1432

Dear Mr. Pihowich:

SFMTA is in receipt of Walsh Letter #SFMTA-1432 dated 7/2/2019 requesting revised traffic signal drawings. As requested, please find enclosed for your use and construction revised traffic signal drawings. These drawings have been updated to the next subsequent revision number and include changes made through RFI's. However, they do not reflect all changes made through field memos.

If you have any questions, please contact me.

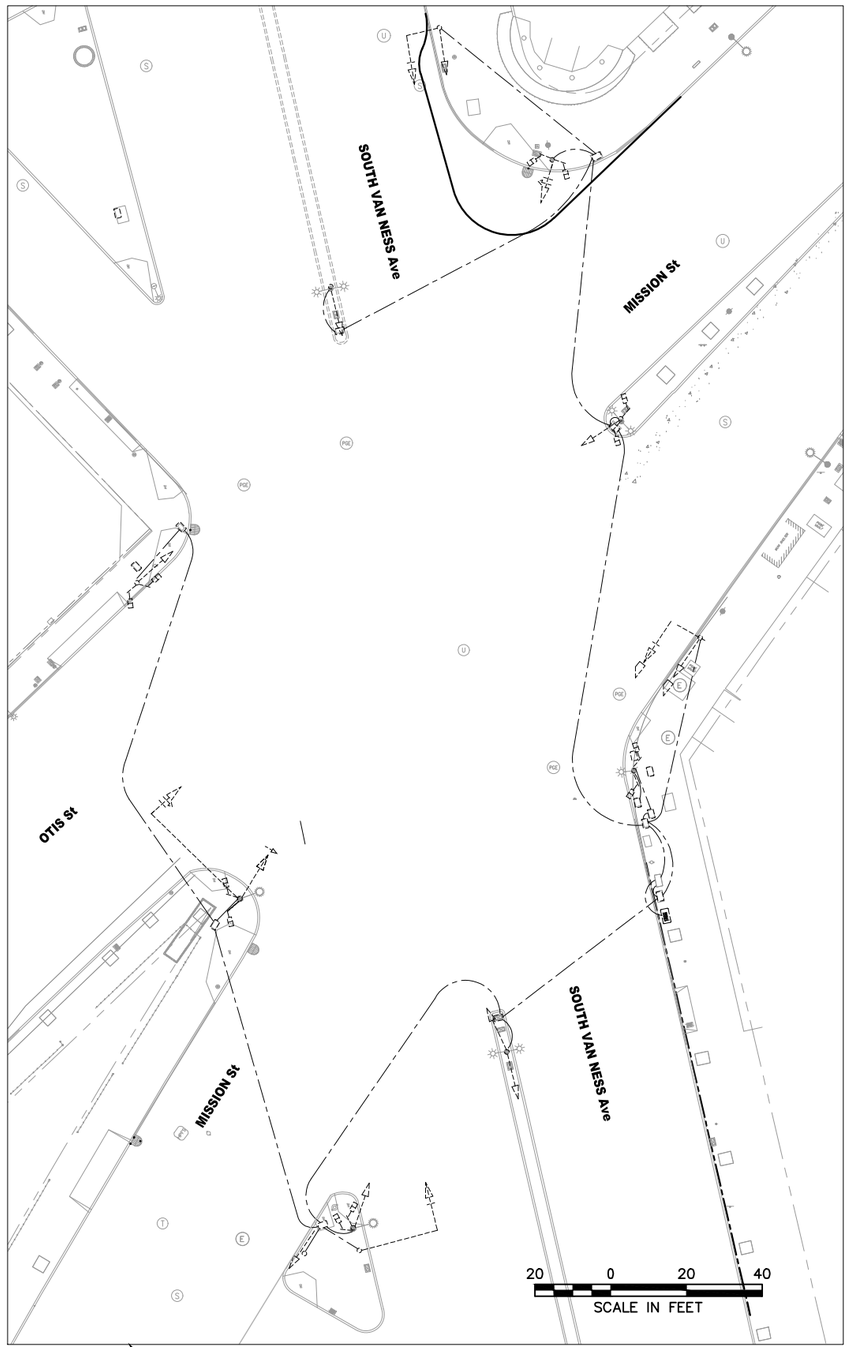
Sincerely,

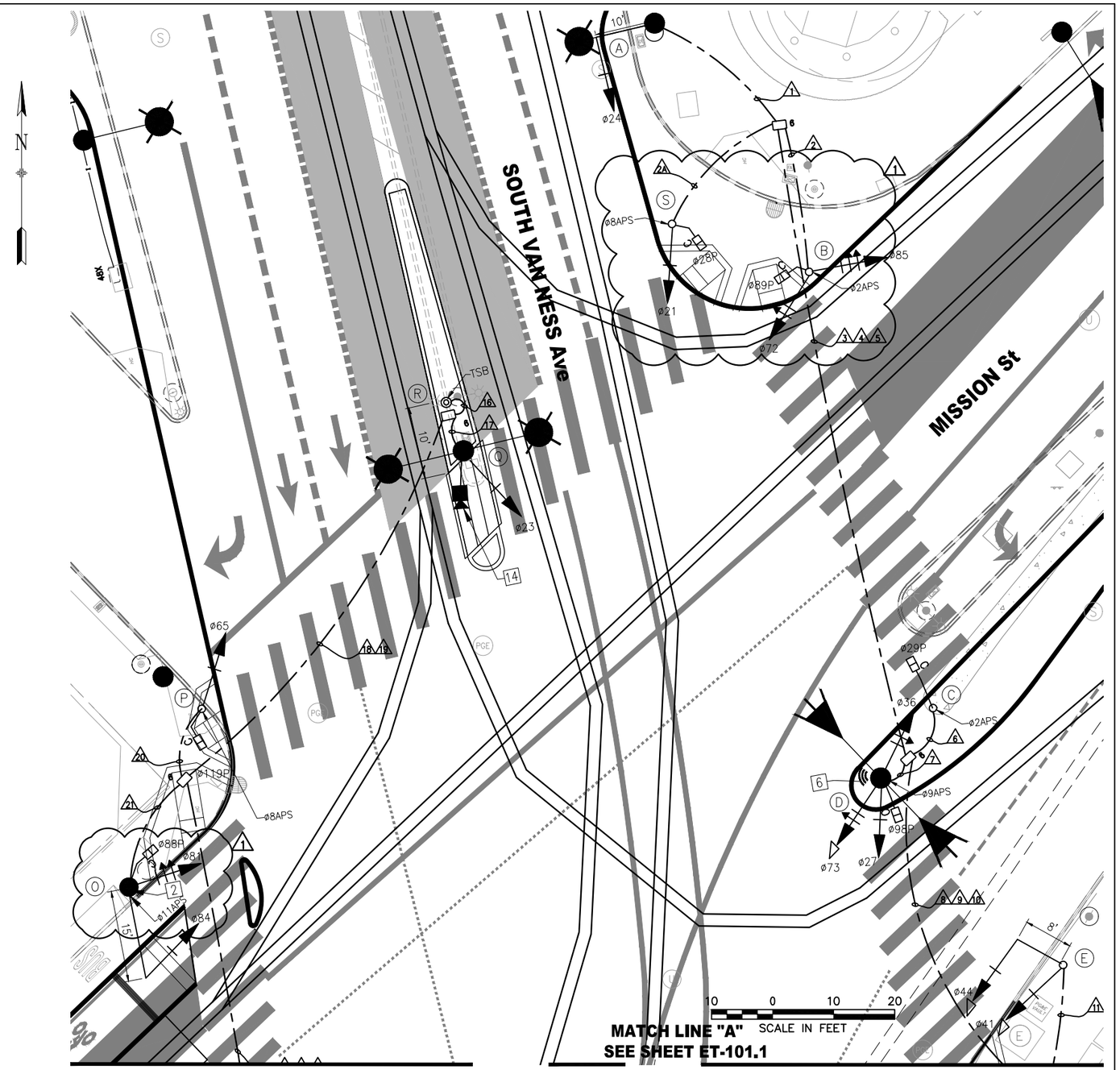
Hubert Wong
Resident Engineer

Enc: Traffic Signal (ET) Drawings

Cc:

File .201	Peter Gabancho	Chris Nocon	Kat Mandapat
	Kannu Balan	Lance Jackson	Manito Velasco
	Kevin Luu	Keanway Kyi	





9 10 11

EXISTING EQUIPMENT

FOR ORIGINAL SIGNATURES, SEE ET-101.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	MOVED POLE B AND CONDUIT 2, RELOCATED PED SIGNAL	KK	MV	CL
		28, SIGNAL 81 AND 85 CHANGED TO 5S12"YGRA, ADDED			
		POLE S AND CONDUIT 2A, ADDED TYPE 6X PULLBOXES			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MISSION/OTIS STREET
TRAFFIC SIGNAL WORK

1289

ET-101.0
ET-204

REVISION 2

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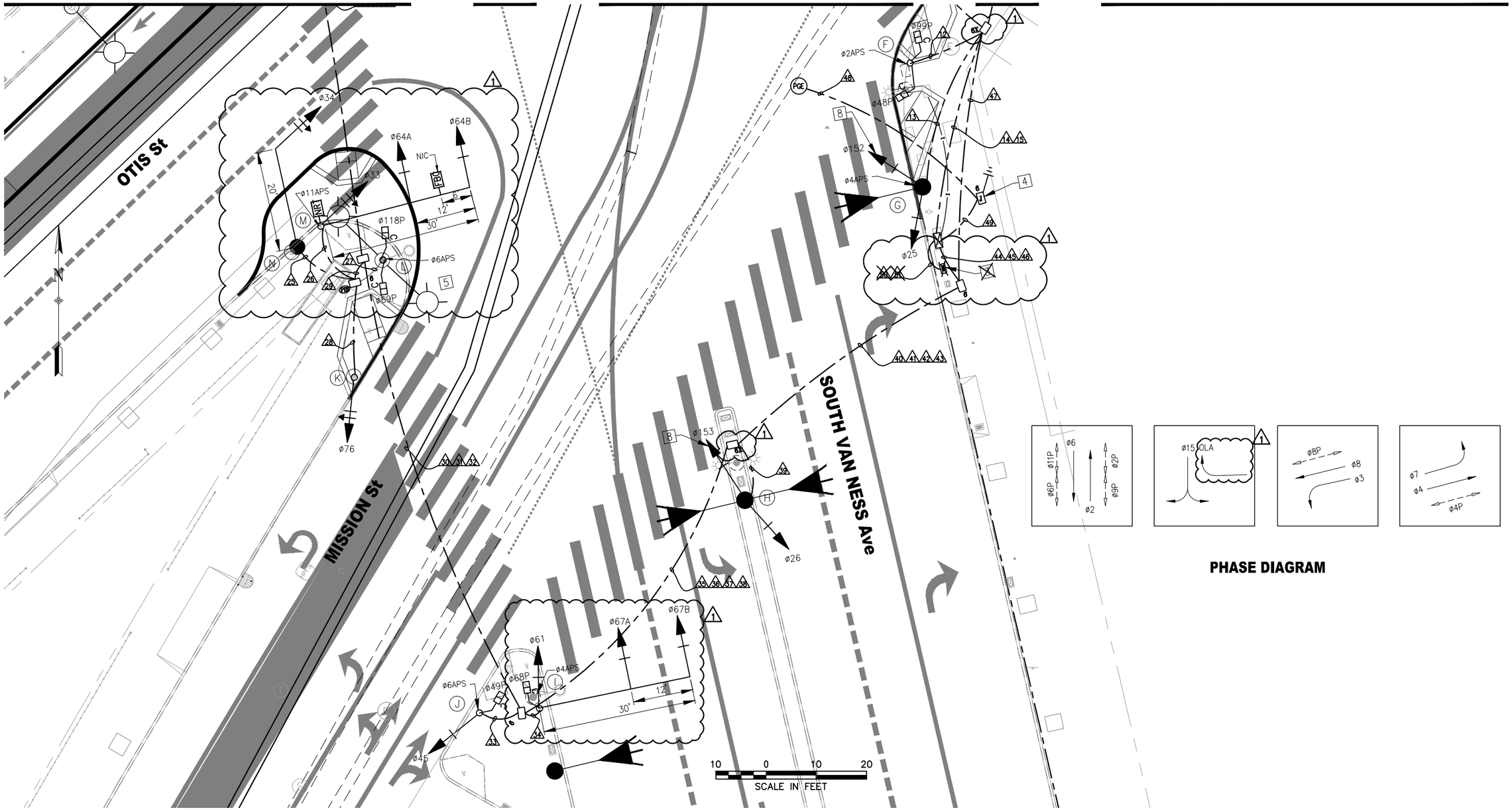
MATCH LINE "A"
SEE SHEET ET-101.0



PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-101.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	MOVED NRT SIGN, ADDED FBC SIGN ON POLE M, REMOVED BBS, ADDED SIGNALS 64A AND 67A, ADDED TYPE 6X PULLBOXES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MISSION STREET
TRAFFIC SIGNAL WORK

1289

ET-101.1
ET-204

REVISION 2

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	10	99 / 13	24	3S12"	MAS	T		–	–	–	–	
Ⓑ	1–A (10')	–		72 85	3S12"LA 5S12"YGRA (1)	TV–2–T	T		89	1S–COUNT	SP–1	–	APS ⟨1⟩ (1)
Ⓒ	1–A (7')	–	(1)	–	–	–	–		29	1S–COUNT	TP–1	–	APS ⟨1⟩
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	1511 / N1511 S1511	27 36 73	3S12" 3S12"LA 4S12"GLA–LAV	SV–3–TA	T T L		98	1S–COUNT	SP–1	–	
Ⓔ	16–1–100	8		44 41	3S12"LAV 3S12"LAV	MAS SV–1–T	L L		–	–	–	–	
Ⓕ	1–A (10') (1)	–		–	–	–	–		48 99	1S–COUNT 1S–COUNT	SP–2–T (1)	–	APS ⟨1⟩ POLE CAP (1)
Ⓖ	SIGNAL, SL & OCS COMBO POLE	–	103 / 11	25 152	3S12" 3S12"LRB	SV–2–TA	T T		–	–	–	–	APS ⟨1⟩ TSP ⟨2⟩
Ⓗ	SIGNAL, SL & OCS COMBO POLE	–	105 / W115 E115	26 153	3S12" 3S12"LRB	SV–2–TA	T T		–	–	–	–	
Ⓘ	SPECIAL SIGNAL MAST ARM POLE (18–4–100) (1)	30		67A 67B 61	3S12" 3S12" 3S12"	MAS (1) MAS SV–1–T	T T T		68	1S–COUNT	SP–1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (1) SEE ST PLANS FOR POLE DETAILS APS ⟨1⟩
Ⓙ	1–A (10')	–		45	3S12"	TV–1–T	T		49	1S–COUNT	SP–1	–	APS ⟨1⟩
Ⓚ	EX SIGNAL & OCS COMBO POLE (FEEDER)	–	1600	76	3S12"LA	SV–1–T	T		–	–	–	–	EXTERNAL CONDUIT
Ⓛ	EX SL/TS MA POLE	–		–	–	–	–		69 118	1S–COUNT 1S–COUNT	SP–2–T	–	APS ⟨1⟩ EXISTING MAST ARM POLE TO BE REMOVED
Ⓜ	SPECIAL SIGNAL MAST ARM POLE (18–4–100) (1)	30		64A 64B 33	3S12" 3S12 4S12"GLA	MAS (1) MAS SV–1–T	T T T		–	–	–	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH (1) APS ⟨1⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓝ	SIGNAL & OCS COMBO MAST ARM POLE	20	9	34	4S12"GLA	MAS	T		–	–	–	–	SIGNAL MA MOUNT AT 23.5' HIGH
Ⓞ	SIGNAL & OCS COMBO MAST ARM POLE	15	10	81 84	5S12"YGRA (1) 3S12"	SV–1–T MAS	T T		88	1S–COUNT	SP–1	–	SIGNAL MA MOUNT AT 23.5' HIGH APS ⟨1⟩
Ⓟ	1–A (10')	–		65	3S12"	TV–1–T	T		119	1S–COUNT	SP–1	–	APS ⟨1⟩
Ⓠ	SIGNAL, SL & OCS COMBO POLE	–	97 / W012 E012	23	3S12"	SV–1–T	T		–	–	–	–	TRAFFIC CAMERA ⟨3⟩
Ⓡ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓢ	1–A (10')	–		21	3S12"	TV–1–T	T		28	1S–COUNT	SP–1	–	APS ⟨1⟩ (1)

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

⟨1⟩ INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
⟨2⟩ INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
⟨3⟩ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
⟨4⟩ FOR STREETLIGHT WORK, SEE SL–SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET–101.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED SIGNALS 21, 81, 85, PED SIGNAL 28, ADDED	KK	MV	CL
		SIGNALS 64A AND 67A, UPDATED POLES A, B, F, I, M,			
		AND O, ADDED POLE S; ADDED FBC TENON NOTE			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MISSION/OTIS STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

1289

ET–101.2
ET–204

REVISION 2

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	2A	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2	2
					SP	SP					SP									SP				SP	SP			EX					SP					SP												
VEHICLE SIGNAL Ø21			3	3					3						3																																			
VEHICLE SIGNAL Ø24	3			3					3						3																																			
VEHICLE SIGNAL Ø72		3		3					3						3																																			
VEHICLE SIGNAL Ø85		5		5					5						5																																			
PED SIGNAL Ø89P		2		2					2						2																																			
PED SIGNAL Ø28P		2		2					2						2																																			
APS PPB FOR XING SOUTH VAN NESS NS ON POLE S			2	2					2						2																																			
APS PPB FOR XING MISSION ES ON POLE B		2		2					2						2																																			
APS PPB FOR XING MISSION ES ON POLE C							2		2						2																																			
PED SIGNAL Ø29P							2			2					2																																			
VEHICLE SIGNAL Ø27								3		3					3																																			
VEHICLE SIGNAL Ø36								3		3					3																																			
VEHICLE SIGNAL Ø73								4		4					4																																			
PED SIGNAL Ø98P								2		2					2																																			
APS PPB FOR XING MISSION ES ON POLE D								2		2					2																																			
VEHICLE SIGNAL Ø41												3				3																																		
VEHICLE SIGNAL Ø44												3				3																																		
PED SIGNAL Ø48P													2			2																																			
PED SIGNAL Ø99P													2			2																																			
APS PPB FOR XING MISSION ES ON POLE F													2			2																																		
TRANSIT SIGNAL Ø152														3		3																																		
VEHICLE SIGNAL Ø25														2		2																																		
APS PPB FOR XING SOUTH VAN NESS SS ON POLE G														2		2																																		
TSB ON POLE P																	2		2				2								2				2						2				2						
VEHICLE SIGNAL Ø23																		3	3				3								3				3						3				3						
VEHICLE SIGNAL Ø65																					3		3								3				3						3				3						
PED SIGNAL Ø119P																					2		2								2				2						2				2						
APS PPB FOR XING SOUTH VAN NESS NS ON POLE P																					2		2								2				2						2				2						
VEHICLE SIGNAL Ø81																					5	5									5				5						5				5						
VEHICLE SIGNAL Ø84																					3	3									3				3						3				3						
PED SIGNAL Ø88P																					2	2									2				2						2				2						
APS PPB FOR XING OTIS WS ON POLE O																					2	2									2				2						2				2						
VEHICLE SIGNAL Ø34																	4						4		4								4				4				4									
VEHICLE SIGNAL Ø33																		4					4		4								4				4				4									
VEHICLE SIGNAL Ø64A																		3					3		3								3				3				3									
VEHICLE SIGNAL Ø64B																		3					3		3								3				3				3									
APS PPB FOR XING OTIS WS ON POLE M																		2					2		2								2				2				2									
PED SIGNAL Ø118P																			2				2		2								2				2				2									
PED SIGNAL Ø69P																			2				2		2								2				2				2									
APS PPB FOR XING MISSION WS ON POLE L																			2				2		2								2				2				2									
VEHICLE SIGNAL Ø76																				3			3		3								3				3				3									
VEHICLE SIGNAL Ø45																										3								3				3				3						
PED SIGNAL Ø49P																										2								2				2				2						
APS PPB FOR XING MISSION WS ON POLE J																										2								2				2				2						
VEHICLE SIGNAL Ø61																											3								3				3				3						
VEHICLE SIGNAL Ø67A																											3								3				3				3						
VEHICLE SIGNAL Ø67B																											3								3				3				3						
PED SIGNAL Ø68P																											2								2				2				2						
APS PPB FOR XING SOUTH VAN NESS SS ON POLE I																											2								2				2				2						

FOR ORIGINAL SIGNATURES, SEE ET-101.3, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED SCHEDULE FOR SIGNALS 81 AND 85, APS ON POLE S, REMOVED BBS, ADDED CONDUIT 2A, UPDATED SIGNAL 21, ADDED SIGNAL 64A AND 67A	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CARYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MISSION/OTIS STREET
CONDUIT & WIRING SCHEDULES

1289

ET-101.3
ET-204

REVISION 2

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	2A	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2
					SP	SP					SP									SP				SP	SP								SP							SP						SP				
TRANSIT SIGNAL Ø153																																								3			3			3					
VEHICLE SIGNAL Ø26																																								3			3			3					
#14 NEUTRAL	1	2	1					2				2	2	2							2	3				1	3	1	1					2	4						2										
#14 SPARE				3					3	3					3	3			3				3							3	3	3			3	3	3			3	3	3							
TOTAL #14 WIRES	4	16	6	25			4	16	27	19		8	8	9	43	22	2	3	8		9	15	27			5	15	7	4	28	27	28		9	17	27	28	23		8	27	28	29		27	28	29				
#10 WIRES NEUTRAL				1					1	1					2	1		1	1				2								2	1				2	1	1			2	1	2		2	1	2				
#6 WIRES (120 V SERVICE)																																																2			
#8 WIRES (120 V SERVICE)																																																2		
#6 BSCW (SEE GENERAL NOTE 10)																																																		
~~#8 WIRES (BBS)~~																																																	2	2	
~~#8 GROUND (BBS)~~																																																1	1	
TSP RECEIVER (10 CONDUCTOR CABLE)								1	1						1																																				
NO RIGHT TURN EMS WIRES (1#14, 1#10 & 1#6 GROUND)																											1			1	1					1					1				1						
CCTV CAMERA WIRES (CAT5e & 3#18)																		1	1				1								1					1					1				1						

FOR ORIGINAL SIGNATURES, SEE ET-101.4, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	REMOVED BBS, ADDED CONDUIT 2A, UPDATED SCHEDULE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

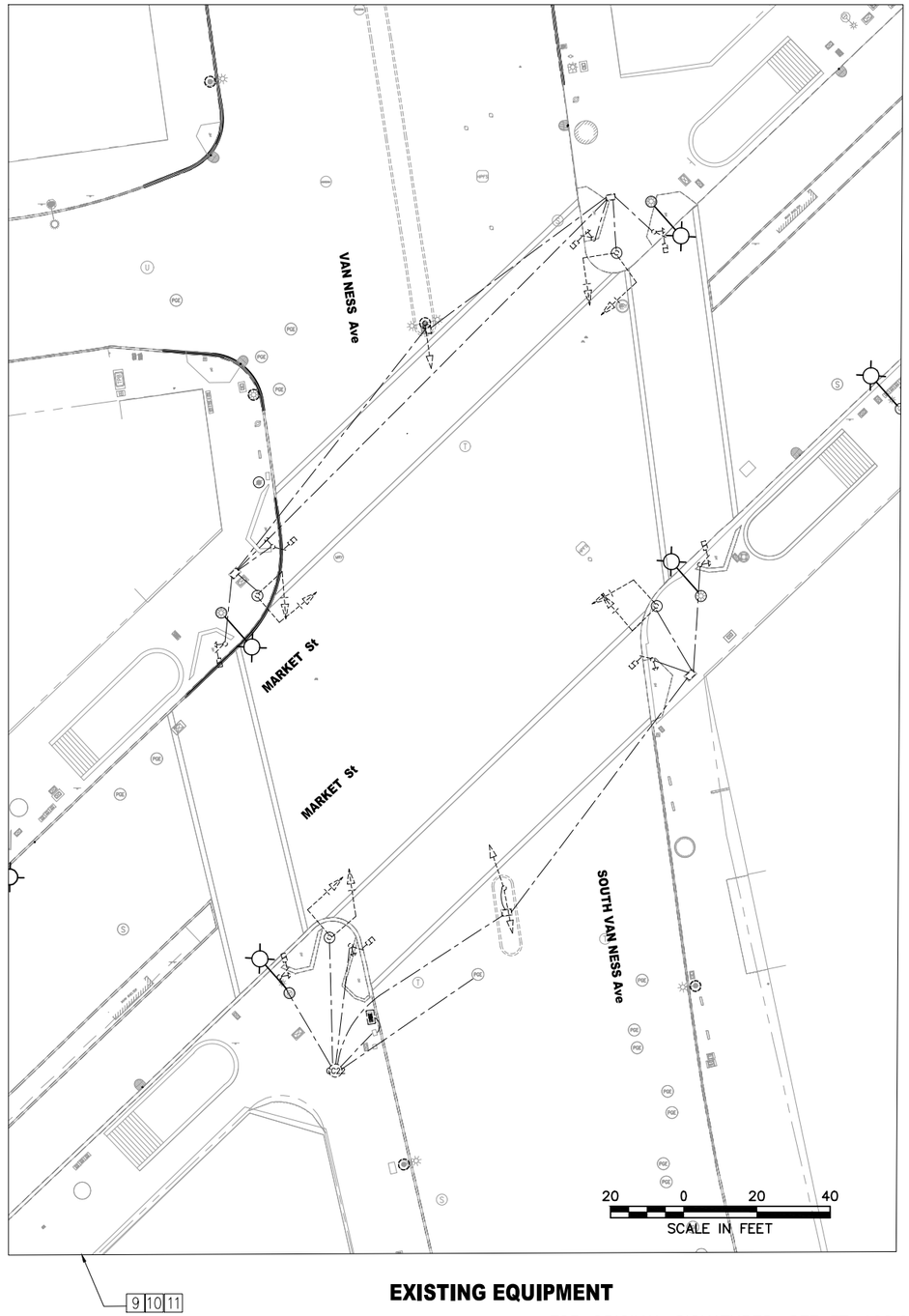
1289

MISSION/OTIS STREET
CONDUIT & WIRING SCHEDULES

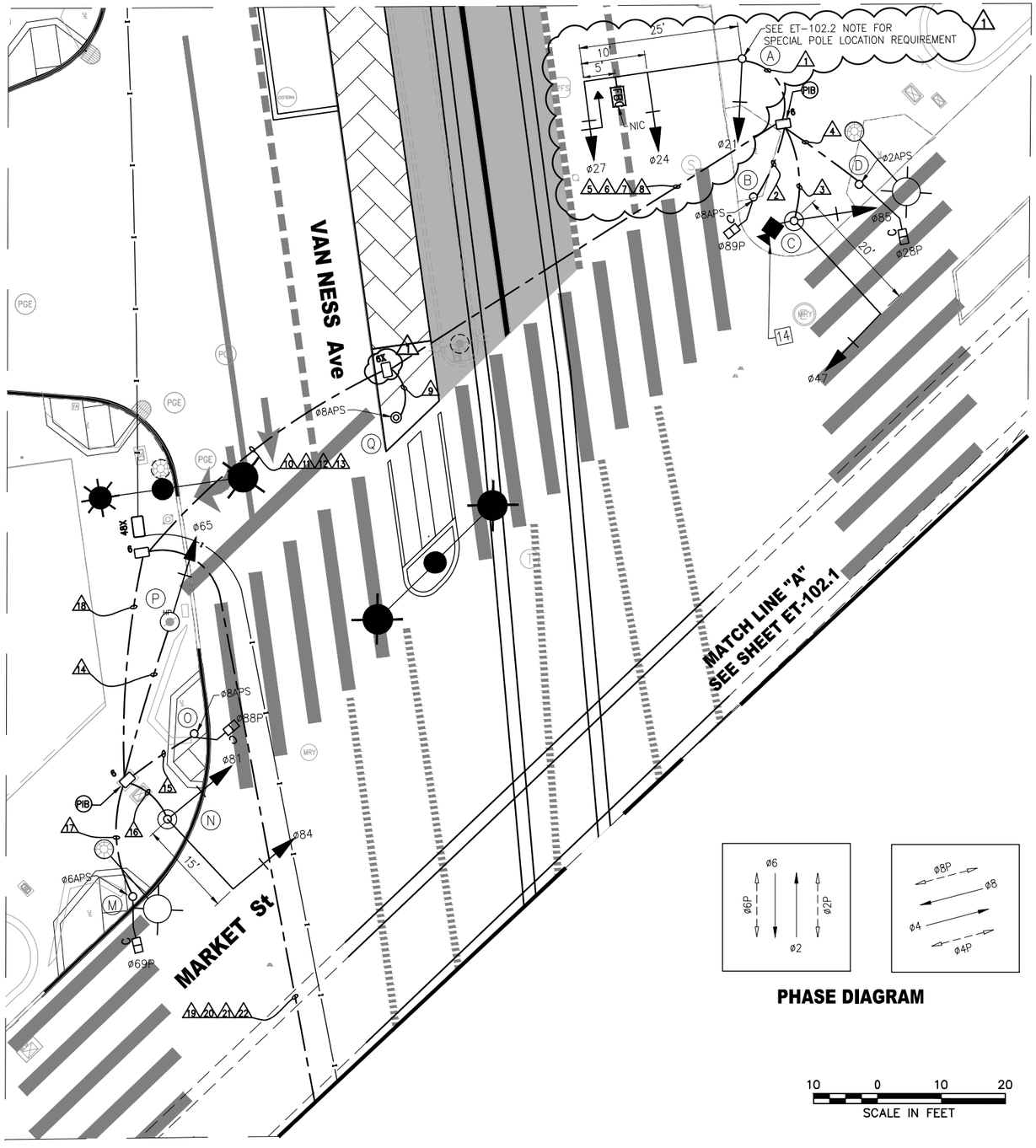
ET-101.4
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:36 pm



EXISTING EQUIPMENT



PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-102.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED FBC SIGN ON POLE A, ADDED TYPE 6X PULLBOXES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MARKET STREET
TRAFFIC SIGNAL WORK

1289

ET-102.0
ET-204

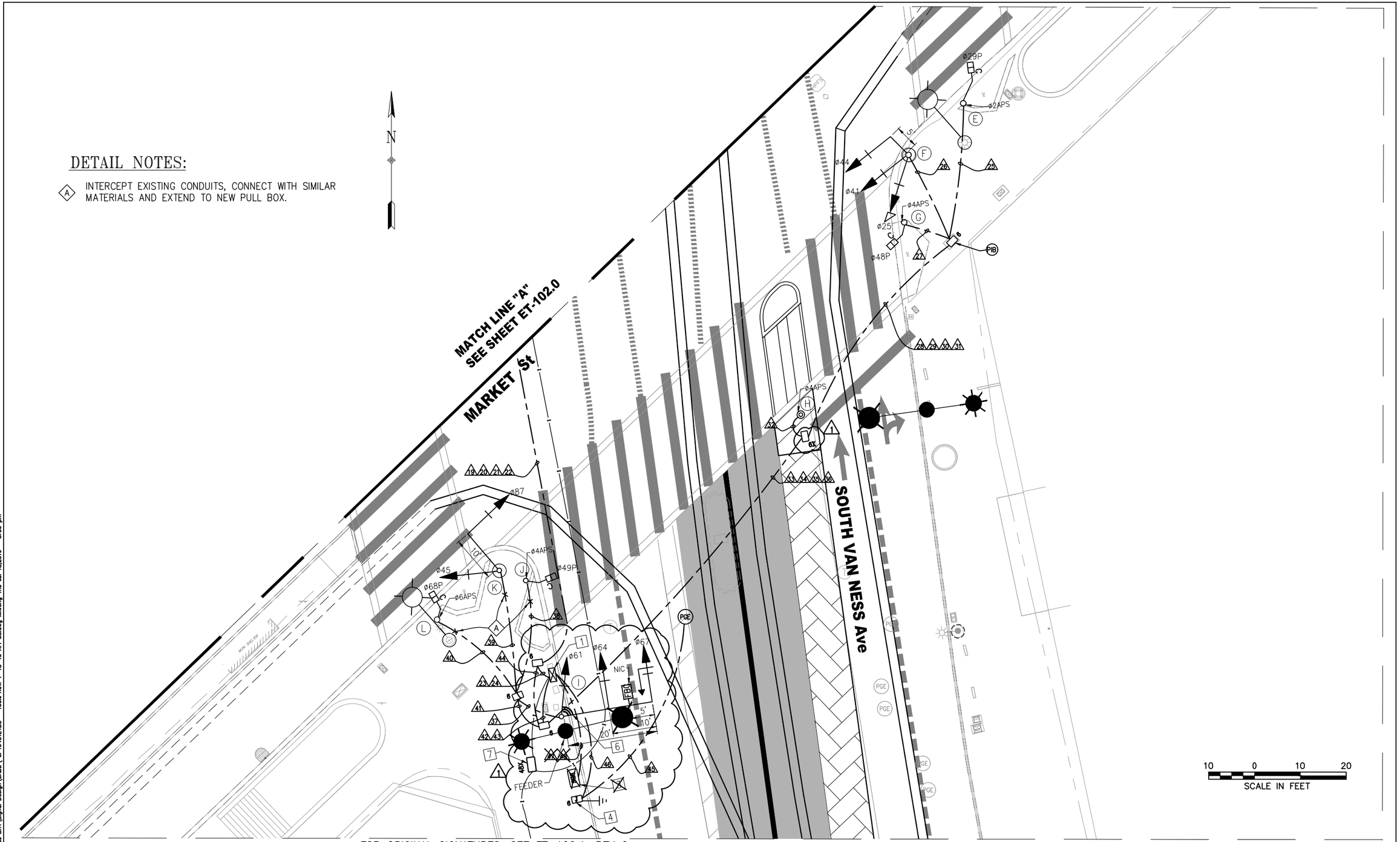
REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:36 pm

BORDER REVISED 11/17/05

DETAIL NOTES:

(A) INTERCEPT EXISTING CONDUITS, CONNECT WITH SIMILAR MATERIALS AND EXTEND TO NEW PULL BOX.



FOR ORIGINAL SIGNATURES, SEE ET-102.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	REVISED CONDUIT RUN AT SE CORNER; ADDED FBC SIGN ON POLE I; REMOVED BBS; ADDED TYPE 6X PULLBOXES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MARKET STREET
TRAFFIC SIGNAL WORK

1289

ET-102.1
ET-204

REVISION 2

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SPECIAL MAST ARM POLE (18-4-100)	25		21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		–	–	–	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (1) COORDINATE WITH JC DECAUX (415-633-1210) TO RELOCATE KIOSK TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	EXISTING PED POLE	–		–	–	–	–		89	1S-COUNT	TP-1	–	APS ◇1
Ⓒ	EXISTING OCS POLE	20	1416	47 85	3S12" 3S12"	MAS SV-1-T	T T		–	–	–	–	MOUNT SIGNAL MA AT 20' HIGH ON EXISTING OCS POLE APS ◇1 TRAFFIC CAMERA ◇3
Ⓓ	EXISTING PED POLE	–		–	–	–	–		28	1S-COUNT	TP-1	–	APS ◇1
Ⓔ	EXISTING PED POLE	–		–	–	–	–		29	1S-COUNT	TP-1	–	APS ◇1
Ⓕ	EXISTING OCS POLE	5	1499	25 41 44	3S12"RAV 3S12" 3S12"	SV-2-TC MAS	R T T		–	–	–	–	MOUNT SIGNAL MA AT 20' HIGH ON EXISTING OCS POLE
Ⓖ	EXISTING PED POLE	–		–	–	–	–		48	1S-COUNT	TP-1	–	APS ◇1
Ⓗ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓘ	SPECIAL MAST ARM POLE (16-3-100) (1)	20		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		–	–	–	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH (1) TSP ◇2 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓙ	EXISTING PED POLE	–		–	–	–	–		49	1S-COUNT	TP-1	–	APS ◇1
Ⓚ	EXISTING OCS POLE	10	1501	45 87	3S12" 3S12"	SV-1-T MAS	T T		–	–	–	–	MOUNT SIGNAL MA AT 20' HIGH ON EXISTING OCS POLE
Ⓛ	EXISTING PED POLE	–		–	–	–	–		68	1S-COUNT	TP-1	–	APS ◇1
Ⓜ	EXISTING PED POLE	–		–	–	–	–		69	1S-COUNT	TP-1	–	APS ◇1
Ⓝ	EXISTING OCS POLE	15	1502	81 84	3S12" 3S12"	SV-1-T MAS	T T		–	–	–	–	MOUNT SIGNAL MA AT 20' HIGH ON EXISTING OCS POLE
Ⓞ	EXISTING PED POLE	–		–	–	–	–		88	1S-COUNT	TP-1	–	APS ◇1
Ⓟ	EXISTING OCS POLE	–	1500	65	3S12"	SV-1-T	T		–	–	–	–	EXTERNAL CONDUIT
Ⓠ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-102.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT, UPDATED POLES A AND I; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MARKET STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

1289

ET-102.2
ET-204

REVISION 2

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
CONDUIT SIZE (INCH)	2				2	2	2	2	1	2	2	2	2	2				2	2	2	2	2	3	2					2	2	2	2	1	2	2	2	2	2	2	2	2	3	2	2	3	2	2	2
		EX	EX	EX		SP	SP	SP			SP	SP	SP		EX	EX	EX		GRS	GRS	GRS SP	GRS SP		SP	EX	EX	EX		SP	SP	SP			SP	SP	SP		GRS	GRS	GRS			SP	SP				
VEHICLE SIGNAL Ø21	3				3					3									3				3																								
VEHICLE SIGNAL Ø24	3				3					3									3				3																								
VEHICLE SIGNAL Ø27	3				3					3									3				3																								
PED SIGNAL Ø89P		2			2					2									2				2																								
APS PPB FOR XING VAN NESS NS ON POLE A		2			2					2									2				2																								
VEHICLE SIGNAL Ø47			3		3					3									3				3																								
VEHICLE SIGNAL Ø85			3		3					3									3				3																								
PED SIGNAL Ø28P				2	2					2									2				2																								
APS PPB FOR XING MARKET ES ON POLE D				2	2					2									2				2																								
APS PPB FOR XING VAN NESS NS ON POLE Q									2	2									2				2																								
VEHICLE SIGNAL Ø65														3				3		3			3																								
PED SIGNAL Ø88P															2			2		2			2																								
APS PPB FOR XING VAN NESS NS ON POLE O															2			2		2			2																								
VEHICLE SIGNAL Ø81																3		3		3			3																								
VEHICLE SIGNAL Ø84																3		3		3			3																								
PED SIGNAL Ø69P																	2	2		2			2																								
APS PPB FOR XING MARKET WS ON POLE M																	2	2		2			2																								
PED SIGNAL Ø29P																									2			2					2									2					
APS PPB FOR XING MARKET ES ON POLE E																									2			2					3									2					
VEHICLE SIGNAL Ø25																										3		3					3									3					
VEHICLE SIGNAL Ø41																										3		3					3									3					
VEHICLE SIGNAL Ø44																										3		3					2									3					
PED SIGNAL Ø48P																											2	2					2									2					
APS PPB FOR XING SOUTH VAN NESS SS ON POLE G																											2	2					2									2					
APS PPB FOR XING VAN NESS SS ON POLE H																															2	2									2					
VEHICLE SIGNAL Ø61																																	3								3	3					
VEHICLE SIGNAL Ø64																																	3								3	3					
VEHICLE SIGNAL Ø67																																	3								3	3					
PED SIGNAL Ø49P																																		2							2	2					
APS PPB FOR XING VAN NESS SS ON POLE J																																		2							2	2					
VEHICLE SIGNAL Ø45																																			3						3	3					
VEHICLE SIGNAL Ø87																																			3						3	3					
PED SIGNAL Ø68P																																				2					2	2					
APS PPB FOR XING MARKET WS ON POLE L																																				2					2	2					
#14 NEUTRAL	3	1	2	1										1	1	2	1								1	3	1								3	1	2	1									
#14 SPARE					3					3								3	3	3			6					3					3								3	6					
TOTAL #14 WIRES	12	5	8	5	26				2	28				4	5	8	5	20	28	20			48		5	12	5	20			2	22				12	5	8	5	26	48					
#10 WIRES NEUTRAL					1					1								1	1	1			2					1					1								1	2					
#6 WIRES (120 V SERVICE)																																													2		
#8 WIRES (120 V SERVICE)																																													2		
#6 BSCW (SEE GENERAL NOTE 10)																																														1
~~#8 WIRES (BBS)~~																																													2	2	
~~#8 GROUND (BBS)~~																																													1	1	
TSP RECEIVER (10 CONDUCTOR CABLE)																																	1								1	1					
CCTV CAMERA WIRES (CAT5e & 3#18)			1		1					1									1				1																								

FOR ORIGINAL SIGNATURES, SEE ET-102.3, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	REMOVED BBS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

MARKET STREET
CONDUIT & WIRING SCHEDULES

1289

ET-102.3
ET-204

REVISION 2

T:_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:36 pm

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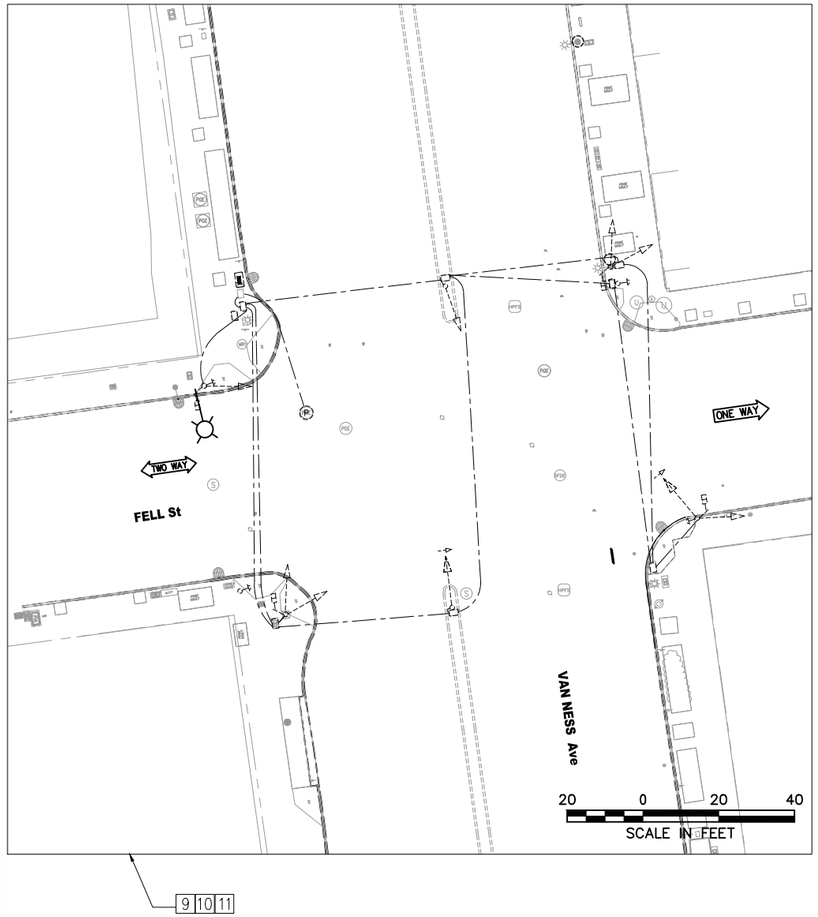
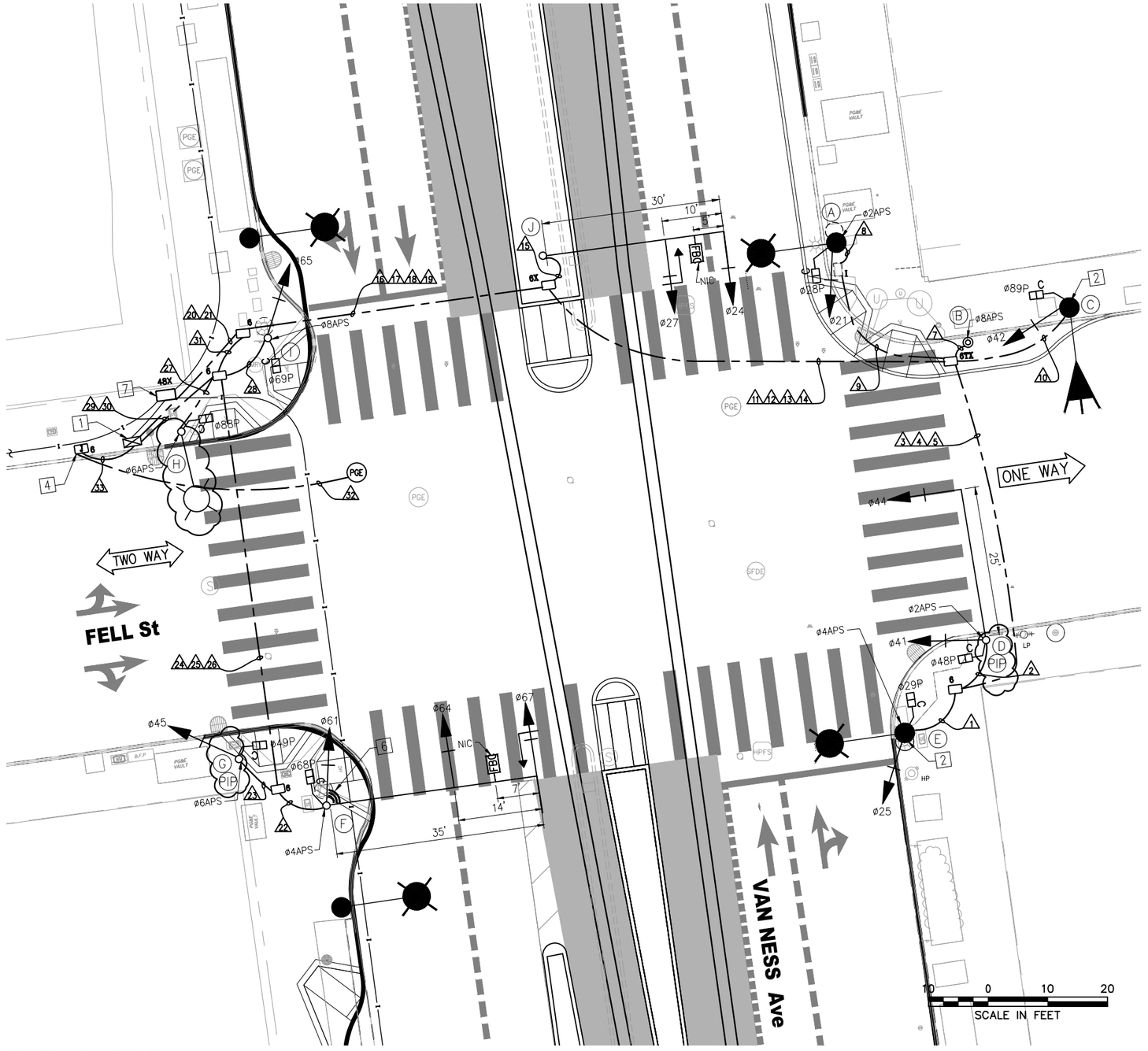
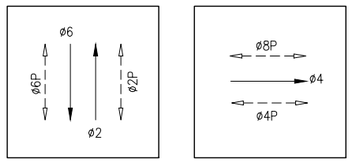


EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-103.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
SK	3/26/19	RFI# 608: POLE H WILL BE A SL POLE INSTALLED BY ATT AND POLE D & G ARE PIP PER POLE LAYOUT.	KK	MV	CL
2	03/2018	REVISED NE CORNER CONDUIT RUNS; ADDED FBC SIGNS ON POLES F AND J; REMOVED BBS, MOVED POLE B AND CONDUIT 7, ADDED TYPE 6X AND 6TX PULLBOXES	KK	MV	CL
1	10/2017	REVISED NE CORNER CONDUIT RUNS; ADJUSTED NE CORNER PULLBOXES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

FELL STREET
TRAFFIC SIGNAL WORK

ET-103.0
ET-204

REVISION 3

BORDER REVISED 11/17/05

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL & SL COMBO POLE	–	/ 12	21	3S12"	SV–1–T	T		28	1S–COUNT	SP–1	–	APS ◇1 SPECIAL POLE FOUNDATION TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPBP POLE	–	/	–	–	–	–		–	–	–	–	APS ◇1
Ⓒ	SIGNAL & OCS COMBO POLE	–	96 /	42	3S12"	SV–1–T	T		89	1S–COUNT	SP–1	–	SPECIAL POLE FOUNDATION
Ⓓ	18–2–100	25	/	41 44	3S12" 3S12"	SV–1–T MAS	T T		48	1S–COUNT	SP–1	–	APS ◇1 INSTALL NEW POLE IN PLACE OF EXISTING POLE
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	90 / 08	25	3S12"	SV–1–T	T		29	1S–COUNT	SP–1	–	APS ◇1
Ⓕ	SPECIAL MAST ARM POLE (23–4–100)	35	/	61 64 67	3S12" 3S12" 3S12"GUA	SV–1–T MAS MAS	T T T		68	1S–COUNT	SP–1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓖ	1–A (10')	–	/	45	3S12"	TV–1–T	T		49	1S–COUNT	SP–1	–	APS ◇1 INSTALL NEW POLE IN PLACE OF EXISTING POLE
Ⓗ	EX. SL POLE	–	/	–	–	–	–		88	1S–COUNT	SP–1	–	APS ◇1 USE NEW SL POLE INSTALL BY AT&T
Ⓘ	1–A (10')	–	/	65	3S12"	TV–1–T	T		69	1S–COUNT	SP–1	–	APS ◇1 TSP ◇2
Ⓙ	SPECIAL MAST ARM POLE (18–4–100)	30	/	24 27	3S12" 3S12"GUA	MAS MAS	T T		–	–	–	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL–SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET–103.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	3/26/19	RFI# 608: POLE H WILL BE A SL POLE INSTALLED BY ATT	KK	MV	CL
		AND POLE D & G ARE PIP PER POLE LAYOUT.			
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT;	KK	MV	CL
		UPDATED POLES B, F, AND J, ADDED FBC TENON NOTE			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

FELL STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET–103.1
ET–204

REVISION 2

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	1	2	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	3	2	2	3	2	2	2
				SP	SP			EX					SP	SP				SP	SP		SP				SP	SP				SP	SP				
VEHICLE SIGNAL Ø25	3		3								3					3				3															
PED SIGNAL Ø29P	2		2								2					2				2															
APS PPB FOR XING VAN NESS SS ON POLE E	2		2								2					2				2															
VEHICLE SIGNAL Ø41		3	3								3					3				3															
VEHICLE SIGNAL Ø44		3	3								3					3				3															
PED SIGNAL Ø48P		2	2								2					2				2															
APS PPB FOR XING FELL ES ON POLE D		2	2								2					2				2															
VEHICLE SIGNAL Ø42						3				3		3					3			3															
PED SIGNAL Ø89P						2				2		2					2			2															
APS PPB FOR XING VAN NESS NS ON POLE B							2					2					2			2															
VEHICLE SIGNAL Ø21								3	3	3		3					3			3															
PED SIGNAL Ø28P								2	2	2		2					2			2															
APS PPB FOR XING FELL ES ON POLE A								2	2	2		2					2			2															
VEHICLE SIGNAL Ø24															3		3			3															
VEHICLE SIGNAL Ø27															3		3			3															
VEHICLE SIGNAL Ø61																						3		3					3						
VEHICLE SIGNAL Ø64																						3		3					3						
VEHICLE SIGNAL Ø67																						3		3					3						
PED SIGNAL Ø68P																						2		2					2						
APS PPB FOR XING VAN NESS SS ON POLE F																						2		2					2						
VEHICLE SIGNAL Ø45																							3	3					3						
PED SIGNAL Ø49P																							2	2					2						
APS PPB FOR XING FELL WS ON POLE G																							2	2					2						
PED SIGNAL Ø88P																											2		2						
APS PPB FOR XING FELL WS ON POLE H																											2		2						
VEHICLE SIGNAL Ø65																												3	3						
PED SIGNAL Ø69P																												2	2						
APS PPB FOR XING VAN NESS NS ON POLE I																												2	2						
#14 NEUTRAL	2	3				2		2		2					2							4	2				1	2							
#14 SPARE			3								3	3				3	3			6				3					3						
TOTAL #14 WIRES	9	13	20			7	2	9	9	14	18	17			8	20	23			43		17	9	23			5	9	34						
#10 WIRES NEUTRAL			1									1					1			2				1					2						
#6 WIRES (120 V SERVICE)																															2				
#8 WIRES (120 V SERVICE)																																2			
#6 BSCW (SEE GENERAL NOTE 10)																																			
#8 WIRES (BBS)																																		2	2
#8 GROUND (BBS)																																		1	1
TSP RECEIVER (10 CONDUCTOR CABLE)																						1		1					1						

FOR ORIGINAL SIGNATURES, SEE ET-103.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	REMOVED BBS; REMOVED CONDUIT 6; UPDATED CONDUIT 10; UPDATED SCHEDULE FOR APS ON POLE B	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

FELL STREET
CONDUIT & WIRING SCHEDULES

ET-103.2
ET-204

REVISION 2

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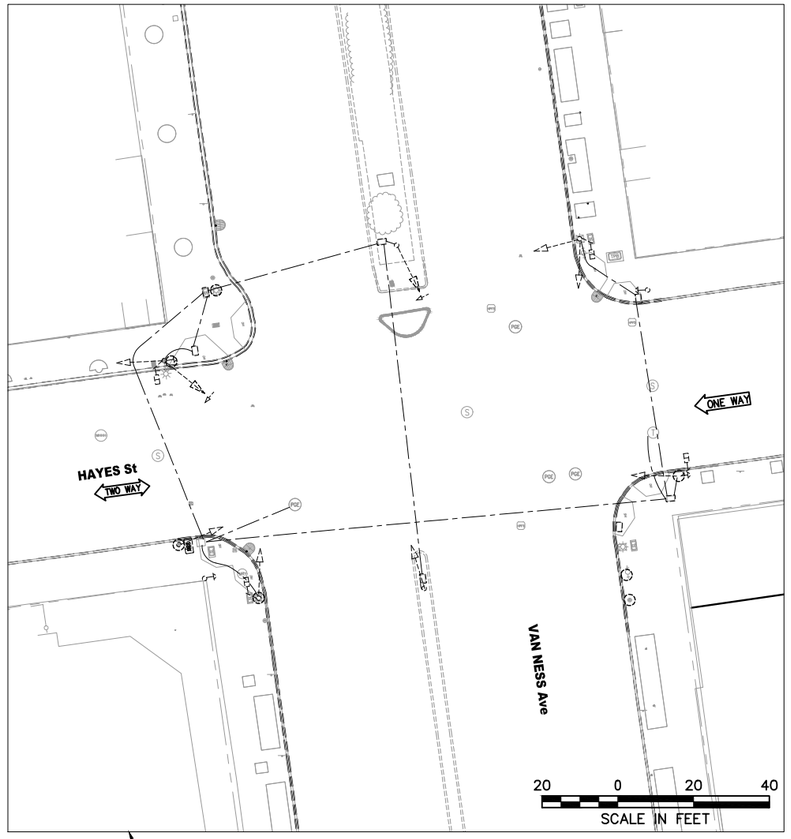
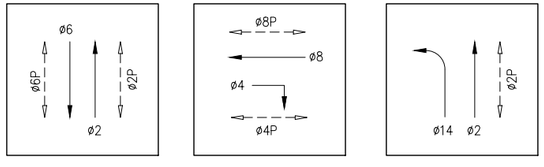
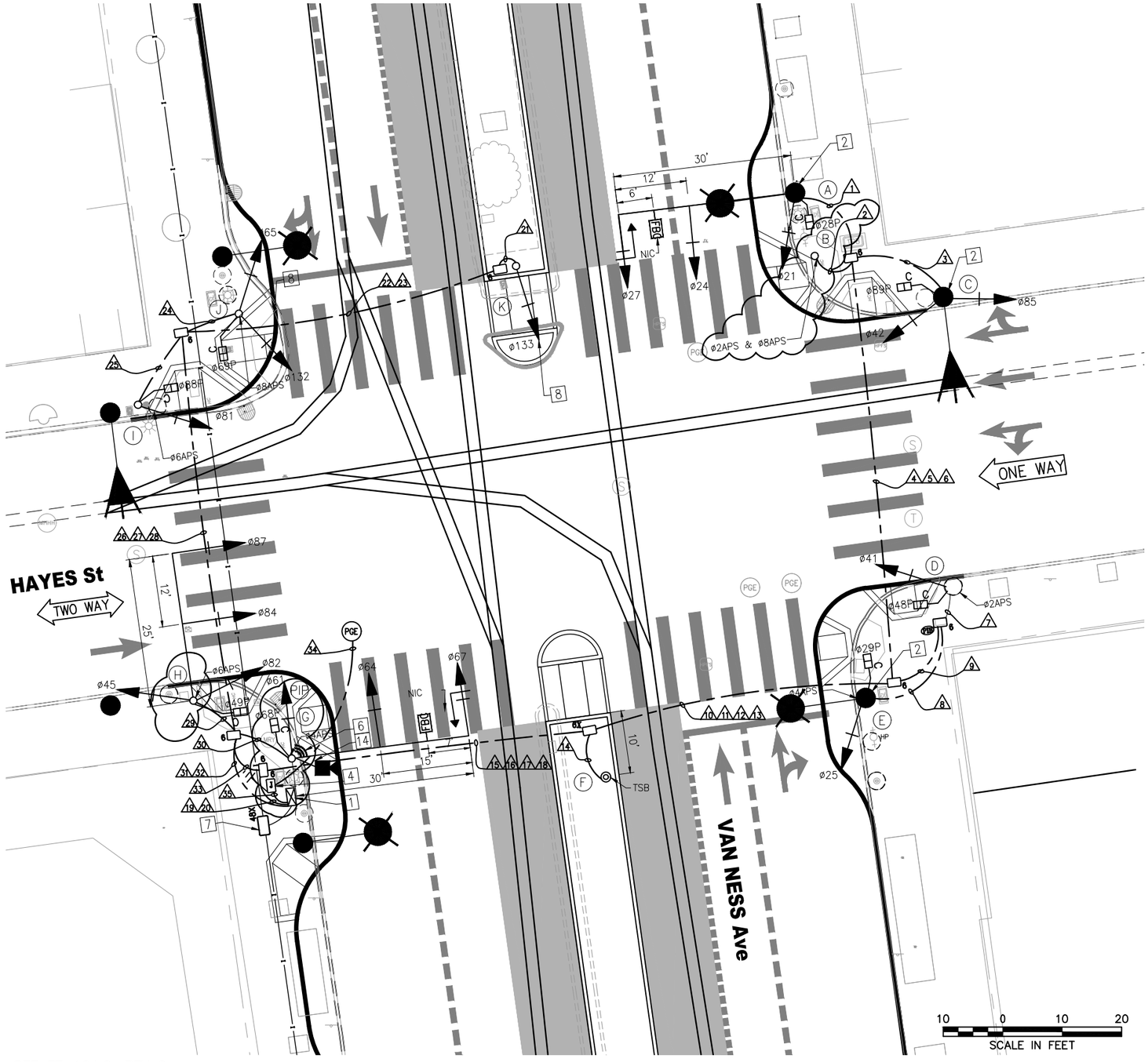


EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-104.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	3/26/19	RFI# 609: POLE B & H ADJUST PER LAYOUT & G IS PIP.	KK	MV	CL
1	03/2018	CHANGED DISTANCE BETWEEN SIGNALS 84 AND 87 FROM 10' TO 12'; ADDED FBC SIGNS ON POLES A AND G; REMOVED BBS; MOVE SIGNALS 41 AND 49 ONTO EXISTING OCS POLE D USING EXISTING CONDUIT; PIB EXISTING PB TO TYPE 6, ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

HAYES STREET
TRAFFIC SIGNAL WORK

ET-104.0
ET-204

REVISION 2

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	202 / 22	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (5')	–		–	–	–	–		–	–	–	–	APS X 2 ◇1
Ⓒ	SIGNAL & OCS COMBO POLE	–	196	42 85	3S12"FY 3S12"	SV-2-TA	T T		89	1S-COUNT	SP-1	–	
Ⓓ	EXISTING OCS POLE	–		41	3S12"FY	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	190 / 18	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓕ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓖ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 AND TSP ◇2 TRAFFIC CAMERA ◇3 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS INSTALL NEW POLE IN PLACE OF EXISTING POLE 2
Ⓗ	18-3-100	25		45 82 84 87	3S12" 3S12" 3S12" 3S12"	SV-2-TA MAS MAS	T T T T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓘ	1-A (10')	–		81	3S12"	TV-1-T	T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓙ	1-A (10')	–		65 132	3S12" 3S12"LB	TV-2-T	T T		69	1S-COUNT	SP-1	–	APS ◇1
Ⓚ	1-A (10')	–		133	3S12"LB	TV-1-T	T		–	–	–	–	

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-104.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	3/26/19	RFI# 609: POLE G IS PIP PER LAYOUT.	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT;	KK	MV	CL
		UPDATED POLES A AND G; POLE D CHANGED TO EX.			
		OCS POLE; SIGNAL 41 MOUNTING; ADDED FBC TENON			
		NOTE			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

HAYES STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

1289

ET-104.1
ET-204

REVISION 2

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
CONDUIT SIZE (INCH)	2	1	2	2	2	2	2	2	3	2	2	2	2	1	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2	2	2
					SP	SP	EX					SP	SP	GRS			SP	SP		SP			SP				SP	SP				SP	SP				
VEHICLE SIGNAL Ø21	3			3			1			3					3				3																		
VEHICLE SIGNAL Ø24	3			3						3					3				3																		
VEHICLE SIGNAL Ø27	3			3						3					3				3																		
PED SIGNAL Ø28P	2			2						2					2				2																		
APS PPB FOR XING VAN NESS NS ON POLE B		2		2						2					2				2																		
VEHICLE SIGNAL Ø42			3	3						3					3				3																		
VEHICLE SIGNAL Ø85			3	3						3					3				3																		
PED SIGNAL Ø89P			2	2						2					2				2																		
APS PPB FOR XING HAYES ES ON POLE B		2		2						2					2				2																		
VEHICLE SIGNAL Ø41							3		3		3					3			3																		
PED SIGNAL Ø48P							2		2		2					2			2																		
APS PPB FOR XING HAYES ES ON POLE D							2		2		2					2			2																		
VEHICLE SIGNAL Ø25								3	3		3					3			3																		
PED SIGNAL Ø29P								2	2		2					2			2																		
APS PPB FOR XING VAN NESS SS ON POLE E								2	2		2					2			2																		
TSB ON POLE F														2		2			2																		
TRANSIT SIGNAL Ø133																					3	3				3					3						
TRANSIT SIGNAL Ø132																								3		3					3						
VEHICLE SIGNAL Ø65																								3		3					3						
PED SIGNAL Ø69P																								2		2					2						
APS PPB FOR XING VAN NESS NS ON POLE J																								2		2					2						
VEHICLE SIGNAL Ø81																									3	3					3						
PED SIGNAL Ø88P																									2	2					2						
APS PPB FOR XING HAYES WS ON POLE I																									2	2					2						
VEHICLE SIGNAL Ø45																													3			3					
VEHICLE SIGNAL Ø82																													3			3					
VEHICLE SIGNAL Ø84																													3			3					
VEHICLE SIGNAL Ø87																													3			3					
PED SIGNAL Ø49P																													2			2					
APS PPB FOR XING HAYES WS ON POLE H																													2			2					
VEHICLE SIGNAL Ø61																														3		3					
VEHICLE SIGNAL Ø64																														3		3					
VEHICLE SIGNAL Ø67																														3		3					
PED SIGNAL Ø68P																														2		2					
APS PPB FOR XING VAN NESS SS ON POLE G																														2		2					
#14 NEUTRAL	4		2				2	2															3	2					5	4							
#14 SPARE				3					3	3	3				3	3			6			3				3					3	3					
TOTAL #14 WIRES	15	4	10	26			9	9	17	26	17			2	26	19			45		3	6		13	9	23			21	17	23	32					
#10 WIRES NEUTRAL				1					1	1	1				1	1			2			1				1					2	1					
#6 WIRES (120 V SERVICE)																																		2			
#8 WIRES (120 V SERVICE)																																			2		
#6 BSCW (SEE GENERAL NOTE 10)																																					
#8 WIRES (BBS)																																			2	2	1
#8 GROUND (BBS)																																			1	1	
TSP RECEIVER (10 CONDUCTOR CABLE)																														1	1						
CCTV CAMERA WIRES (CAT5e & 3#18)																														1	1						

FOR ORIGINAL SIGNATURES, SEE ET-104.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	REMOVED BBS; CHANGED CONDUIT 7 TO EXISTING	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

HAYES STREET
CONDUIT & WIRING SCHEDULES

1289

ET-104.2
ET-204

REVISION 2

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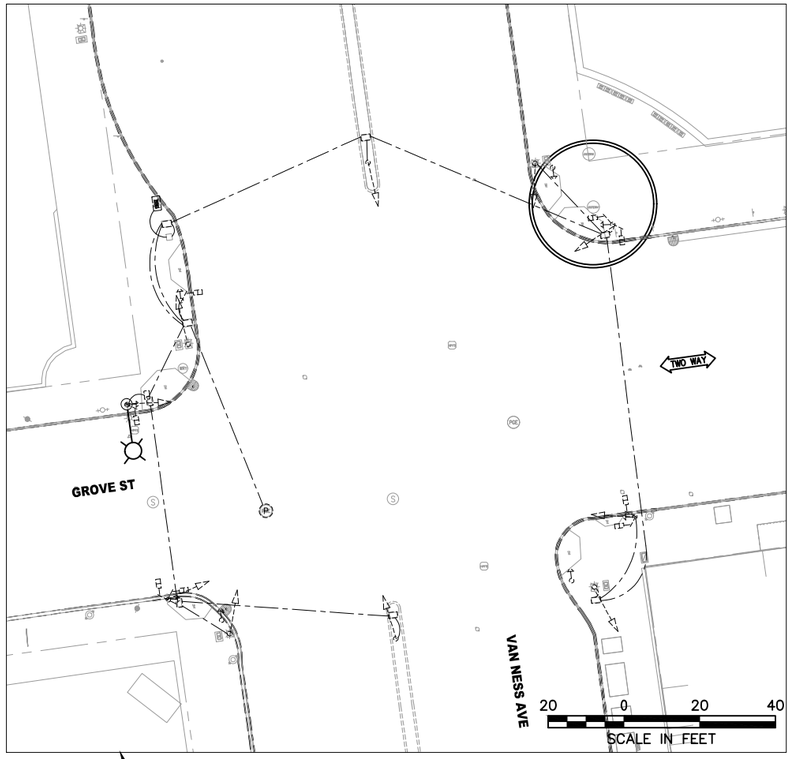
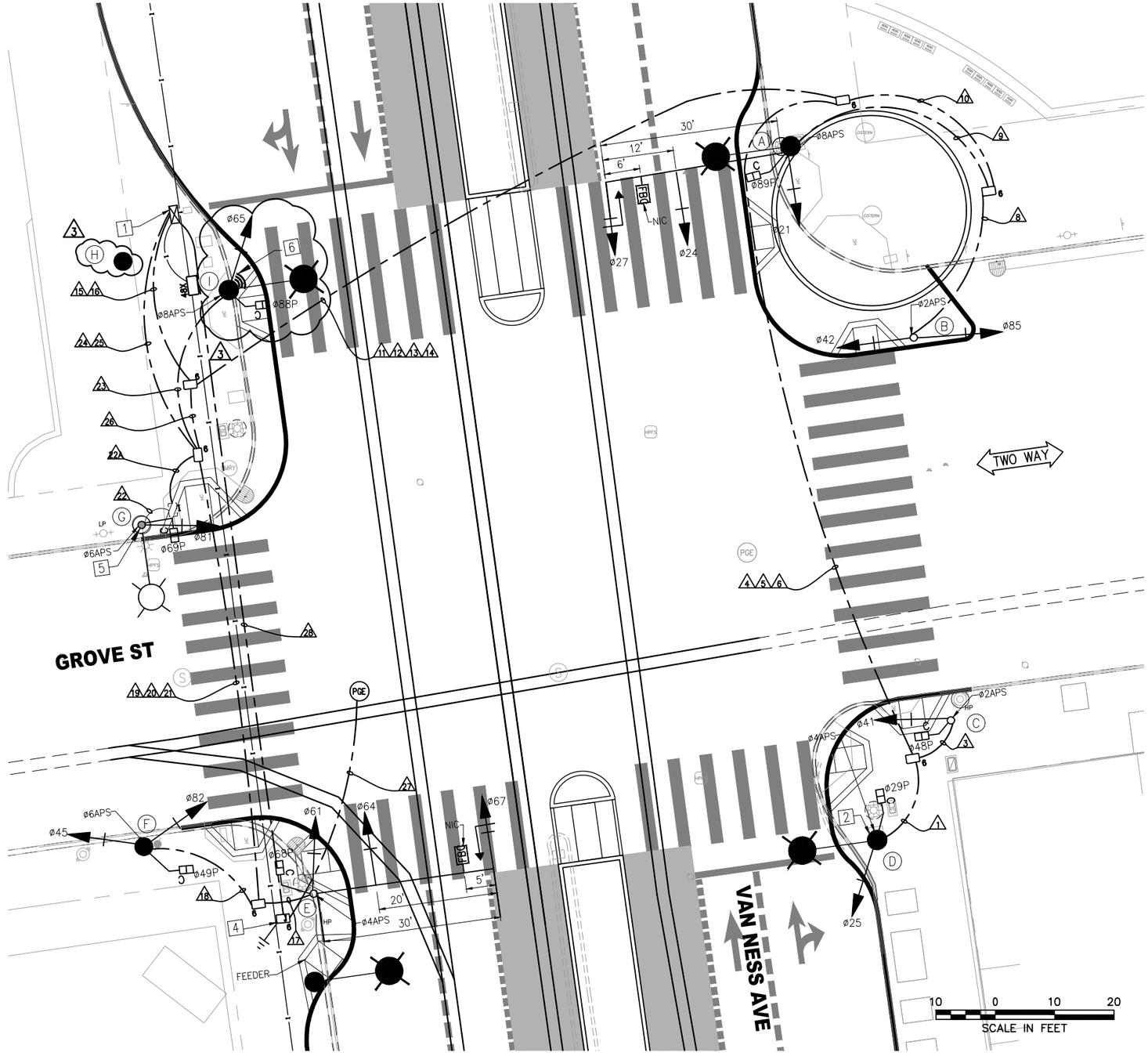
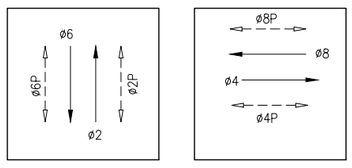


EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-105.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
		REVISIONS			
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/3/19	RFI #564 – POLE I IS A SL POLE & POLE H ADJUSTED	KK	MV	CL
SK	11/2/18	LAYOUT-POLE I: 1-A W/ SIGNALS 65 & 88P, ADJUST	KK	MV	CL
		POLE E & MA LENGTH, & POLE F COMBINED W/OCS POLE			
1	03/2018	ADDED FBC SIGNS ON POLES A AND G; REVISED POLE B	KK	MV	CL
		TO A 1-A POLE; REMOVED BBS			

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GROVE STREET
TRAFFIC SIGNAL WORK

ET-105.0
ET-204

REVISION 2

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	300 / 32	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		–	–	–	–	APS ◇1
Ⓒ	1-A (10')	–		41	3S12"	TV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	260 / 28	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BEWTEEN MAS SIGNALS
Ⓕ	SIGNAL & OCS COMBO POLE	–	203	45 82	3S12" 3S12"	SV-2-TA	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓖ	EXISTING SL/OCS	–	/ 214	81	3S12"	SV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	NOT USED	–	303	–	–	–	–		–	–	–	–	
Ⓘ	SL POLE (SEE SL-PLANS) ◇3	–	/ 31	65	3S12"	SV-1-T ◇3	T		88	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
			◇3										

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-105.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
		REVISIONS			
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/3/19	RFI #564: POLE I IS A SL POLE. SEE SL-PLANS.	KK	MV	CL
SK	11/2/18	POLE E MA LENGTH REVISED, POLE F COMBINED W/OCS	KK	MV	CL
		POLE 203, AND POLE I IS 1-A POLE PER POLE LAYOUT			
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT;	KK	MV	CL
		REVISED PED MOUNTING ON POLE J; UPDATED POLES A,			
		AND G; REVISED POLE B TO A 1-A POLE; ADDED FBC			
		TENON NOTE			

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GROVE STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-105.1
ET-204

REVISION 2

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1		3	4	5	6		8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	22A	23	23A	24	25	26	27	28
CONDUIT SIZE (INCH)	2		2	2	2	2		1	2	3	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2
					SP	SP							SP	SP						SP	SP	EX					SP	SP		
VEHICLE SIGNAL Ø25	3			3							3				3															
PED SIGNAL Ø29P	2			2							2				2															
APS PPB FOR XING VAN NESS SS ON POLE D	2			2							2				2															
VEHICLE SIGNAL Ø41			3	3							3				3															
PED SIGNAL Ø48P			2	2							2				2															
APS PPB FOR XING GROVE ES ON POLE C			2	2							2				2															
VEHICLE SIGNAL Ø44								3		3		3				3														
VEHICLE SIGNAL Ø85								3		3		3				3														
PED SIGNAL Ø89P									3	2		2				2														
APS PPB FOR XING GROVE ES ON POLE B								2		2		2				2														
VEHICLE SIGNAL Ø21									3	3		3				3														
VEHICLE SIGNAL Ø24									3	3		3				3														
VEHICLE SIGNAL Ø27									3	3		3				3														
PED SIGNAL Ø28P								2		2		2				2														
APS PPB FOR XING VAN NESS NS ON POLE A									2	2		2				2														
VEHICLE SIGNAL Ø61																	3		3							3				
VEHICLE SIGNAL Ø64																	3		3							3				
VEHICLE SIGNAL Ø67																	3		3							3				
PED SIGNAL Ø68P																	2		2							2				
APS PPB FOR XING VAN NESS SS ON POLE E																	2		2							2				
VEHICLE SIGNAL Ø45																		3	3							3				
VEHICLE SIGNAL Ø82																		3	3							3				
PED SIGNAL Ø49P																		2	2							2				
APS PPB FOR XING GROVE WS ON POLE F																		2	2							2				
VEHICLE SIGNAL Ø81																					3	3				3				
PED SIGNAL Ø69P																					2	2				2				
APS PPB FOR XING GROVE WS ON POLE G																					2	2				2				
VEHICLE SIGNAL Ø65																								3		3				
PED SIGNAL Ø88P																								2		2				
APS PPB FOR XING VAN NESS NS ON POLE I															2									2		2				
#14 NEUTRAL	2		2					1	4								4	2			2	2	2							
#14 SPARE				3						3	3	3			3	3			3							3				
TOTAL #14 WIRES	9		9	17				11	16	26	17	26			19	26	17	12	23		9	9	9			38				
#10 WIRES NEUTRAL				1						1	1	1			1	1			1							2				
#6 WIRES (120 V SERVICE)																												2		
#8 WIRES (120 V SERVICE)																													2	
#6 BSCW (SEE GENERAL NOTE 10)																														
TSP RECEIVER (10 CONDUCTOR CABLE)																								1		1				

FOR ORIGINAL SIGNATURES, SEE ET-105.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	11/2/18	POLE I HAS SIGNAL 65 & PED SIG 88P PER POLE LAYOUT	KK	MV	CL
1	03/2018	REMOVED BBS, WIRE ADJUSTMENTS	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

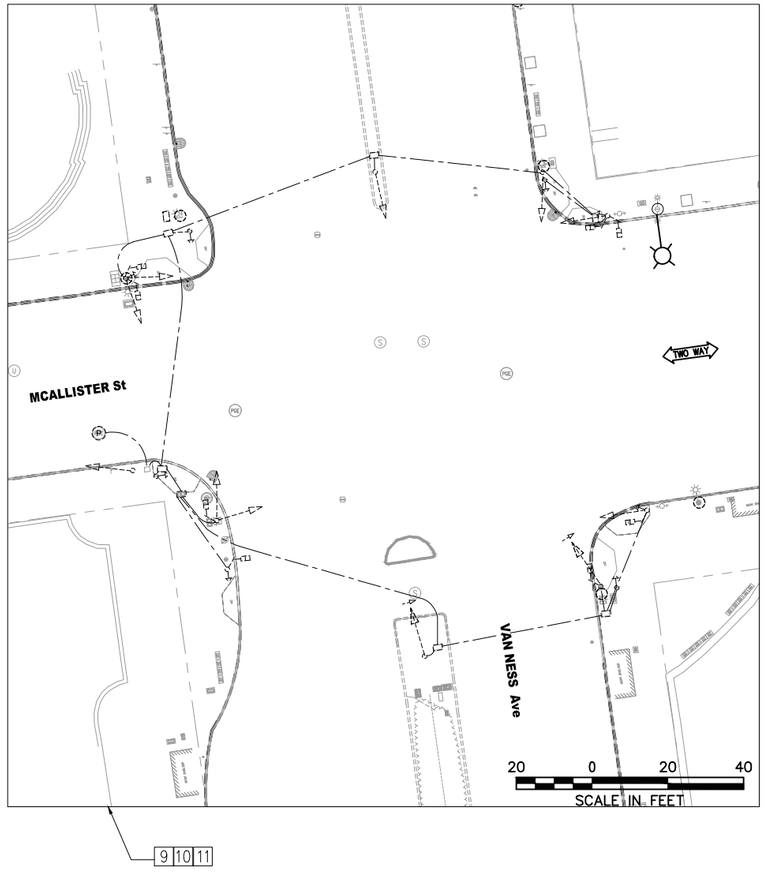
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

GROVE STREET
CONDUIT & WIRING SCHEDULES

1289

ET-105.2
ET-204

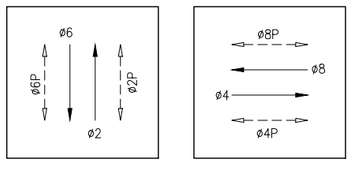
REVISION 2



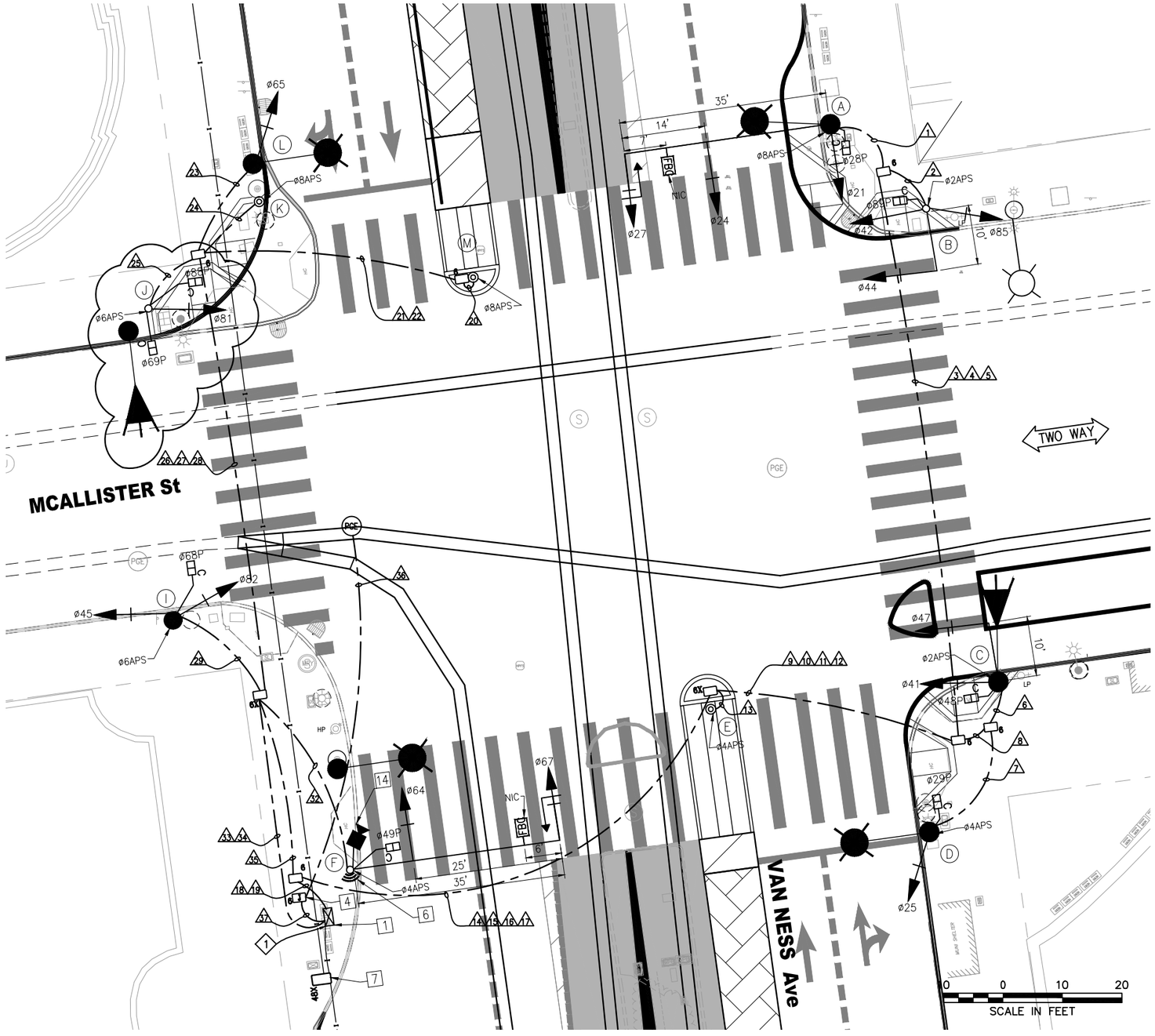
EXISTING EQUIPMENT

DETAIL NOTES:

1. THE CONTRACTOR SHALL CONTACT CLEAR CHANNEL TO RELOCATE NEWSPAPER RACKS TO INSTALL TRAFFIC SIGNAL CABINET.



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-106.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	11/2/18	POLE LAYOUT: ADJUSTED POLE B; COMBINED POLES F & G, H & I, AND J WITH OCS POLE; REMOVED SIGNAL 61.	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND G; REMOVED BBS; ADDED TYPE 6X PULLBOXES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL L. LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

MCALLISTER STREET
TRAFFIC SIGNAL WORK

ET-106.0
ET-204

REVISION 2

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	35	500 / 52	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	16-1-100	10		44 42 85	3S12" 3S12" 3S12"	MAS SV-2-TA	T T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	SIGNAL, SL & OCS COMBO POLE	10	499 / 47	41 47	3S12" 3S12"	SV-1-T MAS	T T		48	1S-COUNT	SP-1		SIGNAL MA MOUNT AT 20' HIGH APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	486 / 48	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓕ	SPECIAL MAST ARM POLE (23-4-100)	35		64 67	3S12"GUA 3S12"	MAS MAS	T T		49	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH APS ◇1 TSP ◇2 TRAFFIC CAMERA ◇3 POLE CAP TENON FOR FUTURE FBC 6' FROM END OF MAST ARM
Ⓖ	NOT USED	–		–	–	–	–		–	–	–	–	
Ⓗ	NOT USED	–		–	–	–	–		–	–	–	–	
Ⓘ	SIGNAL & OCS COMBO POLE	–	507	45 82	3S12" 3S12"	SV-2-TA	T T		68	1S-COUNT	SP-1-SF	–	APS ◇1
Ⓙ	1-A (10')	–		81	3S12"	TV-1-T	T		69 88	1S-COUNT 1S-COUNT	SP-1-SF(12") SP-1(22")	–	APS ◇1
Ⓚ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓛ	NEW SL	–	51	65	3S12"	SV-1-T	T		–	–	–	–	
Ⓜ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-106.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	11/2/18	POLE LAYOUT: COMBINED POLES F & G, H & I, AND J WITH OCS POLE; REMOVED SIGNAL 61.	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A, F, AND G; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

McALLISTER STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

1289

ET-106.1
ET-204

REVISION 2

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	1	2	2	2	2	3	2	1	2	2	2	1	2	2	2	2	2	1	2	2	3	2	2	3	2
				SP	SP						SP	SP				SP	SP					SP					SP	SP				SP		SP	SP		
VEHICLE SIGNAL Ø21	3		3						3					3				3																			
VEHICLE SIGNAL Ø24	3		3						3					3				3																			
VEHICLE SIGNAL Ø27	3		3						3					3				3																			
PED SIGNAL Ø28P	2		2						2					2				2																			
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2					2				2																			
VEHICLE SIGNAL Ø42		3	3						3					3				3																			
VEHICLE SIGNAL Ø44		3	3						3					3				3																			
VEHICLE SIGNAL Ø85		3	3						3					3				3																			
PED SIGNAL Ø89P		2	2						2					2				2																			
APS PPB FOR XING McALLISTER ES ON POLE B		2	2						2					2				2																			
VEHICLE SIGNAL Ø41						3		3		3					3				3																		
VEHICLE SIGNAL Ø47						3		3		3					3				3																		
PED SIGNAL Ø48P						2		2		2					2				2																		
APS PPB FOR XING McALLISTER ES ON POLE C						2		2		2					2				2																		
VEHICLE SIGNAL Ø25							3	3		3					3				3																		
PED SIGNAL Ø29P							2	2		2					2				2																		
APS PPB FOR XING VAN NESS SS ON POLE D							2	2		2					2				2																		
APS PPB FOR XING VAN NESS SS ON POLE E													2		2				2																		
APS PPB FOR XING VAN NESS NS ON POLE M																				2	2					2							2				
VEHICLE SIGNAL Ø65																							3			3							3				
APS PPB FOR XING VAN NESS NS ON POLE K																								2		2							2				
VEHICLE SIGNAL Ø81																									3	3							3				
PED SIGNAL Ø69P																									2	2							2				
PED SIGNAL Ø88P																									2	2							2				
APS PPB FOR XING McALLISTER WS ON POLE J																									2	2							2				
VEHICLE SIGNAL Ø45																													3				3				
VEHICLE SIGNAL Ø82																													3				3				
APS PPB FOR XING McALLISTER WS ON POLE I																													2				2				
VEHICLE SIGNAL Ø64																																	3				
VEHICLE SIGNAL Ø67																																	3				
PED SIGNAL Ø68P																																	2				
PED SIGNAL Ø49P																																	2				
APS PPB FOR XING VAN NESS SS ON POLE F																																	2				
#14 NEUTRAL	4	3				3	2																1		3				2			3				
#14 SPARE			3					3	3	3				3	3			3	3							3							3				
TOTAL #14 WIRES	17	16	29			13	9	20	29	20			2	29	22			29	22	2	2		4	2	12	19			12			13	42				
#10 WIRES NEUTRAL			1					1	1	1				1	1			1	1							1							2				
#6 WIRES (120 V SERVICE)																																				2	
#8 WIRES (120 V SERVICE)																																					2
#6 BSCW (SEE GENERAL NOTE 10)																																					
TSP RECEIVER (10 CONDUCTOR CABLE)																														1		1					
CCTV CAMERA WIRES (CAT5e & 3#18)																														1		1					

FOR ORIGINAL SIGNATURES, SEE ET-106.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	11/2/18	POLE LAYOUT: COMBINED POLES F & G, H & I, AND J	KK	MV	CL
		WITH OCS POLE; REMOVED SIGNAL 61.			
1	03/2018	REMOVED BBS	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

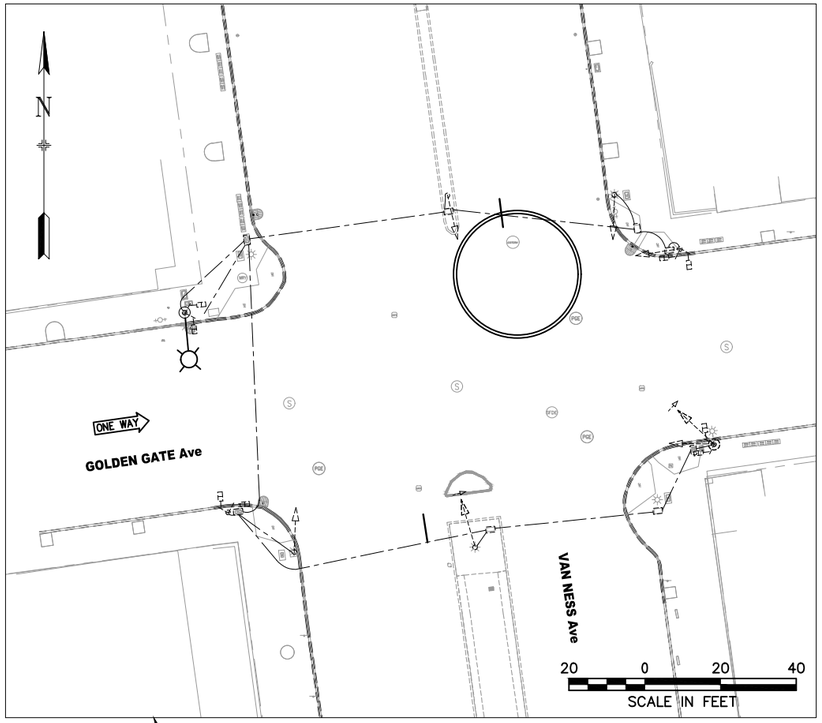
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

McALLISTER STREET
CONDUIT & WIRING SCHEDULES

1289

ET-106.2
ET-204

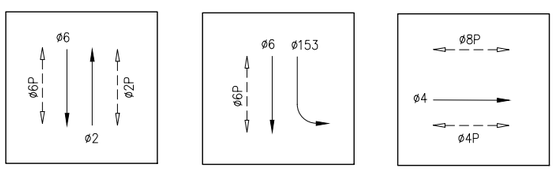
REVISION 2



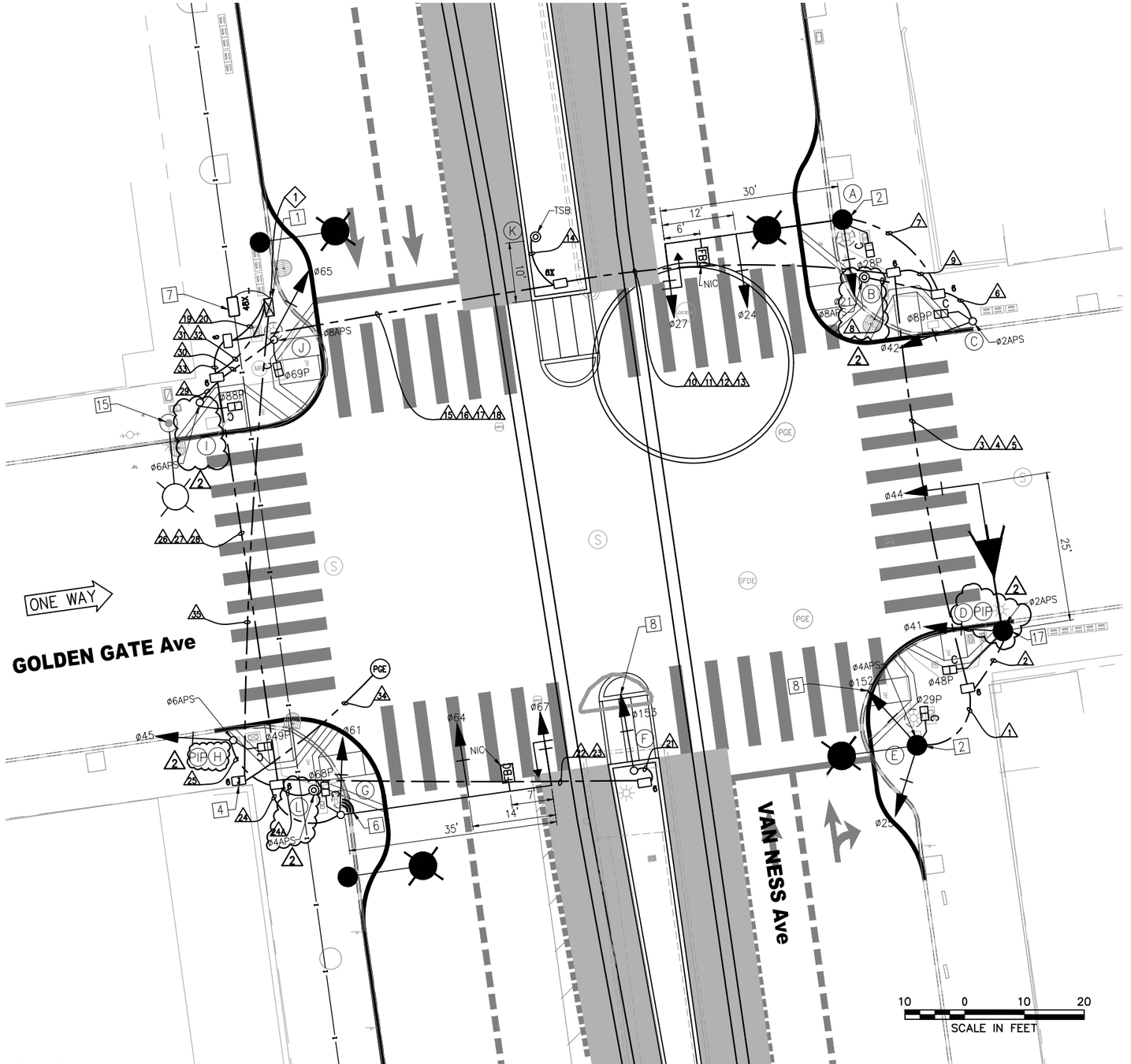
EXISTING EQUIPMENT

DETAIL NOTES:

1. THE CONTRACTOR SHALL CONTACT CLEAR CHANNEL TO RELOCATE NEWSPAPER RACKS TO INSTALL TRAFFIC SIGNAL CABINET.



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-107.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	3/26/18	ADDED PPB POLE L, PIP POLES, AND PER POLE LAYOUT	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND G, ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

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CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GOLDEN GATE AVENUE
TRAFFIC SIGNAL WORK

ET-107.0
ET-204

REVISION 3

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	602 / 62	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓒ	1-A (10')	–		42	3S12"	TV-1-T	T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	19-2-100	25	/ 53	41 44	3S12" 3S12"	SV-1-T MAS	T T		48	1S-COUNT	SP-1	–	APS ◇1 PIP – INSTALL POLE IN PLACE OF EXISTING POLE △2
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	590 / 58	25 152	3S12" 3S12"LB	SV-2-TA	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓕ	1-A (10')	–		153	3S12"LB	TV-1-T	T		–	–	–	–	
Ⓖ	SPECIAL MAST ARM POLE (23-4-100)	35		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓗ	1-A (10')	–		45	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ◇1 PIP – INSTALL POLE IN PLACE OF EXISTING POLE △2
Ⓘ	1-A (7')	–		–	–	–	–		88	1S-COUNT	TP-1	–	APS ◇1
Ⓙ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
Ⓚ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓛ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1 △2

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-107.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	3/26/18	ADDED NEW PPB POLE L & PIP POLES PER POLE LAYOUT	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT;	KK	MV	CL
		UPDATED POLES A AND G; ADDED FBC TENON NOTE			

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GOLDEN GATE AVENUE
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-107.1
ET-204

REVISION 3

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24A	25	26	27	28	29	30	31	32	33	34	35
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	1	3	2	2	2	2	1	2	2	2	2	3	2	2	2	2	2	1	2	2	2	2	2	2	3	2	2	3	2
				SP	SP							SP	SP	GRS			SP	SP		SP			SP					SP	SP				SP	SP		
TRANSIT SIGNAL Ø152	3		3							3					3				3																
VEHICLE SIGNAL Ø25	3		3							3					3				3																
PED SIGNAL Ø29P	2		2							2					2				2																
APS PPB FOR XING VAN NESS SS ON POLE E	2		2							2					2				2																
VEHICLE SIGNAL Ø44		3	3							3					3				3																
VEHICLE SIGNAL Ø41		3	3							3					3				3																
PED SIGNAL Ø48P		2	2							2					2				2																
APS PPB FOR XING GOLDEN GATE ES ON POLE D		2	2							2					2				2																
VEHICLE SIGNAL Ø42						3			3		3					3			3																
PED SIGNAL Ø89P						2			2		2					2			2																
APS PPB FOR XING GOLDEN GATE ES ON POLE C						2			2		2					2			2																
VEHICLE SIGNAL Ø21							3		3		3					3			3																
VEHICLE SIGNAL Ø24							3		3		3					3			3																
VEHICLE SIGNAL Ø27							3		3		3					3			3																
PED SIGNAL Ø28P							2		2		2					2			2																
APS PPB FOR XING VAN NESS NS ON POLE B								2	2		2					2			2																
TSB ON POLE K														2	2				2																
TRANSIT SIGNAL Ø153																					3	3			3	3				3	3				
VEHICLE SIGNAL Ø61																								3			3				3				
VEHICLE SIGNAL Ø64																								3			3				3				
VEHICLE SIGNAL Ø67																								3			3				3				
PED SIGNAL Ø68P																								2			2				2				
APS PPB FOR XING VAN NESS SS ON POLE L																									2		2				2				
VEHICLE SIGNAL Ø45																									3		3				3				
PED SIGNAL Ø49P																									2		2				2				
APS PPB FOR XING GOLDEN GATE WS ON POLE H																									2		2				2				
PED SIGNAL Ø88P																													2		2				
APS PPB FOR XING GOLDEN GATE WS ON POLE I																													2		2				
VEHICLE SIGNAL Ø65																														3	3				
PED SIGNAL Ø69P																														2	2				
APS PPB FOR XING VAN NESS NS ON POLE J																														2	2				
#14 NEUTRAL	3	3				2	4																	4		2			1	2				
#14 SPARE			3						3	3	3				3	3			6			3					3				3				
TOTAL #14 WIRES	13	13	23			9	15	2	23	23	23			2	25	23			48		3	6		17	2	9	26		5	9	37				
#10 WIRES NEUTRAL			1						1	1	1				1	1			2		1	1					2				3				
#6 WIRES (120 V SERVICE)																																		2		
#8 WIRES (120 V SERVICE)																																			2	
#6 BSCW (SEE GENERAL NOTE 10)																																				
TSP RECEIVER (10 CONDUCTOR CABLE)																								1		1				1					

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	3/26/18	ADDED NEW PPB POLE L, CONDUIT 24A, AND WIRES	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

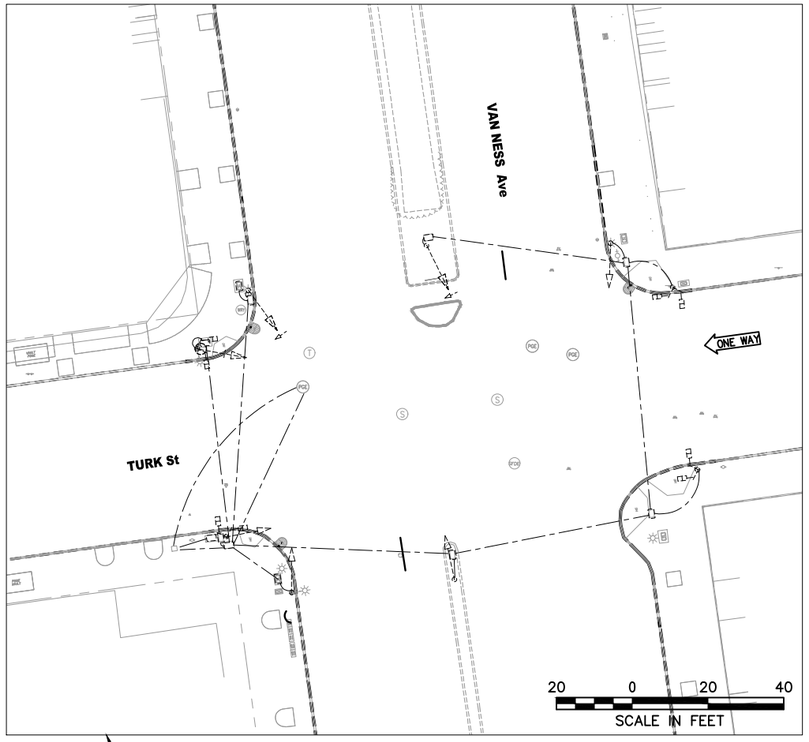
1289

GOLDEN GATE AVENUE
CONDUIT & WIRING SCHEDULES

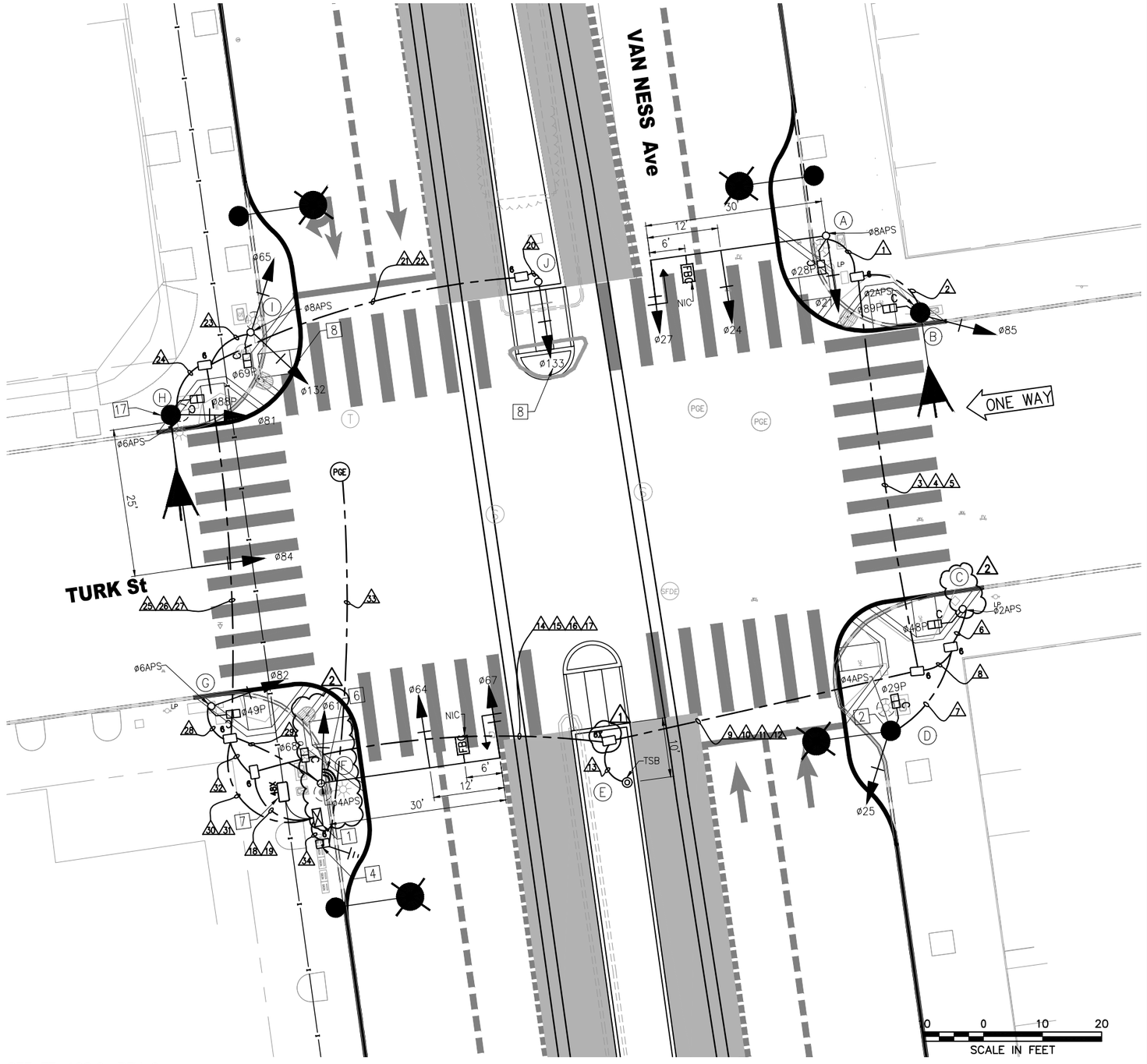
ET-107.2
ET-204

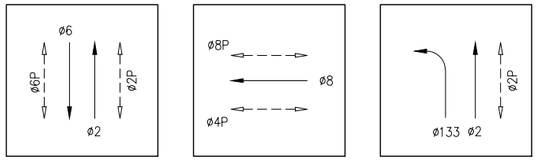
REVISION 2

T:\V_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:37 pm



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-108.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
NA	2/20/19	RFI #813: POLE C, F, & IC PER LAYOUT. NO DWG ISSUED.	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND F, ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED K. KWONG
DRAWN K. KWONG
CHECKED R. ZAMORA/C. LIU
REVIEWED C. LIU
RECOMMENDED P. WILSON
APPROVED R. OLEA
DATE 12/4/2015

REGISTERED PROFESSIONAL ENGINEER CARYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

TURK STREET
TRAFFIC SIGNAL WORK

1289

ET-108.0
ET-204

REVISION 2

T:\E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:37 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SPECIAL MAST ARM POLE (18-4-100)	30		21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	NEW SL (CITY STD)	–	64	65	3S12"	SV-1-T	T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	1-A (10')	–		–	–	–	–		48	1S-COUNT	SP-1	–	APS ◇1 POLE CAP
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	690 / 68	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓕ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TSP ◇2 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓖ	1-A (10')	–		82	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	19-2-100	25	72	81 84	3S12" 3S12"	SV-1-T MAS	T T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓘ	1-A (10')	–		65 132	3S12" 3S12"LB	TV-2-T	T T		69	1S-COUNT	SP-1	–	APS ◇1
Ⓙ	1-A (10')	–		133	3S12"LB	TV-1-T	T		–	–	–	–	

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-108.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A, B, C, AND F; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

TURK STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-108.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:37 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	1	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP	GRS			SP	SP		SP			SP				SP	SP				SP	SP			
VEHICLE SIGNAL Ø21	3		3						3					3				3																
VEHICLE SIGNAL Ø24	3		3						3					3				3																
VEHICLE SIGNAL Ø27	3		3						3					3				3																
PED SIGNAL Ø28P	2		2						2					2				2																
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2					2				2																
VEHICLE SIGNAL Ø85		3	3						3					3				3																
PED SIGNAL Ø89P		2	2						2					2				2																
APS PPB FOR XING TURK ES ON POLE B		2	2						2					2				2																
PED SIGNAL Ø48P						2		2		2					2			2																
APS PPB FOR XING TURK ES ON POLE C						2		2		2					2			2																
VEHICLE SIGNAL Ø25							3	3		3					3			3																
PED SIGNAL Ø29P							2	2		2					2			2																
APS PPB FOR XING VAN NESS SS ON POLE D							2	2		2					2			2																
TSB ON POLE E													2		2			2																
TRANSIT SIGNAL Ø143																				3	3				3					3				
TRANSIT SIGNAL Ø142																							3		3					3				
VEHICLE SIGNAL Ø65																							3		3					3				
PED SIGNAL Ø69P																							2		2					2				
APS PPB FOR XING VAN NESS NS ON POLE I																							2		2					2				
VEHICLE SIGNAL Ø81																								3	3					3				
VEHICLE SIGNAL Ø84																								3	3					3				
PED SIGNAL Ø88P																								2	2					2				
APS PPB FOR XING TURK WS ON POLE H																								2	2					2				
VEHICLE SIGNAL Ø82																											3			3				
PED SIGNAL Ø49P																											2			2				
APS PPB FOR XING TURK WS ON POLE G																											2			2				
VEHICLE SIGNAL Ø61																												3		3				
VEHICLE SIGNAL Ø64																												3		3				
VEHICLE SIGNAL Ø67																												3		3				
PED SIGNAL Ø68P																												2		2				
APS PPB FOR XING VAN NESS SS ON POLE F																												2		2				
#14 NEUTRAL	4	2				1	2											6					2	3				2	4					
#14 SPARE			3					3	3	3				3	3			6			3				3					3				
TOTAL #14 WIRES	17	9	23			5	9	14	23	14			2	23	16			39		3	6		12	13	26			9	17	46				
#10 WIRES NEUTRAL			1					1	1	1				1	1			2		1	1				2					3				
#6 WIRES (120 V SERVICE)																																	2	
#8 WIRES (120 V SERVICE)																																		2
#6 BSCW (SEE GENERAL NOTE 10)																																		
TSP RECEIVER (10 CONDUCTOR CABLE)																													1	1				

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NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

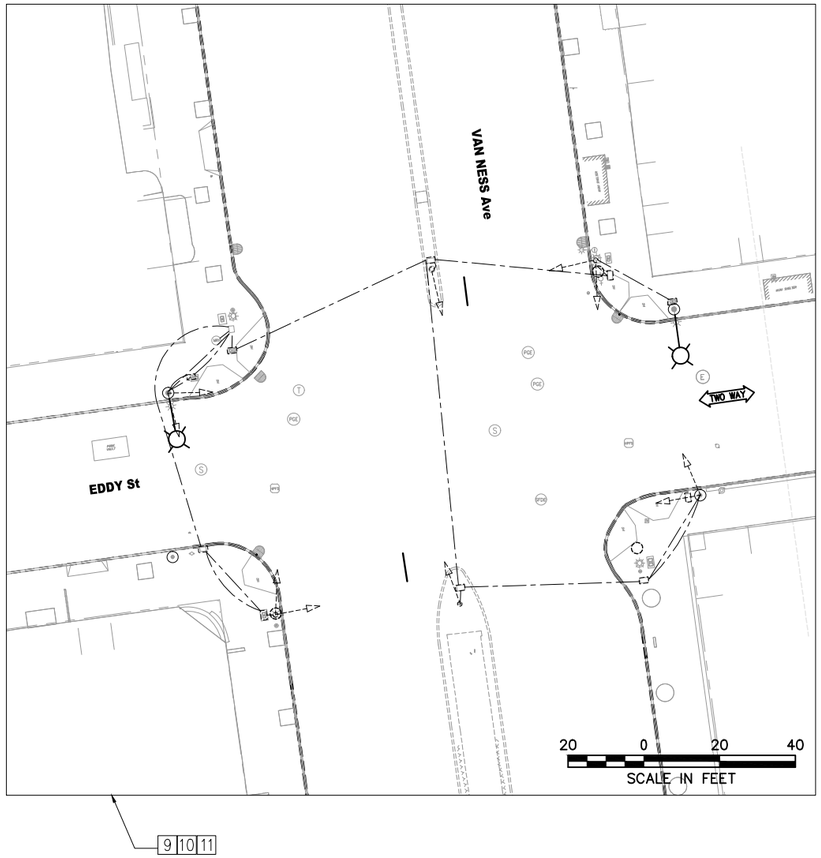
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

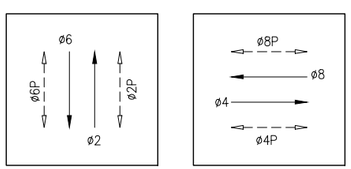
TURK STREET
CONDUIT & WIRING SCHEDULES

ET-108.2
ET-204

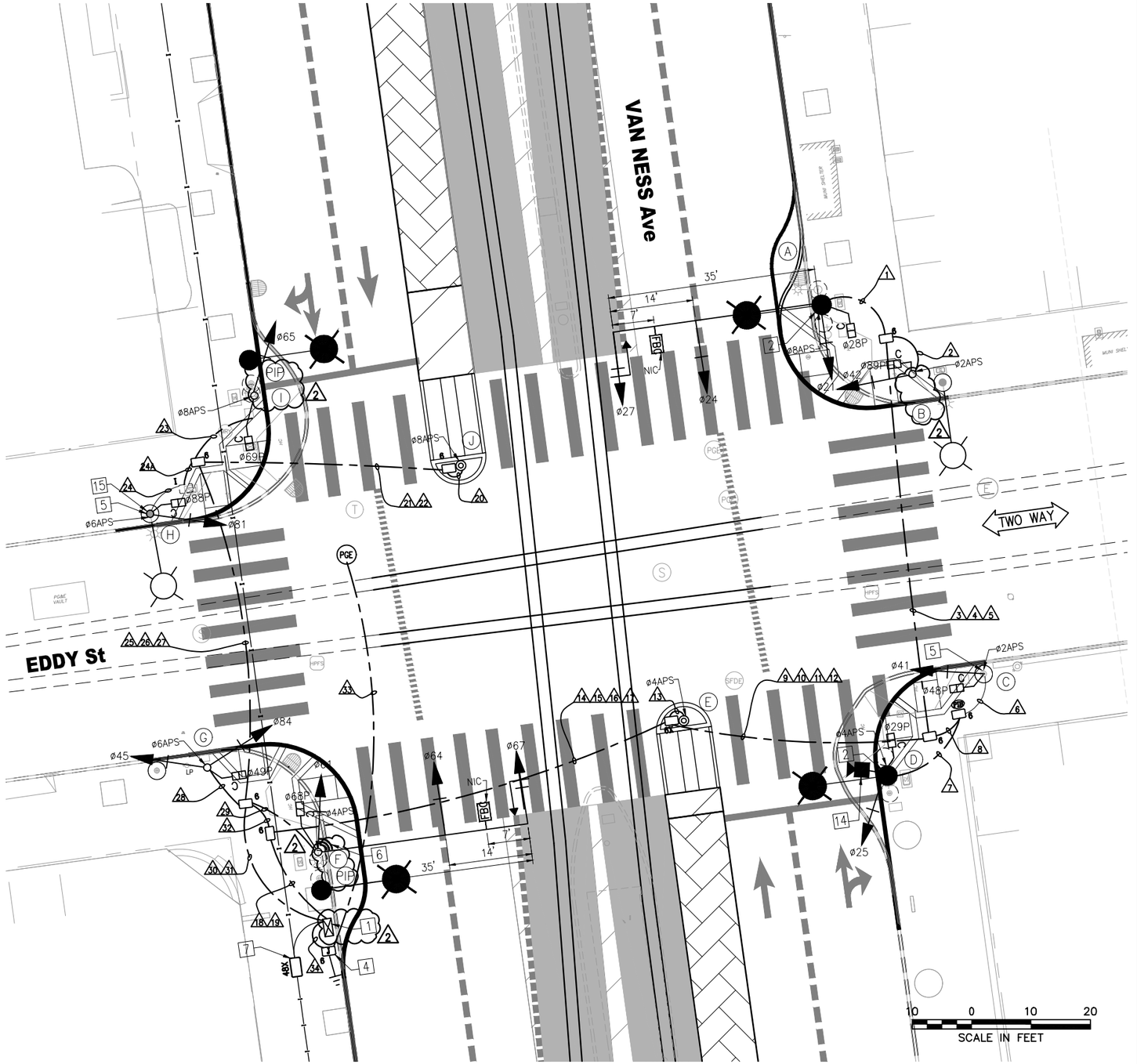
REVISION 1



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-109.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/13/18	POLE LAYOUT – PIP POLE F & I; POLE B AND TRAFFIC SIGNAL CABINET PER POLE LAYOUT	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND F, ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO

MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

EDDY STREET
TRAFFIC SIGNAL WORK

ET-109.0
ET-204

REVISION 3

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP16401ETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:37 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	35	800A / 82	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (10')	–		42	3S12"	TV-1-T	T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	EXISTING OCS POLE	–	799	41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	790 / 78	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1 TRAFFIC CAMERA ◇3
Ⓔ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓕ	SPECIAL MAST ARM POLE (23-4-100)	35		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE △2
Ⓖ	1-A (10')			45 84	3S12" 3S12"	TV-2-T	T T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	EXISTING SL & OCS POLE	–	800	81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓘ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2 PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE △2
Ⓙ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-109.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/13/18	POLE LAYOUT – PIP POLE F & I PER POLE LAYOUT	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT;			
		UPDATED POLES A AND F; ADDED FBC TENON NOTES	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

EDDY STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-109.1
ET-204

REVISION 3

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT840IETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:37 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24A	25	26	27	28	29	30	31	32	33	34
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	1	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP	EX					SP	SP				SP	SP		SP			SP		EX		SP	SP				SP	SP		
VEHICLE SIGNAL Ø21	3		3						3					3				3																
VEHICLE SIGNAL Ø24	3		3						3					3				3																
VEHICLE SIGNAL Ø27	3		3						3					3				3																
PED SIGNAL Ø28P	2		2						2					2				2																
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2					2				2																
VEHICLE SIGNAL Ø42		3	3						3					3				3																
PED SIGNAL Ø89P		2	2						2					2				2																
APS PPB FOR XING EDDY ES ON POLE B		2	2						2					2				2																
VEHICLE SIGNAL Ø41						3		3		3					3			3																
PED SIGNAL Ø48P						2		2		2					2			2																
APS PPB FOR XING EDDY ES ON POLE C						2		2		2					2			2																
VEHICLE SIGNAL Ø25							3	3		3					3			3																
PED SIGNAL Ø29P							2	2		2					2			2																
APS PPB FOR XING VAN NESS SS ON POLE D							2	2		2					2			2																
APS PPB FOR XING VAN NESS SS ON POLE E													2		2			2																
APS PPB FOR XING VAN NESS NS ON POLE J																				2	2					2					2				
VEHICLE SIGNAL Ø65																							3			3					3				
PED SIGNAL Ø69P																							2			2					2				
APS PPB FOR XING VAN NESS NS ON POLE I																							2			2					2				
VEHICLE SIGNAL Ø81																								3	3	3					3				
PED SIGNAL Ø88P																								2	2	2					2				
APS PPB FOR XING EDDY WS ON POLE H																								2	2	2					2				
VEHICLE SIGNAL Ø45																													3		3				
VEHICLE SIGNAL Ø84																													3		3				
PED SIGNAL Ø49P																													2		2				
APS PPB FOR XING EDDY WS ON POLE G																													2		2				
VEHICLE SIGNAL Ø61																														3	3				
VEHICLE SIGNAL Ø64																														3	3				
VEHICLE SIGNAL Ø67																														3	3				
PED SIGNAL Ø68P																														2	2				
APS PPB FOR XING VAN NESS SS ON POLE F																														2	2				
#14 NEUTRAL	4	2				2	2																2	2	2				2	4				
#14 SPARE			3					3	3	3				3	3			6								3					3				
TOTAL #14 WIRES	17	9	23			9	9	17	23	17			2	23	19			42		2	2		9	9	9	19			12	17	42				
#10 WIRES NEUTRAL			1					1	1	1				1	1			2								1					2				
#6 WIRES (120 V SERVICE)																																	2		
#8 WIRES (120 V SERVICE)																																		2	
#6 BSCW (SEE GENERAL NOTE 10)																																			
TSP RECEIVER (10 CONDUCTOR CABLE)																														1	1				
CCTV CAMERA WIRES (CAT5e & 3#18)							1	1		1					1			1																	

FOR ORIGINAL SIGNATURES, SEE ET-109.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED CONDUIT RUN 24A AND WIRES	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

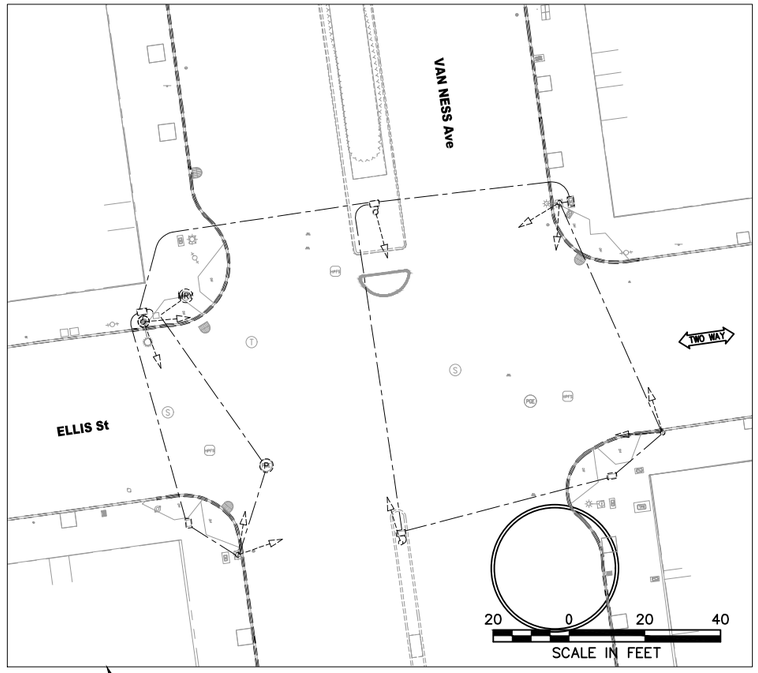
1289

EDDY STREET
CONDUIT & WIRING SCHEDULES

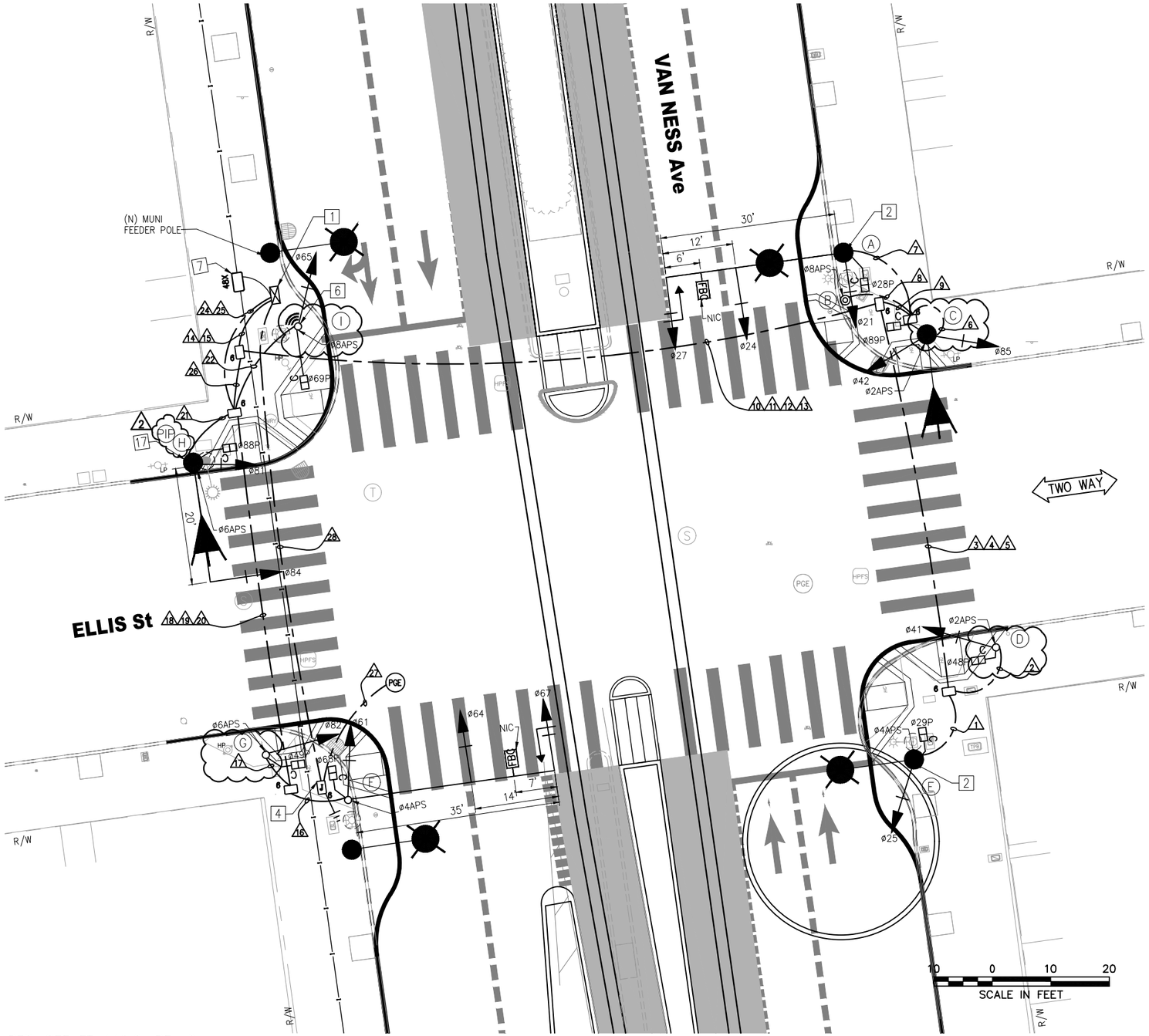
ET-109.2
ET-204

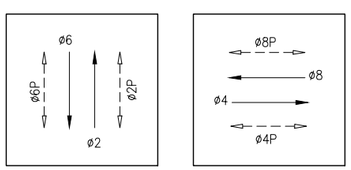
REVISION 2

T:_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:37 pm



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-110.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED SIGNALS 41 AND 42, UPDATED PHASE DIAGRAM; ADDED FBC SIGNS ON POLES A AND F, MOVED #6APS TO POLE G; MOVED #8APS TO RENAMED POLE I	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

ELLIS STREET
TRAFFIC SIGNAL WORK

ET-110.0
ET-204

REVISION 2

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	902 / 92	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPB POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓒ	NEW SL (CITY STD)	–	/ 86	42 85	3S12" 3S12"	SV-2-TA	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	1-A (10')	–		41	3S12"	TV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	896 / 88	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓕ	SPECIAL MAST ARM POLE (23-4-100)	35		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS X 2 ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓖ	1-A (10')	–		82	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	17-2-100	20	/ 92	81 84	3S12" 3S12"	SV-1-T MAS	T T		88	1S-COUNT	SP-1	–	APS ◇1 PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE
Ⓘ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	TSP ◇2 APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-110.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	7/13/18	RFI#461: POLE LAYOUT – PIP POLE H. NO DWG ISSUED.	KK	MV	CL
1	03/2018	ADDED SIGNALS 41 AND 42; UPDATED POLES A, B, C, D, AND F; ADDED FBC TENON NOTE; MOVED #8APS TO RENAMED POLE I	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

ELLIS STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-110.1
ET-204

REVISION 2

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		24	25	26	27	28		
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	1	3	2	2	2	2	3	2	2	2	2	2	2	2	2		3	2	2	3	2		
				SP	SP							SP	SP		SP				SP	SP					SP	SP				
VEHICLE SIGNAL Ø25	3		3							3				3																
PED SIGNAL Ø29P	2		2							2				2																
APS PPB FOR XING VAN NESS SS ON POLE E	2		2							2				2																
VEHICLE SIGNAL Ø41		3	3							3				3																
PED SIGNAL Ø48P		2	2							2				2																
APS PPB FOR XING ELLIS ES ON POLE D		2	2							2				2																
VEHICLE SIGNAL Ø42						3			3		3			3																
VEHICLE SIGNAL Ø85						3			3		3			3																
PED SIGNAL Ø89P						2			2		2			2																
VEHICLE SIGNAL Ø21							3		3		3			3																
VEHICLE SIGNAL Ø24							3		3		3			3																
VEHICLE SIGNAL Ø27							3		3		3			3																
PED SIGNAL Ø28P							2		2		2			2																
APS PPB FOR XING ELLIS ES ON POLE C								2	2		2			2																
APS PPB FOR XING VAN NESS NS ON POLE B								2	2		2			2																
VEHICLE SIGNAL Ø61																3		3						3						
VEHICLE SIGNAL Ø64																3		3						3						
VEHICLE SIGNAL Ø67																3		3						3						
PED SIGNAL Ø68P																2		2						2						
APS PPB FOR XING VAN NESS SS ON POLE G																	2	2						2						
APS PPB FOR XING ELLIS WS ON POLE F																2		2						2						
VEHICLE SIGNAL Ø82																	3	3						3						
PED SIGNAL Ø49P																	2	2						2						
VEHICLE SIGNAL Ø81																					3			3						
VEHICLE SIGNAL Ø84																					3			3						
PED SIGNAL Ø88P																					2			2						
APS PPB FOR XING ELLIS WS ON POLE H																					2			2						
VEHICLE SIGNAL Ø65																						3		3						
PED SIGNAL Ø69P																						2		2						
APS PPB FOR XING VAN NESS NS ON POLE I																						2		2						
#14 NEUTRAL	2	2				3	4									4	2				3	2								
#14 SPARE			3						3	3	3			6				3						3						
TOTAL #14 WIRES	9	9	17			11	15	4	26	17	26			43		21	9	23			13	9		40						
#10 WIRES NEUTRAL			1						1	1	1			2				1						2						
#6 WIRES (120 V SERVICE)																											2			
#8 WIRES (120 V SERVICE)																												2		
#6 BSCW (SEE GENERAL NOTE 10)																														
TSP RECEIVER (10 CONDUCTOR CABLE)																						1		1						

FOR ORIGINAL SIGNATURES, SEE ET-110.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED SIGNALS 41 AND 42; MOVED #2APS TO POLE C; MOVED #6APS ON POLE G; MOVED #8APS TO RENAMED POLE I	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO

MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

ELLIS STREET

CONDUIT & WIRING SCHEDULES

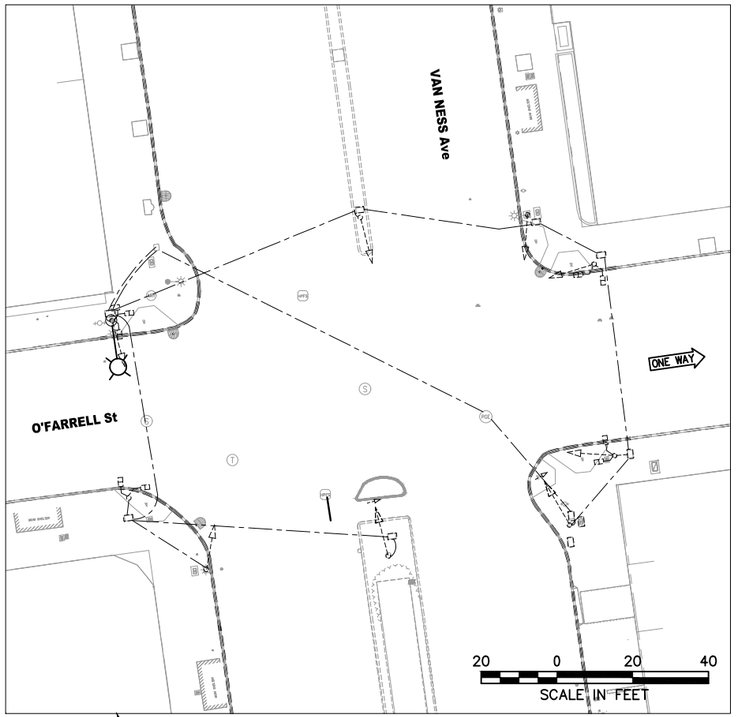
ET-110.2

ET-204

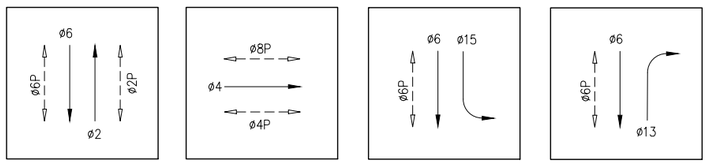
REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:38 pm

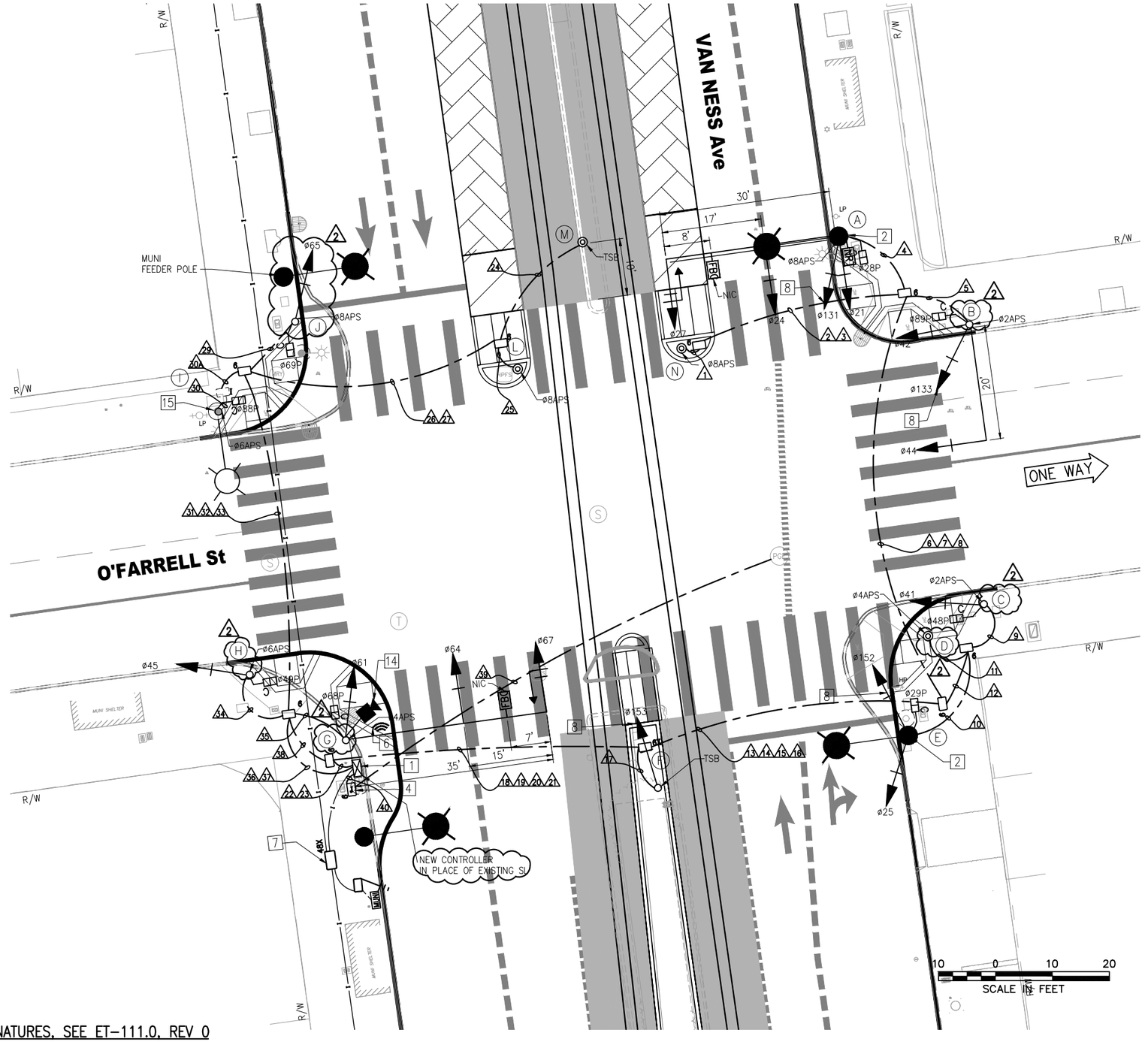
BORDER REVISED 11/17/05



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-111.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/13/18	RFI #400 AND POLE LAYOUT – POLES J & K COMBINED	KK	MV	CL
		INTO POLE J; ADJUST POLE B, C, D, G, AND H			
1	06/2018	ADDED TRANSIT SIGNAL 131 ON POLE A & 133 ON POLE	KK	MV	CL
		B, ADDED TSB ON POLE F, SHIFTED POLE F 10' BACK;			
		UPDATED PHASE DIAGRAM; ADDED FBC SIGN ON POLES A			
		AND G; ADDED TYPE 6X PULLBOX; ADDED NRT EMS			

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

O'FARRELL STREET
TRAFFIC SIGNAL WORK

ET-111.0
ET-204

REVISION 3

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:38 pm

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1000 / 102	21 24 27 131	3S12" 3S12" 3S12"GUA 3S12"RB	SV-1-T MAS MAS SV-1-T	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZ. SIGNAL MA MOUNT AT 21' HIGH SIGNAL 131 MOUNT AT 18' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 "NO RIGHT TURN" BLANK-OUT SIGN TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	16-2-100	20		42 133 44	3S12" 3S12" 3S12"RB	SV-2-TA MAS	T T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	1-A (10')	–		41	3S12"	TV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	994 / 98	25 152	3S12" 3S12"LB	SV-2-TA	T T		29	1S-COUNT	SP-1	–	
Ⓕ	1-A (10')	–		153	3S12"LB	TV-1-T	T		–	–	–	–	TSB
Ⓖ	SPECIAL MAST ARM POLE (23-4-100)	35		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TSP ◇2 TRAFFIC CAMERA ◇3 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓗ	1-A (10')	–		45	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓘ	EXISTING SL	–		–	–	–	–		88	1S-COUNT	SP-1	–	APS ◇1
Ⓙ	1-A (10')	–		65	3S12"	TV-1-T	T	△2	69	1S-COUNT	SP-1	–	APS ◇1
~~Ⓚ~~	~~1-A (10')~~ △2	–		~~65~~	~~3S12"~~	~~TV-1-T~~ △2	–		–	–	–	–	
Ⓛ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓜ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓝ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-111.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/13/18	RFI #400 AND POLE LAYOUT – POLES J & K COMBINED INTO NEW POLE J	KK	MV	CL
1	06/2018	ADDED TRANSIT SIGNALS 131 AND 133; UPDATED POLES A, B, G, AND L; ADDED FBC TENON NOTE; ADDED NRT EMS	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

O'FARRELL STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-111.1
ET-204

REVISION 3

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	30A	31	32	33	34	35	36	37	38	39	40
CONDUIT SIZE (INCH)	1	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	3	2	1	1	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2
			SP					SP							SP	SP				SP				GRS			SP			EX			SP	SP				SP	SP		
APS PPB FOR XING VAN NESS NS ON POLE N	2	2				2							2					2				2																				
VEHICLE SIGNAL Ø21				3		3							3					3				3																			
VEHICLE SIGNAL Ø24				3		3							3					3				3																			
VEHICLE SIGNAL Ø27				3		3							3					3				3																			
TRANSIT SIGNAL Ø131				3		3							3					3				3																			
PED SIGNAL Ø28P				2		2							2					2				2																			
APS PPB FOR XING VAN NESS NS ON POLE A				2		2							2					2				2																			
VEHICLE SIGNAL Ø42					3	3							3					3				3																			
VEHICLE SIGNAL Ø44					3	3							3					3				3																			
PED SIGNAL Ø89P					2	2							2					2				2																			
APS PPB FOR XING O'FARRELL ES ON POLE B					2	2							2					2				2																			
VEHICLE SIGNAL Ø41									3			3		3					3				3																		
PED SIGNAL Ø48P									2			2		2					2				2																		
APS PPB FOR XING O'FARRELL ES ON POLE C									2			2		2					2				2																		
TRANSIT SIGNAL Ø152										3		3		3					3				3																		
VEHICLE SIGNAL Ø25										3		3		3					3				3																		
PED SIGNAL Ø29P										2		2		2					2				2																		
APS PPB FOR XING VAN NESS SS ON POLE D											2	2		2					2				2																		
TRANSIT SIGNAL Ø153																	3		3				3																		
TSB ON POLE F																	2		2				2																		
TSB ON POLE M																								2		2						2					2				
TRANSIT SIGNAL Ø133					3		3							3					3			3														2				
APS PPB FOR XING VAN NESS NS ON POLE L																									2	2						2					2				
VEHICLE SIGNAL Ø65																												3	2			3					3				
PED SIGNAL Ø69P																												2				2					2				
APS PPB FOR XING VAN NESS NS ON POLE J																												2				2					2				
PED SIGNAL Ø88P																													2	2	2						2				
APS PPB FOR XING O'FARRELL WS ON POLE I																													2	2	2						2				
VEHICLE SIGNAL Ø45																																		3			3				
PED SIGNAL Ø49P																																		2			2				
APS PPB FOR XING O'FARRELL WS ON POLE H																																		2			2				
VEHICLE SIGNAL Ø61																																			3	3					
VEHICLE SIGNAL Ø64																																			3	3					
VEHICLE SIGNAL Ø67																																			3	3					
PED SIGNAL Ø68P																																			2	2					
APS PPB FOR XING VAN NESS SS ON POLE G																																			2	2					
#14 NEUTRAL				5	3				2	3															1				1	1	1				2	4				
#14 SPARE						3						3	3	3				3	3			3	3									3					3				
TOTAL #14 WIRES	2	2		21	16	31	3		9	11	2	20	31	23			5	31	28			34	25	2	3	4		8	5	5	18			9	17	38				
#10 WIRES NEUTRAL						1						1	1	1			1	1	2			1	2					2			1					2				
#6 WIRES (120 V SERVICE)																																						2			
#8 WIRES (120 V SERVICE)																																							2		
#6 BSCW (SEE GENERAL NOTE 10)																																									
TSP RECEIVER (10 CONDUCTOR CABLE)																																				1	1				
CCTV CAMERA WIRES (CAT5e & 3#18)																																				1	1				
NO RIGHT TURN EMS WIRES (1#14, 1#10 & 1#6 GROUND)				1			1							1						1		1																		

FOR ORIGINAL SIGNATURES, SEE ET-111.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/13/18	RFI #400 AND POLE LAYOUT – POLES J & K COMBINED INTO POLE J	KK	MV	CL
1	06/2018	UPDATED SCHEDULE; ADDED TRANSIT SIGNALS 131 AND 133 ADDED CONDUIT RUN 30A AND WIRES; ADDED NRT EMS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

O'FARRELL STREET
CONDUIT & WIRING SCHEDULES

1289

ET-111.2
ET-204

REVISION 3

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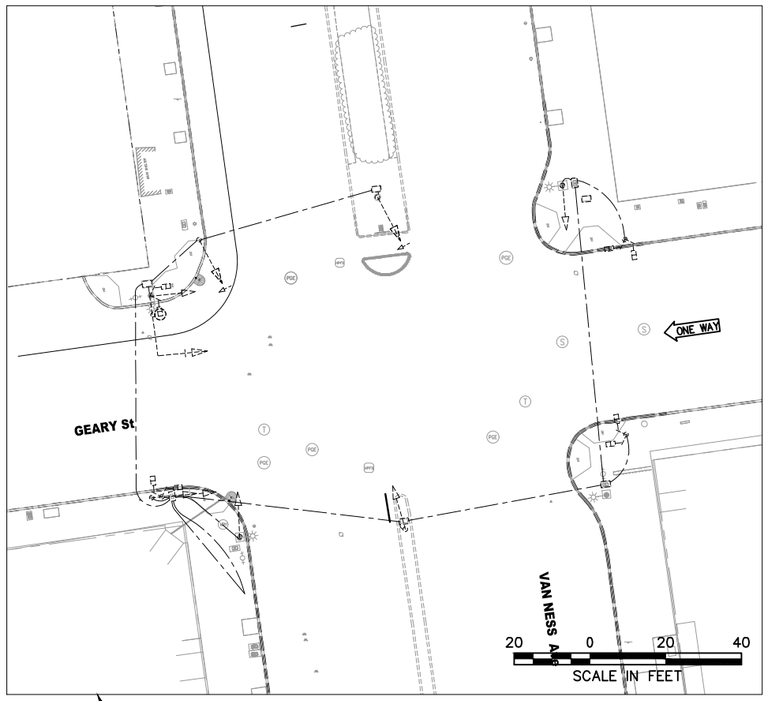
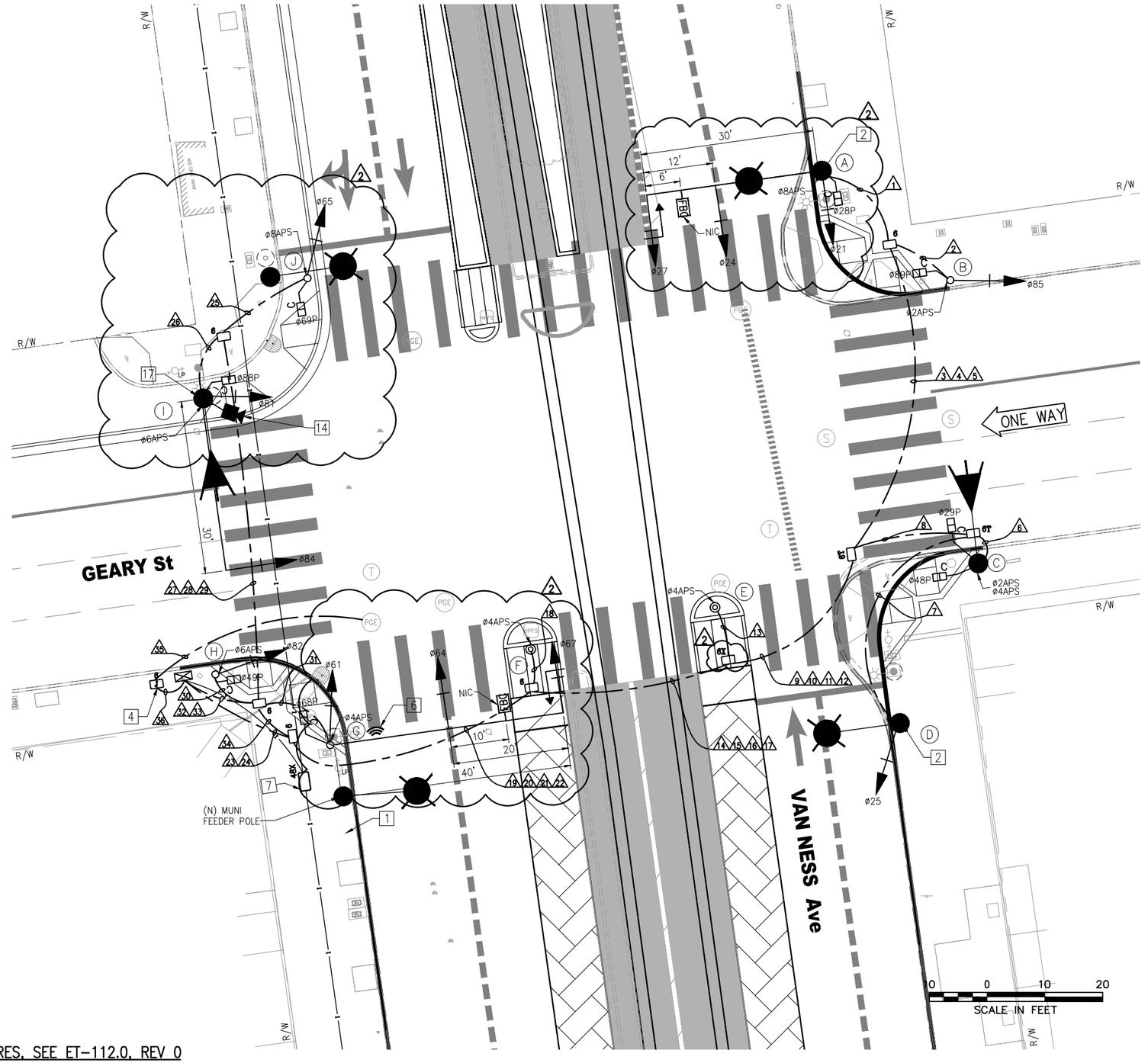
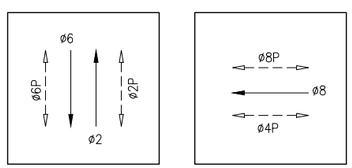


EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-112.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	03/2018	ADDED FBC SIGNS ON POLES A AND G, ADJUSTED POLE I LOCATION, NEW 1-A POLE FOR J; ADDED TYPE 6X PULLBOX	KK	MV	CL
1	06/2017	POLE J ON COMBINED OCS/SL POLE; MOVE ø8APS TO POLE I	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

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CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

GEARY STREET
TRAFFIC SIGNAL WORK

1289

ET-112.0
ET-204

REVISION 3

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1102 / 112 (2)	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (2) SEE ST PLANS FOR POLE DETAILS APS ⟨1⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (2)
Ⓑ	1-A (10')	–		85	3S12"	TV-1-T	T		89	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓒ	NEW SL	–	101 (2)	–	–	–	–		29 48	1S-COUNT 1S-COUNT	SP-1-SF(12") SP-1(22")	–	APS ⟨1⟩ SPECIAL POLE FOUNDATION
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	1060 / 108	25	3S12"	SV-1-T	T		–	–	–	–	
Ⓔ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ⟨1⟩
Ⓕ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ⟨1⟩
Ⓖ	SPECIAL MAST ARM POLE (27-4-100) (2)	40		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (2) APS ⟨1⟩ TSP ⟨2⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (2)
Ⓗ	1-A (13')	–		82	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓘ	19-2-100	30	112	81 84	3S12" 3S12"	SV-1-T MAS	T T		88	1S-COUNT	SP-1	–	MOUNT SIGNAL 81 AT 13' HIGH (2) APS ⟨1⟩ TRAFFIC CAMERA ⟨3⟩ COORDINATE W/ CPMC HOSPITAL CONSTRUCTION
Ⓙ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	COORDINATE W/ CPMC HOSPITAL CONSTRUCTION (2) APS ⟨1⟩

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

⟨1⟩ INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
⟨2⟩ INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
⟨3⟩ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
⟨4⟩ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-112.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT, UPDATED POLES A, C, J, I, AND G; ADDED FBC TENON NOTE	KK	MV	CL
1	06/2017	POLE J ON COMBINED OCS/SL POLE, UPDATED POLE I AND J	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GEARY STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-112.1
ET-204

REVISION 3

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	1	2	2	2	2	1	2	2	2	2	3	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP				SP	SP				SP	SP		SP				SP	SP				SP				
VEHICLE SIGNAL Ø21	3		3						3					3					3				3													
VEHICLE SIGNAL Ø24	3		3						3					3					3				3													
VEHICLE SIGNAL Ø27	3		3						3					3					3				3													
PED SIGNAL Ø28P	2		2						2					2					2				2													
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2					2					2				2													
VEHICLE SIGNAL Ø85		3	3						3					3					3				3													
PED SIGNAL Ø89P		2	2						2					2					2				2													
APS PPB FOR XING GEARY ES ON POLE B		2	2						2					2					2				2													
PED SIGNAL Ø29P						2		2		2					2					2				2													
PED SIGNAL Ø48P						2		2		2					2					2				2													
APS PPB FOR XING GEARY ES ON POLE C						2		2		2					2					2				2													
APS PPB FOR XING VAN NESS SS ON POLE C						2		2		2					2					2				2													
VEHICLE SIGNAL Ø25							3	3		3					3					3				3													
APS PPB FOR XING VAN NESS SS ON POLE E													2		2					2				2													
APS PPB FOR XING VAN NESS SS ON POLE F																		2		2				2													
VEHICLE SIGNAL Ø65																									3		3					3				
~~PED SIGNAL Ø69P~~																									2		2					2				
APS PPB FOR XING VAN NESS NS ON POLE J																									2		2					2				
VEHICLE SIGNAL Ø81																										3	3					3				
VEHICLE SIGNAL Ø84																										3	3					3				
PED SIGNAL Ø88P																										2	2					2				
APS PPB FOR XING GEARY WS ON POLE I																										2	2					2				
VEHICLE SIGNAL Ø82																														3		3				
PED SIGNAL Ø49P																														2		2				
APS PPB FOR XING GEARY WS ON POLE H																														2		2				
VEHICLE SIGNAL Ø61																															3	3				
VEHICLE SIGNAL Ø64																															3	3				
VEHICLE SIGNAL Ø67																															3	3				
PED SIGNAL Ø68P																															2	2				
APS PPB FOR XING VAN NESS SS ON POLE G																															2	2				
#14 NEUTRAL	4	2				2	1																		2	3				2	4					
#14 SPARE			3					3	3	3				3	3				3	3			6				3					3				
TOTAL #14 WIRES	17	9	23			10	4	14	23	14			2	23	16			2	23	18			41		7	15	20			9	17	40				
#10 WIRES NEUTRAL			1					1	1	1				1	1				1	1			2				1					2				
#6 WIRES (120 V SERVICE)																																		2		
#8 WIRES (120 V SERVICE)																																			2	
#6 BSCW (SEE GENERAL NOTE 10)																																				
TSP RECEIVER (10 CONDUCTOR CABLE)																															1	1				
CCTV CAMERA WIRES (CAT5e & 3#18)																										1	1					1				

2

FOR ORIGINAL SIGNATURES, SEE ET-112.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	03/2018	UPDATED APS WIRING TO POLE J	KK	MV	CL
1	06/2017	UPDATED APS WIRING FROM POLE J TO POLE I	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

GEARY STREET
CONDUIT & WIRING SCHEDULES

1289

ET-112.2
ET-204

REVISION 3

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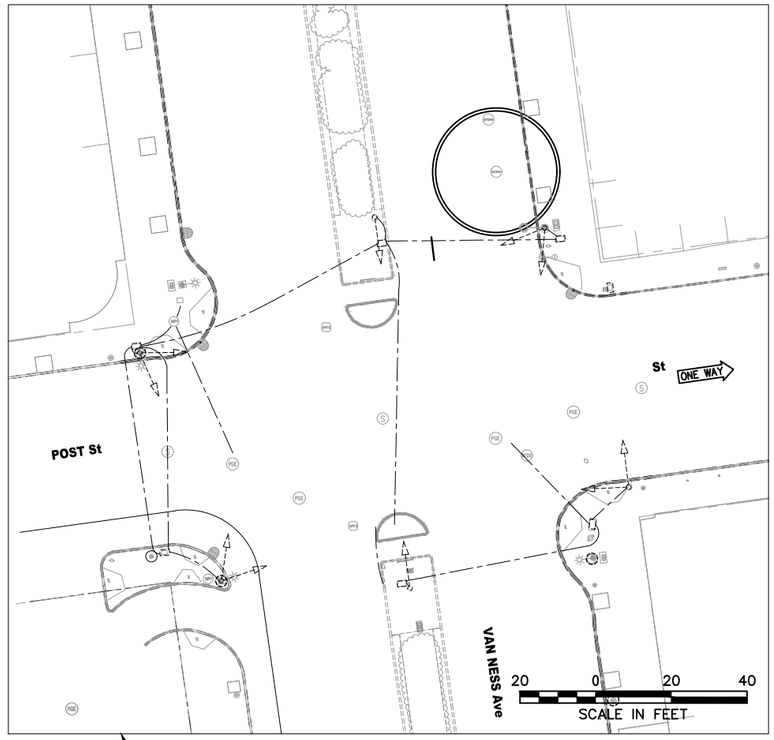
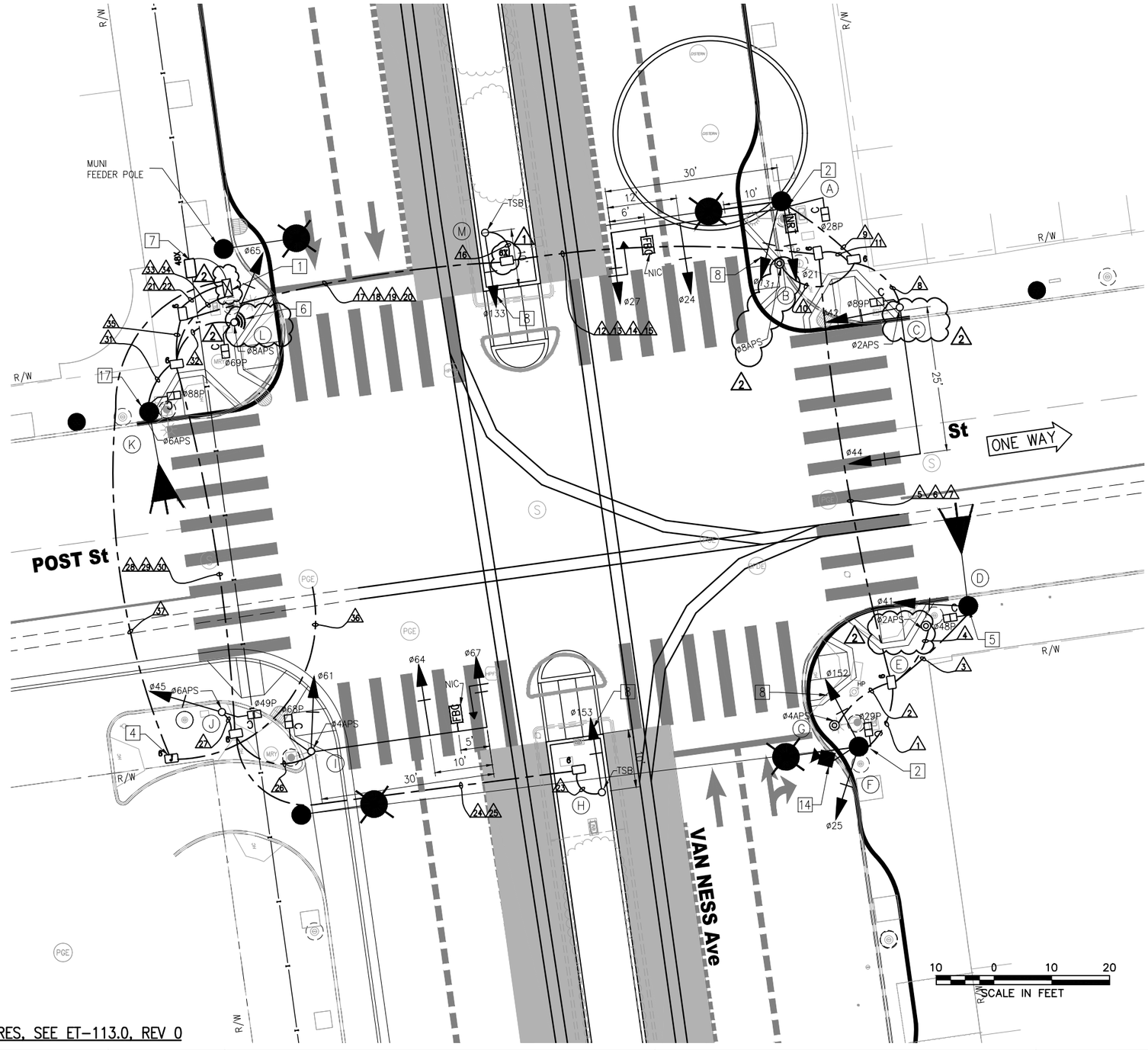
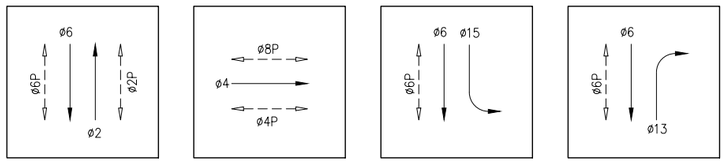
BORDER REVISED 11/17/05



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-113.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/27/18	POLE LAYOUT – MOVED IC TO VAN NESS SIDE & POLES	KK	MV	CL
		PER LAYOUT WALKTHROUGH			
1	03/2018	ADDED FBC SIGNS ON POLES A & I,UPDATED POLE I MA	KK	MV	CL
		LENGTH AND LOCATION, NEW 1–A POLE FOR J, REMOVED			
		POLE N, RELOCATED POLE B, ADDED TYPE 6X PULLBOX			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

POST STREET
TRAFFIC SIGNAL WORK

ET-113.0
ET-204

REVISION 3

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1204 / 122	21 24 27 131	3S12" 3S12" 3S12"GUA 3S12"RB	SV-1-T MAS MAS SV-1-T	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZ. SIGNAL MA MOUNT AT 21' HIGH SIGNAL 131 MOUNT AT 18' HIGH SEE ST PLANS FOR POLE DETAILS "NO RIGHT TURN" BLANK-OUT SIGN TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ①
Ⓒ	18-2-100	25		42 44	3S12" 3S12"	SV-1-T MAS	T T		89	1S-COUNT	SP-1	–	APS ①
Ⓓ	SIGNAL & OCS COMBO POLE	–	1197	41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	
Ⓔ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ①
Ⓕ	SIGNAL, SL & OCS COMBO POLE	–	1152 / 118	25 152	3S12" 3S12"LB	SV-2-TA	T T		29	1S-COUNT	SP-1	–	TRAFFIC CAMERA ③
Ⓖ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ①
Ⓗ	1-A (10')	–		153	3S12"LB	TV-1-T	T		–	–	–	–	TSB
Ⓘ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ① COORDINATE W/ CPMC HOSPITAL CONSTRUCTION TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓙ	1-A (10')	–		45	3S12"	TV-1-T	–		49	1S-COUNT	SP-1	–	APS ① COORDINATE W/ CPMC HOSPITAL CONSTRUCTION
Ⓚ	SIGNAL & SL COMBO POLE	–		–	–	–	–		88	1S-COUNT	SP-1	–	APS ①
Ⓛ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ① TSP ② OFFSET ANCHOR BOLTS NORTHWEST OF RAMP WARNING BAND ②
Ⓜ	1-A (10')	–		133	3S12"RB	TV-1-T	T		–	–	–	–	TSB

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

① INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
② INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
③ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
④ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-113.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/27/18	POLE LAYOUT – PER LAYOUT WALKTHROUGH	KK	MV	CL
1	03/2018	UPDATED POLES A, I, AND J; REMOVED POLE N; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

POST STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-113.1
ET-204

REVISION 3

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	27A	28	29	30	31	32	33	34	35	36	37
CONDUIT SIZE (INCH)	2	1	2	1	2	2	2	2	2	1	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	1	2	2	2	2	2	3	2	2	3	2
						SP	SP							SP	SP				SP	SP		SP			SP					SP	SP					SP	SP			
TRANSIT SIGNAL Ø152	3				3							3					3				3																
VEHICLE SIGNAL Ø25	3				3							3					3				3																
PED SIGNAL Ø29P	2				2							2					2				2																
APS PPB FOR XING VAN NESS SS ON POLE G		2			2							2					2				2																
VEHICLE SIGNAL Ø41			3		3							3					3				3																
PED SIGNAL Ø48P			2		2							2					2				2																
APS PPB FOR XING POST ES ON POLE D				2	2							2					2				2																
VEHICLE SIGNAL Ø42								3			3		3					3				3															
VEHICLE SIGNAL Ø44								3			3		3					3				3															
PED SIGNAL Ø89P								2			2		2					2				2															
APS PPB FOR XING POST ES ON POLE C								2			2		2					2				2															
TRANSIT SIGNAL Ø131									3		3		3					3				3															
VEHICLE SIGNAL Ø21									3		3		3					3				3															
VEHICLE SIGNAL Ø24									3		3		3					3				3															
VEHICLE SIGNAL Ø27									3		3		3					3				3															
PED SIGNAL Ø28P									2		2		2					2				2															
APS PPB FOR XING VAN NESS NS ON POLE B										2	2		2					2				2															
TRANSIT SIGNAL Ø133																3		3				3															
TRANSIT SIGNAL Ø153																							3	3					3					2				
VEHICLE SIGNAL Ø61																										3			3					3				
VEHICLE SIGNAL Ø64																										3			3					3				
VEHICLE SIGNAL Ø67																										3			3					3				
PED SIGNAL Ø68P																										2			2					2				
APS PPB FOR XING VAN NESS SS ON POLE I																										2			2					2				
VEHICLE SIGNAL Ø45																											3		3					3				
PED SIGNAL Ø49P																											2		2					2				
APS PPB FOR XING POST WS ON POLE J																											2		2					2				
PED SIGNAL Ø88P																																2		2				
APS PPB FOR XING POST WS ON POLE K																																2		2				
VEHICLE SIGNAL Ø65																																	3	3				
PED SIGNAL Ø69P																																	2	2				
APS PPB FOR XING VAN NESS NS ON POLE L																																	2	2				
#14 NEUTRAL	3		2					3	5							1										4	2					1	2						
#14 SPARE					3						3	3	3				3	3			3	3		3					3					3				
TOTAL #14 WIRES	11	2	7	2	20			13	19	2	29	20	29			4	20	32			20	32	3	6		17	9		26			5	9	37				
#10 WIRES NEUTRAL					1						1	1	1				1	1			1	1	1						1					3				
#6 WIRES (120 V SERVICE)																																				2		
#8 WIRES (120 V SERVICE)																																					2	
#6 BSCW (SEE GENERAL NOTE 10)																																						
TSP RECEIVER (10 CONDUCTOR CABLE)																																1	1					
NO RIGHT TURN EMS WIRES (1#14, 1#10 & 1#6 GROUND)									1		1		1					1				1																
CCTV CAMERA WIRES (CAT5e & 3#18)	1				1							1					1				1																

DETAIL NOTES:

1. FOR VMS CONDUIT AND WIRING, CONTRACTOR SHALL REFER TO SHEET ET-133.

FOR ORIGINAL SIGNATURES, SEE ET-113.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	REMOVED CONDUIT 27A, ADJUSTED WIRING	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO

MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

POST STREET

CONDUIT & WIRING SCHEDULES

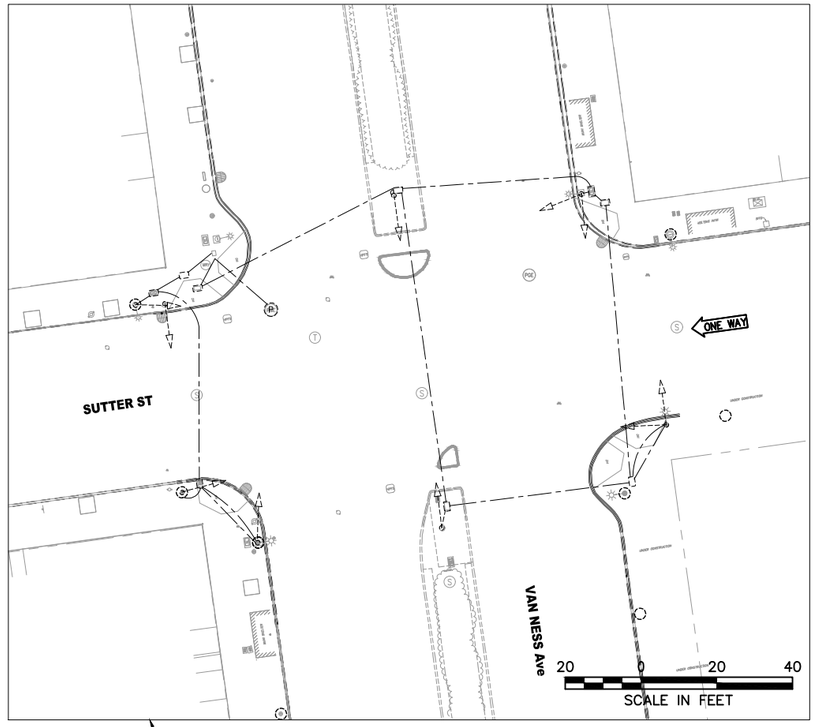
1289

ET-113.2

ET-204

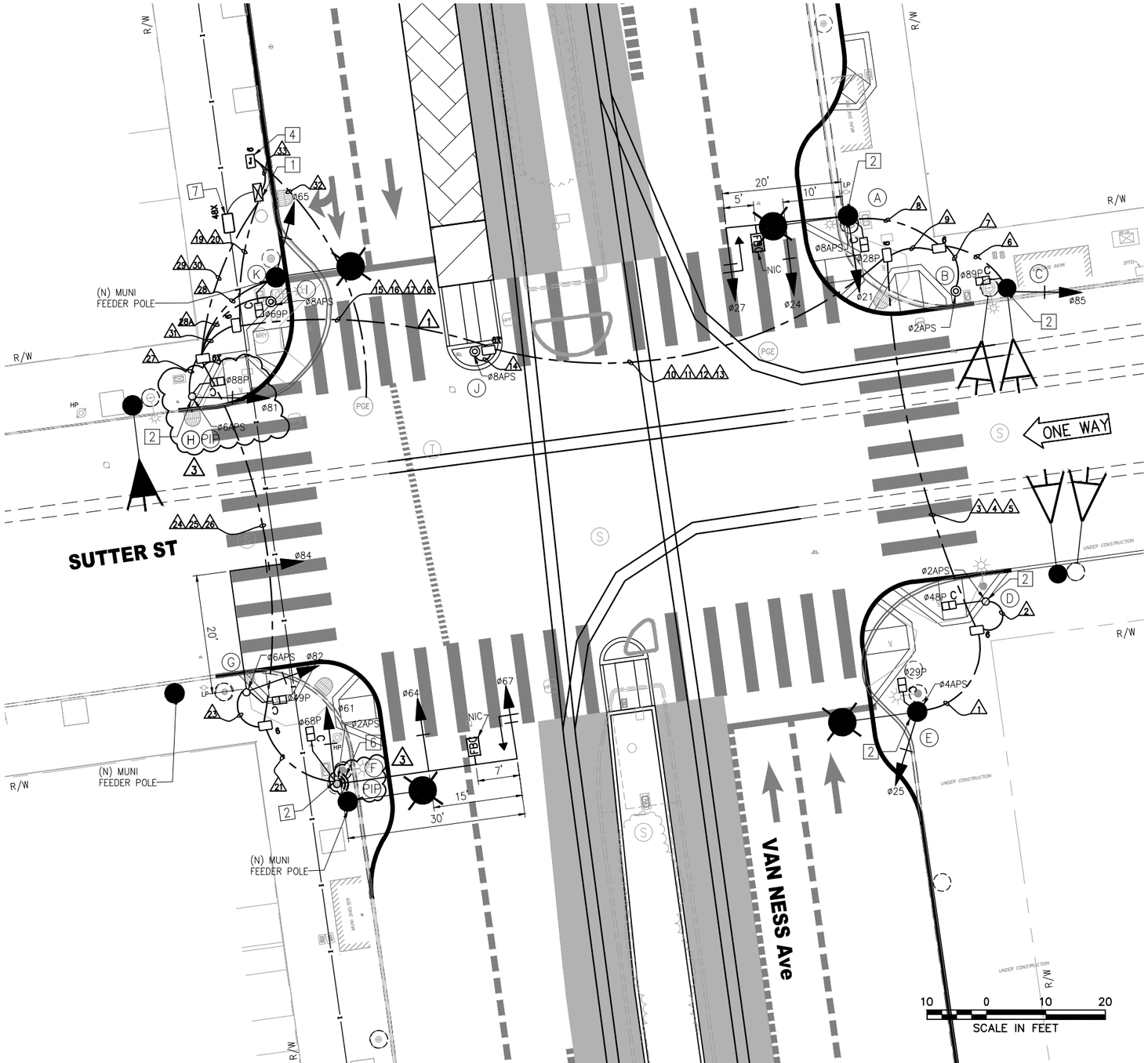
REVISION 2

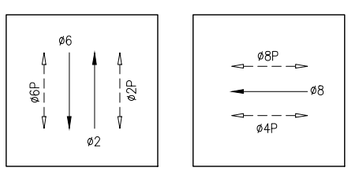
T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPTE401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:38 pm



9 10 11

EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-114.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
4	7/18/19	LATEST DRAWING	KK	MV	CL
3	12/11/18	RFI #559: POLE H IS A STAND-ALONE TYPE 1-A POLE.	KK	MV	CL
		PIP POLE F PER POLE LAYOUT			
2	NOT USED	NOT USED			
1	03/2018	ADDED FBC SIGNS ON POLES A AND F; MOVED APS TO	KK	MV	CL
		POLE F, ADDED TYPE 6X PULLBOXES			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

SUTTER STREET
TRAFFIC SIGNAL WORK

ET-114.0
ET-204

REVISION 4

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	20	1304 / 132	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓒ	SIGNAL, SL & OCS COMBO POLE	–	1288	85	3S12"	SV-1-T	T		89	1S-COUNT	SP-1	–	
Ⓓ	1-A (7')	–		–	–	–	–		48	1S-COUNT	TP-1	–	APS ◇1
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	1242 / 128	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓕ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE ◇3
Ⓖ	16-2-100	20		82 84	3S12" 3S12"	SV-1-T MAS	T T		49	1S-COUNT	SP-1	–	SIGNAL 82 MOUNT AT 13' HIGH APS ◇1
Ⓗ	1-A (13') ◇3	–		81	3S12"	TV-1-T ◇3	T		88	1S-COUNT	SP-1	–	PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE ◇3 APS ◇1
Ⓘ	SIGNAL, SL & OCS COMBO POLE (FEEDER)	–	1300B / 131	65	3S12"	SV-1-T	T		69	1S-COUNT	SP-1-T	–	TSP ◇2 EXTERNAL CONDUIT
Ⓙ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓚ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-114.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
4	7/18/19	LATEST DRAWING	KK	MV	CL
3	12/11/18	RFI #559: POLE H IS A STAND-ALONE TYPE 1-A POLE.	KK	MV	CL
		PIP POLE F PER POLE LAYOUT			
2	NOT USED	NOT USED			
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT;	KK	MV	CL
		UPDATED POLES A & F, AND RELOCATED APS ON POLE			
		F; ADDED FBC TENON NOTE			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

SUTTER STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-114.1
ET-204

REVISION 4

BORDER REVISED 11/17/05

I:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP76401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:38 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	28A	29	30	31	32	33
CONDUIT SIZE (INCH)	2	2	2	2	2	2	1	2	3	2	2	2	2	1	2	2	2	2	3	2	2	1	2	2	2	2	2	2	1	3	2	2	3	2
				SP	SP							SP	SP				SP	SP		SP					SP	SP					SP	SP			
VEHICLE SIGNAL Ø25	3		3							3					3				3															
PED SIGNAL Ø29P	2		2							2					2				2															
APS PPB FOR XING VAN NESS SS ON POLE E	2		2							2					2				2															
PED SIGNAL Ø48P		2	2							2					2				2															
APS PPB FOR XING SUTTER ES ON POLE D		2	2							2					2				2															
VEHICLE SIGNAL Ø85						3			3		3					3			3															
PED SIGNAL Ø89P						2			2		2					2			2															
APS PPB FOR XING SUTTER ES ON POLE B							2		2		2					2			2															
VEHICLE SIGNAL Ø21								3	3		3					3			3															
VEHICLE SIGNAL Ø24								3	3		3					3			3															
VEHICLE SIGNAL Ø27								3	3		3					3			3															
PED SIGNAL Ø28P								2	2		2					2			2															
APS PPB FOR XING VAN NESS NS ON POLE A								2	2		2					2			2															
APS PPB FOR XING VAN NESS NS ON POLE K														2		2			2															
VEHICLE SIGNAL Ø61																					3			3						3				
VEHICLE SIGNAL Ø64																					3			3						3				
VEHICLE SIGNAL Ø67																					3			3						3				
PED SIGNAL Ø68P																					2			2						2				
APS PPB FOR XING VAN NESS SS ON POLE F (1)																					2	2		2						2				
VEHICLE SIGNAL Ø82																							3	3						3				
VEHICLE SIGNAL Ø84																							3	3						3				
PED SIGNAL Ø49P																							2	2						2				
APS PPB FOR XING SUTTER WS ON POLE G (1)																							2	2						2				
VEHICLE SIGNAL Ø81																											3			3				
PED SIGNAL Ø88P																											2			2				
APS PPB FOR XING SUTTER WS ON POLE H (1)																											2			2				
VEHICLE SIGNAL Ø65																												3		3				
PED SIGNAL Ø69P																												2		2				
APS PPB FOR XING VAN NESS NS ON POLE K (1)																													2	2				
#14 NEUTRAL	2	1				2		4													4		3				2	2						
#14 SPARE			3						3	3	3				3	3			6					3						3				
TOTAL #14 WIRES	9	5	14			7	2	17	23	14	23			2	14	25			39		17	2	13	26			9	7	2	40				
#10 WIRES NEUTRAL			1						1	1	1				1	1			2					1						2				
#6 WIRES (120 V SERVICE)																																2		
#8 WIRES (120 V SERVICE)																																	2	
#6 BSCW (SEE GENERAL NOTE 10)																																		
TSP RECEIVER (10 CONDUCTOR CABLE)																					1			1						1				

FOR ORIGINAL SIGNATURES, SEE ET-114.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	3/2018	RELOCATED APS TO POLE F	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

SUTTER STREET
CONDUIT & WIRING SCHEDULES

ET-114.2
ET-204

REVISION 2

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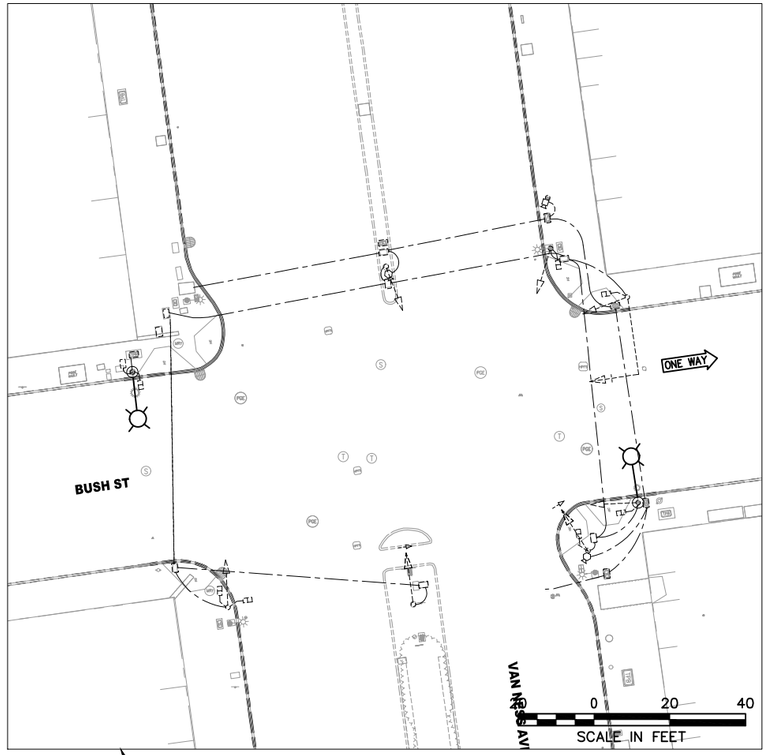
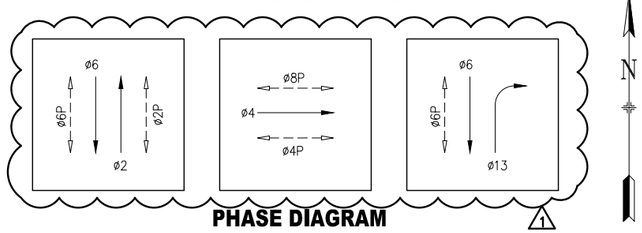


9 10 11

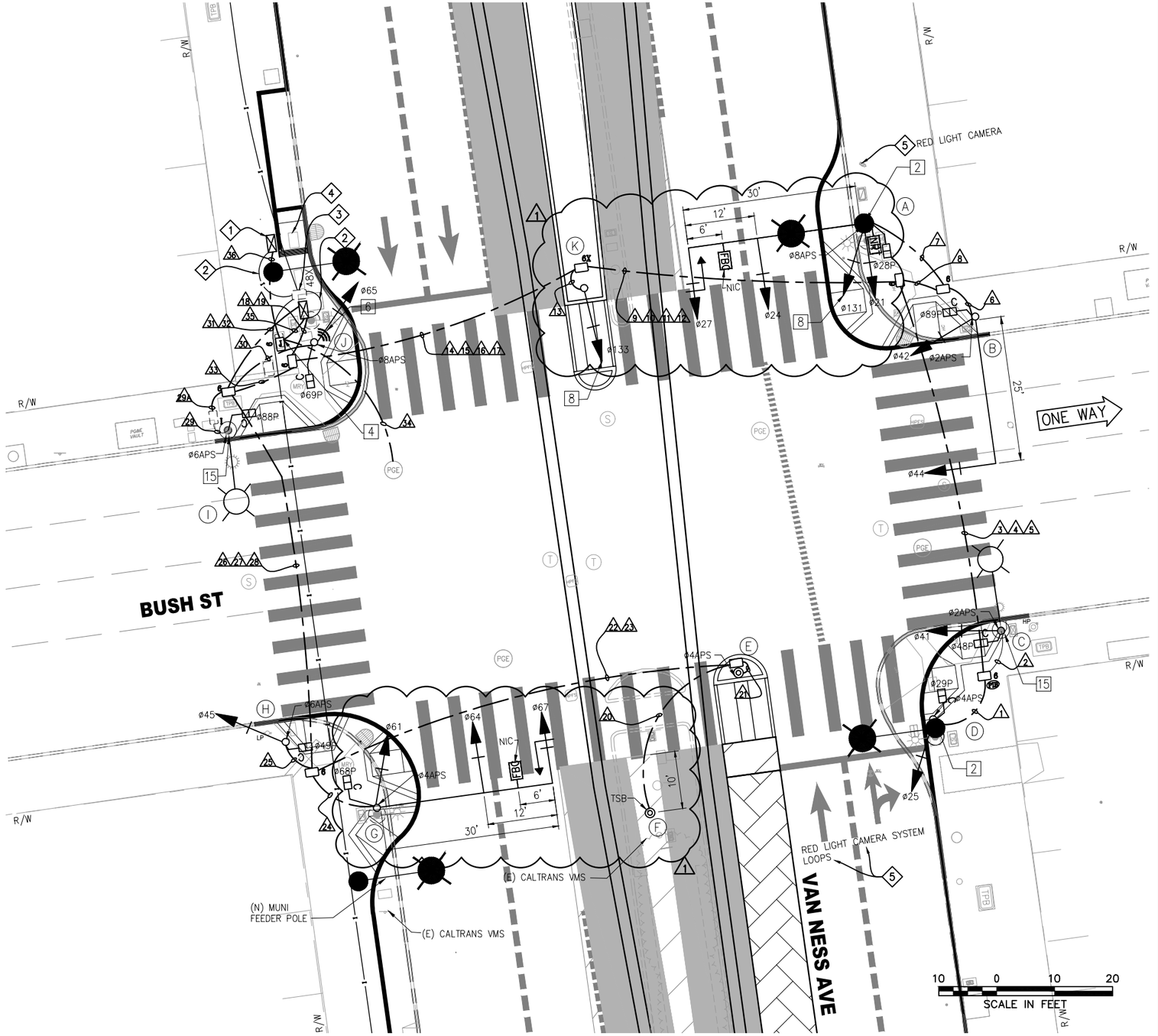
EXISTING EQUIPMENT



PHASE DIAGRAM

DETAIL NOTES:

1. F/I NEW MODEL 342 COMMUNICATIONS HUB CABINET AND MODEL 332 FOUNDATION.
2. F/I 2–2" HDPE CONDUIT SETS FROM TYPE 48X PULL BOX TO NEW COMMUNICATIONS HUB AND TRAFFIC SIGNAL CABINET.
3. CONNECT NEW VAN NESS INTERCONNECT CONDUITS TO EXISTING TYPE 48X PULL BOX.
4. R/S EXISTING COMMUNICATIONS HUB CABINET AND R/C EXISTING HUB CABINET FOUNDATION.
5. COORDINATE WITH THE XEROX CORPORATION TO REMOVE RED LIGHT CAMERA SYSTEM.



FOR ORIGINAL SIGNATURES, SEE ET–115.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	06/2018	ADDED POLE K, ADDED TRANSIT SIGNALS 131 AND 133; ADDED TSB POLE F; UPDATED PHASE DIAGRAM; ADDED FBC SIGNS ON POLES A AND G; UPDATED CONDUITS AND PULLBOXES NEAR POLE I; ADDED TYPE 6X PULLBOX; ADDED NRT EMS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BUSH STREET
TRAFFIC SIGNAL WORK

ET–115.0
ET–204

REVISION 2

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1400 / 142	21 24 27 131	3S12" 3S12" 3S12"GUA 3S12"RB	SV-1-T MAS MAS SV-1-T	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORZ. SIGNAL MA MOUNT AT 21' HIGH SIGNAL 131 MOUNT AT 18' HIGH APS ◇1 SEE ST PLANS FOR POLE DETAILS "NO RIGHT TURN" BLANK-OUT SIGN TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	18-2-100	25		42 44	3S12" 3S12"	SV-1-T MAS	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	EXISTING SL	–		41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	1356 / 138	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓕ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓖ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓗ	1-A (10')	–		45	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓘ	EXISTING SL	–		–	–	–	–		88	1S-COUNT	SP-1	–	APS ◇1
Ⓙ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
Ⓚ	1-A (10')	–		133	3S12"RB	TV-1-T	T		–	–	–	–	

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-115.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	06/2018	ADDED POLES F AND K, ADDED TRANSIT SIGNALS 131 AND 133; UPDATED POLES A AND G; ADDED FBC TENON NOTE; ADDED NRT EMS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
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APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BUSH STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-115.1
ET-204

REVISION 2

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	29A	30	31	32	33	34	35	36
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	1	1	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2	2
	1	EX		SP	SP						SP	SP					SP	1					SP				SP	SP	EX				SP	SP				
VEHICLE SIGNAL Ø25	3		3						3					3				3																			
PED SIGNAL Ø29P	2		2						2					2				2																			
APS PPB FOR XING VAN NESS SS ON POLE D	2		2						2					2				2																			
VEHICLE SIGNAL Ø41		3	3						3					3				3																			
PED SIGNAL Ø48P		2	2						2					2				2																			
APS PPB FOR XING BUSH ES ON POLE C		2	2						2					2				2																			
VEHICLE SIGNAL Ø42						3		3		3					3			3																			
VEHICLE SIGNAL Ø44						3		3		3					3			3																			
PED SIGNAL Ø89P						2		2		2					2			2																			
APS PPB FOR XING BUSH ES ON POLE B						2		2		2					2			2																			
VEHICLE SIGNAL Ø21							3	3		3					3			3																			
VEHICLE SIGNAL Ø24							3	3		3					3			3																			
VEHICLE SIGNAL Ø27							3	3		3					3			3																			
TRANSIT SIGNAL Ø131							3	3		3					3			3																			
PED SIGNAL Ø28P							2	2		2					2			2																			
APS PPB FOR XING VAN NESS NS ON POLE A							2	2		2					2			2																			
TRANSIT SIGNAL Ø133													3			3			3																		
TSB ON POLE F																				2		2				2						2					
APS PPB FOR XING VAN NESS SS ON POLE E																					2	2				2						2					
VEHICLE SIGNAL Ø61																								3		3						3					
VEHICLE SIGNAL Ø64																								3		3						3					
VEHICLE SIGNAL Ø67																								3		3						3					
PED SIGNAL Ø68P																								2		2						2					
APS PPB FOR XING VAN NESS SS ON POLE G																								2		2						2					
VEHICLE SIGNAL Ø45																									3	3						3					
PED SIGNAL Ø49P																									2	2						2					
APS PPB FOR XING BUSH WS ON POLE H																									2	2						2					
PED SIGNAL Ø88P																													2	2		2					
APS PPB FOR XING BUSH WS ON POLE I																													2	2		2					
VEHICLE SIGNAL Ø65																															3	3					
PED SIGNAL Ø69P																															2	2					
APS PPB FOR XING VAN NESS NS ON POLE J																															2	2					
#14 NEUTRAL	2	2				3	5						1							2	2	4		4	2				1	1	2						
#14 SPARE			3					3	3	3				3	3	3		6	3							3						3					
TOTAL #14 WIRES	9	9	17			13	21	29	17	29			4	17	29	6		46	6	2	2	4		17	9	27			5	5	9	38					
#10 WIRES NEUTRAL			1					1	1	1				1	1	1		2	1							1						2					
#6 WIRES (120 V SERVICE)																																		2			
#8 WIRES (120 V SERVICE)																																			2	2	
#6 BSCW (SEE GENERAL NOTE 10)																																					
TSP RECEIVER (10 CONDUCTOR CABLE)																															1	1					
NO RIGHT TURN EMS WIRES (1#14, 1#10 & 1#6 GROUND)							1	1	1					1					1																	

FOR ORIGINAL SIGNATURES, SEE ET-115.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	06/2018	ADDED TRANSIT SIGNALS 131 AND 133. TSB: ADDED CONDUIT RUN 29A & WIRES; CONDUIT RUN 2 IS EXISTING; ADDED NRT EMS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BUSH STREET
CONDUIT & WIRING SCHEDULES

ET-115.2
ET-204

REVISION 2

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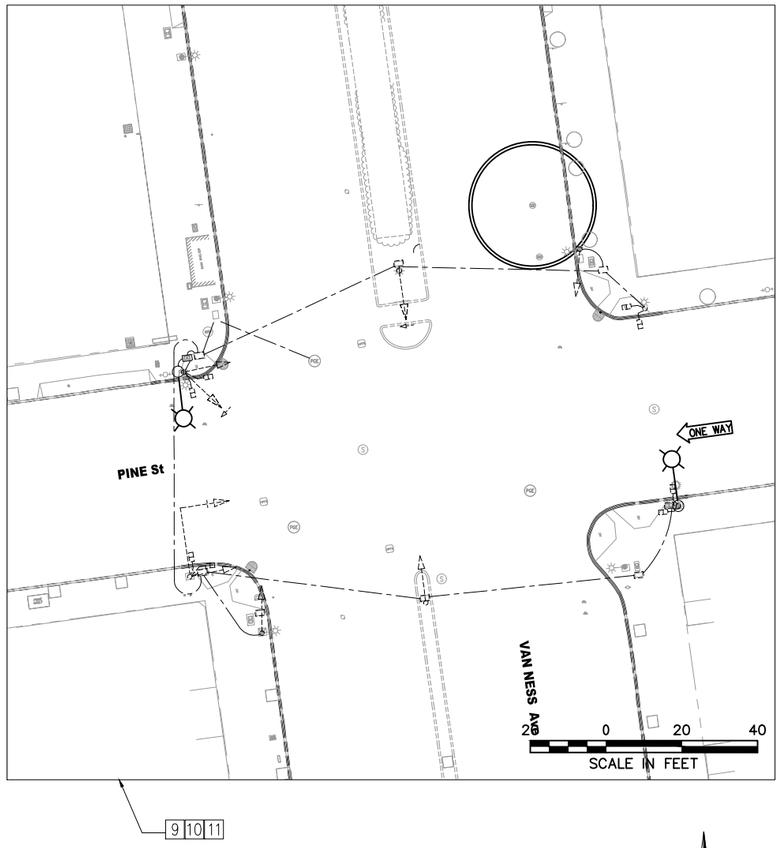
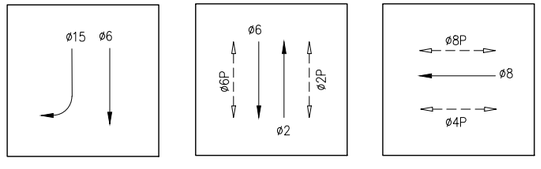
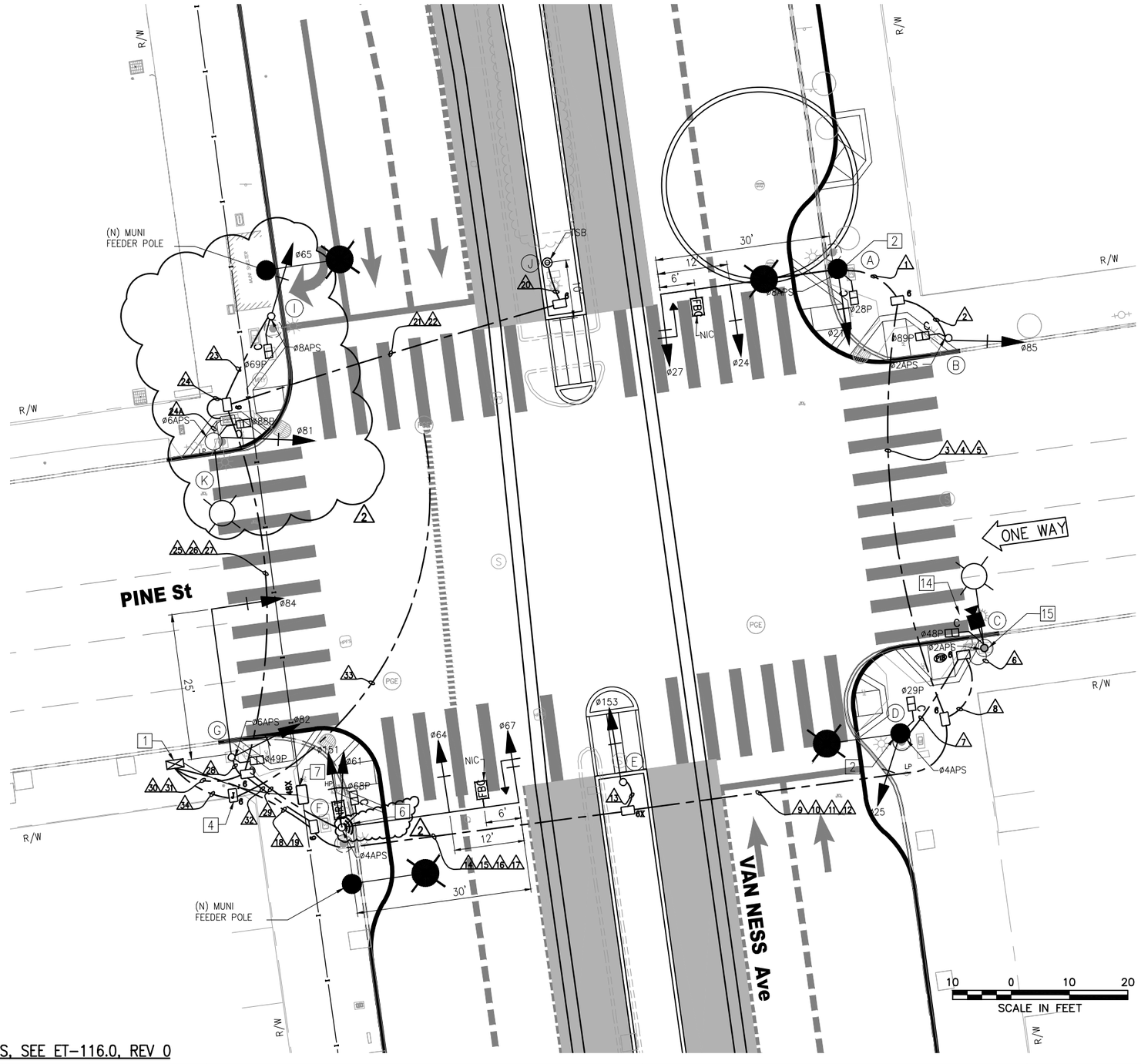


EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-116.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/15/19	RFI#558:REVISED POLE H; POLE I IS NOW A 1-A; AND TSP ON POLE F	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND F; ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

PINE STREET
TRAFFIC SIGNAL WORK

1289

ET-116.0
ET-204

REVISION 2

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1500 / 152	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (10')	–		85	3S12"	TV-1-T	T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	EXISTING SL	–		–	–	–	–		48	1S-COUNT	SP-1	–	APS ◇1 TRAFFIC CAMERA ◇3
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	1482 / 148	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	1-A (10')	–		153	3S12"RB	TV-1-T	T		–	–	–	–	
Ⓕ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67 151	3S12" 3S12" 3S12"GUA 3B12"RB	SV-1-T MAS MAS SV-1-T	T T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SIGNAL 151 MOUNT AT 18' HIGH "NO RIGHT TURN" BLANK-OUT SIGN APS ◇1 AND TSP ◇2 △2 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓖ	18-2-100	25		82 84	3S12" 3S12"	SV-1-T MAS	T T		49	1S-COUNT	SP-1	–	SIGNAL 82 MOUNT AT 13' APS ◇1
Ⓗ	NOT USED	–		–	–	–	–		–	–	–	–	△2
Ⓘ	1-A (10') △2	–		65	3S12"	TV-1-T △2	T		69	1S-COUNT	SP-1	–	APS ◇1
Ⓙ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓚ	EXISTING SL	–		81	3S12"	SV-1-T			88	1S-COUNT	SP-1		APS ◇1 △2

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-116.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/15/19	RFI#558: REVISED POLE H; POLE I IS NOW A 1-A; AND TSP ON POLE F	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND F; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

PINE STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-116.1
ET-204

REVISION 2

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24A	25	26	27	28	29	30	31	32	33	34
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP	EX					SP	SP				SP	SP		SP	GRS		SP			EX		SP	SP				SP	SP		
VEHICLE SIGNAL Ø21	3		3						3					3				3																	
VEHICLE SIGNAL Ø24	3		3						3					3				3																	
VEHICLE SIGNAL Ø27	3		3						3					3				3																	
PED SIGNAL Ø28P	2		2						2					2				2																	
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2					2				2																	
VEHICLE SIGNAL Ø85		3	3						3					3				3																	
PED SIGNAL Ø89P		2	2						2					2				2																	
APS PPB FOR XING PINE ES ON POLE B		2	2						2					2				2																	
PED SIGNAL Ø48P						2		2		2					2			2																	
APS PPB FOR XING PINE ES ON POLE C						2		2		2					2			2																	
VEHICLE SIGNAL Ø25							3	3		3					3			3																	
PED SIGNAL Ø29P							2	2		2					2			2																	
APS PPB FOR XING VAN NESS SS ON POLE D							2	2		2					2			2																	
TRANSIT SIGNAL Ø153													2		2			2																	
TSB ON POLE J																				2	2					2					2				
VEHICLE SIGNAL Ø65																							3			3					3				
VEHICLE SIGNAL Ø81 (2)																								3	3	3					3				
PED SIGNAL Ø69P																							2			2					2				
APS PPB FOR XING VAN NESS NS ON POLE I																							2			2					2				
PED SIGNAL Ø88P																								2	2	2					2				
APS PPB FOR XING PINE WS ON POLE H																								2	2	2					2				
VEHICLE SIGNAL Ø82																													3		3				
VEHICLE SIGNAL Ø84																													3		3				
PED SIGNAL Ø49P																													2		2				
APS PPB FOR XING PINE WS ON POLE G																													2		2				
TRANSIT SIGNAL Ø151																														3	3				
VEHICLE SIGNAL Ø61																														3	3				
VEHICLE SIGNAL Ø64																														3	3				
VEHICLE SIGNAL Ø67																														3	3				
PED SIGNAL Ø68P																														2	2				
APS PPB FOR XING VAN NESS SS ON POLE F																														2	2				
#14 NEUTRAL	4	2				1	2																3		2				3	5					
#14 SPARE			3					3	3	3				3	3			6								3						3				
TOTAL #14 WIRES	17	9	23			5	9	14	23	14			2	23	16			39		2	2		13	7	9	19			13	21	45				
#10 WIRES NEUTRAL			1					1	1	1			1	1	2			3								1					2				
#6 WIRES (120 V SERVICE)																																	2		
#8 WIRES (120 V SERVICE)																																		2	
#6 BSCW (SEE GENERAL NOTE 10)																																			
																														2					
TSP RECEIVER (10 CONDUCTOR CABLE)																														1	1				
																							2			2				1	1				
CCTV CAMERA WIRES (CAT5e & 3#18)						1		1		1					1			1																	

FOR ORIGINAL SIGNATURES, SEE ET-116.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/15/19	RFI 558: SIG 87 (NOW 81) TO POLE H; USE EX. STREET LIGHT CONDUIT; AND TSP ON POLE F.	KK	MV	CL
1	03/2018	CONDUIT RUN 6 IS EXISTING	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

PINE STREET
CONDUIT & WIRING SCHEDULES

1289

ET-116.2
ET-204

REVISION 2

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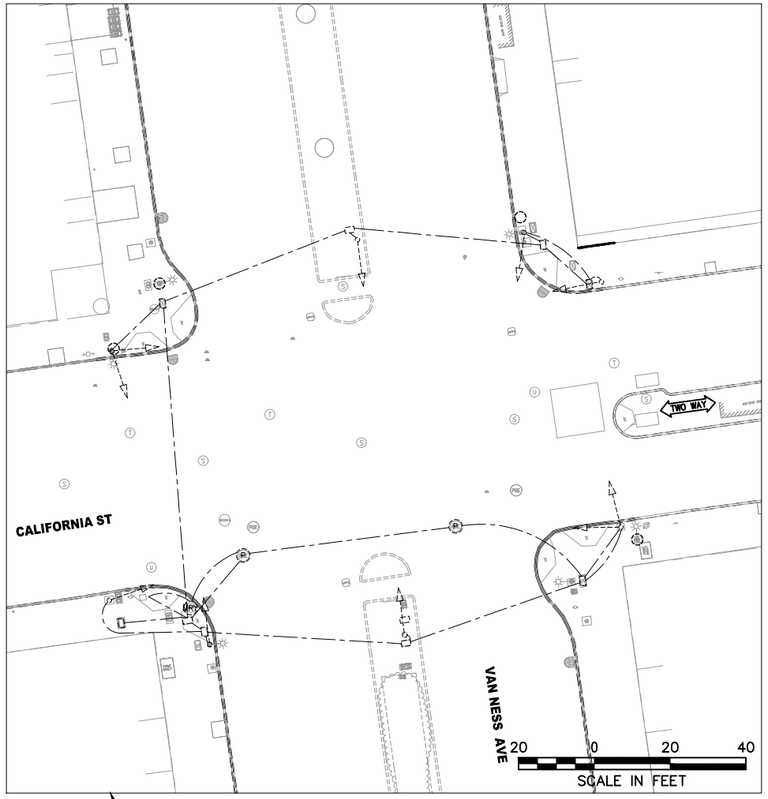
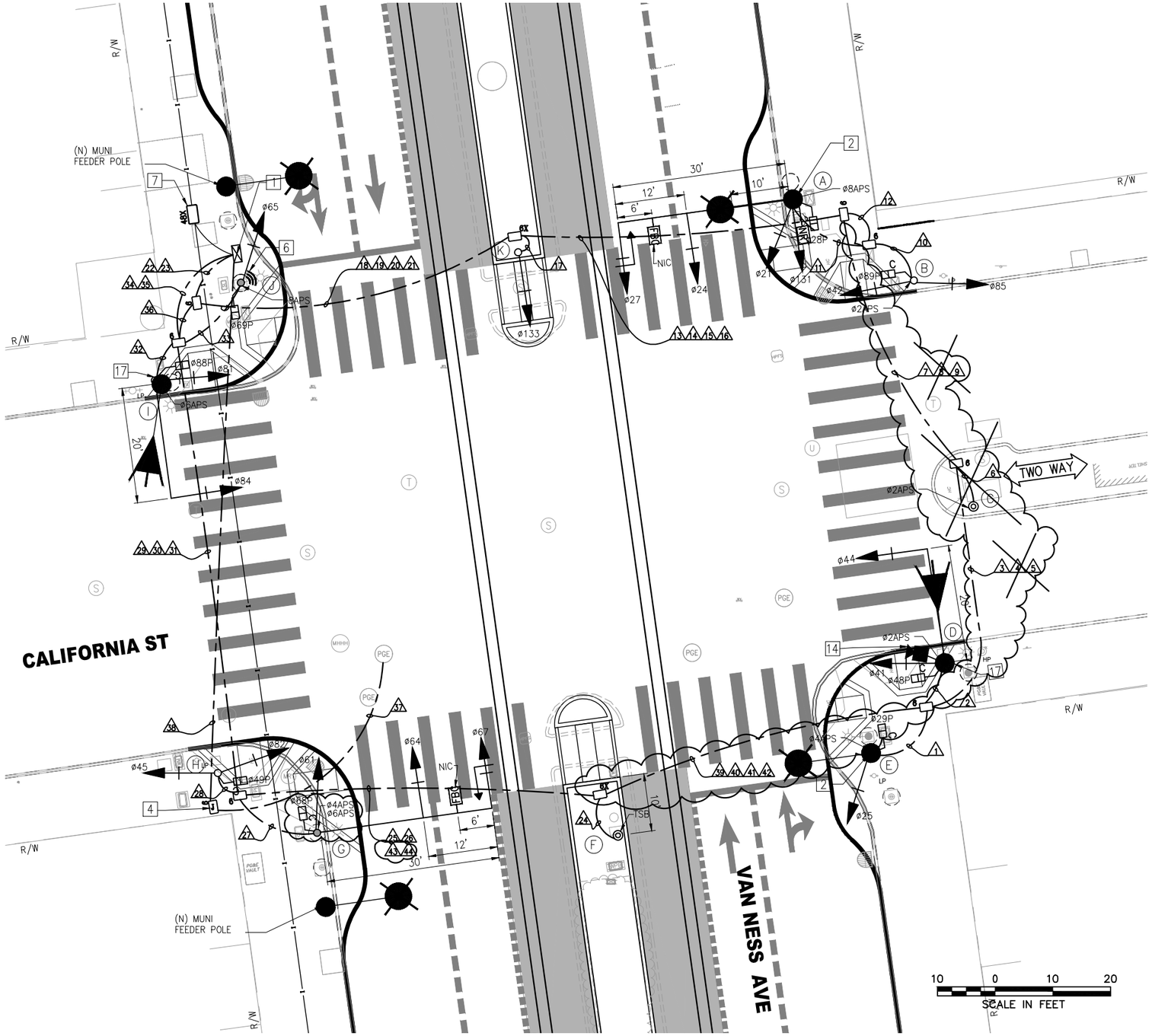
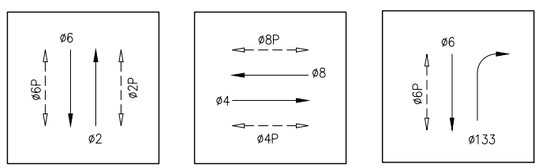


9 10 11

EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-117.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #653 – POLE H APS ON POLE G & REMOVE CA	KK	MV	CL
		MEDIAN PPBP & PULLBOX; E/S CONDUITS TO S/S & 6X			
1	03/2018	ADDED FBC SIGNS ON POLES A AND G; ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

CALIFORNIA STREET
TRAFFIC SIGNAL WORK

ET-117.0
ET-204

REVISION 2

BORDER REVISED 11/17/05

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1600 / 162	21 24 27 131	3S12" 3S12" 3S12"GUA 3S12"RB	SV-1-T MAS MAS SV-1-T	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZ. SIGNAL MA MOUNT AT 21' HIGH SIGNAL 131 MOUNT AT 18' HIGH SEE ST PLANS FOR POLE DETAILS "NO RIGHT TURN" BLANK-OUT SIGN APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	NOT USED	–		–	–	–	–		–	–	–	–	
Ⓓ	17-2-100	20	/ 163	41 44	3S12" 3S12"	SV-1-T MAS	T T		48	1S-COUNT	SP-1	–	APS ◇1 TRAFFIC CAMERA ◇3
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	1560 / 158	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓕ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓖ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS x2 ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓗ	1-A (10')	–		82 45	3S12" 3S12"	TV-2-T	T T		49	1S-COUNT	SP-1	–	
Ⓘ	17-2-100	20	/ 172	81 84	3S12" 3S12"	SV-1-T MAS	T T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓙ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
Ⓚ	1-A (10')	–		133	3S12"RB	TV-1-T	T		–	–	–	–	

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-117.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #653 – POLE H APS ON POLE G AND REMOVE CA MEDIAN PPB POLE AND PULLBOX	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND G; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

CALIFORNIA STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-117.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP76401ETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:39 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	2	2
				SP	SP			SP	SP				SP		SP	SP		SP		SP	SP			GRS		SP					SP				SP				SP	SP	SP	SP	SP
VEHICLE SIGNAL Ø25	3		3				3																		3				3					3				3					
PED SIGNAL Ø29P	2		2				2																		2				2					2				2					
APS PPB FOR XING VAN NESS SS ON POLE E	2		2																						2				2					2				2					
VEHICLE SIGNAL Ø41		3	3				3																		3				3					3				3					
VEHICLE SIGNAL Ø44		3	3				3																		3				3					3				3					
PED SIGNAL Ø48P		2	2				2																		2				2					2				2					
APS PPB FOR XING CALIFORNIA ES ON POLE D		2	2				2																		2				2					2				2					
APS PPB FOR XING CALIFORNIA ES ON POLE C						2	2						2					2				2																					
VEHICLE SIGNAL Ø42										3		3		3					3			3																					
VEHICLE SIGNAL Ø85										3		3		3					3			3																					
PED SIGNAL Ø89P										2		2		2					2			2																					
APS PPB FOR XING CALIFORNIA ES ON POLE B										2		2		2					2			2																					
TRANSIT SIGNAL Ø131											3	3		3					3			3																					
VEHICLE SIGNAL Ø21											3	3		3					3			3																					
VEHICLE SIGNAL Ø24											3	3		3					3			3																					
VEHICLE SIGNAL Ø27											3	3		3					3			3																					
PED SIGNAL Ø28P											2	2		2					2			2																					
APS PPB FOR XING VAN NESS NS ON POLE A											2	2		2					2			2																					
TRANSIT SIGNAL Ø133																	3		3			3																					
TSB ON POLE F																							2	2				2						2									
VEHICLE SIGNAL Ø61																											3		3					3									
VEHICLE SIGNAL Ø64																											3		3					3									
VEHICLE SIGNAL Ø67																											3		3					3									
PED SIGNAL Ø68P																											2		2					2									
APS PPB FOR XING VAN NESS SS ON POLE G																											2		2					2									
VEHICLE SIGNAL Ø45																												3	3					3									
VEHICLE SIGNAL Ø82																												3	3					3									
PED SIGNAL Ø49P																												2	2					2									
APS PPB FOR XING CALIFORNIA WS ON POLE G																										2		2						2									
VEHICLE SIGNAL Ø81																															3			3									
VEHICLE SIGNAL Ø84																															3			3									
PED SIGNAL Ø88P																															2			2									
APS PPB FOR XING CALIFORNIA WS ON POLE I																															2			2									
VEHICLE SIGNAL Ø65																																3		3									
PED SIGNAL Ø69P																																2		2									
APS PPB FOR XING VAN NESS NS ON POLE J																																2		2									
#14 NEUTRAL	2	3								2	5						1										4	2			3	2												
#14 SPARE			3				3					3	3	3				3	3			3			3				3	3				3	3			3					
TOTAL #14 WIRES	9	13	20				20			12	21	29	20	29			4	20	32			32	2	22		19	10	28	20	13	9	45	20				20					
#10 WIRES NEUTRAL			1				1					1	1	1				1	1			1	1	1				1				2	2				1					
#6 WIRES (120 V SERVICE)																																				2								
#8 WIRES (120 V SERVICE)																																					2							
#6 BSCW (SEE GENERAL NOTE 10)																																												
TSP RECEIVER (10 CONDUCTOR CABLE)																																1	1										
NO RIGHT TURN EMS WIRES (1#14, 1#10 & 1#6 GROUND)											1	1		1					1			1																					
CCTV CAMERA WIRES (CAT5e & 3#18)		1																						1					1					1				1					

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #653 – POLE H APS ON POLE G AND REMOVE CA	KK	MV	CL
		MEDIAN PPB POLE AND PULLBOX; E/S CONDUITS TO S/S			

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

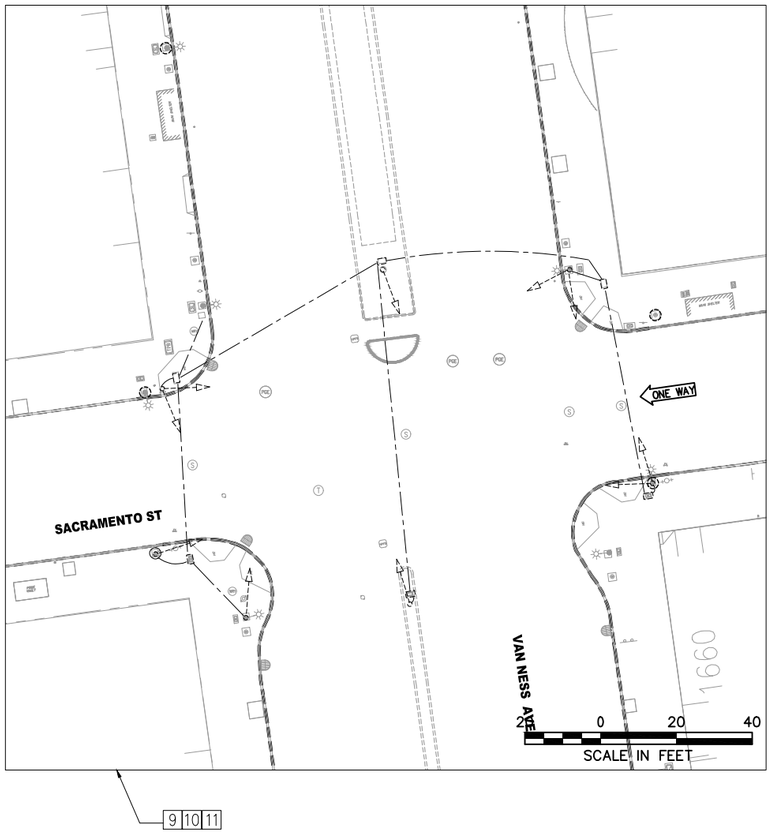
CALIFORNIA STREET
CONDUIT & WIRING SCHEDULES

1289

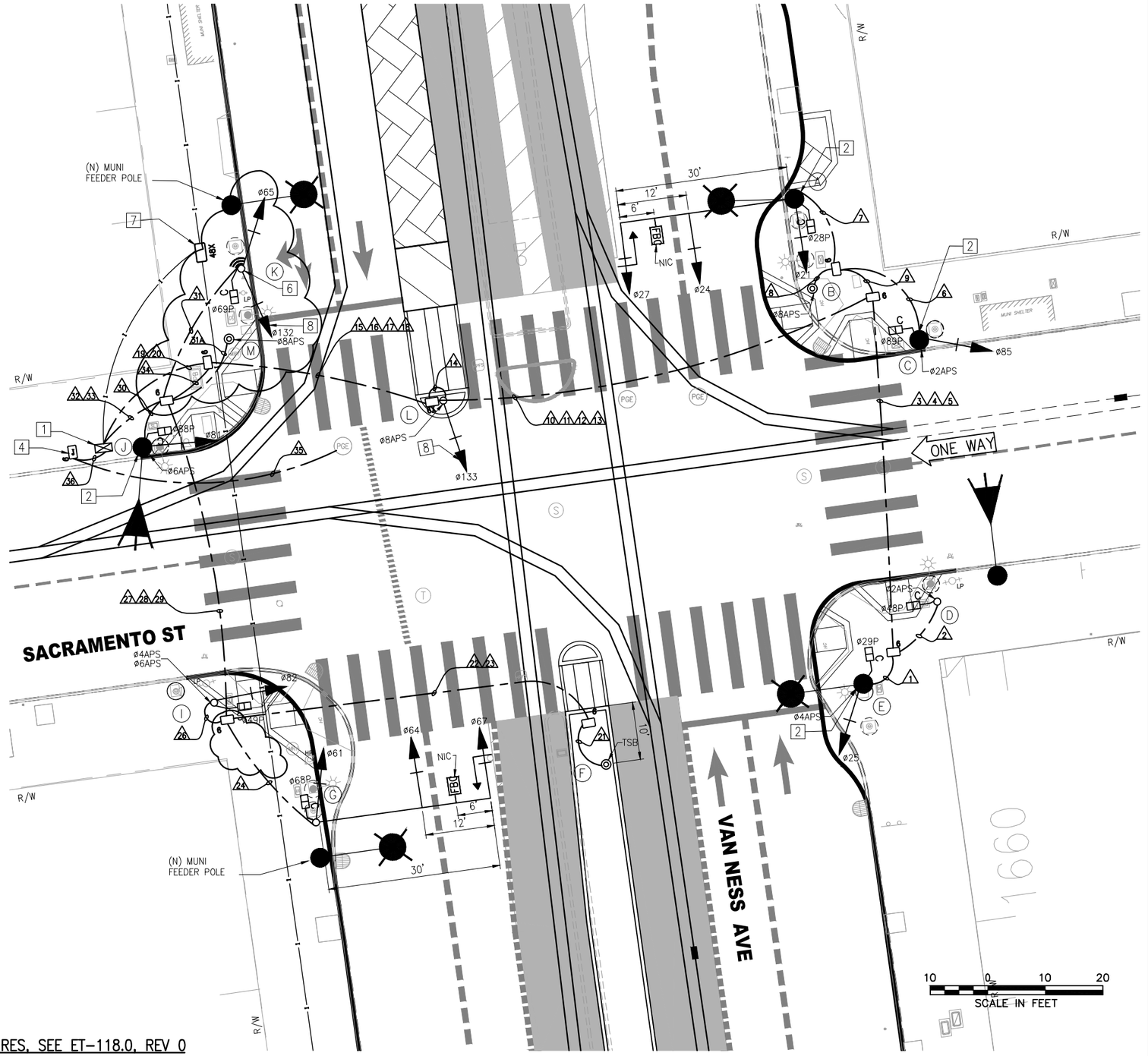
ET–117.2
ET–204

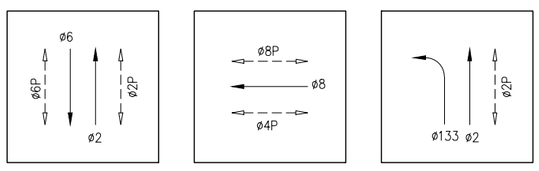
REVISION 1

I:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP18401ETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:39 pm



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-118.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	4/9/19	RFI #620: REMOVED POLE H; TWO APS ON POLE I; NEW PPB POLE M PER POLE LAYOUT.	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND G, UPDATED POLE A MA LENGTH; ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

SACRAMENTO STREET TRAFFIC SIGNAL WORK

1289

ET-118.0

ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1704 / 172	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓒ	SIGNAL & OCS COMBO POLE	–	1798	85	3S12"	SV-1-T	T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	1-A (7')	–		–	–	–	–		48	1S-COUNT	TP-1	–	APS ◇1
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	1694 / 168	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓕ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓖ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓗ	NOT USED	–		–	–	–	–		–	–	–	–	
Ⓘ	1-A (10')			82	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS x2 ◇1
Ⓙ	SIGNAL, SL & OCS COMBO POLE	–	1802 / 182	81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓚ	1-A (10')	–		65 132	3S12" 3S12"LB	TV-2-T	T T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
Ⓛ	1-A (10')			133	3S12"LB	TV-1-T	T						APS ◇1
Ⓜ	PPB POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-118.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	4/9/19	RFI #620: REMOVED POLE H; TWO APS ON POLE I; NEW PPB POLE M PER POLE LAYOUT.	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT, UPDATED POLES A AND G	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

SACRAMENTO STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-118.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	21A	32	33	34	35	36
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	1	3	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	1	2	2	2	2	2	2	1	3	2	2	2	3
				SP	SP							SP	SP				SP	SP		SP	GRS		SP					SP	SP					SP	SP			
VEHICLE SIGNAL Ø25	3		3							3					3				3																		
PED SIGNAL Ø29P	2		2							2					2				2																		
APS PPB FOR XING VAN NESS SS ON POLE E	2		2							2					2				2																		
PED SIGNAL Ø48P		2	2							2					2				2																		
APS PPB FOR XING SACRAMENTO ES ON POLE D		2	2							2					2				2																		
VEHICLE SIGNAL Ø85						3			3		3					3			3																		
PED SIGNAL Ø89P						2			2		2					2			2																		
APS PPB FOR XING SACRAMENTO ES ON POLE C						2			2		2					2			2																		
VEHICLE SIGNAL Ø21							3		3		3					3			3																		
VEHICLE SIGNAL Ø24							3		3		3					3			3																		
VEHICLE SIGNAL Ø27							3		3		3					3			3																		
PED SIGNAL Ø28P							2		2		2					2			2																		
APS PPB FOR XING VAN NESS NS ON POLE B								2	2		2					2			2																		
TRANSIT SIGNAL Ø133														3	3				3																		
APS PPB FOR XING VAN NESS NS ON POLE L														2	2				2																		
TSB ON POLE F																					2	2				2						2				
VEHICLE SIGNAL Ø61																							3			3						3				
VEHICLE SIGNAL Ø64																							3			3						3				
VEHICLE SIGNAL Ø67																							3			3						3				
PED SIGNAL Ø68P																							2			2						2				
APS PPB FOR XING VAN NESS SS ON POLE I																									2	2						2				
VEHICLE SIGNAL Ø82																									3	3						3				
PED SIGNAL Ø49P																									2	2						2				
APS PPB FOR XING SACRAMENTO WS ON POLE I																									2	2						2				
VEHICLE SIGNAL Ø81																														3		3				
PED SIGNAL Ø88P																														2		2				
APS PPB FOR XING SACRAMENTO WS ON POLE J																														2		2				
VEHICLE SIGNAL Ø65																															3	3				
TRANSIT SIGNAL Ø132																															3	3				
PED SIGNAL Ø69P																															2	2				
APS PPB FOR XING VAN NESS NS ON POLE M																																2	2				
#14 NEUTRAL	2	1				2	4							1										4		2			2	3						
#14 SPARE			3						3	3	3				3	3			6								3						3				
TOTAL #14 WIRES	9	5	14			9	15	2	23	14	23			6	19	23			42		2	2		15	3	11	25		7	11	2	42				
#10 WIRES NEUTRAL			1						1	1	1				1	1			2								1					2				
#6 WIRES (120 V SERVICE)																																			2		
#8 WIRES (120 V SERVICE)																																				2	
#6 BSCW (SEE GENERAL NOTE 10)																																					
TSP RECEIVER (10 CONDUCTOR CABLE)																															1		1				

FOR ORIGINAL SIGNATURES, SEE ET-118.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL
SK	4/9/19	RFI #620: REMOVED POLE H; TWO APS ON POLE I; NEW PPB POLE M PER POLE LAYOUT; SCHEDULE CORRECTIONS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

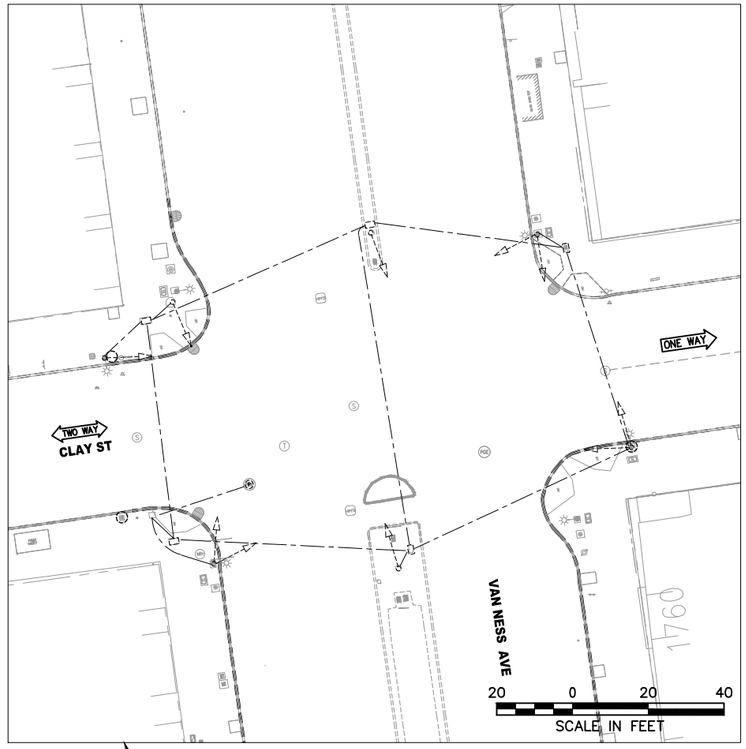
SACRAMENTO STREET
CONDUIT & WIRING SCHEDULES

ET-118.2
ET-204

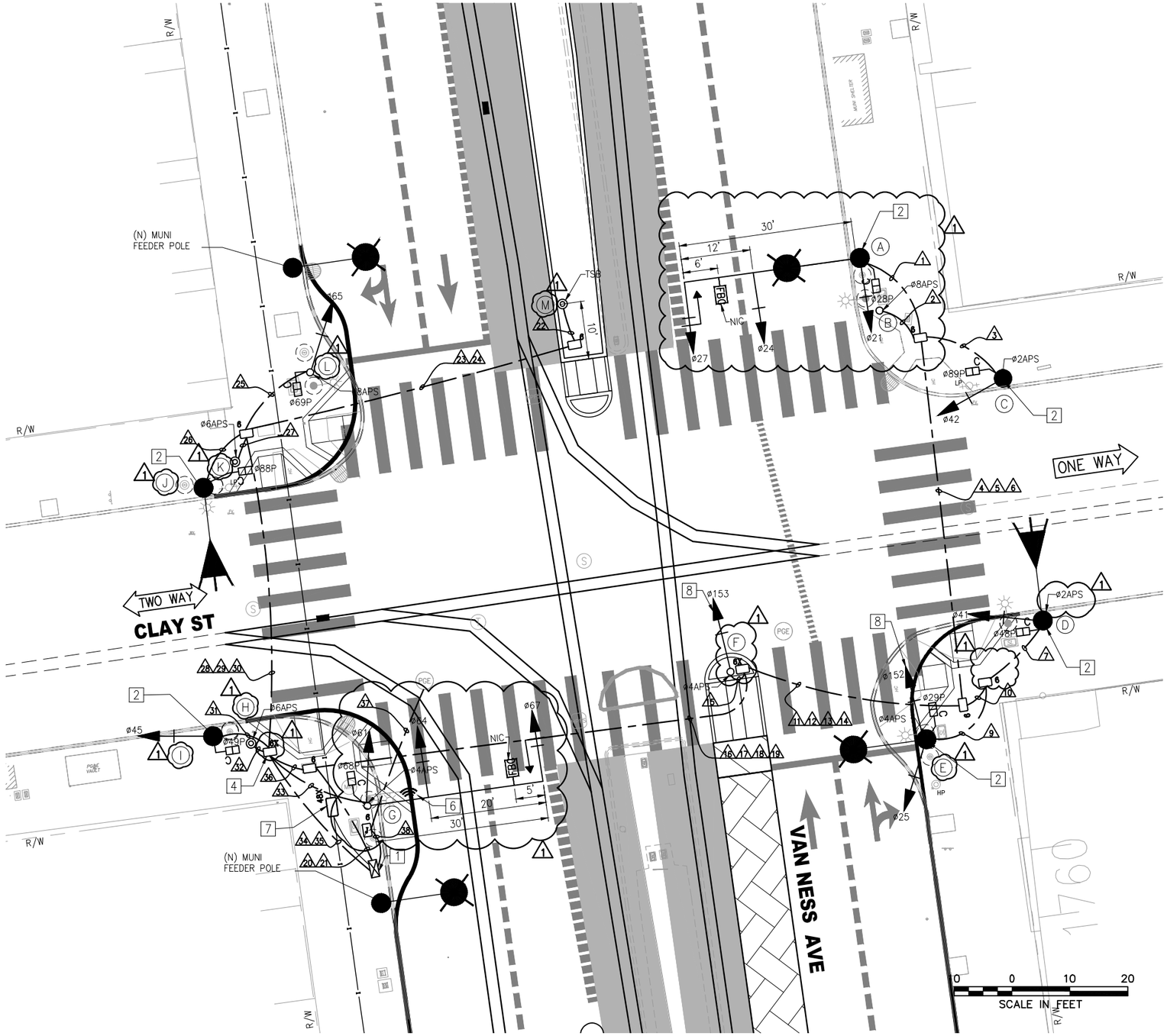
REVISION 1

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP18401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

BORDER REVISED 11/17/05



EXISTING EQUIPMENT



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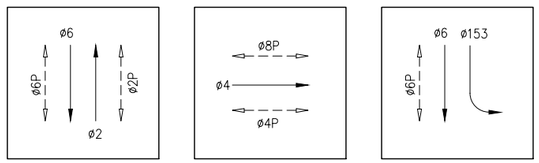


PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-119.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	CHANGED DISTANCE BETWEEN SIGNALS 24 AND 27 FROM 10' TO 12', CHANGED DISTANCE BETWEEN SIGNALS 64 AND 67 FROM 8' TO 20'; ADDED FBC SIGNS ON POLES A AND H, UPDATED POLE A MA LENGTH, UPDATED APS ON POLE B,C, AND D; ADDED TYPE 6X PULLBOXES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

CLAY STREET TRAFFIC SIGNAL WORK

1289

ET-119.0
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ OPTB401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1804 / 182 (1)	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (1) SEE ST PLANS FOR POLE DETAILS TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (1)
Ⓑ	PPBP POLE (1)	–		–	–	–	–		–	–	–	–	APS ⟨1⟩
Ⓒ	SIGNAL & OCS COMBO POLE	–	1796	42	3S12"	SV-1-T	T		89	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	1799 / 177	41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓔ (1)	SIGNAL, SL & OCS COMBO POLE	–	1792 / 178	25 152	3S12" 3S12"LB	SV-2-TA	T T		29	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓕ	1-A (10')	–		153	3S12"LB	TV-1-T	T		–	–	–	–	APS ⟨1⟩
Ⓖ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH (1) APS ⟨1⟩ TSP ⟨2⟩ TENON FOR FUTURE FBC 5' FROM END OF MAST ARM (1)
Ⓗ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ⟨1⟩
Ⓘ	SIGNAL & OCS COMBO POLE	–	1809	45	3S12"	SV-1-T	T		49	1S-COUNT	SP-1	–	
Ⓙ	SIGNAL, SL & OCS COMBO POLE	–	1808 / 182 (1)	–	–	–	–		88	1S-COUNT	SP-1	–	
Ⓚ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ⟨1⟩
Ⓛ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓜ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

⟨1⟩ INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
⟨2⟩ INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
⟨3⟩ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
⟨4⟩ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-119.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED POLE NO., POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND G, UPDATED APS ON POLE B, C, AND D; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

CLAY STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-119.1
ET-204

REVISION 2

F:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CP18401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
CONDUIT SIZE (INCH)	2	1	2	2	2	2	2	1	2	3	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	1	2	2	2	2	1	2	3	2	2	3	2
					SP	SP							SP	SP				SP	SP			GRS		SP						SP	SP					SP	SP			
VEHICLE SIGNAL Ø21	3			3							3					3				3																			
VEHICLE SIGNAL Ø24	3			3							3					3				3																			
VEHICLE SIGNAL Ø27	3			3							3					3				3																			
PED SIGNAL Ø28P	2			2							2					2				2																			
APS PPB FOR XING VAN NESS NS ON POLE B		2		2							2					2				2																		
APS PPB FOR XING CLAY ES ON POLE C (1)	1	1	2	2							2					2				2																			
VEHICLE SIGNAL Ø42			3	3							3					3				3																			
PED SIGNAL Ø89P			2	2							2					2				2																			
VEHICLE SIGNAL Ø41							3			3		3					3				3																		
PED SIGNAL Ø48P							2			2		2					2				2																		
APS PPB FOR XING CLAY ES ON POLE D (1)							2	8		2		2					2				2																		
TRANSIT SIGNAL Ø152									3	3		3					3				3																		
VEHICLE SIGNAL Ø25									3	3		3					3				3																		
PED SIGNAL Ø29P									2	2		2					2				2																		
APS PPB FOR XING VAN NESS SS ON POLE E (1)									2	2		2					2				2																		
TRANSIT SIGNAL Ø153															3		3				3																		
APS PPB FOR XING VAN NESS SS ON POLE F (1)															2		2				2																		
TSB ON POLE N																						2	2					2						2				
VEHICLE SIGNAL Ø65																									3			3						3				
PED SIGNAL Ø69P																									2			2						2				
APS PPB FOR XING VAN NESS NS ON POLE L (1)																									2			2						2				
PED SIGNAL Ø88P																										2		2						2				
APS PPB FOR XING CLAY WS ON POLE K (1)																											2	2						2				
VEHICLE SIGNAL Ø45																															3				3			
PED SIGNAL Ø49P																															2				2			
APS PPB FOR XING CLAY WS ON POLE H (1)																																2			2			
VEHICLE SIGNAL Ø61																																	3		3			
VEHICLE SIGNAL Ø64																																	3		3			
VEHICLE SIGNAL Ø67																																	3		3			
PED SIGNAL Ø68P																																	2		2			
APS PPB FOR XING VAN NESS SS ON POLE G (1)																																	2		2			
#14 NEUTRAL	4		2			2			3						1										2	1					2		4					
#14 SPARE	1			3						3	3	3				3	3			3	3							3						3	3			
TOTAL #14 WIRES	15	2	9	23		9	8		13	20	23	20			6	23	25			26	25	2	2		9	3	2	16			7	2	17	16	23			
#10 WIRES NEUTRAL				1						1	1	1				1	1			1	1							1						1				
#6 WIRES (120 V SERVICE)																																				2		
#8 WIRES (120 V SERVICE)																																					2	
#6 BSCW (SEE GENERAL NOTE 10)																																						
TSP RECEIVER (10 CONDUCTOR CABLE)																																	1		1			

FOR ORIGINAL SIGNATURES, SEE ET-119.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED APS ON POLE B,C, AND D	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

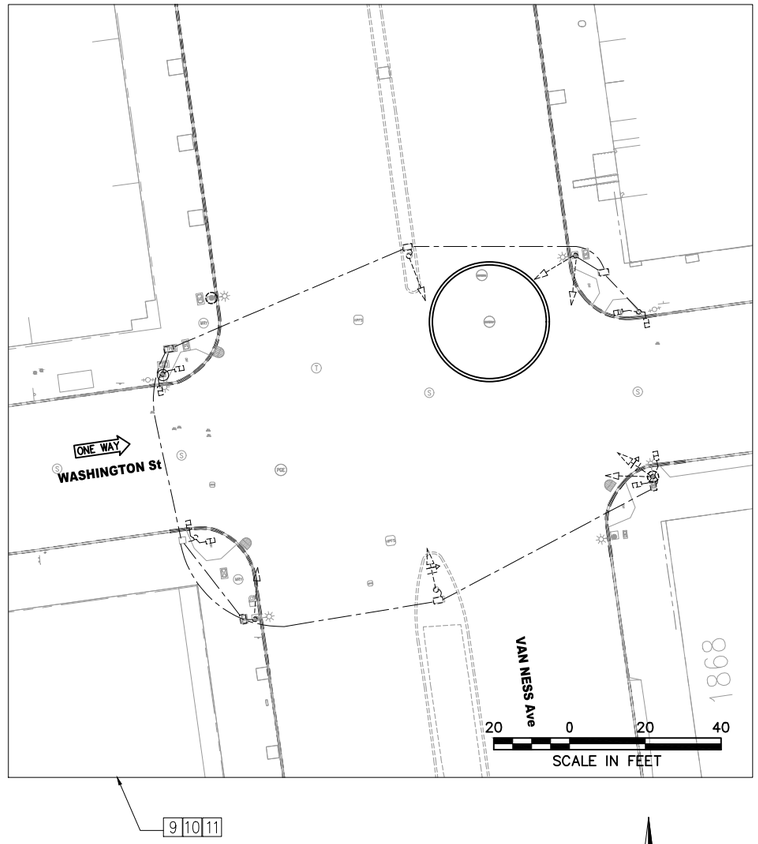
1289

CLAY STREET
CONDUIT & WIRING SCHEDULES

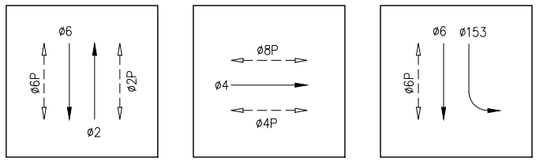
ET-119.2
ET-204

REVISION 2

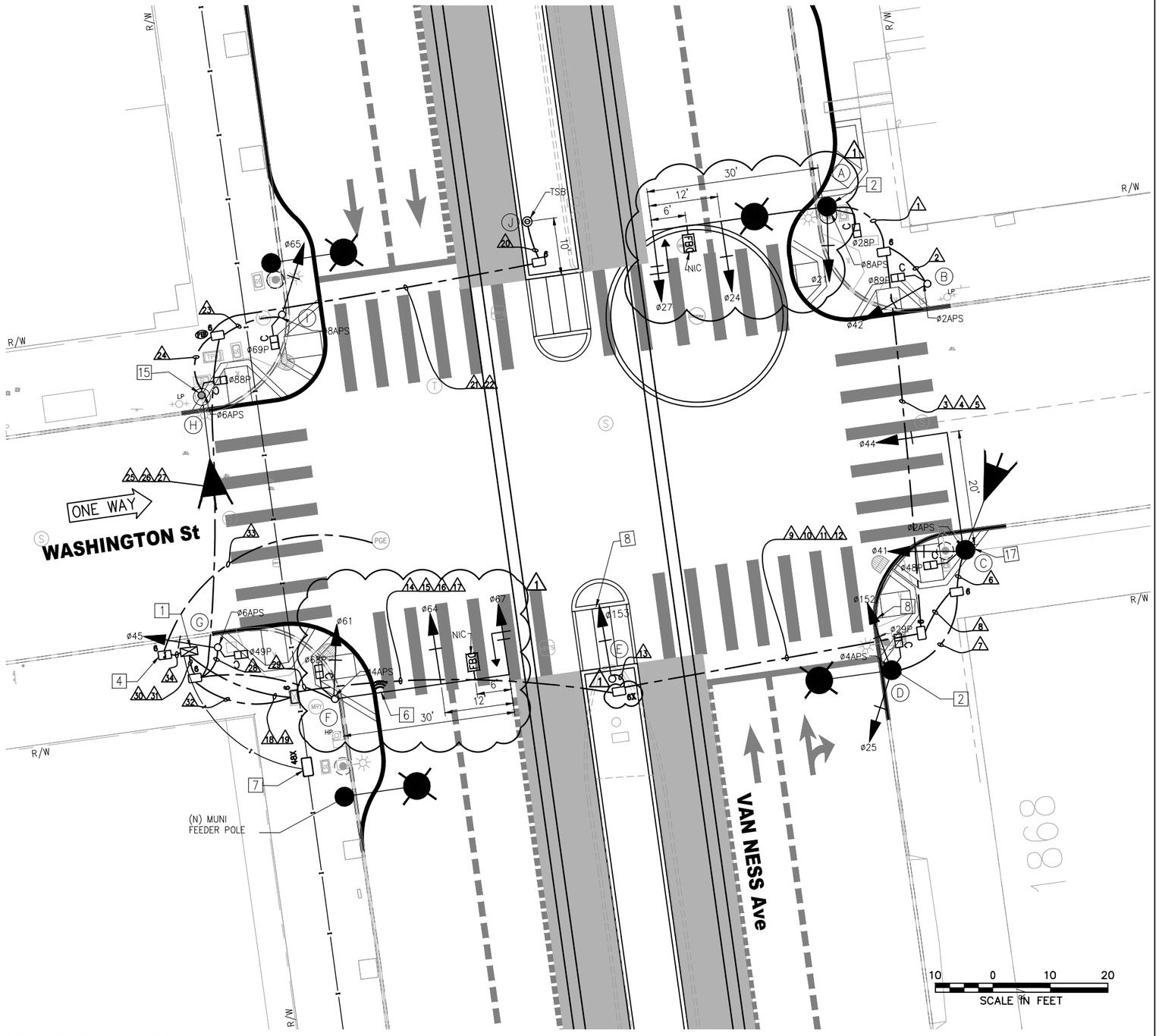
T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-120.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND F; ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

WASHINGTON STREET
TRAFFIC SIGNAL WORK

1289

ET-120.0
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP18401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	1900 / 192	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (1) SEE ST PLANS FOR POLE DETAILS APS ⟨1⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (1)
Ⓑ	1-A (10')	–		42	3S12"	TV-1-T	T		89	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓒ	17-2-100	20	/ 171	41 44	3S12" 3S12"	SV-1-T MAS	T T		48	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	1880 / 188	25 152	3S12" 3S12"LB	SV-2-TA	T T		29	1S-COUNT	SP-1	–	APS ⟨1⟩ SIGNAL 152 MOUNT AT 15' HIGH
Ⓔ	1-A (10')			153	3S12"LB	TV-1-T	T						
Ⓕ	SPECIAL MAST ARM POLE (18-4-100) (1)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (1) APS ⟨1⟩ TSP ⟨2⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (1)
Ⓖ	1-A (10')	–		45	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓗ	EXISTING SL	–		–	–	–	–		88	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓘ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓙ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

⟨1⟩ INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
⟨2⟩ INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
⟨3⟩ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
⟨4⟩ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-120.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND F; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

WASHINGTON STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-120.1
ET-204

REVISION 2

T:\V_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP16401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP				SP	SP			GRS		SP				SP	SP				SP	SP			
VEHICLE SIGNAL Ø21	3		3						3					3				3																
VEHICLE SIGNAL Ø24	3		3						3					3				3																
VEHICLE SIGNAL Ø27	3		3						3					3				3																
PED SIGNAL Ø28P	2		2						2					2				2																
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2					2				2																
VEHICLE SIGNAL Ø42		3	3						3					3				3																
PED SIGNAL Ø89P		2	2						2					2				2																
APS PPB FOR XING WASHINGTON ES ON POLE B		2	2						2					2				2																
VEHICLE SIGNAL Ø41						3		3		3					3				3																
VEHICLE SIGNAL Ø44						3		3		3					3				3																
PED SIGNAL Ø48P						2		2		2					2				2																
APS PPB FOR XING WASHINGTON ES ON POLE C						2		2		2					2				2																
VEHICLE SIGNAL Ø25							3	3		3					3				3																
TRANSIT SIGNAL Ø152							3	3		3					3				3																
PED SIGNAL Ø29P							2	2		2					2				2																
APS PPB FOR XING VAN NESS SS ON POLE D							2	2		2					2				2																
TRANSIT SIGNAL Ø153													3		3				3																
TSB ON POLE J																				2	2				2					2				
VEHICLE SIGNAL Ø65																							3		3					3				
PED SIGNAL Ø69P																							2		2					2				
APS PPB FOR XING VAN NESS NS ON POLE I																							2		2					2				
PED SIGNAL Ø88P																								2	2					2				
APS PPB FOR XING WASHINGTON WS ON POLE H																								2	2					2				
VEHICLE SIGNAL Ø45																												3		3				
PED SIGNAL Ø49P																												2		2				
APS PPB FOR XING WASHINGTON WS ON POLE G																												2		2				
VEHICLE SIGNAL Ø61																													3	3				
VEHICLE SIGNAL Ø64																													3	3				
VEHICLE SIGNAL Ø67																													3	3				
PED SIGNAL Ø68P																													2	2				
APS PPB FOR XING VAN NESS SS ON POLE F																													2	2				
#14 NEUTRAL	4	2				3	3																2	1				2	4					
#14 SPARE			3					3	3	3				3	3			3	3						3					3				
TOTAL #14 WIRES	17	9	23			13	13	26	23	23			3	23	26			23	26	2	2		9	5	16			9	17	36				
#10 WIRES NEUTRAL			1					1	1	1			1	1	2			1	2						1					2				
#6 WIRES (120 V SERVICE)																															2			
#8 WIRES (120 V SERVICE)																																2		
#6 BSCW (SEE GENERAL NOTE 10)																																		
TSP RECEIVER (10 CONDUCTOR CABLE)																													1	1				

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

WASHINGTON STREET
CONDUIT & WIRING SCHEDULES

ET-120.2
ET-204

REVISION 1

T:\V_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:39 pm

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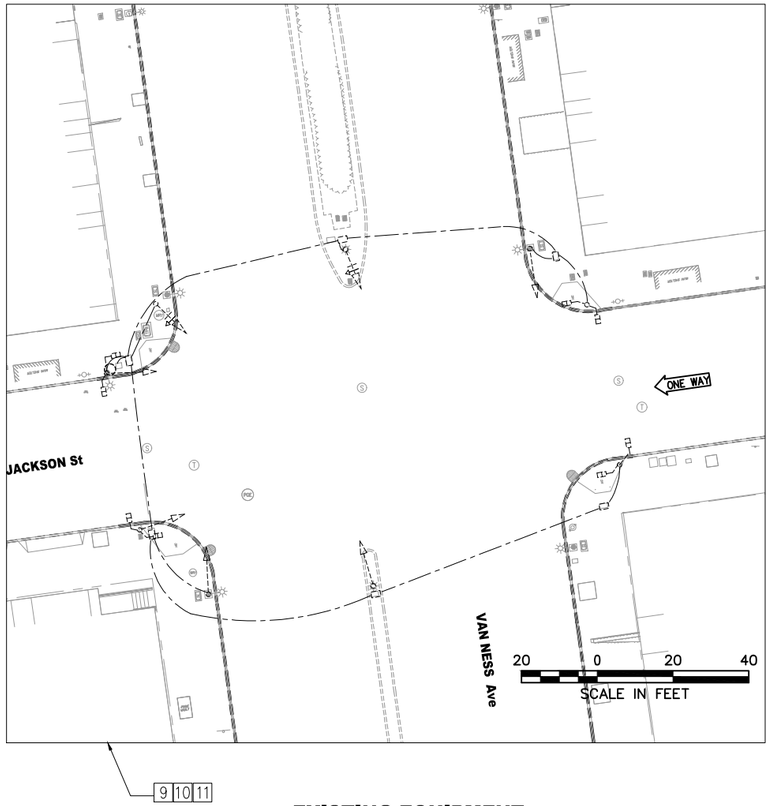
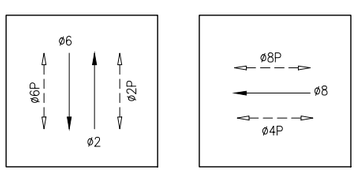
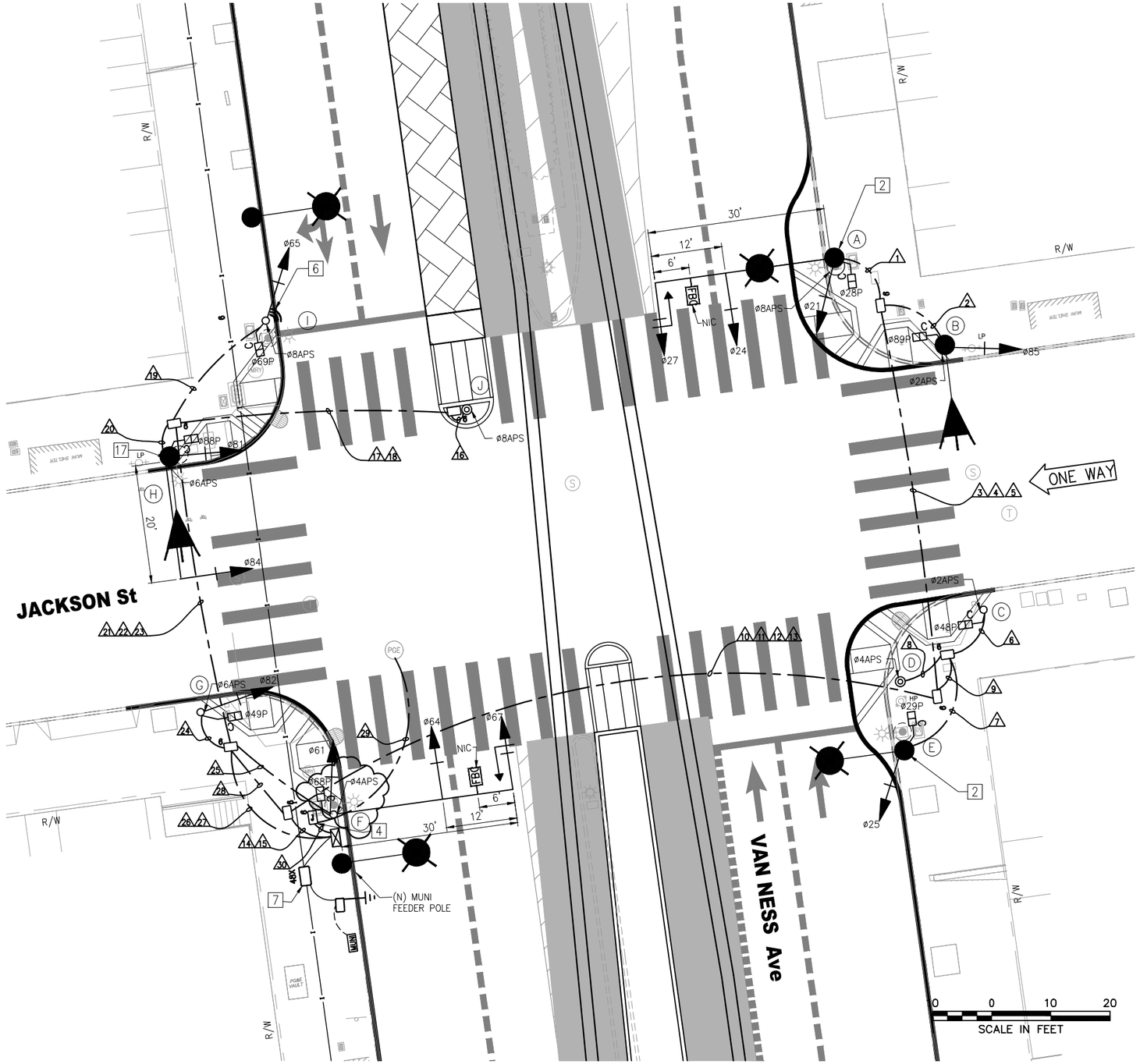


EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-121.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
NA	2/20/19	RFI #610: POLE F PER LAYOUT. NO DWG OR SK ISSUED.	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND F; RELOCATED POLE D	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

JACKSON STREET
TRAFFIC SIGNAL WORK

ET-121.0
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:40 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	2000 / 202	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH (1) SEE SL PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (1)
Ⓑ	NEW SL (CITY STD) (1)	–	/ 166 (1)	85	3S12"	SV-1-T	T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	1-A (7')	–		–	–	–	–		48	1S-COUNT	TP-1	–	APS ◇1
Ⓓ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	1960 / 198	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	
Ⓕ	SPECIAL MAST ARM POLE (18-4-100) (1)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (1)
Ⓖ	1-A (10')	–		82	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	17-2-100	20	/ 172	81 84	3S12" 3S12"	SV-1-T MAS	T T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓙ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
Ⓙ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-121.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT, UPDATED POLES A,B, AND F; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

JACKSON STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-121.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP78401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:40 pm

BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	1	3	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP							SP	SP		SP	GRS		SP				SP	SP				SP	SP		
VEHICLE SIGNAL Ø21	3		3							3				3																
VEHICLE SIGNAL Ø24	3		3							3				3																
VEHICLE SIGNAL Ø27	3		3							3				3																
PED SIGNAL Ø28P	2		2							2				2																
APS PPB FOR XING VAN NESS NS ON POLE A	2		2							2				2																
VEHICLE SIGNAL Ø85		3	3							3				3																
PED SIGNAL Ø89P		2	2							2				2																
APS PPB FOR XING JACKSON ES ON POLE B		2	2							2				2																
PED SIGNAL Ø48P						2			2		2			2																
APS PPB FOR XING JACKSON ES ON POLE C						2			2		2			2																
VEHICLE SIGNAL Ø25							3		3		3			3																
PED SIGNAL Ø29P							2		2		2			2																
APS PPB FOR XING VAN NESS SS ON POLE D								2	2		2			2																
APS PPB FOR XING VAN NESS NS ON POLE J																2	2				2					2				
VEHICLE SIGNAL Ø65																			3		3					3				
PED SIGNAL Ø69P																			2		2					2				
APS PPB FOR XING VAN NESS NS ON POLE I																			2		2					2				
VEHICLE SIGNAL Ø81																				3	3					3				
VEHICLE SIGNAL Ø84																				3	3					3				
PED SIGNAL Ø88P																				2	2					2				
APS PPB FOR XING JACKSON WS ON POLE H																				2	2					2				
VEHICLE SIGNAL Ø82																								3		3				
PED SIGNAL Ø49P																								2		2				
APS PPB FOR XING JACKSON WS ON POLE G																								2		2				
VEHICLE SIGNAL Ø61																									3	3				
VEHICLE SIGNAL Ø64																									3	3				
VEHICLE SIGNAL Ø67																									3	3				
PED SIGNAL Ø68P																									2	2				
APS PPB FOR XING VAN NESS SS ON POLE F																									2	2				
#14 NEUTRAL	4	2				1	2												2	3				2	4					
#14 SPARE			3						3	3	3			6							3					3				
TOTAL #14 WIRES	17	9	23			5	7	2	14	23	14			37		2	2		9	13	22			9	17	42				
#10 WIRES NEUTRAL			1						1	1	1			2							1					2				
#6 WIRES (120 V SERVICE)																													2	
#8 WIRES (120 V SERVICE)																														2
#6 BSCW (SEE GENERAL NOTE 10)																														
TSP RECEIVER (10 CONDUCTOR CABLE)																			1		1					1				

DETAIL NOTES:

1. FOR VMS WIRING, CONTRACTOR SHALL REFER TO SHEET ET–134.

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

JACKSON STREET
CONDUIT AND WIRING SCHEDULES

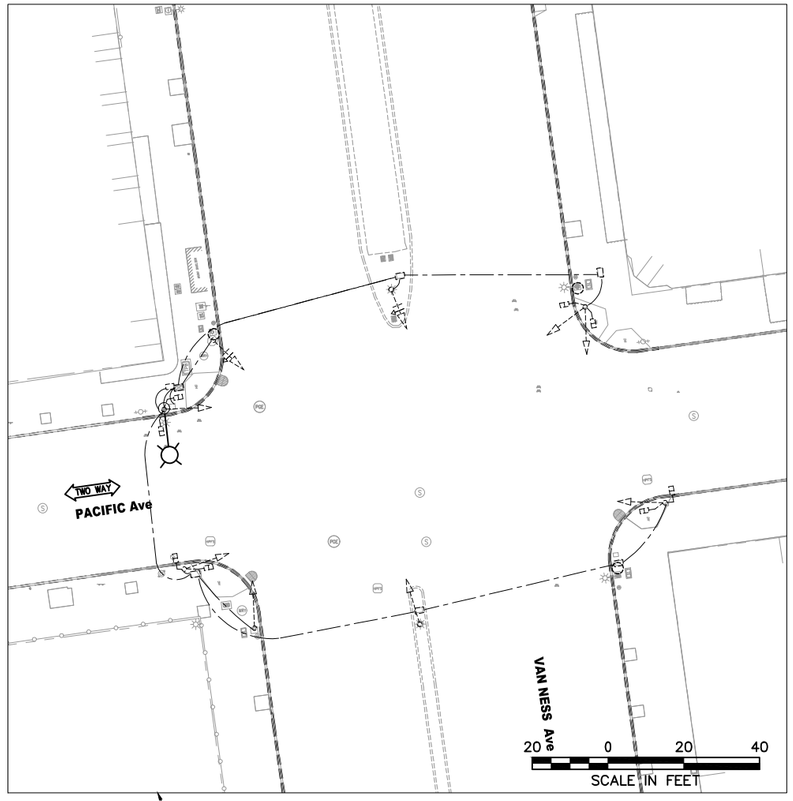
1289

ET–121.2
ET–204

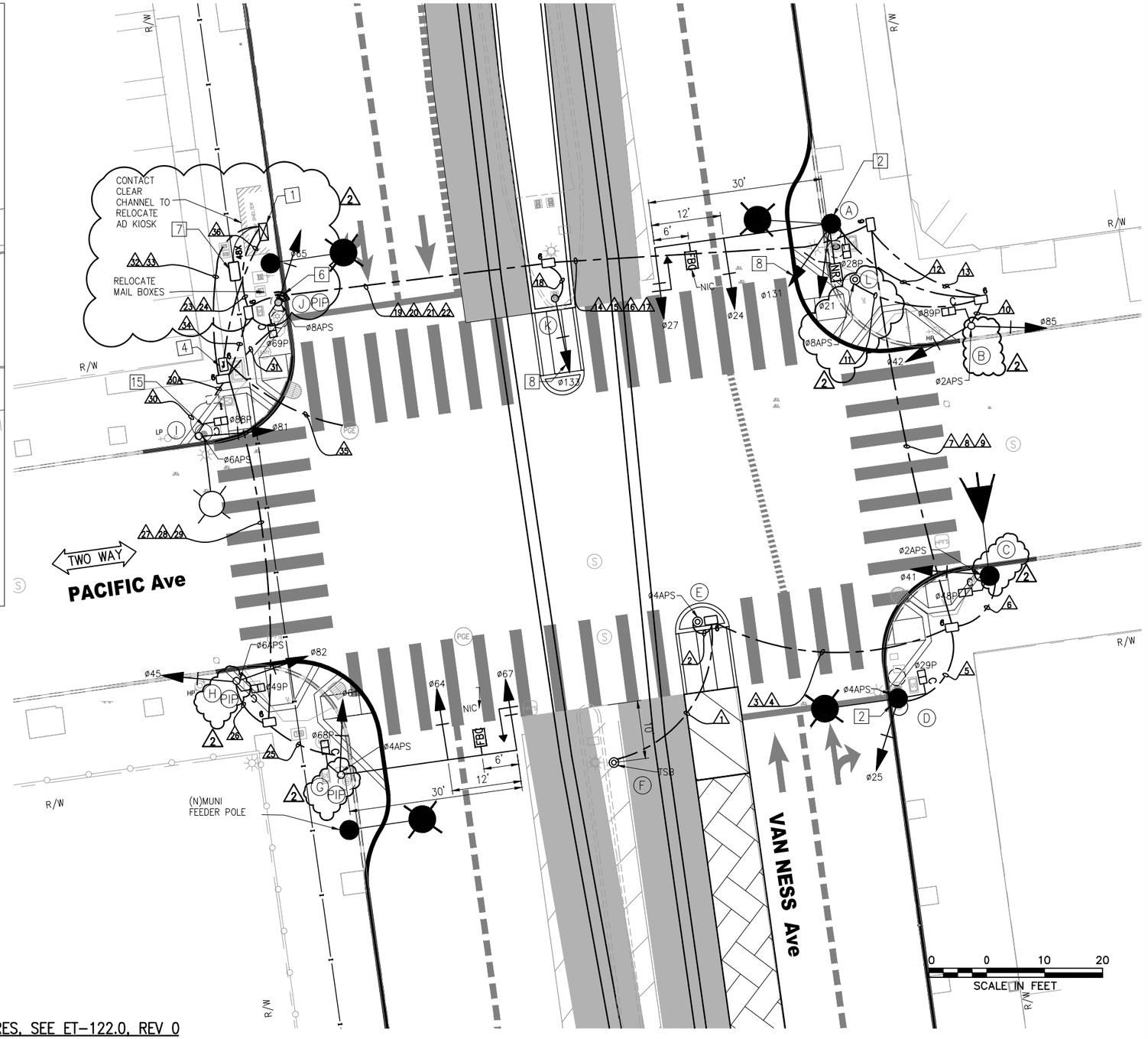
REVISION 1

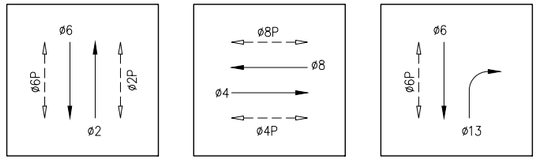
T:\V_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS – 100% Rev. 7–18–19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm

BORDER REVISED 11/17/05



EXISTING EQUIPMENT





PHASE DIAGRAM

N

FOR ORIGINAL SIGNATURES, SEE ET-122.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	8/10/18	POLE LAYOUT – NEW PPB POLE L FOR ø8APS, MOVED IC	KK	MV	CL
		TO VAN NESS SIDE, AND PER POLE LAYOUT WALKTHRU			
1	03/2018	MOVED NRT TO POLE ITSELF, ADDED FBC SIGNS ON	KK	MV	CL
		POLES A AND H; RELOCATED APS TO RENAMED POLE B;			
		UPDATED CONDUITS AND PULLBOXES NEAR RENAMED SL			
		POLE I; ADDED TYPE 6X PULLBOX			

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

PACIFIC AVENUE
TRAFFIC SIGNAL WORK

1289

ET-122.0

ET-204

REVISION 3

T:\V_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	2100 / 210	21 24 27 131	3S12" 3S12" 3S12"GUA 3S12"RB	SV-1-T MAS MAS SV-1-T	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZ. SIGNAL MA MOUNT AT 21' HIGH SIGNAL Ø131 MOUNT @ 18' HIGH SEE ST PLANS FOR POLE DETAILS "NO RIGHT TURN" BLANK-OUT SIGN APS ⟨1⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓒ	NEW SL (CITY STD)	–	163	41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2092 / 208	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓔ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ⟨1⟩
Ⓕ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓖ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ⟨1⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS PIP – INSTALL NEW POLE IN PLACE OF EXISTING SL POLE (2)
Ⓗ	1-A (10')	–		45 82	3S12" 3S12"	TV-2-T	T T		49	1S-COUNT	SP-1	–	APS ⟨1⟩ PIP – INSTALL NEW POLE IN PLACE OF EXISTING TS POLE (2)
Ⓘ	EXISTING SL	–		81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓙ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ⟨1⟩ TSP ⟨2⟩ PIP – INSTALL NEW POLE IN PLACE OF EXISTING SL POLE (2)
Ⓚ	1-A (10')	–		133	3S12"RB	TV-1-T	T		–	–	–	–	
Ⓛ	PPB POLE (2)	–		–	–	–	–		–	–	–	–	APS ⟨1⟩ (2)

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

⟨1⟩ INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
⟨2⟩ INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
⟨3⟩ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
⟨4⟩ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-122.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	8/10/18	POLE LAYOUT – NEW PPB POLE L FOR #8APS & PER LAYOUT WALKTHROUGH	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND H; RELOCATED APS TO RENAMED POLE B; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
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APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

PACIFIC AVENUE
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

1289

ET-122.1
ET-204

REVISION 3

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	30A	31	32	33	34	35	36
CONDUIT SIZE (INCH)	1	1	2	2	2	2	2	2	2	2	1	2	3	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	3	2	2	2	2	3
	GRS			SP				SP	SP								SP				SP	SP						SP	SP	EX				SP	SP			
TSB ON POLE G	2		2				2							2					2				2														
APS PPB FOR XING VAN NESS SS ON POLE E		2	2				2							2					2				2													
VEHICLE SIGNAL Ø25					3		3							3					3				3													
PED SIGNAL Ø29P					2		2							2					2				2													
APS PPB FOR XING VAN NESS SS ON POLE D					2		2							2					2				2													
VEHICLE SIGNAL Ø41						3	3							3					3				3													
PED SIGNAL Ø48P						2	2							2					2				2													
APS PPB FOR XING PACIFIC ES ON POLE C						2	2							2					2				2													
VEHICLE SIGNAL Ø42										3			3		3					3					3												
VEHICLE SIGNAL Ø85										3			3		3					3					3												
PED SIGNAL Ø89P										2			2		2					2					2												
APS PPB FOR XING PACIFIC ES ON POLE B										2			2		2					2					2												
TRANSIT SIGNAL Ø131												3	3		3					3					3												
VEHICLE SIGNAL Ø21												3	3		3					3					3												
VEHICLE SIGNAL Ø24												3	3		3					3					3												
VEHICLE SIGNAL Ø27												3	3		3					3					3												
PED SIGNAL Ø28P												2	2		2					2					2												
APS PPB FOR XING VAN NESS NS ON POLE A												2	2		2					2					2												
TRANSIT SIGNAL Ø133																		3		3					3												
VEHICLE SIGNAL Ø61																										3		3					3				
VEHICLE SIGNAL Ø64																										3		3					3				
VEHICLE SIGNAL Ø67																										3		3					3				
PED SIGNAL Ø68P																										2		2					2				
APS PPB FOR XING VAN NESS SS ON POLE G																										2		2					2				
VEHICLE SIGNAL Ø45																											3	3					3				
VEHICLE SIGNAL Ø82																											3	3					3				
PED SIGNAL Ø49P																											2	2					2				
APS PPB FOR XING PACIFIC WS ON POLE H																											2	2					2				
VEHICLE SIGNAL Ø81																														3	3		3				
PED SIGNAL Ø88P																														2	2		2				
APS PPB FOR XING PACIFIC WS ON POLE I																														2	2		2				
VEHICLE SIGNAL Ø65																																3	3				
PED SIGNAL Ø69P																																2	2				
APS PPB FOR XING VAN NESS NS ON POLE J																																2	2				
APS PPB FOR XING VAN NESS NS ON POLE L											2		2		2				2				2														
#14 NEUTRAL					2	2				2		4												4	2				2	2	2						
#14 SPARE							3						3	3	3					3							3						3				
TOTAL #14 WIRES	2	2	4		9	9	21			12	2	20	45	21	31	2		3	23	29			21	34	17	12	26			9	9	9	40				
#10 WIRES NEUTRAL							1					2	1	1	1			1	1	2			1	2	2		1					2				
#6 WIRES (120 V SERVICE)																																		2			
#8 WIRES (120 V SERVICE)																																			2		
#6 BSCW (SEE GENERAL NOTE 10)																																					
TSP RECEIVER (10 CONDUCTOR CABLE)																																1	1				
NO RIGHT TURN EMS WIRES (1#14, 1#10 & 1#6 GROUND)												1	1		1					1				1												

FOR ORIGINAL SIGNATURES, SEE ET-122.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	8/10/18	POLE LAYOUT – NEW PPB POLE L FOR #8APS, ADDED CONDUIT RUN 11, AND ADDED APS WIRES BACK TO IC	KK	MV	CL
1	03/2018	RELOCATED APS TO POLE C AND ADDED CONDUIT RUN 30A & WIRES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

PACIFIC AVENUE
CONDUIT & WIRING SCHEDULES

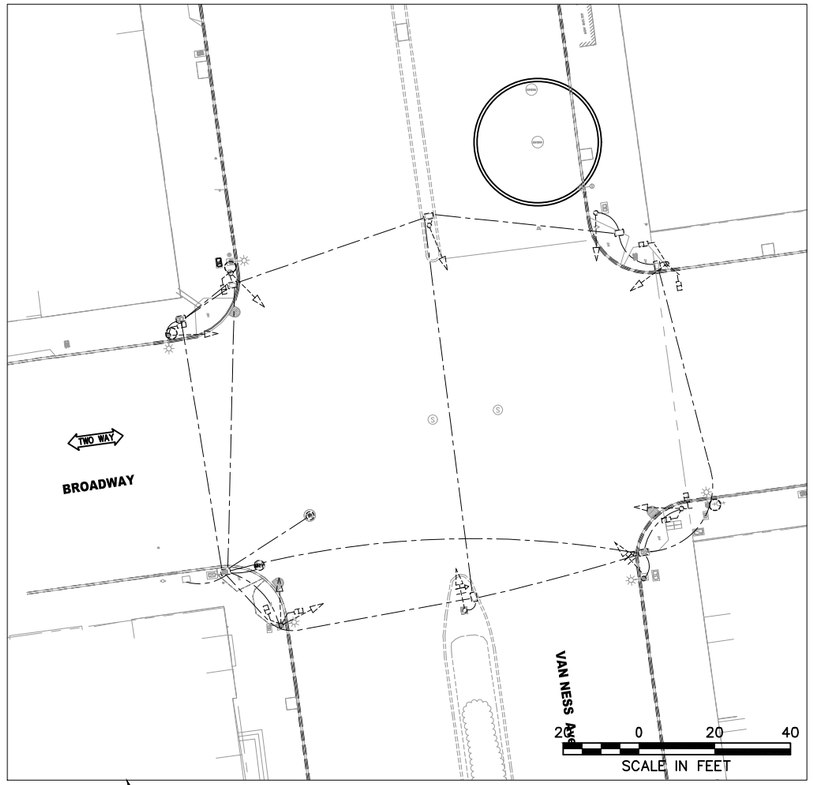
1289

ET-122.2
ET-204

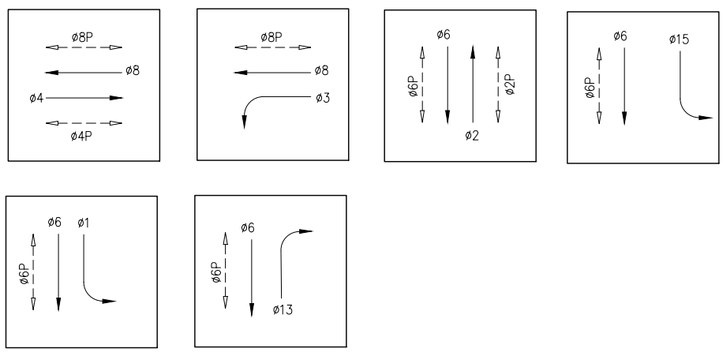
REVISION 3

BORDER REVISED 11/17/05

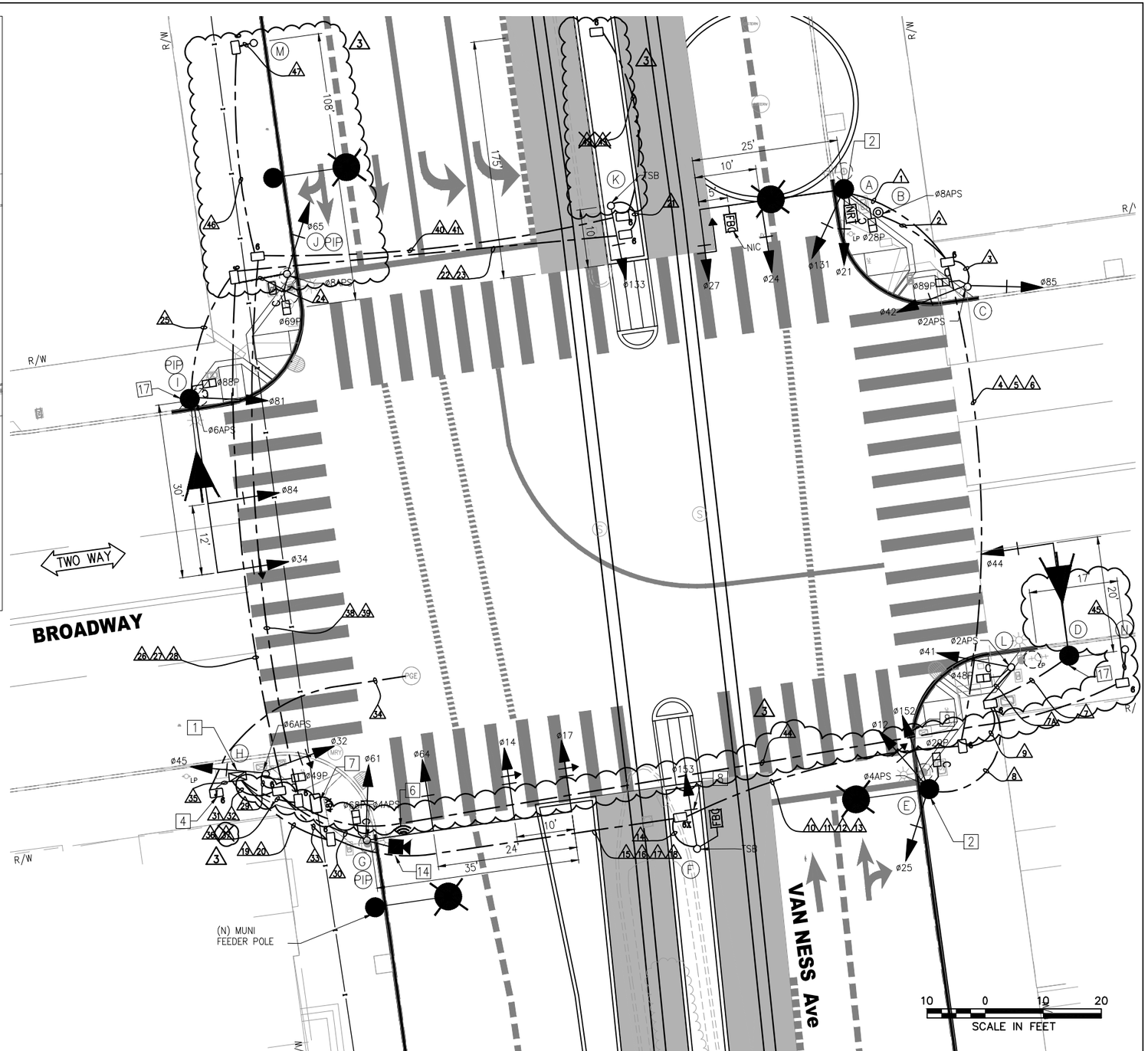
T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT840IETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-123.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
SK	2/15/19	ADD RED LIGHT CAMERA POLES M & N, DELETE CONDUITS 37, 42, & 43. ADD CONDUITS 44, 45, 46, 47.	JH	GD	
		ADD RED LIGHT CAMERA HARDWARE & WIRING.			
2	8/10/18	POLE LAYOUT – MOVE SIGNAL 41, PED SIGNAL 48,			
		ø2APS ONTO NEW 1–A POLE IN FRONT OF MA POLE D, &			
		PER LAYOUT WALKTHROUGH			
1	03/2018	ADDED FBC SIGN ON POLE A AND F, UPDATED POLE A	KK	MV	CL
		MA LENGTH; ADDED SIGNALS 32 AND 34, RELOCATED			
		SIGNAL 84, UPDATED PHASE DIAG.; ADDED TYPE 6X PB			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

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CITY AND COUNTY OF SAN FRANCISCO
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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BROADWAY
TRAFFIC SIGNAL WORK

ET-123.0
ET-204

REVISION 3

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP16401ETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	25	2200 / 222	21 24 27 131	3S12" 3S12" 3S12"GUA 3S12"RB	SV-1-T MAS MAS SV-1-T	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZ. SIGNAL MA MOUNT AT 21' HIGH SIGNAL Ø131 MOUNT AT 18' HIGH SEE ST PLANS FOR POLE DETAILS "NO RIGHT TURN" BLANK-OUT SIGN TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ①
Ⓒ	1-A(10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ①
Ⓓ	17-2-100	20	/ 155	44	3S12"	MAS	T		–	–	–	–	
Ⓔ	SIGNAL, SL & OCS COMBO POLE	–	2160 / 218	12 25 152	3S12"LA 3S12" 3S12"LB	SV-2-TA SV-1-T	T T T		29	1S-COUNT	SP-1	–	APS ① SIGNAL Ø152 ON TOP OF Ø12 AT 15' HIGH
Ⓕ	1-A(13')	–		153	3S12"LB	TV-1-T	T		–	–	–	–	TSB FBC TO BE INSTALLED BY CONTRACTOR
Ⓖ	SPECIAL MAST ARM POLE	35		14 17 61 64	3S12"LA 3S12"LA 3S12" 3S12"	MAS MAS SV-1-T MAS	T T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST-103 FOR POLE DETAILS APS ① TSP ② TRAFFIC CAMERA ③ PIP – INSTALL NEW POLE IN PLACE OF EXISTING SL POLE
Ⓗ	1-A(10')	–		32 45	4S12"GLA 3S12"	TV-2-T	T T		49	1S-COUNT	SP-1	–	APS ① IN-LINE WITH SEWER VENT; OFFSET ANCHOR BOLTS EAST
Ⓘ	19-3-100	30	/ 162	34 81 84	4S12"GLA 3S12" 3S12"	MAS SV-1-T MAS	T T T		88	1S-COUNT	SP-1	–	APS ① PIP – INSTALL NEW POLE IN PLACE OF EXISTING SL POLE
Ⓙ	1-A(10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ① PIP – INSTALL NEW POLE IN PLACE OF EXISTING OCS/SL POLES
Ⓚ	1-A(10')	–		133	3S12"RB	TV-1-T	T		–	–	–	–	TSB
Ⓛ	1-A(10')			41	3S12"	TV-1-T	T		48	1S-COUNT	SP-1		APS ①
3 Ⓜ	REAR RED LIGHT CAMERA POLE												F/I POLE FOUNDATIONS, INSTALL CITY FURNISHED RED LIGHT CAMERA POLES, CAMERAS, STROBES, CABINETS, AND OTHER ANCILLARY HARDWARE, REFER TO REFERENCE DRAWINGS: 2855J SHEETS E-7.1, E-7.2, E-14.0, E-14.1, E-14.3
Ⓝ	FRONT RED LIGHT CAMERA POLE												

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

① INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
② INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
③ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
④ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-123.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
SK	2/15/19	ADDED RED LIGHT CAMERA POLES M & N.	JH	GD	
2	8/10/18	POLE LAYOUT – MOVE SIGNAL 41, PED SIGNAL 48, #2APS ONTO NEW 1-A POLE IN FRONT OF MA POLE D PER LAYOUT WALKTHROUGH.			
1	03/2018	ADDED FLASHING BUS COMING SIGN ON POLE F; ADDED SIGNALS 32 AND 34, UPDATED POLE I; ADDED BLANK OUT SIGN NOTE ON SPECIAL REQUIREMENTS; UPDATED POLES A AND G; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BROADWAY
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-123.1
ET-204

REVISION 3

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\CP76401ETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	7A	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
CONDUIT SIZE (INCH)	2	1	2	2	2	2	2	2	2	3	2	2	2	2	2	2	3	2	2	3	3	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2
					SP	SP							SP	SP				SP	SP					SP				SP	SP				SP															
TRANSIT SIGNAL Ø131	3			3							3					3				3																											
VEHICLE SIGNAL Ø21	3			3							3					3				3																											
VEHICLE SIGNAL Ø24	3			3							3					3				3																											
VEHICLE SIGNAL Ø27	3			3							3					3				3																											
PED SIGNAL Ø28P	2			2							2					2				2																											
APS PPB FOR XING VAN NESS NS ON POLE B		2		2							2					2				2																											
VEHICLE SIGNAL Ø42			3	3							3					3				3																											
VEHICLE SIGNAL Ø85			3	3							3					3				3																											
PED SIGNAL Ø89P			2	2							2					2				2																											
APS PPB FOR XING BROADWAY ES ON POLE C			2	2							2					2				2																											
VEHICLE SIGNAL Ø41								3		3		3					3				3																											
VEHICLE SIGNAL Ø44							3			3		3					3				3																											
PED SIGNAL Ø48P								2		2		2					2				2																											
APS PPB FOR XING BROADWAY ES ON POLE L								2		2		2					2				2																											
TRANSIT SIGNAL Ø152									3	3		3					3				3																											
VEHICLE SIGNAL Ø12									3	3		3					3				3																											
VEHICLE SIGNAL Ø25									3	3		3					3				3																											
PED SIGNAL Ø29P									2	2		2					2				2																											
APS PPB FOR XING VAN NESS SS ON POLE E									2	2		2					2				2																											
TRANSIT SIGNAL Ø153															3		3				3																											
TSB ON POLE F															2		2				2																											
TRANSIT SIGNAL Ø133																						3	3				3					3															
TSB ON POLE K																						2	2				2					2															
VEHICLE SIGNAL Ø65																									3		3					3															
PED SIGNAL Ø69P																									2		2					2															
APS PPB FOR XING VAN NESS NS ON POLE J																									2		2					2															
VEHICLE SIGNAL Ø34																										4	4					4															
VEHICLE SIGNAL Ø81																										3	3					3															
VEHICLE SIGNAL Ø84																										3	3					3															
PED SIGNAL Ø88P																										2	2					2															
APS PPB FOR XING BROADWAY WS ON POLE I																										2	2					2															
VEHICLE SIGNAL Ø32																														4			4															
VEHICLE SIGNAL Ø45																														3			3															
PED SIGNAL Ø49P																														2			2															
APS PPB FOR XING BROADWAY WS ON POLE H																														2			2															
VEHICLE SIGNAL Ø14																															3		3															
VEHICLE SIGNAL Ø17																															3		3															
VEHICLE SIGNAL Ø61																															3		3															
VEHICLE SIGNAL Ø64																															3		3															
PED SIGNAL Ø68P																															2		2															
APS PPB FOR XING VAN NESS SS ON POLE G																															2		2															
#14 NEUTRAL	5		2				1	2	4													2	3								2	5																
#14 SPARE				3						3	3	3				3	3			3	3		3				3						3	3														
TOTAL #14 WIRES	19	3	12	29			4	9	17	26	26	26			6	29	31			29	31	6	8		9	17	29			13	21	29	30												
#10 WIRES NEUTRAL				1						1	1	1			1	1	2			1	2	1	1				2					2	1														
#6 WIRES (120 V SERVICE)																																		2														
#8 WIRES (120 V SERVICE)																																			2													
#6 BSCW (SEE GENERAL NOTE 10)																																																

DETAIL NOTES:

1. IN CONDUIT RUNS 36 TO 43, THE CONTRACTOR SHALL F/I 2#8 AWG STRANDED COPPER CONDUCTORS WITH TYPE UF INSULATION (ONE WIRE SHALL BE BLACK AND OTHER SHALL BE WHITE). 1#10 AWG STRANDED WIRE WITH GREEN INSULATION.

FOR ORIGINAL SIGNATURES, SEE ET-123.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
SK	2/15/19	DELETE CONDUITS 37, 42, & 43, ADD CONDUITS 44, 45, 46, & 47, ADD RED LIGHT CAMERA WIRING.	JH	GD	
2	8/10/18	POLE LAYOUT - MOVE SIGNAL 41, PED SIGNAL 48, AND #2APS ONTO NEW 1-A POLE IN FRONT OF MA POLE D.			
1	03/2018	UPDATED SCHEDULE, ADDED SIGNALS 32 AND 34	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BROADWAY
CONDUIT & WIRING SCHEDULES

ET-123.2
ET-204

REVISION 3

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
CONDUIT SIZE (INCH)	2	1	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2
					SP	SP						SP	SP				SP	SP					SP				SP	SP					SP														
TSP RECEIVER (10 CONDUCTOR CABLE)																														1		1																
NO RIGHT TURN EMS WIRES (1#14, 1#10 & 1#6 GROUND)	1			1						1					1				1																												
FBC SIGN WIRES (1#14, 1#10 & 1#6 GROUND)														1	1				1																												
CCTV CAMERA WIRES (CAT5e & 3#18)																														1		1																
RLC POWER (3 CONDUCTOR #10)																																				1		3						2	2	3	3
RLC PHASE (7 CONDUCTOR #14)																																				1		1								1	1
RLC COMMUNICATIONS (PE 22 6/PAIR 24 AWG OR EQUAL)																																						1						1	1	1	1

DETAIL NOTES:

1. IN CONDUIT RUNS 36 TO 43, THE CONTRACTOR SHALL F/I 2#8 AWG STRANDED COPPER CONDUCTORS WITH TYPE UF INSULATION (ONE WIRE SHALL BE BLACK AND OTHER SHALL BE WHITE). 1#10 AWG STRANDED WIRE WITH GREEN INSULATION.

FOR ORIGINAL SIGNATURES, SEE ET-123.3, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	2/15/19	DELETE CONDUITS 37, 42, & 43, ADD CONDUITS 44, 45, 46, & 47, ADD RED LIGHT CAMERA WIRING.	JH	GD	
1	03/2018	ADDED FLASHING BUS COMING SIGN	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

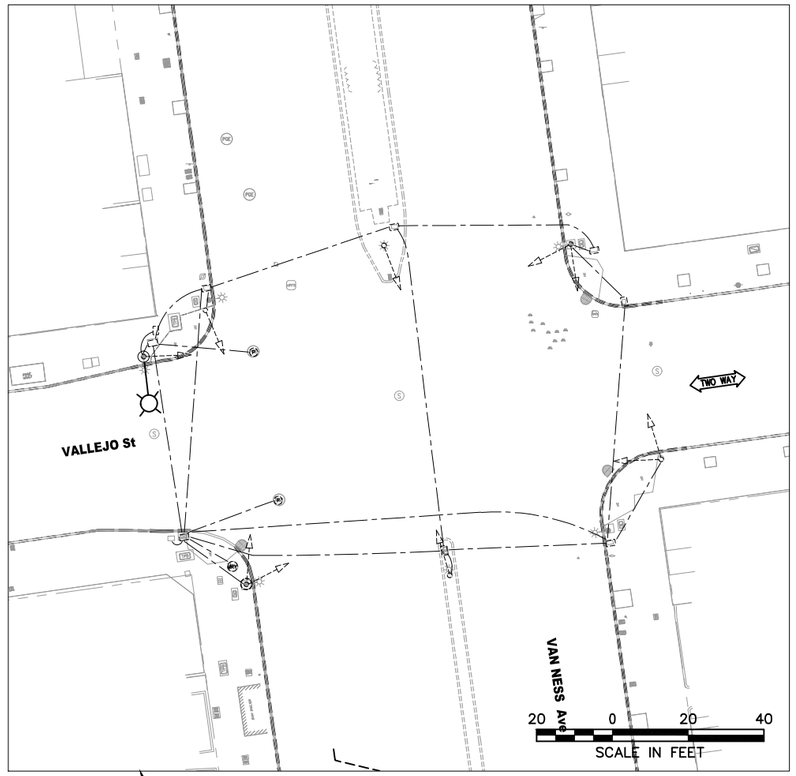
1289

BROADWAY
CONDUIT & WIRING SCHEDULES

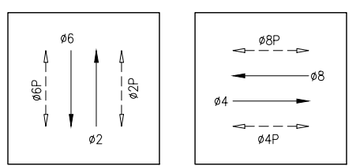
ET-123.3
ET-204

REVISION 2

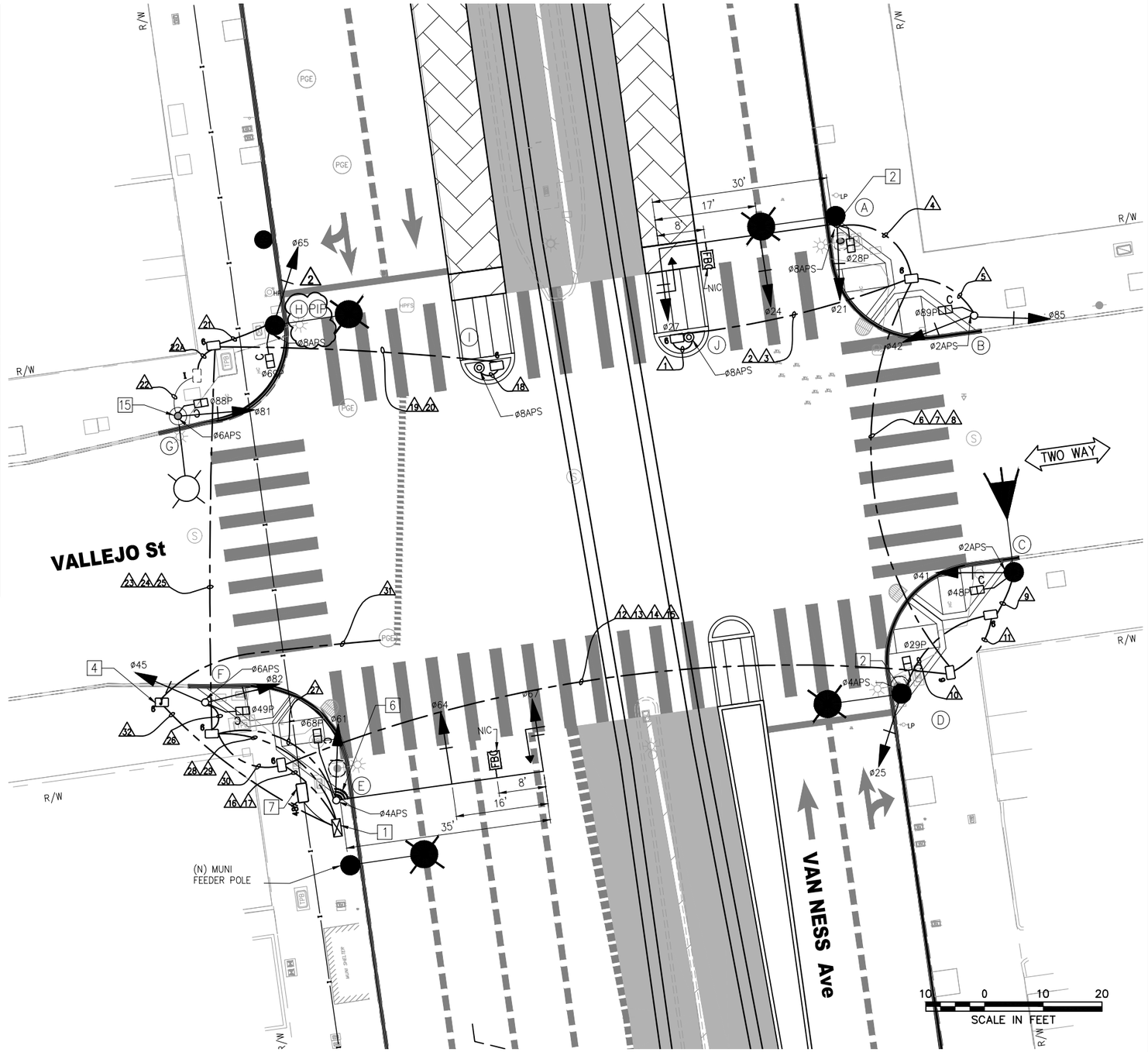
I:\YE_FILES\SFgov\Projects\Van Ness BRT\Signal Design\CADD\ CP1640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:40 pm



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-124.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	9/28/18	PER POLE LAYOUT: PIP FOR POLE H & OTHER POLES	KK	MV	CL
		PER LAYOUT WALKTHROUGH			
1	03/2018	ADDED FBC SIGNS ON POLES A AND E; UPDATED	KK	MV	CL
		PULLBOXES & CONDUITS AT POLE G			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

VALLEJO STREET
TRAFFIC SIGNAL WORK

1289

ET-124.0

ET-204

REVISION 2

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	2302 / 232	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	NEW SL (CITY STD)	–	/ 151	41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2260 / 228	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SPECIAL MAST ARM POLE (23-4-100)	35		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TSP ◇2 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓕ	1-A (10')	–		45 82	3S12" 3S12"	TV-2-T	T T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓖ	EXISTING SL	–		81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	SIGNAL, SL COMBO POLE	–	/ 231	65	3S12"	SV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1 PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE △2
Ⓘ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1
Ⓙ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-124.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	9/28/18	PER POLE LAYOUT: PIP FOR POLE H	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND E; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

VALLEJO STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

1289

ET-124.1
ET-204

REVISION 2

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	22A	23	24	25	26	27	28	29	30	31	32
CONDUIT SIZE (INCH)	1	2	2	2	2	2	2	2	2	2	3	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2
			SP				SP	SP						SP	SP		SP			SP		EX			SP	SP				SP	SP		
APS PPB FOR XING VAN NESS NS ON POLE J	2	2				2						2				2																	
VEHICLE SIGNAL Ø21				3		3						3				3																	
VEHICLE SIGNAL Ø24				3		3						3				3																	
VEHICLE SIGNAL Ø27				3		3						3				3																	
PED SIGNAL Ø28P				2		2						2				2																	
APS PPB FOR XING VAN NESS NS ON POLE A				2		2						2				2																	
VEHICLE SIGNAL Ø42					3	3						3				3																	
VEHICLE SIGNAL Ø85					3	3						3				3																	
PED SIGNAL Ø89P					2	2						2				2																	
APS PPB FOR XING VALLEJO ES ON POLE B					2	2						2				2																	
VEHICLE SIGNAL Ø41									3		3		3			3																	
PED SIGNAL Ø48P									2		2		2			2																	
APS PPB FOR XING VALLEJO ES ON POLE C									2		2		2			2																	
VEHICLE SIGNAL Ø25										3	3		3			3																	
PED SIGNAL Ø29P										2	2		2			2																	
APS PPB FOR XING VAN NESS SS ON POLE D										2	2		2			2																	
APS PPB FOR XING VAN NESS NS ON POLE I																		2	2					2					2				
VEHICLE SIGNAL Ø65																					3			3					3				
PED SIGNAL Ø69P																					2			2					2				
APS PPB FOR XING VAN NESS NS ON POLE H																					2			2					2				
VEHICLE SIGNAL Ø81																						3	3	3					3				
PED SIGNAL Ø88P																						2	2	2					2				
APS PPB FOR XING VALLEJO WS ON POLE G																						2	2	2					2				
VEHICLE SIGNAL Ø45																											3		3				
VEHICLE SIGNAL Ø82																											3		3				
PED SIGNAL Ø49P																											2		2				
APS PPB FOR XING VALLEJO WS ON POLE F																											2		2				
VEHICLE SIGNAL Ø61																												3	3				
VEHICLE SIGNAL Ø64																												3	3				
VEHICLE SIGNAL Ø67																												3	3				
PED SIGNAL Ø68P																												2	2				
APS PPB FOR XING VAN NESS SS ON POLE E																												2	2				
#14 NEUTRAL				4	2				2	2											2	2	2					2	4				
#14 SPARE						3					3	3	3			6								3					3				
TOTAL #14 WIRES	2	2		17	12	28			9	9	17	28	17			45		2	2		9	9	9	19			12	17	42				
#10 WIRES NEUTRAL						1					1	1	1			2								1					2				
#6 WIRES (120 V SERVICE)																															2		
#8 WIRES (120 V SERVICE)																																2	
#6 BSCW (SEE GENERAL NOTE 10)																																	
TSP RECEIVER (10 CONDUCTOR CABLE)																												1	1				

FOR ORIGINAL SIGNATURES, SEE ET-124.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED CONDUIT RUN 22A AND WIRES	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

VALLEJO STREET
CONDUIT & WIRING SCHEDULES

ET-124.2
ET-204

REVISION 2

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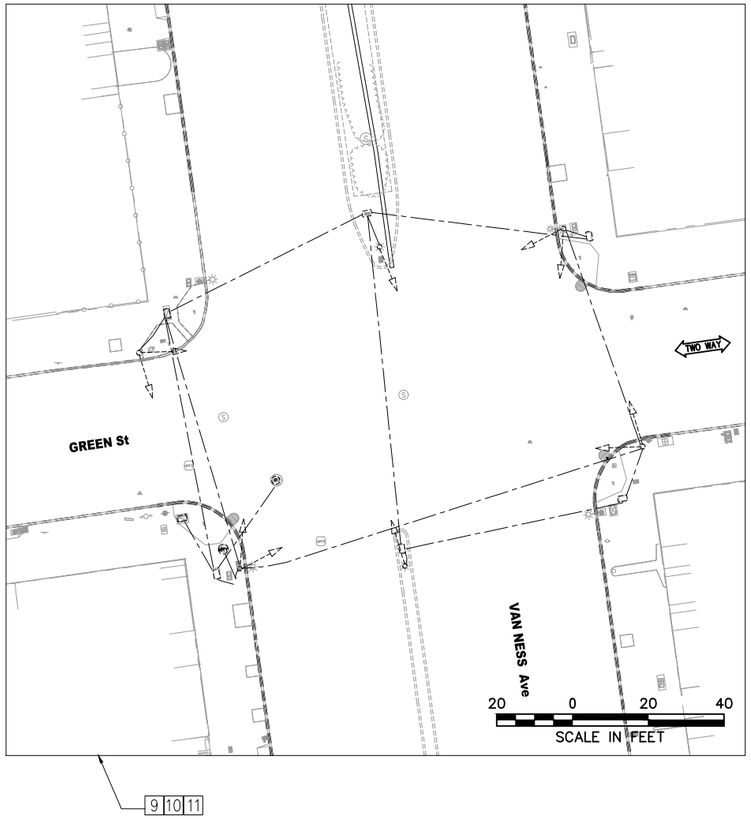
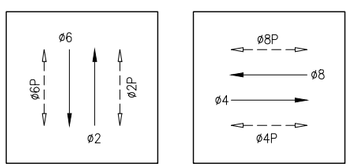
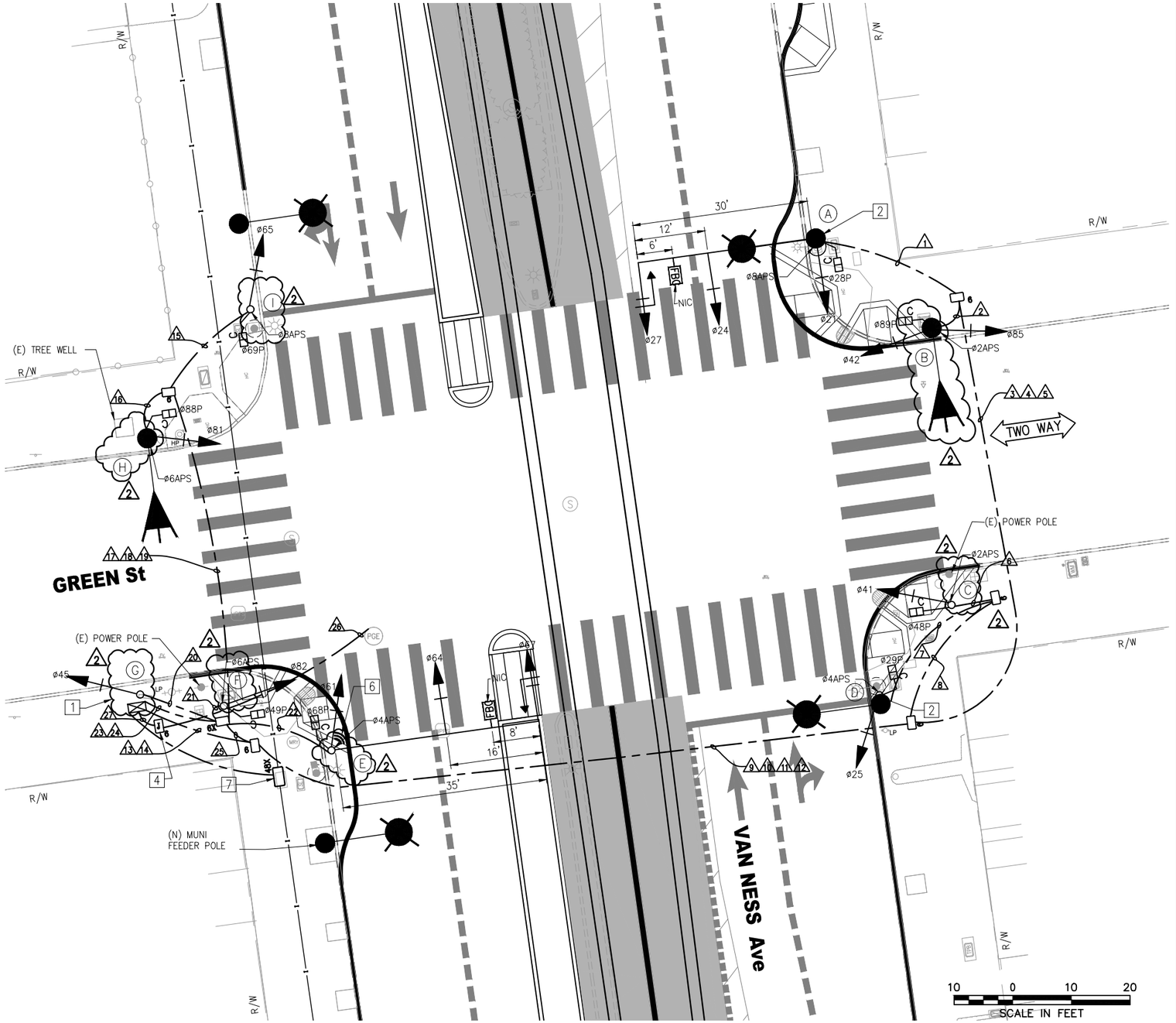
BORDER REVISED 11/17/05



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-125.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	9/28/18	POLE LAYOUT - SL POLE ON SE CORNER MOVED TO NE CORNER AND OTHER POLES PER POLE LAYOUT WALKTHRU	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND E; ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GREEN STREET
TRAFFIC SIGNAL WORK

ET-125.0
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT840IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:40 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	2400 / 242	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	NEW SL (CITY STD) △2	–		42 85	3S12" 3S12"	SV-2-TA △2	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	1-A (10') △2	–		41	3S12"	TV-1-T △2	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2360 / 238	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SPECIAL MAST ARM POLE (23-4-100)	35		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TSP ◇2 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓕ	1-A (10')	–		82	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓖ	1-A (10')	–		45	3S12"	TV-1-T	T						
Ⓗ	NEW SL (CITY STD)	–	152	81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓘ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-125.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	9/28/18	POLE LAYOUT – POLE B IS A SL POLE (MOVED FROM SE CORNER) & POLE C IS A 1-A POLE (MOVED FROM NEC)	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND E; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GREEN STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-125.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP		SP				SP	SP					SP			
VEHICLE SIGNAL Ø21	3		3						3				3														
VEHICLE SIGNAL Ø24	3		3						3				3														
VEHICLE SIGNAL Ø27	3		3						3				3														
PED SIGNAL Ø28P	2		2						2				2														
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2				2														
VEHICLE SIGNAL Ø42		3	3						3				3														
VEHICLE SIGNAL Ø85		3	3						3				3														
PED SIGNAL Ø89P		2	2						2				2														
APS PPB FOR XING GREEN ES ON POLE B		2	2						2				2														
VEHICLE SIGNAL Ø41						3		3		3			3														
PED SIGNAL Ø48P						2		2		2			2														
APS PPB FOR XING GREEN ES ON POLE C						2		2		2			2														
VEHICLE SIGNAL Ø25							3	3		3			3														
PED SIGNAL Ø29P							2	2		2			2														
APS PPB FOR XING VAN NESS SS ON POLE D							2	2		2			2														
VEHICLE SIGNAL Ø65															3		3						3				
PED SIGNAL Ø69P															2		2						2				
APS PPB FOR XING VAN NESS NS ON POLE I															2		2						2				
VEHICLE SIGNAL Ø81																3	3						3				
PED SIGNAL Ø88P																2	2						2				
APS PPB FOR XING GREEN WS ON POLE H																2	2						2				
VEHICLE SIGNAL Ø45																				3			3				
VEHICLE SIGNAL Ø82																					3		3				
PED SIGNAL Ø49P																					2		2				
APS PPB FOR XING GREEN WS ON POLE F																					2		2				
VEHICLE SIGNAL Ø61																						3	3				
VEHICLE SIGNAL Ø64																						3	3				
VEHICLE SIGNAL Ø67																						3	3				
PED SIGNAL Ø68P																						2	2				
APS PPB FOR XING VAN NESS SS ON POLE E																						2	2				
#14 NEUTRAL	4	2				2	2								2	2				1	2	4					
#14 SPARE			3					3	3	3			6				3						3				
TOTAL #14 WIRES	17	12	26			9	9	17	26	17			43		9	9	17			4	9	17	40				
#10 WIRES NEUTRAL			1					1	1	1			2				1						2				
#6 WIRES (120 V SERVICE)																										2	
#8 WIRES (120 V SERVICE)																											2
#6 BSCW (SEE GENERAL NOTE 10)																											
TSP RECEIVER (10 CONDUCTOR CABLE)																						1	1				

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT8401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:40 pm

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

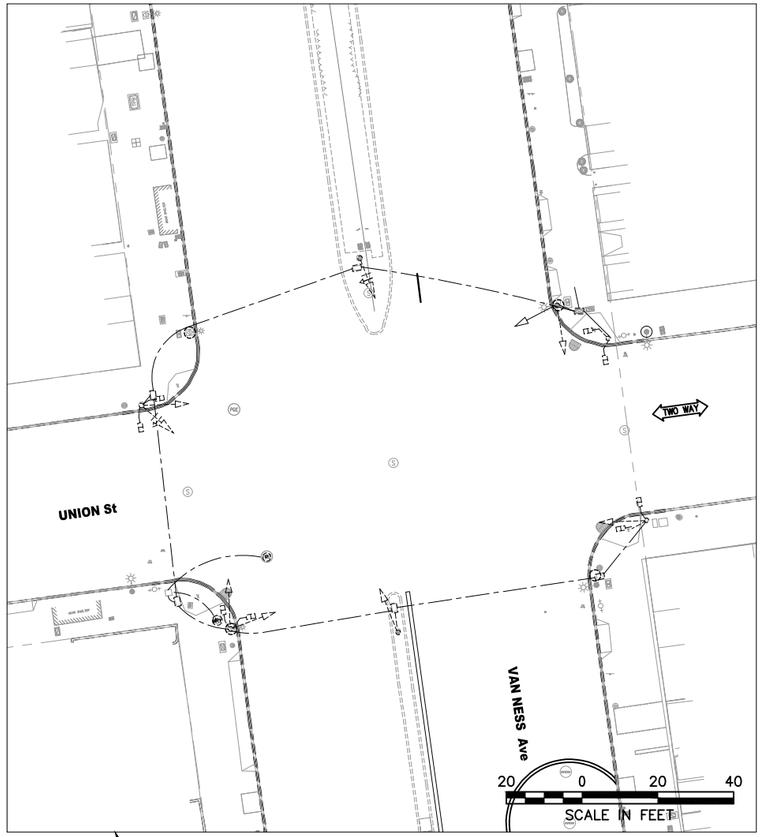
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

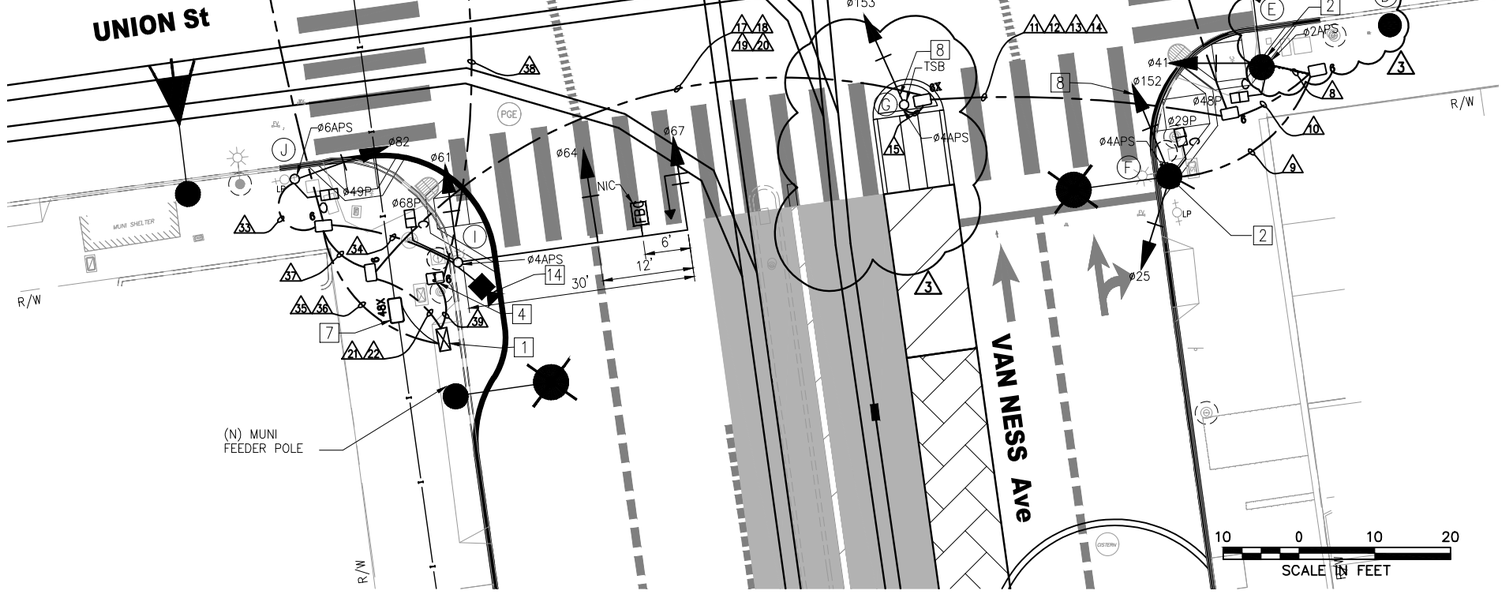
GREEN STREET
CONDUIT & WIRING SCHEDULES

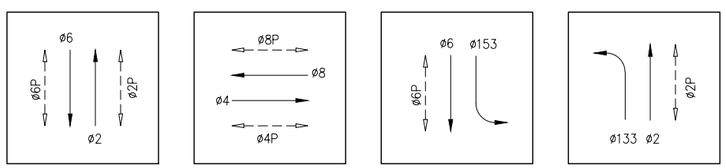
ET-125.2
ET-204

REVISION 1



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-126.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/29/19	RFI#527 REVISE RESPNSE: REV. POLE C, D, E, H, O, & P	KK	MV	CL
SK	10/18/18	PER POLE LAYOUT: NEW PPB POLE P & ADJUSTED OTHER POLES PER LAYOUT WALKTHROUGH	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND I; RELOCATED POLE B; ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

UNION STREET
TRAFFIC SIGNAL WORK

ET-126.0
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP76401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:40 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	35	2500 / 252	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH SEE ST PLANS FOR POLE DETAILS TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ①
Ⓒ	NOT USED	–		–	–	–	–		–	–	–	–	③
Ⓓ	NOT USED	–		–	–	–	–		–	–	–	–	③
Ⓔ	SL POLE (SEE SL-PLANS)	–		41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ① ③
Ⓕ	SIGNAL, SL & OCS COMBO POLE	–	2454 / 246	25 152	3S12" 3S12"LB	SV-2-TA	T T		29	1S-COUNT	SP-1	–	APS ①
Ⓖ	1-A (10')	–		153	3S12"LB	TV-1-T	T		–	–	–	–	APS ① TSB KEY BOX – CITY TO INSTALL ABOVE APS UNIT ③
Ⓗ	NOT USED	–		–	–	–	–		–	–	–	–	③
Ⓘ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH APS ① TRAFFIC CAMERA ③ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓙ	1-A (10')	–		82	3S12"	TV-1-T	T		49	1S-COUNT	SP-1	–	APS ①
Ⓚ	SIGNAL & OCS COMBO POLE	–	1502	46 81	3S12" 3S12"	SV-2-TA	T		88	1S-COUNT	SP-1	–	
Ⓛ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ①
Ⓜ	1-A (10')	–		65 132	3S12" 3S12"LB	TV-2-T	T T		69	1S-COUNT	SP-1	–	APS ① TSP ② PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE
Ⓝ	1-A (10')	–		133	3S12"LB	TV-1-T	T		–	–	–	–	APS ① TSB KEY BOX – CITY TO INSTALL ABOVE APS UNIT ③
Ⓞ	NOT USED	–		–	–	–	–		–	–	–	–	③
Ⓟ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ① ③

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

① INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
② INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
③ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
④ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-126.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/29/19	RFI#527 REVISE RESPNSE: REV. POLE C, D, E, H, O, & P	KK	MV	CL
SK	10/18/18	PER POLE LAYOUT: ADD PPB POLE P & PIP FOR POLE M	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT;	KK	MV	CL
		UPDATED POLES A AND I; ADDED FBC TENON NOTE			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

UNION STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-126.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT840IETBS – 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 – 3:40 pm

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	3A	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
CONDUIT SIZE (INCH)	2	1	2	2	2	2	2	2	2	2	3	2	2	2	2	2		2	2	2	2	3	2		2	2	2	2	2	1	2	2	2	2	2	3	2	2	3	2
						SP	SP							SP	SP		GRS			SP	SP		SP	GRS			SP					SP	SP				SP	SP		
VEHICLE SIGNAL Ø21	3				3							3						3				3																		
VEHICLE SIGNAL Ø24	3				3							3						3				3																		
VEHICLE SIGNAL Ø27	3				3							3						3				3																		
PED SIGNAL Ø28P	2				2							2						2				2																		
APS PPB FOR XING VAN NESS NS ON POLE B		2			2							2						2				2																		
VEHICLE SIGNAL Ø42			3	3	3							3						3				3																		
VEHICLE SIGNAL Ø85				3	3							3						3				3																		
PED SIGNAL Ø89P			2	2	2							2						2				2																		
APS PPB FOR XING UNION ES ON POLE P				2	2							2						2				2																		
VEHICLE SIGNAL Ø41							3	3	2	3		3							3				3																	
PED SIGNAL Ø48P								2		2		2							2				2																	
APS PPB FOR XING UNION ES ON POLE E								2		2		2							2				2																	
TRANSIT SIGNAL Ø152										3	3	3							3				3																	
VEHICLE SIGNAL Ø25										3	3	3							3				3																	
PED SIGNAL Ø29P										2	2	2							2				2																	
APS PPB FOR XING VAN NESS SS ON POLE F										2	2	2							2				2																	
TRANSIT SIGNAL Ø153																3			3				3																	
APS PPB FOR XING VAN NESS SS ON POLE G																2			2				2																	
TSB ON POLE G																2			2				2																	
TSB ON POLE N																									2	2					2					2				
TRANSIT SIGNAL Ø133																									3	3					3					3				
APS PPB FOR XING VAN NESS NS ON POLE N																									2	2					2					2				
TRANSIT SIGNAL Ø132																												3			3					3				
VEHICLE SIGNAL Ø65																												3			3					3				
PED SIGNAL Ø69P																												2			2					2				
APS PPB FOR XING VAN NESS NS ON POLE M																												2			2					2				
VEHICLE SIGNAL Ø46																													3		3					3				
VEHICLE SIGNAL Ø81																													3		3					3				
PED SIGNAL Ø88P																													2		2					2				
APS PPB FOR XING UNION WS ON POLE L																														2	2					2				
VEHICLE SIGNAL Ø82																																3				3				
PED SIGNAL Ø49P																																2				2				
APS PPB FOR XING UNION WS ON POLE J																																2				2				
VEHICLE SIGNAL Ø61																																	3			3				
VEHICLE SIGNAL Ø64																																	3			3				
VEHICLE SIGNAL Ø67																																	3			3				
PED SIGNAL Ø68P																																	2			2				
APS PPB FOR XING VAN NESS SS ON POLE I																																	2			2				
#14 NEUTRAL	4			2					2	3																	3	2				2	4							
#14 SPARE					3						3	3	3					3	3			3	3			3					3				3	3				
TOTAL #14 WIRES	15	2		12	26				9	13	20	26	20			8		26	27			26	27		7	10	13	10	2	30		9	17	30	23				
#10 WIRES NEUTRAL					1						1	1	1			1		1	2			1	2		1	1				2				2	1				
#6 WIRES (120 V SERVICE)																																						2		
#8 WIRES (120 V SERVICE)																																							2	
#6 BSCW (SEE GENERAL NOTE 10)																																								
TSP RECEIVER (10 CONDUCTOR CABLE)																											1				1					1				
CCTV CAMERA WIRES (CAT5e & 3#18)																															1					1				

FOR ORIGINAL SIGNATURES, SEE ET-126.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL
SK	1/29/19	RFI#527 REVISE RESPNSE:REV. POLE C, D, E, H, O, & P	KK	MV	CL
SK	10/18/18	PER POLE LAYOUT: ADDED PPB POLE P	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

UNION STREET
CONDUIT & WIRING SCHEDULES

ET-126.2
ET-204

REVISION 1

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:40 pm

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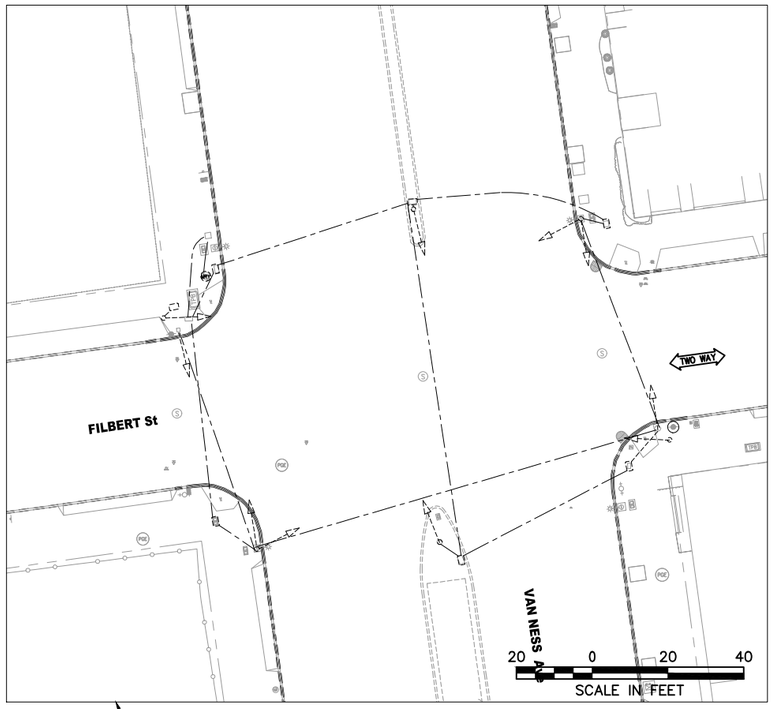
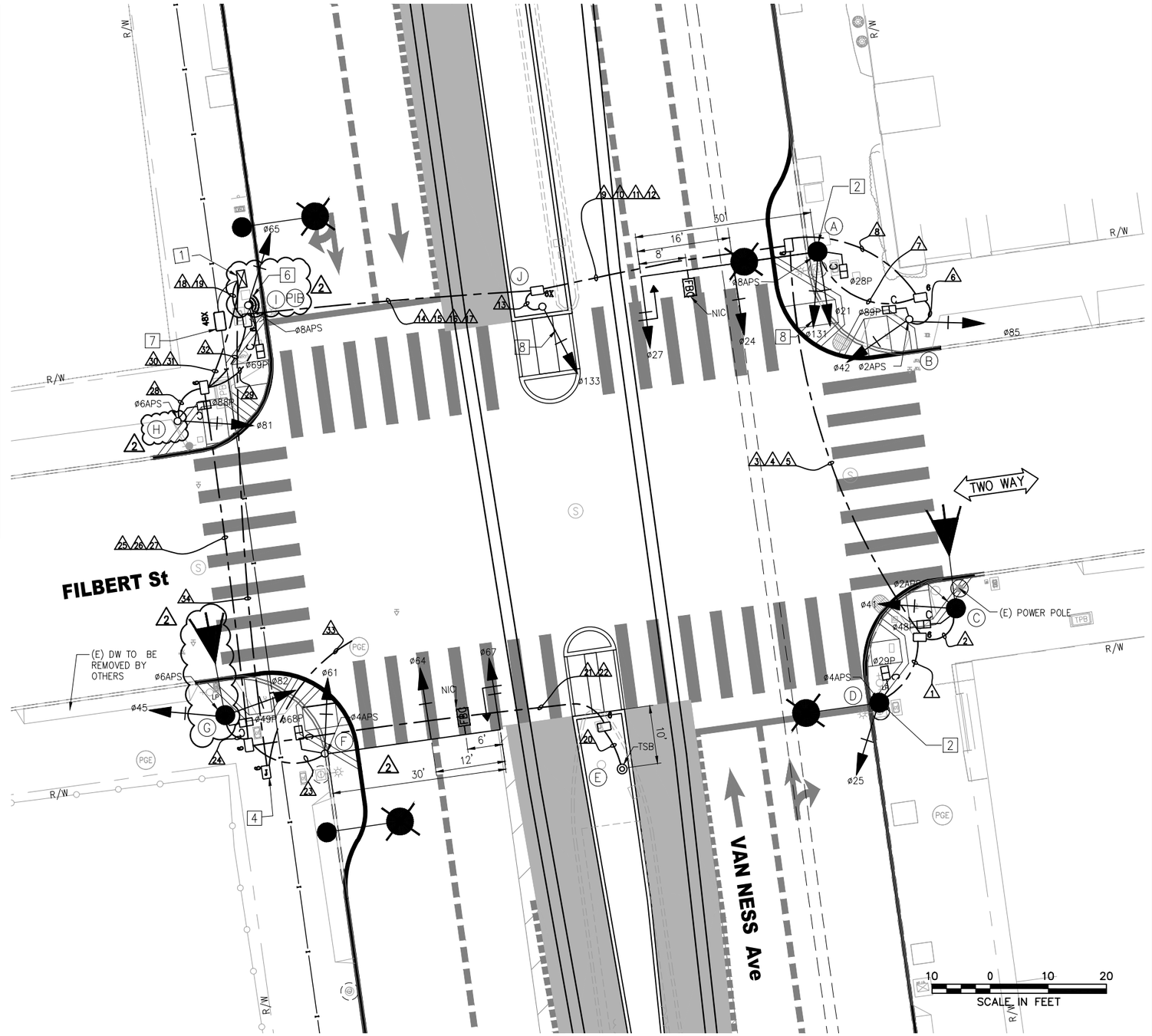
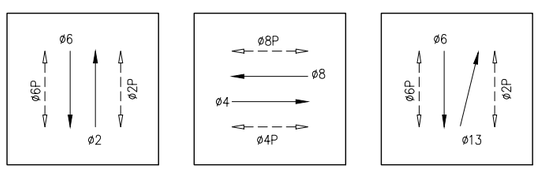


9 10 11

EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-127.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	10/18/18	PER POLE LAYOUT: POLE H IS A 1-A POLE; POLE G IS A SL POLE; & OTHER POLES PER LAYOUT WALKTHROUGH	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND F, UPDATED POLE A MA LENGTH; ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

FILBERT STREET
TRAFFIC SIGNAL WORK

ET-127.0
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP7B401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	30	2602 / 262	21 24 27 131	3S12" 3S12" 3S12"GUA 2S12"RB	SV-1-T MAS MAS SV-1-T	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZ. SIGNAL MA MOUNT AT 23.5' HIGH SIGNAL 131 MOUNT AT 15' HIGH SEE ST PLANS FOR POLE DETAILS APS ⟨1⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓒ	NEW SL (SEE SL-PLANS FOR DETAILS)	△2 –		41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2550 / 258	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓔ	TSB POLE	–		–	–	–	–		–	–	–	–	TSB
Ⓕ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS⟨1⟩ TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓖ	NEW SL (CITY STD)	△2 –		45 82	3S12" 3S12"	TV-2-T	T T		49	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓗ	1-A (10')	△2 –		81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓘ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ⟨1⟩ TSP ⟨2⟩ PIB: POLE IN PLACE OF TRAFFIC SIGNAL CABINET BOX △2
Ⓙ	1-A (10')	–		133	2S12"RB	TV-1-T	T		–	–	–	–	

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

⟨1⟩ INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
⟨2⟩ INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
⟨3⟩ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
⟨4⟩ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-127.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	10/18/18	PER POLE LAYOUT: POLE H IS A 1-A POLE; POLE G IS A SL POLE; & OTHER POLES PER LAYOUT WALKTHROUGH	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT; UPDATED POLES A AND F; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

FILBERT STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-127.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP				SP	SP		SP	GRS		SP				SP	SP				SP	SP			
VEHICLE SIGNAL Ø25	3		3						3					3				3																
PED SIGNAL Ø29P	2		2						2					2				2																
APS PPB FOR XING VAN NESS SS ON POLE D	2		2						2					2				2																
VEHICLE SIGNAL Ø41		3	3						3					3				3																
PED SIGNAL Ø48P		2	2						2					2				2																
APS PPB FOR XING FILBERT ES ON POLE C		2	2						2					2				2																
VEHICLE SIGNAL Ø42						3		3		3					3			3																
VEHICLE SIGNAL Ø85						3		3		3					3			3																
PED SIGNAL Ø89P						2		2		2					2			2																
APS PPB FOR XING FILBERT ES ON POLE B						2		2		2					2			2																
VEHICLE SIGNAL Ø21							3	3		3					3			3																
VEHICLE SIGNAL Ø24							3	3		3					3			3																
VEHICLE SIGNAL Ø27							3	3		3					3			3																
TRANSIT SIGNAL Ø131							2	2		2					2			2																
PED SIGNAL Ø28P							2	2		2					2			2																
APS PPB FOR XING VAN NESS NS ON POLE A							2	2		2					2			2																
TRANSIT SIGNAL Ø133													2	2				2																
TSB ON POLE E																				2	2				2					2				
VEHICLE SIGNAL Ø61																							3		3					3				
VEHICLE SIGNAL Ø64																							3		3					3				
VEHICLE SIGNAL Ø67																							3		3					3				
PED SIGNAL Ø68P																							2		2					2				
APS PPB FOR XING VAN NESS SS ON POLE F																							2		2					2				
VEHICLE SIGNAL Ø45																								3	3					3				
VEHICLE SIGNAL Ø82																								3	3					3				
PED SIGNAL Ø49P																								2	2					2				
APS PPB FOR XING FILBERT WS ON POLE G																								2	2					2				
VEHICLE SIGNAL Ø81																													3		3			
PED SIGNAL Ø88P																													2		2			
APS PPB FOR XING FILBERT WS ON POLE H																													2		2			
VEHICLE SIGNAL Ø65																														3	3			
PED SIGNAL Ø69P																														2	2			
APS PPB FOR XING VAN NESS NS ON POLE I																														2	2			
#14 NEUTRAL	2	2				2	5						1										4	2					2	2			
#14 SPARE			3					3	3	3				3	3			6							3					3				
TOTAL #14 WIRES	9	9	17			12	20	28	17	28			3	19	28			47					17	12	26				9	9	40			
#10 WIRES NEUTRAL			1					1	1	1				2	1			3		1	1				2					3				
#6 WIRES (120 V SERVICE)																																2		
#8 WIRES (120 V SERVICE)																																	2	
#6 BSCW (SEE GENERAL NOTE 10)																																		
TSP RECEIVER (10 CONDUCTOR CABLE)																														1	1			

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	7/18/19	LATEST DRAWING	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

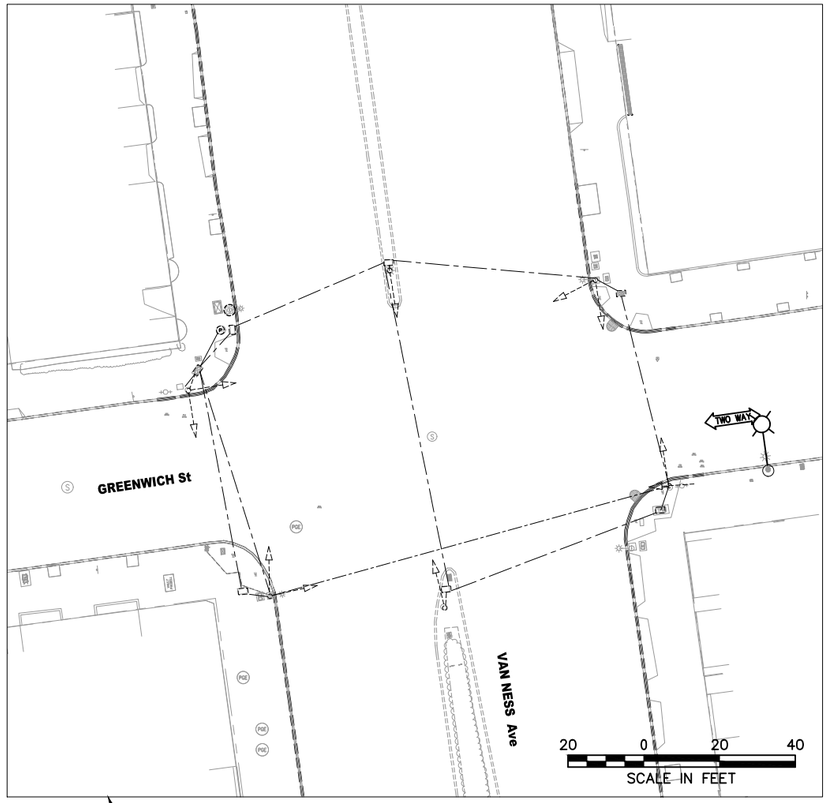
1289

FILBERT STREET
CONDUIT & WIRING SCHEDULES

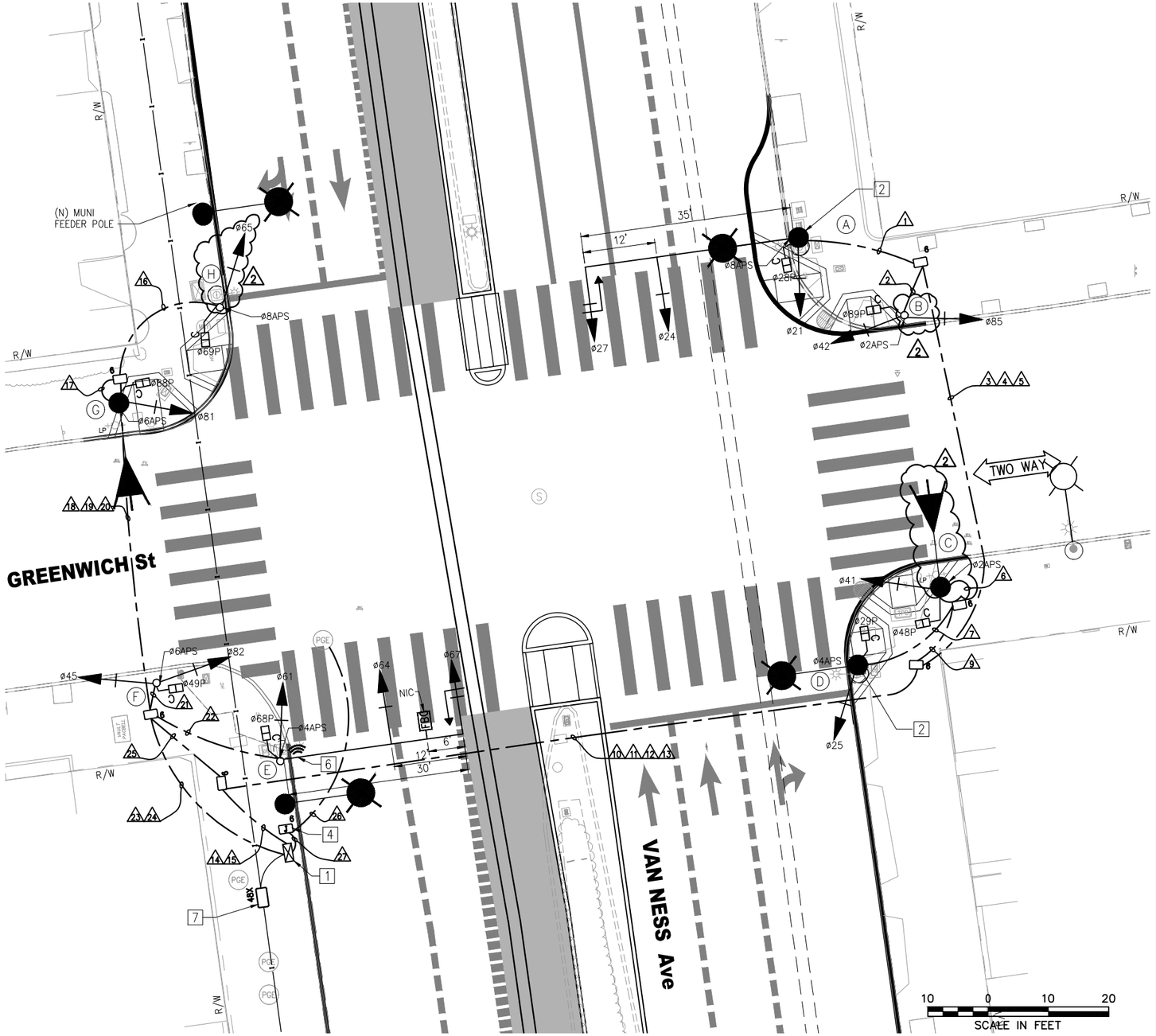
ET-127.2
ET-204

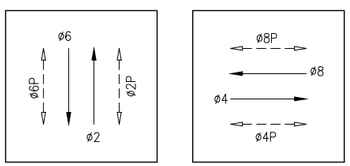
REVISION 1

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm



EXISTING EQUIPMENT





PHASE DIAGRAM

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FOR ORIGINAL SIGNATURES, SEE ET-128.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	1/22/19	RFI #582: POLE B, C, AND H LOCATION PER POLE LYOUT	KK	MV	CL
1	03/2018	ADDED FBC SIGN ON POLE F; RELOCATED APS TO POLE C AND RENAMED POLE D	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GREENWICH STREET
TRAFFIC SIGNAL WORK

ET-128.0
ET-204

REVISION 3

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	35	2700 / 272	21 24 27	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH (1) SEE ST PLANS FOR POLE DETAILS APS ◇1
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	NEW SL (CITY STD)	–	141	41	3S12"	SV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2690 / 268	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SPECIAL MAST ARM POLE (18-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH APS ◇1 TSP ◇2 TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS (1)
Ⓕ	1-A (10')	–		45 82	3S12" 3S12"	TV-2-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓖ	NEW SL (CITY STD)	–	152	81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-128.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	UPDATED POLE STANDARD AND SPECIAL REQUIREMENT, UPDATED POLES A AND E, RELOCATED APS ONTO RENAMED POLE D; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp._____ CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
APPROVED
for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

GREENWICH STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-128.1
ET-204

REVISION 2

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BORDER REVISED 11/17/05

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	2	3	2	2	2	2	3	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP							SP	SP		SP				SP	SP				SP	SP		
VEHICLE SIGNAL Ø21	3		3							3				3													
VEHICLE SIGNAL Ø24	3		3							3				3													
VEHICLE SIGNAL Ø27	3		3							3				3													
PED SIGNAL Ø28P	2		2							2				2													
APS PPB FOR XING VAN NESS NS ON POLE A	2		2							2				2													
VEHICLE SIGNAL Ø42		3	3							3				3													
VEHICLE SIGNAL Ø85		3	3							3				3													
PED SIGNAL Ø89P		2	2							2				2													
APS PPB FOR XING GREENWICH ES ON POLE B		2	2							2				2													
VEHICLE SIGNAL Ø41						3			3		3			3													
PED SIGNAL Ø48P						2			2		2			2													
VEHICLE SIGNAL Ø25							3		3		3			3													
PED SIGNAL Ø29P							2		2		2			2													
APS PPB FOR XING GREENWICH ES ON POLE C (1)						2		2	2		2			2													
APS PPB FOR XING VAN NESS SS ON POLE D (1)							2	2	2		2			2													
VEHICLE SIGNAL Ø65																3		3					3				
PED SIGNAL Ø69P																2		2					2				
APS PPB FOR XING VAN NESS NS ON POLE H (1)																2		2					2				
VEHICLE SIGNAL Ø81																	3	3					3				
PED SIGNAL Ø88P																	2	2					2				
APS PPB FOR XING GREENWICH WS ON POLE G (1)																	2	2					2				
VEHICLE SIGNAL Ø45																					3		3				
VEHICLE SIGNAL Ø82																					3		3				
PED SIGNAL Ø49P																					2		2				
APS PPB FOR XING GREENWICH WS ON POLE F (1)																					2		2				
VEHICLE SIGNAL Ø61																						3	3				
VEHICLE SIGNAL Ø64																						3	3				
VEHICLE SIGNAL Ø67																						3	3				
PED SIGNAL Ø68P																						2	2				
APS PPB FOR XING VAN NESS SS ON POLE E (1)																						2	2				
#14 NEUTRAL	4	2				2	2									2	2				2	4					
#14 SPARE			3						3	3	3			6				3					3				
TOTAL #14 WIRES	17	12	26			9	9	1	17	26	17			40		9	9	17			12	17	40				
#10 WIRES NEUTRAL			1						1	1	1			2				1					2				
#6 WIRES (120 V SERVICE)																										2	
#8 WIRES (120 V SERVICE)																											2
#6 BSCW (SEE GENERAL NOTE 10)																											
TSP RECEIVER (10 CONDUCTOR CABLE)																						1	1				

FOR ORIGINAL SIGNATURES, SEE ET-128.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED APS TO POLE C AND RENAMED POLE D	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

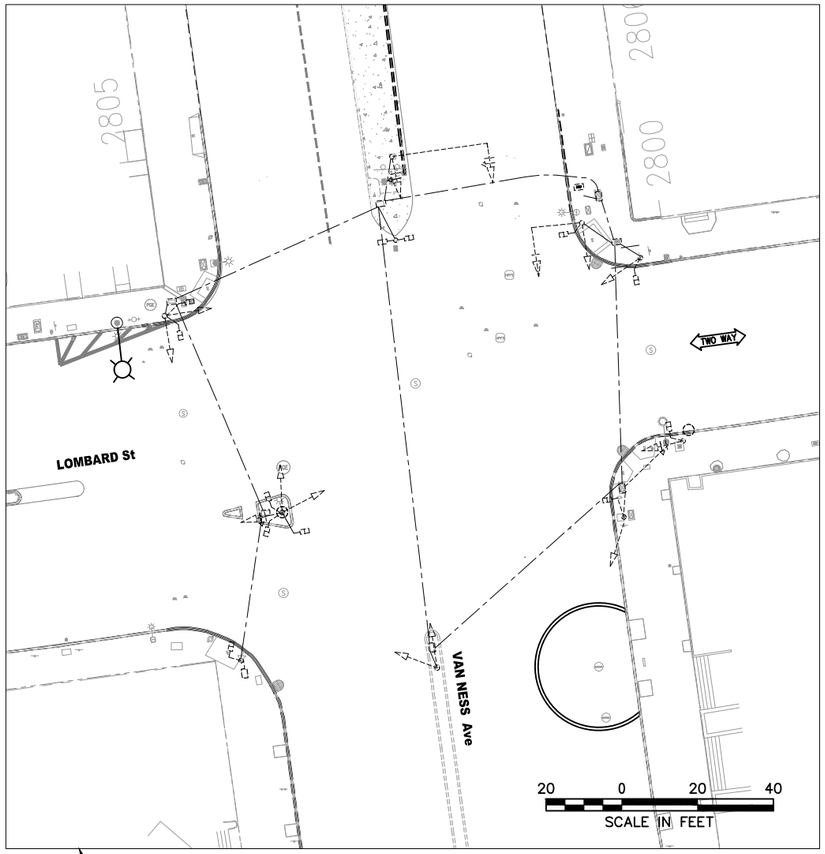
1289

GREENWICH STREET
CONDUIT & WIRING SCHEDULES

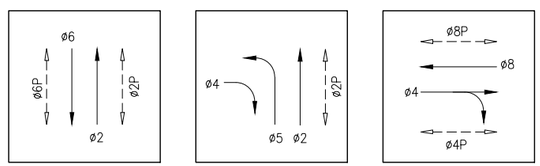
ET-128.2
ET-204

REVISION 2

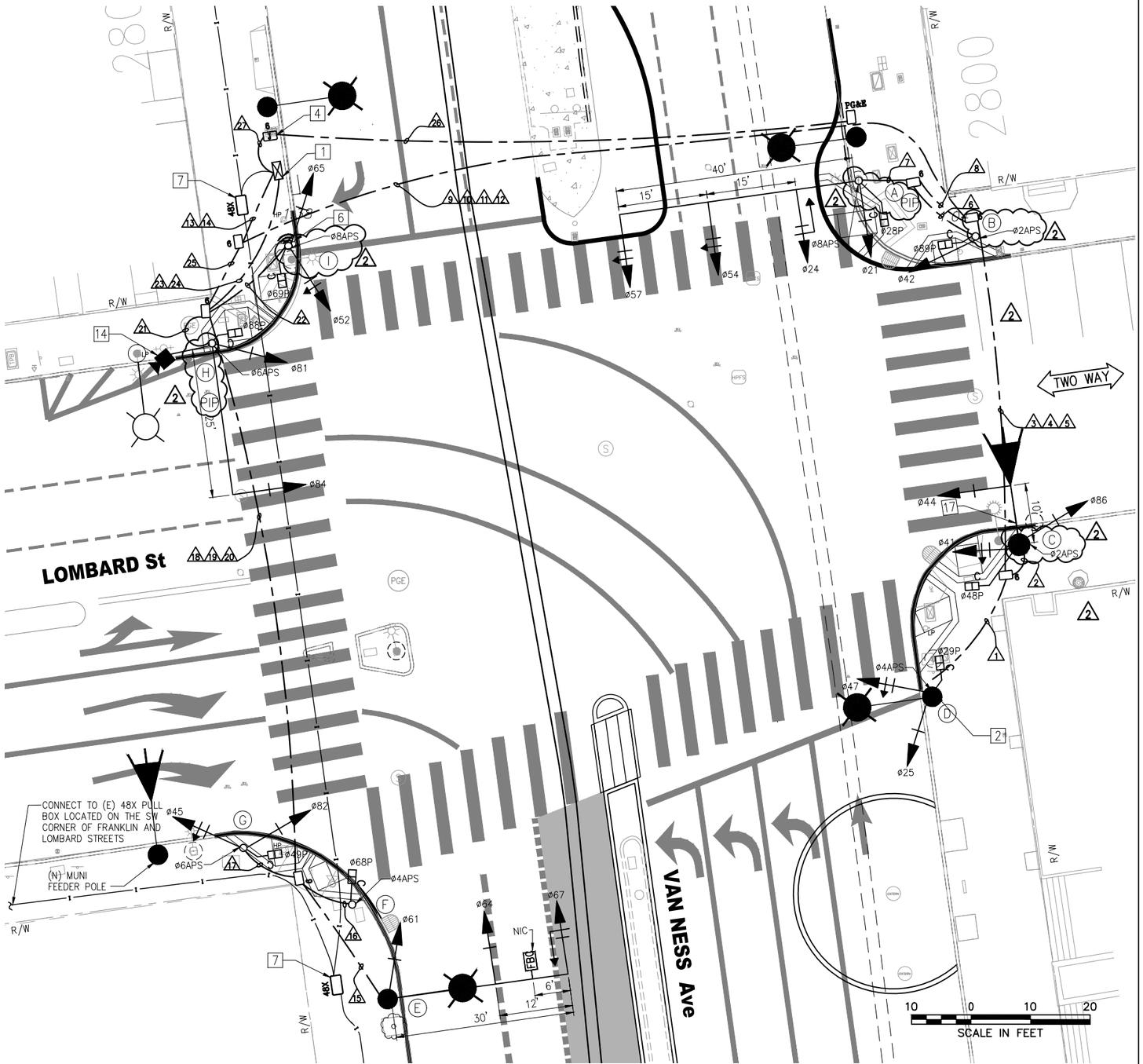
T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-129.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	1/22/19	RFI#583: POLE A, B, C, H, & I PER LYOUT; APS UPDATE	KK	MV	CL
1	03/2018	UPDATED SIGNAL 24 TO 3S12"GUA; ADDED FBC SIGN	KK	MV	CL
		ON POLE E; REMOVED BBS; COMBINED SL WITH POLE C			

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

LOMBARD STREET
TRAFFIC SIGNAL WORK

1289

ET-129.0
ET-204

REVISION 3

BORDER REVISED 11/17/05

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POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SPECIAL MAST ARM POLE	40		21 24 54 57	3S12" 3S12"GUA 3S12"LA 3S12"LA	SV-1-T MAS MAS MAS	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 22.5' HIGH SEE ST PLANS FOR POLE DETAILS APS ⟨1⟩ PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE ⟨2⟩
Ⓑ	1-A(10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓒ	17-2-100	10	133	44 41	3S12" 4S12"GRA	MAS SV-1-T	T T		48	1S-COUNT	SP-1	–	APS ⟨1⟩ CONTRACTOR TO CONTACT USPS TO RELOCATE MAIL BOX
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2790 / 278	25 47	3S12" 4S12"GRA	SV-2-TA	T		29	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓔ	SPECIAL MAST ARM POLE (19-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		–	–	–	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓕ	1-A (7')	–		–	–	–	–		68	1S-COUNT	TP-1	–	APS ⟨1⟩
Ⓖ	1-A (10')	–		45 82	4S12"GRA 3S12"	TV-2-T-SFA	T		49	1S-COUNT	SP-1	–	APS ⟨1⟩
Ⓗ	18-2-100	25		81 84	3S12" 3S12"	SV-1-T MAS	T		88	1S-COUNT	SP-1	–	APS ⟨1⟩ TRAFFIC CAMERA ⟨3⟩ PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE ⟨2⟩
Ⓘ	1-A (10')	–		52 65	3S12"LA 3S12"	TV-2-T-SFA	T T		69	1S-COUNT	SP-1	–	APS ⟨1⟩ TSP ⟨2⟩

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

⟨1⟩ INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
⟨2⟩ INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
⟨3⟩ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
⟨4⟩ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-129.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	1/22/19	RFI #583: POLE A & H PER POLE LAYOUT	KK	MV	CL
1	03/2018	UPDATED SIGNAL 24 TO 3S12"GUA; UPDATED POLES A AND E; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

LOMBARD STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-129.1
ET-204

REVISION 3

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP							SP	SP				SP	SP		
VEHICLE SIGNAL Ø25	3		3						3				3														
VEHICLE SIGNAL Ø47	4		4						4				4														
PED SIGNAL Ø29P	2		2						2				2														
APS PPB FOR XING VAN NESS SS ON POLE D	2		2						2				2														
VEHICLE SIGNAL Ø41		4	4						4				4														
VEHICLE SIGNAL Ø44		3	3						3				3														
VEHICLE SIGNAL Ø86		3	3						3				3														
PED SIGNAL Ø48P		2	2						2				2														
APS PPB FOR XING LOMBARD ES ON POLE C		2	2						2				2														
VEHICLE SIGNAL Ø42						3		3		3				3													
PED SIGNAL Ø89P						2		2		2				2													
VEHICLE SIGNAL Ø21							3	3		3				3													
VEHICLE SIGNAL Ø24							3	3		3				3													
VEHICLE SIGNAL Ø54							3	3		3				3													
VEHICLE SIGNAL Ø57							3	3		3				3													
PED SIGNAL Ø28P							2	2		2				2													
APS PPB FOR XING VAN NESS NS ON POLE A							2	2		2				2													
APS PPB FOR XING LOMBARD ES ON POLE B (2)						2		2		2				2													
VEHICLE SIGNAL Ø61							(2)								3			3					3				
VEHICLE SIGNAL Ø64															3			3					3				
VEHICLE SIGNAL Ø67															3			3					3				
PED SIGNAL Ø68P																2		2					2				
APS PPB FOR XING VAN NESS SS ON POLE F																2		2					2				
VEHICLE SIGNAL Ø45																	4	4					4				
VEHICLE SIGNAL Ø82																	3	3					3				
PED SIGNAL Ø49P																	2	2					2				
APS PPB FOR XING LOMBARD WS ON POLE G																	2	2					2				
VEHICLE SIGNAL Ø81																					3		3				
VEHICLE SIGNAL Ø84																					3		3				
PED SIGNAL Ø88P																					2		2				
APS PPB FOR XING LOMBARD WS ON POLE H																					2		2				
APS PPB FOR XING VAN NESS NS ON POLE I (2)																					(2)	2	2				
VEHICLE SIGNAL Ø52																					2	3	3				
VEHICLE SIGNAL Ø65																						3	3				
PED SIGNAL Ø69P																						2	2				
#14 NEUTRAL	2	4				2	5								3	2	2				3	2					
#14 SPARE			3					3	3	3			3	3				3					3				
TOTAL #14 WIRES	13	18	28			9	21	26	28	26			28	26	12	6	13	27			13	12	47				
#10 WIRES NEUTRAL			1				(2)	1	1	1			1	1				1			(2)		2				
(2) #4 WIRES (120 V SERVICE)																										2	
#8 WIRES (120 V SERVICE)																											2
#6 BSCW (SEE GENERAL NOTE 10)																											
TSP RECEIVER (10 CONDUCTOR CABLE)																						1	1				
CCTV CAMERA WIRES (CAT5e & 3#18)																					1		1				

FOR ORIGINAL SIGNATURES, SEE ET-129.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	1/22/19	RFI #583: POLE B & I W/ APS & RFI #591: SERV WIRES	KK	MV	CL
1	03/2018	REMOVED BBS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

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CITY AND COUNTY OF SAN FRANCISCO
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APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

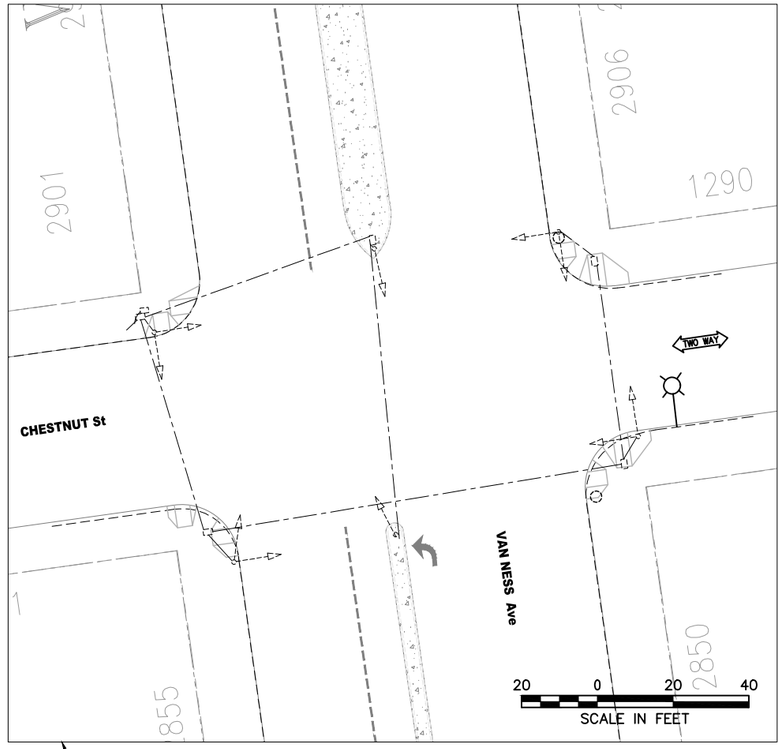
1289

LOMBARD STREET
CONDUIT & WIRING SCHEDULES

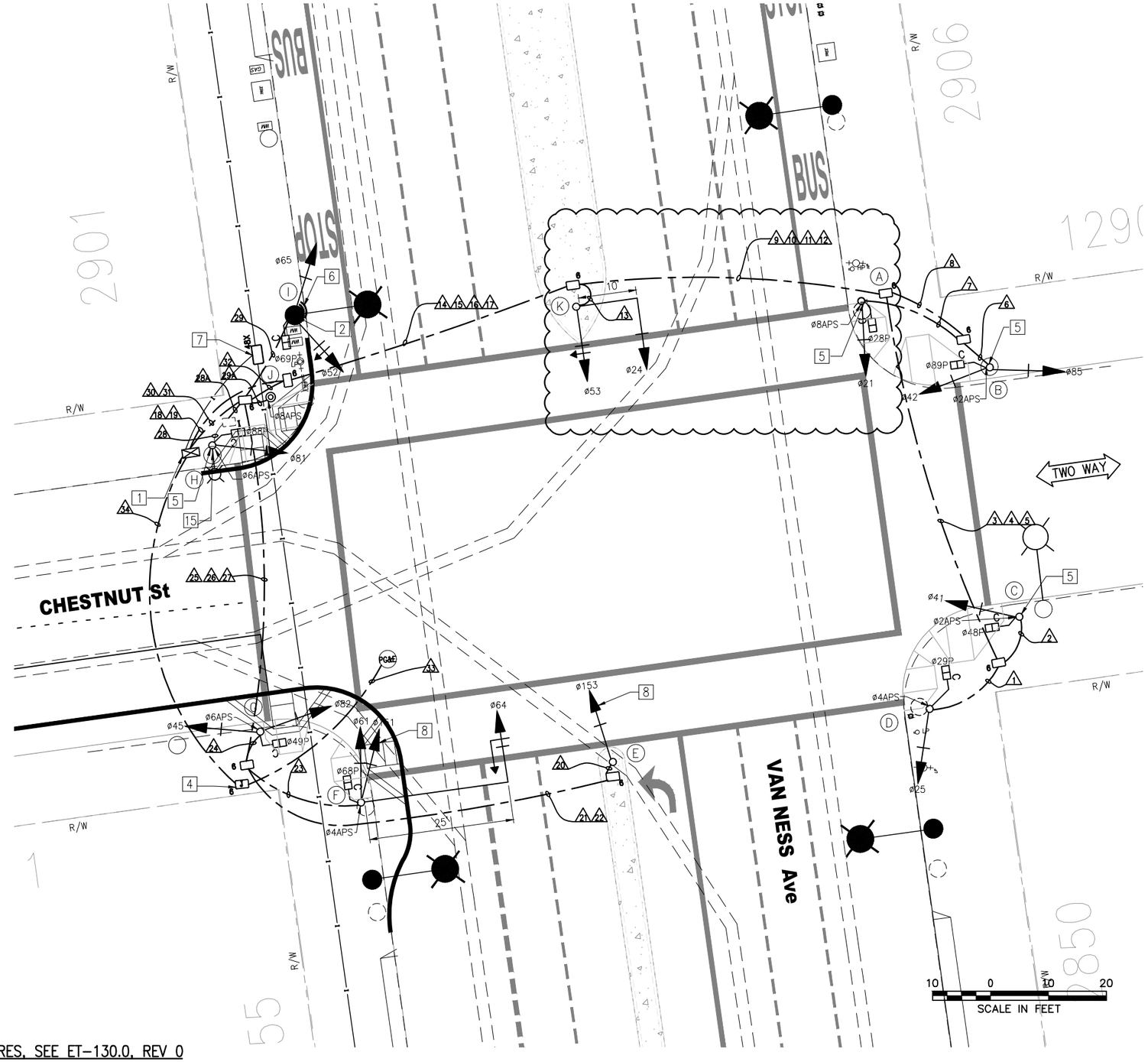
ET-129.2
ET-204

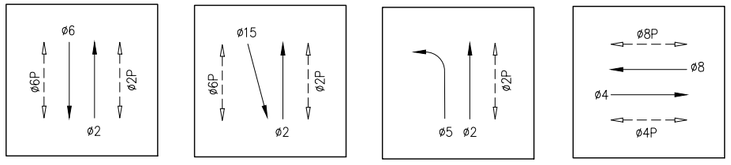
REVISION 3

BORDER REVISED 11/17/05



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-130.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #656: POLE A IS 1-A POLE & POLE K IS 10' MA POLE	KK	MV	CL
1	03/2018	UPDATED CONDUITS AND PULLBOXES AT POLE H; ADDED PPB POLE ON RENAMED J	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

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CITY AND COUNTY OF SAN FRANCISCO
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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

CHESTNUT STREET
TRAFFIC SIGNAL WORK

1289

ET-130.0
ET-204

REVISION 2

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BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	1-A (10')			21	3S12"	TV-1-T	T		28	1S-COUNT	SP-1	–	APS ①
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ①
Ⓒ	1-A (10')	–		41	3S12"	TV-1-T	T		48	1S-COUNT	SP-1	–	APS ①
Ⓓ	1-A (10')	–		25	3S12"	TV-1-T	T		29	1S-COUNT	SP-1	–	APS ①
Ⓔ	1-A (10')	–		153	2S12"VB	TV-1-T	T		–	–	–	–	
Ⓕ	SPECIAL MAST ARM POLE (18-4-100)	25		61 64 151	3S12" 3S12"GUA 2S12"VB	SV-1-T MAS SV-1-T	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 22.5' HIGH SIGNAL 151 MOUNT AT 15' (ON TOP OF SIGNAL 61) APS ①
Ⓖ	1-A (10')	–		45 82	3S12" 3S12"	TV-2-T	T		49	1S-COUNT	SP-1	–	APS ①
Ⓗ	EXISTING COMBINED SL & OCS POLE	–	1300 /	81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ①
Ⓘ	SIGNAL, SL & OCS COMBO POLE	–	2901 / 291	52 65	3S12"LA 3S12"	SV-2-TA	T		69	1S-COUNT	SP-1	–	EXTERNAL CONDUIT TSP ②
Ⓙ	PPBP POLE	–		–	–	–			–	–	–	–	APS ①
Ⓚ	16-1-100	10		24 53	3S12" 3S12"LA	MAS SV-1-T	T T						

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

① INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
② INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
③ INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
④ FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-130.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #656: POLE A IS 1-A POLE, POLE K IS 10' MA POLE, & CONDUIT #29 IS EXTERNAL	KK	MV	CL
1	03/2018	UPDATED POLES A AND F; ADDED PPB POLE ON RENAMED J	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

CHESTNUT STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-130.1
ET-204

REVISION 2

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CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	28A	29	29A	30	31	32	33	34
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP							SP			SP				SP	SP	EX						SP	SP		
VEHICLE SIGNAL Ø25	3		3						3					3				3																		
PED SIGNAL Ø29P	2		2						2					2				2																		
APS PPB FOR XING VAN NESS SS ON POLE D	2		2						2					2				2																		
VEHICLE SIGNAL Ø41		3	3						3					3				3																		
PED SIGNAL Ø48P		2	2						2					2				2																		
APS PPB FOR XING CHESTNUT ES ON POLE C		2	2						2					2				2																		
VEHICLE SIGNAL Ø42						3		3		3					3			3																		
VEHICLE SIGNAL Ø85						3		3		3					3			3																		
PED SIGNAL Ø89P						2		2		2					2			2																		
APS PPB FOR XING CHESTNUT ES ON POLE B						2		2		2					2			2																		
VEHICLE SIGNAL Ø21							3	3		3					3			3																		
VEHICLE SIGNAL Ø24													3		3			3																		
PED SIGNAL Ø28P							2	2		2					2			2																		
APS PPB FOR XING VAN NESS NS ON POLE A							2	2		2					2			2																		
VEHICLE SIGNAL Ø53													3		3			3																		
TRANSIT SIGNAL Ø153																				3	3				3							3				
VEHICLE SIGNAL Ø61																							2		2							2				
VEHICLE SIGNAL Ø64																							3		3							3				
TRANSIT SIGNAL Ø151																							2		2							2				
PED SIGNAL Ø68P																							2		2							2				
APS PPB FOR XING VAN NESS SS ON POLE F																							2		2							2				
APS PPB FOR XING CHESTNUT WS ON POLE G																								2	2							2				
VEHICLE SIGNAL Ø45																								3	3							3				
VEHICLE SIGNAL Ø82																								3	3							3				
PED SIGNAL Ø49P																								2	2							2				
VEHICLE SIGNAL Ø81																												3	3			3				
PED SIGNAL Ø88P																												2	2			2				
APS PPB FOR XING CHESTNUT WS ON POLE H																												2	2			2				
APS PPB FOR XING VAN NESS NS ON POLE J																															2	2				
VEHICLE SIGNAL Ø52																														3		3				
VEHICLE SIGNAL Ø65																														3		3				
PED SIGNAL Ø69P																														2		2				
#14 NEUTRAL	2	2				2	3																4	2				2	2	2					
#14 SPARE			3					3	3	3				3	3			6			3				3							3				
TOTAL #14 WIRES	9	9	17			12	10	20	17	20			6	17	26			43		3	6		15	12	27			9	9	10	2	44				
#10 WIRES NEUTRAL			1					1	1	1			1	1	2			3		1	1				2							3				
#6 WIRES (120 V SERVICE)																																			2	
#8 WIRES (120 V SERVICE)																																				2
#6 BSCW (SEE GENERAL NOTE 10)																																				
TSP RECEIVER (10 CONDUCTOR CABLE)																														1		1				

FOR ORIGINAL SIGNATURES, SEE ET-130.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #656: VEH SIGNAL 24 ON POLE K	KK	MV	CL
1	03/2018	ADDED CONDUIT RUN 28A AND WIRES; ADDED PPB POLE ON RENAMED J	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

CHESTNUT STREET
CONDUIT & WIRING SCHEDULES

1289

ET-130.2
ET-204

REVISION 2

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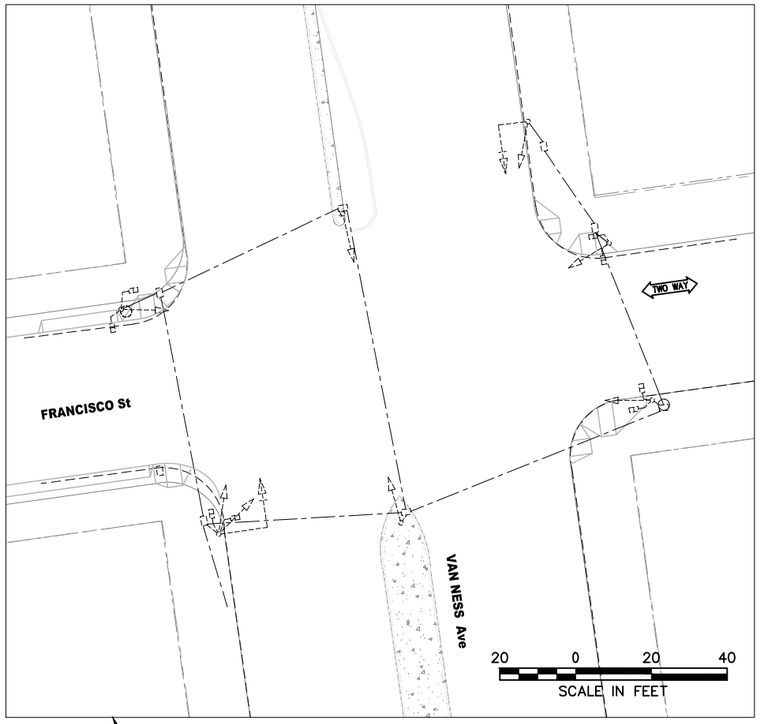
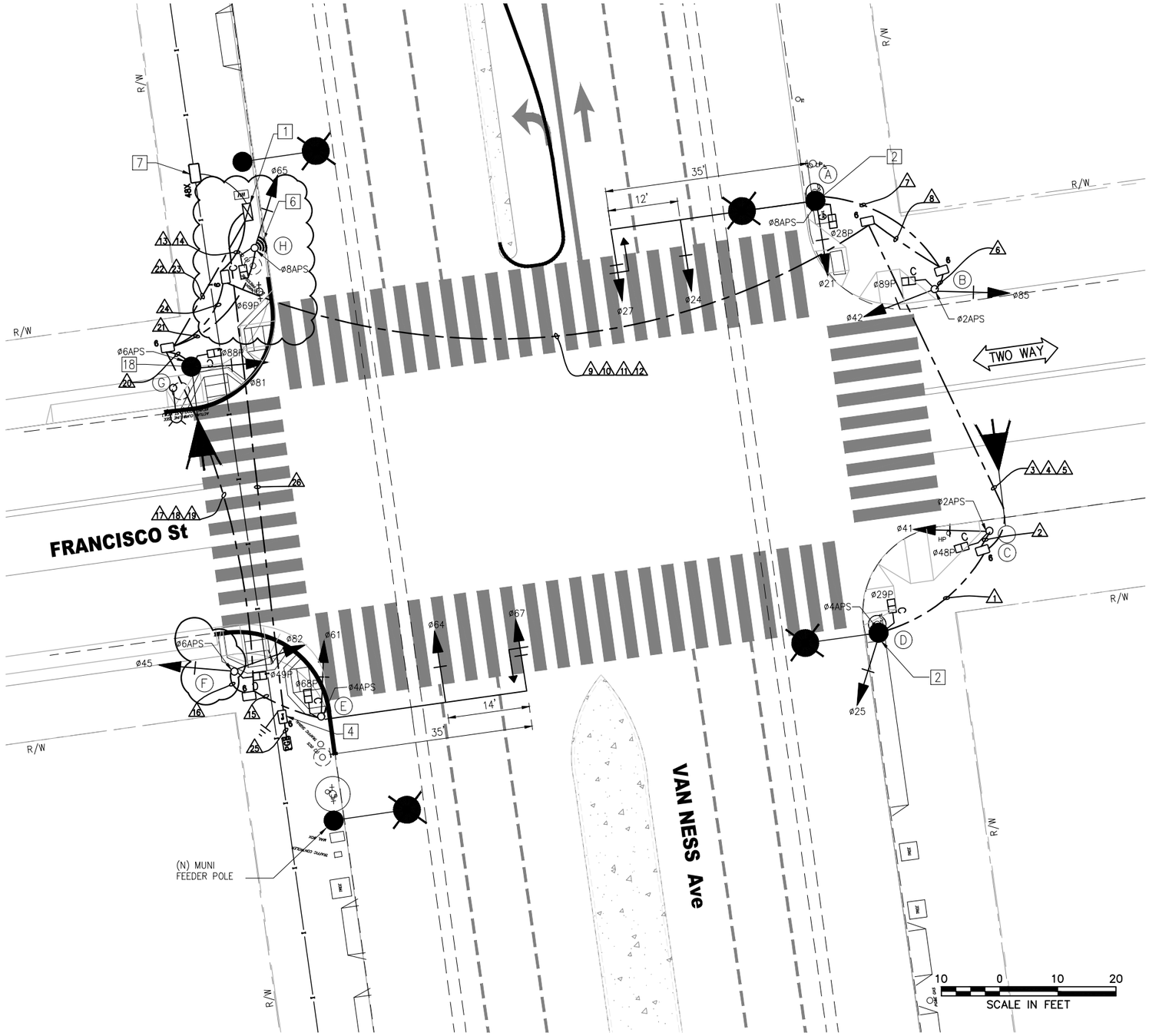
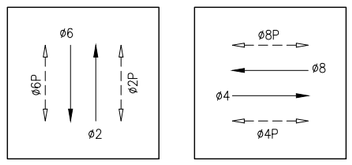
BORDER REVISED 11/17/05



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-131.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #655: POLE I APS ON POLE H DUE TO HPFH. APS ON POLE F.	KK	MV	CL
1	03/2018	ADDED PPB POLE I	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

FRANCISCO STREET
TRAFFIC SIGNAL WORK

ET-131.0
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT6401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL & OCS COMBO POLE	35	3000 / 302	21 24 27	3S12" 3S12" 3S12" GUA	SV-1-T MAS MAS	T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 22.5' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	1-A (10')	–		41	3S12"	TV-1-T	T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2960 / 298	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SPECIAL MAST ARM POLE (23-4-100)	35		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 22.5' HIGH APS X 2 ◇1
Ⓕ	1-A (10')	–		45 82	3S12" 3S12"	TV-2-T	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓖ	NEW SL (CITY STD)	–	122	81	3S12"	SV-1-T	T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	1-A (10')	–		65	3S12"	TV-1-T	T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
Ⓘ	NOT USED	–		–	–	–	–		–	–	–	–	

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-131.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
SK	5/31/19	RFI #655: POLE I APS ON POLE H DUE TO HPFH. APS ON POLE F.	KK	MV	CL
1	03/2018	UPDATED POLES A AND E; ADDED PPB POLE I	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

FRANCISCO STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-131.1
ET-204

REVISION 2

I:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CP18401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	20A	21	22	23	24	25	26			
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	3	2			
				SP	SP						SP	SP		SP				SP	SP					SP	SP					
VEHICLE SIGNAL Ø25	3		3						3				3																	
PED SIGNAL Ø29P	2		2						2				2																	
APS PPB FOR XING VAN NESS SS ON POLE D	2		2						2				2																	
VEHICLE SIGNAL Ø41		3	3						3				3																	
PED SIGNAL Ø48P		2	2						2				2																	
APS PPB FOR XING FRANCISCO ES ON POLE C		2	2						2				2																	
VEHICLE SIGNAL Ø42						3		3		3			3																	
VEHICLE SIGNAL Ø85						3		3		3			3																	
PED SIGNAL Ø89P						2		2		2			2																	
APS PPB FOR XING FRANCISCO ES ON POLE B						2		2		2			2																	
VEHICLE SIGNAL Ø21							3	3		3			3																	
VEHICLE SIGNAL Ø24							3	3		3			3																	
VEHICLE SIGNAL Ø27							3	3		3			3																	
PED SIGNAL Ø28P							2	2		2			2																	
APS PPB FOR XING VAN NESS NS ON POLE A							2	2		2			2																	
VEHICLE SIGNAL Ø61															3		3						3							
VEHICLE SIGNAL Ø64															3		3						3							
VEHICLE SIGNAL Ø67															3		3						3							
PED SIGNAL Ø68P															2		2						2							
APS PPB FOR XING VAN NESS SS ON POLE E															2		2						2							
APS PPB FOR XING FRANCISCO WS ON POLE F																2	2						2							
VEHICLE SIGNAL Ø45																3	3						3							
VEHICLE SIGNAL Ø82																3	3						3							
PED SIGNAL Ø49P																2	2						2							
VEHICLE SIGNAL Ø81																				3			3							
PED SIGNAL Ø88P																				2			2							
APS PPB FOR XING FRANCISCO WS ON POLE G																				2			2							
APS PPB FOR XING VAN NESS NS ON POLE H																					2		2							
VEHICLE SIGNAL Ø65																					3		3							
PED SIGNAL Ø69P																					2		2							
#14 NEUTRAL	2	2				2	4								4	2				2		2								
#14 SPARE			3					3	3	3			6				3						3							
TOTAL #14 WIRES	9	9	17			12	17	26	17	26			43		17	12	26			9		9	40							
#10 WIRES NEUTRAL			1					1	1	1			2				1						2							
#6 WIRES (120 V SERVICE)																										2				
#8 WIRES (120 V SERVICE)																											2			
#6 BSCW (SEE GENERAL NOTE 10)																														
TSP RECEIVER (10 CONDUCTOR CABLE)																						1	1							

FOR ORIGINAL SIGNATURES, SEE ET-131.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED PPB POLE I	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp.____ CIVIL STATE OF CALIFORNIA

SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

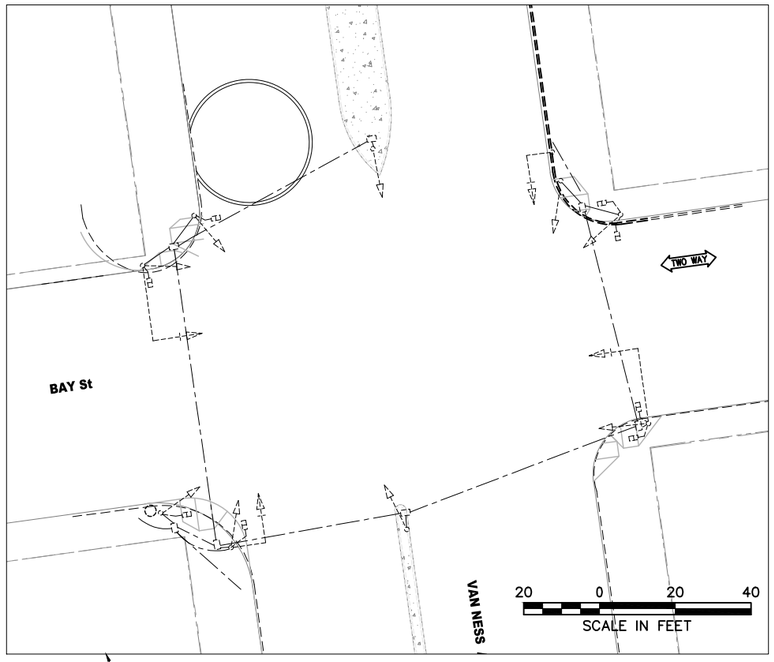
FRANCISCO STREET
CONDUIT & WIRING SCHEDULES

ET-131.2
ET-204

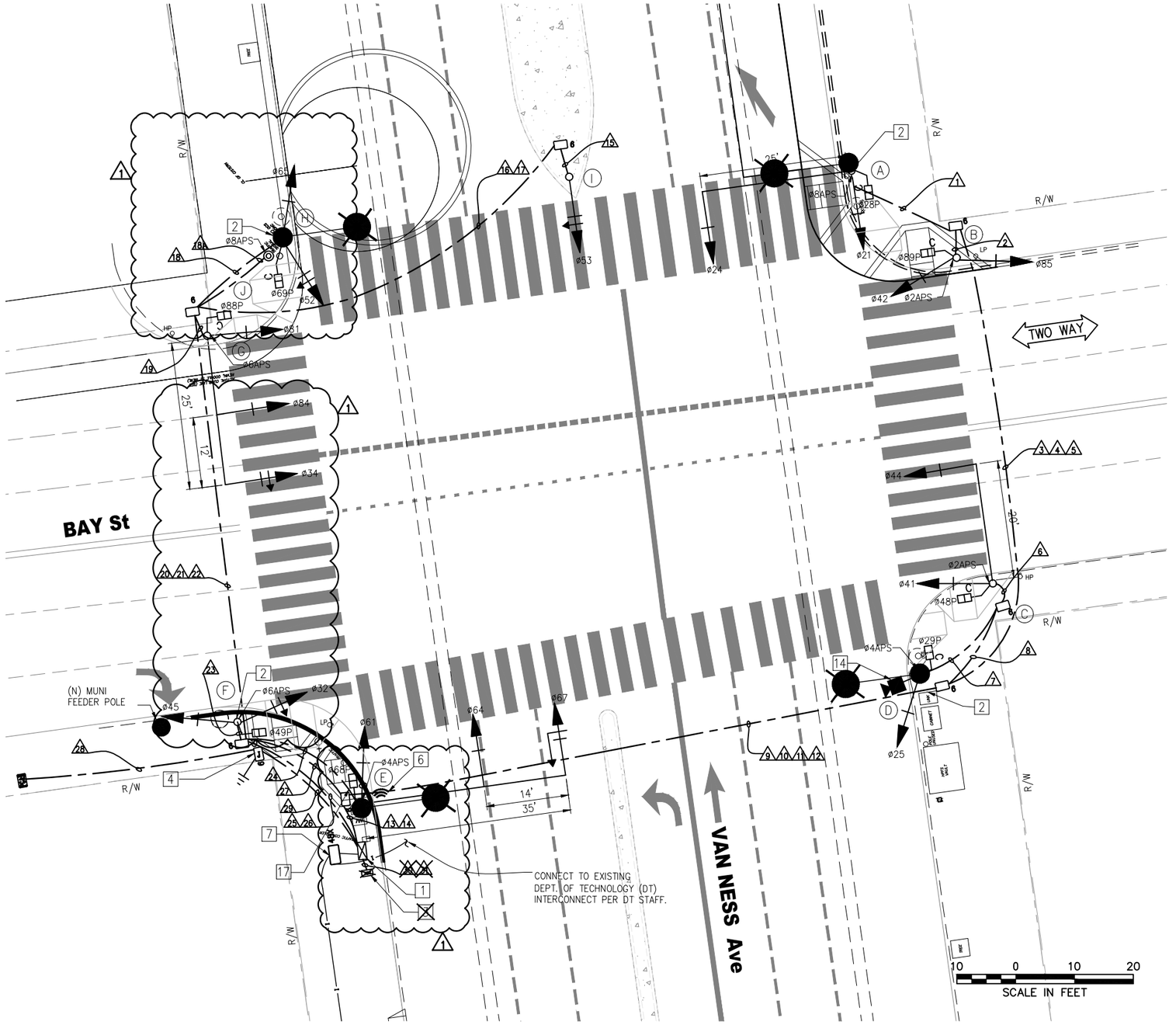
REVISION 2

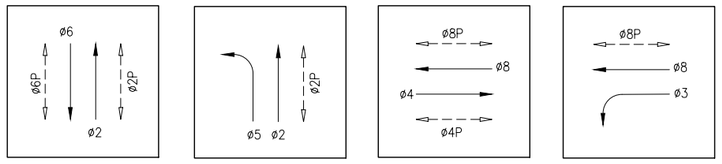
T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD_CPT6401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm

BORDER REVISED 11/17/05



EXISTING EQUIPMENT





PHASE DIAGRAM

FOR ORIGINAL SIGNATURES, SEE ET-132.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
1	03/2018	ADDED SIGNALS 32 AND 34, RELOCATED SIGNAL 84 AND SL, UPDATED PHASE DIAGRAM; REMOVED BBS, RELOCATED POLE J	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BAY STREET
TRAFFIC SIGNAL WORK

1289

ET-132.0

ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT8401ETB3 - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm

BORDER REVISED 11/17/05

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SIGNAL, SL & OCS COMBO POLE	25	3102 / 312	21 24	3S12" 3S12"	SV-1-T MAS	T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 23.5' HIGH (1) SEE ST PLANS FOR POLE DETAILS APS ◇1
Ⓑ	1-A (10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	16-2-100	20		41 44	3S12" 3S12"	SV-1-T MAS	T T		48	1S-COUNT	SP-1	–	APS ◇1
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	3062 / 308	25	3S12"	SV-1-T	T		29	1S-COUNT	SP-1	–	APS ◇1 TRAFFIC CAMERA ◇3
Ⓔ	SPECIAL MAST ARM POLE (24-4-100) (1)	35	/ 307	61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		68	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 22.5' HIGH (1) APS ◇1 TSP ◇2
Ⓕ	1-A (10')	–		32 (1) 45	4S12"GLA 3S12"	TV-2-T-SFA	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓖ	19-3-100	25		34 (1) 81 84	4S12"GLA 3S12" 3S12"	MAS SV-1-T MAS	T T T		88	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	SIGNAL, SL & OCS COMBO POLE	–	3101 / 311	52 65	3S12"LA 3S12"	SV-2-TA	T		69	1S-COUNT	SP-1	–	EXTERNAL CONDUIT
Ⓘ	1-A (10')	–		53	3S12"LA	TV-1-T	T						
Ⓙ	PPBP POLE	–		–	–	–	–		–	–	–	–	APS ◇1

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-132.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
NA	7/18/19	RFI #854: CONDUIT RUN #18 EXTERNAL. NO DWG/SK ISSUED	KK	MV	CL
1	03/2018	ADDED SIGNALS 32 AND 34, UPDATED POLES A, E, F, G AND H	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BAY STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-132.1
ET-204

REVISION 2

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP18401ETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:41 pm

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18A	19	20	21	22	23	24	25	26	27	28	29	30	31
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	3	2	2	2	2	3	2	2	3	2	2	2
				SP	SP						SP	SP		SP			SP					SP	SP				SP	SP				
VEHICLE SIGNAL Ø21	3		3						3				3																			
VEHICLE SIGNAL Ø24	3		3						3				3																			
PED SIGNAL Ø28P	2		2						2				2																			
APS PPB FOR XING VAN NESS NS ON POLE A	2		2						2				2																			
VEHICLE SIGNAL Ø42		3	3						3				3																			
VEHICLE SIGNAL Ø85		3	3						3				3																			
PED SIGNAL Ø89P		2	2						2				2																			
APS PPB FOR XING BAY ES ON POLE B		2	2						2				2																			
VEHICLE SIGNAL Ø41						3		3		3			3																			
VEHICLE SIGNAL Ø44						3		3		3			3																			
PED SIGNAL Ø48P						2		2		2			2																			
APS PPB FOR XING BAY ES ON POLE C						2		2		2			2																			
VEHICLE SIGNAL Ø25							3	3		3			3																			
PED SIGNAL Ø29P							2	2		2			2																			
APS PPB FOR XING VAN NESS SS ON POLE D							2	2		2			2																			
VEHICLE SIGNAL Ø53															3	3					3					3						
VEHICLE SIGNAL Ø52																			3		3					3						
VEHICLE SIGNAL Ø65																			3		3					3						
PED SIGNAL Ø69P																			2		2					2						
APS PPB FOR XING VAN NESS NS ON POLE J																			2		2					2						
VEHICLE SIGNAL Ø34																				4	4					4						
VEHICLE SIGNAL Ø81																				3	3					3						
VEHICLE SIGNAL Ø84																				3	3					3						
PED SIGNAL Ø88P																				2	2					2						
APS PPB FOR XING BAY WS ON POLE G																				2	2					2						
VEHICLE SIGNAL Ø32																								4		4						
VEHICLE SIGNAL Ø45																								3		3						
PED SIGNAL Ø49P																								2		2						
APS PPB FOR XING BAY WS ON POLE F																								2		2						
VEHICLE SIGNAL Ø61																									3	3						
VEHICLE SIGNAL Ø64																									3	3						
VEHICLE SIGNAL Ø67																									3	3						
PED SIGNAL Ø68P																									2	2						
APS PPB FOR XING VAN NESS SS ON POLE E																									2	2						
#14 NEUTRAL	3	2				3	2												2	3				2	4							
#14 SPARE			3					3	3	3			6			3					3					3						
TOTAL #14 WIRES	13	12	23			13	9	20	23	20			43	4	6			12	17	30				13	17	54						
#10 WIRES NEUTRAL			1					1	1	1			2		1	1				2						3						
#6 WIRES (120 V SERVICE)																													2			
#8 WIRES (120 V SERVICE)																														2		
#6 BSCW (SEE GENERAL NOTE 10)																																
#8 WIRES (BBS)																															2	2
#6 GROUND (BBS)																															1	1
TSP RECEIVER (10 CONDUCTOR CABLE)																									1	1						
CCTV CAMERA WIRES (CAT5e & 3#18)							1	1		1			1																			

1

FOR ORIGINAL SIGNATURES, SEE ET-132.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
2	7/18/19	LATEST DRAWING	KK	MV	CL
NA	5/31/19	RFI #654: POLE J IS 1-A POLE AND MOVE POLE H SIG EQUIP TO POLE J PER POLE LAYOUT.	KK	MV	CL
1	03/2018	UPDATED SCHEDULE, ADDED SIGNALS 32 AND 34; REMOVED BBS	KK	MV	CL

REVISIONS

BORDER REVISED 11/17/05

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

REGISTERED PROFESSIONAL ENGINEER CHERYL LIU No. C56718 Exp. CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

BAY STREET
CONDUIT & WIRING SCHEDULES

ET-132.2
ET-204

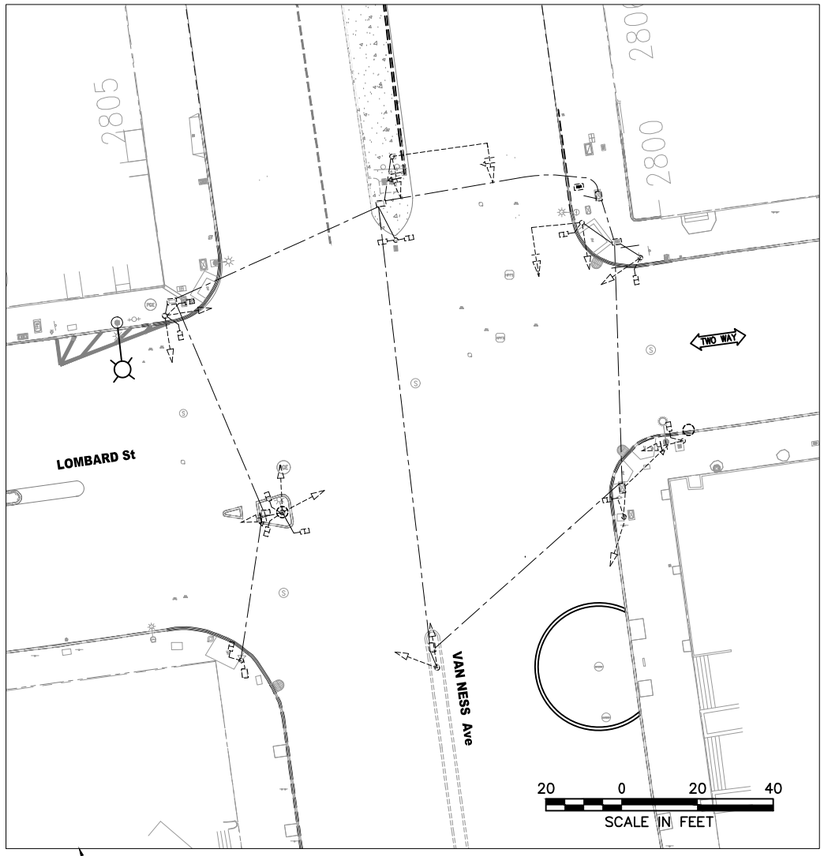
REVISION 2

T:\VE_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CPT640IETBS - 100% Rev. 7-18-19 RFI CS.dwg kkwong Thu Jul 18,2019 - 3:42 pm

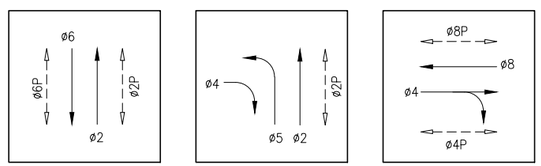
Attachment 2

FIELD MEMO #309R1

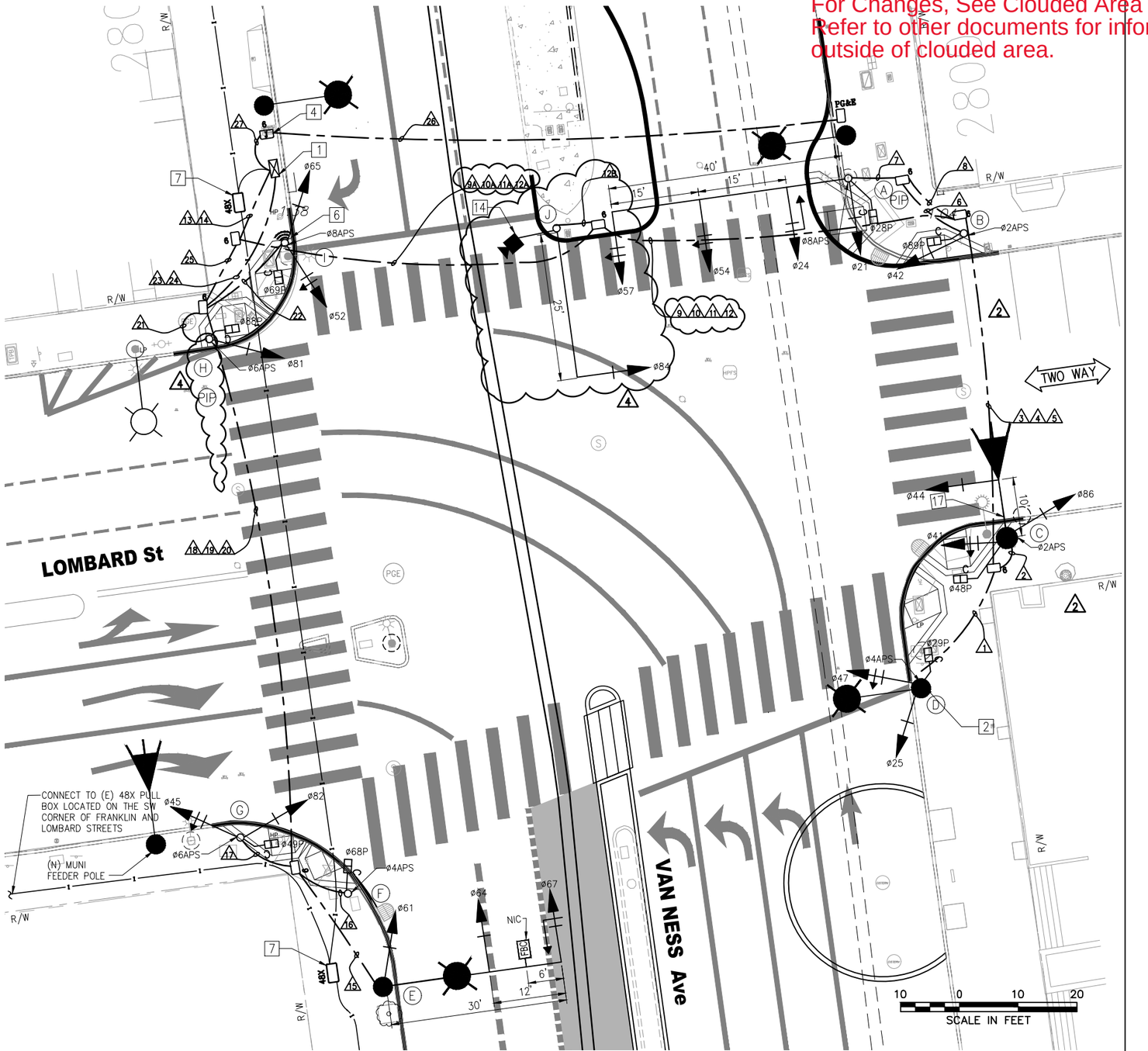
For Changes, See Clouded Area ONLY. Refer to other documents for information outside of clouded area.



EXISTING EQUIPMENT



PHASE DIAGRAM



FOR ORIGINAL SIGNATURES, SEE ET-129.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
4	12/16/19	POLE H IS 1A, MA MOVED TO NEW POLE J ON MEDIAN, & NEW CONDUIT RUN TO THE NORTH MEDIAN	KK	MV	CL
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	1/22/19	RFI#583: POLE A, B, C, H, & I PER LYOUT; APS UPDATE	KK	MV	CL
1	03/2018	UPDATED SIGNAL 24 TO 3S12"GUA; ADDED FBC SIGN ON POLE E; REMOVED BBS; COMBINED SL WITH POLE C	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

LOMBARD STREET
TRAFFIC SIGNAL WORK

1289

ET-129.0
ET-204

REVISION 4

BORDER REVISED 11/17/05

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP76401ETBS - 100% Rev.1-13-20 RFI.dwg kkwong Thu Feb 13,2020 - 3:29 pm

FIELD MEMO #309R1
For Changes, See Clouded Area ONLY.
Refer to other documents for information outside of clouded area.

POLE AND EQUIPMENT SCHEDULE

POLE NO.	POLE STANDARD			VEHICLE SIGNAL					PEDESTRIAN SIGNAL			HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SIG. MA (FEET)	OCS / SL	No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING		
Ⓐ	SPECIAL MAST ARM POLE	40		21 24 54 57	3S12" 3S12"GUA 3S12"LA 3S12"LA	SV-1-T MAS MAS MAS	T T T T		28	1S-COUNT	SP-1	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 22.5' HIGH SEE ST PLANS FOR POLE DETAILS APS ◇1 PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE
Ⓑ	1-A(10')	–		42 85	3S12" 3S12"	TV-2-T	T T		89	1S-COUNT	SP-1	–	APS ◇1
Ⓒ	17-2-100	10	/ 133	44 41	3S12" 4S12"GRA	MAS SV-1-T	T T		48	1S-COUNT	SP-1	–	APS ◇1 CONTRACTOR TO CONTACT USPS TO RELOCATE MAIL BOX
Ⓓ	SIGNAL, SL & OCS COMBO POLE	–	2790 / 278	25 47	3S12" 4S12"GRA	SV-2-TA	T		29	1S-COUNT	SP-1	–	APS ◇1
Ⓔ	SPECIAL MAST ARM POLE (19-4-100)	30		61 64 67	3S12" 3S12" 3S12"GUA	SV-1-T MAS MAS	T T T		–	–	–	–	STRAIGHT HORIZONTAL SIGNAL MA MOUNT AT 21' HIGH TENON FOR FUTURE FBC MIDWAY BETWEEN MAS SIGNALS
Ⓕ	1-A (7')	–		–	–	–	–		68	1S-COUNT	TP-1	–	APS ◇1
Ⓖ	1-A (10')	–		45 82	4S12"GRA 3S12"	TV-2-T-SFA	T		49	1S-COUNT	SP-1	–	APS ◇1
Ⓗ	1-A (10')	–		81	3S12"	TV-1-T △4	T		88	1S-COUNT	SP-1	–	APS ◇1 PIP – INSTALL NEW POLE IN PLACE OF EXISTING POLE △4
Ⓘ	1-A (10')	–		52 65	3S12"LA 3S12"	TV-2-T-SFA	T T		69	1S-COUNT	SP-1	–	APS ◇1 TSP ◇2
Ⓙ	18-2-100	25		84	3S12"	MAS	T						TRAFFIC CAMERA ◇3 △4

*OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS.
FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE CALTRANS STANDARD PLANS OR DETAIL DRAWINGS.

◇1 INSTALL APS WIRING AS SHOWN IN CONDUIT AND WIRING SCHEDULE. CITY FORCES TO INSTALL CITY FURNISHED APS UNIT.
◇2 INSTALL CITY FURNISHED TSP WIRING FROM TS OR COMBINED POLES WITH 3 FEET OF SLACK TO TS CABINET.
◇3 INSTALL CITY FURNISHED TRAFFIC CAMERA AND CONTRACTOR FURNISHED WIRING.
◇4 FOR STREETLIGHT WORK, SEE SL-SERIES PLANS.

FOR ORIGINAL SIGNATURES, SEE ET-129.1, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
4	12/16/19	POLE H IS 1A & MA MOVED TO NEW POLE J ON MEDIAN	KK	MV	CL
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	1/22/19	RFI #583: POLE A & H PER POLE LAYOUT	KK	MV	CL
1	03/2018	UPDATED SIGNAL 24 TO 3S12"GUA; UPDATED POLES A AND E; ADDED FBC TENON NOTE	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

1289

LOMBARD STREET
CONDUCTOR POLE AND EQUIPMENT SCHEDULES

ET-129.1
ET-204

REVISION 4

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BORDER REVISED 11/17/05

FIELD MEMO #309R1

For Changes, See Clouded Area ONLY. Refer to other documents for information outside of clouded area.

CONDUIT AND WIRING SCHEDULE

CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	9A	10A	11A	12A	12B	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
CONDUIT SIZE (INCH)	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	3	2
				SP	SP						SP	SP			SP	SP								SP	SP				SP	SP		
VEHICLE SIGNAL Ø25	3		3						3				3					3														
VEHICLE SIGNAL Ø47	4		4						4				4					4														
PED SIGNAL Ø29P	2		2						2				2					2														
APS PPB FOR XING VAN NESS SS ON POLE D	2		2						2				2					2														
VEHICLE SIGNAL Ø41		4	4						4				4					4														
VEHICLE SIGNAL Ø44		3	3						3				3					3														
VEHICLE SIGNAL Ø86		3	3						3				3					3														
PED SIGNAL Ø48P		2	2						2				2					2														
APS PPB FOR XING LOMBARD ES ON POLE C		2	2						2				2					2														
VEHICLE SIGNAL Ø42						3		3		3				3					3													
PED SIGNAL Ø89P						2		2		2				2					2													
VEHICLE SIGNAL Ø21							3	3		3				3					3													
VEHICLE SIGNAL Ø24							3	3		3				3					3													
VEHICLE SIGNAL Ø54							3	3		3				3					3													
VEHICLE SIGNAL Ø57							3	3		3				3					3													
PED SIGNAL Ø28P							2	2		2				2					2													
APS PPB FOR XING VAN NESS NS ON POLE A							2	2		2				2					2													
APS PPB FOR XING LOMBARD ES ON POLE B						2		2		2				2					2													
VEHICLE SIGNAL Ø61																				3			3					3				
VEHICLE SIGNAL Ø64																				3			3					3				
VEHICLE SIGNAL Ø67																				3			3					3				
PED SIGNAL Ø68P																					2		2					2				
APS PPB FOR XING VAN NESS SS ON POLE F																					2		2					2				
VEHICLE SIGNAL Ø45																						4	4					4				
VEHICLE SIGNAL Ø82																						3	3					3				
PED SIGNAL Ø49P																						2	2					2				
APS PPB FOR XING LOMBARD WS ON POLE G																						2	2					2				
VEHICLE SIGNAL Ø81																										3		3				
VEHICLE SIGNAL Ø84														3			3	3														
PED SIGNAL Ø88P																										2		2				
APS PPB FOR XING LOMBARD WS ON POLE H																										2		2				
APS PPB FOR XING VAN NESS NS ON POLE I																											2	2				
VEHICLE SIGNAL Ø52																											3	3				
VEHICLE SIGNAL Ø65																											3	3				
PED SIGNAL Ø69P																											2	2				
#14 NEUTRAL	2	4				2	5										1			3	2	2				3	2					
#14 SPARE			3					3	3	3			3	3				3	3				3					3				
TOTAL #14 WIRES	13	18	28			9	21	26	28	26			28	29			4	31	26	12	6	13	27			13	12	47				
#10 WIRES NEUTRAL			1					1	1	1			1	1			1		1				1					2				
#4 WIRES (120 V SERVICE)																														2		
#8 WIRES (120 V SERVICE)																															2	
#6 BSCW (SEE GENERAL NOTE 10)																																
TSP RECEIVER (10 CONDUCTOR CABLE)																											1	1				
CCTV CAMERA WIRES (CAT5e & 3#18)													1				1	1														

FOR ORIGINAL SIGNATURES, SEE ET-129.2, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
4	12/16/19	MOVE MA WITH SIG 84 TO MEDIAN & NEW CONDUIT TO THE NORTH MEDIAN	KK	MV	CL
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	1/22/19	RFI #583: POLE B & I W/ APS & RFI #591: SERV WIRES	KK	MV	CL
1	03/2018	REMOVED BBS	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

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LOMBARD STREET
CONDUIT & WIRING SCHEDULES

ET-129.2
ET-204

REVISION 4

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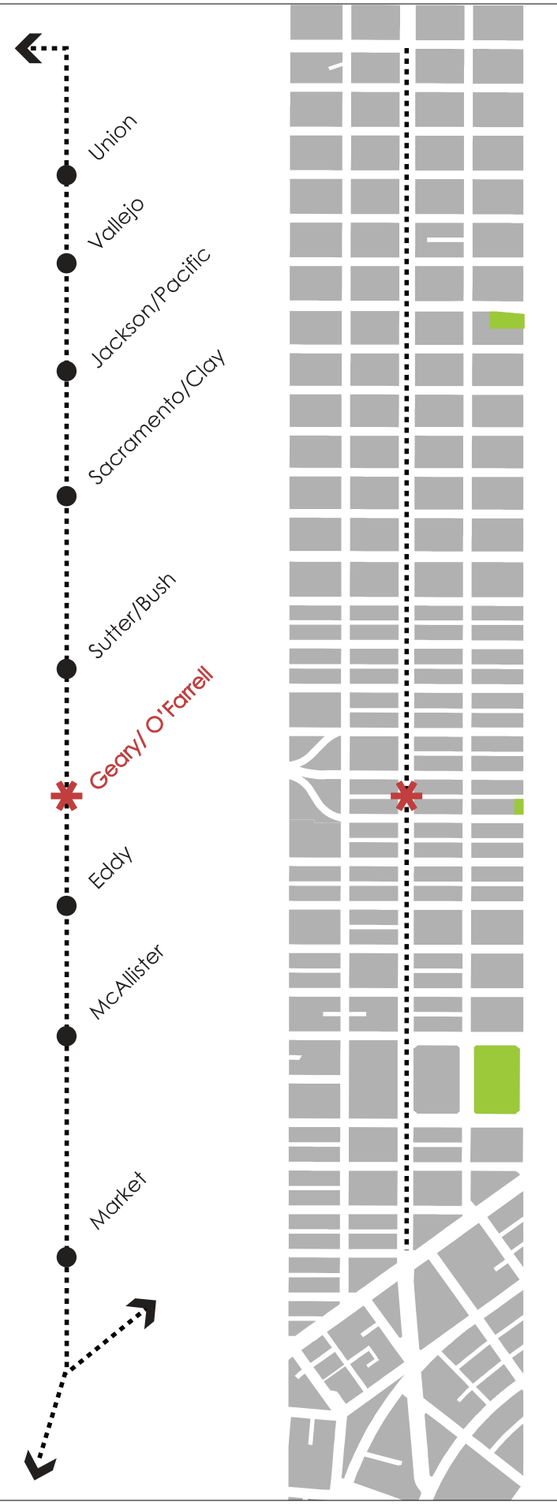
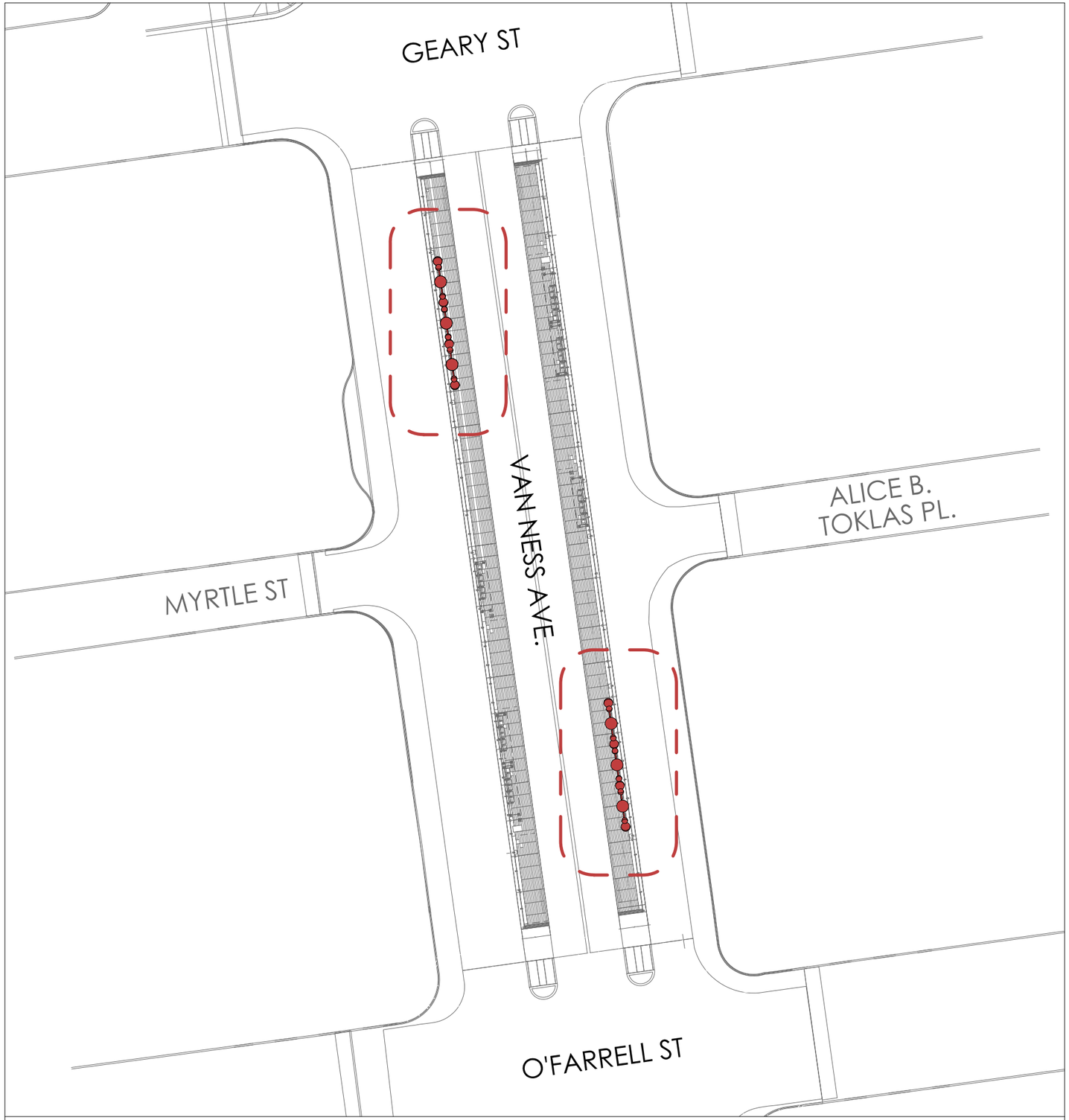
BORDER REVISED 11/17/05

Attachment 3



n a l P e t i S

NTS



n a l P e t i S

SCALE 1:450

prepared by:

Jorge Pardo Sculpture

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SHEET NOTES:

NOT FOR CONSTRUCTION

Site Plan

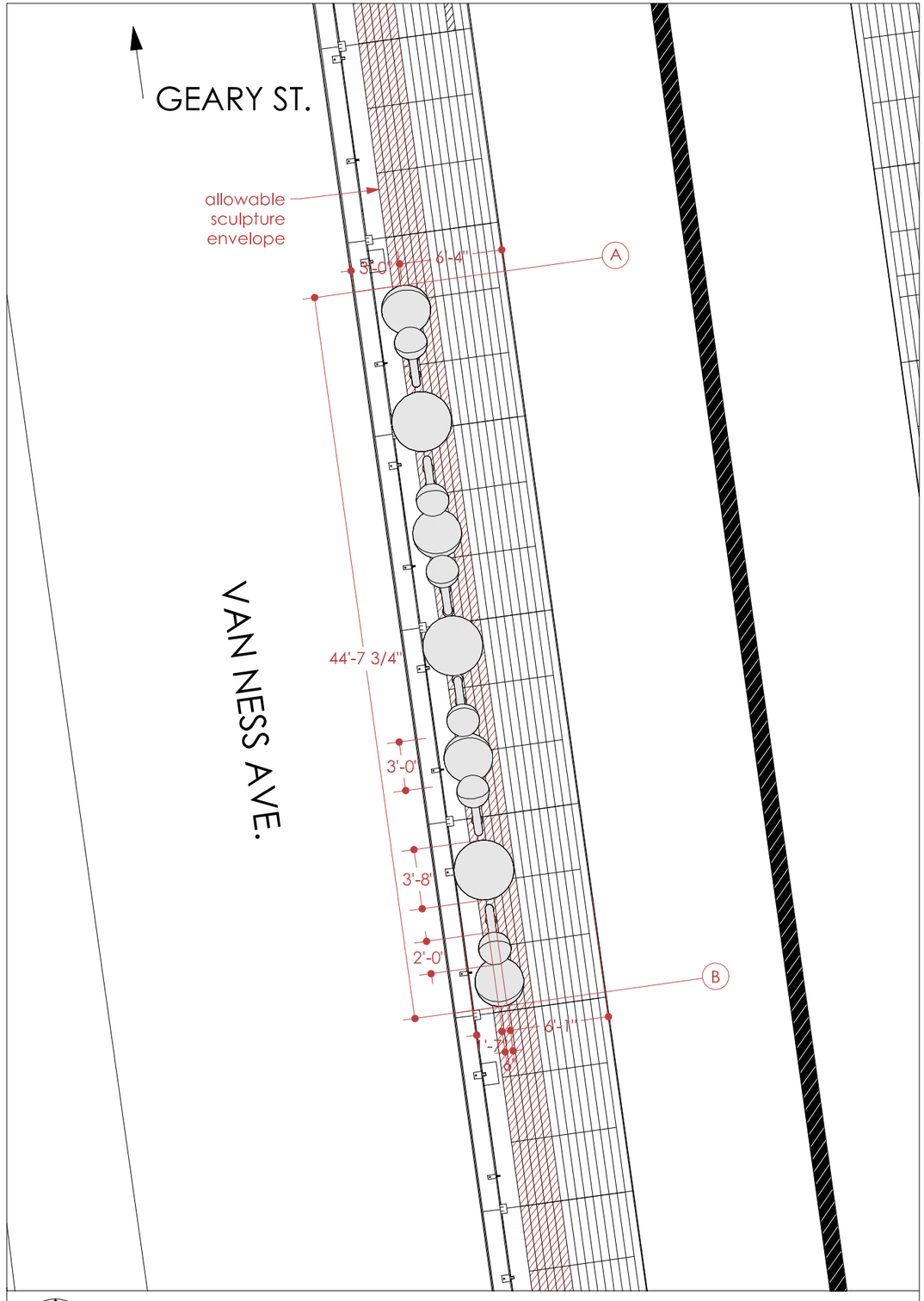
VN-BRT Artworks

02.14.2019

1 OF 10 SHEETS

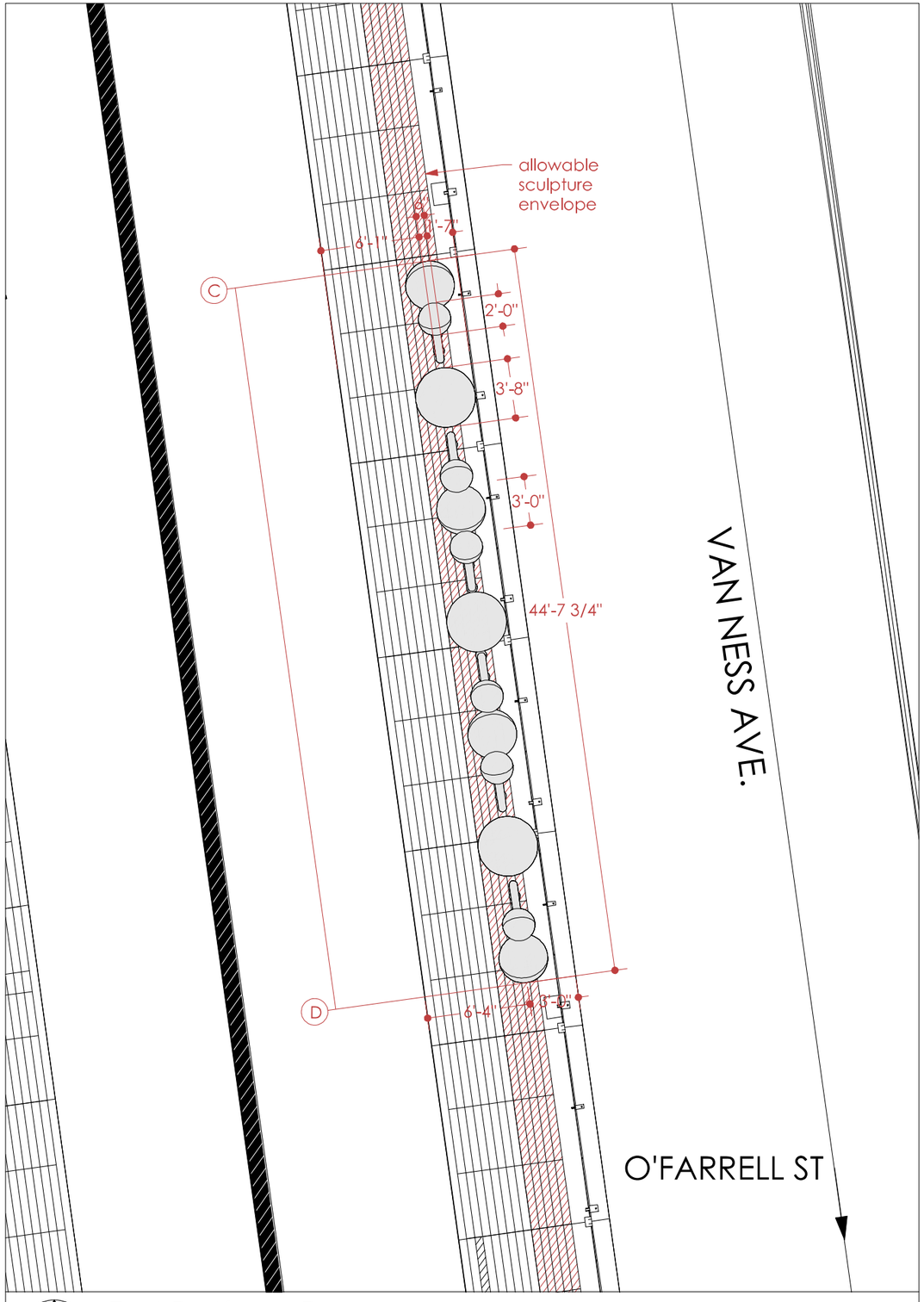
SCALE VARIES

A1.1



West Platform: Plan

SCALE 1/8" = 1'



East Platform: Plan

SCALE 1/8" = 1'

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SHEET NOTES:

NOT FOR CONSTRUCTION

Plan

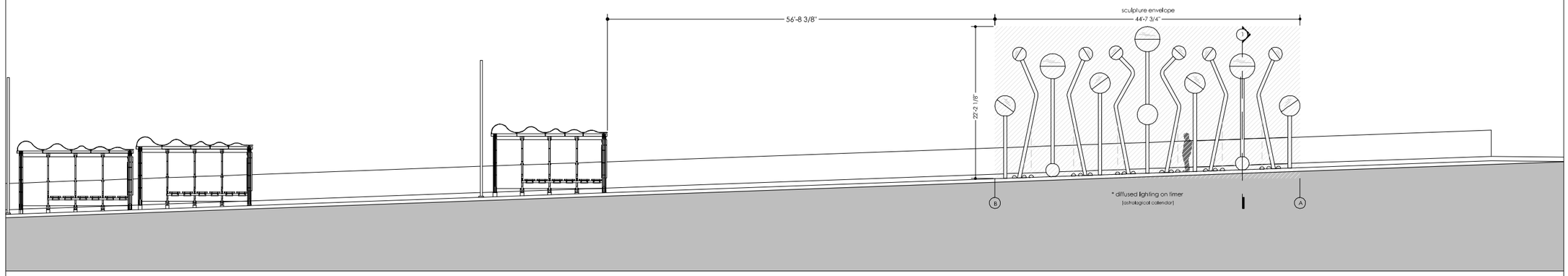
VN-BRT Artworks

09.25. 2019

2 OF 10 SHEETS

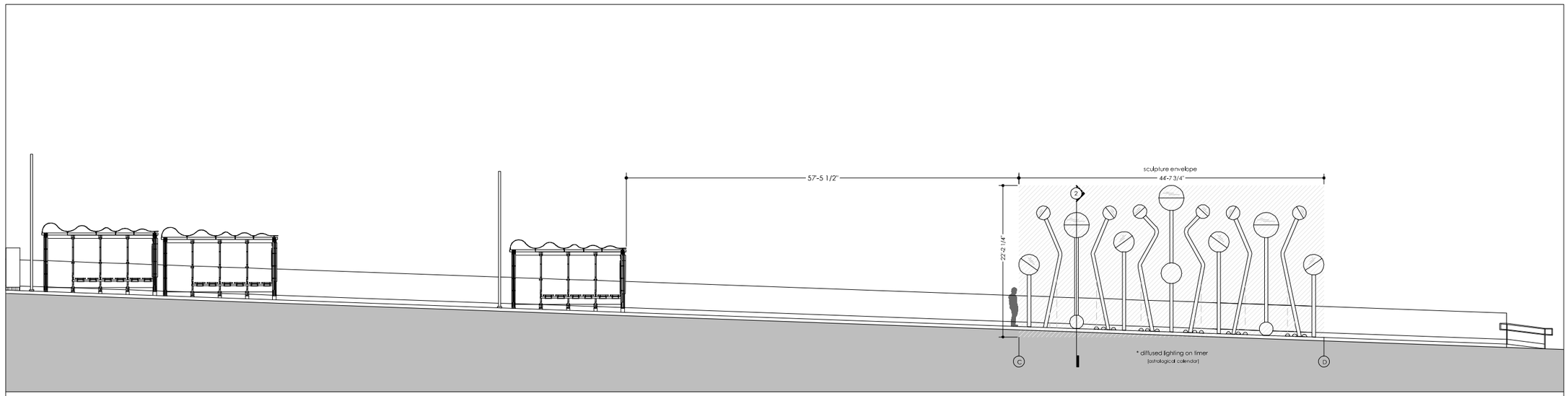
SCALE 1/8" = 1'

A2.1-R1



2 West Platform: Front Elevation

SCALE 1/16" = 1'



2 East Platform: Front Elevation

SCALE 1/16" = 1'

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Las Vegas, NV 89107

SHEET NOTES:

NOT FOR CONSTRUCTION

Elevations

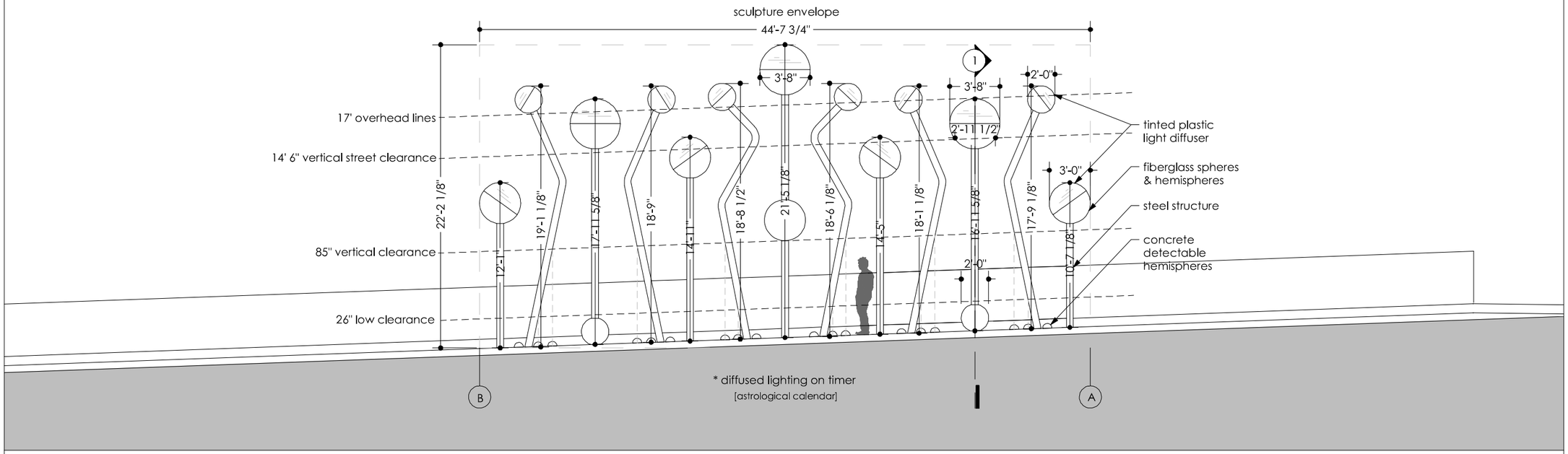
VN-BRT Artworks

09.25. 2019

3 OF 7 SHEETS

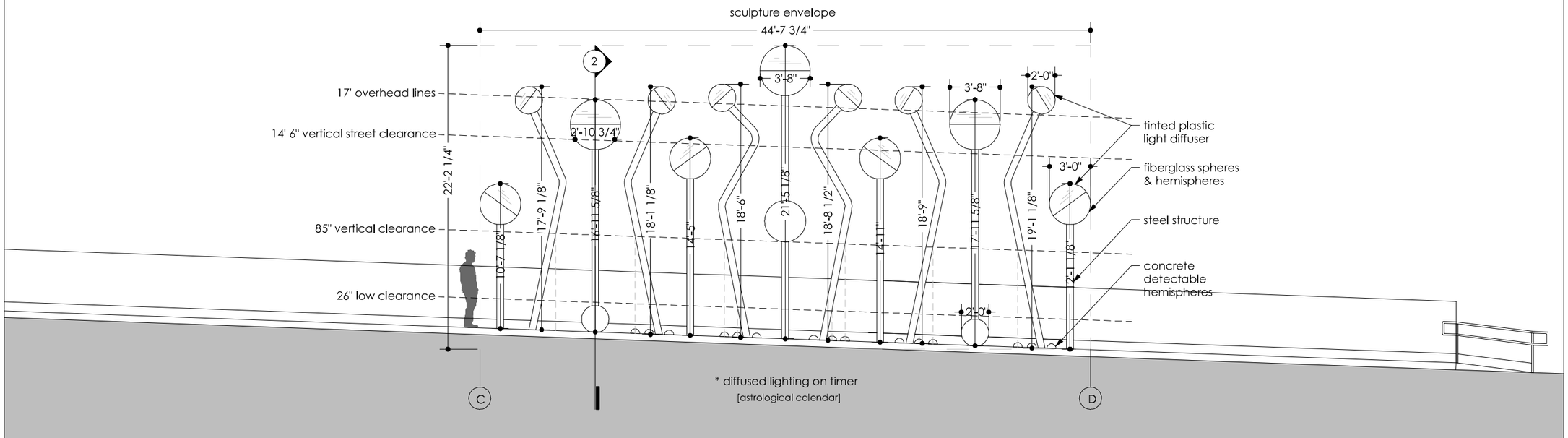
SCALE 1/16" = 1'

A3.1-R1



1 West Platform: Front Elevation

SCALE 1/8" = 1'



2 East Platform: Front Elevation

SCALE 1/8" = 1'

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SHEET NOTES:

NOT FOR CONSTRUCTION

Elevations

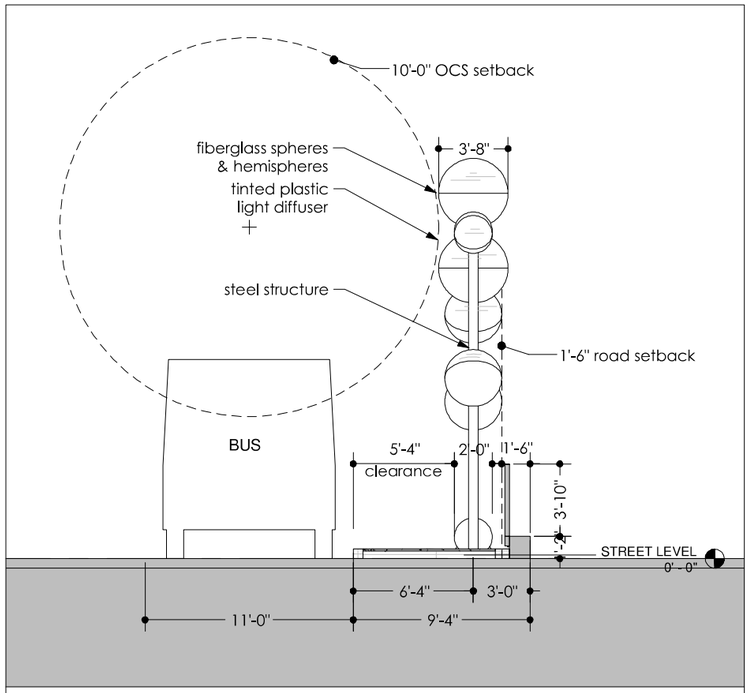
VN-BRT Artworks

10.02. 2019

4 OF 10 SHEETS

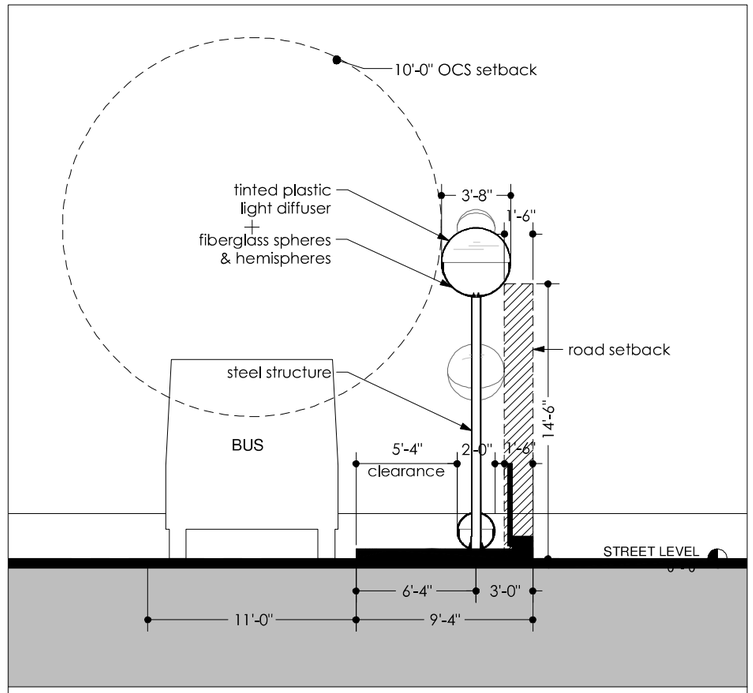
SCALE 1/8" = 1'

A3.2-R3



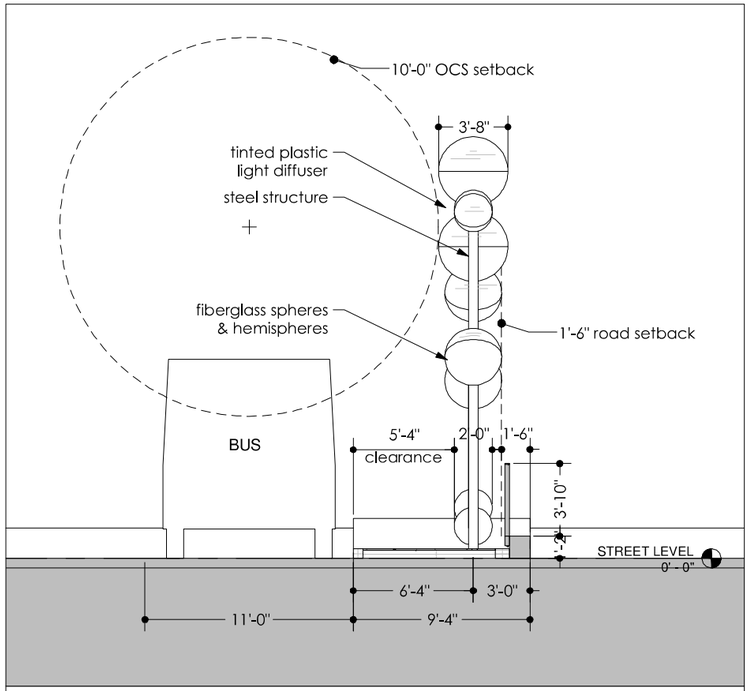
A-B West Platform: Side Elevation

SCALE 1/8" = 1'



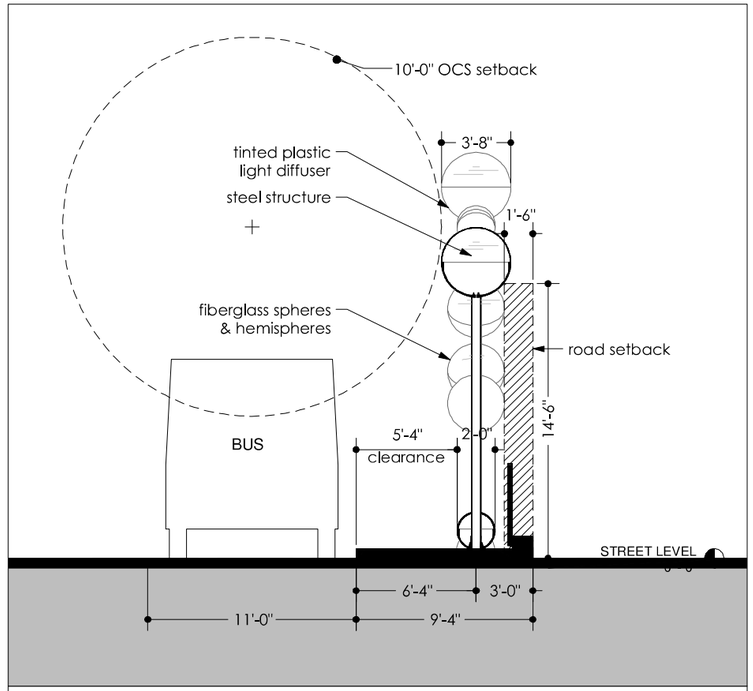
1 West Platform: Section

SCALE 1/8" = 1'



D-C East Platform: Side Elevation

SCALE 1/8" = 1'



2 East Platform: Section

SCALE 1/8" = 1'

prepared by:

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Las Vegas, NV 89107

SHEET NOTES:

NOT FOR CONSTRUCTION

Elevations & Sections

VN-BRT Artworks

10.02. 2019

5 OF 10 SHEETS

SCALE 1/8" = 1'

A3.3

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE 2016 CALIFORNIA BUILDING CODE (REFERRED TO HEREINAFTER AS "CBC") AND 2016 SAN FRANCISCO BUILDING CODE AMENDMENTS.

2. ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE, UNLESS NOTED OTHERWISE. NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS.

3. ALL OMISSIONS AND CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR ARCHITECTURAL SPECIFICATIONS (WHERE APPLICABLE) SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY OF THE WORK INVOLVED.

4. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF THE PERSONS AND PROPERTY, AND FOR ALL NECESSARY INDEPENDENT ENGINEERING REVIEWS OF THESE CONDITIONS. THE ARCHITECT'S OR ENGINEER'S JOB SITE REVIEW IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.

5. DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS.

6. IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE STRUCTURAL DRAWINGS.

7. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER PRIOR TO FABRICATION WITH SUFFICIENT TIME FOR REVIEW OF DESIGN INTENT (A MINIMUM OF 10 WORKING DAYS) FOR THE FOLLOWING ITEMS:
   a. STRUCTURAL STEEL
   b. REINFORCING STEEL

8. NO OPENINGS, CHASES, NOTCHES, ETC. SHALL BE PLACED IN COLUMNS, JOISTS, BEAMS, BEARING WALLS, AND SHEAR WALLS UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW SUCH OPENINGS.

9. CONTRACTOR SHALL COORDINATE ALL STRUCTURAL FRAMING WITH MECHANICAL, PLUMBING AND ELECTRICAL INFRASTRUCTURE, INCLUDING, BUT NOT LIMITED TO, RECESSED AND SEMI-RECESSED LIGHTING, MECHANICAL DUCTS AND PIPING, FIRE SPRINKLER PIPE AND HEADS AND PLUMBING DRAINS, WASTE AND SUPPLY LINES.

10. ALL ASTM DESIGNATIONS SHALL BE AS AMENDED TO DATE UNLESS NOTED OTHERWISE.

DESIGN CRITERIA

1. DEAD LOADS:
   a. TOTAL WEIGHT = T.B.D.

2. LIVE LOADS:
   a. POINT LOAD = 200 LB

3. SEISMIC DESIGN PARAMETERS:

a.	IMPORTANCE FACTOR	I = 1.0
b.	RISK CATEGORY	II
c.	SITE CLASS	D
d.	MAPPED SHORT PERIOD ACCELERATION	S_s = 1.5
e.	SITE COEFFICIENT	F_a = 1.0
f.	DESIGN SHORT PERIOD ACCELERATION	S_{DS} = 1.000
g.	MAPPED ONE SECOND ACCELERATION	S_1 = 0.639
h.	SITE COEFFICIENT	F_v = 1.5
i.	DESIGN ONE SECOND ACCELERATION	S_{D1} = 0.639
j.	SEISMIC DESIGN CATEGORY	D

   DESIGN BASE SHEAR: V = Cs*W AT STRENGTH LEVEL
   (W = EFFECTIVE SEISMIC WEIGHT)

4. WIND DESIGN PARAMETERS:

a.	BASIC WIND SPEED	110mph
b.	RISK CATEGORY	II
c.	EXPOSURE CATEGORY	B
d.	WIND PRESSURES:	
	• FREE STANDING WALLS AND SOLID SIGNS: 5,663 LB	

5. FOUNDATION DESIGN PARAMETERS:
   a. SPREAD FOOTING PARAMETERS
      • ALLOWABLE SOIL PRESSURE:

DEAD LOADS:	1,500 PSF
DEAD PLUS LIVE LOADS:	1,500 PSF
DEAD PLUS LIVE PLUS SEISMIC:	2,000 PSF

FOUNDATION

1. FOUNDATION DESIGN IS BASED ON THE PRESUMPTIVE LOAD BEARING VALUES OF SOIL GIVEN IN THE CALIFORNIA BUILDING CODE 2016, TABLE 1806.2.

2. INSTALLATION OF THE FOUNDATION FOOTINGS OR PIERS WITH RESPECT TO THE DEPTH BELOW FINISHED OR NATURAL GRADE SHALL BE AT A MINIMUM ACCORDING TO THE FOUNDATION DETAILS ON THESE PLANS. FIELD DISCOVERED CONDITIONS MAY NECESSITATE DEEPER FOUNDATIONS.

3. EXCEPT WHERE OTHERWISE SHOWN, EXCAVATIONS SHALL BE MADE AS NEAR AS POSSIBLE TO THE NEAT LINES REQUIRED BY THE SIZE AND SHAPE OF THE STRUCTURE.

4. ALL WATER, SOIL, AND OTHER DEBRIS SHALL BE REMOVED FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING OF CONCRETE.

5. ALL BACKFILL WITH ENGINEERED FILLS SHALL BE COMPACTED TO 95% RELATIVE DENSITY.

CONCRETE

1. ALL CONCRETE CONSTRUCTION SHALL BE PER CBC CHAPTER 19 AND IN ACCORDANCE WITH ACI 318-11, SPECIFICATIONS FOR STRUCTURAL CONCRETE.

2. ALL CONCRETE SHALL HAVE A MAXIMUM WATER-CEMENT RATIO OF 0.48 FOR FOUNDATIONS AND ALL STRUCTURAL ELEMENTS AND 0.45 FOR SLABS, 4"±1" SLUMP, AND SHALL OBTAIN A 28 DAY MINIMUM COMPRESSIVE STRENGTH AS FOLLOWS:

a.	GRADE BEAMS, MAT SLABS, AND FOOTINGS	2,500 PSI
b.	STRUCTURAL SLABS AND SLABS-ON-GRADE	2,500 PSI
c.	NON-STRUCTURAL CONCRETE TOPPING SLAB	2,000 PSI

3. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE, WEIGHING LESS THAN 150 PCF, UNLESS OTHERWISE NOTED. ALL CONCRETE FILL OVER METAL DECK SHALL BE LIGHTWEIGHT CONCRETE, WEIGHING LESS THAN 115 PCF, UNLESS OTHERWISE NOTED.

4. CEMENT SHALL CONFORM TO ASTM C150, TYPE II (OR ENGINEERED MAXIMUM DESIGN TO STRENGTH).

5. HARD ROCK AGGREGATES SHALL CONFORM TO ASTM C33. MAXIMUM NORMAL SIZE OF AGGREGATE SHALL NOT EXCEED 1 1/2 INCHES FOR FOUNDATION CONCRETE AND 1 INCH FOR STRUCTURAL CONCRETE ABOVE THE FOUNDATION. SEE ALSO THE REQUIREMENTS IN ACI STANDARD SPECIFICATIONS. MAXIMUM NORMAL SIZE SHALL ALSO BE SELECTED SUCH THAT WORKABILITY AND PLACEABILITY OF CONCRETE ARE FACILITATED.

6. ALL ALTERNATE CONCRETE MIX DESIGN AND TEST STRENGTHS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

7. MAXIMUM VERTICAL DROP OF CONCRETE SHALL BE NO MORE THAN 2'-0" FROM END OF PLACEMENT DEVICE TO PLACEMENT SURFACE.

8. CONCRETE COVER AT REINFORCING SHALL BE AS FOLLOWS:

a.	CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3" CLEAR
b.	EXPOSED TO EARTH OR WEATHER BUT CAST AGAINST FORMS	2" CLEAR
c.	SLABS (EXCEPT FOR MATS)	REBAR AT CENTER OF SLAB
d.	BARS PARALLEL TO COLD JOINTS	2" CLEAR

9. ALL REINFORCING STEEL, DOWELS, ANCHOR BOLTS, PIPE SLEEVES AND OTHER INSERTS SHALL BE SECURED IN POSITION PRIOR TO PLACING OF CONCRETE. "WET SETTING" WILL NOT BE ALLOWED.

10. THE SURFACE OF ALL CONSTRUCTION JOINTS SHALL BE CLEANED AND ROUGHENED BY REMOVING THE ENTIRE SURFACE AND EXPOSING CLEAN AGGREGATE SOLIDLY EMBEDDED IN MORTAR MIX.

11. EPOXY SET ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS A MINIMUM AGE OF 21 DAYS PER ACI D5.5.2.

REINFORCING BAR

1. REINFORCING STEEL SHALL BE DEFORMED BARS PER ASTM A615 WITH BAR MARKS LEGIBLY ROLLED INTO THE SURFACE INDICATION SIZE, TYPE OF STEEL, AND YIELD STRENGTH DESIGNATION:

a.	#3 BARS AND SMALLER	GRADE 40 OR GRADE 60
b.	#4 BARS AND LARGER	GRADE 60
c.	ALL BARS TO BE WELDED	GRADE A706

2. REINFORCING SHALL HAVE A MINIMUM LAP IN CONFORMANCE WITH DETAILS AND SPECIFICATIONS SHOWN ON THESE DRAWINGS. STAGGER SPLICES WHENEVER POSSIBLE. VERTICAL WALL REINFORCING BARS SHALL EITHER EXTEND INTO FOOTINGS OR LAP SPLICED WITH FOOTING DOWELS OF THE SAME SIZE BARS.

3. BENDING OF REINFORCING SHALL BE IN CONFORMANCE WITH DETAILS AND SPECIFICATIONS SHOWN ON THESE DRAWINGS. FIELD BENDING OF BARS THAT ARE IN PLACE IS NOT PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

4. ALL BARS SHALL BE FREE OF LOOSE AND FLAKY RUST AND SCALE, GREASE, OR OTHER MATERIALS WHICH MIGHT AFFECT OR IMPAIR BOND.

EPOXY ANCHORING:

1. EPOXY OR RESIN ADHESIVE SHALL BE ON OF THE FOLLOWING:
   • SIMPSON SET-3G ADHESIVE (ICC-ES-ESR-4057)
   • EQUIVALENT ALTERNATES WILL BE CONSIDERED UPON REQUEST AND SUBMISSION OF SPECIFICATIONS AND ICBO EVALUATION REPORT.

2. EPOXY ADHESIVE WILL BE USED IN ALL LOCATIONS WHERE EITHER THREADED STEEL ROD OR REBAR IS BEING EMBEDDED INTO EXISTING CONCRETE OR MASONRY AS TENSION AND/OR SHEAR ELEMENTS.

3. CONTRACTOR SHALL MIX AND INSTALL RESIN AND HARDENER PER MANUFACTURER'S SPECIFICATION.

4. HOLES SHALL BE DRILLED WITH ROTARY DRILL. DRILL BIT DIAMETER SHALL BE ⅛" LARGER THAN BOLT/REBAR DIAMETER OR PER THE MANUFACTURERS SPECIFICATION. EXISTING REINFORCEMENT SHALL NOT BE CUT OR DAMAGED UNLESS PERMITTED IN WRITING BY THE ENGINEER. IMMEDIATELY BEFORE APPLYING ADHESIVE, HOLES SHALL BE REAMED WITH A CIRCULAR WIRE BRUSH ATTACHED TO A DRILL MOTOR (MINIMUM OF 4 CYCLES) AND THEN BLOWN OUT WITH OIL-FREE COMPRESSED AIR FOR A MINIMUM OF 4 SECONDS. COMPRESSED AIR NOZZLE MUST REACH THE BOTTOM OF THE HOLE.

5. CONTINUOUS OR PERIODIC SPECIAL INSPECTION IS REQUIRED FOR THREADED STEEL ROD EPOXY SET IN EXISTING CONCRETE OR MASONRY.

   a. CONTINUOUS SPECIAL INSPECTION SHALL BE THE FULL TIME OBSERVATION OF WORK BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. INSPECTOR SHALL OBSERVE WORK IS IN CONFORMANCE TO THE APPROVE DRAWINGS AND NOTIFY ENGINEER OF ANY EXCEPTIONS

   b. PERIODIC INSPECTION SHALL BE AS FOLLOWS:
      • 5% OF TENSION BOLTS OR A MINIMUM OF 2 ANCHORS SHALL BE TESTED USING THE DIRECT TENSION LOAD METHOD:
      • TENSION RODS SHALL BE SUBJECT TO DIRECT TENSION LOAD AS SHOWN FOR FIVE MINUTES (10 PERCENT DEVIATION). THE DISTANCE BETWEEN THE ANCHOR AND THE TEST APPARATUS SUPPORT SHALL NOT BE LESS THAN 75 PERCENT OF THE EMBEDMENT OF THE ANCHOR BOLT.
      • 20% OF ANCHOR BOLTS TORQUE TEST

TESTING LOAD, U.O.N.		
THREADED ROD DIAMETER	DIRECT TENSION LOAD	TORQUE TEST LOAD
1" ø	18,000 LBS	80 FT-LB

STRUCTURAL STEEL

1. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING:

HSS SHAPES	ASTM A500, GRADE B
OTHER SHAPES AND PLATES	ASTM A36
ELECTRODES	ASTM E70XX
BASE PLATES	ASTM A36
ANCHOR BOLTS	AISI 304, 316, OR ASTM F1554 GRADE 36
MACHINE BOLTS	ASTM A307

2. ALL STRUCTURAL STEEL SHALL CONFORM TO AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. BOLT HOLES SHALL BE 1/16" OVERSIZED, EXCEPT AT BASE PLATES WHERE THEY CAN BE 5/16" OVERSIZED, WITH WELDED WASHERS.

3. ALL SHOP AND FIELD WELDING SHALL BE INSPECTED BY AN APPROVED TESTING LABORATORY. SPECIAL INSPECTION REQUIREMENTS OF CHAPTER 17, 2016 CBC, APPLY TO ALL WELDING.

4. ALL WELDING TO CONFORM TO THE REQUIREMENTS OF THE LATEST AWS D1.1 STRUCTURAL WELDING CODE AND SHALL BE PERFORMED BY CERTIFIED WELDERS.

5. ALL WELDS NOT SPECIFIED SHALL BE CONTINUOUS FILLET WELDS, USING NOT LESS THAN THE MINIMUM SIZES BASED ON THICKNESS OF THICKER PART JOINED PER AISC/AWS, AND IN NO CASE LESS THAN 1/4" UNLESS NOTED OTHERWISE.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES ESPECIALLY WITH RELATION TO TEMPERATURE DIFFERENTIALS, ERECTION TOLERANCES, AND WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO REINFORCED CONCRETE WALLS.

7. THE STRUCTURAL STEEL CONNECTIONS CONSIST OF THE FOLLOWING:
   a. ALL MAJOR STRUCTURAL STEEL CONNECTIONS ARE DETAILED ON THE DRAWINGS. THE DETAILS INDICATE THE REQUIRED MINIMUM PLATE THICKNESSES, ANGLES, WELDS, BOLTS AND GENERAL CONNECTION CONFIGURATION. THE FINAL DIMENSIONAL CONFIGURATION INCLUDING ADJUSTMENTS FOR CAMBER SHALL BE DETERMINED BY THE FABRICATOR ON SHOP DRAWINGS.
   b. ANY PROPOSED REVISIONS OR MODIFICATIONS TO THE CONNECTIONS AS SHOWN ON THE DRAWINGS SHALL BE FULLY ENGINEERED BY THE FABRICATOR. SHOP DRAWINGS AND CALCULATIONS PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA SHALL BE SUBMITTED FOR REVIEW. THE CAPACITY OF CONNECTIONS SHALL NOT BE REDUCED FROM THAT PROVIDED BY THE DETAIL AS SHOWN WHERE NOT SHOWN OR INFERRED FROM DRAWINGS, THE CONNECTION SHALL BE CAPABLE OF NOT LESS THAN 120% OF THE MEMBER CAPACITY IN TENSION. ANY PROPOSED REVISIONS SHALL BE AT NO ADDITIONAL COST TO THE OWNER.

STRUCTURAL OBSERVATIONS

1. THE FOLLOWING ITEMS SHALL HAVE PERIODIC STRUCTURAL OBSERVATION BY THE STRUCTURAL ENGINEER OF RECORD PER CBC SECTION 1704.5:
   a. REINFORCING STEEL PRIOR TO POURING CONCRETE
   b. ANCHOR BOLTS AND HOLD DOWNS ANCHORS PRIOR TO POURING CONCRETE
   c. STRUCTURAL STEEL CONSTRUCTION PRIOR TO COVER

2. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER A MINIMUM OF 48 HOURS (EXCLUDING WEEKEND DAYS) PRIOR TO THE TIME OF A REQUIRED STRUCTURAL OBSERVATION.

3. OBSERVATION VISITS TO THE JOB SITE BY THE ENGINEER'S FIELD REPRESENTATIVE SHALL BE CONSTRUED AS NEITHER INSPECTION NOR APPROVAL OF CONSTRUCTION.

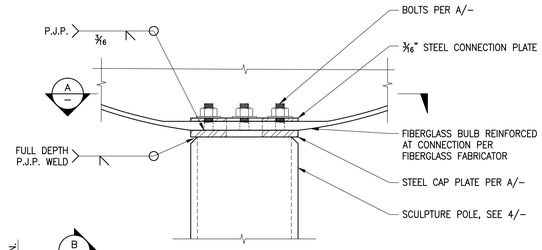
SPECIAL INSPECTIONS

1. THE FOLLOWING CONTINUOUS OR PERIODIC SPECIAL INSPECTIONS, AS REQUIRED BY THE 2016 CALIFORNIA BUILDING CODE (CBC) CHAPTER 17, SHALL BE PERFORMED BY THE OWNER'S TESTING AND INSPECTION AGENCY:

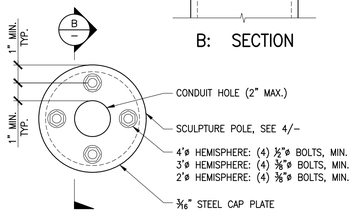
   a. STRUCTURAL WELDING. DURING THE WELDING OF ANY MEMBER OR CONNECTION IN THE SHOP OR FIELD, INCLUDING NON-DESTRUCTIVE TESTING OF SPECIAL MOMENT-RESISTING AND ECCENTRICALLY BRACED STEEL FRAMES. PERIODIC INSPECTIONS PERMITTED ONLY AS NOTED IN CONTRACT DOCUMENTS. DURING THE WELDING OF REINFORCING STEEL.
   b. EPOXY CONNECTED ANCHORS TO EXISTING CONCRETE.

10 GENERAL NOTES

SCALE: N.T.S.



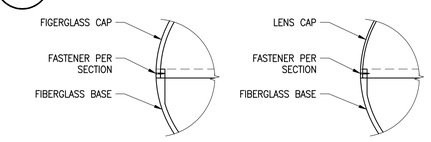
B: SECTION



A: CAP PLATE

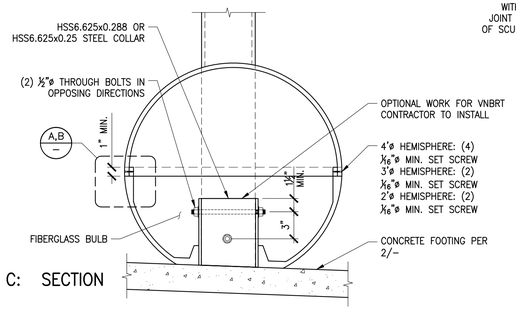
6 COLUMN CAP DETAIL

SCALE: 3"=1'-0"



A: FIBERGLASS TO FIBERGLASS

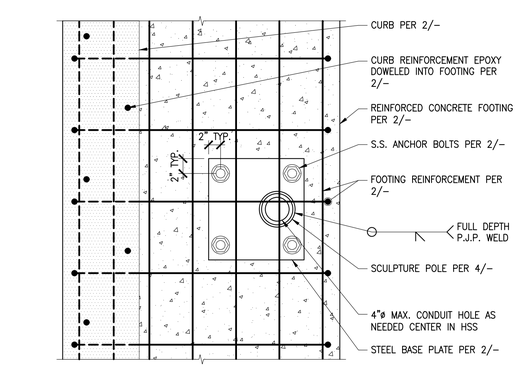
B: LENS TO FIBERGLASS



C: SECTION

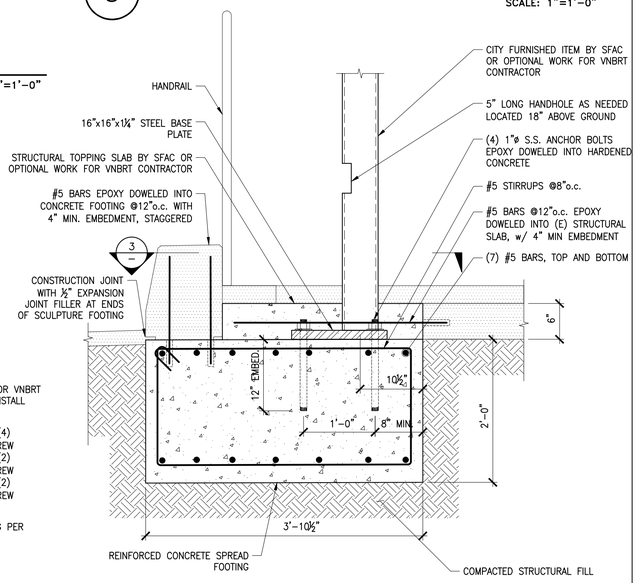
5 HEMISPHERE CONNECTION DETAIL

SCALE: 1-1/2"=1'-0"



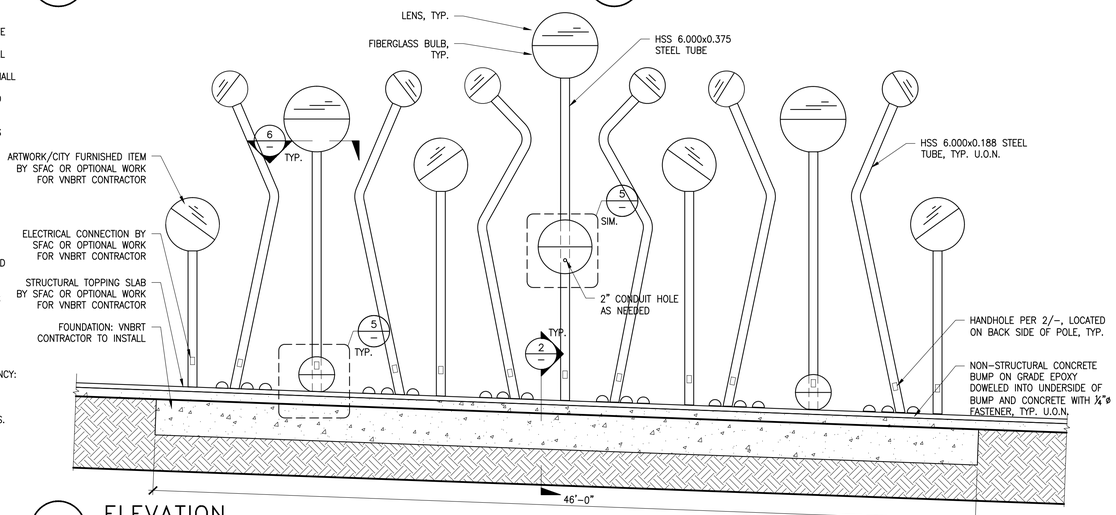
3 CONCRETE FOOTING PLAN

SCALE: 1"=1'-0"



2 CONCRETE FOOTING SECTION

SCALE: 1"=1'-0"



4 ELEVATION

SCALE: 1/4"=1'-0"

STRUCTURAL ENGINEER:

rbhu Engineering Imagination

1329A Hopkins Street
Berkeley
California
94702

T. 415.967.2525

selinda@rbhu.org

ARTIST:

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VN-BRT Artwork
Van Ness Avenue
San Francisco, California 94109

DATE:	ISSUE:
10.31.2019	Permit Set

STAMP

REGISTERED PROFESSIONAL ENGINEER
SELINDA A. MARTINEZ
No. 82038
Exp. 3-31-20
CIVIL
STATE OF CALIFORNIA

PROJECT NUMBER:

1822

TITLE

GENERAL NOTES, ELEVATION AND DETAILS

SHEET:

S1

ELECTRICAL LEGEND AND ABBREVIATIONS

POWER LEGEND

(J)	JUNCTION BOX, CEILING MOUNTED
(J)	JUNCTION BOX, WALL MOUNTED
#	NUMBERED NOTE

ABBREVIATIONS

A	AMPERES
CB	CIRCUIT BREAKER
CKT	CIRCUIT
DWG	DRAWING
(E)	EXISTING TO REMAIN
EC	EMPTY CONDUIT
EMT	ELECTRICAL METALLIC TUBING
GFI	GROUND FAULT INTERRUPTOR
GND	GROUND
IG	ISOLATED GROUND
JB	JUNCTION BOX
MCB	MAIN CIRCUIT BREAKER
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
P	POLE
PB	PULL BOX
PH	PHASE
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
(R)	EXISTING TO BE RELOCATED
RAC	RIGID ALUMINUM CONDUIT
RGS	RIGID GALVANIZED STEEL
RSC	RIGID STEEL CONDUIT
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
WT	WATERTIGHT
(X)	EXISTING TO BE REMOVED

DRAWING LIST

WSP USA Buildings Inc.
425 Market St. 17th Floor
San Francisco, CA 94105
(415) 243-4600
wsp.com

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REGISTERED PROFESSIONAL ENGINEER
JILLIAN P. MORITZ
No. E19179
ELECTRICAL
STATE OF CALIFORNIA

Electrical Legend, Abbreviations and Drawing List

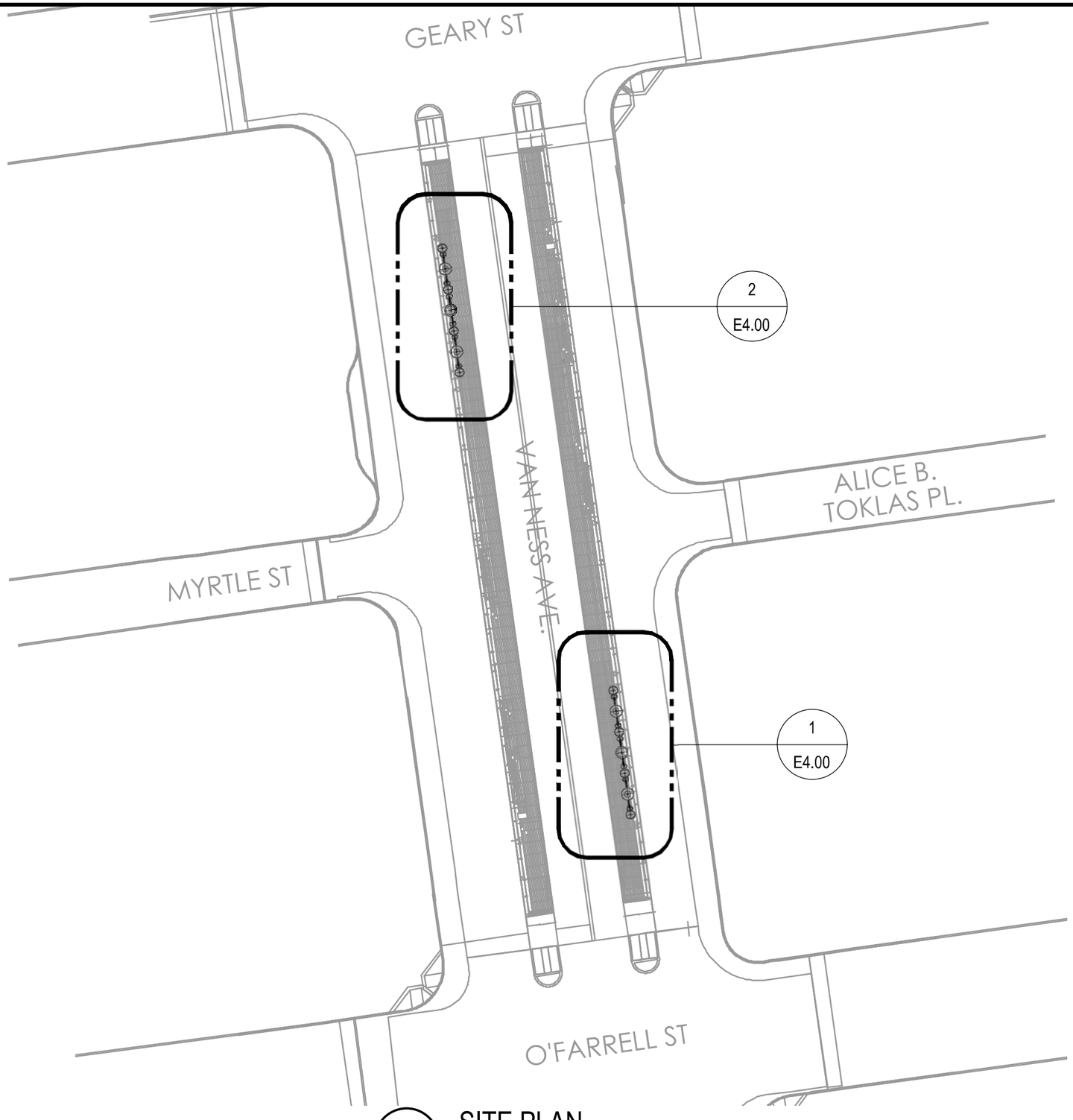
VN-BRT Artworks

06.14.2019

1 OF 6 SHEETS

SCALE: AS NOTED

E0.00



1 SITE PLAN
1:450

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No. E19179
ELECTRICAL
STATE OF CALIFORNIA

Site Plan

VN-BRT Artworks

06.14.2019

2 OF 6 SHEETS

SCALE: AS NOTED

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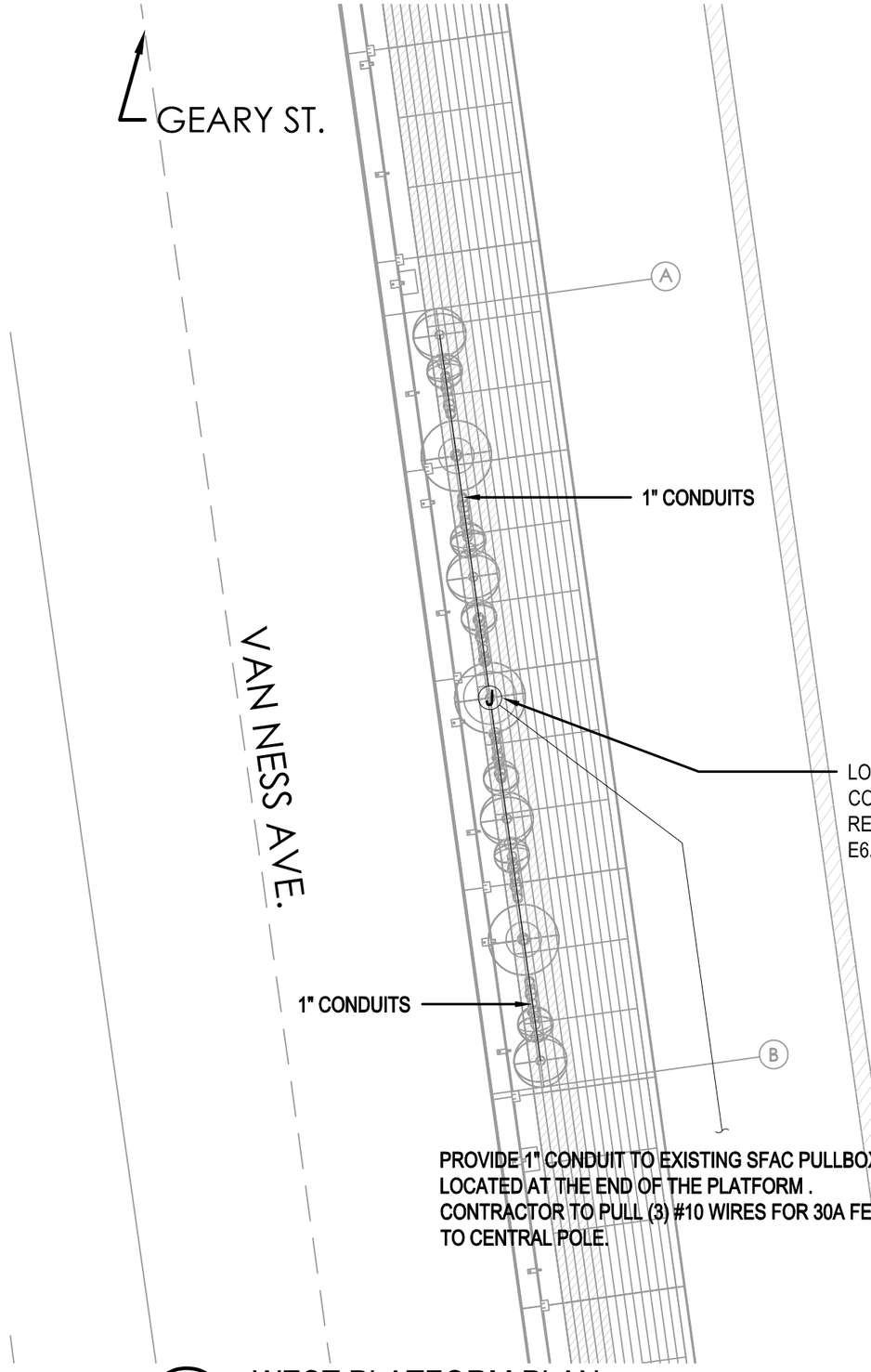
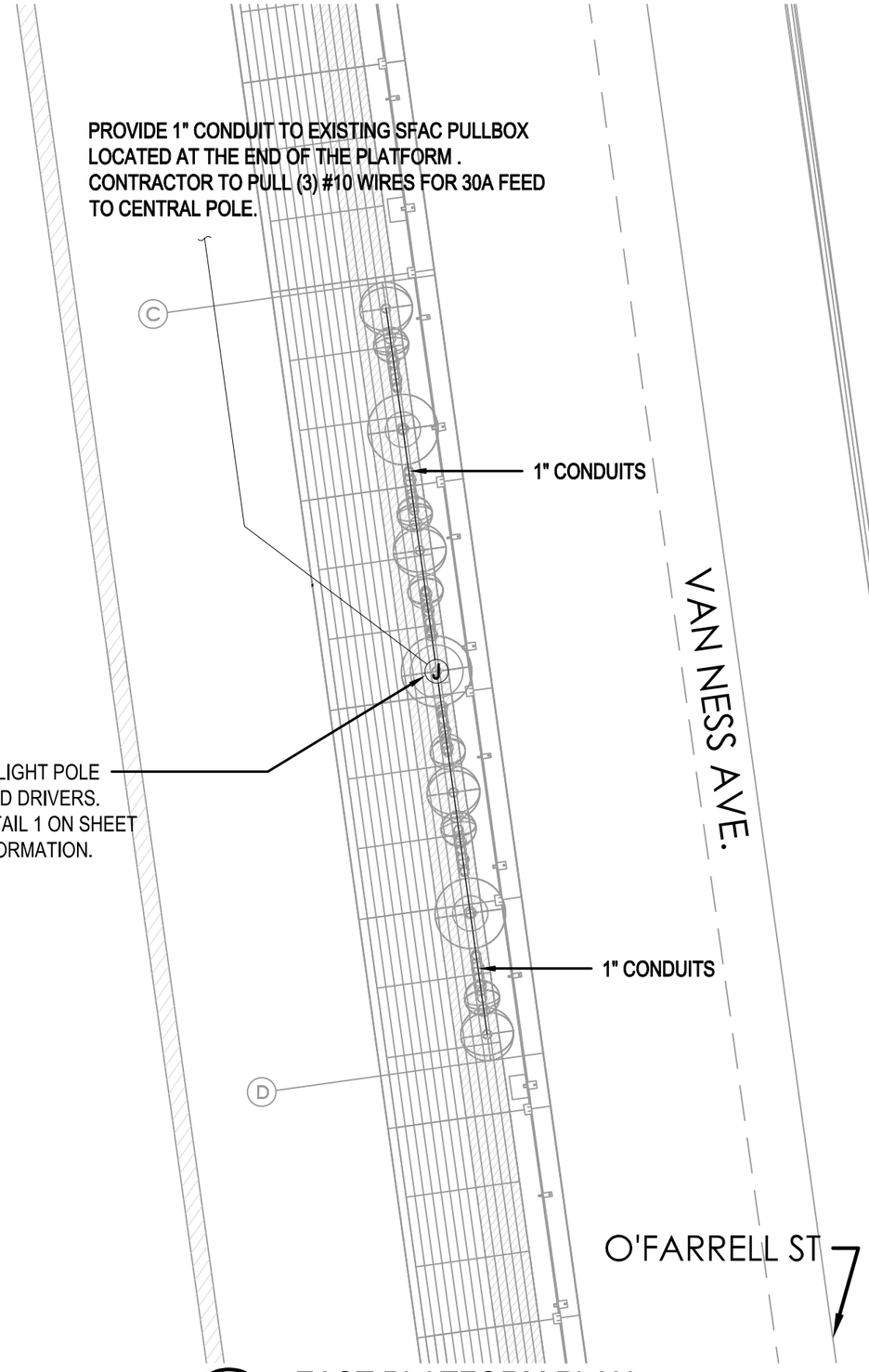


2 WEST PLATFORM PLAN

1/8"=1'-0"



1 EAST PLATFORM PLAN

1/8"=1'-0"

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Electrical Enlarged Plans

VN-BRT Artworks

06.14.2019

3 OF 6 SHEETS

SCALE: AS NOTED

E4.00

ARTIST/ SFAC TO
CALIBRATE LIGHT LEVELS

J-HOOK TO BE PROVIDED WITHIN
4' OF WIRE TERMINATION, TYP.
REFER TO SHOP DRAWINGS FOR
EXACT LOCATION.

ADD ALTERNATE:
VN-BRT CONTRACTOR
TO SPLICE WIRES
THROUGH HANDHOLE.

PULL BOXES TO MATCH PLATFORM SPECIFIED PULL BOX
ALL BELOW GRADE ELECTICAL SCOPE BY VN-BRT CONTRACTOR

VN-BRT CONTRACTOR TO PROVIDE (1) PAIR OF 18 GAUGE WIRE TO EACH SCUPLTURE POLE, TYP.

VN-BRT CONTRACTOR TO PROVIDE 1" CONDUIT FROM PULLBOX TO EACH SCUPLTURE POLE, TYP.

VNBRT SCOPE

1 SCUPLTURE POLES 7-13 WIRING DIAGRAM

NTS

SHEET NOTES:

A. SCULPURE LIGHT POLES ARE TO BE PRE-WIRED BY ART FABRICATOR. ADD ALTERNATE FOR VN-BRT TO SPLICE TOGETHER PREWIRED POLE WIRING VIA HAND HOLE IN EACH POLE, OTHERWISE SFAC RESPONSIBLE FOR CONNECTION.

B. SCUPLTURE LIGHT CONTROLS, DRIVERS, AND POWER BOX ARE TO BE PREMOUNTED AND PRE-TESTED IN POLE #7 CENTRAL GLOBE BY ART FABRICATOR.

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REGISTERED PROFESSIONAL ENGINEER
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No. E19179
ELECTRICAL
STATE OF CALIFORNIA

Electrical Details

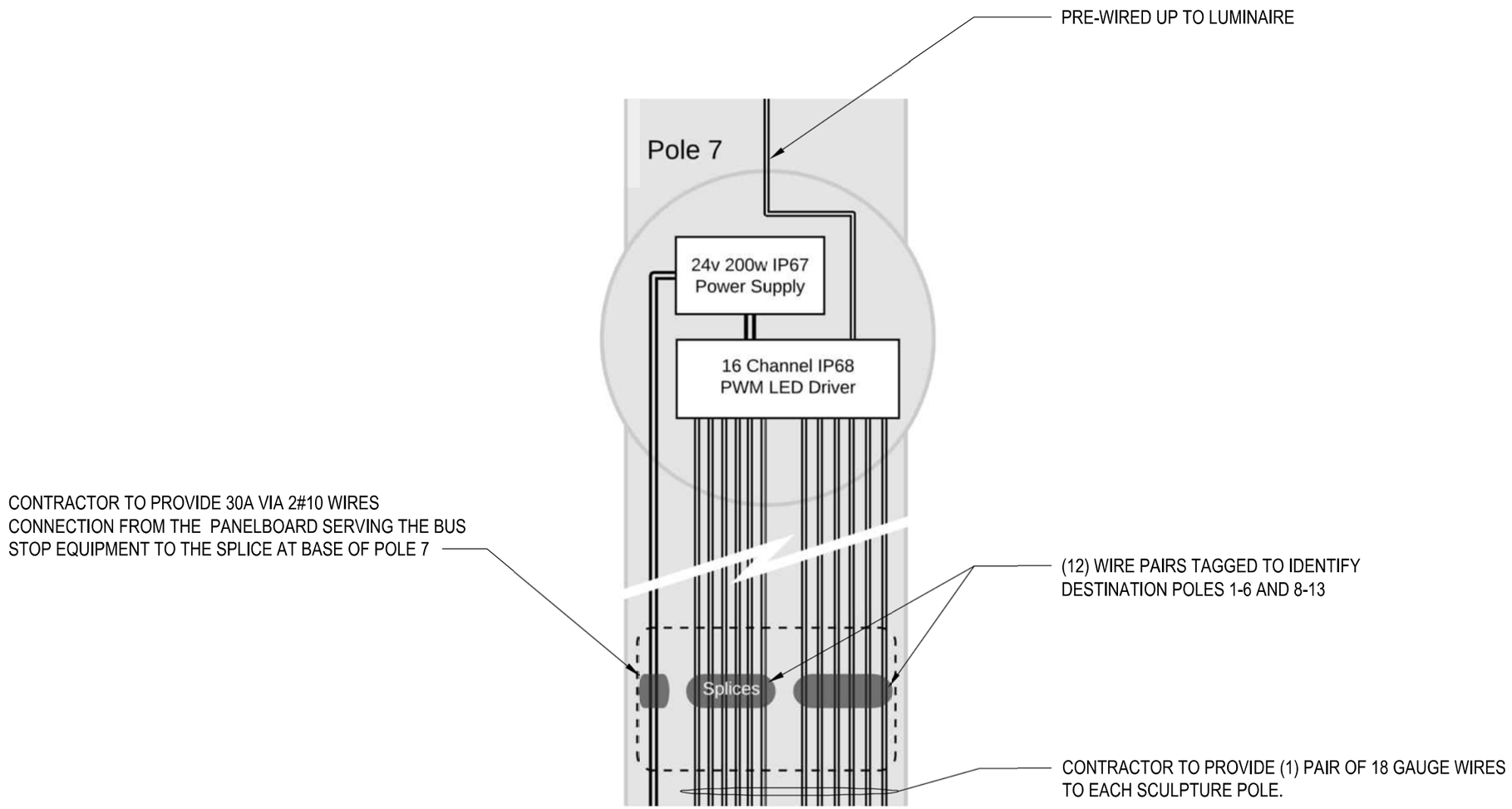
VN-BRT Artworks

06.14.2019

4 OF 6 SHEETS

SCALE: AS NOTED

E6.00



1 SCUPLTURE WIRING DIAGRAM

NTS

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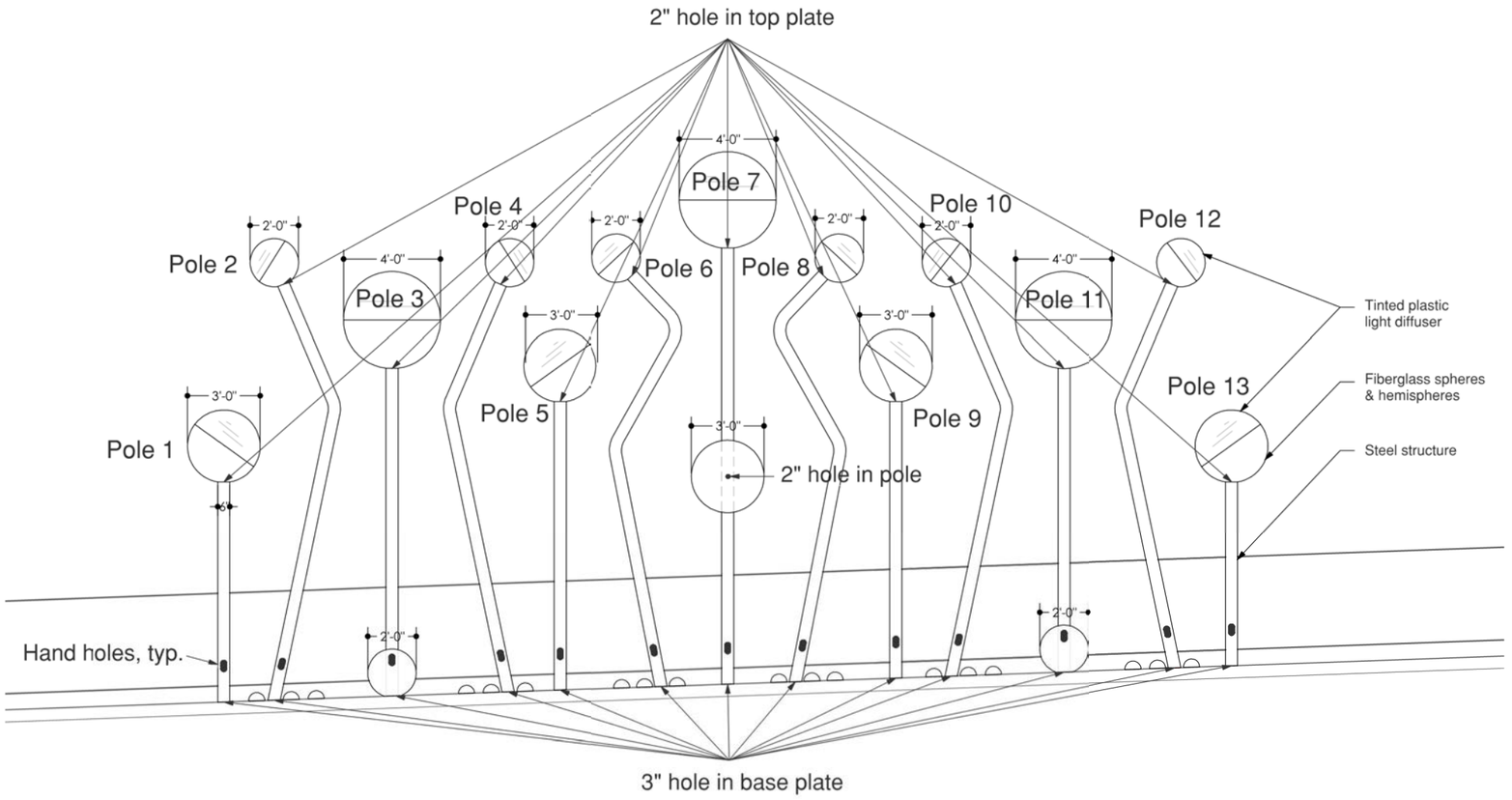
5 OF 6 SHEETS

SCALE: AS NOTED

E6.01



1 SCULPTURE ELEVATION

NTS

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Electrical Details

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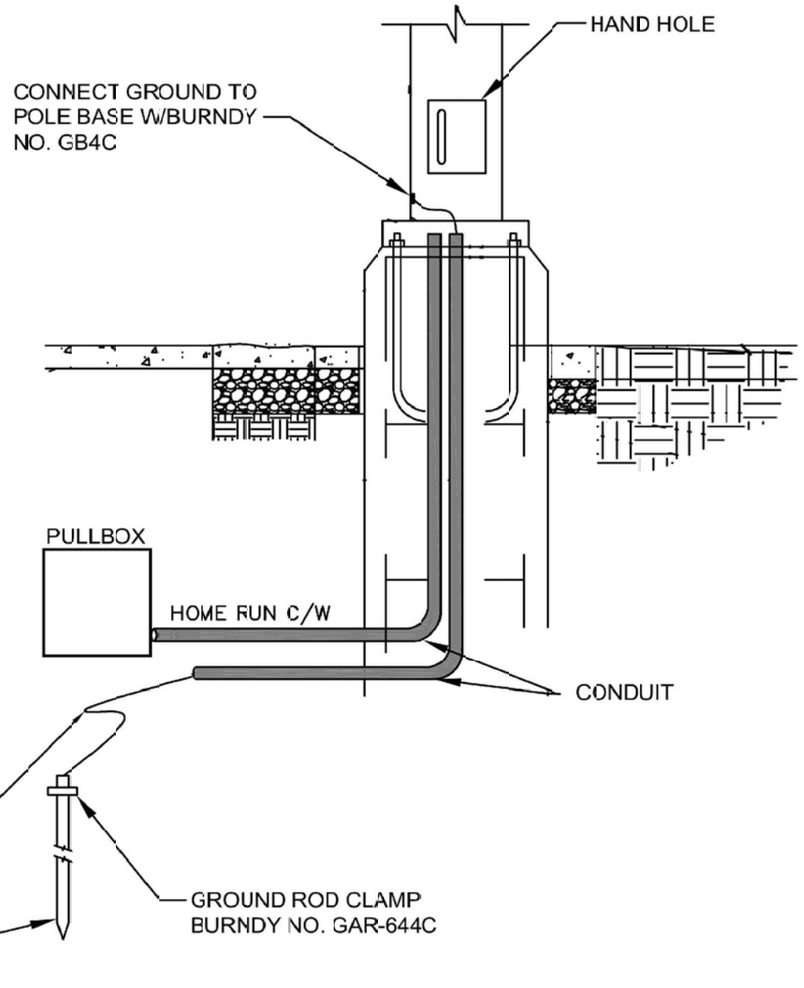
06.14.2019

6 OF 6 SHEETS

SCALE: AS NOTED

E6.02



1 POLE GROUNDING DETAIL

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	REVISION #1	10.28.2019

REGISTERED PROFESSIONAL ENGINEER
JILLIAN P. MORITZ
No. E19179
ELECTRICAL
STATE OF CALIFORNIA

Electrical Details

VN-BRT Artworks

06.14.2019

7 OF 7 SHEETS

SCALE: AS NOTED

E6.03

REFERENCE DOCUMENTS

R: 225
G: 254
B: 255

R: 120
G: 150
B: 19

R: 191
G: 255
B: 191

R: 23
G: 66
B: 139

R: 205
G: 205
B: 0

R: 255
G: 255
B: 206

R: 216
G: 244
B: 96

R: 216
G: 245
B: 245

R: 96
G: 194
B: 244

R: 170
G: 233
B: 223

R: 0
G: 107
B: 107

R: 221
G: 238
B: 133

R: 231
G: 237
B: 251

R: 45
G: 195
B: 196

R: 0
G: 168
B: 150

West Platform: Cool Color Palette

R: 253
G: 239
B: 246

R: 173
G: 4
B: 4

R: 205
G: 179
B: 139

R: 255
G: 140
B: 105

R: 255
G: 222
B: 173

R: 255
G: 255
B: 160

R: 255
G: 236
B: 158

R: 233
G: 176
B: 8

R: 127
G: 0
B: 0

R: 255
G: 127
B: 0

R: 255
G: 191
B: 0

R: 255
G: 210
B: 127

R: 255
G: 192
B: 76

R: 244
G: 164
B: 96

R: 255
G: 133
B: 79

East Platform: Warm Color Palette

prepared by:
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tina@jorgepardosculpture.com
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Suite 300
Las Vegas, NV 89107

SHEET NOTES:

NOT FOR CONSTRUCTION

Color Palette

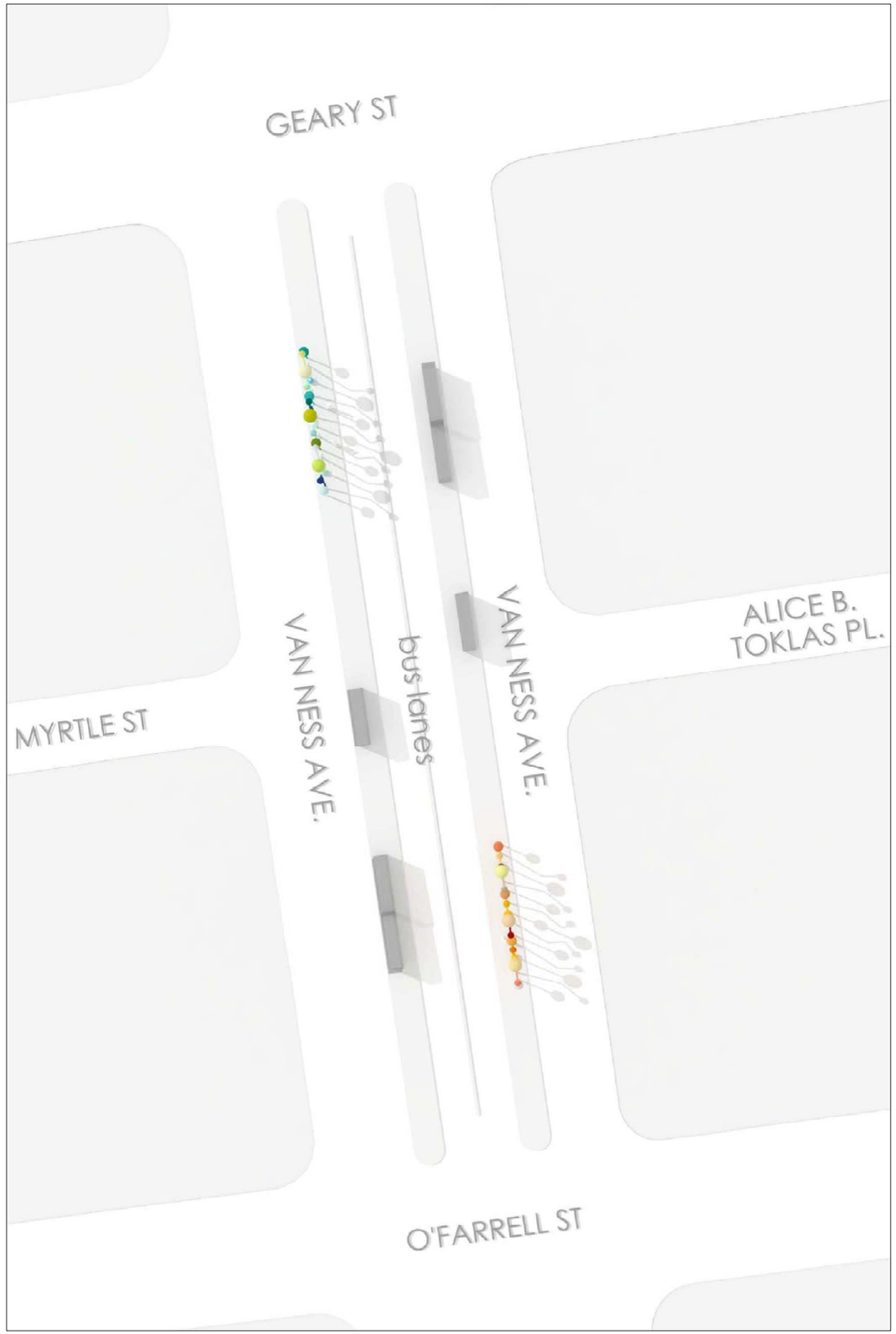
VN-BRT Artworks

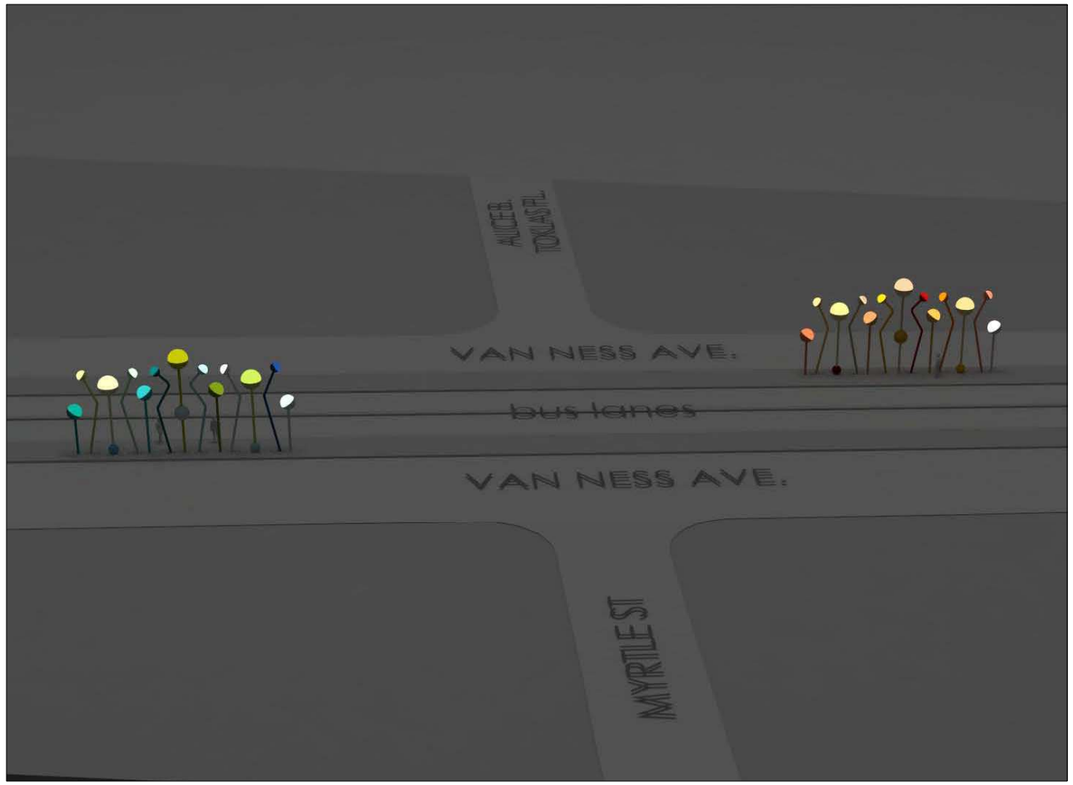
02.14.2019

6 OF 10 SHEETS

SCALE / NTS

A6.1





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Pardo
Sculpture

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SHEET NOTES:

NOT FOR CONSTRUCTION

3D Views

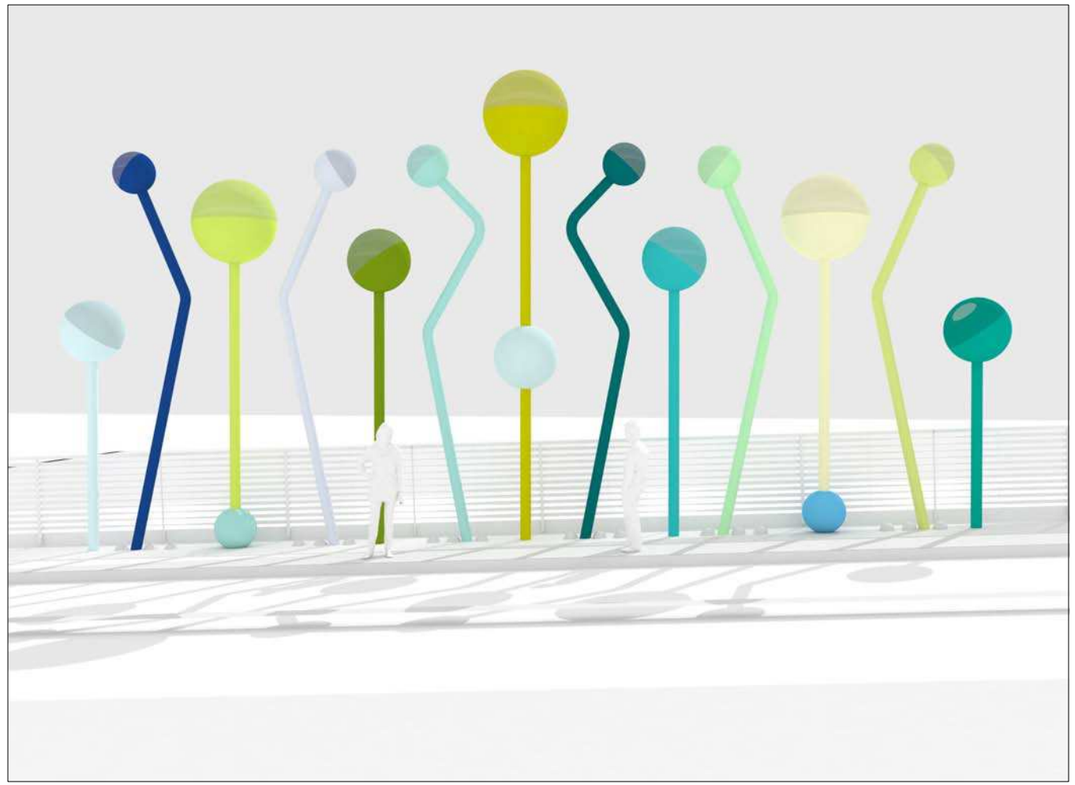
VN-BRT
Artworks

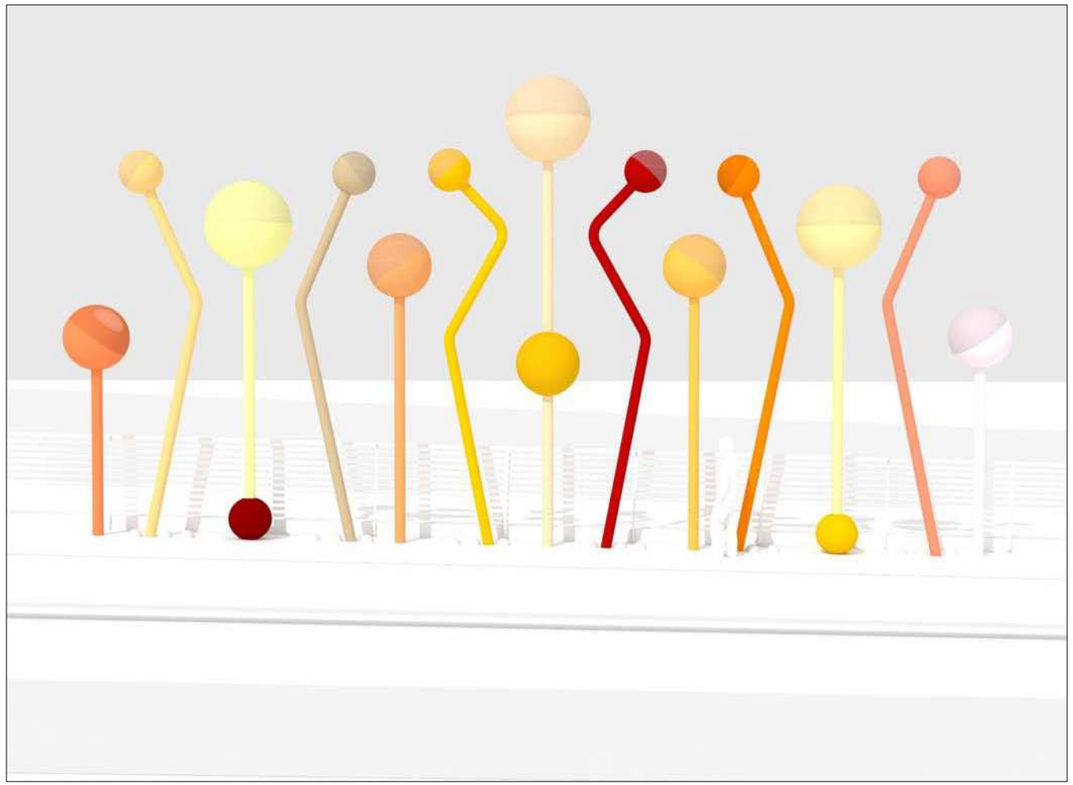
02.14. 2019

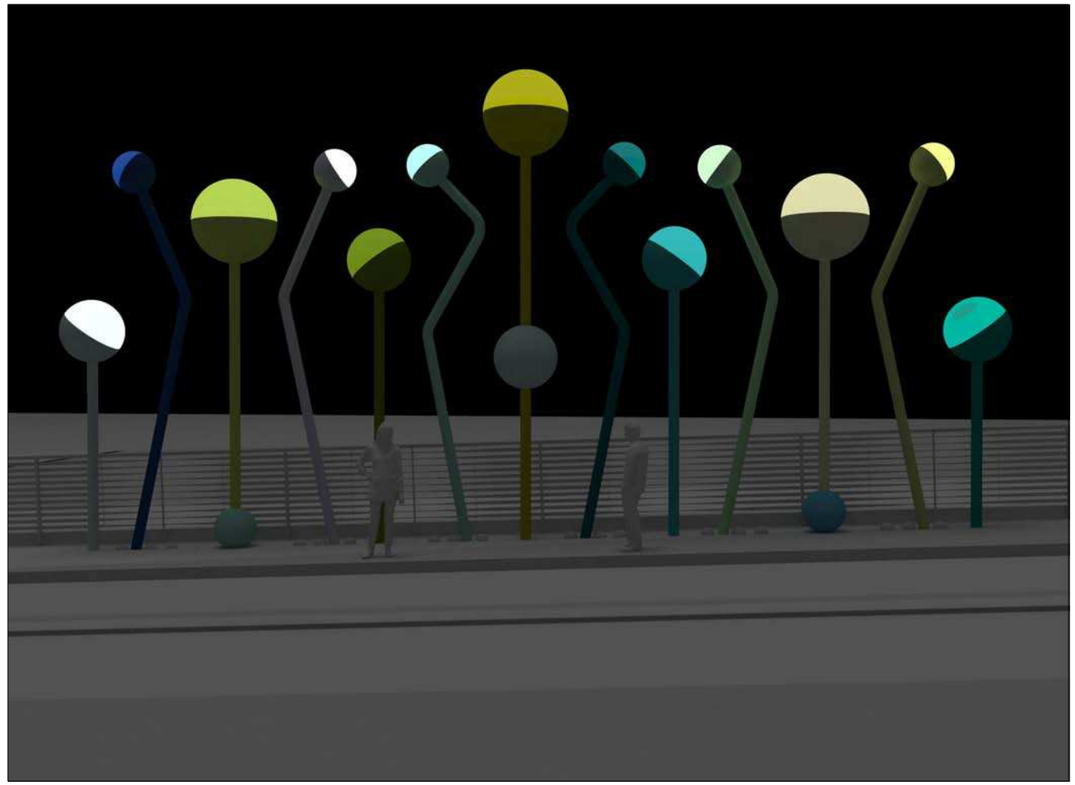
7 OF 10 SHEETS

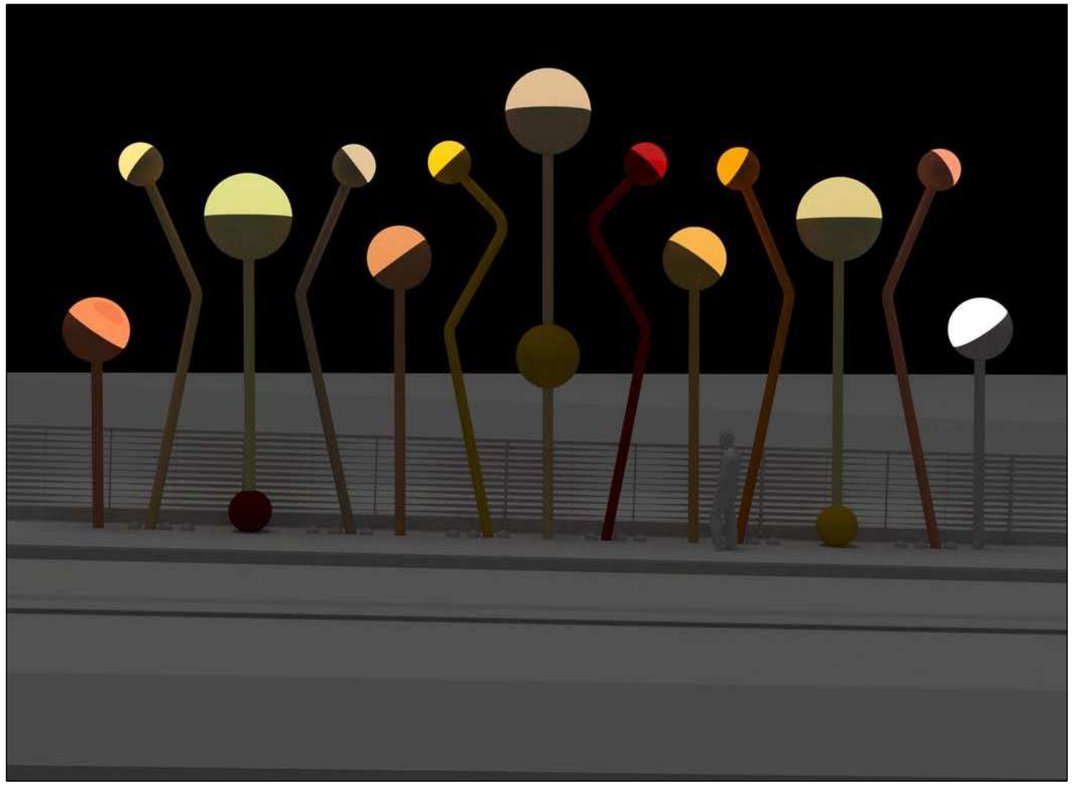
SCALE / NTS

A6.2









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SHEET NOTES:

NOT FOR CONSTRUCTION

3D Views

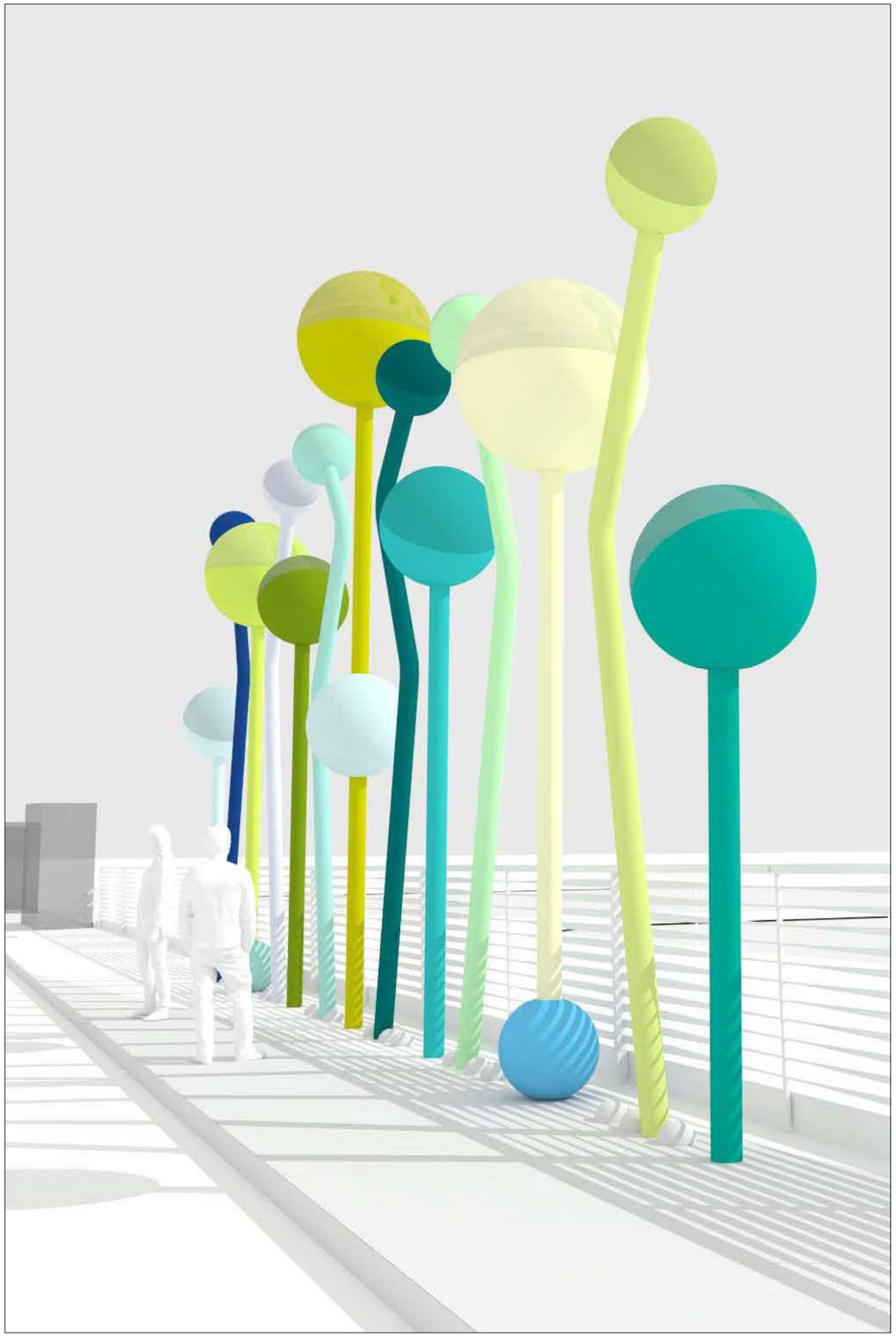
VN-BRT Artworks

03.21. 2019

8 OF 10 SHEETS

SCALE / NTS

A6.3



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SHEET NOTES:

NOT FOR CONSTRUCTION

3D Views

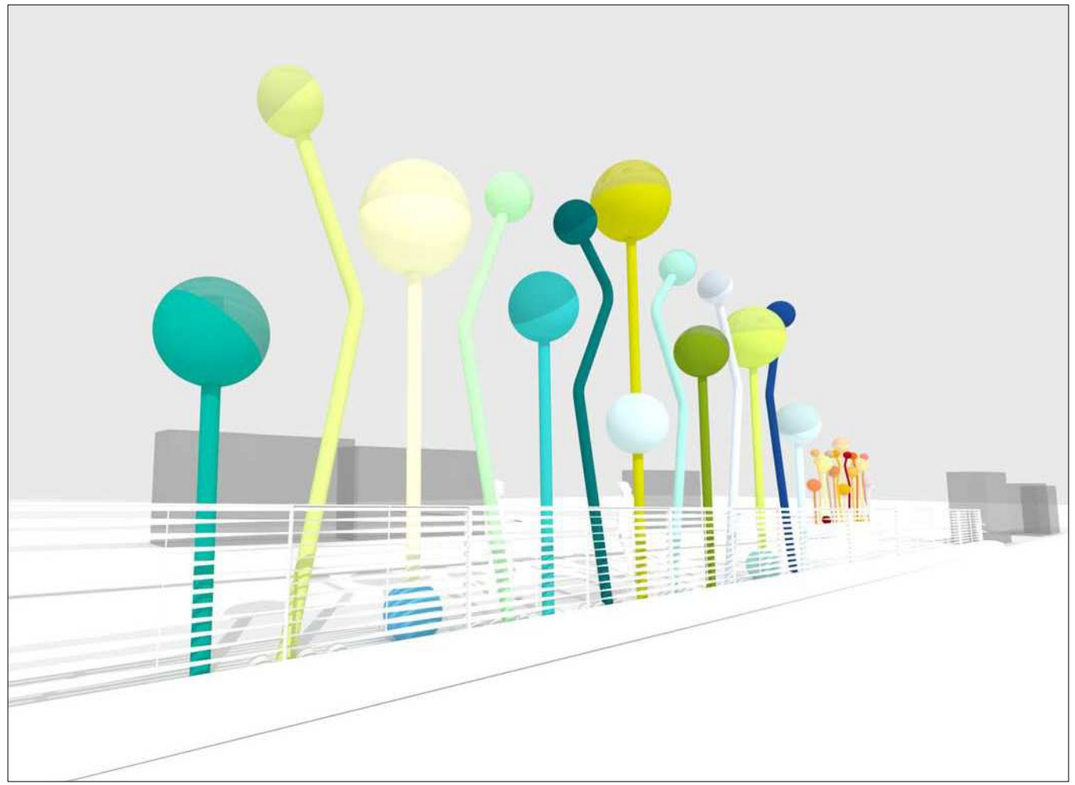
VN-BRT Artworks

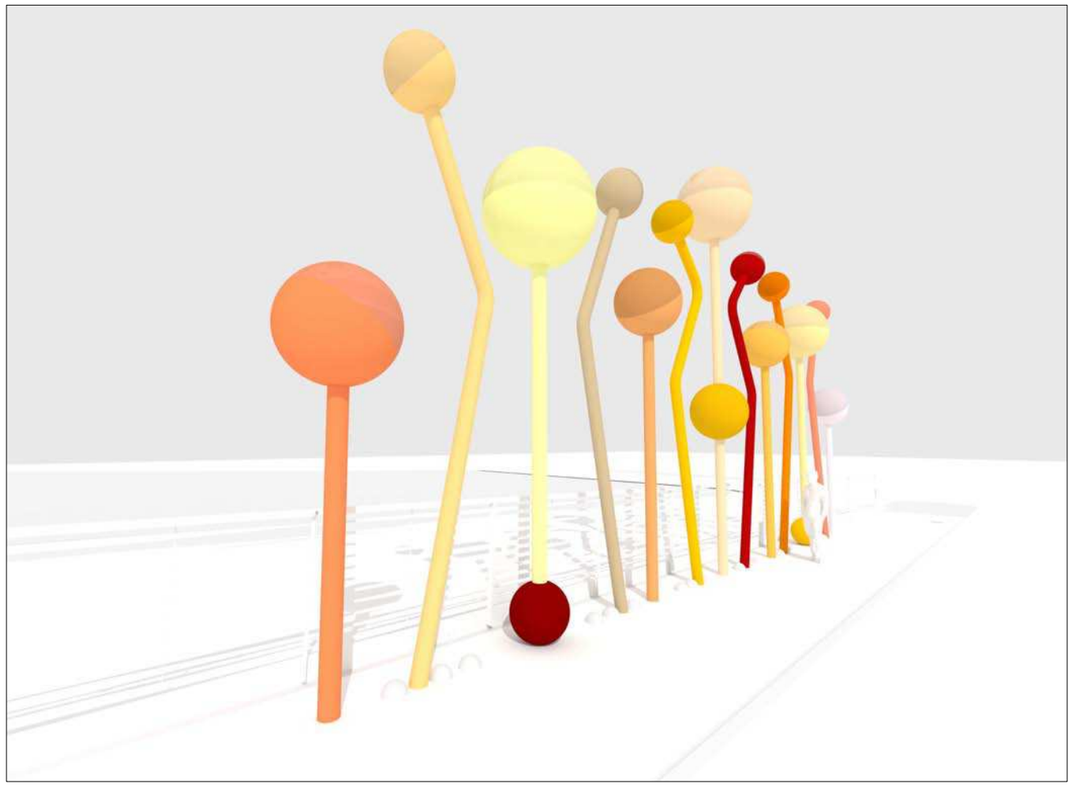
03.21. 2019

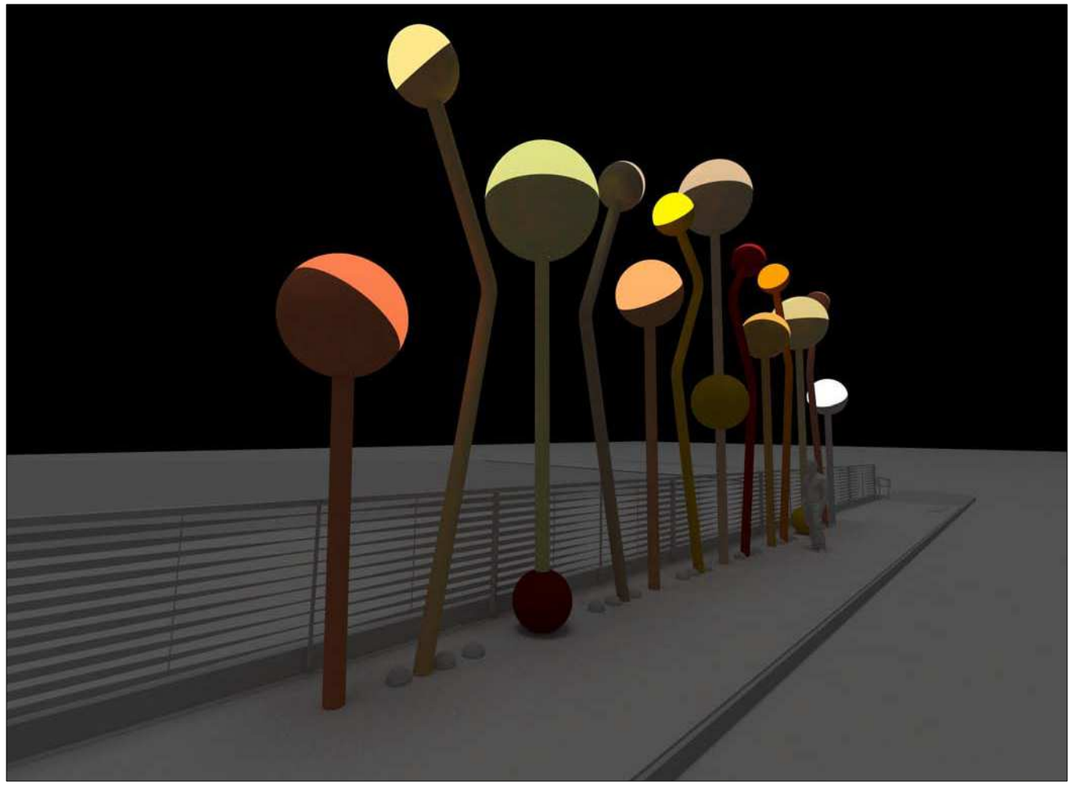
9 OF 10 SHEETS

SCALE / NTS

A6.4







prepared by:

Jorge Pardo Sculpture

tina@jorgepardosculpture.com

500 North Rainbow Blvd.
Suite 300
Las Vegas, NV 89107

SHEET NOTES:

NOT FOR CONSTRUCTION

3D Views

VN-BRT Artworks

03.21. 2019

10 OF 10 SHEETS

SCALE / NTS

A6.5

Attachment 4

DIVISION 26 – ELECTRICAL SYSTEMS

SPECIALITY ILLUMINATION CONSULTANT SCOPE OF WORK

A. The Artwork Fabricator will provide, pre-mount, and pre-test all power and control hardware located in the center globe on pole #7, as well as all the luminaires in the top globes. The Artwork Fabricator will bundle and label the low-voltage wires to indicated which pole each pair of wires will be terminated. The poles will be delivered to site prewired with pigtails emerging from the base of each pole. The VN-BRT contractor is responsible for providing conduit/ pullbox between poles and pulling the wires through the conduit as shown. Add alternate for VN-BRT contractor to splice the prewired poles to the appropriate wires in the prewired bundle at the base of pole #7, otherwise SFAC is responsible for the connection.

SECTION 26 05 01 – ELECTRICAL GENERAL PROVISIONS

A. General: Provide labor and materials required to install, test and place into operation complete, operating electrical systems as called for in the Contract Documents.
B. Codes: Comply with the current applicable codes, ordinances, and regulations of the authority or authorities having jurisdiction, the Owner's insurance underwriter, and applicable base building standards.
C. Quality Assurance: All equipment and installations shall meet or exceed minimum requirements of ADA, ANSI, ASTM, IEEE, IES, NEC, NEMA, NETA, NFPA, OSHA, SMACNA, UL, and the State Fire Marshal. Equipment shall be certified for use in the State of the project and shall meet the State energy code. Provide products and materials that are new, clean, free of defects, and free of damage and corrosion.
D. Guarantee: Guarantee work against faulty and improper material and workmanship for a period of one year from the date of final acceptance by the Owner.
E. Coordination: The electrical drawings show the general arrangement of equipment and appurtenances. Follow these drawings as closely as the actual construction and the work of other trades will permit. Provide offsets, fittings, and accessories, which may be required but not shown on the Drawings. Investigate the site, and review drawings of other trades to determine conditions affecting the work, and provide such work and accessories as may be required to accommodate such conditions.
F. Provide conduit and wire as required for the circuiting and control indicated.
G. Before commencing work, examine adjoining work on which this work is in any way affected and report conditions, which prevent performance of the work. Become thoroughly familiar with actual existing conditions to which connections must be made or which must be changed or altered.
H. Whenever the word "Provide" is used, it shall mean "Furnish and install complete and ready for use".
I. Supports: Support work in accordance with the best industry practice. Provide supports, hangers, auxiliary structural members and supplemental hardware required for support of the work.
J. Existing Equipment and Services: Electrical services not specifically indicated to be removed or altered shall remain as they presently exist. Remove, relocate, and reroute existing electrical equipment to facilitate new construction or remodeling work. Preserve continuity of service of existing facilities (related to damage or alteration due to new construction). Unauthorized alteration to existing equipment shall be corrected without additional cost to the Owner.
K. Cleaning: Clean all fixtures and equipment at the completion of the project. Wipe clean exposed lighting fixture reflectors and trim pieces with a non abrasive cloth just prior to occupancy.

L. Field Testing:

1. Programmable Lighting Control Systems: Completed by specialty illumination consultant.

M. As-Builts: Provide two sets of as-built drawings to the Building Engineer. Indicate new and existing circuiting, junction box locations, and conduit routing. Submit one disk containing a complete set of as-builts for the entire project in AutoCAD 2006 format. Include on the disk PDF versions of all drawings for reference.

N. Identification

1. Unless otherwise noted in specific equipment identification requirements listed below, identify electrical equipment with permanently attached black phenolic identification nameplates with ½-inch high white engraved lettering. Identification shall include equipment name or load served as appropriate. Nameplates for equipment connected to the emergency power system shall be red with white lettering. Nameplates shall be attached with cadmium-plated screws; peel-and-stick tape or glue-on type nameplates are not allowed.
2. Equipment
    a. Lighting Controls: To be provided by specialty illumination consultant.
3. Cabling
    a. Cable tags: To be provided by specialty illumination consultant
4. Raceways
    a. Raceways and Boxes
        1) Mark junction box covers with permanent stencil identification of panelboard and circuit numbers of wiring contained within.
    b. Modular Wiring System
        1) Label distribution junction box with panelboard and circuit numbers.

O. The Artist or Artist's Representative may conduct unannounced field reviews of any work completed or in progress during the Contractor's working hours. A report will be issued to the Contractor if the field review of the electrical systems construction has revealed elements of the work which are inconsistent with the Contract Documents. All items in the report shall be addressed in writing by the Contractor within two (2) weeks and corrections in the field shall be made as directed.

END OF SECTION 26 05 01

SECTION 26 05 19 – 600 VOLT WIRE AND CABLE

A. Acceptable Manufacturers:

1. Copper: Anaconda, General Cable, Okonite, National, Simplex or Triangle.

B. Connectors:

1. Hand applied for number 12 through number 6: Piggy (Thomas & Betts), Scotchlock (3M), or Wing Nut (Ideal).
2. Tool applied for number 4 through number 1: Tool applied: One hole compression type, Burndy HYLUG or Thomas & Betts 54000 Series.
3. Electrical tape: Insulating type, Johns-Manville or 3M.

C. Wire and Cable:

1. 600 volts minimum insulation rating, electrical grade, annealed copper, tinned if rubber insulated, and fabricated in accordance with ASTM and IPCEA standards. Minimum size number 12. Aluminum conductors are not permitted.
2. Number 12 and number 10 solid, larger than number 10, stranded ASTM Class B.
3. Aluminum conductors are not permitted.

D. Insulation:

1. Copper: 600 volts, 90 degree C PVC insulation, nylon jacket, surface printed identification, listed as type THHN or THWN per UL 83.

E. Color Coding:

Conductor	**120/208V System**
Phase A	Black
Phase B	Red
Phase C	Blue
Neutral	White
Ground	Green

END OF SECTION 26 05 19

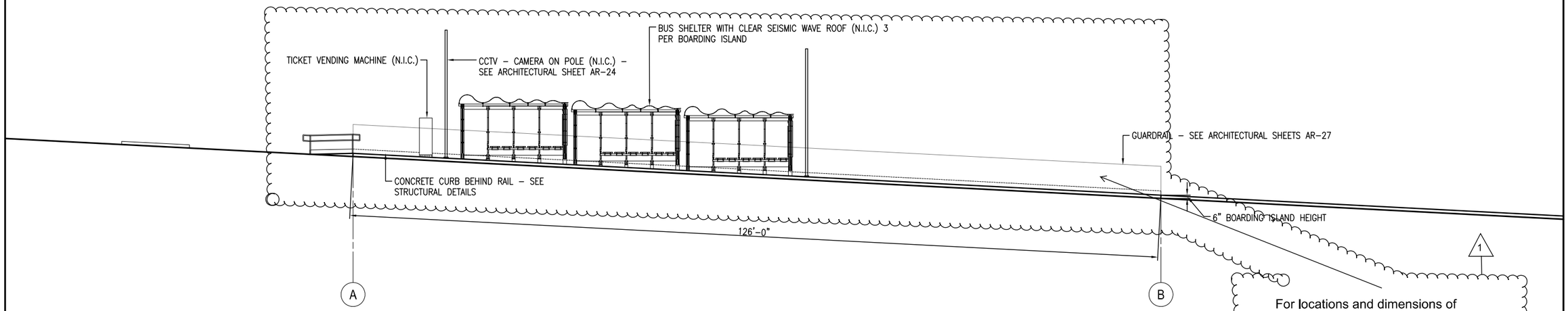
SECTION 26 05 33 – RACEWAYS AND BOXES

A. Provide raceway between poles for luminaire power and controls.
B. Rigid Non-Metallic Conduit:

1. Schedule 40 polyvinyl chloride suitable for 90 degrees C.
2. Solvent cemented type fittings.

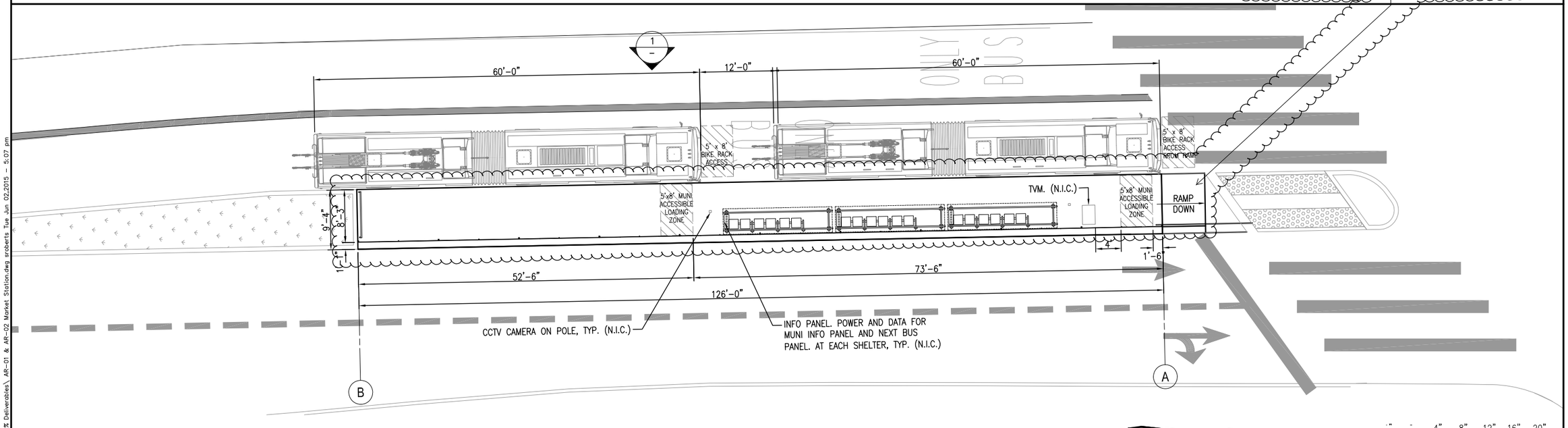
END OF SECTION 26 05 33

Attachment 5



1 WEST ELEVATION AT MARKET ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT MARKET ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO
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DESIGNED
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RECOMMENDED
APPROVED
DATE

LICENSED ARCHITECT
WILL W. H. KWAN
NO. C - 18253
REN. 11/2015
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT MARKET ST.
NORTHBOUND

1289

CL–28878

AR–01

REVISION 1

AR–31

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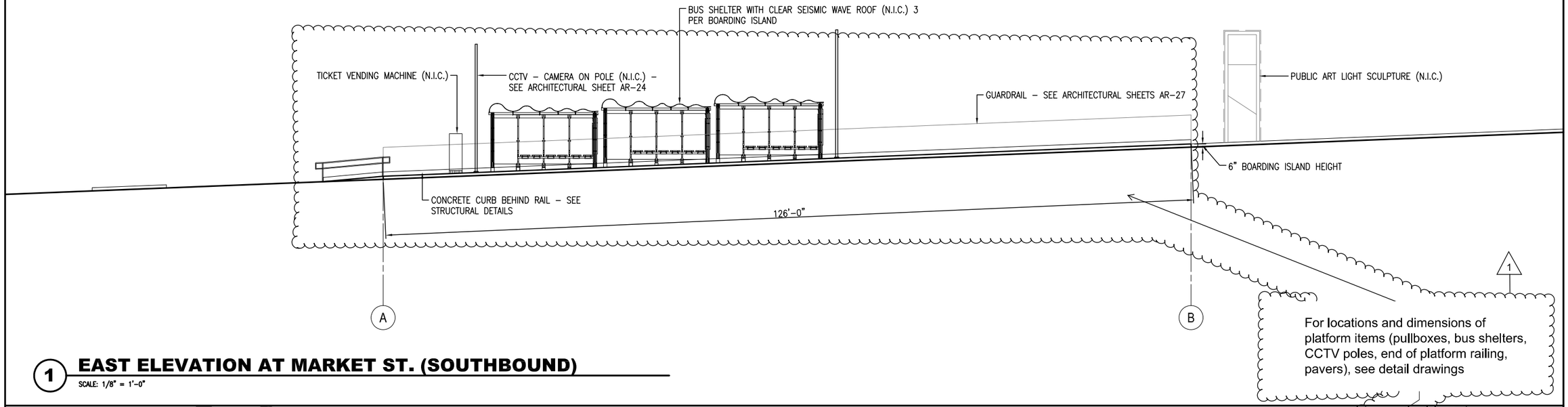
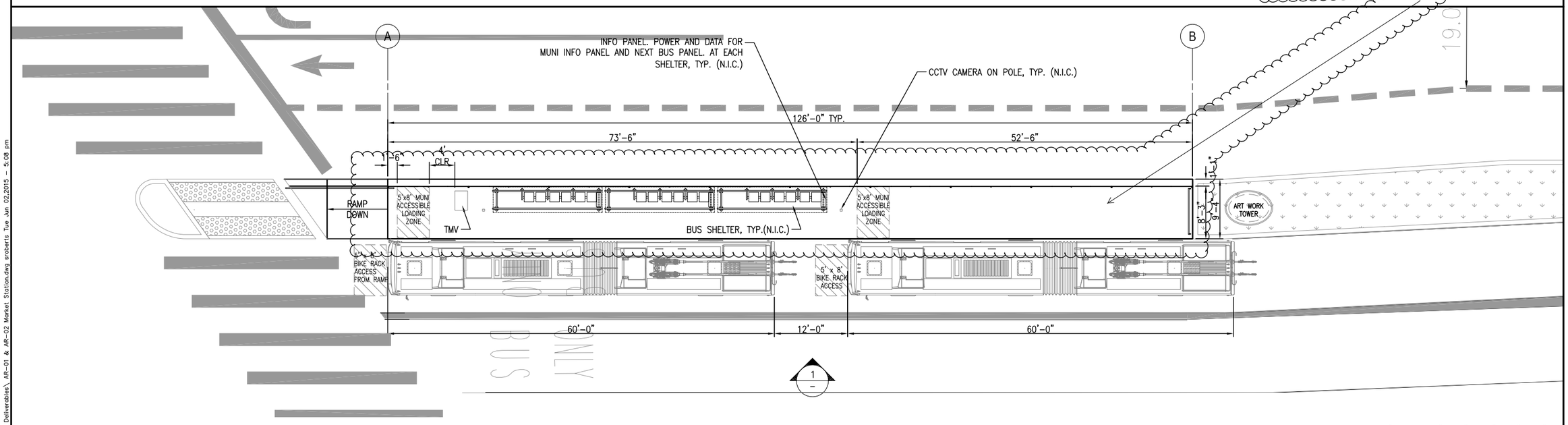


1 EAST ELEVATION AT MARKET ST. (SOUTHBOUND)

SCALE: 1/8" = 1'-0"



2 BOARDING ISLAND PLAN AT MARKET ST. (SOUTHBOUND)

SCALE: 1/8" = 1'-0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'-0"

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VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT MARKET ST. SOUTHBOUND

1289

CL–28879

AR–02

REVISION 1

AR–31

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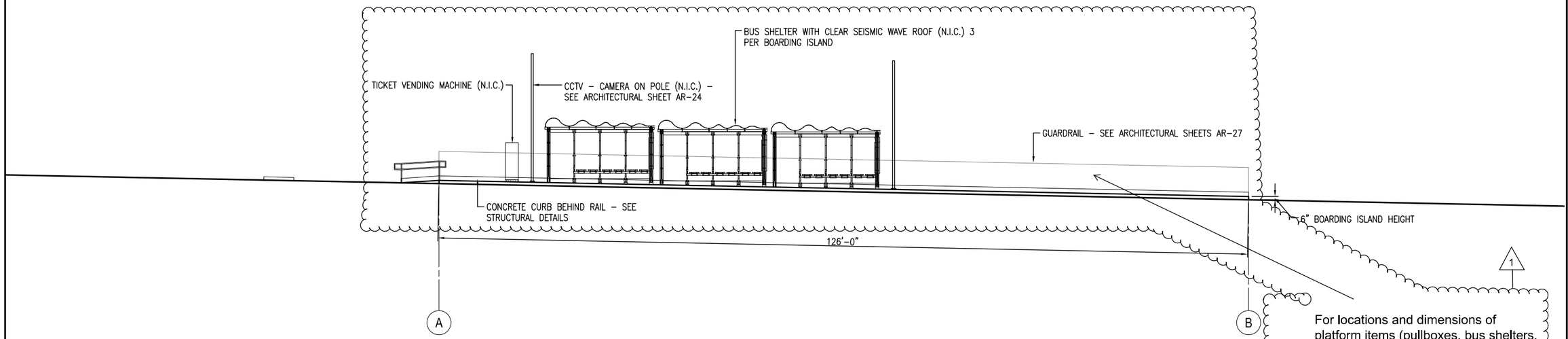
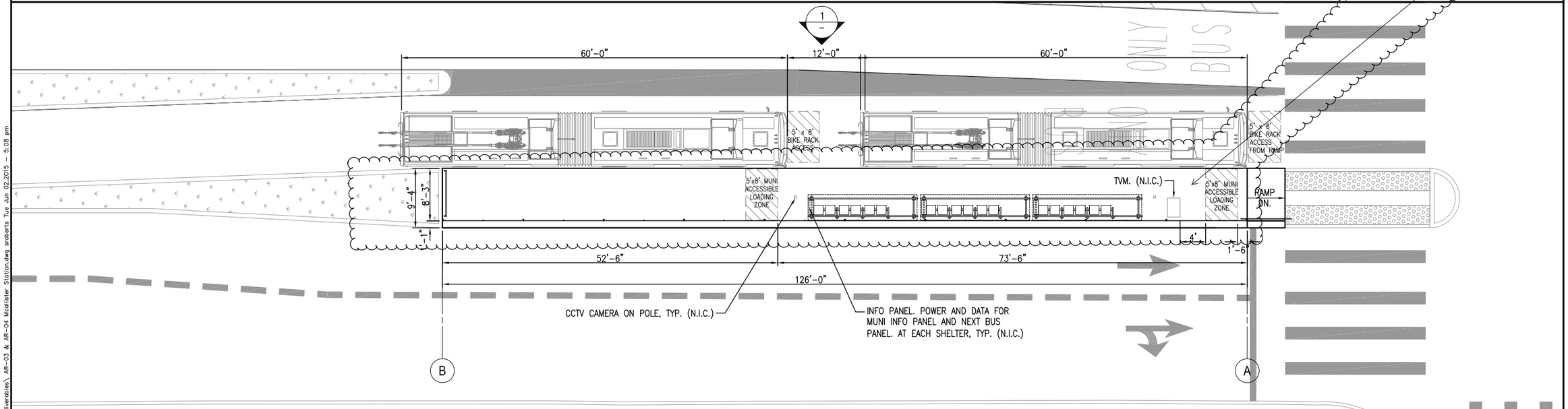


1 WEST ELEVATION AT MCALLISTER ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT MCALLISTER ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

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MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT MCALLISTER ST. NORTHBOUND

1289

CL–28880

AR–03

AR–31

REVISION 1

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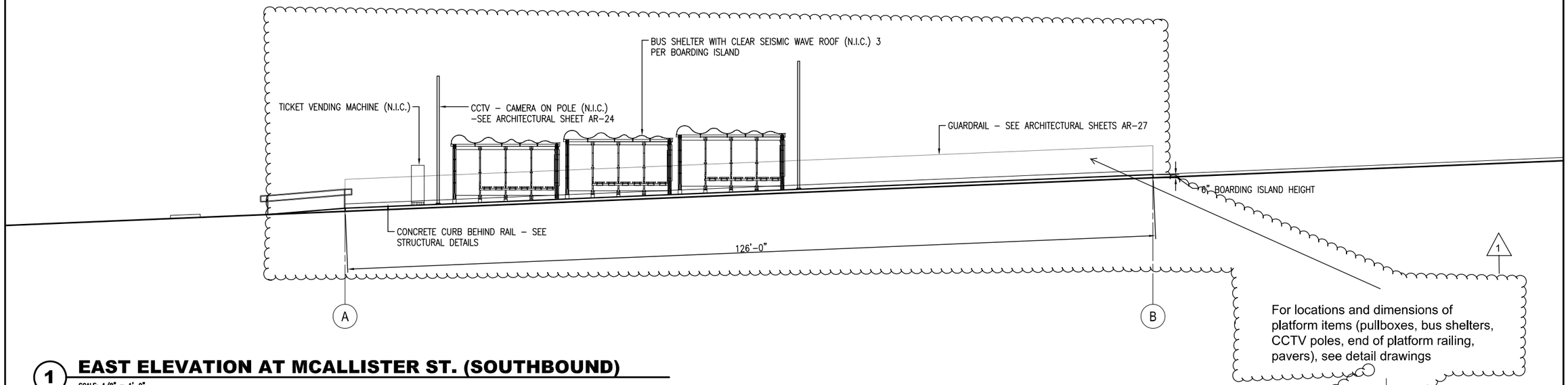

1 EAST ELEVATION AT MCALLISTER ST. (SOUTHBOUND)

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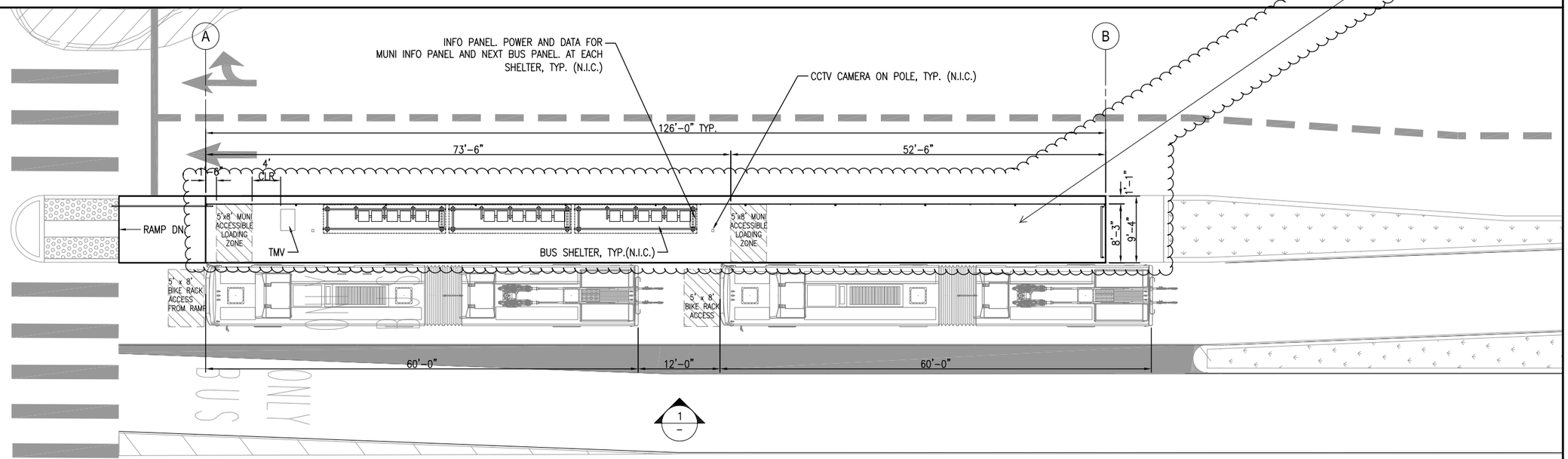

2 BOARDING ISLAND PLAN AT MCALLISTER ST. (SOUTHBOUND)

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1/8"= 1'–0"

JUNE, 2015

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VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT MCALLISTER ST. SOUTHBOUND

1289
CL–28881
AR–04
AR–31
REVISION 1

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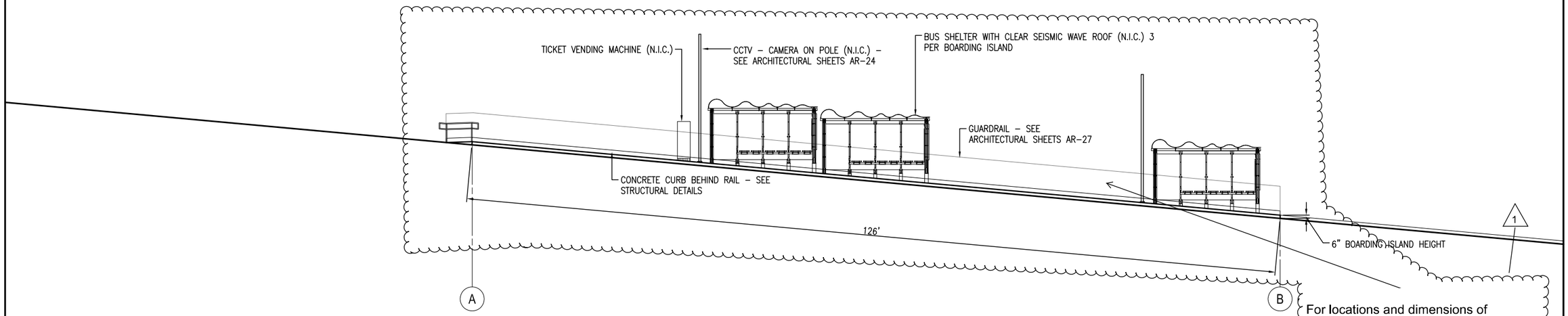

1 WEST ELEVATION AT EDDY ST. (NORTHBOUND)

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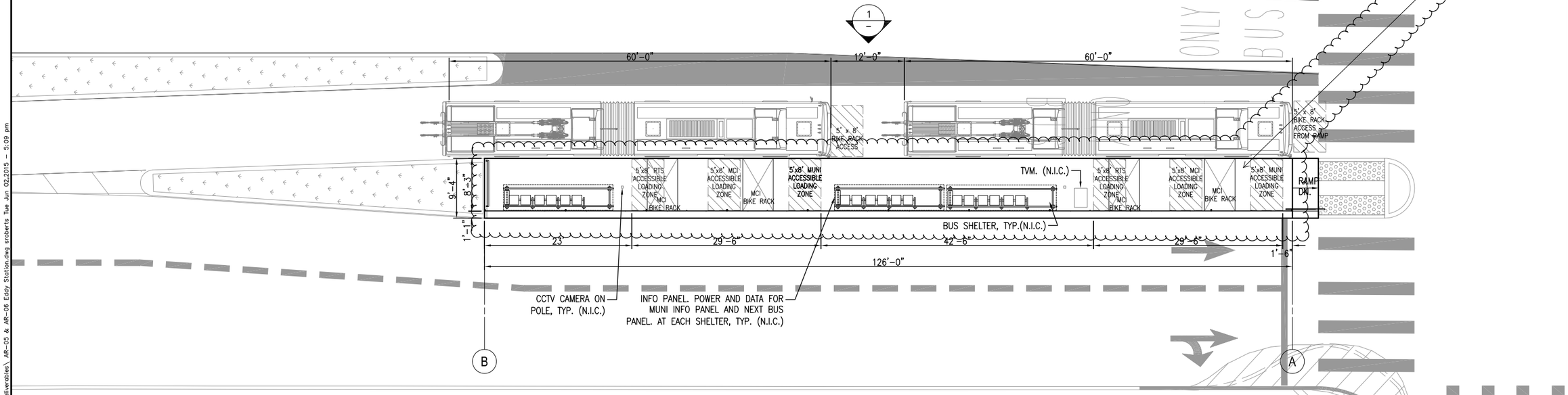

2 BOARDING ISLAND PLAN AT EDDY ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

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1/8"= 1'–0"

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NORTHBOUND

1289
CL–28882
AR–05
AR–31
REVISION 1

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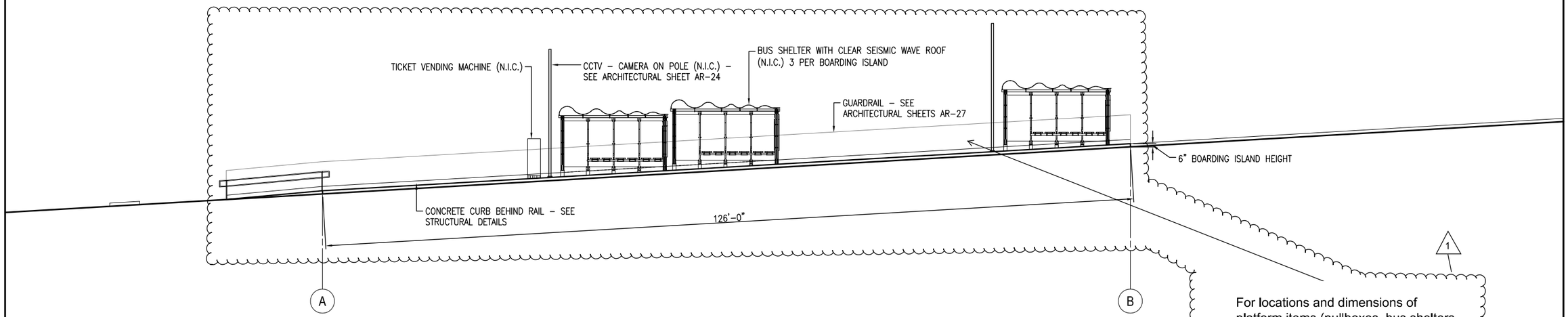
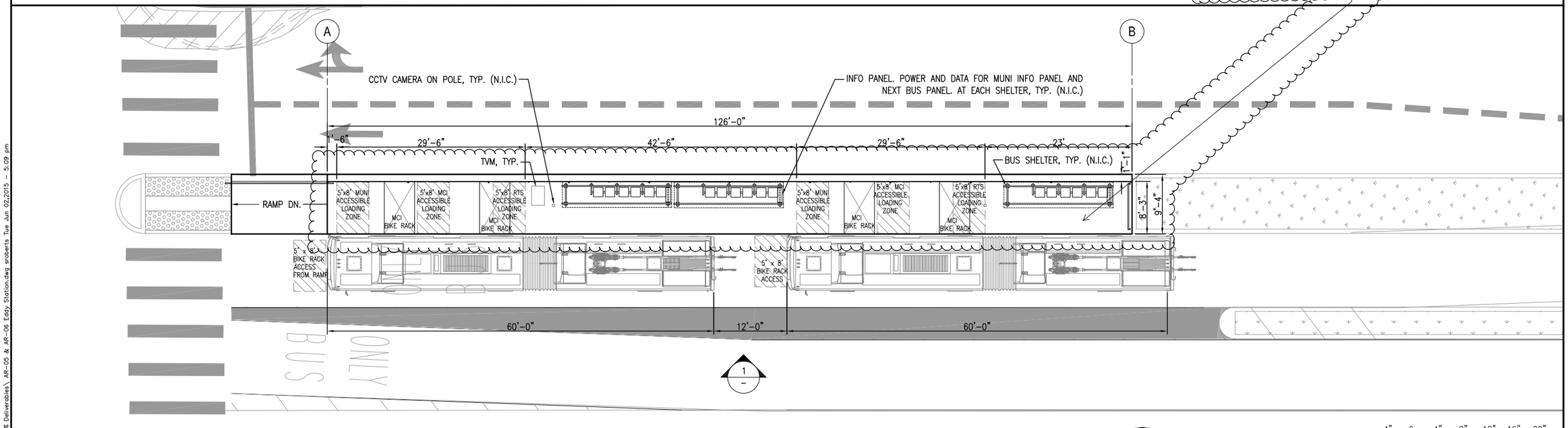


1 EAST ELEVATION AT EDDY ST. (SOUTHBOUND)

SCALE: 1/8" = 1'-0"



2 BOARDING ISLAND PLAN AT EDDY ST. (SOUTHBOUND)

SCALE: 1/8" = 1'-0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'-0"

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VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT EDDY ST. SOUTHBOUND

1289

CL-28883

AR-06

AR-31

REVISION 1

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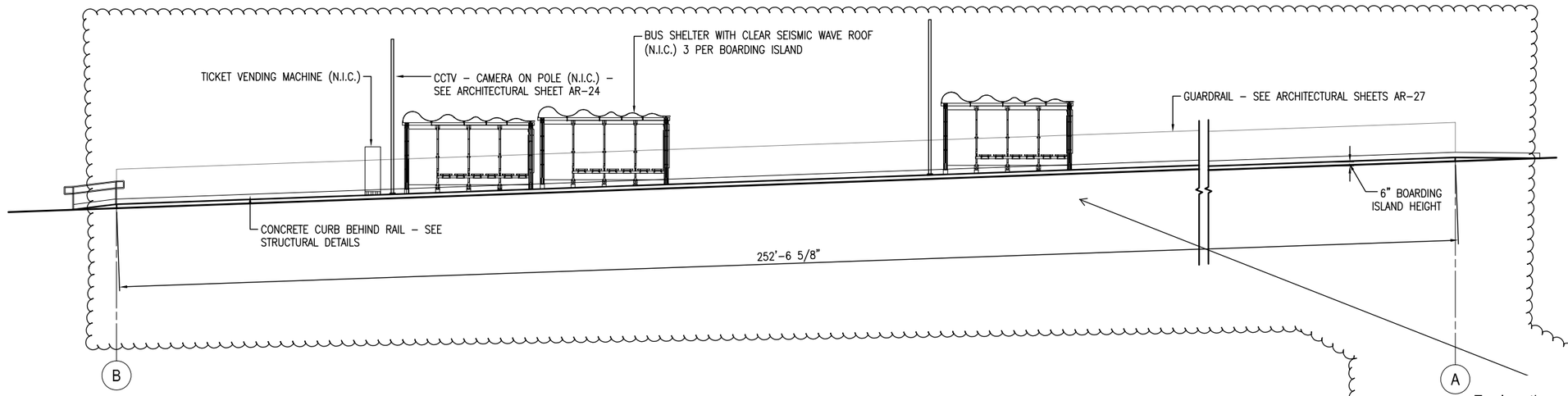
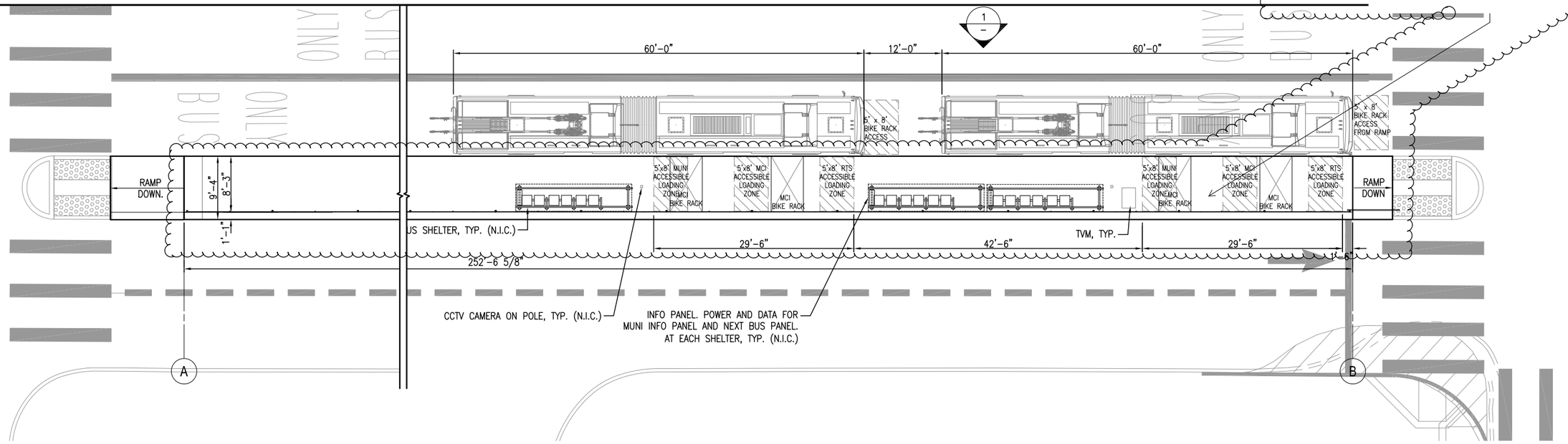


1 WEST ELEVATION AT O'FARRELL ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

For locations and dimensions of platform items (pullboxes, bus shelters, CCTV poles, end of platform railing, pavers), see detail drawings



2 BOARDING ISLAND PLAN AT O'FARRELL ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
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REVISIONS

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT O'FARRELL ST. NORTHBOUND

1289
CL–28884
AR–07
AR–31
REVISION 1

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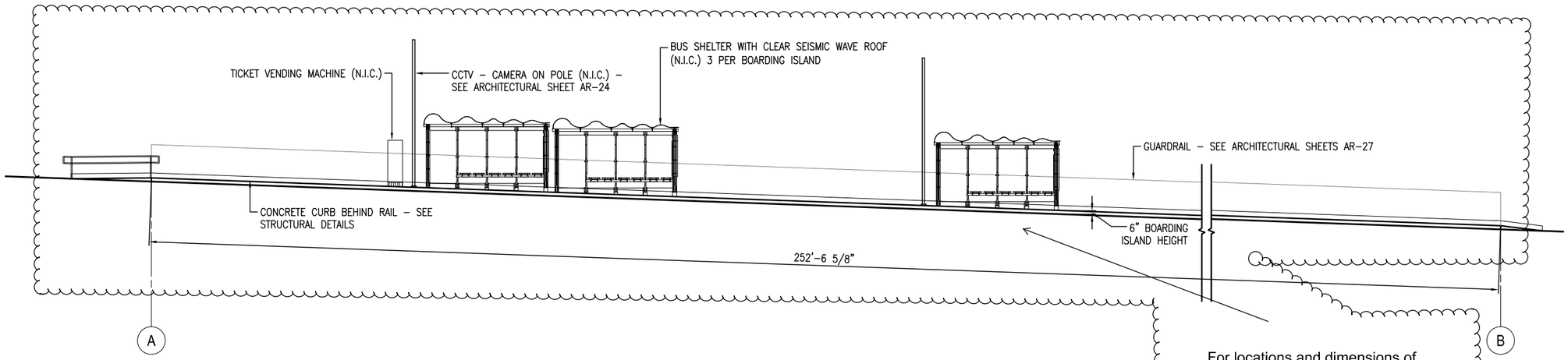
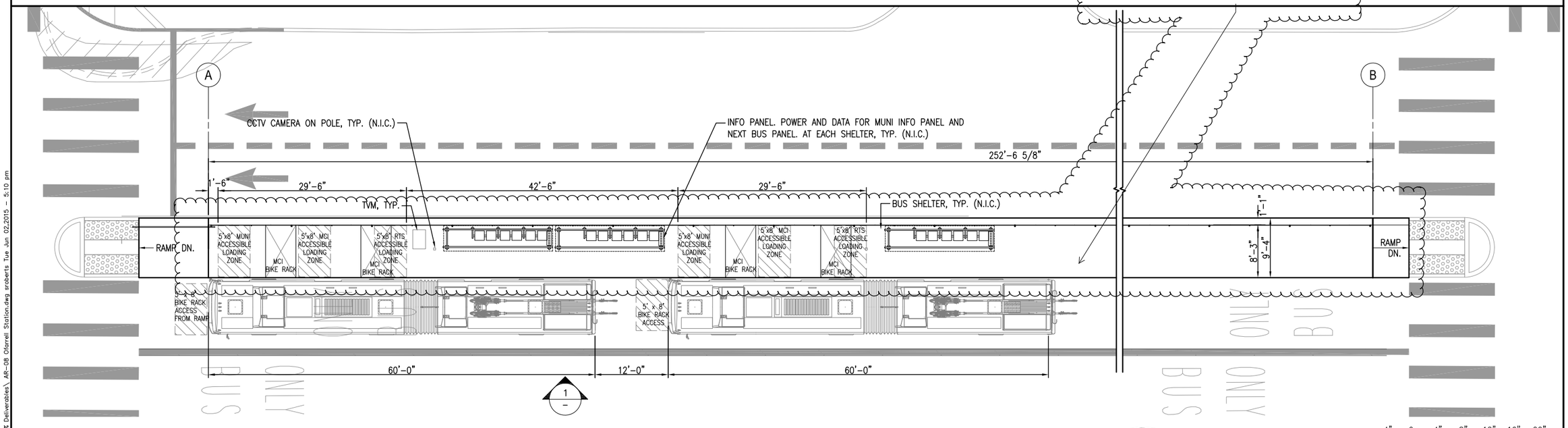
BORDER REVISED 11/17/05



1 EAST ELEVATION AT O'FARREL ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT O'FARREL ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

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MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT O'FARREL ST. SOUTHBOUND

1289

CL–28885

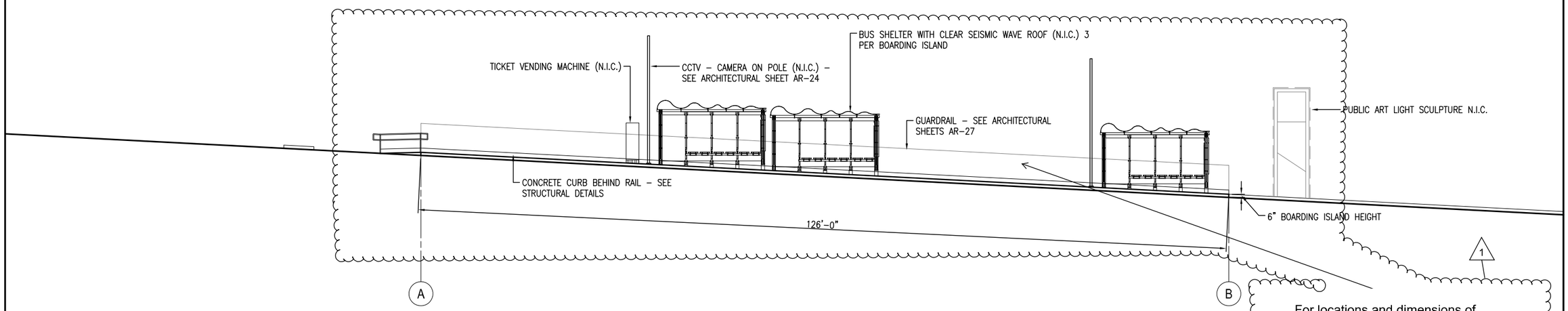
AR–08

AR–31

REVISION 1

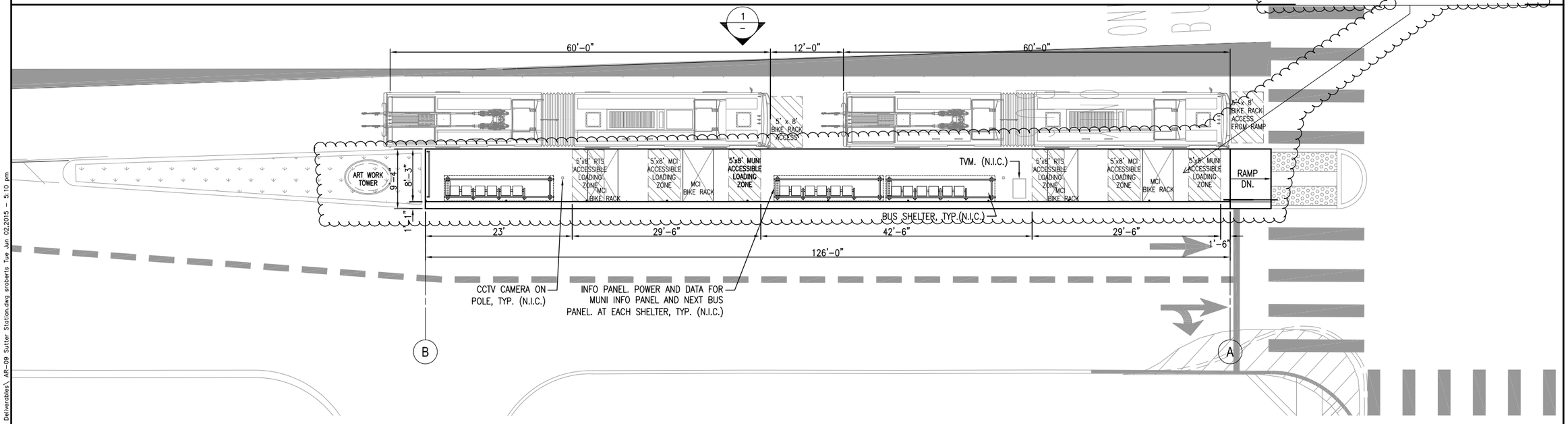
R:\2106J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–08 Ofarrell Station.dwg sroberts Tue Jun 02,2015 – 5:10 pm

BORDER REVISED 11/17/05



1 WEST ELEVATION AT SUTTER & BUSH ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT SUTTER & BUSH ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO
30 Van Ness Avenue, Suite 4100
San Francisco, CA 94102–6028
(415) 557–4700
Fax (415) 557–4701

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REVIEWED
RECOMMENDED
APPROVED
DATE

LICENSED ARCHITECT
WILL W. H. KWAN
NO. C–18253
REN. 11/2015
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT SUTTER & BUSH ST. NORTHBOUND

1289

CL–28886

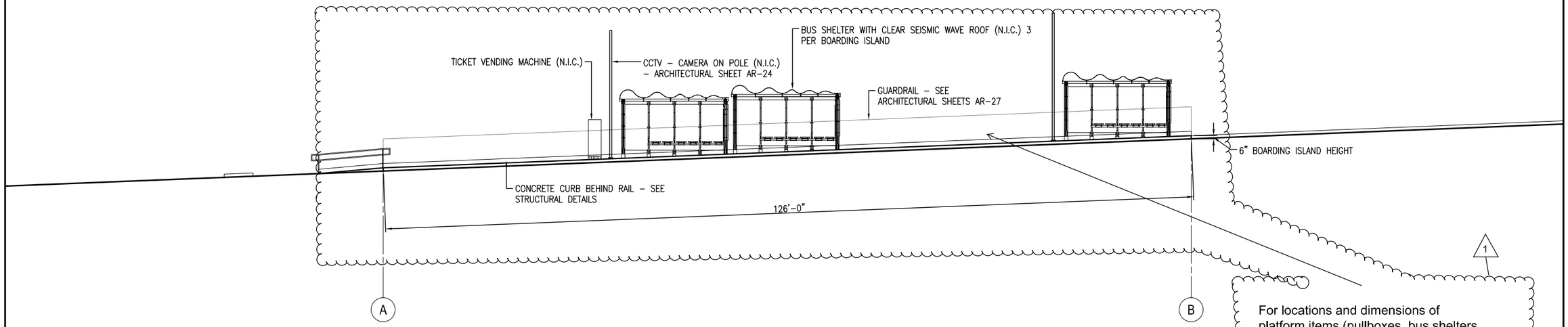
AR–09

AR–31

REVISION 1

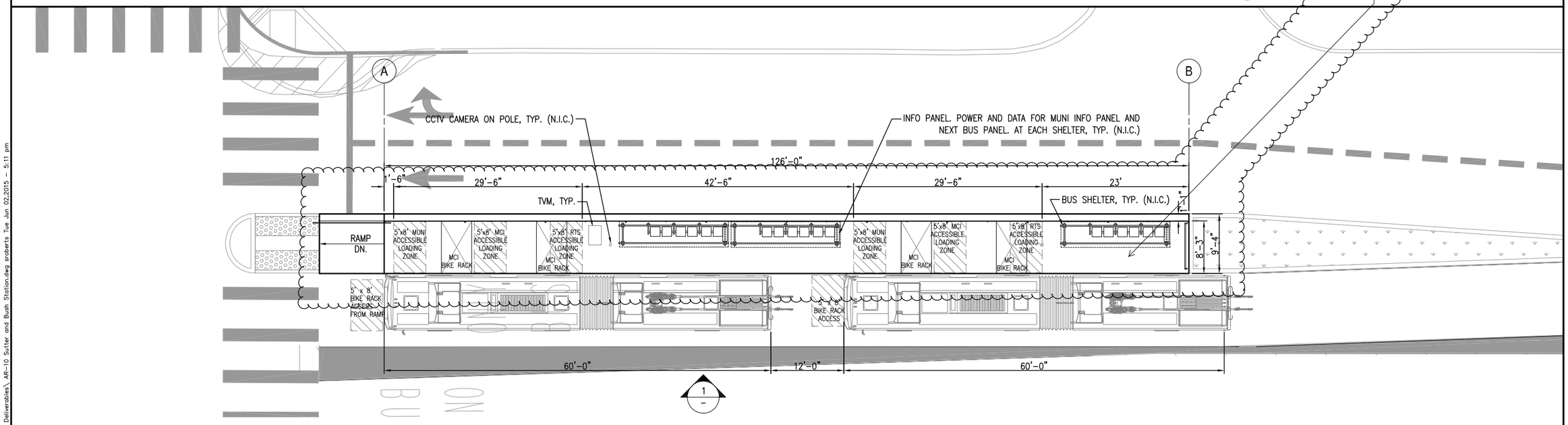
R:\2106J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–09 Sutter Station.dwg sroberts Tue Jun 02,2015 – 5:10 pm

BORDER REVISED 11/17/05



1 EAST ELEVATION AT SUTTER & BUSH ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT SUTTER & BUSH ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

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MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT SUTTER & BUSH ST. SOUTHBOUND

1289

CL–28887

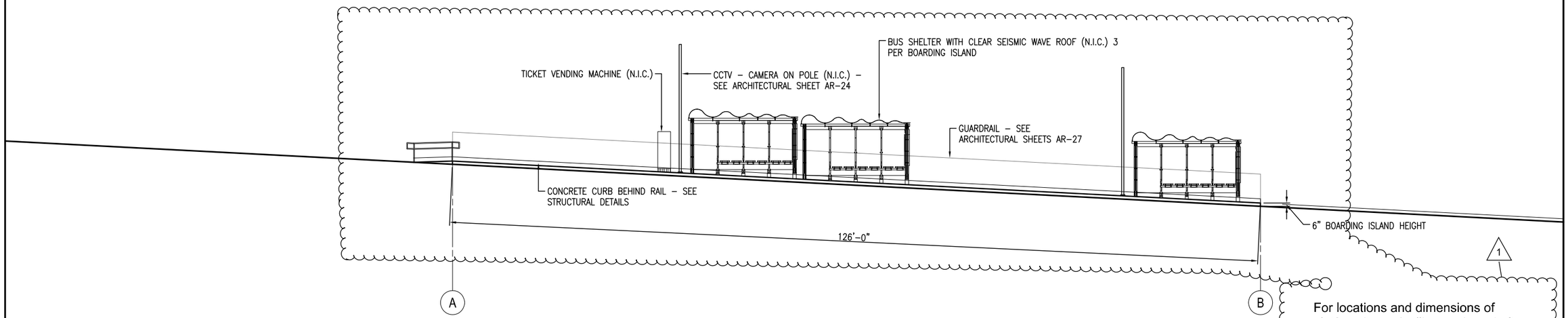
AR–10

AR–31

REVISION 1

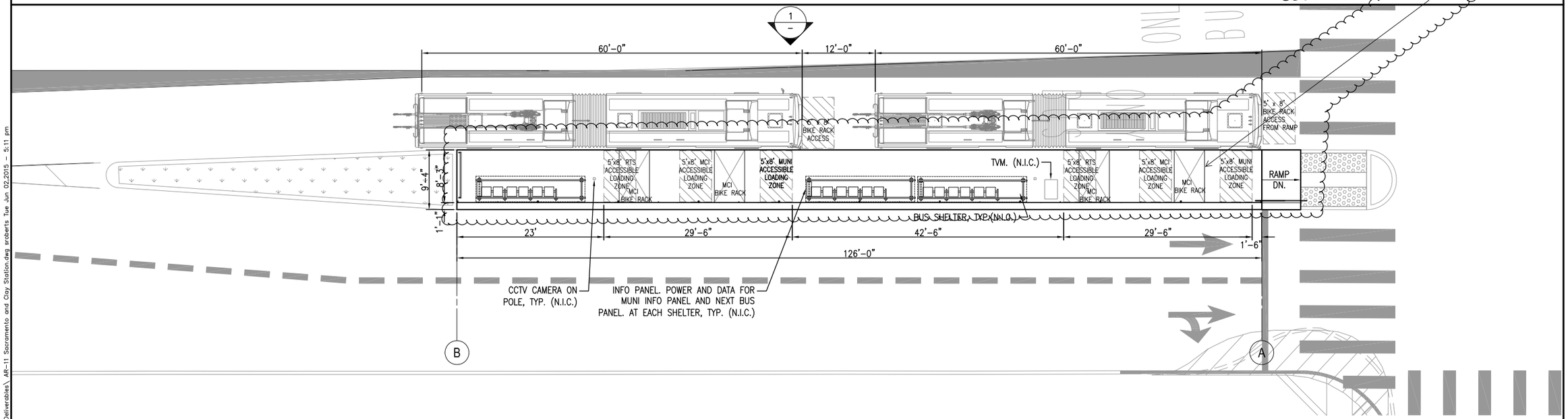
R:\2105J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–10 Sutter and Bush Station.dwg sroberts Tue Jun 02,2015 – 5:11 pm

BORDER REVISED 11/17/05



1 WEST ELEVATION AT SACRAMENTO & CLAY ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT SACRAMENTO & CLAY ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

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DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO
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WILL W. H. KWAN
NO. C - 18253
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CITY AND COUNTY OF SAN FRANCISCO
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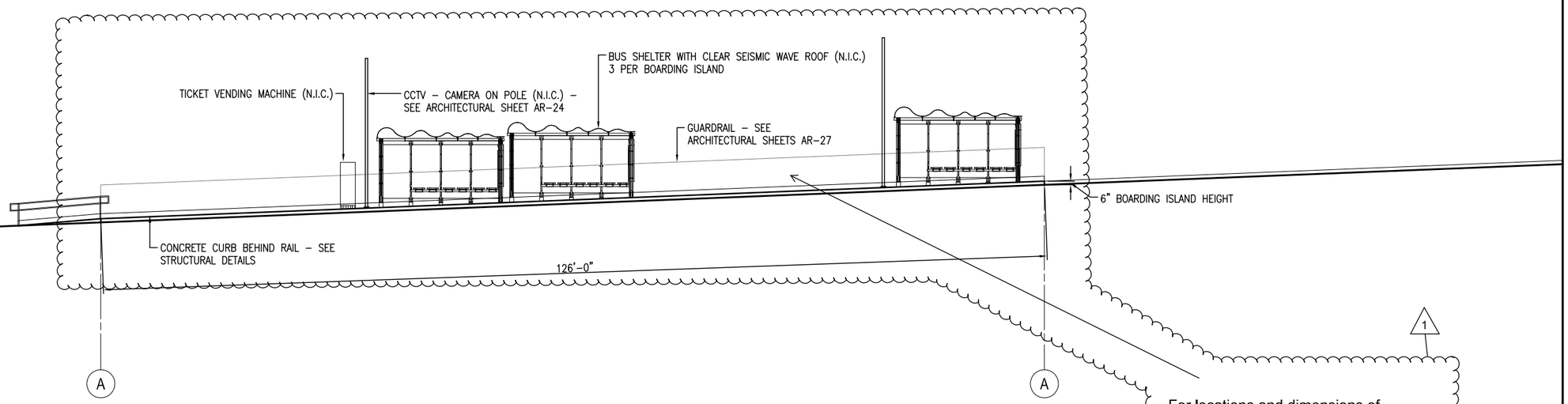
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT SACRAMENTO & CLAY ST. NORTHBOUND

1289
CL–28888
AR–11
AR–31
REVISION 1

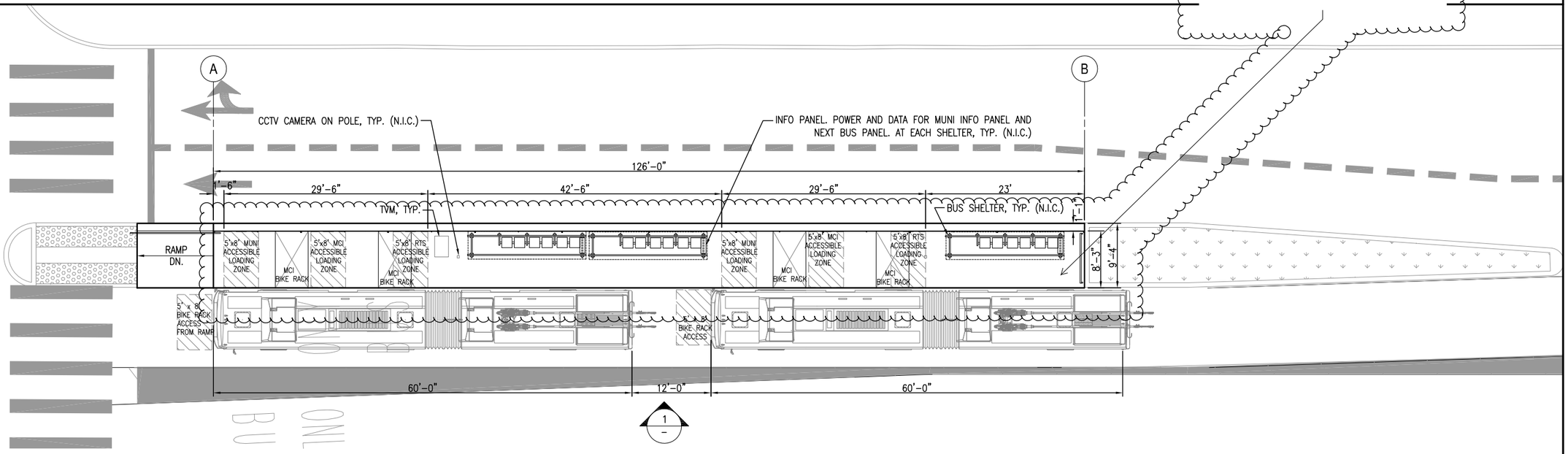
R:\2706J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–11 Sacramento and Clay Station.dwg srobert Tue Jun 02,2015 – 5:11 pm

BORDER REVISED 11/17/05



1 EAST ELEVATION AT SACRAMENTO & CLAY ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT SACRAMENTO & CLAY ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

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MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT SACRAMENTO & CLAY ST. SOUTHBOUND

1289

CL–28889

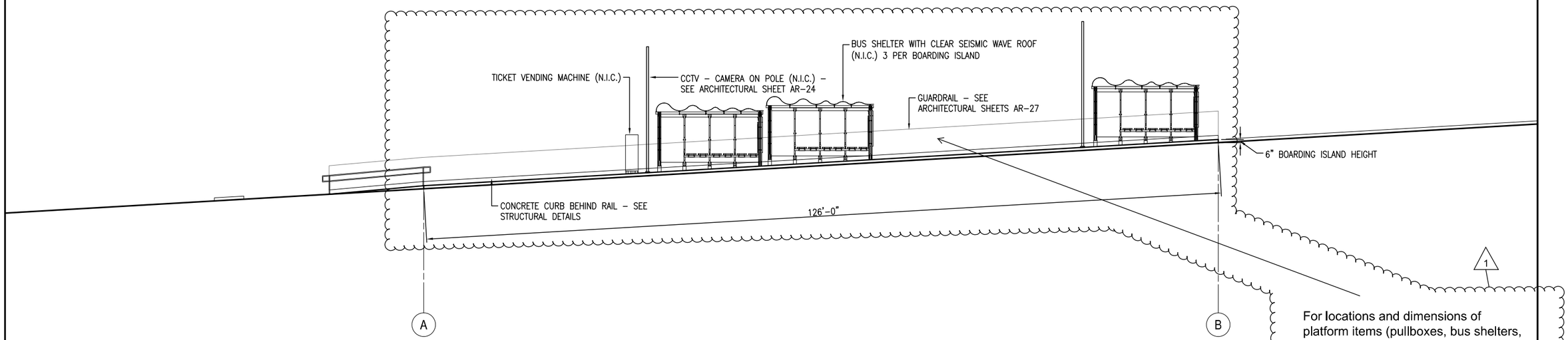
AR–12

AR–31

REVISION 1

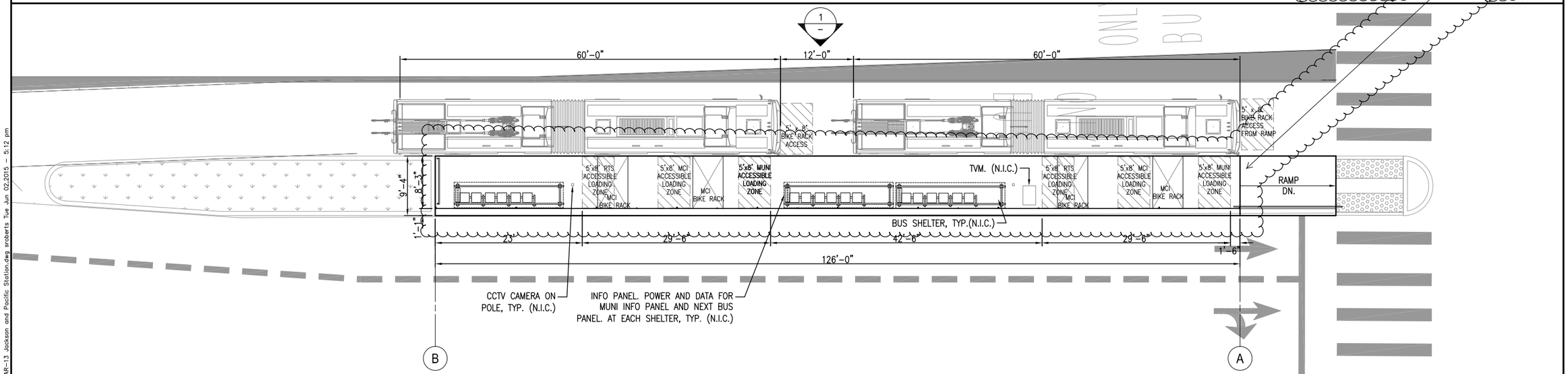
R:\2106J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–12 Sacramento and Clay Station.dwg sroberts Tue Jun 02,2015 – 5:12 pm

BORDER REVISED 11/17/05



1 WEST ELEVATION AT JACKSON & PACIFIC ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT JACKSON & PACIFIC ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

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DEPARTMENT OF PUBLIC WORKS
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LICENSED ARCHITECT WILL W. H. KWAN NO. C-18253 REN. 11/2015 STATE OF CALIFORNIA

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MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT JACKSON & PACIFIC ST. NORTHBOUND

1289

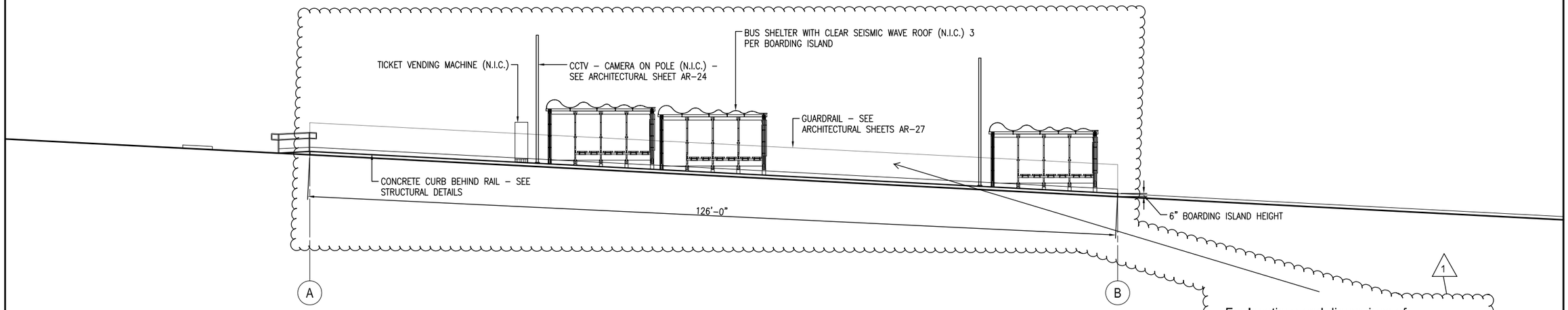
CL–28890

AR–13 REVISION 1

AR–31

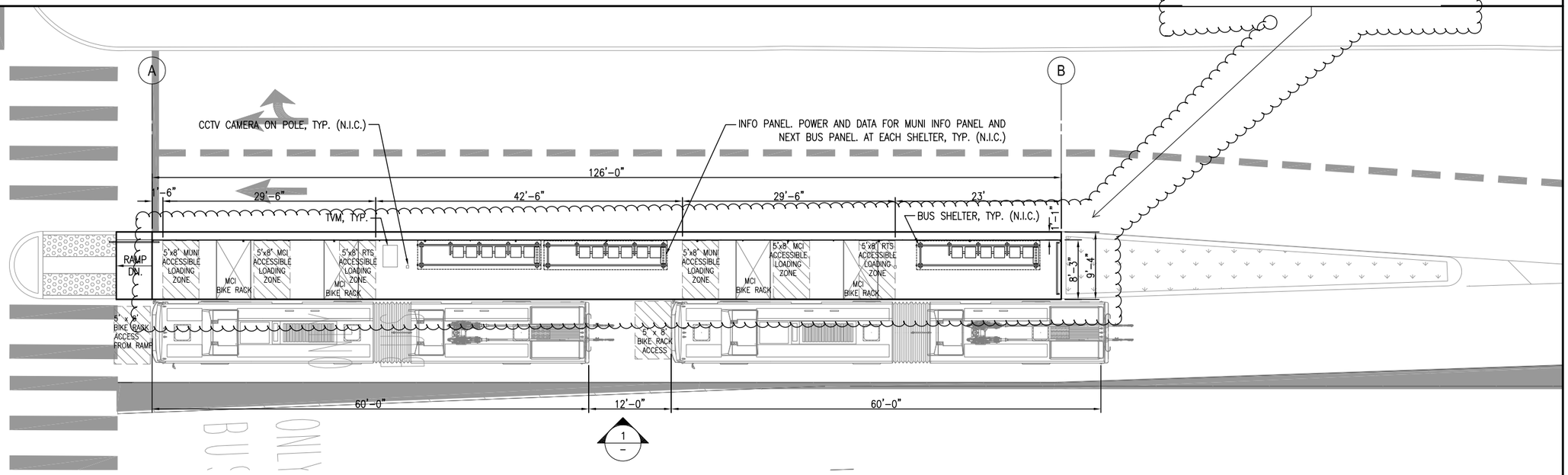
R:\2106J-MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR-13 Jackson and Pacific Station.dwg sroberts Tue Jun 02,2015 – 5:12 pm

BORDER REVISED 11/17/05



1 EAST ELEVATION AT JACKSON & PACIFIC ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT JACKSON & PACIFIC ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

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DEPARTMENT OF PUBLIC WORKS
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WILL W. H. KWAN
NO. C-18253
REN. 11/2015
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

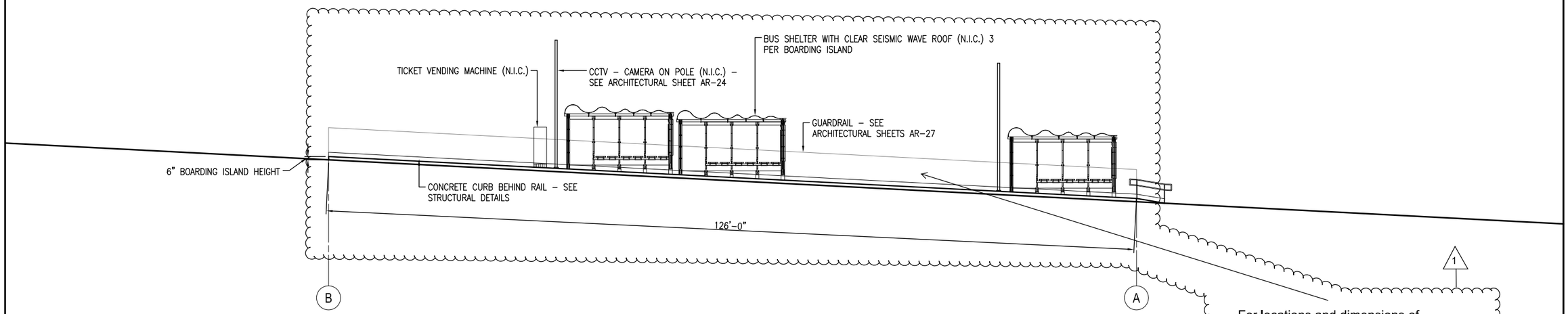
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT JACKSON & PACIFIC ST. SOUTHBOUND

1289
CL–28891
AR–14
AR–31
REVISION 1

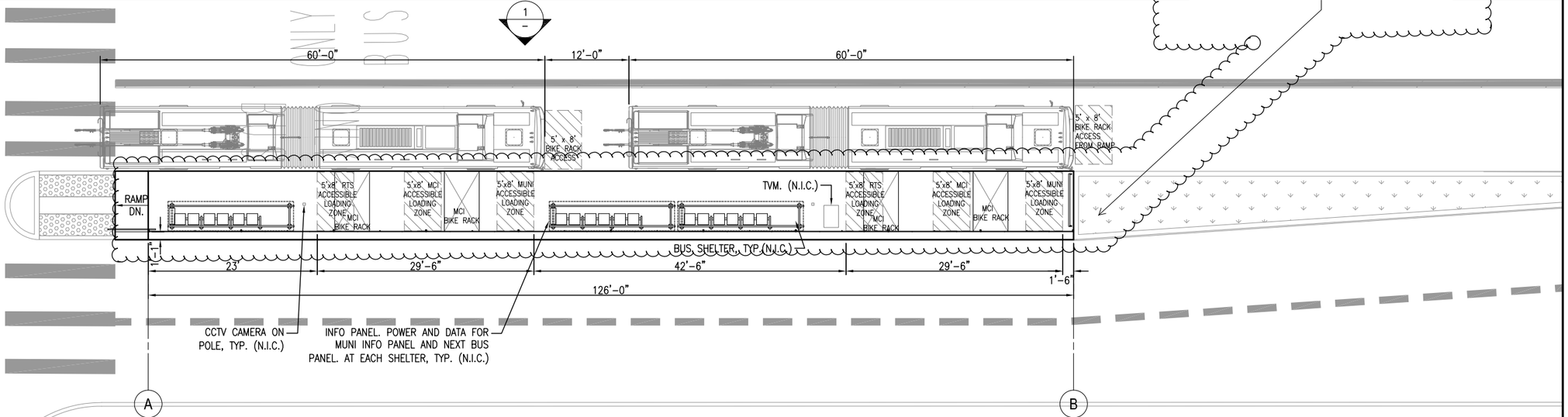
R:\2106J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–14 Jackson and Pacific Station.dwg sroberts Tue Jun 02,2015 – 5:12 pm

BORDER REVISED 11/17/05



1 WEST ELEVATION AT VALLEJO & GREEN ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT VALLEJO AND GREEN ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO
30 Van Ness Avenue Suite 4100
San Francisco, CA 94102–6028
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LICENSED ARCHITECT WILL W.H.KWAN NO. C-18253 REN. 11/2015 STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT VALLEJO & GREEN ST. NORTHBOUND

1289

CL–28892

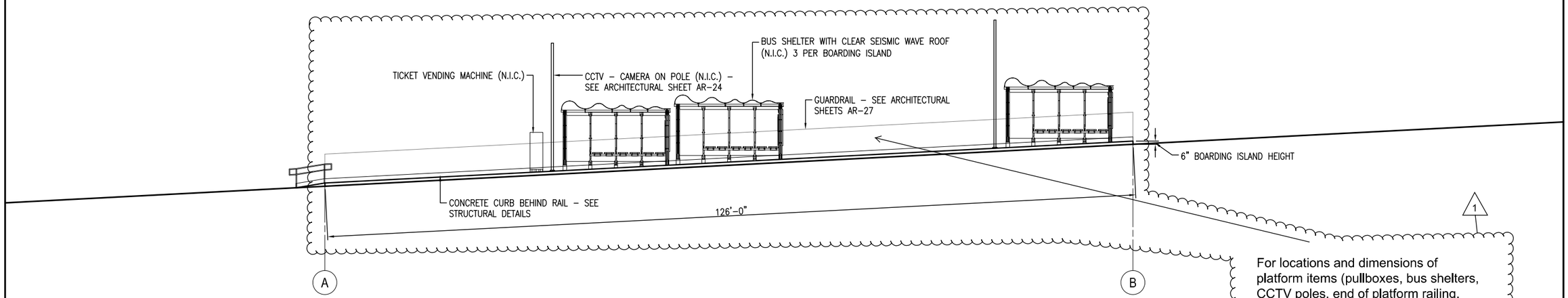
AR–15

AR–31

REVISION 1

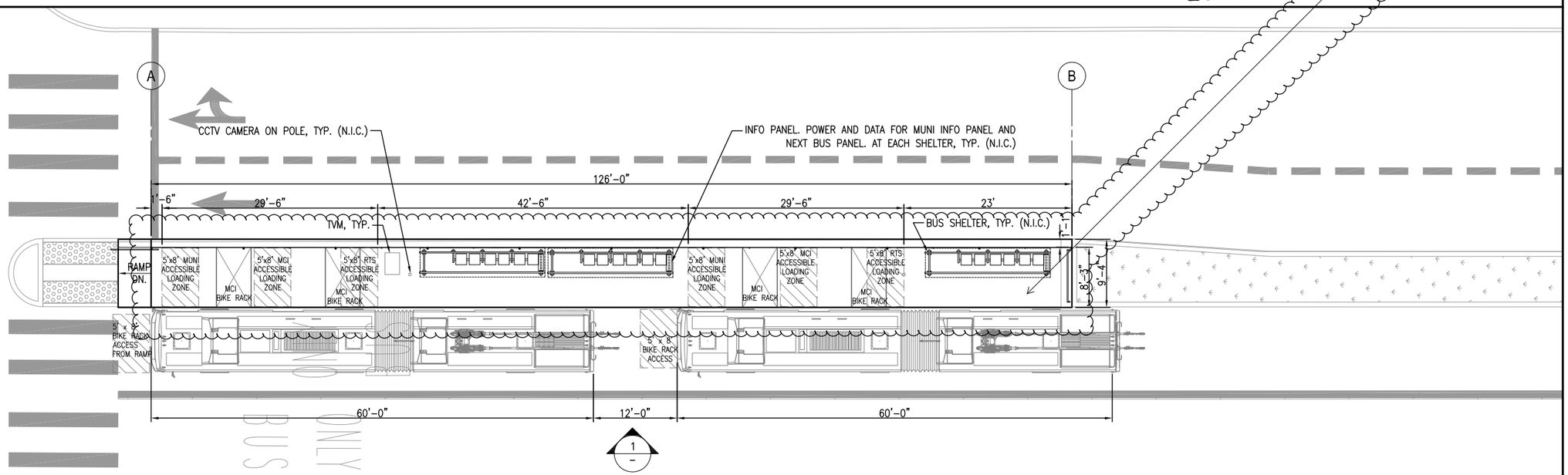
R:\2106J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–15 Vallejo and Green Station.dwg sroberts Tue Jun 02,2015 – 5:13 pm

BORDER REVISED 11/17/05



1 EAST ELEVATION AT VALLEJO & GREEN ST. (SOUTHBOUND)

SCALE: 1/8" = 1'-0"



2 BOARDING ISLAND PLAN AT VALLEJO AND GREEN ST. (SOUTHBOUND)

SCALE: 1/8" = 1'-0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'-0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO
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WILL W. H. KWAN
NO. C-18253
REN. 11/2015
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT VALLEJO & GREEN ST. SOUTHBOUND

1289

CL-28893

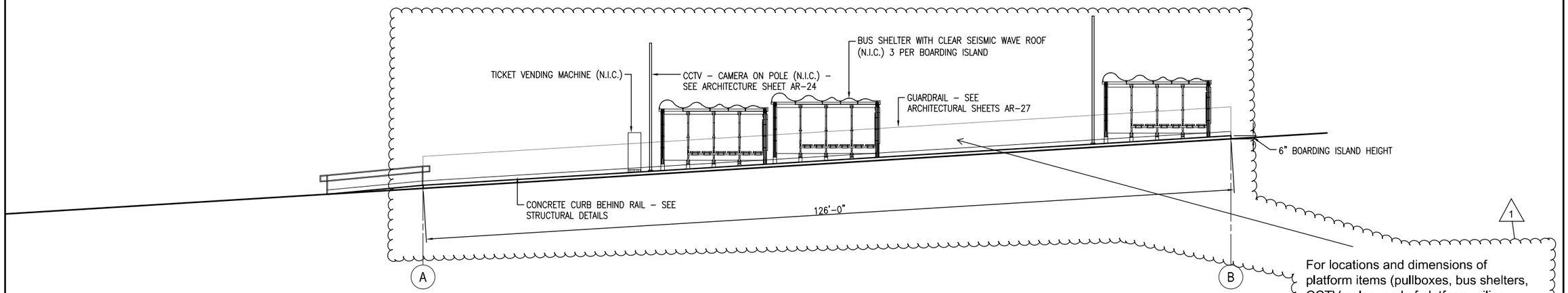
AR-16

AR-31

REVISION 1

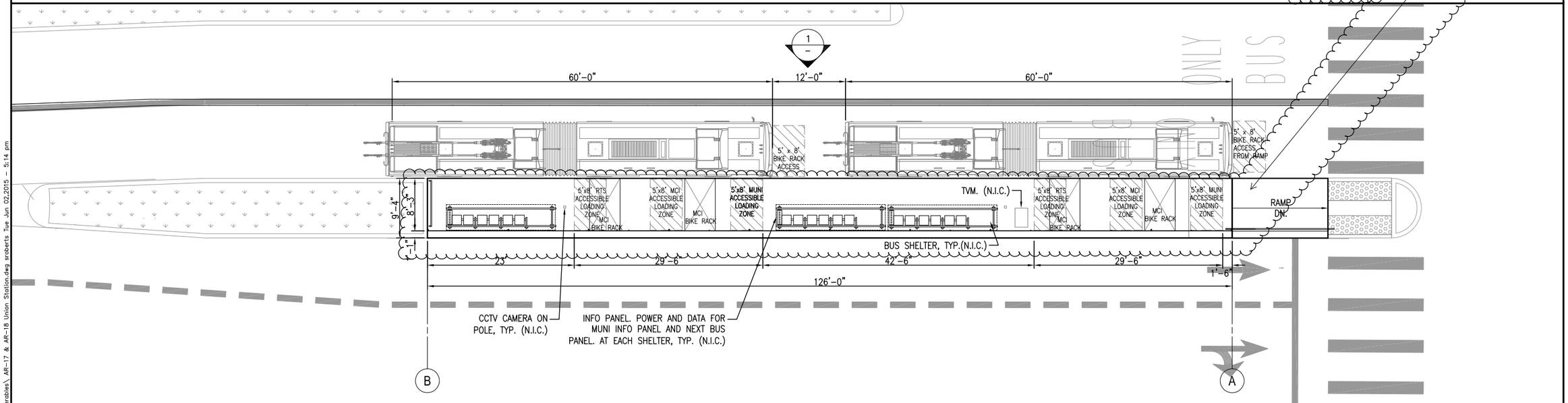
R:\2106J-MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR-16 Vallejo and Green Station.dwg sroberts Tue Jun 02,2015 - 5:13 pm

BORDER REVISED 11/17/05



1 WEST ELEVATION AT UNION ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"



2 BOARDING ISLAND PLAN AT UNION ST. (NORTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

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REN. 11/2015
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

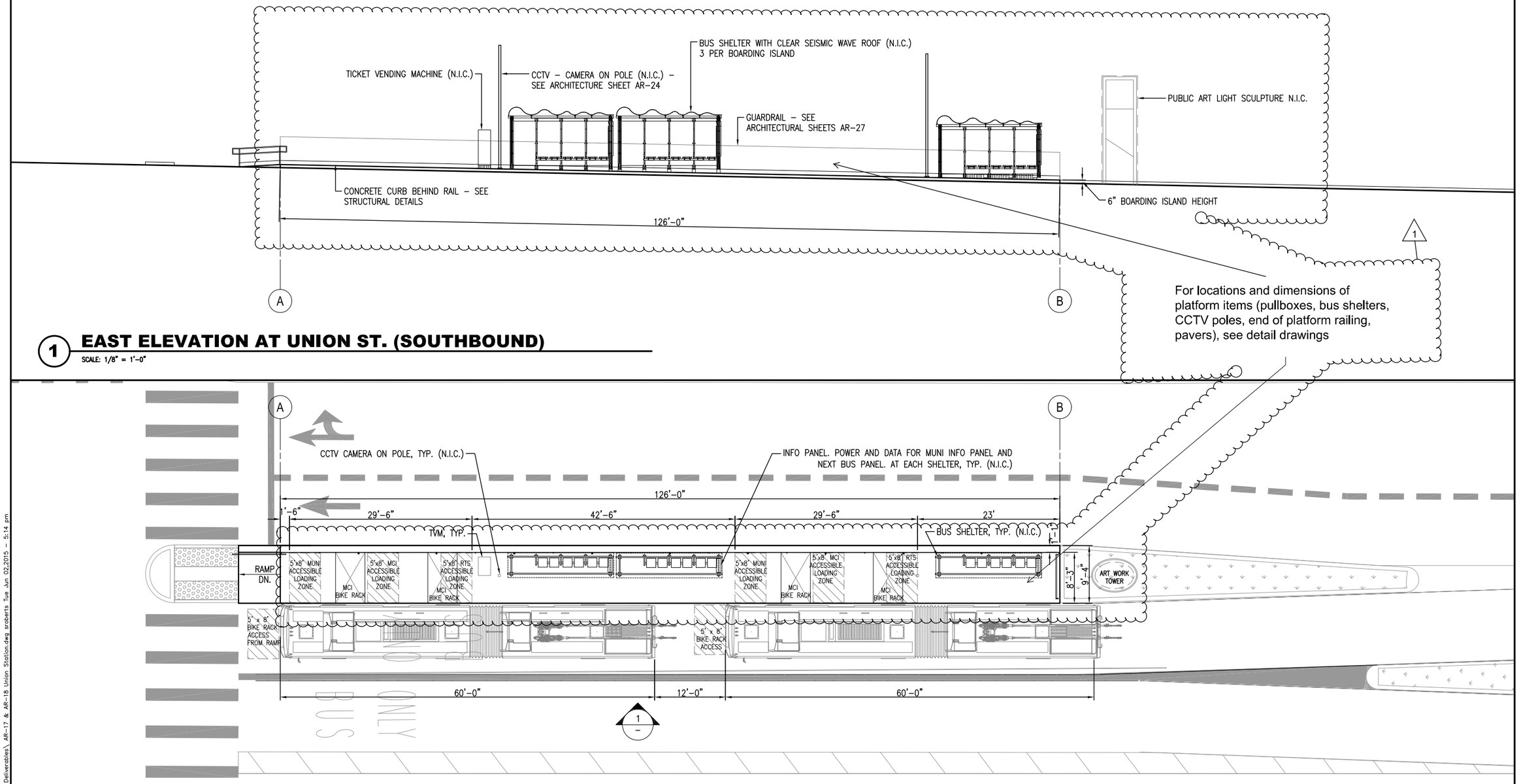
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT UNION ST.
NORTHBOUND

1289	
CL–28894	
AR–17	REVISION 1
AR–31	

R:\2106J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–17 & AR–18 Union Station.dwg sroberts Tue Jun 02,2015 – 5:14 pm

BORDER REVISED 11/17/05



1 EAST ELEVATION AT UNION ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"

2 BOARDING ISLAND PLAN AT UNION ST. (SOUTHBOUND)

SCALE: 1/8" = 1'–0"

4" 0 4" 8" 12" 16" 20"

1/8"= 1'–0"

JUNE, 2015

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	6-9-2020	REV 1_ Revised platform layout			

REVISIONS

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REN. 11/2015
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

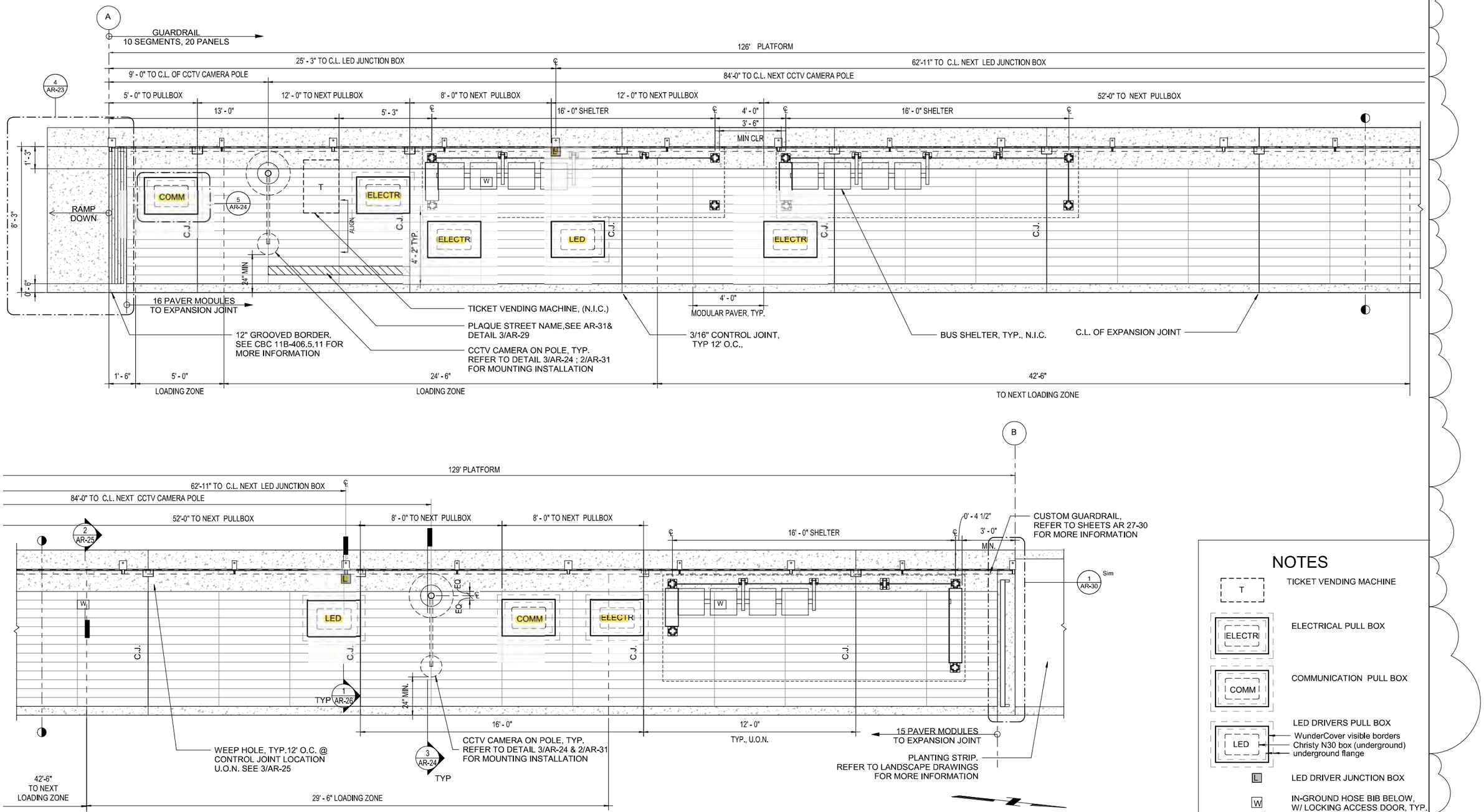
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

BOARDING ISLAND PLAN AT UNION ST.
SOUTHBOUND

1289
CL–28895
AR–18
AR–31
REVISION 1

R:\2106J–MTA BRT VAN NESS AVENUE\CAD\100% Deliverables\ AR–17 & AR–18 Union Station.dwg sroberts Tue Jun 02,2015 – 5:14 pm

BORDER REVISED 11/17/05



1 Type 1 - Enlarged plan

3/8" = 1'-0"

NOTES

- T — TICKET VENDING MACHINE
- ELECTRI — ELECTRICAL PULL BOX
- COMM — COMMUNICATION PULL BOX
- LED — LED DRIVERS PULL BOX
  - WunderCover visible borders
  - Christy N30 box (underground)
  - underground flange
- L — LED DRIVER JUNCTION BOX
- W — IN-GROUND HOSE BIB BELOW, W/ LOCKING ACCESS DOOR, TYP. SEE DETAIL 2/AR-25

NOTES:

1. WEEP HOLES TO BE INSTALLED AT EACH CONTROL JOINT, CENTER U.O.N.

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	06-10-2020	REV 1_Revised Platform layout			

REVISIONS

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LICENSED ARCHITECT — WILL W. H. KWAN — NO. C-18253 — REN. 11/2017 — STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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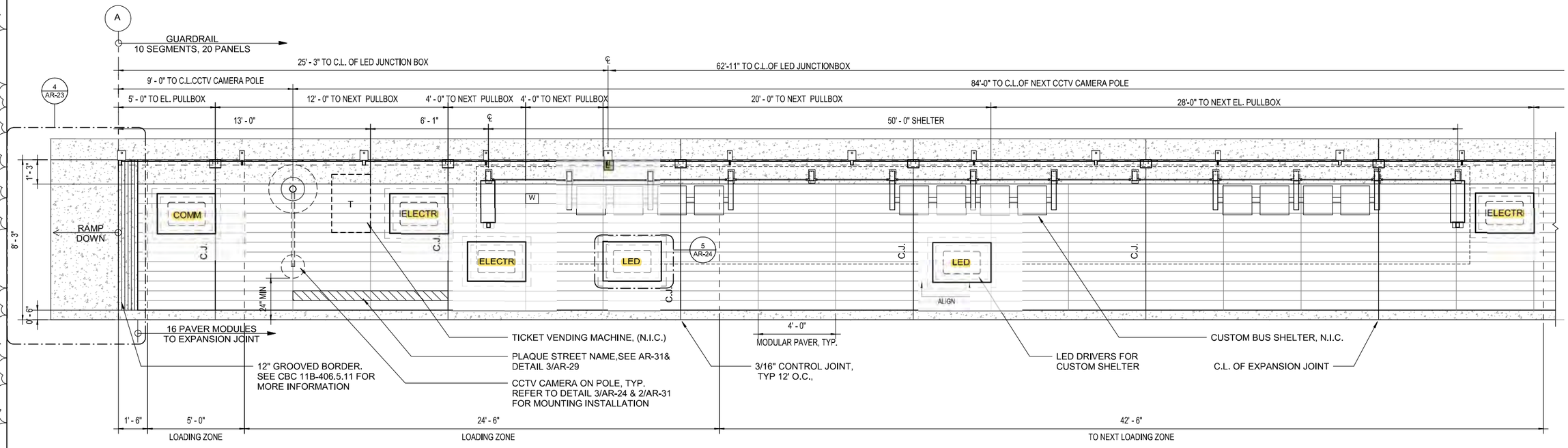
for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

ENLARGED PLAN – TYPE 1

1289
CL-28896
AR-19
AR-31
REVISION 1



2 TYPE 1 @ MCALLISTER - ENLARGED PLAN

3/8" = 1'-0"

NOTES

- T — TICKET VENDING MACHINE
- ELECTR — ELECTRICAL PULL BOX
- COMM — COMMUNICATION PULL BOX
- LED — LED DRIVERS PULL BOX; WunderCover visible borders; Christy N30 box (underground); underground flange
- L — LED DRIVER JUNCTION BOX
- W — IN-GROUND HOSE BIB BELOW, W/ LOCKING ACCESS DOOR, TYP. SEE DETAIL 2/AR-25

NOTES:

1. WEEP HOLES TO BE INSTALLED AT EACH CONTROL JOINT, CENTER U.O.N.

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
0	06-10-2020	REV 1_New sheet-Custom Platform layout @McAllister str			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SANFRANCISCO
30 Van Ness Avenue, Suite 4100, San Francisco, CA 94102-6078, (415) 557-4700, Fax (415) 557-4701

DESIGNED
DRAWN
CHECKED
REVIEWED
RECOMMENDED
APPROVED
DATE

LICENSED ARCHITECT WILL W. H. KWAN NO. C-18253 REN. 11/2017 STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

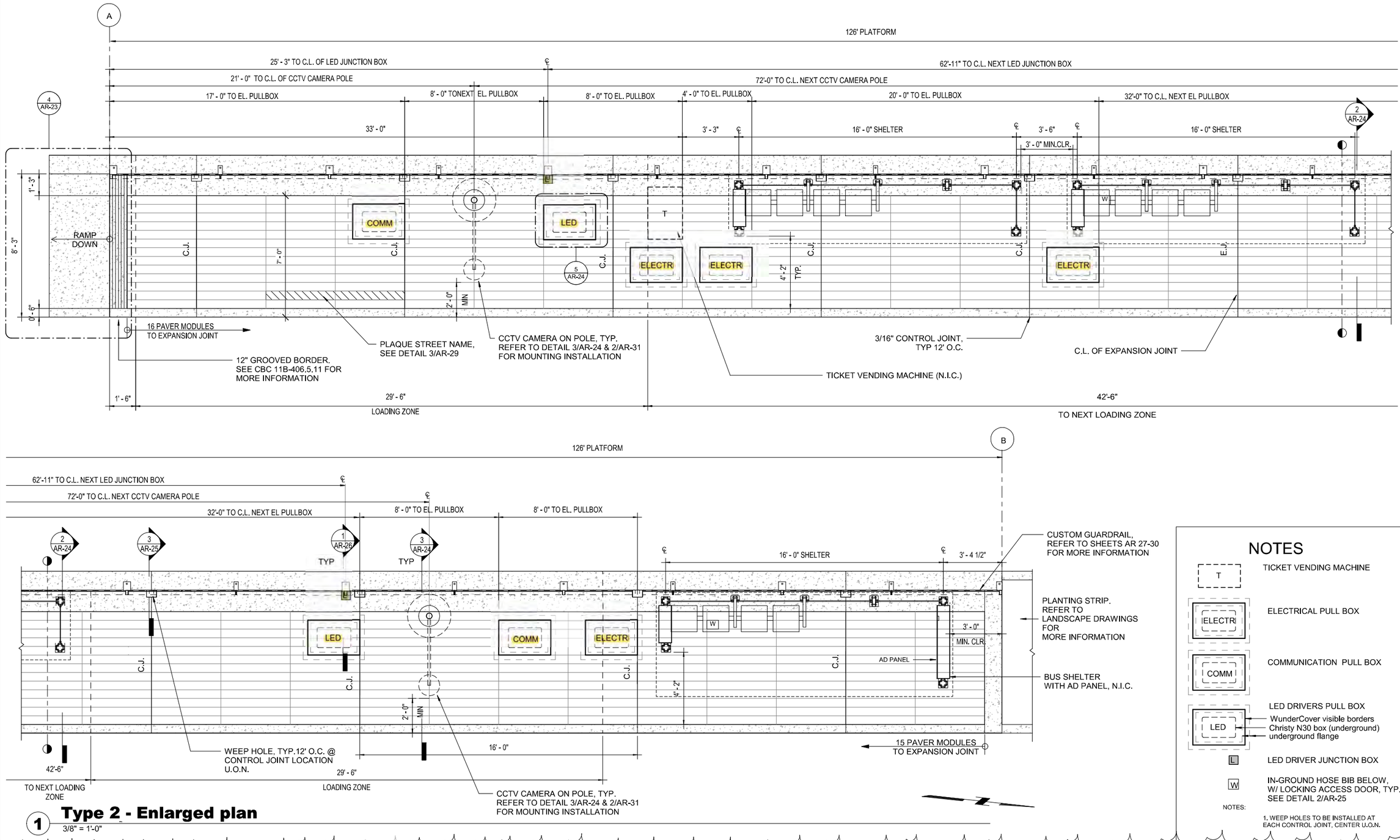
NEW SHEET ENLARGED PLAN–TYPE 1 @ McAllister

1289

AR-19A

AR-31

REVISION 0



1 Type 2 - Enlarged plan

3/8" = 1'-0"

NOTES

- T — TICKET VENDING MACHINE
- ELECTR — ELECTRICAL PULL BOX
- COMM — COMMUNICATION PULL BOX
- LED — LED DRIVERS PULL BOX
  - WunderCover visible borders
  - Christy N30 box (underground)
  - underground flange
- L — LED DRIVER JUNCTION BOX
- W — IN-GROUND HOSE BIB BELOW, W/ LOCKING ACCESS DOOR, TYP. SEE DETAIL 2/AR-25

NOTES:

1. WEEP HOLES TO BE INSTALLED AT EACH CONTROL JOINT, CENTER U.O.N.

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	06-10-2020	REV 1_Revised Platform layout			

REVISIONS

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LICENSED ARCHITECT W.H.L.W. KWAN NO. C-18253 REN. 11/2017 STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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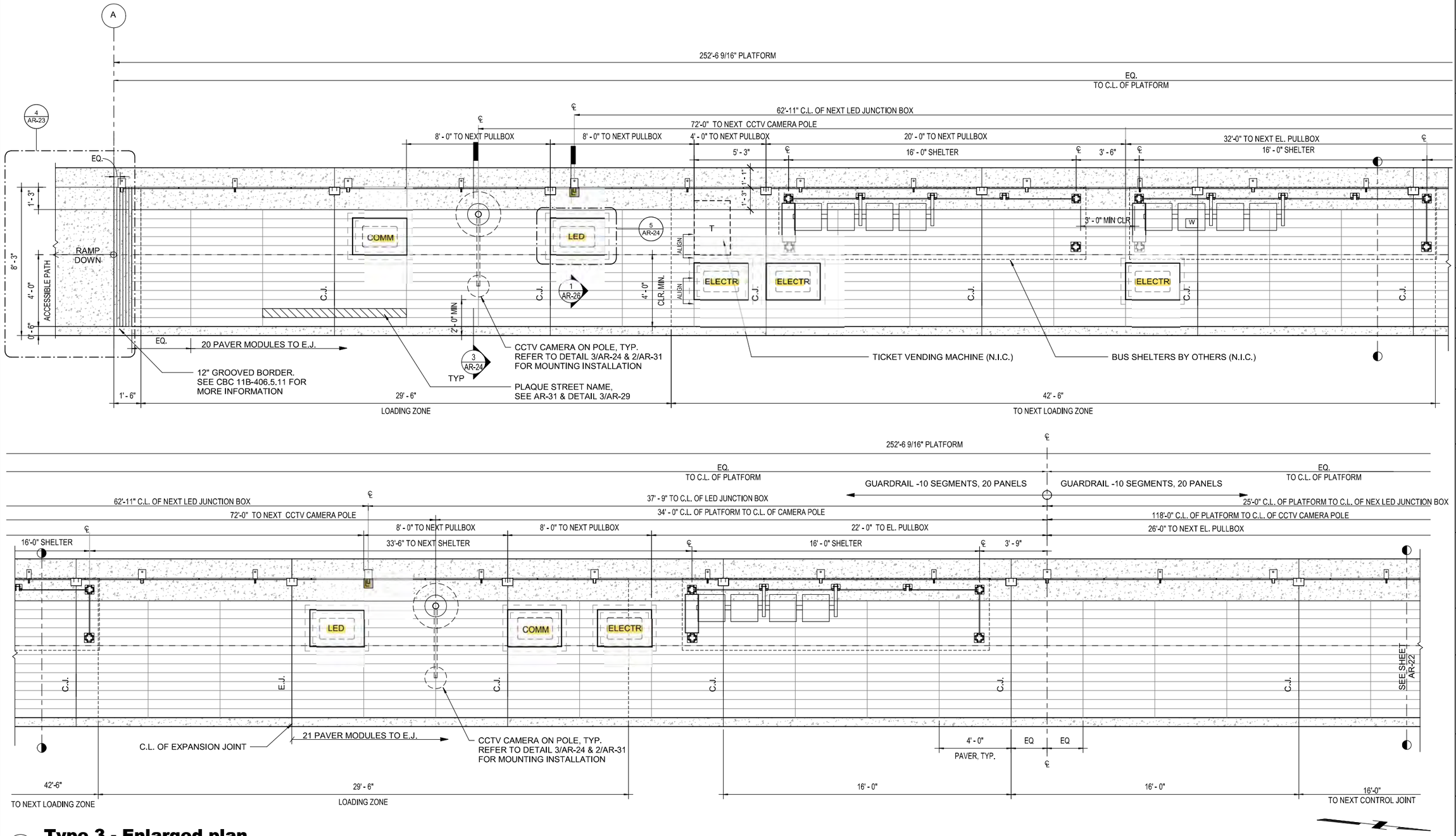
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

ENLARGED PLAN – TYPE 2

1289
CL-28897
AR-20
AR-31
REVISION 1



1 Type 3 - Enlarged plan

3/8" = 1'-0"

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	06-10-2020	REV 1 _Revised Platform layout			

REVISIONS

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LICENSED ARCHITECT WILL W. H. KWAN NO. C-18253 REN. 11/2017 STATE OF CALIFORNIA

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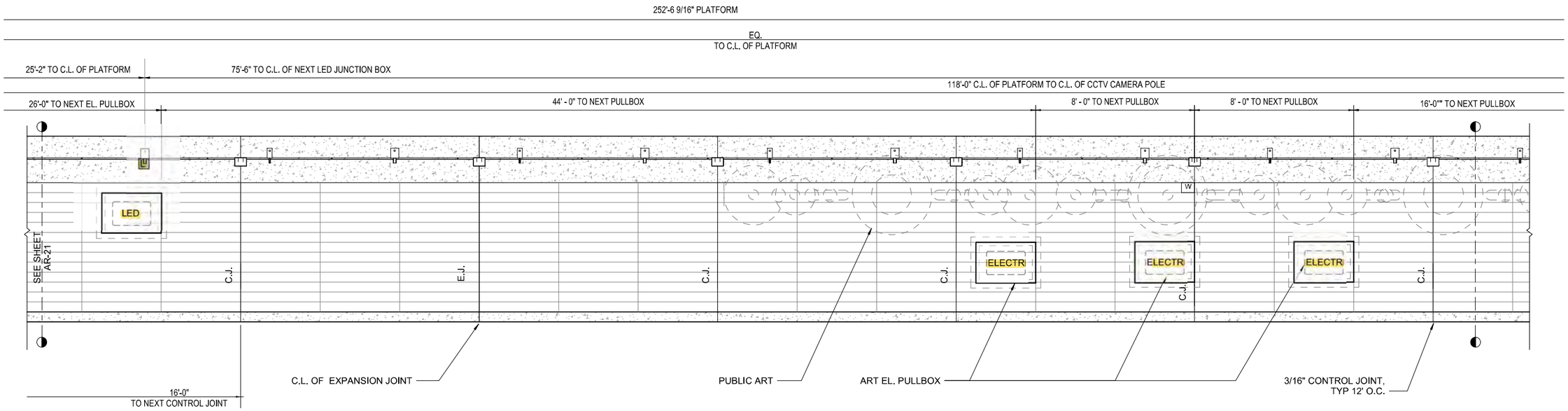
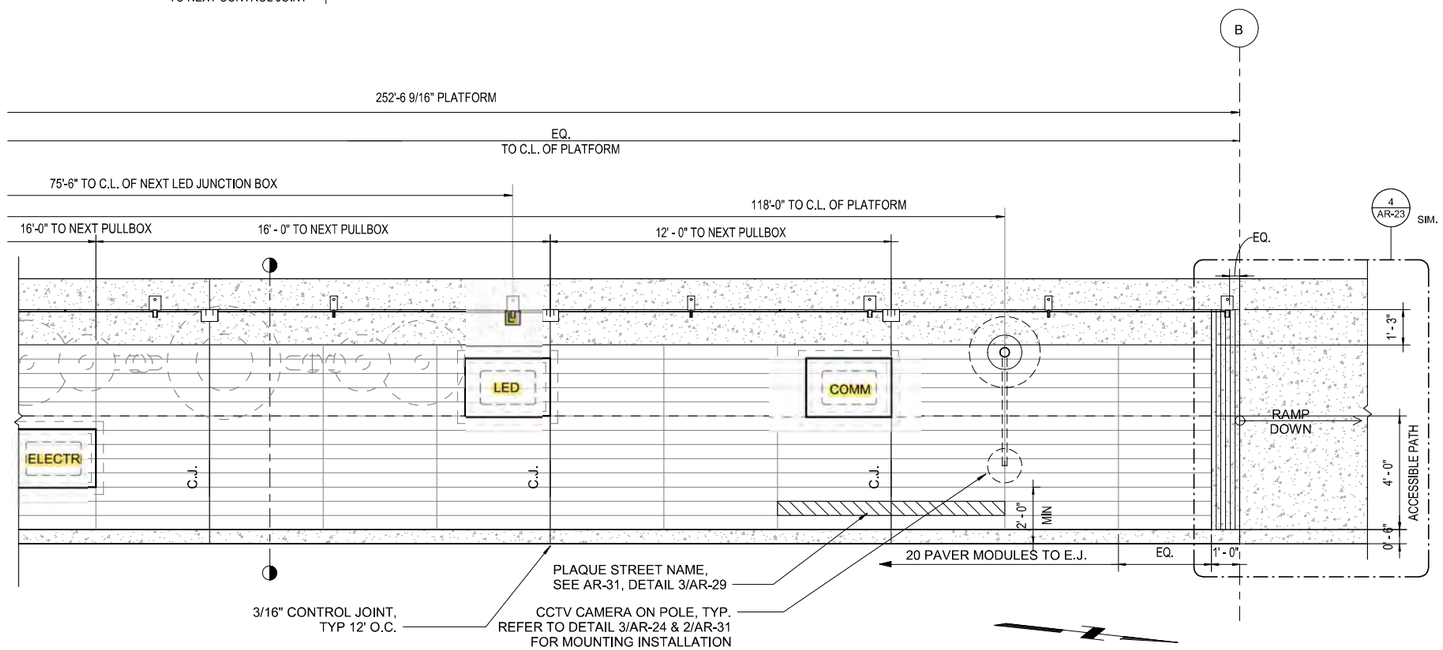
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

ENLARGED PLAN – TYPE 3

1289
CL–28898
AR–21
AR–31
REVISION 1

BORDER REVISED 11/7/2016





1 Type 3 - Enlarged plan

3/8" = 1'-0"

NOTES

- T — TICKET VENDING MACHINE
- ELECTR — ELECTRICAL PULL BOX
- COMM — COMMUNICATION PULL BOX
- LED — LED DRIVERS PULL BOX
  - WunderCover visible borders
  - Christy N30 box (underground)
  - underground flange
- L — LED DRIVER JUNCTION BOX
- W — IN-GROUND HOSE BIB BELOW, W/ LOCKING ACCESS DOOR, TYP. SEE DETAIL 2/AR-25

NOTES:

1. WEEP HOLES TO BE INSTALLED AT EACH CONTROL JOINT, CENTER U.O.N.

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	06-10-2020	REV 1 _Revised Platform layout			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SANFRANCISCO
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APPROVED
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LICENSED ARCHITECT WILL W. H. KWAN NO. C-18253 REN. 11/2017 STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

ENLARGED PLAN – TYPE 3

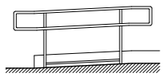
1289
CL-28899
AR-22
AR-31
REVISION 1

BORDER REV 1 7/5

RAMP TYPES
(CORDINATE BIR WITH CIVIL DRAWINGS)

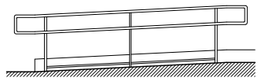
TYPE A
LESS THAN 5'-0" RAMP

PLATFORMS	BIR LENGTH
SEE CIVIL DRAWINGS	



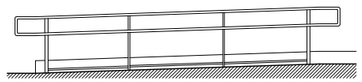
TYPE B
5'-0" TO 10'-0" RAMP

PLATFORMS	BIR LENGTH
SEE CIVIL DRAWINGS	



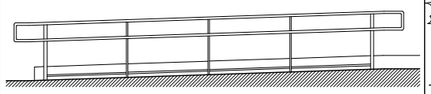
TYPE C
10'-0" TO 15'-0" RAMP

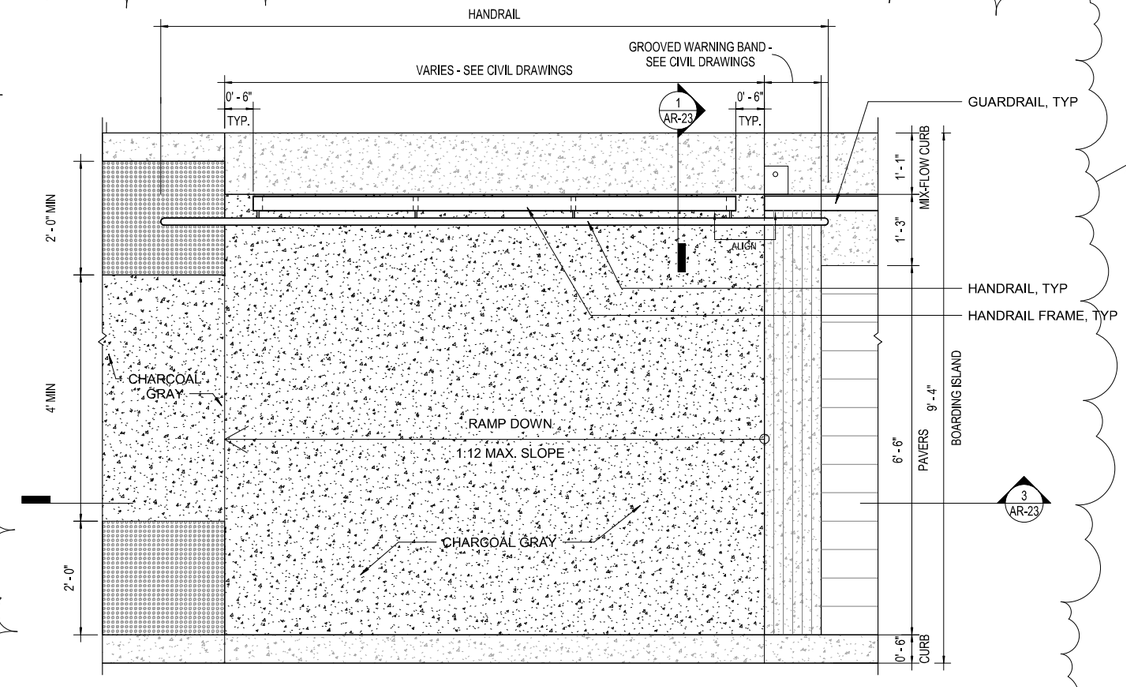
PLATFORMS	BIR LENGTH
SEE CIVIL DRAWINGS	



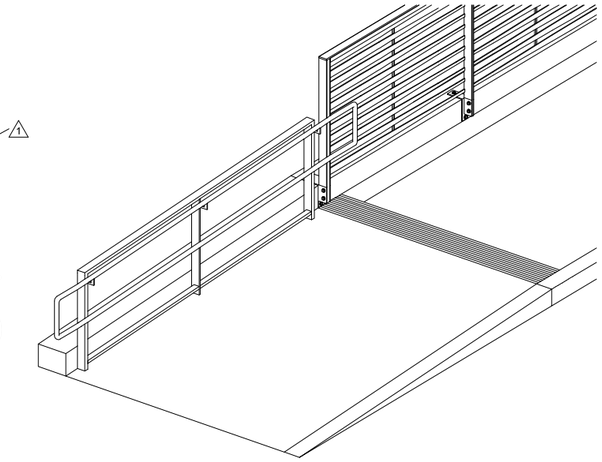
TYPE D
OVER 15'-0" RAMP

PLATFORMS	BIR LENGTH
SEE CIVIL DRAWINGS	

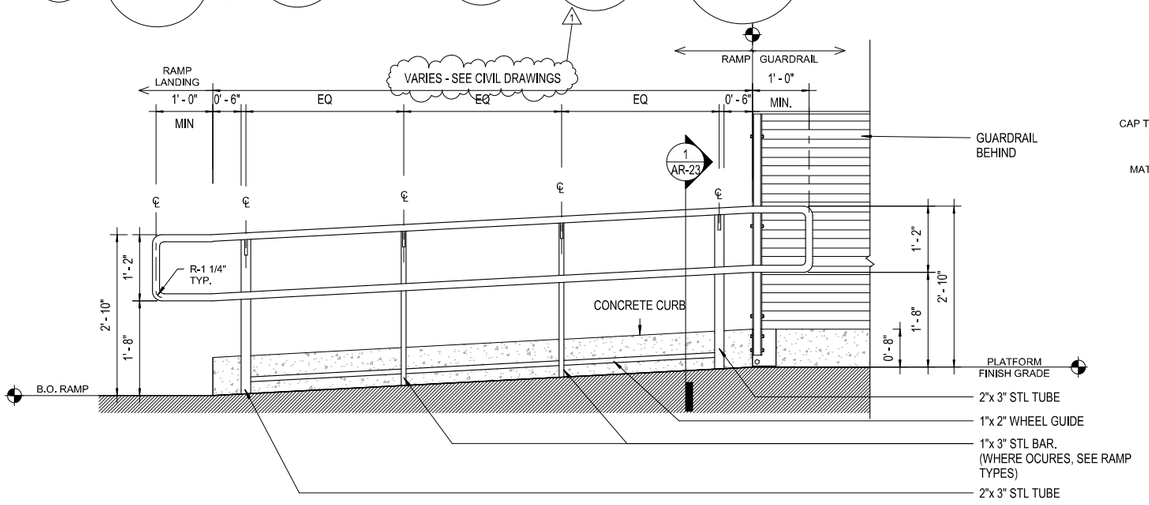




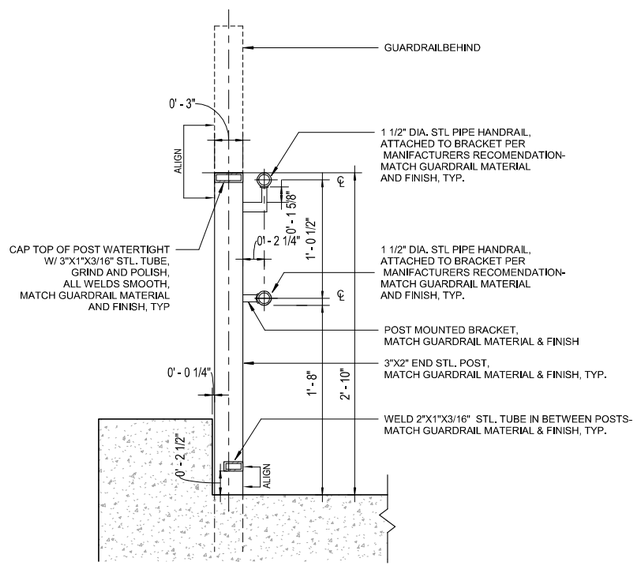
4 ENLARGED RAMP PLAN
3/4" = 1'-0"



2 HANDRAIL 3D VIEW
1/2" = 1'-0"



3 TYPICAL RAMP SECTION
3/4" = 1'-0"



1 HANDRAIL POST DETAIL@RAMP
1 1/2" = 1'-0"

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	06-10-2020	REV 1_Ramp Modification			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SANFRANCISCO
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DATE	

LICENSED ARCHITECT — WILL W. H. KWAN — NO. C-18253 REN. 11/2017 — STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

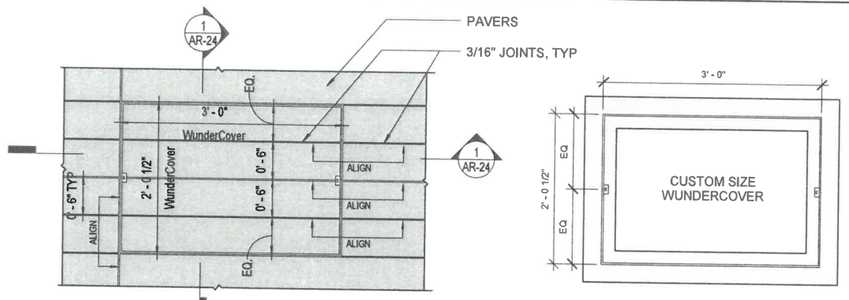
1289

ENLARGED RAMP FLOOR PLAN AND SECTION

AR-23
AR-31

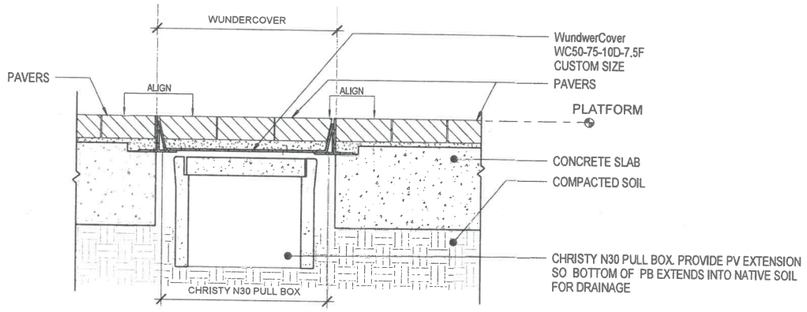
REVISION 1

BORDER REISSUE 1" 7/15



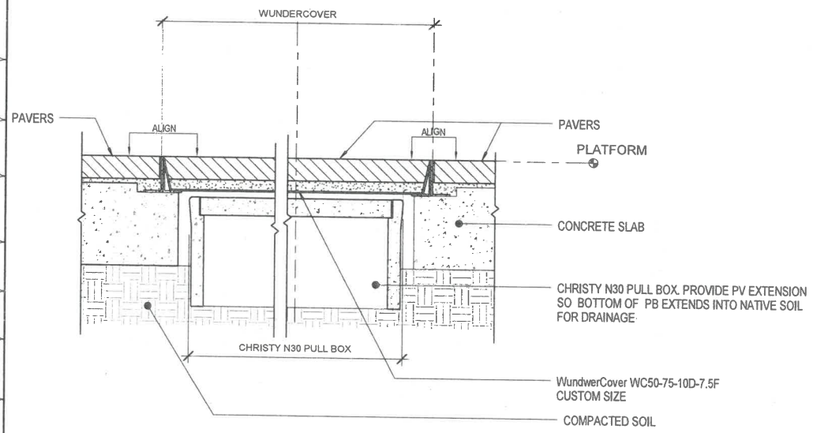
5 TYPICAL PAVERS PLAN @WUNDERCOVER

1" = 1'-0"



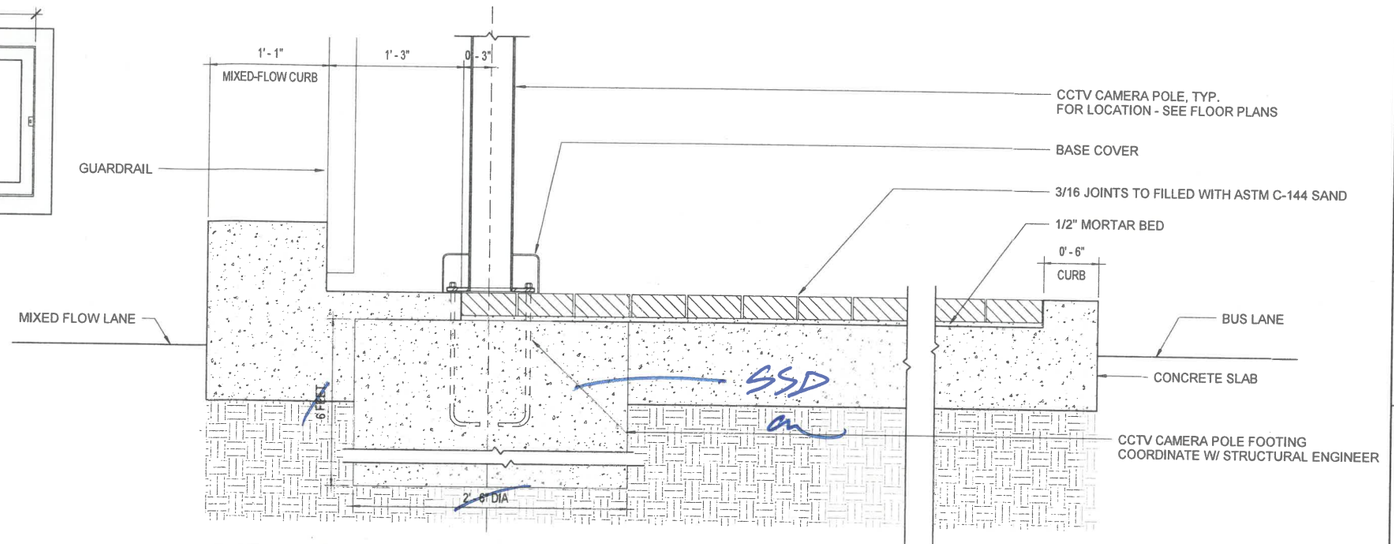
4 SECTION-2 PAVERS @ PULL BOX

1 1/2" = 1'-0"



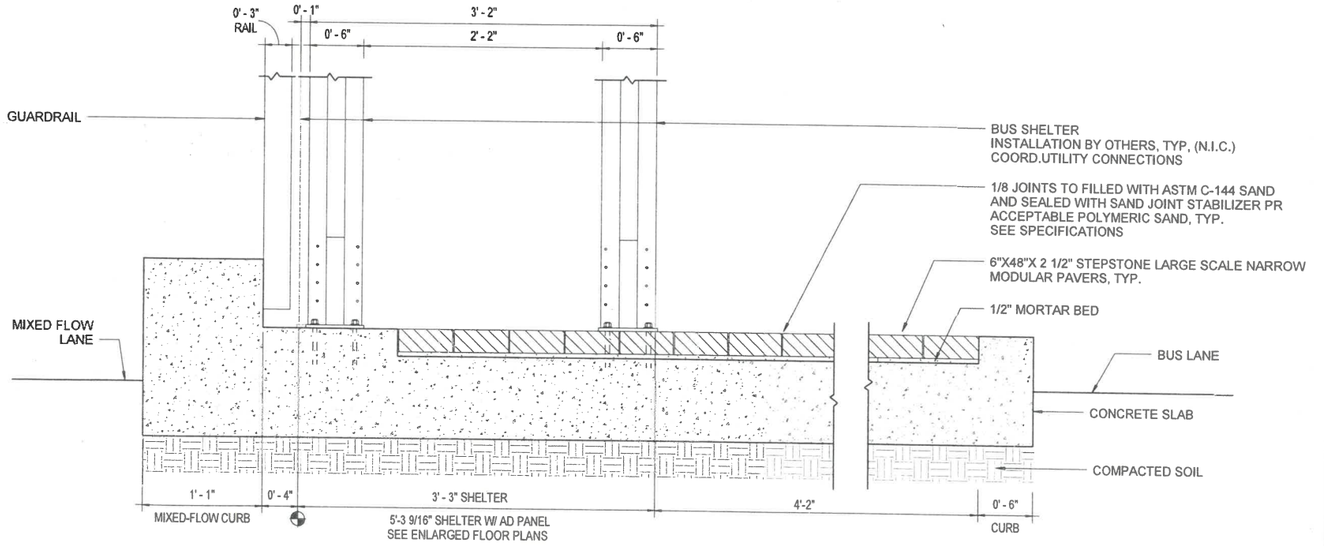
1 SECTION PAVERS @ PULL BOX

1 1/2" = 1'-0"



3 CCTV CAMERA POLE INSTALATION@BOARDING ISLAND

1 1/2" = 1'-0"



2 BUS SHELTER LOCATION AND PAVERS@BOARDING ISLAND

1 1/2" = 1'-0"

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	06-10-2020	REV 1 _Revised Paving			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SANFRANCISCO
30 Van Ness Avenue, Suite 4100, San Francisco, CA 94102-6028
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LICENSED ARCHITECT
WILLW. H. KWAN
NO. C - 18253
REN. 11/2017
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

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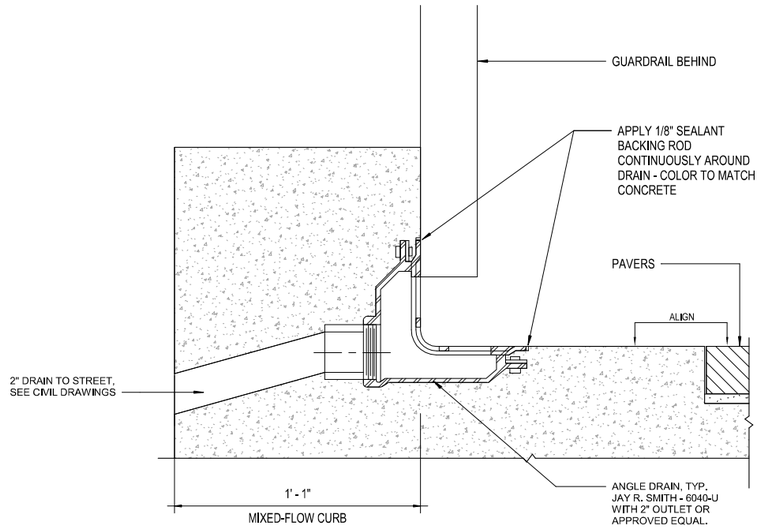
MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

1289

PAVER DETAILS

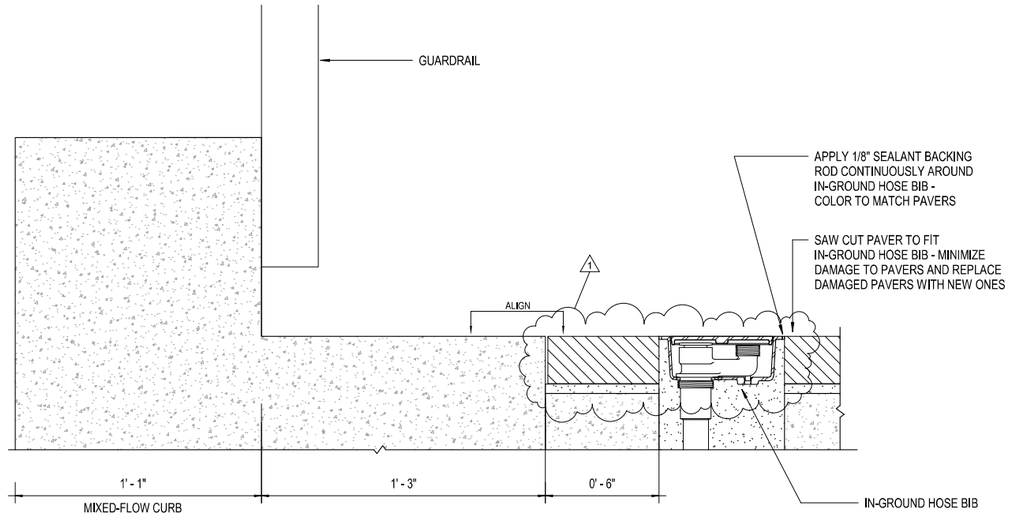
AR-24
AR-31

REVISION 1



3 DRAIN@BOARDING ISLAND

3" = 1'-0"



2 HOSE BIB@BOARDING ISLAND

3" = 1'-0"

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
1	06-10-2020	REV 1 _Hose Bib layout			

REVISIONS

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LICENSED ARCHITECT WILL W. H. KWAN NO. C-18253 REN. 11/2017 STATE OF CALIFORNIA

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

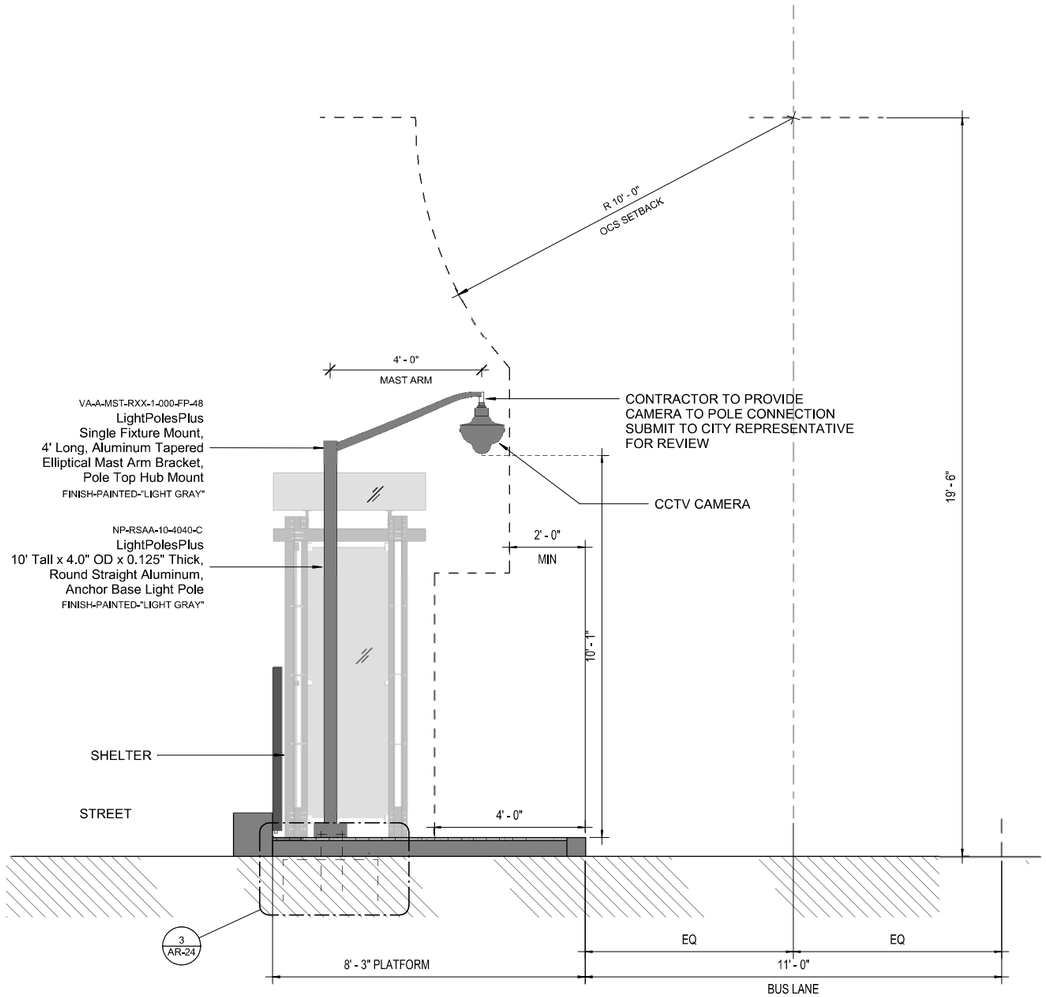
1289

EQUIPMENT INSTALATION DETAILS

AR-25
AR-31

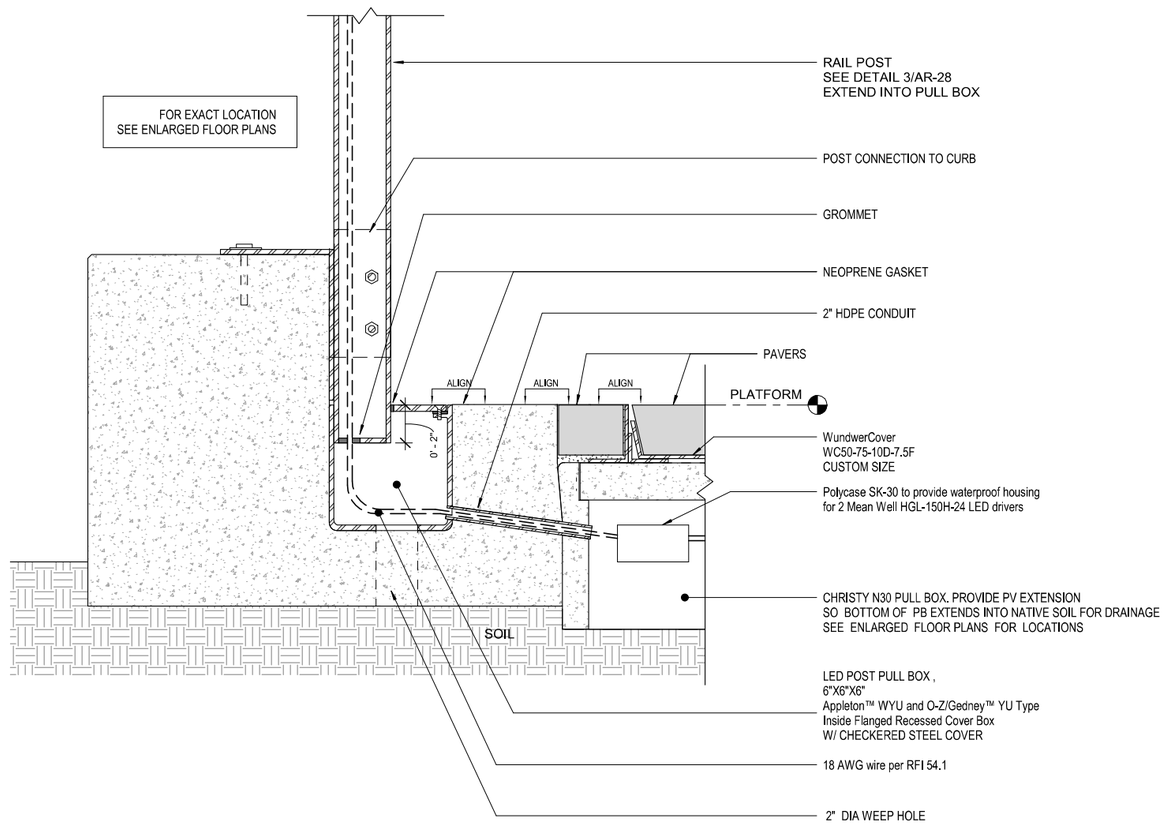
REVISION 1

BORDER REV 1 - 7/15



2 CCTV camera clearance Diagram

1/2" = 1'-0"



1 RAIL SECTION 1 1/2" POST@ LED PULL BOX_6-2020

3" = 1'-0"

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
0	06-10-2020	REV.1_New sheet_Guardrail details			

REVISIONS

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APPROVED	
DATE	

LICENSED ARCHITECT
WILL W. H. KWAN
NO. C - 18253
REN. 11/2017
STATE OF CALIFORNIA

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MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

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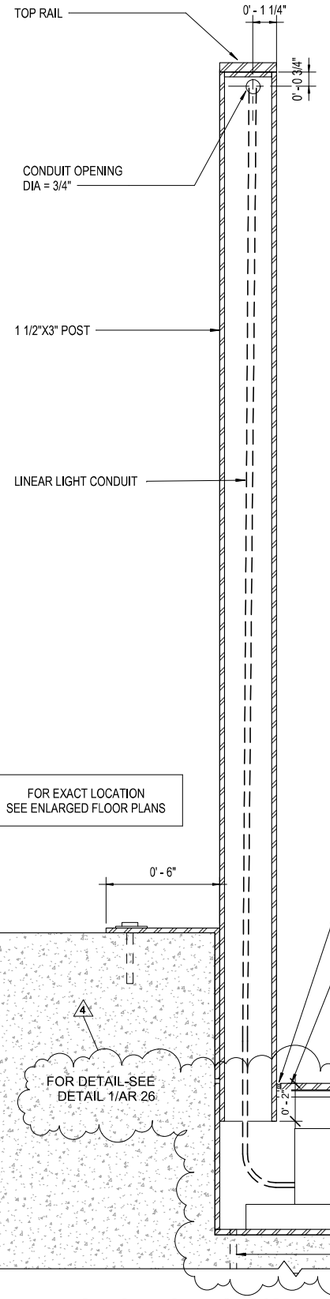
NEW SHEET GUARDRAIL DETAILS_6-2020

AR-26
AR-31

REVISION 0

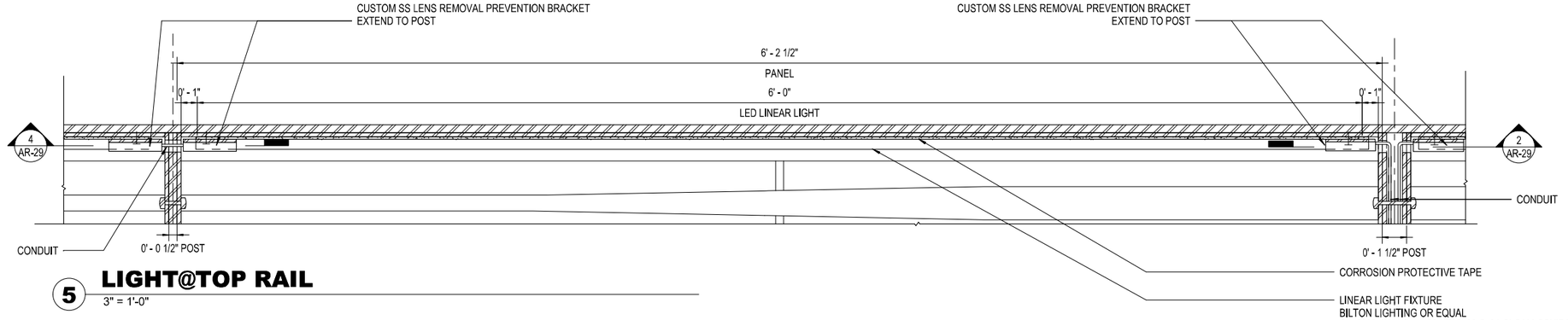
△0

PLOTTED: 6/10/20



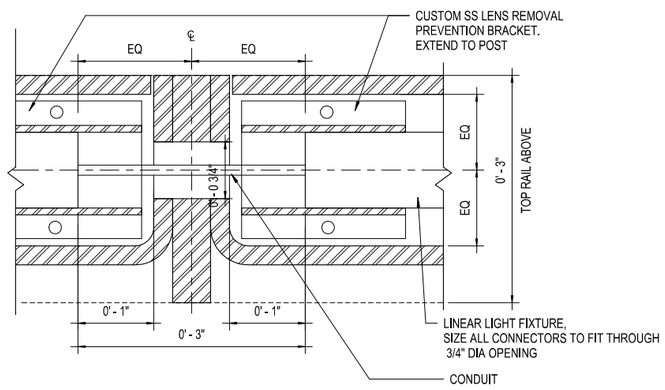
6 RAIL SECTION 1 1/2" POST@ LED PULL BOX

3" = 1'-0"



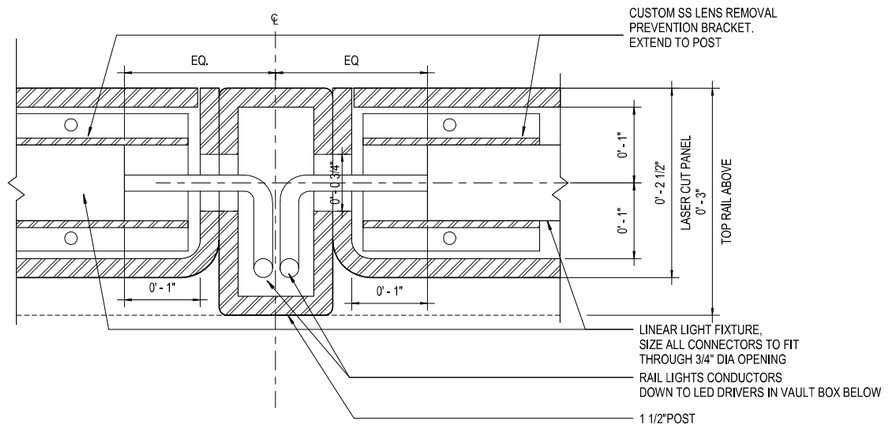
5 LIGHT@TOP RAIL

3" = 1'-0"



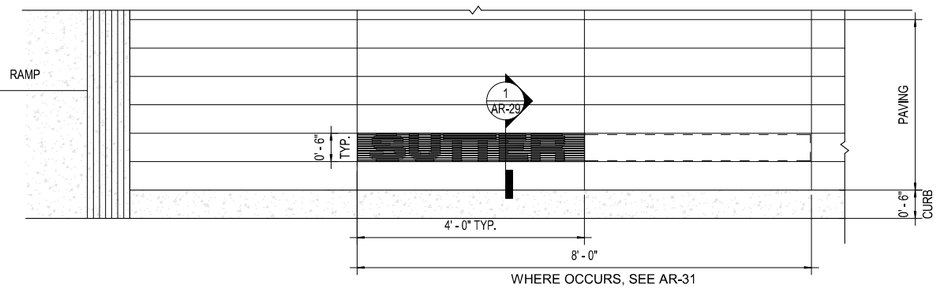
4 1/2" POST ASSEMBLY@TOP RAIL

12" = 1'-0"



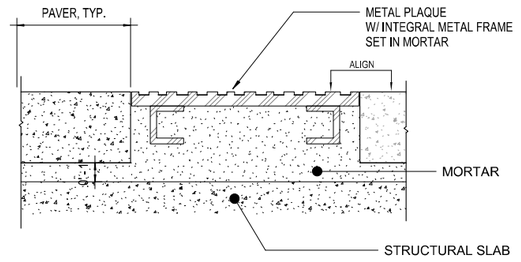
2 1 1/2"POST ASSEMBLY@TOP RAIL

12" = 1'-0"



3 STATION NAME

3/4" = 1'-0"



1 STATION NAME PLAQUE SECTION

3" = 1'-0"

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
4	06-10-2020	REV 4_Pullboxes revision			

REVISIONS

BUILDING DESIGN AND CONSTRUCTION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SANFRANCISCO
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Fax (415) 557-4701

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DRAWN	
CHECKED	
REVIEWED	
RECOMMENDED	
APPROVED	
DATE	

LICENSED ARCHITECT
WILLW. H. KWAN
NO. C-18253
REN. 11/2017
STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORIDOR TRANSIT IMPROVEMENT PROJECT

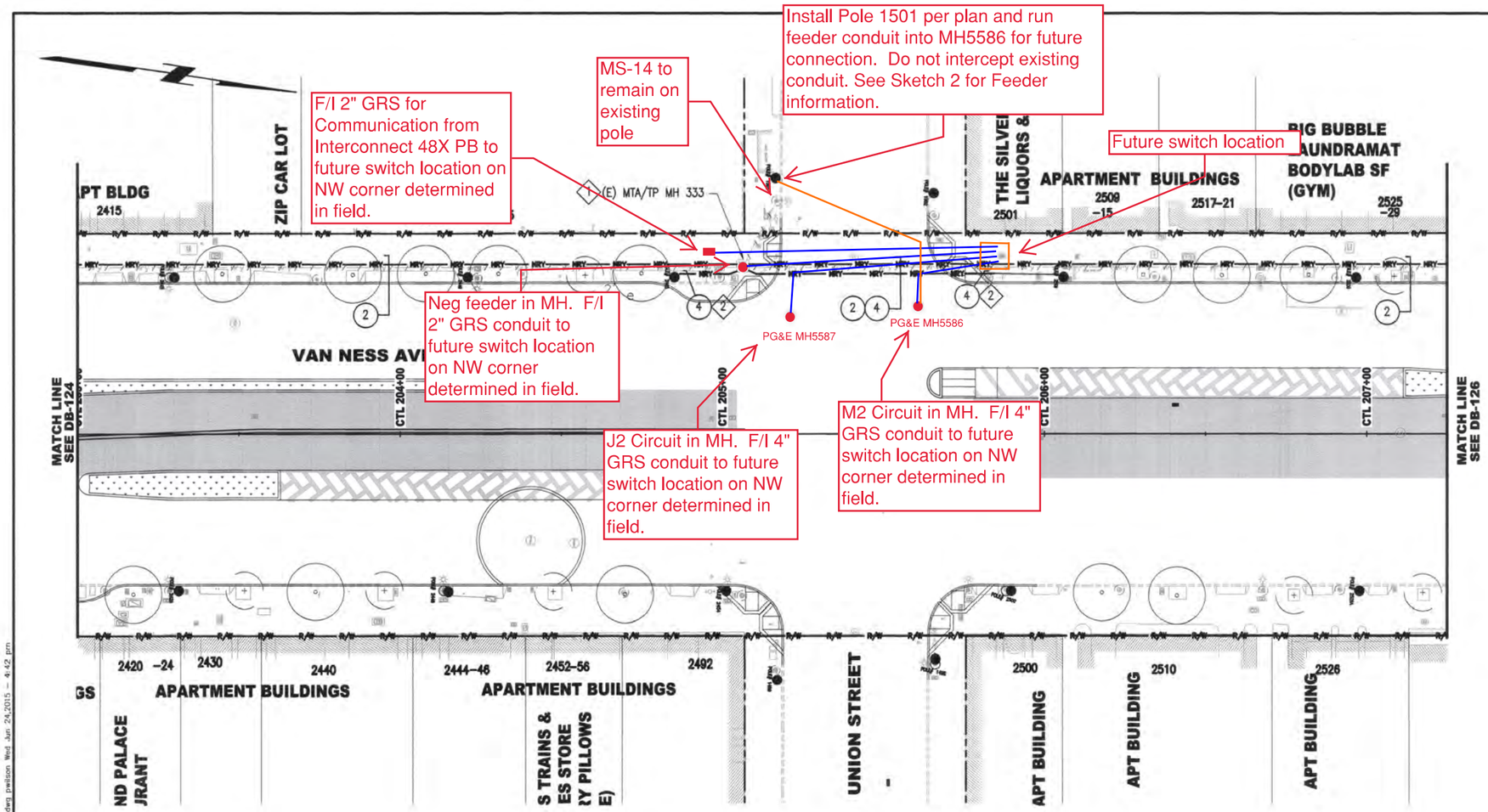
1289
CL-28906

GUARDRAIL DETAILS

AR-29
AR-31

REVISION 4

Attachment 6



CONDUIT NOTES:

CONDUIT NOTE #	CONDUIT # AND SIZE	MATERIAL	UTILITY AGENCY
1	2-4"	GRS	MTA/TP
2	6-4", 2-2"	HDPE, GRS	MTA/TP
3	4-4", 2-2"	HDPE, GRS	MTA/TP
4	1-2"	GRS	MTA/TP

1) 4" GRS - approx 200 ft
2) 2" GRS - approx 300 ft
3) Future switch location determine in field

SHEET NOTES:

1. CONNECT CONDUITS TO EXISTING MANHOLE/VAULT. COORDINATE WORK WITH MUNI.
2. SEE OV SERIES PLANS FOR RISER CONDUIT ELBOW INSTALLATION WORK IN NEW TROLLEY POLE FOUNDATION. PROVIDE FEEDER RISER CONDUIT CONNECTIONS AT NEW TROLLEY POLE PER STANDARD DRAWING B-1646, REV. 6.

SK-1 (PCC 18) 1-31-2020
REFERENCE DB-125 REV 0

20' 0 20' 40'
SCALE = 1"=20'

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED

REVISIONS

DESIGNED
DRAWN
CHECKED Edison Cayleyo
REVIEWED Mark A. Rudnicki
RECOMMENDED
APPROVED
DATE MAY 13 2016

REGISTERED PROFESSIONAL ENGINEER WILLIAM FORREST WITSON C59930 EXP. 3/31/16 CIVIL STATE OF CALIFORNIA

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

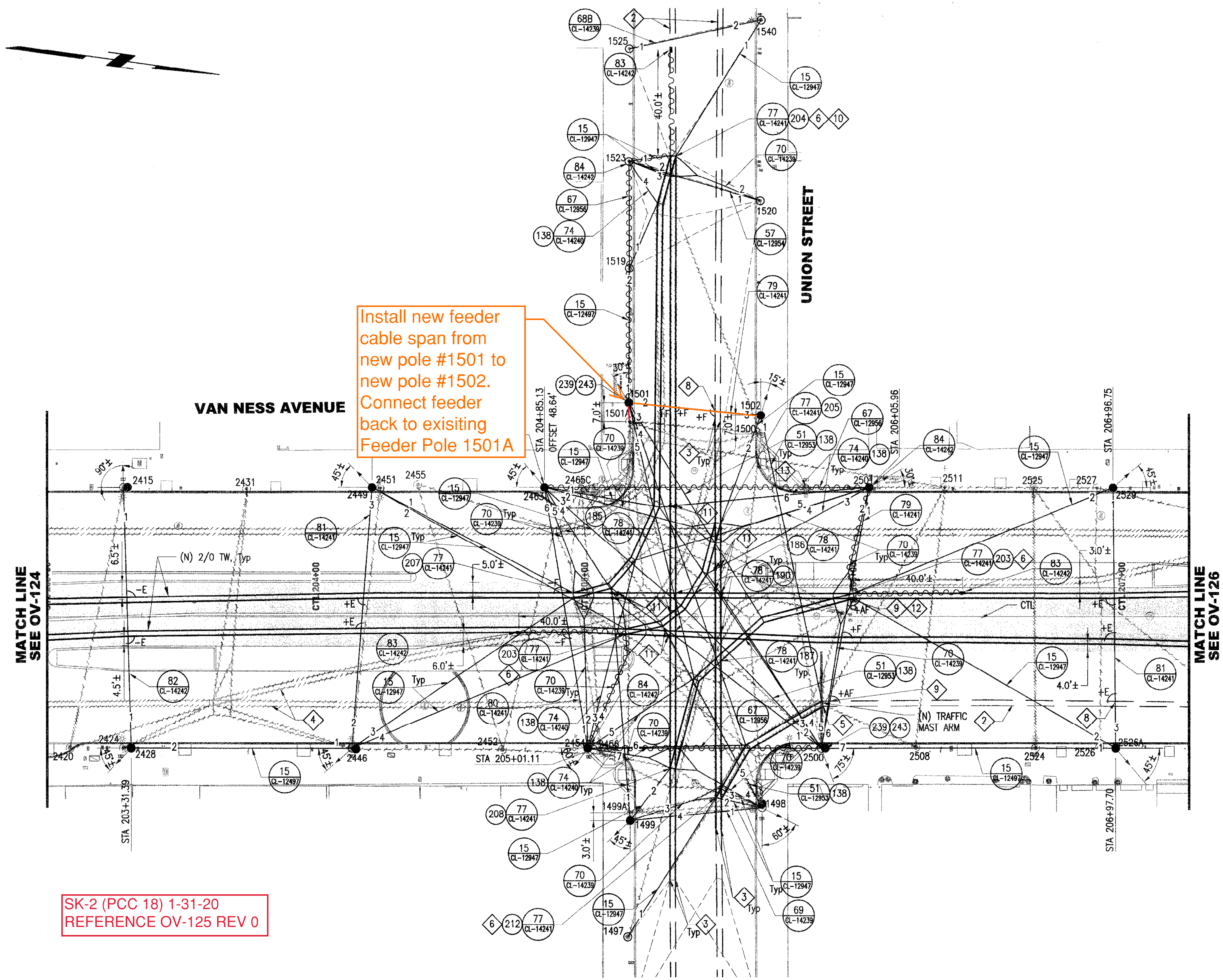
APPROVED
for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

TRACTION POWER DUCTBANK
CTL 203+00 TO 207+25
PLAN

1289
CL-29017
DB-125
DB-152
REVISION 0

BORDER REVISED 11/17/05



NOTES:

1. SEE OV-125A FOR OCS SCHEDULE AND TROLLEY WIRE SECTIONALIZATION PLAN.
2. EXISTING TROLLEY WIRE TO REMAIN, Typ.
3. SPLICE EXISTING TROLLEY WIRE TO NEW TROLLEY WIRE, Typ. PROVIDE DETAIL 1, AS SHOWN ON CL-12945.
4. EXISTING TROLLEY WIRE TO BE REMOVED, Typ.
5. SPLICE (N) TROLLEY WIRE TO (E) TROLLEY WIRE AT CARRIED THROUGH PORTION OF (N) CURVE SEGMENT.
6. RESET FLIPPER TO STRAIGHT.
7. AUXILIARY SPAN IS ALIGNED VERTICALLY ABOVE INVERTED SPAN, MAINTAIN MIN. 18" ABOVE TROLLEY WIRE.
8. PROVIDE ADDITIONAL ITEMS 49, 51, AND 69.
9. PROVIDE ADDITIONAL AUXILIARY FEED TAP ITEMS 51, 11, 57, AND 263. STRIP CABLE TO ATTACH CLAMP, WRAP EXPOSED CABLE WITH TWO LAYERS OF ELECTRICAL TAPE AND TWO COATS OF INSULATING VARNISH.
10. SPLICE (N) SWITCH TO (E) TROLLEY WIRE.
11. PROVIDE ADJUSTABLE HANGER, DETAIL 6, AS SHOWN ON CL-12945
12. REMOVE ONE FEED SPAN HANGER ASSEMBLY, ONE EACH OF ITEMS 49, 51, AND 69.
13. REMOVE AND SALVAGE ALL HARDWARE ASSOCIATED WITH (E) SWITCH ASSEMBLY. SEE SL-SERIES DRAWINGS FOR STREETLIGHT POLE REMOVAL.

20' 0 20' 40'

SCALE = 1"=20'

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED

REVISIONS

DESIGNED / DRAWN / CHECKED / REVIEWED / RECOMMENDED / APPROVED

DATE MAY 13 2016

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM

VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

OVERHEAD CONTACT SYSTEM
SPECIAL WORK AND LAYOUT PLAN
CTL STA 203+00 TO 207+25

1289

CL-29132

OV-125

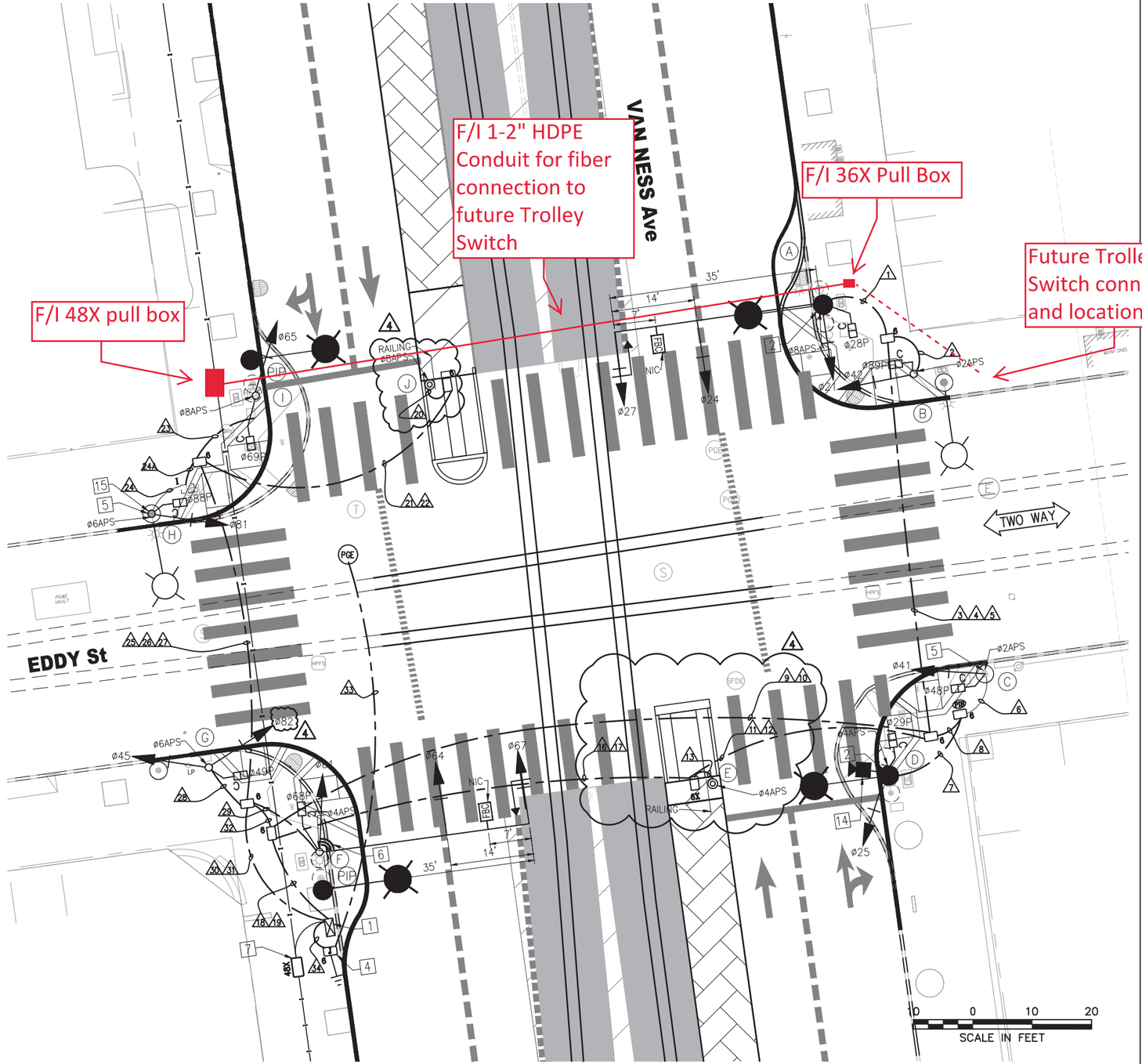
OV-161

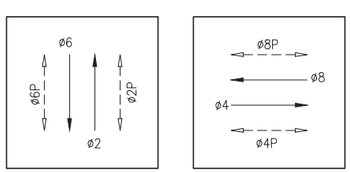
REVISION 0

BORDER REVISED 11/17/05

PCC 18 Eddy Street Sketch

EXISTING EQUIPMENT





PHASE DIAGRAM

N

FOR ORIGINAL SIGNATURES, SEE ET-109.0, REV 0

NO.	DATE	DESCRIPTION	REVISED	CHECKED	APPROVED
4	11/10/20	CONFORMED SET AND UPDATED WITH RFI #932	KK	MV	CL
3	7/18/19	LATEST DRAWING	KK	MV	CL
2	7/13/18	POLE LAYOUT – PIP POLE F & I; POLE B AND TRAFFIC SIGNAL CABINET PER POLE LAYOUT	KK	MV	CL
1	03/2018	ADDED FBC SIGNS ON POLES A AND F, ADDED TYPE 6X PULLBOX	KK	MV	CL

REVISIONS

DESIGNED	K. KWONG
DRAWN	K. KWONG
CHECKED	R. ZAMORA/C. LIU
REVIEWED	C. LIU
RECOMMENDED	P. WILSON
APPROVED	R. OLEA
DATE	12/4/2015

CITY AND COUNTY OF SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY

APPROVED

for the DIRECTOR OF TRANSPORTATION

MUNI BUS RAPID TRANSIT SYSTEM
VAN NESS CORRIDOR TRANSIT IMPROVEMENT PROJECT

EDDY STREET
TRAFFIC SIGNAL WORK

1289

ET-109.0
ET-204

REVISION 4

T:\T_E_FILES\SFgo\Projects\Van Ness BRT\Signal Design\CADD\ CP16401ETBS – 100% Rev.1-8-21 Conform.dwg KKWONG Mon Jan 11,2021 – 5:44 pm

BORDER REVISED 11/17/05

ENCLOSURE 3
Van Ness Corridor Transit Improvement Project Contract No. 1289
Project Budget and Financial Plan

Project Budget (by Type of Work)	Amount
Core Bus Rapid Transit (BRT)	$185.5 M
Water Line Replacement	$26.8 M
Sewer Replacement	$20.6 M
SFGo Traffic Signals	$24.6 M
Muni Forward	$4.3 M
Emergency Firefighting System Replacement	$6.2 M
Bus Procurement	$4.0 M
Bus Power Overhead Contact System and Pole Replacement	$30.3 M
Lighting Replacement	$13.0 M
Green Infrastructure	$1.2 M
Total	$316.4 M

Project Budget (by Phase)	Amount
Environmental	$6.0 M
Conceptual Engineering	$8.9 M
Detailed Design	$15.9 M
Construction	$281.7 M
Total	$316.4 M

Funding Sources	Amount
FTA 5309 Small Starts	$74,999,999
Active Transportation Program	$4,058,000
California Pacific Medical Center Contribution	$5,000,000
Central Freeway Parcel Revenues	$12,654,135
FTA 5307 Formula Funds	$3,980,000
FTA 5309 State of Good Repair Funds	$23,871,440
FTA Congestion Mitigation and Air Quality	$20,000,000
PPM: Planning, Programming and Monitoring funds	$197,907
Prop B Population based General Fund Set Aside	$8,134,232
Prop K Sales Tax	$44,898,444
PUC Local Funds	$61,543,618
SFMTA Series 2013 Revenue Bonds	$1,765,751
SFMTA Series 2016 Revenue Bonds	$48,000,000
State Highway Operation and Protection Program (SHOPP)	$7,304,868
TOTAL	$316,408,394