Agenda

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

9:00 a.m.

Virtual and in-person participation is available for this meeting:
Board Meeting Room, 10th Floor 1255 Imperial Avenue, San Diego CA 92101

To request an agenda in an alternative format or to request accommodations to facilitate meeting participation, please email the Clerk of the Board, ClerkoftheBoard@sdmts.com at least two working days prior to the meeting. Assistive Listening Devices (ALDs) are available from the Clerk of the Board prior to the meeting and are to be returned at the end of the meeting. Meeting webinar/teleconference instructions can be accessed under 'Meeting Link and Webinar Instructions '. Click the following link to access the meeting: https://zoom.us/j/98288032362

Para solicitar la agenda en un formato alternativo o para solicitar acomodaciones de participación, por favor mande un correo a la Secretaria de la Junta, ClerkoftheBoard@sdmts.com al menos dos días hábiles antes de la reunión. Dispositivos de ayuda auditiva están disponibles antes de la junta, los cuales se regresarán al final de la junta. Instrucciones para ingresar a la junta virtual están disponibles bajo 'Meeting Link and Webinar Instructions .' Use este enlace para acceder la reunión virtual: https://zoom.us/j/98288032362

		ACTION RECOMMENDED
1.	Roll Call	
2.	Approval of Minutes - July 21, 2022	Approve
3.	Public Comments - Limited to five speakers with three minutes per speaker. Others will be heard after Board Discussion items. If you have a report to present, please give your copies to the Clerk of the Board.	

CONSENT ITEMS

6. Authorization of Remote Teleconferenced Meetings — Approve

Action would authorize remote teleconferenced meetings for any public meetings held by MTS, including all Brown Act committees, for the next thirty (30) days pursuant to Assembly Bill (AB) 361 and make the following findings: 1) The MTS Board has considered the current circumstances of the COVID-19 pandemic and its impact in San Diego County; and 2) State or local officials continue to recommend measures to promote social distancing. On September 23, 2021, County of San Diego Public Health Officer, Wilma J. Wooten, M.D., M.P.H., issued a recommendation supporting the use of teleconferencing for attendance at public meetings as "a social distancing measure that may help control transmission of the SARS-CoV-2 virus."

7. Centralized Train Control (CTC) System Maintenance Agreement – Contract Amendment, Work Order Agreements (WOA) Ratification and Approvals — Approve

Action would 1. Ratify WOA # 1 Amendment 1 to MTS Doc. No. L1607.0-22 (WOA 1.1) with Wabtec Transportation Systems, LLC (Wabtec), formally known as ARINC Incorporated, a part of Collins Aerospace, for Beech Street Interlocking Field Integration Testing services, in the amount of $72,003.50; 2. Authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. L1607.2-22 with Wabtec, in the amount of not-to-exceed $15,000.00 for travel expense reimbursements paid during the performance of the contract, 3. Authorize the CEO to execute WOA # 1 Amendment 2 to MTS Doc. No. L1607.0-22 (WOA 1.2) with Wabtec, in the amount of $55,130.00, for final acceptance of Beech Street Double Crossover; 4. Authorize the CEO to execute WOA # 2 to MTS Doc No. L1607.0-22 (WOA 2) with Wabtec, in the amount of $297,555.00, for San Diego Association of Governments (SANDAG) Traction Power Sub-Station (TPSS) point-to-point testing, field integration testing 5. Authorize the CEO to execute WOA # 3 to MTS Doc. No. L1607.0-22 (WOA 3) with Wabtec, in the amount of $1,222,599.00, for Mission Valley West (MVW) Signal, Imperial Terminal (IMT) Double Track, and El Cajon Third Track Upgrades, in substantially the same format as. 6. Ratify WOA # 5 to MTS Doc. No. L1607.0-22 (WOA 5) with Wabtec, in the amount of $27,817.00, for Server and Sonicwall SecurID Token Upgrades.

8. Regional Communication System (RCS) Radio Equipment – Contract Award — Approve

Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. G2622.0-22 with Motorola Solutions, Inc. for RCS Radio Equipment and Installation in the amount of $276,103.60, inclusive of 7.750% CA tax.

9. 40-Foot Low-Floor Compressed Natural Gas (CNG) Buses – Contract Amendment — Approve

Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0660.15-17 with Gillig LLC (Gillig), to approve a 4% increase for the purchase of thirty-eight (38) 40-foot CNG buses.

10. Sale Of 2015 Ford E450 Starcraft To San Diego State University Police Department – Contract Approval — Approve
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0753.0-23 for the sale of MTS paratransit vehicle #3975 (2015 Ford E450 Starcraft, VIN #1FDFE4FS9GDC03883) to the San Diego State University Police Department ("SDSU PD") for $11,400.00.

11. Investment Report – Quarter Ending June 30, 2022 — Informational

12. Rail Welding Services - Contract Award — Approve
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. PWL359.0-22, with Morrison Metalweld Process Corp. (Morrison), a Small Business (SB), in the amount of $438,933.00, for a five (5) year period from October 18, 2022 to October 17, 2027 for rail welding services.

13. Joint Defense and Funding Agreement with SANDAG — Approve
Action would authorize increased funding of up to $190,000 for the Joint Defense and Common Interest Agreement between MTS, North County Transit District (NCTD), and San Diego Association of Governments (SANDAG) related to the litigation titled Anna Avenue Associates, LLC, et al., v. SANDAG, et al., San Diego Superior Court Case No. 37-2018-00000231-CU-EI-CTL; consolidated with Case No. 37-2016-00009321-CU-EI-CTL.

14. Fare Collection (Various Amendments) – Contract Amendments — Approve
Action would 1) Ratify Amendment 12 to MTS Doc. No. G2091.0-18, with Innovations in Transportation, Inc. (INIT), in the amount of $14,012.50; 2) Authorize the Chief Executive Officer (CEO) to execute Amendment 13 to MTS Doc. No. G2091.0-18, with INIT, in the amount of $129,600.00; and 3) Authorize the CEO to execute Amendment 14 to MTS Doc. No. G2091.0-18, with INIT, in the amount of $91,941.44.

15. Zero-Emission Bus (ZEB) Procurement Project: 60-Foot Low-Floor Electric Buses – Contract Amendment — Approve
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0722.4-21 with New Flyer, Inc, ("New Flyer"), to approve a 4%, or $704,775.08, increase for the purchase of twelve (12) 60-foot ZEB buses for a new contract total of $19,512,289.29.

16. Federal Transit Administration (FTA) Section 5310 Grant Application — Approve
Action would 1) Adopt Resolution No. 22-07 agreeing to comply with all terms and conditions of the Federal Transit Administration (FTA) Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities Program as set forth by the FTA and the San Diego Association of Governments (SANDAG); 2) Authorize the Chief Executive Officer (CEO) to submit the following applications and execute any grant agreements awarded by SANDAG: a) $600,000 in federal fiscal year (FFY) 2021 FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities funding for paratransit vehicle replacement; b) $600,000 in FFY 2022 FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities funding for paratransit

vehicle replacement; 3) Authorize the commitment of up to $300,000 in local matching funds to fully fund the purchase of 7 paratransit vehicles.

17. Fiscal Year (FY) 2022-2023 California Senate Bill (SB) 1 State of Good Repair (SGR) Funding — Approve
Action would approve Resolution No. 22-08 in order to: 1) Authorize the use of and application of the estimated $5,095,907 in FY 2022-23 State of Good Repair funding to be used for the ongoing SD100 Light Rail Vehicle (LRV) Replacement Project; and 2) Approve the acceptance of additional FY 2022-23 SB1-SGR funding if made available to MTS.

18. America Plaza Pedestrian Enhancements Project Construction Management Services – Work Order — Approve
Action would authorize the Chief Executive Officer (CEO) to execute Work Order No. WOA2497-CM04 under MTS Doc. No. G2497.0-21 with Jacobs Project Management Co. for the America Plaza Pedestrian Enhancements Project Construction Management (CM) Services in the amount of $575,591.29.

19. San Diego State University (SDSU) Uninterruptible Power Supply (UPS) and Inverters System Replacement – Work Order — Approve
Action would authorize the Chief Executive Officer (CEO) to execute Work Order MTSJOC311-03 to MTS Doc. No. PWL311.0-20 with HMS Construction, Inc. (HMS) in the amount of $496,883.90 for replacing the obsolete UPS and inverters at the SDSU Station.

20. Digital Signage and Variable Message Sign (VMS) Maintenance and As-Needed Repairs - Contract Amendment — Approve
Action would authorize the Chief Executive Officer (CEO) to: 1) Ratify Amendment No. 1 to MTS Doc. No. PWG318.0-20, with Brault, Inc., dba Electro Specialty Systems (ESS), a Small Business (SB), in the amount of $33,787.90 to add Mid-Coast VMS maintenance during contract year 2; and 2) Execute Amendment No. 2 to MTS Doc. No. PWG318.0-20, with ESS, an SB, in the amount of $246,402.33 to add Mid-Coast VMS maintenance for remaining contract and option years.

21. Siemens Computer Aids Signaling (SICAS) S7 Components - Sole Source Contract Award — Approve
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. L1625.0-23, a sole source award to Siemens Mobility, Inc. (Siemens) in the amount of $265,762.11 for the purchase of Siemens computer aids signaling components for the Maintenance of Way (MOW) department.

22. Parking Usage and Alternatives Market Study – Work Order — Approve
Action would authorize the Chief Executive Officer (CEO) to execute Work Order WOA357-AE-02 under MTS Doc No. PWL357.0-22 with Chen Ryan Associates, Inc., (CRA), a Disadvantaged Business Enterprise (DBE), in the amount of $136,864.86, to conduct a parking usage study and analysis.

23. Stormwater Management Services - Contract Amendment — Approve
Action would authorize the Chief Executive Officer (CEO) to: 1) Ratify Amendment No. 1 to MTS Doc. No. PWG332.0-21 with SoCal Stormwater Runoff Solution Services, Inc. (SoCal), a Small Business (SB), in the amount of $48,939.62 for the addition of (4) Bus Rapid Transit (BRT) locations and updated various inspection and maintenance services; 2) Ratify Amendment No. 2 to MTS Doc. No. PWG332.0-21, with SoCal for increases in as-needed services and filters. This is a no-cost amendment; and 3) Execute Amendment No. 3 to MTS Doc. No. PWG332.0-21 with SoCal in the amount of $232,884.65 for additional funds to cover increased services.

24. Imperial Avenue Division (IAD) Ram Bus Maintenance Building Heating Ventilation/Air Conditioning (HVAC) Replacement – Work Order — Approve
Action would authorize the Chief Executive Officer (CEO) to execute Work Order MTSJOC324-13 to MTS Doc. No. PWG324.0-21 with ABC General Contractor, Inc. (ABCGC) in the amount of $378,294.06, plus an additional project contingency of $150,000.00, for a total amount of $528,294.06 for the removal and replacement of the HVAC units at the IAD RAM bus maintenance building.

CLOSED SESSION

25. Closed Session - Conference with Labor Negotiators Pursuant to California Government Code Section 54957.6 — Possible Action
Agency: San Diego Transit Corporation ("SDTC")
Employee Organization: Amalgamated Transit Union, Local 1309 ("ATU")
Agency- Designated Representative: Jeffrey M. Stumbo, Chief Human Resources Officer (EEO Officer)

NOTICED PUBLIC HEARINGS

26. None.

DISCUSSION ITEMS

30. Rancho Bernardo Transit Station Transit-Oriented Development (Karen Landers) — Approve
Action would authorize the Chief Executive Officer to: 1) Execute a Disposition and Development Agreement with Bernardo Family Housing L.P. for a Rancho Bernardo Transit Station Transit-Oriented Development Project (DDA); and 2) Take all actions necessary to fulfill MTS's obligations under the DDA, including, but not limited to, executing a Ground Lease and related regulatory agreements for the project.

REPORT ITEMS

45.	2022 Customer Satisfaction Survey Report (Mark Olson, MTS; and Judith McCourt Redhill Group)	Informational
46.	Fiscal Year (FY) 2022 Annual Performance Monitoring Report (Denis Desmond, Neomi Woods)	Informational

OTHER ITEMS

60.	Chair Report	Informational
61.	Chief Executive Officer's Report	Informational
62.	Board Member Communications	Informational

63. Additional Public Comments Not on the Agenda
If the limit of 5 speakers is exceeded under No. 3 (Public Comments) on this agenda, additional speakers will be taken at this time. If you have a report to present, please furnish a copy to the Clerk of the Board. Subjects of previous hearings or agenda items may not again be addressed under Public Comments.

64. Next Meeting Date: October 20, 2022

65. Adjournment

DRAFT MINUTES

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

July 21, 2022

[Clerk's note: Except where noted, public, staff and board member comments are paraphrased. Note that the meeting was conducted via webinar to comply with public health orders].

1. Roll Call

Chair Fletcher called the Board meeting to order at 9:00 a.m. A roll call sheet listing Board member attendance is attached.

2. Approval of Minutes

Chair Fletcher moved to approve the minutes of the June 16, 2022, MTS Board of Directors meeting. Board Member Shu seconded the motion, and the vote was 11 to 0 in favor with Board Member Aguirre, Board Member Whitburn, Board Member Hall and Board Member Salas absent.

3. Public Comment

Sammy Gabriel – Made a verbal statement to the Board during the meeting. Gabriel explained the process to submit a jitney application length and asked the Board to assist with the processing timeline.

CONSENT ITEMS:

6. Authorization of Remote Teleconferenced Meetings
Action would authorize remote teleconferenced meetings for any public meetings held by MTS, including all Brown Act committees, for the next thirty (30) days pursuant to Assembly Bill (AB) 361 and make the following findings: 1) The MTS Board has considered the current circumstances of the COVID-19 pandemic and its impact in San Diego County; and 2) State or local officials continue to recommend measures to promote social distancing. On September 23, 2021, County of San Diego Public Health Officer, Wilma J. Wooten, M.D., M.P.H., issued a recommendation supporting the use of teleconferencing for attendance at public meetings as "a social distancing measure that may help control transmission of the SARS-CoV-2 virus."

7. Amendment to Chief Executive Officer Employment Agreement
Action would approve an amendment to the Executive Employment Agreement (EEA) between MTS and Sharon Cooney to provide a base salary increase and a merit bonus.

8. Adoption of Amended 2022 Conflict of Interest Code
Action would 1) Adopt Resolution No. 22-06 amending the MTS Conflict of Interest Code pursuant to the Political Reform Act of 1974; 2) Adopt the amended 2022 MTS Conflict of Interest Code; and 3) Forward the amended 2022 MTS Conflict of Interest Code to the County of San Diego (the designated code-reviewing body).

9. Legal Services – Contract Amendments to Increase Funds for Projected Expenses in Fiscal Year 2023
Action would authorize the Chief Executive Officer (CEO) to execute amendments to the legal services contracts described herein increasing the dollar amounts of fifteen (15) legal services contracts by $1,865,000.00 to cover anticipated Fiscal Year 2023 (FY 23) expenses.

10. Skid Steer Purchase & Delivery – Contract Award
Action would authorize the Chief Executive Officer (CEO) to: 1) Execute MTS Doc. No. L1620.0-22 with Miramar Bobcat, LLC, at $159,056.41, for the purchase and delivery of a skid steer; and 2) Exercise the option to purchase the equipment options within the CEO's discretion.

11. Pyramid Building Initial Cleanup and Repairs – Work Order
Action would authorize the Chief Executive Officer (CEO) to execute Work Order MTSJOC324-17 to MTS Doc. No. PWG324.0-21 with ABC General Contractor, Inc. (ABCGC) in the amount of $179,476.83, for the rehabilitation of the Pyramid Building.

12. Davra Networks Ruban Software Reporting and Analytics, Server Migration and System Enhancements – Contract Amendment
Action would authorize the Chief Executive Officer (CEO) to execute Amendment No. 4 to MTS Doc. No. G2071.0-18 (in substantially the same format as Attachment A), with Davra Networks, increasing the contract value in the amount of $666,400.00, bringing the contract total to $2,216,400.00 (Attachment B) and based on the changes to the scope, extend the agreement from December 1, 2022 through December 31, 2023.

13. Security Services Uniforms – Contract Award
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. G2608.0-22 to Ace Uniforms, LLC dba Ace Uniforms, a Small Business (SB), for Security Services Uniforms for a five (5) year term in the amount of $416,449.44.

14. Imperial Avenue Division (IAD) Zero Emission Bus (ZEB) Overhead Charging Phase I – Work Order
Action would authorize the Chief Executive Officer (CEO) to execute Work Order Amendment WOA353-AE-01 under MTS Doc No. PWL353.0-22 with Dokken Engineering, Inc. (Dokken) in the amount of $335,731.23 to provide engineering design services for Phase 1 of the IAD electric bus charging infrastructure project.

15. Vehicle Paint Supply – Sole Source Contract Award
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. G2610.0-22 with Annex Warehouse Co. Inc. (Annex), for the provision of vehicle paint in the amount of $202,743.48 for a period of two (2) years.

16. AT&T CALNET – Add Cloud-Hosted Interactive Voice Response (IVR) Five9 – Contract Amendment
Action would authorize the Chief Executive Officer (CEO) to execute Amendment No. 1 to MTS Doc. No. G2510.0-22, with AT&T Corp., increasing the contract value in the amount of $1,052,132.19, bringing the contract total to $4,136,927.19 with no changes to the term of the agreement.

17. Vector Environmental Health and Safety (EHS) Management Software – Sole Source Contract Award
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. G2647.0-23 with RedVector.com LLC (RedVector), in the amount of $155,145 for 5-years of licensing, maintenance and support of Vector EHS Management.

MEMBER COMMENTS – CONSENT ITEM 9

Board Member Sandke asked about the increase in the legal budget and asked for the cause of the contract increase. Karen Landers, MTS General Counsel replied that there was not a specific reason, rather the increase was in anticipation of needs such as projections for the remainder of the year and rescheduled trials from last year, due to COVID.

MEMBER COMMENTS – CONSENT ITEM 7

Board Member Galvez expressed appreciation for the leadership of Sharon Cooney, MTS Chief Executive Officer.

Action on Recommended Consent Items

Board Member Sandke moved to approve Consent Agenda Item Nos. 6 through 17. Chair Fletcher seconded the motion and the vote was 12 to 0 in favor with Board Member Aguirre, Board Member Whitburn and Board Member Hall absent.

CLOSED SESSION:

24. None.

NOTICED PUBLIC HEARINGS

25. None.

DISCUSSION ITEMS:

30. Bus Procurement: Low Floor Compressed Natural Gas (CNG) and Battery Electric Buses (BEB) – Contract Award (Michael Wygant, Claudine Aquino, Larry Marinesi)

Chair Fletcher acknowledged the lengthy conversation on this topic discussed at the Executive Committee Meeting. He explained that the bus procurement allows the agency flexibility moving forward to move more rapidly and acquire more ZEB with concurrent infrastructure projects to support them. He explained the need to acquire new buses that need to be replaced while the zero-emission technology is being implemented.

Michael Wygant, MTS Chief Operating Officer for Bus, Claudine Aquino, Manager of Procurement and Larry Marinesi, Chief Financial Officer presented on CNG and BEB Contract Award. They presented on: the fleet history and background, schedule, existing contract 2017-2022, request for proposals, vehicle improvements, technology, procurement, total contract costs and staff recommendation.

PUBLIC COMMENT

Corina Contreras – Representing Climate Action Campaign made a verbal statement to the Board during the meeting. Contreras cautioned the Board of health effects CNG buses would bring to various communities throughout the region. Contreras urged the Board to reconsider approving the item and if the Board moved forward with the approval, to include ZEB replacement within a 12-year period.

Gretchen Newsom – Representing IBEW 569 made a verbal statement to the Board during the meeting. Newsom expressed concern that the proposed timeline will not meet a zero-emission

fleet in 2040. Newsom urged the Committee to remove the CNG purchase option and only allow ZEB. Newsom urged the Board to support the zero-emission plan more aggressively.

COMMITTEE COMMENT

Board Member Elo-Rivera acknowledged the urgency to move to a clean fleet and the community's disapproval. He asked staff if there was a good resale avenue for CNG vehicles as electric vehicles are purchased. Mr. Marinesi replied that in accordance to Federal funding requirements, the vehicle must be used over its life cycle of 12 years. Otherwise, the funds must be returned to the Federal Transit Administration (FTA). Once the vehicle has reached its useful life, the agency may auction off the bus or seek a buyer. Board Member Elo-Rivera clarified that the agency would need federal action in order to alleviate the financial loss the agency would take prior to the vehicle's lifetime. Board Member Elo-Rivera acknowledged the financial impact to the agency. He expressed caution over purchasing CNG vehicles and clarified that the agency was not committed to purchasing these CNG vehicles, rather securing a price. He supported the staff recommendation and encouraged the Board to be flexible in purchasing the cleanest fleet as quickly as possible.

Chair Fletcher acknowledged the Board's 2040 Zero Emission Goal and if possible, the ability to reach the goal sooner. He compared the 12-year replacement lifespan with the time it takes for bus charging infrastructure construction. He noted that the procurement timeline becomes crucial for 2026 and 2028 when it could affect our goal timeline. Currently the agency does not have the charging capacity nor the vehicle fleet but is confident the agency will attain its goal. He urged this and future Boards to be conscious of the timeline and noted his appreciation for the discussion.

Board Member Shu stated that methane is released in the mining of CNG, and that it was comparable to using coal. He appreciated the flexibility of the proposal. He asked about the plan's flexibility in the next five years to the purchase of electric vehicles. Ms. Cooney replied that staff will present the ZEB transition plan annually where the Board can create changes to accelerate the purchase of zero emission busses. He asked staff about the savings of the transition to ZEB due to the longevity of electric buses. Mr. Wygant confirmed that the agency does track the data and it is presented in the annual transition plan update, along with online reports. He noted that maintenance requirements for inspection of CNG and ZEB buses remain the same. Labor and needed maintenance repairs for ZEB buses are currently lower than a comparable CNG vehicle because electric parts are historically more affordable. Electric charging costs, however, have not shown comparable savings to CNG fueling. The fleet is small and manageable but it will become more complex as the fleet grows. Board Member Shu noted that the transition was both an environmental and financial benefit.

<u>Action Taken</u>

Board Member Elo-Rivera moved to authorize the Chief Executive Officer (CEO) to:1) Execute the following contracts with New Flyer of America, Inc. (New Flyer), for the base quantity purchase of CNG and BEB buses plus spare parts, tools and diagnostics, training services and sales tax for a period not-to-exceed five (5) years; and 2) Exercise option quantity purchases in the CEO's discretion of CNG and BEB buses plus spare parts, tools and diagnostics, training services and sales tax for a period not-to-exceed five (5) years from the date of the initial contract with New Flyer.

Attachment #	Contract #	Group	Description	Base quantity up to	Option quantity up to	Total Amount
A-1	B0746.0-22	A	40ft CNG	138	50	$152,475,675.09
A-3	B0747.0-22	B	40ft BEB	91	50	$170,804,314.53
A-5	B0748.0-22	C	60ft CNG	30	40	$96,279,531.73
A-7	B0749.0-22	D	60ft BEB	34	40	$149,543,816.51
Not-to-exceed total amount						$569,103,337.86

Chair Fletcher seconded the motion, and the vote was 12 to 0 in favor with Board Member Aguirre, Board Member Whitburn and Board Member Hall.

REPORT ITEMS:

45. Inter-Con Security Transition Update (Al Stiehler)

Al Stiehler, MTS Director of Transit Security and Passenger Safety, presented an Inter-Con Security Transition Update. He outlined the following information: code compliance inspectors (CCI) duties, contract security, ambassadors, 2021: Intercon awarded security contract, transition plan, local office, management team, training curriculum, personnel turnover, resignations and terminations, hiring progress, “health” report, and video retention.

Board Member Montgomery Steppe asked that staff incorporate costs associated with the extention of the video retention into budget decisions.

Chair Fletcher commended the Public Security Committee for their work.

Board Member Shu commended the strides for change the agency has made. He stated a desire for CCIs to have more informal interactions with passengers while checking fare. He also commented on the officer’s physical stance that is not welcoming. He claimed that such interactions would allow the transit system to feel secure and friendly. He asked staff about the type of training CCIs receive and noted that officers interact with each other more than the public while in the field. Mr. Stiehler replied that part of the agency’s goal was to provide a pleasant experience for riders. Part of the agency’s training was for customer service training, he assured that officers are encouraged to have friendly interactions. However, while they are checking for fares onboard they need to finish their car fare inspection. Board Member Shu thanked staff for the response.

Action Taken

Informational item only. No action taken.

46. Operations Budget Status Report for May 2022 (Gordon Meyer)

Gordon Meyer, MTS Operating Budget Supervisor presented an Operations Budget Status Report. He provided details on: comparison to budget – May 31, 2022 - FY 2022 federal stimulus funding, total operating revenues, total operating expenses, and total operating activities.

Vice Chair Sotelo-Solis asked about the increase of ridership but lack of tapping. She asked about educational opportunities to demonstrate tapping on validators. Ms. Cooney

acknowledged the education campaign with school districts to inform students and youth about free transit access.

Action Taken

Informational item only. No action taken.

OTHER ITEMS:

60. Chair Report

There was no Chair report.

61. Chief Executive Officer's Report

Ms. Cooney noted her intent for MTS to support a successful Comic-Con event.

62. Board Member Communications

Board Member Sandke commended the safe, efficient and cheap transportation system of Helsinki. He noted the exemplary features of the system including phone tap and ride feature along with the airport connectivity and transit-oriented development. He was eager to share and use the system as a case study.

63. Additional Public Comments on Items Not on the Agenda

Jose Puga – Representing TransDev Transit Services for South Bay and El Cajon made a verbal statement to the Board during the meeting. Puga expressed unfair labor practices including meal and break area, restroom access and relief cars for drivers.

Alex Wong – made a verbal statement to the Board during the meeting. Wong advocated for a tax increase and listed various programs that the agency could fund.

64. Next Meeting Date

The next regularly scheduled Board meeting is September 15, 2022 at 9am.

65. Adjournment

The meeting was adjourned at 10:20am.

Chairperson
San Diego Metropolitan Transit System

Filed by:

Approved as to form:

Clerk of the Board
San Diego Metropolitan Transit System

General Counsel
San Diego Metropolitan Transit System

Attachment: Roll Call Sheet

SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS
ROLL CALL

MEETING OF (DATE): July 21, 2022 CALL TO ORDER (TIME): 9:00 am
RECESS: RECONVENE:
CLOSED SESSION: RECONVENE:
PUBLIC HEARING: RECONVENE:
ORDINANCES ADOPTED: ADJOURN: 10:20 am

BOARD MEMBER		(Alternate)		PRESENT (TIME ARRIVED)	ABSENT (TIME LEFT)
FLETCHER	☒	(Vargas)	☐	9:00 am	10:20 am
SOTELO-SOLIS	☒	(Bush)	☐	9:00 am	10:20 am
AGUIRRE	☐	(Leyba-Gonzalez)	☐	ABSENT	ABSENT
ELO-RIVERA	☒	(LaCava)	☐	9:00 am	10:20 am
FRANK	☒	(Mullin)	☐	9:00 am	10:20 am
GALVEZ	☒	(Cardenas)	☐	9:00 am	10:20 am
GASTIL	☐	(Mendoza)	☒	9:00 am	10:20 am
GLORIA	☐	(Whitburn)	☒	9:59 am	10:20 am
GOBLE	☒	(Ortiz)	☐	9:00 am	10:20 am
HALL	☐	(McNelis)	☐	ABSENT	ABSENT
MONTGOMERY STEPPE	☒	(Von Wilpert)	☐	9:00 am	10:20 am
MORENO	☒	(Campillo)	☐	9:01 am	10:20 am
SALAS	☒	(Cardenas)	☐	9:06 am	10:20 am
SANDKE	☒	(Donovan)	☐	9:00 am	10:20 am
SHU	☒	(Arapostathis)	☐	9:00 am	10:20 am

SIGNED BY THE CLERK OF THE BOARD: /S/ Dalia Gonzalez

Agenda Item No. 6

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

AUTHORIZATION OF REMOTE TELECONFERENCED MEETINGS

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize remote teleconferenced meetings for any public meetings held by MTS, including all Brown Act committees, for the next thirty (30) days pursuant to Assembly Bill (AB) 361 and make the following findings:

1) The MTS Board has considered the current circumstances of the COVID-19 pandemic and its impact in San Diego County; and

2) State or local officials continue to recommend measures to promote social distancing. On September 23, 2021, County of San Diego Public Health Officer, Wilma J. Wooten, M.D., M.P.H., issued a recommendation supporting the use of teleconferencing for attendance at public meetings as “a social distancing measure that may help control transmission of the SARS-CoV-2 virus” (Attachment A).

Budget Impact

None with this action.

DISCUSSION:

On March 17, 2020, Governor Newsom issued Executive Order N-29-20, suspending the teleconferencing rules set forth under the Ralph M. Brown Act (Brown Act), Government Code Section 54950 et seq. On June 11, 2021, Governor Newsom issued Executive Order N-08-21, clarifying the suspension of the teleconferencing rules set forth in the Brown Act, noting that those provisions would remain suspended through September 30, 2021. On September 16, 2021, Governor Newsom signed AB 361, which allows legislative bodies subject to the Brown Act to continue meeting by teleconference, provided they make certain findings, including that meeting in person would present imminent risks to the health or safety of attendees. AB 361 requires that certain findings be made by the legislative body every 30 days.

The purpose of this agenda item is for the MTS Board of Directors to make findings supporting the continuation of a teleconference option for Board or committee members and for teleconference attendance by members of the public at MTS Board and committee meetings consistent with the requirements of AB 361.

AB 361 added subdivision (e) to Government Code section 54953 (emphasis added), providing for streamlined teleconference attendance at public meetings subject to the Brown Act, subject to the governing board making specified findings:

> **(e) (1) A local agency may use teleconferencing without complying with the requirements of paragraph (3) of subdivision (b) if the legislative body complies with the requirements of paragraph (2) of this subdivision in any of the following circumstances:**
>
> **(A) The legislative body holds a meeting during a proclaimed state of emergency, and state or local officials have imposed or recommended measures to promote social distancing.**
>
> **(B) The legislative body holds a meeting during a proclaimed state of emergency for the purpose of determining, by majority vote, whether as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.**
>
> **(C) The legislative body holds a meeting during a proclaimed state of emergency and has determined, by majority vote, pursuant to subparagraph (B), that, as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.**
>
> (2) A legislative body that holds a meeting pursuant to this subdivision shall do all of the following:
>
> (A) The legislative body shall give notice of the meeting and post agendas as otherwise required by this chapter.
>
> (B) The legislative body shall allow members of the public to access the meeting and the agenda shall provide an opportunity for members of the public to address the legislative body directly pursuant to Section 54954.3. In each instance in which notice of the time of the teleconferenced meeting is otherwise given or the agenda for the meeting is otherwise posted, the legislative body shall also give notice of the means by which members of the public may access the meeting and offer public comment. The agenda shall identify and include an opportunity for all persons to attend via a call-in option or an internet-based service option. This subparagraph shall not be construed to require the legislative body to provide a physical location from which the public may attend or comment.
>
> (C) The legislative body shall conduct teleconference meetings in a manner that protects the statutory and constitutional rights of the parties and the public appearing before the legislative body of a local agency.

(D) In the event of a disruption which prevents the public agency from broadcasting the meeting to members of the public using the call-in option or internet-based service option, or in the event of a disruption within the local agency's control which prevents members of the public from offering public comments using the call-in option or internet-based service option, the body shall take no further action on items appearing on the meeting agenda until public access to the meeting via the call-in option or internet-based service option is restored. Actions taken on agenda items during a disruption which prevents the public agency from broadcasting the meeting may be challenged pursuant to Section 54960.1.

(E) The legislative body shall not require public comments to be submitted in advance of the meeting and must provide an opportunity for the public to address the legislative body and offer comment in real time. This subparagraph shall not be construed to require the legislative body to provide a physical location from which the public may attend or comment.

(F) Notwithstanding Section 54953.3, an individual desiring to provide public comment through the use of an internet website, or other online platform, not under the control of the local legislative body, that requires registration to log in to a teleconference may be required to register as required by the third-party internet website or online platform to participate.

(G) (i) A legislative body that provides a timed public comment period for each agenda item shall not close the public comment period for the agenda item, or the opportunity to register, pursuant to subparagraph (F), to provide public comment until that timed public comment period has elapsed.

(ii) A legislative body that does not provide a timed public comment period, but takes public comment separately on each agenda item, shall allow a reasonable amount of time per agenda item to allow public members the opportunity to provide public comment, including time for members of the public to register pursuant to subparagraph (F), or otherwise be recognized for the purpose of providing public comment.

(iii) A legislative body that provides a timed general public comment period that does not correspond to a specific agenda item shall not close the public comment period or the opportunity to register, pursuant to subparagraph (F), until the timed general public comment period has elapsed.

(3) If a state of emergency remains active, or state or local officials have imposed or recommended measures to promote social distancing, in order to continue to teleconference without compliance with paragraph (3) of subdivision (b), the legislative body shall, not later than 30 days after teleconferencing for the first time pursuant to subparagraph (A), (B), or (C) of paragraph (1), and every 30 days thereafter, make the following findings by majority vote:

(A) The legislative body has reconsidered the circumstances of the state of emergency.

(B) Any of the following circumstances exist:

(i) The state of emergency continues to directly impact the ability of the members to meet safely in person.

(ii) State or local officials continue to impose or recommend measures to promote social distancing.

(4) For the purposes of this subdivision, "state of emergency" means a state of emergency proclaimed pursuant to Section 8625 of the California Emergency Services Act (Article 1 (commencing with Section 8550) of Chapter 7 of Division 1 of Title 2).

***

The circumstances set forth in Government Code section 54953(e)(1)(A) and (e)(3) still apply and support the continuation of a teleconference option for Board or committee members and for teleconference attendance by members of the public at MTS Board and committee meetings for the upcoming 30-day period. Staff recommends that the Board make the following findings:

1) The MTS Board has considered the current circumstances of the COVID-19 pandemic and its impact in San Diego County; and

2) State or local officials continue to recommend measures to promote social distancing. On September 23, 2021, County of San Diego Public Health Officer, Wilma J. Wooten, M.D., M.P.H., issued a recommendation supporting the use of teleconferencing for attendance at public meetings as "a social distancing measure that may help control transmission of the SARS-CoV-2 virus." (Attachment A) That recommendation remains in effect.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. September 23, 2021 County of San Diego Health Officer Teleconferencing Recommendation

County of San Diego

NICK MACCHIONE, FACHE
AGENCY DIRECTOR

HEALTH AND HUMAN SERVICES AGENCY
PUBLIC HEALTH SERVICES

WILMA J. WOOTEN, M.D.
PUBLIC HEALTH OFFICER

HEALTH OFFICER TELECONFERENCING RECOMMENDATION

COVID-19 disease prevention measures, endorsed by the Centers for Disease Control and Prevention, include vaccinations, facial coverings, increased indoor ventilation, handwashing, and physical distancing (particularly indoors).

Since March 2020, local legislative bodies—such as commissions, committees, boards, and councils—have successfully held public meetings with teleconferencing as authorized by Executive Orders issued by the Governor. Using technology to allow for virtual participation in public meetings is a social distancing measure that may help control transmission of the SARS-CoV-2 virus. Public meetings bring together many individuals (both vaccinated and potentially unvaccinated), from multiple households, in a single indoor space for an extended time. For those at increased risk for infection, or subject to an isolation or quarantine order, teleconferencing allows for full participation in public meetings, while protecting themselves and others from the COVID-19 virus.

Utilizing teleconferencing options for public meetings is an effective and recommended social distancing measure to facilitate participation in public affairs and encourage participants to protect themselves and others from the COVID-19 disease. This recommendation is further intended to satisfy the requirement of the Brown Act (specifically Gov't Code Section 54953(e)(1)(A)), which allows local legislative bodies in the County of San Diego to use certain available teleconferencing options set forth in the Brown Act.

September 23, 2021

Wilma J. Wooten, MD

Wilma J. Wooten, M.D., M.P.H
Public Health Officer
County of San Diego

Agenda Item No. 7

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

CENTRALIZED TRAIN CONTROL (CTC) SYSTEM MAINTENANCE AGREEMENT – CONTRACT AMENDMENT, WORK ORDER AGREEMENTS (WOA) RATIFICATION AND APPROVALS

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors:

1. Ratify WOA # 1 Amendment 1 to MTS Doc. No. L1607.0-22 (WOA 1.1) with Wabtec Transportation Systems, LLC (Wabtec), formally known as ARINC Incorporated, a part of Collins Aerospace, for Beech Street Interlocking Field Integration Testing services, in the amount of $72,003.50 as shown in Attachment A;

2. Authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. L1607.2-22 with Wabtec, in the amount of not-to-exceed $15,000.00 for travel expense reimbursements paid during the performance of the contract, in substantially the same format as Attachment B;

3. Authorize the CEO to execute WOA # 1 Amendment 2 to MTS Doc. No. L1607.0-22 (WOA 1.2) with Wabtec, in the amount of $55,130.00, for final acceptance of Beech Street Double Crossover, as shown in Attachment C;

4. Authorize the CEO to execute WOA # 2 to MTS Doc No. L1607.0-22 (WOA 2) with Wabtec, in the amount of $297,555.00, for San Diego Association of Governments (SANDAG) Traction Power Sub-Station (TPSS) point-to-point testing, field integration testing, and warranty in substantially the same format as Attachment D;

5. Authorize the CEO to execute WOA # 3 to MTS Doc. No. L1607.0-22 (WOA 3) with Wabtec, in the amount of $1,222,599.00, for Mission Valley West (MVW) Signal, Imperial Terminal (IMT) Double Track, and El Cajon Third Track Upgrades, in substantially the same format as Attachment E; and

6. Ratify WOA # 5 to MTS Doc. No. L1607.0-22 (WOA 5) with Wabtec, in the amount of $27,817.00, for Server and Sonicwall SecurID Token Upgrades, in substantially the same format as Attachment F.

Budget Impact

The total amendments subject to today's proposed Board action total $1,690,104.50, resulting in a total budget for this contract at $3,708,943.50. This project is funded by Capital Improvement Project (CIP) 2008118101 – Wabtec Integrations.

The contract summary is shown below:

Date Issued	Board Approval or Ratified Date	Document	Description	Amount
1/1/2022	12/16/2021		CTC System Maintenance	$1,568,916.00
5/1/2022	12/16/2021	WOA 1	Various System Integrations	$452,000.00
		WOA 1	*Project came in below budget. MTS received a credit of $2,077.00.*	*$(2,077.00)*
05/09/22	*9/15/22*	*WOA 1.1 (Ratify)*	*Add Beech Street Interlocking Field Integration Testing*	*$72,003.50*
6/24/2022	*n/a*	*L1607.1-22*	*Recognized assignment from ARINC to Wabtec; updated Federal Requirements language*	*n/a*
TBD	*9/15/22*	*L1607.2-22 (Approve)*	*Travel Expense. Reimbursements to be paid during the contract.*	*$15,000.00*
TBD	*9/15/22*	*WOA 1.2 (Approve)*	*Final Acceptance of Beech Street Double Crossover*	*$55,130.00*
TBD	*9/15/22*	*WOA 2 (Approve)*	*SANDAG – Mid Coast existing Task Orders # 33 (SANDAG TPSS point-to-point testing and GPS) and #34 (SANDAG Field Integration testing TPSS, Stations and warranty). MTS takes on these Task Orders using Addendum 17 SOW 105, and will be reimbursed by SANDAG.*	*$297,555.00*
TBD	*9/15/22*	*WOA 3 (Approve)*	*MVW Signal, IMT Double Track, and El Cajon Third Track Upgrades*	*$1,222,599.00*
	9/15/22	*WOA 5 (Ratify)*	*Server and Sonicwall SecurID Token Upgrades*	*$27,817.00*
			Total Contract Amount after Board Approval	**$3,708,943.50**

DISCUSSION:

In December 2007, after a competitive Request for Proposals, the San Diego Association of Governments (SANDAG) entered into Agreement No. 5000786 with Wabtec's predecessor-in-interest, ARINC Inc. (collectively "Wabtec"), to design, fabricate, install, integrate, implement and test all hardware, software, components and subsystems of the CTC System. This work was completed over multiple phases. Each phase had warranty and maintenance services to

ensure the system ran smoothly. The last phase was entered into January 1, 2017 and terminated December 31, 2021. As that SANDAG contract expired, SANDAG and MTS staff agreed that it was more appropriate for MTS to manage and oversee future contracts related to the CTC system. This was appropriate because CTC services relate more to MTS's ongoing operations as opposed to new regional projects managed by SANDAG. Historically, MTS has provided the funding for such services.

Therefore, on December 16, 2021 (AI 21), the MTS Board of the Directors approved a sole source contract in the amount of $2,020,916.00 for CTC Service Maintenance with Wabtec. The new Wabtec contract included five years of general maintenance of the CTC system and provided for the ability to issue work orders for future as-needed CTC-related work such as new systems, maintenance obligations or integration of new MTS projects into current systems. Contract services generally include tracking trains, dispatch, security and control systems for MTS Rail Operations, as well as maintenance of all Wabtec licensed software, patches, bug-fixes, and updates required to maintain original software capabilities relating to CTC.

The December 2021 Board approval also authorized the first as-needed services work – WOA No. 1 which included various pending projects that were transferred from the SANDAG contract to the new MTS contract. WOA No. 1 included system services for Beech St. Deployment & Cutover; Blue Line TPSS F St. & 24th St. Integration; Commercial St. Switch 9 & 11 Interface; Blue Line Siemens S7 Upgrades; and San Ysidro TPSS to the Blue Line TPSS Replacement.

Today's proposed action would authorize ratify and approve the items in the above table, and also as described below.

<u>Ratify WOA 1.1:</u>

Amendment 1 to WOA 1, in the amount of $72,003.50, was issued under the CEO's Policy 41 authority to continue the work for the Beech Street Deployment and Cutover Field Integration Test. The scope included performing point-to-point test and field integration test, resolve, test and release field integration test issues (Attachment A).

<u>Approve Amendment 2:</u>
Allow up to $15,000 for travel expense reimbursements that are necessary to perform services. All travel must be in accordance with MTS Board Policy No. 44-C (Attachment B).

<u>Approve WOA 1.2:</u>
Amendment 2 to WOA 1, in the amount of $55,130.00, to complete final acceptance of Beech Street Double Crossover (Attachment C).

<u>Approve WOA 2:</u>
This work, in the amount of $297,555.00, includes Traction Power Sub-Station (TPSS) point-to-point testing, field integration testing, and warranty services (Attachment D). As this work relates to the Mid-Coast Project, MTS will be reimbursed by SANDAG.

<u>Approve WOA 3:</u>
WOA 3 generally involves upgrades and modifications to the existing Advanced Information Management (AIM®) CTC system. This work will include ARINC System Integration Software Development, Factory Acceptance Testing, and Field Acceptance Testing for the following projects: Mission Valley West SCADA Signaling Upgrades, Imperial Terminal Double (IMT)

Track Upgrades, and El Cajon Third Track Upgrades in the amount of $1,222,599.00 (Attachment E).

Ratify WOA 5:
WOA 5 was executed under the CEO's Policy 41 authority and involves MTS's VPN remote access to the AIM® CTC SCADA network, which includes Server and Sonicwall SecurID Tokens (i.e. keyfobs). This work will update this system's VPN and deploy a new set of keyfobs in the amount of $27,817.00 (Attachment F).

The expected result of these WOAs is that Wabtec shall implement system modifications including, but not limited to graphics, functions, displays, reports, database points, supervisory control, panel logic, and communications within the AIM® CTC system. For each WOA, MTS performed an independent cost estimate and deemed the proposed costs to be fair and reasonable.

The MTS Board approval costs for today's proposed action are summarized below:

	Total
Amendment 2	$15,000.00
WOA #1.1	$72,003.50
WOA #1.2	$55,130.00
WOA #2	$297,555.00
WOA #3	$1,222,599.00
WOA #5	$22,817.00
Overall Board Approval	**$1,690,104.05**

Therefore, staff recommends that the Board of Directors:

1. Ratify WOA 1.1 with Wabtec for Beech Street Interlocking Field Integration Testing services, in the amount of $72,003.50 as shown in Attachment A;

2. Authorize the CEO to execute MTS Doc. No. L1607.2-22 with Wabtec, in the amount of not-to-exceed $15,000.00 for travel expense reimbursements paid during the performance of the contract, in substantially the same format as Attachment B;

3. Authorize the CEO to execute WOA 1.2 with Wabtec, in the amount of $55,130.00, for final acceptance of Beech Street Double Crossover, as shown in Attachment C;

4. Authorize the CEO to execute WOA 2 with Wabtec, in the amount of $297,555.00, for SANDAG TPSS point-to-point testing, field integration testing, and warranty in substantially the same format as Attachment D;

5. Authorize the CEO to execute WOA 3 with Wabtec, in the amount of $1,222,599.00, for MVW Signal, IMT Double Track, and El Cajon Third Track Upgrades, in substantially the same format as Attachment E; and

6. Ratify WOA 5 with Wabtec, in the amount of $27,817.00, for Server and Sonicwall SecurID Token Upgrades, in substantially the same format as Attachment F.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. WOA No. 1.1
B. Draft Amendment 2
C. Draft WOA No. 1.2
D. Draft WOA No. 2
E. Draft WOA No. 3
F. WOA No. 5

Work Order Agreement No. 1 – Amendment 1 (WOA 1.1)

May 9, 2022 MTS Doc No. L1607.0-22

CENTRALIZED TRAIN CONTROL (CTC) SYSTEM MAINTENANCE AGREEMENT – WORK ORDER 1, AMENDMENT 1

ARINC Incorporated, a part of Collins Aerospace
Sandra Leuer
Sr. Manager, Contracts
2151 Riva Road
Annapolis, MD 21401

This shall serve as Work Order Agreement No.1 – Amendment 1 (WOA 1.1) to the original agreement L1607.0-22 as further described below.

SCOPE

The scope of work for this WOA 1.1, is to add Beech Street Interlocking Field Integration Testing (FIT), and as further detailed in Exhibit A:

SCHEDULE

This WOA 1.1 is effective May 1, 2022 to December 31, 2022.

There are no changes to the termination date of the overall agreement which remains December 31, 2026.

PAYMENT

The cost for this WOA 1.1, shall not exceed $72,003.50 as shown in Exhibit A.

The overall contract amount including this WOA 1.1, is increased to $2,090,842.50. This amount shall not be exceeded without prior written approval from MTS.

CONTRACT SUMMARY

To-date, the contract summary is as shown below:

Date Issued	Document	Description	Amount
1/1/2022	Agreement	CTC System Maintenance	$1,568,916.00
5/1/2022	WOA #1	Various System Integrations	$449,923.00

5/9/2022	WOA 1.1	Beech Street Interlocking Field Integration Testing (FIT)	$72,003.50
		Total Contract Amount	**$2,090,842.50**

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

DocuSigned by:
788555D713344B7...

Sandra Leuer, Sr. Manager, Contracts
ARINC Incorporated, a part of Collins Aerospace

Date: 5/23/2022

Attachment: Exhibit A – Collins' Work Order Agreement #1, Amendment #1

2551 Riva Road
Annapolis, MD 21401 USA
Phone: +1319 213-6047
Email: Sandra.Leuer@collins.com
www.collinsaerospace.com

Sandra Leuer
Manager Contracts

Collins Aerospace

30 April 2022

Letter Ref: CCO/HDQ-21-0932-Add01-REV1

Thang Q. Nguyen, PE
Sr. Project Manager – Rail Systems
San Diego Metropolitan Transit System
1255 Imperial Avenue, Suite 900
San Diego, CA 92101
Email: thang.nguyen@sdmts.com

Subject: MTS WORK ORDER AGREEMENT # 1 – Additional Scope

References: (1) Offer Letter CCO/HDQ-21-0932-REV1, dated 27 April 2022
(2) Offer letter CCO/HDQ-21-0932-Add01, dated 19 January 2022
(3) Contract L1607.0-22, 1 January 2022

Dear Thang,

In addition to the offer provided in the reference (1) letter for Beech St. deployment and cutover, Blue Line TPSS F St. and 24th St. & San Ysidro Integration Commercial St Switch 9 & 11 Interface and Blue Line Siemens S7 Upgrade, with this letter, Collins is updating its offer, reference (2), to add TO38 Beech St Interlocking Field Integration Testing (FIT) to the scope of work in WOA#1. Our firm fixed price quotation for this additional scope has remained at $72,003.50 USD and is based on the following conditions:

a) Per the attached Statement of Work (SOW).
b) Offer is valid until 25 May 2022.
c) Payment terms are net 30 days from date of invoice. Invoicing of payment milestones are specified in the SOW.
d) Price is exclusive of taxes.
e) All other terms and conditions are per reference (3) Contract

For any questions, please contact me or Jagan Narayanan at Email: jagan.narayanan@collins.com, Tel: +1 310 751 3395.

Thank you!

Sincerely,

DocuSigned by:
788555D713344B7...

Sandra Leuer

Attachment: Work Order Agreement # 1 (WOA #1) Additional Scope of Work (SOW) 01-April 2022

CC: Jagan Narayanan, Brian Riley

Collins Aerospace

SAN DIEGO METROPOLITAN TRANSIT SYSTEM ("MTS")

WORK ORDER AGREEMENT # 1 (WOA #1)
Amendment #1

SCOPE OF WORK

SANDAG TO38 Beech St – Pending Scope for 2022

Attachment to Letter Ref: CCO/HDQ-21-0932-Add01-REV1

Revision	Description	Date
0.0	Initial version	January 2022
0.1	Revised version	April 2022

I. PROJECT DESCRIPTION

This SOW document identifies the scope of work that was under SANDAG's task order TO38 and shall be moved under MTS agreement WO#1, in 2022.

II. SCOPE OF WORK

TASK ORDER & SCOPE	WORK COMPLETE IN 2021	Scope of work continued into 2022
TO38 – Beech St Interlocking	•	• To perform point to point test and field integration test Beech St interlocking. • To resolve, test and release FIT issues. • (Deployment and cutover are scoped under MTS WO1) • (Final Acceptance of TO38 is scoped under MTS WO#2)

III. DELIVERABLES

TO38

a. Beech St FIT test results.

IV. COLLINS RESPONSIBILITIES

1. Provision of system engineering and project management.
2. Performance of software analysis and programming.
3. Software development of new displays (including OVD), modifications to existing displays, updating, and modifying the database, and linkage of displays to database for each of MTS' projects.
4. Compilation, integration, and testing of the MTS-supplied field point database and displays; generation, compilation, integration, and testing of all other databases (such as data exchange with other systems, alarms, event reports) necessary to attain full operation.
5. AIM® CTC System software interfaces to other programmable logic controllers and train-to-wayside controller devices.
6. Integration of new signals and programmable logic controllers into the AIM® CTC system.
7. Perform field site, and availability tests plus all inspections in accordance with MTS approved plans.
8. Maintenance of all Collins supplied software through the availability demonstration.

V. SCHEDULE OF SERVICES, MILESTONES AND DELIVERABLES

Milestone	Estimated Completion Date	Agreed Prices from SANDAG Task Orders (USD)	2022 Price Escalation – MTS (USD)	Total (USD)
TO38 – Beech St FIT	5/31/2022	$72,003.50		$72,003.50

VI. MATERIALS TO BE PROVIDED BY MTS

Pending final MTS approval, the following items shall be provided to Collins as a basis for their design.

1. Required field changes and issue fixes by Sandag and/or its contractors.

VII. ASSUMPTIONS AND EXCLUSIONS

1. Work for this WOA #1 A#1 will begin upon acceptance of this offer via a Notice to Proceed (NTP) from MTS

2. Collins assumes MTS will provide all field hardware and install in the field and will verify their operations over the network prior to Collins performing field tests. Any issues with the hardware and its performance over the network are the responsibility of MTS.

3. Collins expects that the RTUs will be accessible to the AIM® CTC system via the MTS network.

4. Collins's proposal assumes no hardware costs.

5. All features of this WOA #1 A#1 are implemented only on the 64-bit system.

6. Collins assumes MTS will provide a flag person at no cost to Collins.

7. Should a schedule delay caused by factors outside of Collins' responsibility and/or control require additional resources to maintain the proposed schedule, the cost for the additional resources will be considered as part of a contractual change order. This must be approved by the MTS project manager prior to incurring the additional expense.

8. There could be potential cost based on the rate increase and schedule impacts if Collins is not able to complete any of the listed tasks due to delays caused by factors that are outside of Collins' responsibility, including delay of execution of the Agreement between Collins (ARINC, Inc.) and MTS.

9. Collins assumes that the Tech Refresh, SANDAG's Task Order 32, will be the System Baseline for the modifications under the scope of WOA #1 A#1.

10. Milestone payments are the Estimated Completion Dates in Section V Table.

Metropolitan Transit System

Amendment 2

Date: September 15, 2022 MTS Doc No. L1607.2-22

CENTRALIZED TRAIN CONTROL (CTC) SYSTEM MAINTENANCE AGREEMENT – TRAVEL EXPENSE

Wabtec Transportation Systems, LLC
Steven Baird
Sr. Contracts Manager
2551 Riva Road
Annapolis, MD, 21401

This shall serve as Amendment No.2 to the original agreement L1607.1-22 as further described below.

SCOPE

Both parties agreed to add in the amount of not-to-exceed $15,000.00 for travel expense reimbursements paid during the performance of the contract. All travel must be in accordance with MTS Board Policy No. 44-C.

SCHEDULE

There are no changes to the termination date of the overall agreement which remains December 31, 2026.

PAYMENT

This amendment shall not exceed $15,000.00. The overall contract amount remains at $2,105,842.50, illustrated in the contract summary section below. This amount shall not be exceeded without prior written approval from MTS.

CONTRACT SUMMARY

To-date, the contract summary is as shown below:

Date Issued	Document	Description	Amount
1/1/2022	Agreement	CTC System Maintenance	$1,568,916.00
5/1/2022	WOA #1	Various System Integrations	$449,923.00
5/9/2022	WOA #1.1	Beech Street Interlocking Field Integration Testing (FIT)	$72,003.50
9/15/2022	Amendment #2	Travel Expense. Reimbursements to be paid during the contract.	$15,000
		Total Contract Amount	**$2,105,842.50**

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Steven Baird, Sr. Contracts Manager
Wabtec Transportation Systems, LLC

Date: _____

Attachment: Exhibit B – Wabtec Work Order Agreement #0, Amendment 2

Mohsen Shafeie
Sr. Manager, Program Management
5140 West Goldleaf Circle
Suite 300
Los Angeles, CA 90054 – U.S.A
Phone: 1-647-669-3646
Email: Mohsen.shafeie@collins.com
www.wabteccorp.com

Thang Q. Nguyen
San Diego Metropolitan Transit System
1255 Imperial Ave.
Suite 1000
San Diego, CA 92101-7490

8/23/2022

REF: Maintenance Work Order 0 Amendment 2
(a) Letter offers CCO/HDQ-22-0005REV, dated 5 January 2022, and CCO/HDQ-22-0005REV2, dated 19 January 2022
(b) San Diego MTS Agreement No. L1607.0-22, effective 1 January 2022
(c) Letter MTS Work Order Agreement 0 Amendment 2, dated July 7, 2022
Proposal Number: CCO/HDQ-22-0005REV4

Mr. Nguyen,

Wabtec Transportation Systems, LLC (**Wabtec**) is pleased to provide the attached proposal (**Proposal**) to San Diego Metropolitan Transit System (**SDMTS** or **Customer**) for travel expenses.

Wabtec welcomes the opportunity to provide this Proposal. If you have any questions or require any further assistance, please feel free to contact us.

Thank you,

Mohsen Shafeie
Sr. Manager, Program Management
Wabtec Corporation

IMPORTANT NOTICE REGARDING PROPOSAL

1. **Confidentiality.** Customer and Wabtec acknowledge that Customer is a public agency subject to the California Public Records Act (CPRA) (California Government Code §§ 6250through 6276.48) and other applicable laws. This Proposal and any agreement entered into between Customer and Wabtec will be considered a public record and subject to disclosure in compliance with the CPRA. Notwithstanding the above, this Proposal is for Customer only and not for the benefit of any third party. Customer acknowledges and agrees that during the course of the work conducted by Wabtec, Customer may be provided with Wabtec's confidential and proprietary or trade secret information that is not subject to disclosure under the CPRA or other applicable law. Such information will be clearly marked as "Confidential and Proprietary". Customer shall maintain such Confidential and Proprietary documents as confidential and shall not disclose them to third parties unless required to do so by applicable law, rule or regulation. In the event a request for Wabtec's Confidential and Proprietary documents is received by Customer, whether under the CPRA, subpoena, or other method, Customer will provide Wabtec with an opportunity to review the request, and at Wabtec's sole cost, to defend or pursue an action to protect such Confidential and Proprietary documents from disclosure. Customer shall not be required to incur legal fees and costs to protect Wabtec's Confidential and Proprietary documents from disclosure under state or federal law..

2. **Not an offer.** This Proposal is for discussion purposes only, and Customer shall not rely on this Proposal. This Proposal is not an offer capable of acceptance. Wabtec and Customer shall not be bound in relation to the subject of this Proposal unless and until Wabtec and Customer sign a mutually agreed, written contract. Should Wabtec and Customer mutually agree to proceed, the final contract signed by Wabtec and Customer will be the entire agreement, superseding this Proposal. This Proposal is given based on the terms and conditions of the referenced agreement **SDMTS Doc. No. L1607.0-22**. Any deviation from such terms and conditions in the final signed written contract may impact price, schedule and other terms in Wabtec's sole discretion.

3. **No liability for costs of Proposal**. Wabtec shall have no liability for costs incurred by Customer in reviewing this Proposal.

4. **Validity.** This Proposal is valid for sixty (60) days from the date of the Proposal, unless withdrawn or extended by Wabtec prior to that time.

5. **Structural Considerations.** Wabtec may have one or more of Wabtec's affiliated entities enter into relevant contract documents and/or provide some or all of Wabtec's offerings described in this Proposal. In this Proposal, references to Wabtec mean Wabtec and/or one or more of Wabtec's affiliated entities.

6. **Statements as to future.** In this Proposal, any information regarding Wabtec's roadmaps and future product plans are indicative only of Wabtec's current plans and are not binding. Plans are subject to Wabtec internal approvals, and plans may change, in Wabtec's sole discretion. Commitments and binding representations as to the future are expressly disclaimed. Customer must not rely on such information and plans in deciding whether to proceed with a final written agreement.

Proposal for Proposal for Work Order Agreement 0 Amendment 2
Wabtec Proposal Number CCO/HDQ-22-0005REV4

1. Contents

1.1 This Proposal is comprised of the following:

Section 1: Contents

Section 2: Scope of Wabtec Offerings

Section 3: Customer responsibilities

Section 4: Delivery schedule

Section 5: Fees

1.2 In this Proposal, except where the context requires otherwise, all references to Sections and Appendices are to Sections and Appendices of this Proposal.

1.3 If Customer wishes to proceed with this Proposal, Wabtec will provide the contract incorporating the Terms and Conditions in this Proposal.

2. Scope of Wabtec Offerings

2.1 This Proposal is for Wabtec to charge travel expenses incurred in the execution of the Work pertaining to the referenced agreement.

3. Customer responsibilities

(a) NA

4. Anticipated delivery schedule

4.1 An anticipated period of performance shall be approximately forty-five (45) days from notice to proceed.

4.2 The above schedule for delivery of the scope described in Section 2 of this Proposal is indicative only. Actual times may vary. Further, timely delivery of Wabtec's offerings is dependent on Customer's timely discharge of Customer's responsibilities, including as identified in this Proposal.

5. Fees

5.1 The Fees for the scope of Wabtec's offerings as described in this Proposal shall be Time and Materials not to exceed **$ 15,000.00**.

Proposal for Proposal for Work Order Agreement 0 Amendment 2
Wabtec Proposal Number CCO/HDQ-22-0005REV4

5.2 The above Fees are subject to the following qualifications:

(a) All Fees are stated and shall be paid in United States dollars.

(b) Prices are NET and are exclusive of all taxes, customs, duties, levies, tariffs, government permits and third-party licenses.

(c) Delays caused by Customer or delays for which Customer is responsible will incur additional charge on account of costs incurred by Wabtec plus Wabtec's standard administration fee.

(d) Any deviations from Wabtec's standard terms and conditions referenced in SDMTS Doc. No. L1607.0-22 may incur an additional risk premium, which will be added to the price, in Wabtec's sole discretion.

Metropolitan Transit System

Work Order Agreement No. 1 – Amendment 2 (WOA 1.2)

September 15, 2022 MTS Doc No. L1607.0-22

CENTRALIZED TRAIN CONTROL (CTC) SYSTEM MAINTENANCE AGREEMENT – WOA 1.2

Wabtec Transportation Systems, LLC
Steven Baird
Sr. Manager, Contracts
2151 Riva Road
Annapolis, MD 21401

This shall serve as WOA 1.2 to the original agreement L1607.0-22 as further described below.

SCOPE

The scope of work for this WOA 1.2, is to add Final Acceptance of Beech Street Double Crossover, and as further detailed in Exhibit C:

SCHEDULE

The schedule is as shown in Exhibit C.

There are no changes to the termination date of the overall agreement which remains December 31, 2026.

PAYMENT

The cost for this WOA 1.2, shall not exceed $55,130.00 as shown in Exhibit C.

The overall contract amount including this WOA 1.2, is increased to $2,160,972.50. This amount shall not be exceeded without prior written approval from MTS.

CONTRACT SUMMARY

To-date, the contract summary is as shown below:

Date Issued	Document	Description	Amount
1/1/2022	Agreement	CTC System Maintenance	$1,568,916.00
5/1/2022	WOA #1	Various System Integrations	$449,923.00
5/9/2022	WOA #1.1	Beech Street Interlocking Field Integration Testing (FIT)	$72,003.50

9/15/22	Amendment #2	Travel Expense. Reimbursements to be paid during the contract.	$15,000.00
9/15/22	WOA #1.2	Final Acceptance of Beech Street Double Crossover	$55,130.00
		Total Contract Amount	**$2,160,972.50**

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Steven Baird, Sr. Manager, Contracts
Wabtec Transportation Systems, LLC

Date: _____

Attachment: Exhibit C – Wabtec Work Order Agreement #1, Amendment #2

Mohsen Shafeie
Sr. Manager, Program Management
5140 West Goldleaf Circle
Suite 300
Los Angeles, CA 90054 – U.S.A
Phone: 1-647-669-3646
Email: Mohsen.shafeie@collins.com
www.wabteccorp.com

Thang Q. Nguyen
San Diego Metropolitan Transit System
1255 Imperial Ave.
Suite 1000
San Diego, CA 92101-7490

8/23/2022

REF: Maintenance Work Order 1 Amendment 2
(a) Letter offers CCO/HDQ-22-0005REV, dated 5 January 2022, and CCO/HDQ-22-0005REV2, dated 19 January 2022
(b) San Diego MTS Agreement No. L1607.0-22, effective 1 January 2022
(c) Letter MTS Work Order Agreement 1 Amendment 2, dated July 7, 2022
Proposal Number: CCO/HDQ-22-0005REV4

Mr. Nguyen,

Wabtec Transportation Systems, LLC (**Wabtec**) is pleased to provide the attached proposal (**Proposal**) to San Diego Metropolitan Transit System (**SDMTS** or **Customer**) for SANDAG TO38 Beech St - Final Acceptance.

Wabtec welcomes the opportunity to provide this Proposal. If you have any questions or require any further assistance, please feel free to contact us.

Thank you,

Mohsen Shafeie
Sr. Manager, Program Management
Wabtec Corporation

IMPORTANT NOTICE REGARDING PROPOSAL

1. **Confidentiality.** Customer and Wabtec acknowledge that Customer is a public agency subject to the California Public Records Act (CPRA) (California Government Code §§ 6250through 6276.48) and other applicable laws. This Proposal and any agreement entered into between Customer and Wabtec will be considered a public record and subject to disclosure in compliance with the CPRA. Notwithstanding the above, this Proposal is for Customer only and not for the benefit of any third party. Customer acknowledges and agrees that during the course of the work conducted by Wabtec, Customer may be provided with Wabtec's confidential and proprietary or trade secret information that is not subject to disclosure under the CPRA or other applicable law. Such information will be clearly marked as "Confidential and Proprietary". Customer shall maintain such Confidential and Proprietary documents as confidential and shall not disclose them to third parties unless required to do so by applicable law, rule or regulation. In the event a request for Wabtec's Confidential and Proprietary documents is received by Customer, whether under the CPRA, subpoena, or other method, Customer will provide Wabtec with an opportunity to review the request, and at Wabtec's sole cost, to defend or pursue an action to protect such Confidential and Proprietary documents from disclosure. Customer shall not be required to incur legal fees and costs to protect Wabtec's Confidential and Proprietary documents from disclosure under state or federal law..

2. **Not an offer.** This Proposal is for discussion purposes only, and Customer shall not rely on this Proposal. This Proposal is not an offer capable of acceptance. Wabtec and Customer shall not be bound in relation to the subject of this Proposal unless and until Wabtec and Customer sign a mutually agreed, written contract. Should Wabtec and Customer mutually agree to proceed, the final contract signed by Wabtec and Customer will be the entire agreement, superseding this Proposal. This Proposal is given based on the terms and conditions of the referenced agreement **SDMTS Doc. No. L1607.0-22**. Any deviation from such terms and conditions in the final signed written contract may impact price, schedule and other terms in Wabtec's sole discretion.

3. **No liability for costs of Proposal**. Wabtec shall have no liability for costs incurred by Customer in reviewing this Proposal.

4. **Validity.** This Proposal is valid for sixty (60) days from the date of the Proposal, unless withdrawn or extended by Wabtec prior to that time.

5. **Structural Considerations.** Wabtec may have one or more of Wabtec's affiliated entities enter into relevant contract documents and/or provide some or all of Wabtec's offerings described in this Proposal. In this Proposal, references to Wabtec mean Wabtec and/or one or more of Wabtec's affiliated entities.

6. **Statements as to future.** In this Proposal, any information regarding Wabtec's roadmaps and future product plans are indicative only of Wabtec's current plans and are not binding. Plans are subject to Wabtec internal approvals, and plans may change, in Wabtec's sole discretion. Commitments and binding representations as to the future are expressly disclaimed. Customer must not rely on such information and plans in deciding whether to proceed with a final written agreement.

Proposal for Proposal for Work Order Agreement 1 Amendment 2
Wabtec Proposal Number CCO/HDQ-22-0005REV4 dated 8/23/2022

1. Contents

1.1 This Proposal is comprised of the following:

Section 1: Contents

Section 2: Scope of Wabtec Offerings

Section 3: Customer responsibilities

Section 4: Delivery schedule

Section 5: Fees

Appendix A: Description of Offerings

1.2 In this Proposal, except where the context requires otherwise, all references to Sections and Appendices are to Sections and Appendices of this Proposal.

1.3 If Customer wishes to proceed with this Proposal, Wabtec will provide the contract incorporating the Terms and Conditions in this Proposal.

2. Scope of Wabtec Offerings

2.1 This Proposal is for the scope of work that was under SANDAG's task order TO38 that shall be moved under MTS agreement WO#1, in 2022.

3. Customer responsibilities

3.1 Customer will be responsible for:

(a) The actions referenced in Section 8 of the Scope of Work in Appendix A

4. Anticipated delivery schedule

4.1 An anticipated period of performance shall be approximately forty-five (45) days from notice to proceed.

4.2 The above schedule for delivery of the scope described in Section 2 of this Proposal is indicative only. Actual times may vary. Further, timely delivery of Wabtec's offerings is dependent on Customer's timely discharge of Customer's responsibilities, including as identified in this Proposal.

Proposal for Proposal for Work Order Agreement 1 Amendment 2
Wabtec Proposal Number CCO/HDQ-22-0005REV4 dated 8/23/2022

5. Fees

5.1 The Fees for the scope of Wabtec's offerings as described in this Proposal are as follows.

(a) The Fees are **$ 55,130**.

5.2 The Fees will be invoiced at the milestones listed in the schedule found in Section 9 of the attached Statement of Work in Appendix A.

5.3 The above Fees are subject to the following qualifications:

(a) All Fees are stated and shall be paid in United States dollars.

(b) Prices are NET and are exclusive of all taxes, customs, duties, levies, tariffs, government permits and third-party licenses.

(c) Delays caused by Customer or delays for which Customer is responsible will incur additional charge on account of costs incurred by Wabtec plus Wabtec's standard administration fee.

(d) Any deviations from Wabtec's standard terms and conditions referenced in SDMTS Doc. No. L1607.0-22 may incur an additional risk premium, which will be added to the price, in Wabtec's sole discretion.

Appendix A: Description of Offerings

SAN DIEGO METROPOLITAN TRANSIT SYSTEM (SDMTS)

Maintenance Work Order 1 Amendment 2

SANDAG TO38 Beech St – Final Acceptance

Revision	Description	Date
0.0	Initial version	July 28, 2022
1.0	Updated Confidentiality Language	August 23, 2022

TABLE OF CONTENTS

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Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

1. INTRODUCTION

This SOW document identifies the scope of work that was under SANDAG's task order TO38 and shall be moved under MTS agreement WO#1, in 2022.

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

2. BACKGROUND

The Metropolitan Transit System (MTS) has multiple signaling, track, and station enhancement projects to upgrade and improve various portions of its 53-mile trolley system for operational flexibility, reliability, and efficiency. This is a amendment 2 proposal for Maintenance Work Order 1 to move SANDAG Task Order 38 under SDMTA agreement Work Order 1.

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

3. PERSONNEL

List of the Collins technical personnel responsible for the ROCS SCADA system identified below.

NAME	TITLE
Mohsen Shafeie	Sr. Manager, Program Management
Jack Luepke	Project Engineering Lead / System Engineering

* Personnel assignments are subject to change at the discretion of Collins management.

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

4. SCOPE OF WORK

TASK ORDER & SCOPE	WORK COMPLETE IN 2021	Scope of work continued into 2022
TO38 – Beech St. Interlocking	-	• Final Acceptance of TO38 work. (Completed on June 21, 2022)

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

5. DELIVERABLES

NA.

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

6. WABTEC RESPONSIBILITIES

NA.

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

7. SCHEDULE

Milestone	Estimated Completion Date
TO38 – Final Acceptance	10/01/2022

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

8. ASSUMPTIONS AND EXCLUSIONS

NA

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

9. SDMTS PRICE BREAKDOWN

Item	PAYMENTS	Agreed SANDAG TO Price	2022 Escalation	Total USD
1	Final Acceptance	$ 54,003	$ 1,127	$ 55,130

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

Contract No. 5000786 (S502695)
Task Order No. (S837863)

AGREEMENT FOR SERVICES BETWEEN
THE SAN DIEGO ASSOCIATION OF GOVERNMENTS
AND ARINC, INC.

TASK ORDER NO. 38 (S837863)

SANDAG AGREEMENT NO. 5000786 (S502695)

I. Under the Agreement between the San Diego Association of Governments ("SANDAG") and ARINC, Inc. ("Consultant"), dated December 28, 2007, Consultant is responsible for providing services and deliverables described in the Scope of Work attached as Exhibit A to the Agreement. All of the terms of said Agreement are hereby incorporated herein by reference.

II. Task Order No. S837863 authorizes Consultant to commence performance on the Beech and Middletown Double Crossover Integration (hereinafter referred to as the "Project") according to the terms of the Agreement and the Scope of Work, Payment Schedule, and Project Schedule which are attached to this Task Order as Exhibits A, B, and C, respectively.

III. Consultant shall be paid an amount not to exceed $360,018.00 for work performed on the Project pursuant to this Task Order No. 38.

IV. The term of performance for this Task Order is from the notice to proceed to December 31, 2021. SANDAG shall not pay for services rendered by Consultant on this Task Order after December 31, 2021.

V. This Task Order is subject to the following Underutilized/Disadvantaged Business Enterprise (U/DBE) requirements:

SANDAG has not established an U/DBE goal for this Task Order; however, Consultant is encouraged to obtain U/DBE participation for work performed pursuant to this Task Order.

VI. This Task Order may be executed and delivered by email or facsimile signature and an email or facsimile signature shall be treated as an original. This Task Order may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same agreement.

The persons below assert that they are authorized to execute this Task Order and have executed it to have an effective date of the date of the last signature below.

Version 1.1

[***S837863 *75 *160106709673162994860307724835862614016678307962*1*10***] Powered by ASC

SAN DIEGO ASSOCIATION OF GOVERNMENTS	ARINC, INC.
JIM LINTHICUM Chief of Capital Programs and Regional Services	**SEAN KENOSIAN** Senior Contracts Manager
APPROVED AS TO FORM AND LEGALITY:	
Office of General Counsel	

Exhibits:

☒ Scope of Work (Exhibit A)

☒ Payments (Exhibit B)

☒ Schedule (Exhibit C)

Version 1.1

[***S837863 *75 *160106709673162994860307724835862614016678307962*2*10***] Powered by ASC

EXHIBIT A

SCOPE OF WORK

I. PROJECT DESCRIPTION

The Metropolitan Transit System (MTS) has two projects to upgrade the existing Beech Street double crossover and create a new double crossover at Middletown Station. These new double crossovers will improve operational flexibility, reliability and efficiency in the Old Town corridor. MTS has separate contractors installing and testing the track and signaling changes resulting from these new double crossovers. These crossovers require modifications to Advanced Information Management (AIM®) Centralized Train Control (CTC) system developed by ARINC so they can be monitored at the MTS Operations Control Center (OCC).

II. EXPECTED RESULTS

The expected result of Task Order 38 is a system modification including, but not limited to graphics, functions, displays, reports, database points, panel logic, and communications within the AIM® CTC system. The AIM® CTC system database shall allow for the new double crossovers and related signaling at Middletown and Beech segments in the Old Town Corridor. The new equipment and functions supported by the CTC modifications shall include:

a) Integrate rail system changes into AIM as part of MTS' Middletown Double Crossovers Track Switch Project.
b) Integrate rail system changes into AIM as part of MTS' Beech Street Double Crossover Track Switch Project.

III. SCOPE OF WORK

The scope of work shall consist of the following tasks and deliverables:

Middletown Double Crossover

The Middletown Double Crossover Project adds new double crossover switches north of the Middletown Station in the Old Town Corridor. New interlocking O6 will be added to signaling system and will include new signals, switches, rail cases, TWC loops and fiber optic connections.

The Contractor shall integrate rail system changes into AIM logic and GUI as part of MTS' Middletown Double Crossover Track Switch Project, including, but not limited to:

a) New Interlocking O6
b) Four (4) new switches O5A, O5B, O7A and O7B
c) Four (4) new signals O6RA, O6RB, O6LA and O6LB
d) Four (4) new TWC loops
e) Track section changes O6LT, O191AT and O6RT
f) One (1) new rail case O138RC
g) Four (4) new pole-mounted disconnect switches
h) Six (6) new section insulators
i) Programming changes to GE RX3i PLC at Middletown Station for TWC filtering and reporting to OCC

Beech Street Double Crossover

The Beech Double Crossover Track Switch Project adds a new powered switches to the existing double crossover north of Beech Street in the Old Town Corridor. New interlocking O2 will be added to the signaling system and will include new signals, switches, rail cases, TWC loops and fiber optic connections.

The Contractor shall integrate rail system changes into AIM logic and GUI as part of MTS' Beech Double Track Switch Project, including, but not limited to:

a) New Interlocking O2
b) Four (4) new switches O1A, O1B, O3A and O3B
c) Four (4) new signals O2RA, O2RB, O2LA and O2LB
d) Multiple TWC changes including four (4) new TWC near interlocking O2 and removal of existing TWC near Santa Fe Depot and County Center stations.
e) Incorporate TWC changes into train tracking algorithm.
f) Track section changes between Santa Fe Depot and County Center stations, including new sections O1AT, O1BT, O2RT and O087AT
g) Two (2) new rail cases O030RC and O036RC
h) Four (4) new pole-mounted disconnect switches
i) Two (2) new section insulators over O2 double crossover
j) Two (2) new section insulators replacing existing air gaps

Possible programming changes to existing GE RX3i PLC at County Center Station may be required for TWC filtering and reporting to OCC.

IV. DELIVERABLES

The following documents shall be provided by the Contractor:

1. Baseline Schedule
2. Overall Requirements Traceability Matrix (RTM)
3. Design Change Form (Software Design Review)
4. Field Test Plan
5. Test Results
6. Cutover Plan

V. CONTRACTOR RESPONSIBLITIES

The Contractor shall assume complete responsibility for the design, fabrication, testing installation and start-up of all subsystems and components of the expanded AIM® CTC system, with the exception of those SANDAG obligations defined in Section 1.5 of Exhibit A attached to the Agreement (5000786). The Contractors' obligations shall include, but not limited to the responsibilities in the following list and those required to meet all requirements described in these Specifications:

1. System Engineering and Project Management.

2. Software Analysis and Programming.

3. Software modifications to General Electric RX3i PLCs, as necessary, to filter and read new TWC data.

4. Development of new Displays (including OVD), modifications to existing displays, updating and modifying the database, and linkage of displays to database for each of MTS' projects.

5. Compilation, integration and testing of the SANDAG-supplied field point database and displays; also generation, compilation, integration and testing of all other databases (such as data exchange with other systems, alarms, event reports) necessary to attain full operation.

6. AIM® CTC System software interfaces to other programmable logic controllers and train-to-wayside controller devices.

7. Integration of new and modified signals and programmable logic controllers into the AIM® CTC system.

8. Field Site, and Availability tests plus all inspections in accordance with SANDAG approved plans.

9. Maintenance of all contractor supplied software through the Availability demonstration.

Detailed description of the Contractors' obligations in relation to particular areas of software functions, and services are contained in other sections of this Task Order and in Exhibit A – Centralized Train Control System Technical Specification.

VI. SCHEDULE OF SERVICES/MILESTONES/DELIVERABLES

Milestone	Due Date
Baseline Schedule	The schedule shall be delivered within 15-days from NTP.
Middletown - Software Design Review	6/21/2021(expected)
Middletown – Point-to-Point Test	7/28/2021 to 8/17/2021
Middletown - Factory Acceptance Test	8/30/2021
Middletown - Field Integration Test	9/10/2021
Middletown – Cutovers	9/19/2021
Beech – Software Design Review	9/7/2021
Beech – Point-to-Point Test	10/18/2021 to 11/5/2021

Beech - Factory Acceptance Test	12/7/2021
Beech - Field Integration Test	12/31/2021
Middletown - Final Acceptance	12/5/2021
Middletown - Final Deliverables	12/31/2021

VII. MATERIALS TO BE PROVIDED BY SANDAG AND/OR THE LOCAL AGENCY

Pending final SANDAG approval, the following items shall be provided to the vendor (ARINC) as a basis for their design. The items will be provided to ARINC by close of business June 4, 2021.

1. Vital logic software (detailing ultimate arrangements)
2. Reference Drawings for each project
3. Project point-to-point listings
4. ElectroLogIXS Local HMI Panel Drawings
5. IP addresses and network configuration parameters for field devices

VIII. SPECIAL CONDITIONS

Any condition listed below applies solely to this Task Order and does not otherwise alter the Agreement or other Task Orders.

a. SANDAG Task Order Manager shall approve completed work prior to payment per Attachment B schedule.

b. All new TWC Interrogators implemented on the Project shall be integrated into the system design and utilized in the same manner as elsewhere on the system.

IX. ASSUMPTIONS AND EXCLUSIONS

The following assumptions are made and apply to Task Order 38:

1. All work for this task order will begin upon NTP from SANDAG.
2. Collins assumes SANDAG/MTS will provide all field hardware and install in the field and will verify their operations over the network prior to Collins performing field tests. Any issues with the hardware and its performance over the network are the responsibility of SANDAG/MTS.
3. Collins expects that the RTUs will be accessible to CTC via the MTS network.
4. Beech Street − O2, Middletown − O6, interlocking design will conform to Mid Coast Reach one Interlockings.

5. Collins assumes that we will receive final code charts for Middletown within 10 days of NTP and no later than 15 days.

6. Collins assumes that we will receive final code charts for Beech Street NLT 60 days after NTP and no later than 90 days.

7. Collins proposal assumes no hardware costs.

8. Collins proposal assumes no warranty for this scope of work.

9. All features of Task Order 38 are implemented only on the 64-bit system.

10. Collins assumes SANDAG/MTS will provide a Flag Person at no cost to Collins.

11. Collins assumes that SANDAG/MTS will be responsible for scheduling and coordinating the IP address changes prior to start of the FAT.

12. Should a schedule delay caused by factors outside of Collins's responsibility require additional resources to expedite software development to maintain the planned September cutover date for Middletown, the cost for the additional resources will be $36,000. This must be approved by the SANDAG project manager prior to incurring the additional expense.

13. There could be potential cost based on the rate increase and schedule impacts if Collins is not able to complete any of the listed tasks due to delays caused by factors that are outside of Collins's responsibility.

14. For Beech Street Double crossover, all milestones such as Design, Point to Point Test, Field Integration Test and Factory Acceptance Test are planned as part of this proposal. The last milestone for Beech Street Double Crossover which is 'Deployment and Cutover' is not scoped in this proposal and it needs to be scoped and planned as a separate change order.

15. Payment terms are Net 30 days.

16. No U/DBE goal is established for Task Order 38.

17. Bonding cost for Task Order 38 is included in the price.

18. It is assumed that no retention will apply to this amendment.

19. Collins assumes that the Tech Refresh – Task Order 32 will be the System Baseline for the modifications under the scope of Task Order 38.

20. With exception to the above assumptions, it is assumed that all other terms and conditions of Contract Number 5000786 apply to this task order.

21. Collins reserves the right to resubmit a proposal for work not completed before December 31, 2021 under a new agreement.

EXHIBIT B

PAYMENT SCHEDULE

TASK ORDER 38 PAYMENT MILESTONE	PRICE ($)
NTP	$72,003
Design Review	$90,006
Middletown – Cutover	$72,003
Beech – Cutover	$72,003
Final Acceptance	$54,003
TOTAL	**$360,018**

EXHIBIT C

SCHEDULE

Milestone	Due Date
Baseline Schedule	The schedule shall be delivered within 15-days from NTP.
Middletown - Software Design Review	6/21/2021 (expected)
Middletown – Point-to-Point Test	7/28/2021 to 8/17/2021
Middletown - Factory Acceptance Test	8/30/2021
Middletown - Field Integration Test	9/10/2021
Middletown – Cutovers	9/19/2021
Beech – Software Design Review	9/7/2021
Beech – Point-to-Point Test	10/18/2021 to 11/5/2021
Beech - Factory Acceptance Test	12/7/2021
Beech - Field Integration Test	12/31/2021
Middletown - Final Acceptance	12/5/2021
Middletown - Final Deliverables	12/31/2021

Work Order Agreement No. 2 (WOA 2)

September 15, 2022 MTS Doc No. L1607.0-22

CENTRALIZED TRAIN CONTROL (CTC) SYSTEM MAINTENANCE AGREEMENT – WOA 2

Wabtec Transportation Systems, LLC
Steven Baird
Sr. Manager, Contracts
2151 Riva Road
Annapolis, MD 21401

This shall serve as WOA 2 to the original agreement L1607.0-22 as further described below.

SCOPE

The scope of work for this WOA 2, SANDAG Traction Power Sub-Station (TPSS) point-to-point testing, field integration testing, and warranty, and as further detailed in Exhibit D.

SCHEDULE

The schedule is as shown in Exhibit D.

There are no changes to the termination date of the overall agreement which remains December 31, 2026.

PAYMENT

The cost for this WOA 2, shall not exceed $297,555.00as shown in Exhibit D.

The overall contract amount including this WOA 2, is increased to $2,458,527.50. This amount shall not be exceeded without prior written approval from MTS.

CONTRACT SUMMARY

To-date, the contract summary is as shown below:

Date Issued	Document	Description	Amount
1/1/2022	Agreement	CTC System Maintenance	$1,568,916.00
5/1/2022	WOA #1	Various System Integrations	$449,923.00
5/9/2022	WOA #1.1	Beech Street Interlocking Field Integration Testing (FIT)	$72,003.50

9/15/2022	Amendment #2	Travel Expense. Reimbursements to be paid during the contract.	$15,000.00
9/15/2022	WOA #1.2	Final Acceptance of Beech Street Double Crossover	$55,130.00
9/15/2022	WOA #2	SANDAG – Mid Coast existing Task Orders # 33 (SANDAG TPSS point-to-point testing and GPS) and #34 (SANDAG Field Integration testing TPSS, Stations and warranty). MTS takes on these Task Orders using Addendum 17 SOW 105, and will be reimbursed by SANDAG.	$297,555.00
		Total Contract Amount	**$2,458,527.50**

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Steven Baird, Sr. Manager, Contracts
Wabtec Transportation Systems, LLC

Date: _____

Attachment: Exhibit D – Wabtec Work Order Agreement #2

SAN DIEGO METROPOLITAN TRANSIT SYSTEM (SDMTS)

Maintenance Work Order 2

Transfer of Remaining Work from TO33 & TO34

Revision	Description	Date
0.0	Initial version	July 7, 2022
1.0	Second Revision	August 09, 2022

Steven Baird
Sr. Contract Manager
2551 Riva Road
Annapolis, MD 21401
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www.wabteccorp.com

Thang Q. Nguyen, PE
Sr. Project Manager – Rail Systems
San Diego Metropolitan Transit System
1255 Imperial Avenue, Suite 900
San Diego, CA 92101

8/9/2022

REF: MTS Maintenance Work Order 2
(a) Transfer of Remaining Work from TO33 and TO34
(b) San Diego MTS Agreement No. L1607.0-22, effective 1 January 2022
Proposal Number: SDMTS WO2

Dear Thang,

Wabtec Transportation Systems, LLC (**Wabtec**) is pleased to provide the attached proposal (**Proposal**) to San Diego Metropolitan Transit System (**SDMTS** or **Customer**) for SANDAG TO33 and TO34 work to be moved under MTS Agreement L1607.0-22.

Wabtec welcomes the opportunity to provide this Proposal. If you have any questions or require any further assistance, please feel free to contact us.

Thank you,

Steven Baird

Steven Baird
Sr. Contract Manager
Wabtec Corporation

Wabtec CORPORATION

IMPORTANT NOTICE REGARDING PROPOSAL

1. **Confidentiality.** Customer and Wabtec acknowledge that Customer is a public agency subject to the California Public Records Act (CPRA) (California Government Code §§ 6250 through 6276.48) and other applicable laws. This Proposal and any agreement entered into between Customer and Wabtec will be considered a public record and subject to disclosure in compliance with the CPRA. Notwithstanding the above, this Proposal is for Customer only and not for the benefit of any third party. Customer acknowledges and agrees that during the course of the work conducted by Wabtec, Customer may be provided with Wabtec's confidential and proprietary or trade secret information that is not subject to disclosure under the CPRA or other applicable law. Such information will be clearly marked as "Confidential and Proprietary". Customer shall maintain such Confidential and Proprietary documents as confidential and shall not disclose them to third parties unless required to do so by applicable law, rule or regulation. In the event a request for Wabtec's Confidential and Proprietary documents is received by Customer, whether under the CPRA, subpoena, or other method, Customer will provide Wabtec with an opportunity to review the request, and at Wabtec's sole cost, to defend or pursue an action to protect such Confidential and Proprietary documents from disclosure. Customer shall not be required to incur legal fees and costs to protect Wabtec's Confidential and Proprietary documents from disclosure under state or federal law.

2. **Not an offer.** This Proposal is for discussion purposes only, and Customer shall not rely on this Proposal. This Proposal is not an offer capable of acceptance. Wabtec and Customer shall not be bound in relation to the subject of this Proposal unless and until Wabtec and Customer sign a mutually agreed, written contract amendment. Should Wabtec and Customer mutually agree to proceed, the final amendment signed by Wabtec and Customer will be the entire agreement, superseding this Proposal. This Proposal is given based on the terms and conditions of agreement L1607.0-22. Any deviation from such terms and conditions in the final signed written contract may impact price, schedule and other terms in Wabtec's sole discretion.

3. **Wabtec may withdraw Proposal.** Wabtec may modify or withdraw this Proposal without liability any time prior to execution by both Customer and Wabtec of a formal written contract.

4. **No liability for costs of Proposal**. Wabtec shall have no liability for costs incurred by Customer in reviewing this Proposal.

5. **Validity.** This Proposal is valid for sixty (60) days from the date of the Proposal, unless withdrawn or extended by Wabtec prior to that time.

6. **Structural Considerations.** Wabtec may have one or more of Wabtec's affiliated entities enter into relevant contract documents and/or provide some or all of Wabtec's offerings described in this Proposal. In this Proposal, references to Wabtec mean Wabtec and/or one or more of Wabtec's affiliated entities.

7. **Statements as to future.** In this Proposal, any information regarding Wabtec's roadmaps and future product plans are indicative only of Wabtec's current plans and are not binding. Plans are subject to Wabtec internal approvals, and plans may change, in Wabtec's sole discretion. Commitments and binding representations as to the future are expressly disclaimed. Customer must not rely on such information and plans in deciding whether to proceed with a final written agreement.

Proposal for MTS Maintenance Work Order 2

Wabtec Proposal Number SDMTS WO2 dated 8/9/2022

1. Contents

1.1 This Proposal is comprised of the following:

Section 1: Contents

Section 2: Scope of Wabtec Offerings

Section 3: Customer responsibilities

Section 4: Delivery schedule

Section 5: Fees

1.2 In this Proposal, except where the context requires otherwise, all references to Sections and Appendices are to Sections and Appendices of this Proposal.

1.3 If Customer wishes to proceed with this Proposal, the Customer will provide the Work Order incorporating the Terms and Conditions in this Proposal.

2. Scope of Wabtec Offerings

2.1 The Metropolitan Transit System (MTS) has multiple signaling, track, and station enhancement projects to upgrade and improve various portions of its 53-mile trolley system for operational flexibility, reliability, and efficiency. These upgrades require modifications to the existing Advanced Information Management (AIM®) Centralized Train Control (CTC) system developed by WABTEC for each of the separate project sections.

2.2 This Proposal is for Wabtec to provide the scope of work that was under SANDAG's task orders 33 and 34 and shall be moved under the MTS Agreement, L1607.0-22.

TASK ORDER & SCOPE	WORK COMPLETE IN 2021	Scope of work continued into 2022
TO33 – TPSS for OliveA, OliveB, Wright, Bean, Congress	• Point to point testing was completed in August 2021. • Retest - Field Integration testing to be completed by end of Dec 2021.	• To resolve, test, and release FIT issues. • To deploy in production servers.
TO33 – GPS Requirements	• Development complete	• To deploy in production servers. • To gather required feedback from the production system. • To resolve, test, and release feedback received. • To deploy in production servers.
TO34 - Phase II - Stations, TPSS,	• Field integration testing for Stations completed.	• To resolve, test, and release FIT issues.

Health Status, TWC @ Balboa	• Field integration testing of TPSS	• To deploy in production servers.
TO34 – Warranty	•	• Assuming that the cutover will be complete by Sept 30, 2022, the warranty will be from Oct 1, 2022, to Sept 30, 2023.

Deliverables:

(a) TO33

(i) Deployment of TPSS scope of work

(ii) Deployment of GPS scope of work

(b) TO34

(i) Deployment of Phase 2 scope of work (Stations, TPSS, Health Status, GPS, TWC at Balboa)

(ii) Warranty

2.3 Personnel

List of the Collins technical personnel responsible for the ROCS SCADA system identified below.

NAME	TITLE
Mohsen Shafeie	Sr. Manager, Program Management
Jack Luepke	Project Engineering Lead / System Engineering
Nubia Vazquez	Sr. Coordinator, Administration

- Personnel assignments are subject to change at the discretion of Wabtec management.

2.4 Wabtec Responsibilities

(a) Provision of system engineering and project management.

(b) Performance of software analysis and programming.

(c) Software development of new displays (including OVD), modifications to existing displays, updating, and modifying the database, and linkage of displays to the database for each of MTS' projects.

(d) Compilation, integration, and testing of the MTS-supplied field point database and displays; generation, compilation, integration, and testing of all other databases (such as data exchange with other systems, alarms, and event reports) necessary to attain full operation.

(e) AIM® CTC System software interfaces to other programmable logic controllers and train-to-wayside controller devices.

(f) Integration of new signals and programmable logic controllers into the AIM® CTC system.

(g) Perform field site, and availability tests plus all inspections in accordance with MTS approved plans.

(h) Maintenance of all Wabtec-supplied software through the availability demonstration.

3. Customer responsibilities

(a) Pending final MTS approval, the following items shall be provided to Wabtec as a basis for their design.
(b) Required field changes and issue fixes by Sandag and/or its contractors.
(c) Wabtec assumes MTS will provide all field hardware and installations in the field and will verify their operations over the network prior to Wabtec performing field tests. Any issues with the hardware and its performance over the network are the responsibility of MTS.
(d) Wabtec expects that the RTUs will be accessible to the AIM® CTC system via the MTS network.
(e) All features of this WOA #2 are implemented only on the 64-bit system.
(f) Wabtec assumes MTS will provide a flag person at no cost to Wabtec.
(g) Wabtec assumes that MTS will be responsible for scheduling and coordinating the IP address changes prior to start of the FAT.
(h) Wabtec assumes that the Tech Refresh, SANDAG's Task Order 32, will be the System Baseline for the modifications under the scope of WOA #2.

4. Anticipated delivery schedule

4.1 The estimated completion date is Dec 31, 2022.

4.2 The above schedule for delivery of the scope described in Section 2 of this Proposal is indicative only. Actual times may vary. Further, timely delivery of Wabtec's offerings is dependent on Customer's timely discharge of Customer's responsibilities, including as identified in this Proposal.

5. Fees

5.1 The Fees for the scope of Wabtec's offerings as described in this Proposal are as follows.

Milestone	Estimated Completion Date	Agreed Prices from SANDAG Task Orders (USD)	2022-23 Price Escalation – MTS (USD)	Total (USD)
TO34 - Ph 2 SAT / Cutover for TPSS and Stations	12/31/2022	$137,465	$8,881	$146,346
TO34 - Final Acceptance/Project Close-Out	12/31/2022	$137,465		$ 137,465
TO34 – TWC at Balboa	12/31/2022	$10,925		$ 10,925
TO33 – Cutover	12/31/2022		$ 2,819	$ 2,819
TOTAL		**$ 285,855**	**$ 11,700**	**$ 297,555**

5.2 The above Fees are subject to the following qualifications:

(a) Wabtec's proposal assumes no hardware costs.

(b) All Fees are stated and shall be paid in United States dollars

(c) Prices are NET and are exclusive of all taxes, customs, duties, levies, tariffs, government permits and third-party licenses.

(d) Should a schedule delay caused by factors outside of Wabtec' responsibility and/or control require additional resources to maintain the proposed schedule, the cost for the additional resources will be considered as part of a contractual change order. This must be approved by the MTS project manager prior to incurring the additional expense.

(e) There could be potential costs based on the rate increase and schedule impacts if Wabtec is not able to complete any of the listed tasks due to delays caused by factors that are outside of Wabtec' responsibility, including delay of execution of the Agreement between Wabtec (ARINC, Inc.) and MTS.

(f) Any deviations from the terms and conditions of agreement L1607.0-22 may incur an additional risk premium, which will be added to the price, in Wabtec's sole discretion.

Work Order Agreement No. 3 (WOA 3)

September 15, 2022 MTS Doc No. L1607.0-22

CENTRALIZED TRAIN CONTROL (CTC) SYSTEM MAINTENANCE AGREEMENT – WOA 3

Wabtec Transportation Systems, LLC
Steven Baird
Sr. Manager, Contracts
2151 Riva Road
Annapolis, MD 21401

This shall serve as WOA 3 to the original agreement L1607.0-22 as further described below.

SCOPE

The scope of work for this WOA 3, is to add Mission Valley West (MVW) Signal, Imperial Terminal (IMT) Double Track, and El Cajon Third Track Upgrades, and as further detailed in Exhibit E.

SCHEDULE

The schedule is as shown in Exhibit E.

There are no changes to the termination date of the overall agreement which remains December 31, 2026.

PAYMENT

The cost for this WOA 3, shall not exceed $1,222,599.00 as shown in Exhibit E.

The overall contract amount including this WOA 3, is increased to $3,681,126.50. This amount shall not be exceeded without prior written approval from MTS.

CONTRACT SUMMARY

To-date, the contract summary is as shown below:

Date Issued	Document	Description	Amount
1/1/2022	Agreement	CTC System Maintenance	$1,568,916.00
5/1/2022	WOA #1	Various System Integrations	$449,923.00
5/9/2022	WOA #1.1	Beech Street Interlocking Field Integration Testing (FIT)	$72,003.50

9/15/2022	Amendment #2	Travel Expense. Reimbursements to be paid during the contract.	$15,000.00
9/15/2022	WOA #1.2	Final Acceptance of Beech Street Double Crossover	$55,130.00
9/15/2022	WOA #2	SANDAG – Mid Coast existing Task Orders # 33 (SANDAG TPSS point-to-point testing and GPS) and #34 (SANDAG Field Integration testing TPSS, Stations and warranty). MTS takes on these Task Orders using Addendum 17 SOW 105, and will be reimbursed by SANDAG.	$297,555.00
9/15/2022	WOA #3	MVW Signal, IMT Double Track, and El Cajon Third Track Upgrades	$1,222,599.00
		Total Contract Amount	**$3,681,126.50**

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Steven Baird, Sr. Manager, Contracts
Wabtec Transportation Systems, LLC

Date: _____

Attachment: Exhibit E – Wabtec Work Order Agreement #3

Steven Baird
Sr. Contract Manager
2551 Riva Road
Annapolis, MD 21401
Phone: 1-410-266-2986
Email: steven.c.baird@collins.com
www.wabteccorp.com

Thang Q. Nguyen
San Diego Metropolitan Transit System
1255 Imperial Ave.
Suite 1000
San Diego, CA 92101-7490

8/9/2022

REF: Proposal for Work Order 3 to SDMTS Doc. No. L1607.0-22
Proposal Number: OP-0104984

Mr. Nguyen,

Wabtec Transportation Systems, LLC (**Wabtec**) is pleased to provide the attached proposal (**Proposal**) to San Diego Metropolitan Transit System (**SDMTS** or **Customer**) for Mission Valley West SCADA Signal Upgrades, Imperial Terminal Double-Track Upgrades, and El Cajon Third Track Upgrades.

Wabtec welcomes the opportunity to provide this Proposal. If you have any questions or require any further assistance, please feel free to contact us.

Thank you

Steven Baird

Steven Baird
Sr. Contract Manager
Wabtec Corporation

Wabtec CORPORATION

IMPORTANT NOTICE REGARDING PROPOSAL

1. **Confidentiality.** Customer and Wabtec acknowledge that Customer is a public agency subject to the California Public Records Act (CPRA) (California Government Code §§ 6250 through 6276.48) and other applicable laws. This Proposal and any agreement entered into between Customer and Wabtec will be considered a public record and subject to disclosure in compliance with the CPRA. Notwithstanding the above, this Proposal is for Customer only and not for the benefit of any third party. Customer acknowledges and agrees that during the course of the work conducted by Wabtec, Customer may be provided with Wabtec's confidential and proprietary or trade secret information that is not subject to disclosure under the CPRA or other applicable law. Such information will be clearly marked as "Confidential and Proprietary". Customer shall maintain such Confidential and Proprietary documents as confidential and shall not disclose them to third parties unless required to do so by applicable law, rule or regulation. In the event a request for Wabtec's Confidential and Proprietary documents is received by Customer, whether under the CPRA, subpoena, or other method, Customer will provide Wabtec with an opportunity to review the request, and at Wabtec's sole cost, to defend or pursue an action to protect such Confidential and Proprietary documents from disclosure. Customer shall not be required to incur legal fees and costs to protect Wabtec's Confidential and Proprietary documents from disclosure under state or federal law.

2. **Not an offer.** This Proposal is for discussion purposes only, and Customer shall not rely on this Proposal. This Proposal is not an offer capable of acceptance. Wabtec and Customer shall not be bound in relation to the subject of this Proposal unless and until Wabtec and Customer sign a mutually agreed, written amendment. Should Wabtec and Customer mutually agree to proceed, the final amendment signed by Wabtec and Customer will be the entire agreement, superseding this Proposal. This Proposal is given based on the terms and conditions of the referenced agreement **SDMTS Doc. No. L1607.0-22**. Any deviation from such terms and conditions in the final signed written contract may impact price, schedule and other terms in Wabtec's sole discretion.

3. **No liability for costs of Proposal**. Wabtec shall have no liability for costs incurred by Customer in reviewing this Proposal.

4. **Validity.** This Proposal is valid for sixty (60) days from the date of the Proposal, unless withdrawn or extended by Wabtec prior to that time.

5. **Structural Considerations.** Wabtec may have one or more of Wabtec's affiliated entities enter into relevant contract documents and/or provide some or all of Wabtec's offerings described in this Proposal. In this Proposal, references to Wabtec mean Wabtec and/or one or more of Wabtec's affiliated entities.

6. **Statements as to future.** In this Proposal, any information regarding Wabtec's roadmaps and future product plans are indicative only of Wabtec's current plans and are not binding. Plans are subject to Wabtec internal approvals, and plans may change, in Wabtec's sole discretion. Commitments and binding representations as to the future are expressly disclaimed. Customer must not rely on such information and plans in deciding whether to proceed with a final written agreement.

Proposal for Proposal for Work Order 3 to SDMTS Doc. No. L1607.0-22

Wabtec Proposal Number OP-0104984 dated 8/9/2022

1. Contents

1.1 This Proposal is comprised of the following:

Section 1: Contents

Section 2: Scope of Wabtec Offerings

Section 3: Customer responsibilities

Section 4: Delivery schedule

Section 5: Fees

Appendix A: Description of Offerings

1.2 In this Proposal, except where the context requires otherwise, all references to Sections and Appendices are to Sections and Appendices of this Proposal.

1.3 If Customer wishes to proceed with this Proposal, Wabtec will provide the contract incorporating the Terms and Conditions in this Proposal.

2. Scope of Wabtec Offerings

2.1 This Proposal is for Wabtec to provide Mission Valley West SCADA Signal Upgrades, Imperial Terminal Double-Track Upgrades, and El Cajon Third Track Upgrades as described in Appendix A.

3. Customer responsibilities

3.1 Customer will be responsible for:

(a) The materials referenced in Section 7 and Assumptions referenced in Section 9 of the Scope of Work in Appendix A

4. Anticipated delivery schedule

4.1 An anticipated period of performance shall be approximately sixteen (16) months from notice to proceed and is detailed in Section 6 of Appendix A.

4.2 The above schedule for delivery of the scope described in Section 2 of this Proposal is indicative only. Actual times may vary. Further, timely delivery of Wabtec's offerings is dependent on Customer's timely discharge of Customer's responsibilities, including as identified in this Proposal.

5. Fees

5.1 The Fees for the scope of Wabtec's offerings as described in this Proposal are as follows.

(a) The Fees are **$1,222,599.00**.

5.2 The Fees will be invoiced at the milestones listed in the schedule found in Section 6 of the attached Statement of Work in Appendix A.

5.3 The above Fees are subject to the following qualifications:

(a) All Fees are stated and shall be paid in United States dollars

(b) Prices are NET and are exclusive of all customs, duties, levies, tariffs, government permits and third-party licenses.

(c) Delays caused by Customer or delays for which Customer is responsible will incur additional charge on account of costs incurred by Wabtec plus Wabtec's standard administration fee.

(d) Any deviations from the negotiated terms and conditions referenced in SDMTS Doc. No. L1607.0-22 may incur an additional risk premium, which will be added to the price, in Wabtec's sole discretion.

Appendix A: Description of Offerings

San Diego Metropolitan Transit System
WORK ORDER 3

Scope of Work

MISSION VALLEY WEST SCADA SIGNAL UPGRADES

IMPERIAL TERMINAL DOUBLE-TRACK UPGRADES EL CAJON

THIRD TRACK UPGRADES

Revision	Description	Date
0.0	Initial version	July 15, 2022
1.0	Updated based on discussions about Confidentiality	August 8, 2022

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1 INTRODUCTION

The Metropolitan Transit System (MTS) has multiple signaling, track, and station enhancement projects to upgrade and improve various portions of its 53-mile trolley system for operational flexibility, reliability, and efficiency. These upgrades require modifications to the existing Advanced Information Management (AIM®) Centralized Train Control (CTC) system developed by WABTEC for each of the separate project sections.

2 SCOPE OF WORK

The scope of work shall consist of the following three tasks and deliverables:

2.1 Mission Valley West SCADA Signaling Upgrades

Micrologix 1400 PLC units shall be used as I/O gatherers at each of six interlockings, and six additional intermediate locations at the Mission Valley West area along the Green Line from signal case M488RC, M570RC, M612RC, M650RC, M694RC, M720RC, M760RC, M812RC, M840RC, M878RC, 900RC, M912RC to and including M936RC (Interlocking M22). The 12 new Micrologix 1400 shall utilize the fiber optic communications backbone, along with ruggedized Ethernet switches at each location (IP addresses shall be assigned by MTS). The Ethernet switch traffic shall be collected at the station communications cabinets along the Green Line and reach the central control facility via the MTS network. The compatible Allen Bradley protocol via Kepware OPC (over Ethernet) shall be utilized for communications back to the central control facility, in a manner consistent with what is used elsewhere on the MTS Rail network.

New and revised Train to Wayside (TWC) equipment shall be implemented at the stadium. The compatible Modbus protocol (over Ethernet) shall be utilized for these systems.

All network components shall be provided by MTS and other contractor(s).

A system architecture identifying proposed locations, proposed I/O lists, as well as track layout shall be provided by MTS or the contractor(s).

The Micrologix 1400 PLCs shall be procured and installed by others.

WABTEC shall test and integrate the new signaling field elements into CTC by working with MTS and MTS' construction contractor(s).

2.2 Imperial Terminal Double Track Upgrades

MTS has plans to Double-track the Green Line at the 12th & Imperial Transit Center station platform. This includes the construction of a new track segment and double crossover at this transit center to provide greater operational flexibility, reduce service disruptions, and increase work windows for ongoing maintenance. In addition, Yard routing shall be enhanced at the station platform with a new interlocking for routing trains into and out of the yard. One new ElectroLogixs controller shall be added for the new double crossover. The new yard Interlocking will be implemented using the existing Siemens S7 controller at Imperial Junction and shall also require some rework to support the upgrades. The new equipment shall utilize the fiber optic communications backbone, along with ruggedized Ethernet switches at the location (IP addresses shall be assigned by MTS). The Ethernet switch traffic shall be collected at the station communications cabinet at Imperial Terminal and reach the central control facility via the MTS network. The compatible Genisys protocol (over Ethernet) shall be utilized for all controller communications back to the central control facility, in a manner consistent with what is used elsewhere on the MTS Rail network.

New and revised Train to Wayside (TWC) equipment shall be implemented at Imperial Terminal. The compatible Modbus protocol (over Ethernet) shall be utilized for these systems.

All network components shall be provided by MTS and other contractor(s).

A system architecture identifying proposed modifications and updates proposed new and revised I/O lists, as well as track layout, shall be provided by MTS or the contractor(s).

The Electrologixs controller shall be procured and installed by others.

WABTEC shall test and integrate the new signaling field elements into CTC by working with MTS and MTS' construction contractor(s).

2.3 El Cajon Station Third Track Upgrades

MTS plans to construct a third track and additional platform extension at the El Cajon Transit Center to allow trolley service for Orange and Green lines from downtown to terminate at Arnelle station with additional Green line shuttle service between El Cajon and Santee Town Center station.

A new interlocking (E27) shall be constructed, and both the El Cajon and Arnelle interlockings shall be significantly reworked. The existing El Cajon (E26) interlocking RTU shall be replaced with an Electrologixs system. An all-new Electrologixs system shall be installed at the E27 Interlocking. The new equipment shall utilize the fiber optic communications backbone, along with ruggedized Ethernet switches at the location (IP addresses assigned by MTS). The Ethernet switch traffic shall be collected at the station communications cabinet at El Cajon Station and reach the central control facility via the MTS network. The compatible Genisys protocol (over Ethernet) shall be utilized for the Electrologixs controller communications back to the central control facility, and the compatible ECOM protocol (over Ethernet) shall be utilized for the existing DirectLogics controller at Arnelle (E28) Interlocking in a manner consistent to what is used elsewhere on the MTS Rail network.

New and revised Train to Wayside (TWC) equipment shall be implemented at El Cajon. The compatible Modbus protocol (over Ethernet) shall be utilized for these systems.

All network components shall be provided by MTS and other contractor(s).

A system architecture identifying proposed modifications and updates proposed new and revised I/O lists, as well as track layout, shall be provided by MTS or the contractor(s).

The Electrologixs controllers shall be procured and installed by others

WABTEC shall test and integrate the new and revised signaling field elements into CTC by working with MTS and MTS' construction contractor(s).

3 EXPECTED RESULTS

The expected result of SDMTS Work Order 3 is that WABTEC shall implement system modifications including, but not limited to graphics, functions, displays, reports, database points, Supervisory Control, panel logic, and communications within the AIM® CTC system. The AIM® CTC system database shall allow for:

- All new and modified track and signaling arrangements along the Mission Valley West (MVW) portion of the existing Green Line.
- All new and modified Track circuit, switch, and signaling at El Cajon Transit Center Third track (ECTT) and Platform Extension.
- All new and modified Track circuit, switch, and signaling at Imperial Terminal Double track (IMTDT) and Platform Extension.

The new or replaced equipment and functions supported by the CTC modifications shall include:

3.1 Mission Valley West SCADA Upgrades

- Existing Interlockings and Signals, modification/upgrade of 12 existing rail cases from M488RC to M936RC shall be Interfaced to 12 new Micrologix 1400 PLCs.
- All new functionalities shall be implemented for the new Micrologix 1400 PLCs which provide track occupancy, switch & signal processing for the track interlocking systems at 12 locations.
- Revised functionalities shall be implemented for Train to Wayside (TWC).

3.2 Imperial Terminal Double Track Upgrades

- All new functionalities shall be implemented for the new Electrologixs controller which provides track occupancy, switch & signal processing for the track interlocking systems.
- The existing S7 controller shall be reworked, which provides new and modified track occupancy, switch & signal processing of the track interlocking system.
- The existing overhead Catenary (OCS) shall be reworked to reflect the addition of the double crossover, the yard interlocking, and the Double-track platform updates.
- New and revised functionalities shall be implemented for Train to Wayside (TWC).

3.3 El Cajon Station Third Track Upgrades

- All new functionalities shall be implemented for the new Electrologixs controller at E27 Interlocking which provides track occupancy, switch & signal processing for the track interlocking system.
- The E26 Interlocking DirectLogics controller shall be replaced with a new ElectroLogix controller.
- The existing DirectLogics controller shall be reworked at the E28 Interlocking which provides modified track occupancy, switch & signal processing for the track interlocking system.
- The existing Overhead Catenary (OCS) shall be reworked to reflect the addition of E27 Interlocking and modifications to E38 Interlocking.

- New and revised functionalities for Train to Wayside (TWC) shall reflect the modified track topology for the new third track and station platform.
- The existing RX3i PLC is being relocated, and WABTEC will perform Field Integration tests to verify functionality at the new location.

4 DELIVERABLES

4.1 Mission Valley West SCADA Upgrades

WABTEC shall provide the following:

1. Detailed Design DCF
2. Factory Acceptance Test plan & procedures
3. Field Test plan & results
4. Development, test & deployment schedule

4.2 Imperial Terminal Double Track Upgrades

WABTEC shall provide the following:

1. Detailed Design DCF
2. Factory Acceptance Test plan & procedures
3. Field Test plan & results
4. Development, test & deployment schedule

4.3 El Cajon Station Third Track Upgrades

WABTEC shall provide the following:

1. Detailed Design DCF
2. Factory Acceptance Test plan & procedures
3. Field Test plan & results
4. Development, test & deployment schedule

5 WABTEC RESPONSIBILITIES

WABTEC shall assume complete responsibility for the design, fabrication, testing, installation, and start-up of all subsystems and components of the expanded AIM® CTC system, except for those SDMTS obligations defined in Section VII. WABTEC obligations shall include, but not be limited to the responsibilities in the following list and those required to meet all requirements described in these Specifications:

1. System Engineering and Project Management.
2. Software Analysis and Programming.
3. Field tests for the relocated General Electric RX3i PLC at El Cajon Transit Center, as necessary, to verify functionalities at the new location.
4. Development of new Displays (including OVD), modifications to existing displays, updating, and modifying the database, and linkage of displays to the database for each of MTS' projects.
5. Compilation, integration, and testing of the SDMTS-supplied field point database and displays; generation, compilation, integration, and testing of all other databases (such as data exchange with other systems, alarms, and event reports) necessary to attain full operation.
6. AIM® CTC System software interfaces to other programmable logic controllers and train-to-wayside controller devices.
7. Integration of new signals and programmable logic controllers into the AIM® CTC system.
8. Field Site and Availability tests plus all inspections in accordance with SDMTS-approved plans.
9. Maintenance of all WABTEC supplied software through the Availability demonstration.

A detailed description of the WABTEC obligations in relation to particular areas of software functions and services are contained in other sections of this Work Order.

6 SCHEDULE OF SERVICES, MILESTONES, AND DELIVERABLES

A. Period of performance is from September 15, 2022, to December 31, 2023.

B. Unless a Project Schedule is attached in the amendment to this Work order; the tasks, milestones, and/or deliverables are as follows: (NTP is assumed to be available on 09/15/2022)

Milestone	Due Date (Subject to Change)	Invoice Amount (USD)
NTP	9/15/2023	$305,390
Baseline Schedule	15 days from NTP	NA
Mission Valley West SCADA Software Design Review	12/14/2022	$366,463
Imperial Double-track Software Design Review		
El Cajon Third Track Software Design Review		
Mission Valley West SCADA Factory Acceptance Test	6/16/2023	$244,309
Imperial Double-track Factory Acceptance Test		
Mission Valley West SCADA Field Tests	6/31/2023	NA
Imperial Double-track Field Tests	7/02/2023	
Mission Valley West SCADA Deployment & Cutover	7/14/2023	$183,974
Imperial Double-track Deployment & Cutover		
El Cajon Third Track Factory Acceptance Test	9/18/2023	$61,077
El Cajon Third Track Field Tests	9/30/2023	NA
El Cajon Third Track Deployment & Cutover	10/11/2023	$61,386
Final Acceptance	12/31/2023	NA
TOTAL		**$1,222,599**

7 MATERIALS TO BE PROVIDED BY SDMTS OR CONTRACTOR(S)

Pending final SDMTS approval, the following items shall be provided to WABTEC as a basis for their design.

1. C & I (controls and indications) points list (Code Chart) Shall be provided
   - prior to the MVW SCADA start of design.
   - prior to Imperial Terminal Double-track start of design
   - prior to El Cajon Third Track start of design.
2. Reference Drawings for each project
   - Shall be provided within five weeks from NTP.
3. Signaling system design for MVW SCADA
4. IP addresses and network configuration parameters for field devices shall be provided prior to any field testing.

8 SPECIAL CONDITIONS

Any condition listed below applies solely to this Work Order and does not otherwise alter the Agreement or other Work Orders.

A. SDMTS Work Order Manager shall approve completed work prior to payment.

9 ASSUMPTIONS AND EXCLUSIONS

1. WABTEC shall not be responsible for the configuration or programming of MVW Micrologix devices.
2. WABTEC shall not be responsible for the configuration or programming of Electrologixs devices.
3. MVW Micrologix devices shall utilize Allen Bradley protocol via OPC.
4. ElectroLogixs and SIEMENS S7 controllers shall utilize Genisys protocol.
5. TWC Interrogators shall utilize Modbus protocol.
6. IMT Double-track and El Cajon Third-track interlocking designs shall conform to Midcoast design standards.
7. WABTEC shall not be responsible for the configuration or programming of Micrologixs devices at Mission Valley West.
8. WABTEC shall not be responsible for configuration or programming of Electrologixs or Directlogcs devices at El Cajon third track.
9. WABTEC shall not be responsible for the configuration or programming of Electrologixs or Siemens S7 devices at Imperial Double-Track.
10. WABTEC assumes MTS will provide all field hardware and install it in the field and will verify their operations over the network prior to performing field tests.
11. All work for this Work order shall begin upon NTP from MTS.
12. WABTEC assumes MTS will provide all field hardware and install it in the field and will verify their operations over the network prior to WABTEC performing field tests. Any issues with the hardware and its performance over the network are the responsibility of MTS.
13. WABTEC expects that the RTUs will be accessible to CTC via the MTS network.
14. WABTEC assumes that we will receive final code charts within five weeks from NTP.
15. WABTEC's proposal assumes no hardware costs.
16. WABTEC's proposal assumes no warranty for this scope of work.
17. All features of Work Order 3 are implemented only on the 64-bit system.
18. WABTEC assumes MTS will provide a Flag Person at no cost to WABTEC.
19. WABTEC assumes that MTS will be responsible for scheduling and coordinating the IP address changes prior to the start of the FAT.
20. Should a schedule delay caused by factors outside of WABTEC's responsibility require additional resources to maintain the proposed schedule, the cost for the additional resources will be considered as part of a contractual change order. This must be approved by the MTS project manager prior to incurring the additional expense.
21. There could be potential costs based on the rate increase and schedule impacts if WABTEC is not able to complete any of the listed tasks due to delays caused by factors that are outside of WABTEC's responsibility.
22. Payment terms are Net 30 days.
23. No U/DBE goal is established for this Work Order.
24. WABTEC assumes that the Tech Refresh – Task Order 32 shall be the System Baseline for the modifications under the scope of Work Order 3.
25. With exception to the above assumptions, it is assumed that all other terms and conditions of Contract Number <new MTS contract> apply to this work order.

26. Currently, quarterly maintenance releases and Work Order 1 scope alone are considered to define the schedule and milestone dates. If additional work orders are executed before the completion of this WO3, then the full scope will be re-prioritized based on SDMTS requirements, and accordingly, the schedule and milestone will be redefined.

END OF PROPOSAL

Metropolitan Transit System

Work Order Agreement No. 5 (WOA 5)

August 24, 2022 MTS Doc No. L1607.0-22

CENTRALIZED TRAIN CONTROL (CTC) SYSTEM MAINTENANCE AGREEMENT – WORK ORDER 5

Wabtec Transportation Systems, LLC
Mohsen Shafeie
Sr. Manager
2151 Riva Road
Annapolis, MD 21401

This shall serve as WOA 5 to the original agreement L1607.0-22 as further described below.

SCOPE

The scope of work for this WOA 5, is for Server and Sonicwall SecurID Token Upgrades, and as further detailed in Exhibit A.

SCHEDULE

The schedule is as shown in Exhibit A.

There are no changes to the termination date of the overall agreement which remains December 31, 2026.

PAYMENT

The cost for this WOA 5, shall not exceed $27,817.00 as shown in Exhibit A.

The overall contract amount including this WOA 5, is increased to $2,118,659.50. This amount shall not be exceeded without prior written approval from MTS.

CONTRACT SUMMARY

To-date, the contract summary is as shown below:

Date Issued	Document	Description	Amount
1/1/2022	Agreement	CTC System Maintenance	$1,568,916.00
5/1/2022	WOA 1	Various System Integrations	$449,923.00
5/9/2022	WOA 1.1	Beech Street Interlocking Field Integration Testing (FIT)	$72,003.50

8/24/2022	WOA 5	Server and SonicWall SecurID Token Upgrade	$27,817.00
		Total Contract Amount	**$2,118,659.50**

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney

Sharon Cooney, Chief Executive Officer

Agreed:

Mohsen Shafeie
2022.09.01 11:02:47 -04'00'

Mohsen Shafeie, Sr. Manager
Wabtec Transportation Systems, LLC

Date: _____

Attachment: Exhibit A – Wabtec's Work Order Agreement #5

Exhibit A – Wabtec's Work Order Agreement #5

Mohsen Shafeie
Sr. Manager, Program Management
5140 West Goldleaf Circle
Suite 300
Los Angeles, CA 90054 – U.S.A
Phone: 1-647-669-3646
Email: Mohsen.shafeie@collins.com
www.wabteccorp.com

Thang Q. Nguyen
San Diego Metropolitan Transit System
1255 Imperial Ave.
Suite 1000
San Diego, CA 92101-7490

8/23/2022

REF: Proposal for Work Order 5 to SDMTS Doc. No. L1607.0-22
Proposal Number: OP-0104984

Mr. Nguyen,

Wabtec Transportation Systems, LLC (**Wabtec**) is pleased to provide the attached proposal (**Proposal**) to San Diego Metropolitan Transit System (**SDMTS** or **Customer**) for RSA Server and Sonicwall SecurID Token Upgrades.
Wabtec welcomes the opportunity to provide this Proposal. If you have any questions or require any further assistance, please feel free to contact us.

Thank you

Mohsen Shafeie
Sr. Manager, Program Management
Wabtec Corporation

Wabtec CORPORATION

IMPORTANT NOTICE REGARDING PROPOSAL

1. **Confidentiality.** Customer and Wabtec acknowledge that Customer is a public agencysubject to the California Public Records Act (CPRA) (California Government Code §§ 6250through 6276.48) and other applicable laws. This Proposal and any agreement enteredinto between Customer and Wabtec will be considered a public record and subject todisclosure in compliance with the CPRA. Notwithstanding the above, this Proposal is forCustomer only and not for the benefit of any third party. Customer acknowledges andagrees that during the course of the work conducted by Wabtec, Customer may beprovided with Wabtec's confidential and proprietary or trade secret information that is notsubject to disclosure under the CPRA or other applicable law. Such information will beclearly marked as "Confidential and Proprietary". Customer shall maintain suchConfidential and Proprietary documents as confidential and shall not disclose them to thirdparties unless required to do so by applicable law, rule or regulation. In the event a requestfor Wabtec's Confidential and Proprietary documents is received by Customer, whetherunder the CPRA, subpoena, or other method, Customer will provide Wabtec with anopportunity to review the request, and at Wabtec's sole cost, to defend or pursue an actionto protect such Confidential and Proprietary documents from disclosure. Customer shallnot be required to incur legal fees and costs to protect Wabtec's Confidential andProprietary documents from disclosure under state or federal law..

2. **Not an offer.** This Proposal is for discussion purposes only, and Customer shall not rely on this Proposal. This Proposal is not an offer capable of acceptance. Wabtec and Customer shall not be bound in relation to the subject of this Proposal unless and until Wabtec and Customer sign a mutually agreed, written contract. Should Wabtec and Customer mutually agree to proceed, the final contract signed by Wabtec and Customer will be the entire agreement, superseding this Proposal. This Proposal is given based on the terms and conditions of the referenced agreement **SDMTS Doc. No. L1607.0-22**. Any deviation from such terms and conditions in the final signed written contract may impact price, schedule and other terms in Wabtec's sole discretion.

3. **No liability for costs of Proposal**. Wabtec shall have no liability for costs incurred by Customer in reviewing this Proposal.

4. **Validity.** This Proposal is valid for sixty (60) days from the date of the Proposal, unless withdrawn or extended by Wabtec prior to that time.

5. **Structural Considerations.** Wabtec may have one or more of Wabtec's affiliated entities enter into relevant contract documents and/or provide some or all of Wabtec's offerings described in this Proposal. In this Proposal, references to Wabtec mean Wabtec and/or one or more of Wabtec's affiliated entities.

6. **Statements as to future.** In this Proposal, any information regarding Wabtec's roadmaps and future product plans are indicative only of Wabtec's current plans and are not binding. Plans are subject to Wabtec internal approvals, and plans may change, in Wabtec's sole discretion. Commitments and binding representations as to the future are expressly disclaimed. Customer must not rely on such information and plans in deciding whether to proceed with a final written agreement.

Proposal for Proposal for Work Order 5 to SDMTS Doc. No. L1607.0-22
Wabtec Proposal Number OP-0104984 dated 8/9/2022

1. Contents

1.1 This Proposal is comprised of the following:

Section 1: Contents

Section 2: Scope of Wabtec Offerings

Section 3: Customer responsibilities

Section 4: Delivery schedule

Section 5: Fees

Appendix A: Description of Offerings

1.2 In this Proposal, except where the context requires otherwise, all references to Sections and Appendices are to Sections and Appendices of this Proposal.

1.3 If Customer wishes to proceed with this Proposal, Wabtec will provide the contract incorporating the Terms and Conditions in this Proposal.

2. Scope of Wabtec Offerings

2.1 This Proposal is for Wabtec to provide RSA Server and Sonicwall SecurID Token Upgrades as described in Appendix A.

3. Customer responsibilities

3.1 Customer will be responsible for:

(a) The actions referenced in Section 8 of the Scope of Work in Appendix A

4. Anticipated delivery schedule

4.1 An anticipated period of performance shall be approximately forty-five (45) days from notice to proceed.

4.2 The above schedule for delivery of the scope described in Section 2 of this Proposal is indicative only. Actual times may vary. Further, timely delivery of Wabtec's offerings is dependent on Customer's timely discharge of Customer's responsibilities, including as identified in this Proposal.

5. Fees

5.1 The Fees for the scope of Wabtec's offerings as described in this Proposal are as follows.

(a) The Fees are **$ 27,817.00**.

5.2 The Fees will be invoiced at the milestones listed in the schedule found in Section 9 of the attached Statement of Work in Appendix A.

5.3 The above Fees are subject to the following qualifications:

(a) All Fees are stated and shall be paid in United States dollars.

(b) Prices are NET and are exclusive of all taxes, customs, duties, levies, tariffs, government permits and third-party licenses.

(c) Delays caused by Customer or delays for which Customer is responsible will incur additional charge on account of costs incurred by Wabtec plus Wabtec's standard administration fee.

(d) Any deviations from Wabtec's standard terms and conditions referenced in SDMTS Doc. No. L1607.0-22 may incur an additional risk premium, which will be added to the price, in Wabtec's sole discretion.

Appendix A: Description of Offerings

SAN DIEGO METROPOLITAN TRANSIT SYSTEM (SDMTS)

Maintenance Work Order 5

RSA Server & Sonicwall SecurID Token Upgrades

Revision	Description	Date
0.0	Initial version	July 28, 2022
1.0	Updated based on MTS comments	August 03, 2022
2.0	Updated based on MTS comments	August 15, 2022

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1. INTRODUCTION

The San Diego Metropolitan Transit System (MTS) has a VPN for remote access to the AIM® CTC SCADA network. This system consists of an RSA server, a Sonicwall firewall, and a number of *RSA SecurID Tokens* (Keyfobs) for 2 factor authentication (2FA). WABTEC has traditionally managed this VPN system. The Keyfobs will function for a fixed number of years and then need to be replaced. The current set of 3-year Keyfobs will remain functional until September 30, 2022. MTS would like WABTEC to update this VPN and deploy a new set of Keyfobs before the current set expires.

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2. BACKGROUND

The Metropolitan Transit System (MTS) has multiple signaling, track, and station enhancement projects to upgrade and improve various portions of its 53-mile trolley system for operational flexibility, reliability, and efficiency. This is a proposal for Maintenance Work Order 5 which covers RSA Server & Sonicwall SecurID Token Upgrades under the CTC Maintenance Agreement MTS Doc. No. L1607.0-22.

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3. PERSONNEL

List of the Collins technical personnel responsible for the ROCS SCADA system identified below.

NAME	TITLE
Mohsen Shafeie	Sr. Manager, Program Management
Jack Luepke	Project Engineering Lead / System Engineering
Mickey Gajewski	System Engineering
Nubia Vazquez	Sr. Coordinator, Administration

* Personnel assignments are subject to change at the discretion of Collins management.

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4. SCOPE OF WORK

The scope of work shall consist of the following items:

1. WABTEC will determine price & availability of a set of 20 RSA SecurID 700 Hardware Tokens with 2-year functional life. WABTEC shall procure the Keyfobs, subject to reimbursement from MTS.
2. WABTEC will configure and internally test the new RSA server at the lab facilities in Ladera Heights
3. WABTEC will configure the RSA Server to deploy the new set of Keyfobs at the lab facilities in Ladera Heights.
4. WABTEC will deliver the RSA Server to MTS and remove and replace the RSA Server in the OCC server room, and test the VPN 2FA functionality with the new RSA SecurID Tokens.
5. WABTEC will coordinate the distribution of the Keyfobs to MTS Operations and IT staff and WABTEC personnel as required.
6. WABTEC will update internal documentation detailing the Keyfob distribution.

4.1 Bill of Materials (BOM)

ITEM	MFG	DESCRIPTION	QUANTITY	PRICE
SID700-6-60-24-10	RSA	SecurID Hardware Token 2 YR	2 – 10 PACK	$992.00
SIDACC-A130-A	RSA	SID Access Dell A130 Server	1	SDMTS Supplied

4.2 Requirement Modifications

There are no modifications to requirements.

4.3 Expected Results

The expected result of MTS' Work Order Agreement #5 (WOA #5) is that WABTEC shall deploy an updated RSA Server and integrate a new set of Keyfobs before the current set expire on September 30, 2022.

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5. DELIVERABLES

The deliverables shall consist of the following:

1. Replacement RSA Server.
2. RSA SecurID 700 Hardware Tokens (Keyfobs).
3. Update document detailing the Keyfob distribution and assignment

Use or disclosure of data contained on this sheet is subject to the restrictions on the title page of this document.

6. WABTEC RESPONSIBILITIES

WABTEC will assume responsibility for the Sonicwall VPN upgrades including deploying replacement Keyfobs, except for those MTS obligations defined in Section VII. WABTEC obligations shall be limited to the responsibilities in the following list and those required to meet all requirements described in these Specifications:

1. RSA replacement server deployment, configuration, and maintenance in the AIM® CTC production environment.
2. Replacement RSA SecureID hardware token integration & deployment.

Detailed description of the WABTEC obligations in relation to particular areas of functions, and services are contained in other sections of this Work Order.

6.1 Final Acceptance Criteria

- Replacement RSA Server is installed in OCC Server Rm, passing onsite Wabtec connectivity tests.
- Retired RSA Server is decommissioned and removed from OCC Server Rm.
- RSA SecurID replacement tokens pass Wabtec connectivity tests with RSA Server & Sonicwall VPN.
- RSA SecurID replacement tokens are distributed to replace MTS tokens as needed.

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7. SCHEDULE

TASK or MILESTONE	DATE
RSA Server and SecurID Token Upgrades WO-5 NTP	Mon 8/29/22
SecurID Token Procurement started	Tues 8/30/22
Wabtec Lab RSA server & SecurID Token setup & test	Fri 9/9/22
SDMTS OCC Server RM RSA Server and SecurID Token Deployment	Tue 9/13/22
Final Acceptance - RSA Server & SecurID Token Deployment Complete	Wed 9/16/22

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8. ASSUMPTIONS AND EXCLUSIONS

Wabtec makes the following assumptions for this proposal:

1. Integration, configuration of RSA SecurID hardware tokens will be at WABTEC's discretion.
2. MTS shall be responsible for network connections that facilitate the RSA server access to AIM® CTC production network.
3. No DBE goal shall be established for this Work Order;
4. There is no bonding cost included in Work Order #5.
5. Wabtec personnel are at the discretion of Wabtec management.
6. Wabtec assumes NTP no later than August 15, 2022.
7. Wabtec assumes Final Acceptance NLT September 16, 2022.
8. This proposal does not include maintaining or updating a deliverable schedule or monthly reports.
9. Wabtec assumes the following travels under this agreement:
    - Two (2) Engineer for one (1) trip of two (2) days long
10. Wabtec assumes any additional tasks/enhancements outside the scope described above will require a Work Request and is not covered under this proposal.

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9. SDMTS PRICE BREAKDOWN

Item	PAYMENTS	USD
1	Final Acceptance	$ 27,817

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Agenda Item No. 8

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

REGIONAL COMMUNICATION SYSTEM (RCS) RADIO EQUIPMENT – CONTRACT AWARD

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. G2622.0-22 (in substantially the same format as Attachment A) with Motorola Solutions, Inc. for RCS Radio Equipment and Installation in the amount of $276,103.60, inclusive of 7.750% CA tax.

Budget Impact

The total budget for this project shall not exceed $276,103.60, inclusive of 7.750% CA tax. This project is funded by the Security Operating Budget 420010-571250.

DISCUSSION:

The Transit Security and Passenger Safety Department's former communications system consisted of a Very High Frequency (VHF) Analog Vote/Steer system with Motorola XPR 7350e handheld radios. The former system was substandard in a number of ways: low power, static, dead spots (weak or no reception) in numerous areas, not secure, insufficient battery life and no ability to communicate directly with law enforcement agencies when working in various jurisdictions (San Diego Police, San Diego Sheriff's Department, Chula Vista Police Department, La Mesa Police Department, El Cajon Police Department, and National City Police Department). These issues highlighted not only enormous obstacles in conducting routine operations during non-critical information exchanges, but also represented an incredible safety issue for MTS Code Compliance Inspectors (CCI) and contract security officers. Since switching to the RCS Radio System in March 2021, MTS CCIs and contracted security officers are now equipped with Motorola APX6000, 7/8MHZ, Model 2.5 portable radios. This radio communications system is far clearer and more reliable.

As Transit Security and Passenger Safety is a 24/7 operation, 52 more APX6000 radios are needed to equip CCIs and contracted security officers without having to wait for one shift to come in from the field (day shift) and have the radios handed off to the next shift (night shift), thus causing a gap in field coverage. Furthermore, the additional 52 handheld radios will allow a

San Diego Metropolitan Transit System (MTS) is a California public agency comprised of San Diego Transit Corp., San Diego Trolley, Inc. and San Diego and Arizona Eastern Railway Company (nonprofit public benefit corporations). MTS member agencies include the cities of Chula Vista, Coronado, El Cajon, Imperial Beach, La Mesa, Lemon Grove, National City, Poway, San Diego, Santee, and the County of San Diego. MTS is also the For-Hire Vehicle administrator for nine cities.

cache of radios available for special events that require additional staffing such as Comic-Con and events at Petco Park and Snapdragon Stadium.

On June 9, 2022, staff issued an Invitation for Bids (IFB). MTS received a single bid from Motorola Solutions, Inc. as reflected below.

Bidder Name	**Disadvantage Business Enterprise (DBE) Small Business (SB) Minority Business Enterprise (MBE) Certifications**	**Overall Total Amount ***
Motorola Solutions, Inc.	None	$276,103.60
MTS Independent Cost Estimate (ICE)	-	$221,706.40

***** *The overall total amount is inclusive of delivery charges and 7.75% California sales tax.*

MTS conducted a post bid survey with prospective bidders requesting their reason(s) for not bidding. The results indicated that neither the IFB nor MTS's procurement processes played a role in their decision not to respond. Based on the bid received and in comparison, with the ICE, staff determined Motorola Solutions, Inc.'s price to be fair and reasonable.

Therefore, staff recommends the MTS Board authorize the CEO to execute MTS Doc. No. G2622.0-22 (in substantially the same format as Attachment A) with Motorola Solutions, Inc. for RCS Radio Equipment and Installation in the amount of $276,103.60, inclusive of 7.750% CA tax.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Draft Agreement, MTS Doc. No. G2622.0-22
B. Bid Cost Form

Metropolitan Transit System

STANDARD AGREEMENT

FOR

MTS DOC. NO. G2622.0-22

THIS AGREEMENT is entered into this _____ day of _____, 2022 in the State of California by and between San Diego Metropolitan Transit System ("MTS"), a California public agency, and the following, hereinafter referred to as "Contractor":

Name: Motorola Solutions, Inc.

Address: 500 West Monroe St.

Chicago IL 60661
City State Zip

Form of Business: Corporation
(Corporation, Partnership, Sole Proprietor, etc.)

Email: jburch@motorolasolutions.com

Telephone: 971-219-8970

Authorized person to sign contracts Jerry Burch Vice President
Name Title

The Contractor agrees to provide services with goods as specified in the conformed Scope of Work/Technical Specification (Exhibit A), Contractor's Cost/Pricing Form (Exhibit B), and in accordance with the Standard Agreement, including Standard Conditions (Exhibit C), Federal Requirements (Exhibit D), and Forms (Exhibit E).

The contract term is valid for up to a one (1) year period through September 30, 2023.

Payment terms shall be net 30 days from invoice date. The total cost of this contract shall not exceed $276,103.60, inclusive of 7.75% CA tax, without the express written consent of MTS.

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	MOTOROLA SOLUTIONS, INC.
By: _____ Sharon Cooney, Chief Executive Officer	By _____
Approved as to form: By: _____ Karen Landers, General Counsel	Title: _____

RETURN THIS FORM WITH YOUR BID

BID FORM

BIDDER NAME: Motorola Solutions, Inc.

Item	Description	Quantity	Unit Price	Total Cost
1	Motorola APX 6000 Model 2.5 Portable Radios	52	$ 4103.77	$ 213,396.04
2	Motorola APX 6500 Mobile Radios	4	$ 4535.66	$ 18,142.64
3	APX Spare Batteries	26	$ 163.35	$ 4247.10
4	Impres 6-unit Multi-Chargers	10	$ 1065.15	$ 10,651.50
5	Magnetic Radio Clip for Vehicles	4	$ 0.00	$ 0.00
6	On-site Mobile Radio Installation	1	$ 3571.43	$ 3571.43
7	3-Year Extended Warranty – Portable Radios	52	$ 121.00	$ 6292.00
8	3-Year Extended Warranty – Vehicle Radios	4	$ 176.00	$ 704.00
9			Delivery Cost	$ 0.00
10			CA @ 7.750% (Line Items 1-5)	$ 19,098.89
			Total Cost (Basis of Award)	$ 276,103.60

Bidder shall submit pricing for all the work described in the Scope of Work section. In preparing a cost bid, Bidders are requested to provide a total all-inclusive cost for each year of service. Estimated quantities are for bid purposes only. The quantities do not reflect guaranteed usage by MTS and may be more or less than indicated.

Read attached General Provisions carefully. **They are a part of your bid.** Unit prices will prevail regardless of extensions submitted by the Bidder.

All bidders must complete bid forms as provided, failure to do so will deem the bid non-responsive.

Bidder accepts responsibility for accuracy and presentation of the numbers included in the cost/price form.

Submit the bid following instructions as specified in Submission Requirements section.

Agenda Item No. 9

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

40-FOOT LOW-FLOOR COMPRESSED NATURAL GAS (CNG) BUSES – CONTRACT AMENDMENT

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0660.15-17 (in substantially the same format as Attachment A) with Gillig LLC (Gillig), to approve a 4% increase for the purchase of thirty-eight (38) 40-foot CNG buses.

Budget Impact

The total budget for this project shall not exceed $73,853,895.02. This project is funded by Capital Improvement Project (CIP) 3001119201 Fiscal Year (FY) 23 Bus Procurement Rapid.

DISCUSSION:

On September 21, 2017 (AI 31), the MTS Board approved a contract with Gillig for the purchase of a not-to-exceed quantity of two-hundred-fifty (250) 40-foot CNG buses, with an option for 100 additional buses, plus associated spare parts, manuals, training, tools and diagnostics, and tax payments. The contract covers a five-year period, from October 1, 2017 to September 30, 2022. That Board action authorized purchase of up to 350 buses for an estimated $204,613,984.66 plus sales tax.

The contract contemplated the order of 50 buses per year for the five-year contract term to maintain MTS's bus fleet in a state of good repair as older buses reach the end of their useful life. The 100 option buses were in case additional funding was obtained to increase transit service during the five-year period. The contract set a base price for each bus of $519,423.00 plus sales tax, and required a Producers Price Index (PPI) increase each year starting in Year 2 (October 1, 2018). The budget estimates calculated PPI at 2% per year based on historical averages, but the actual PPI for the specified years is required to be paid. The cost per bus for each individual order varies based on the division it is assigned to operate in and the type of equipment needed on each bus.

Although the Board authorized the order of up to 350 buses (contingent upon funding being available in each year's CIP budget), only 126 buses were in fact ordered under the contract:

Contract Year	Bus Order	Running Total – Buses Ordered
Year 1 (10/1/17 to 9/30/18)	7 buses for South Bay Airport Express Service (for delivery Jan 1, 2019)	7
Year 2 (10/1/18 to 9/30/19)	6 buses for East County Division (production to begin June 2019)	13
Year 3 (10/1/19 to 9/30/20)	38 buses for IAD/KMD (production to begin September 2020)	51
	5 buses for South Bay Division (production to begin December 2020)	56
	32 buses for South Bay Division (production to begin August 2021)	88
Year 4 (10/1/20 to 9/30/21)	38 buses for South Bay Division (production to begin July 2022)	126
Year 5 (10/1/21 to 9/30/22)	NONE	126

Although Gillig would have been entitled to charge a PPI increase for the buses ordered in Year 2 and the first 43 buses in Year 3, MTS and Gilling negotiated to waive the PPI by giving Gillig an advance "Notice of Intent to Order" those buses. Gillig used this information to plan its production schedule and anticipate the bus order from MTS.

Gillig has completed the orders for and delivered 88 buses so far. The final 38 buses are still in production. Since the contract expires September 30, 2022, no further buses will be ordered under this specific contract. Future bus orders will be under a new five-year bus purchase contract that the Board awarded to New Flyer of America, Inc. at the July 21, 2022 (AI 30) Board meeting.

In July 2022 Gillig requested a 5.9% increase on the 38 buses currently on order noting the extreme unprecedented inflationary pressures from labor shortages caused by the pandemic and the increased cost of raw materials due to the current supply chain issues and global uncertainties. In addition, its suppliers of components and subcomponents have also seen an increase in costs for commodities such as steel, aluminum, and plastics, which is an increase that is passed on to Gillig. During the life of the Gillig contract, the applicable PPI (*Commodity: Transportation Equipment: Truck and Bus Bodies, Index Dec 1982=100, Monthly, Not Seasonally Adjusted - WPU 1413 Series)* was as follows:

Contract YR	PPI	% change from prior YR	Cumulative % change	Notes
October 2017	240.800	n/a	n/a	Contract Start
October 2018	249.200	3.49%	3.49%	

October 2019	259.800	4.25%	7.74%	
October 2020	262.900	1.19%	8.94%	*last PPI implemented on this bus order 8.93%
October 2021	283.496	7.83%	16.77%	
July 2022	320.501	13.05%	29.82%	Gillig PPI increase request

This demonstrates that the PPI increased by 20.9% between the PPI adjustment that was applied in January 2021 when MTS originally placed this order, and the month production was expected to officially start in July 2022. This is substantially higher over a 22-month period as compared to prior years and is not the level of percentage increase that vendors in this field would reasonably foresee and factor into the pricing submitted during the competitive process.

The Federal Transit Administration (FTA) recognizes there are times when unusual inflationary risks may call for fixed-price contracts with economic price adjustment provisions. When permitted to modify a contract, it is FTA's expectation that recipients are responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements.

To perform its due diligence, MTS staff surveyed other transit agencies to see their responses to price increase requests from bus manufacturers. In considering whether to increase or not, agencies evaluated factors such as funding availability, number of buses on order and schedule for the next solicitation. MTS staff engaged in negotiations with Gillig, resulting in today's proposal that MTS agree to a 4% increase for the final order of 38 buses, which Gillig agreed to (Attachment B). Staff deems this increase to be fair and reasonable by comparison to Gillig's price increase requests from other transit agencies (both approved and pending approval) ranging from 4.0% to 8.8%, and when compared to the PPI increase of 20.9% since the PPI applied when the bus order was placed.

The summary for the final 38 bus order under this contract, including the proposed 4% increase in Amendment 15, is shown below:

Bus Price	**Order QTY**		**PPI**	**PPI**	**PPI**
	38		***8.93%**	**N/A**	**4.00%**
	Contract Price	**Amendment 10**	**Amendment 11**	**Amendment 13**	**Amendment 15**
Base Bus Price	461,956.00	496,279.33	503,723.52	503,723.52	**523,872.46**
Equipment Added/Changed	26,978.00	28,982.47	29,417.21	29,417.21	**30,593.90**
Equipment Deleted	(25,738.00)	(27,650.33)	(28,065.08)	(28,065.08)	**(29,187.68)**
Conduent "Make Ready" Prewire to IVU-4000	23,665.00	23,665.00	24,019.98	24,019.98	**24,980.78**
Conduent "Make Ready" Prewire to IVU-3100	23,914.00	23,914.00	24,272.71	24,272.71	**25,243.62**
Pre-Production Meeting Changes 11/9/20	(18,774.00)	(18,774.00)	(19,055.61)	(19,055.61)	**(19,817.83)**
ADD - Tires				3,833.00	**3,986.32**
ADA Equipment (Non-taxable)	26,361.00	28,319.62	28,744.41	28,744.41	**29,894.19**
Delivery (Non-taxable)	1,061.00	1,139.83	1,156.93	1,156.93	**1,203.21**
Bus Unit Price	*519,423.00*	*555,875.92*	*564,214.00*	*568,047.00*	***590,768.00***

Sales Tax @ 7.75% Per Bus			*41,410.00*	*41,707.00*	***43,375.00***
Total Price Per Bus			*605,624.00*	*609,754.00*	***634,143.00***
		Total Cost - 38 Buses	*23,013,712.00*	*23,170,652.00*	***24,097,434.00***

****(7.43% from AM 10 and 1.5% from AM 11=8.93%)***

With the 4% increase, the cost for the 38 buses is increased from $609,754.00 to $634,143.00 each, an increase of $24,389.00 each, and a total of $926,782.00 (inclusive of sales tax).

The total value of the contract, including this amendment is $72,927,113.02 + $926,782.00 = $73,853,895.02.

This increase is within the initial Board approved amount which remains at $204,613,984.66.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute MTS Doc. No. B0660.15-17 (in substantially the same format as Attachment A) with Gillig, to approve a 4% increase for the purchase of thirty-eight (38) 40-foot CNG buses.

Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. MTS Doc. No. B0660.15-17
B. Gillig Letter

Metropolitan Transit System

Amendment 15

September 15, 2022 MTS Doc No. B0660.15-17

40-FOOT LOW-FLOOR CNG TRANSIT BUSES

Gillig, LLC
Mr. William F. Fay Jr.
Vice President, Sales and Marketing
451 Discovery Drive
Livermore, CA 94550

This shall serve as Amendment No.15 to the original agreement B0660.0-17 as further described below.

SCOPE OF WORK

There are no changes to the scope of work of the agreement.

SCHEDULE

There are no changes to the schedule provision of the overall agreement. The contract term remains five (5) years, from October 1, 2017 to September 30, 2022.

PRODUCTION SCHEDULE

There shall be no changes to the bus production which is July 2022. Serial Numbers 196927 through 196964.

PAYMENT

Both parties have agreed to a 4% increase on the 38 CNG buses currently on order and under production (see MTS Doc. Nos. B0660.11-17 and B0660.13-17, and table below). The parties also agree to the following true-up of the current unit and extended costs for the 38 CNG bus order:

Bus Price	**PPI**	**PPI**	**PPI**
	***8.93%**	**N/A**	**4.00%**
	Amendment 11	**Amendment 13**	**Amendment 15**
Base Bus Price	503,723.52	503,723.52	**523,872.46**
Equipment Added/Changed	29,417.21	29,417.21	**30,593.90**
Equipment Deleted	(28,065.08)	(28,065.08)	**(29,187.68)**
Conduent "Make Ready" Prewire to IVU-4000	24,019.98	24,019.98	**24,980.78**

DRAFT

Conduent "Make Ready" Prewire to IVU-3100	24,272.71	24,272.71	**25,243.62**
Pre-Production Meeting Changes 11/9/20	(19,055.61)	(19,055.61)	**(19,817.83)**
ADD - Tires		3,833.00	**3,986.32**
ADA Equipment (Non-taxable)	28,744.41	28,744.41	**29,894.19**
Delivery (Non-taxable)	1,156.93	1,156.93	**1,203.21**
Bus Unit Price	*564,214.00*	*568,047.00*	***590,768.00***
Sales Tax @ 7.75% Per Bus	*41,410.00*	*41,707.00*	***43,375.00***
Total Price Per Bus	*605,624.00*	*609,754.00*	***634,143.00***
Total Cost - 38 Buses	*23,013,712.00*	*23,170,652.00*	***24,097,434.00***

*****(7.43% from AM 10 and 1.5% from AM 11=8.93%)***

With the 4% increase, the cost for the 38 buses is increased from $609,754.00 to $634,143.00 each, an increase of $ 24,389.00 each, and a total of $926,782 (inclusive of sales tax).

The total value of the contract, including this amendment is $72,927,113.02+ $926,782 = $73,853,895.02.

This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Mr. William F. Fay Jr., Vice President,
Sales and Marketing
Gillig, LLC

Date: _____

cc. W. Wells, M. Wygant, Contract File

Attachment: Gillig Letter dated July 2, 2022

GILLIG

July 2, 2022

Mr. Michael Wygant
Chief Operating Officer
San Diego MTS
100 16th Street
San Diego, CA 92101

RE: Cost Increase San Diego MTS RFP #B0660.0-17

Dear Mr. Wygant,

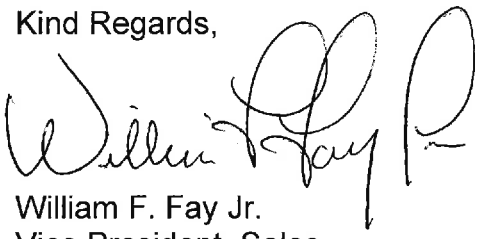
GILLIG LLC continues to face extreme, unprecedented inflationary pressures stemming from the Pandemic's broken global supply chain and the invasion of Ukraine which have begun to cause long-lasting damage to the U.S. transit supply base. This not only impacts transit bus OEMs, but it also impacts the thousands of U.S. suppliers that provide components to the OEMs. To put these extraordinary increases into perspective, as of May of this year, the PPI for Transportation Equipment Truck and Bus Bodies was up over 12.7% year-over-year compared to its historical norm in the low single digits. This increase has been primarily driven by the significant commodity cost increases in inputs like aluminum, which is up over 90% from a year earlier, steel - up 70%, plastics - up 90%, nickel that is used in both stainless steel and batteries - up over 280%, and our inbound freight for our components is up over 30%.

GILLIG LLC continues to work with our suppliers to provide longer range forecasts to assist in both securing longer lead time components and potential leveraging larger volumes to lessen the impact of inflation.

Due to GILLIG's strong financial position we have increased inventory volumes at both our production and aftermarket facilities to minimize potential shortages. After taking all these proactive approaches we continue to be concerned that these unprecedented levels of inflation will be impacting our business for the foreseeable future along with supply chain disruption well into 2023.

GILLIG LLC is formally requesting a contract increase of $926,820 for the (38) 40' CNG buses that are slated to be built. This is an increase of 4.0%, which is less than the current PPI adjustment rate of 12.7%, as shown in the attached BLS table for the Producer Price Index for Truck and Bus Bodies, Series No. 1413, published by the United States Department of Labor.

Kind Regards,



William F. Fay Jr.
Vice President, Sales
GILLIG LLC

CC: Javier Hernandez, Jr., Director, National Sales
Sean Solis, Regional Sales Manager

Agenda Item No. 10

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

SALE OF 2015 FORD E450 STARCRAFT TO SAN DIEGO STATE UNIVERSITY POLICE DEPARTMENT – CONTRACT APPROVAL

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0753.0-23 (in substantially the same format as Attachment A) for the sale of MTS paratransit vehicle #3975 (2015 Ford E450 Starcraft, VIN #1FDFE4FS9GDC03883) to the San Diego State University Police Department ("SDSU PD") for $11,400.00.

Budget Impact

Proceeds from the sale of the MTS vehicle will be recorded to the MTS revenue account 901010-440200.

DISCUSSION:

In July 2022, MTS paratransit vehicle #3975 reached the end of its useful life as designated by Federal Transit Administration (FTA) regulations. This is the last gas paratransit cutaway bus in the MTS fleet. The bus, while owned by MTS, is operated by First Transit, Inc. as part of MTS's paratransit service contract, MTS Doc. No. B0703.0-19.

With any capital asset that has reached the end of its useful life, MTS's procedure is to send it to auctioneer, J. J. Kane, to ensure that MTS will get a fair price for the vehicles. A commission is applied by J. J. Kane and the remaining proceeds vary depending on the age and mileage of the vehicle. MTS determined a fair market valuation by comparison to previous auction sales of similar MTS vehicles in the last 12 months. The estimated fair market value of the vehicle was determined to be $11,400.00.

SDSU PD approached MTS looking for a used bus vehicle, as they are interested in using the bus to shuttle students and/or staff between the main campus and the new stadium for events. Per MTS Board Policy No. 33, Capital Asset Disposal, in order to execute a negotiated sale of an asset valued over $10,000, Board of Directors approval is required.

Per MTS Board Policy No. 33, Capital Asset Disposal, Section 33.3 – Negotiated Sale, capital assets with an individual value in excess of $10,000 or an aggregate value in excess of $25,000 may be disposed of on a negotiated sale basis provided a finding by the MTS Board of Directors by a two-thirds vote that special circumstances exist that make it in the best interest of the Board. Such circumstances may include the following:

a) Unique item(s) may have a limited resale market.
b) The financial interest of MTS would be best served by negotiation.
c) In the case of used buses, the Board shall give specific direction on the method of disposal to be followed on a case-by-case basis considering potential financial return and available alternatives, including the sale for scrap or other nonoperating purposes to avoid use of the vehicles and resultant air pollution in California and the San Diego region. A method of disposal may be approved even though the financial benefit may be less than other methods of disposal.
d) If approved, the CEO may be authorized to negotiate a sale price.

A negotiated sale for this used bus would be the most advantageous option for MTS because MTS would receive the greatest financial return, since MTS would not have to pay a commission fee to the auctioneer. Further, MTS would be assisting a public, higher education institution in its mission to provide services to its students and staff.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute MTS Doc. No. B0753.0-23 (in substantially the same format as Attachment A) for the sale of MTS paratransit vehicle #3975 (2015 Ford E450 Starcraft, VIN #1FDFE4FS9GDC03883) to SDSU PD for $11,400.00.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Draft Agreement MTS Doc. No. B0753.0-23

AGREEMENT FOR SALE OF SURPLUS PROPERTY

MTS DOC. NO. B0753.0-23

This AGREEMENT FOR SALE OF SURPLUS PROPERTY ("Agreement") is made this _____ day of _____ 2022 ("Date of Sale") by and between the San Diego Metropolitan Transit System (MTS), a California Public Agency and San Diego State University Police Department ("Buyer"). For good consideration it is agreed between the parties that:

1. MTS agrees to sell, and Buyer agrees to buy the following described surplus property:

   One (1) 2015 E450 Cutaway, Starcraft Conversion ("Vehicle") described as:

Year	Make	VIN
2015	E450 Cutaway, Starcraft Conversion	1FDFE4FS9GDC03883

2. MTS warrants it has full legal title to said Vehicle.

3. Buyer agrees to pay to the MTS the total purchase price of Eleven Thousand Four Hundred Dollars and no/100 ($11,400.00); payable by _____ ("Pay by Date").

   Payable To:

   San Diego Metropolitan Transit System
   1255 Imperial Avenue #1000
   San Diego, CA 92101

4. Buyer shall pay all taxes, costs, and fees imposed by any governmental entity upon the Vehicle, as well as all operating costs and expenses associated with the Vehicle.

5. MTS has removed all the logos. Buyer agrees to repaint the Vehicle to differentiate it from the MTS brand.

6. The parties agree that the MTS will be released of all liability resulting from the operation of the Vehicle effective upon the Date of Sale (California Vehicle Code§5602). MTS shall cause the *Notice of Release of Liability* to be properly filed with the California Department of Motor Vehicles upon the Date of Sale.

7. Release of Liability:

   The undersigned hereby certifies that he or she is authorized to sign this document on behalf of the organization or governmental agency herein after referred to as the Buyer. The Buyer thereby agrees to indemnify and hold harmless, at its own risk, cost and expense, defend MTS, its officers, agents,

employees, and volunteers hereinafter referred to as MTS from and against any and all liability, loss, or expense to persons or property, including defense costs, legal fees, and claims for damages, arising out of, or related to, the access to or use of MTS property, including access to MTS facilities, and viewing, selection, removal, loading/unloading, or eventual use or transfer of vehicle by the Buyer and any person using, operating or handling that property.

8. No warranties - asset is being sold "As Is":

   MTS makes no representations whatsoever, extend no warranties of any kind, either express or implied, including but not limited to the implied warranties of merchantability or fitness for a particular purpose, and assumes no responsibilities whatsoever with respect to design, development, manufacture, or use of the vehicle. Furthermore, in no event shall MTS be liable for direct, indirect, special, consequential, incidental or punitive loss, damage, or expenses arising out of or in connection with this vehicle, including but not limited to Buyer's use of the vehicle or removal of the vehicle from the MTS's premises, whether based on breach of contract or tort which would include any negligence by MTS.

9. The parties agree to transfer title of the subject vehicle upon receipt of the full payment, at the MTS address located at:

   San Diego Metropolitan Transit System
   100 16th Street
   San Diego, CA 92101

10. This agreement shall be binding and inure to the benefit of the parties, their successors, assigns and personal representatives.

IN WITNESS WHEREOF, the parties have read and fully understand the terms and conditions as set out in this Agreement.

Executed on the dates written below.

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	SAN DIEGO STATE UNIVERSITY POLICE DEPARTMENT
By: _____ Sharon Cooney, Chief Executive Officer	By _____ Greg Robertson, Police Lieutenant
Approved as to form:	
By: _____ Karen Landers, General Counsel	_____ Contracts & Procurement Manager

Agenda Item No. 11

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

INVESTMENT REPORT – QUARTER ENDING JUNE 30, 2022

INFORMATIONAL ONLY:

Budget Impact

None.

DISCUSSION:

Attachment A comprises a report of the San Diego Metropolitan Transit System (MTS) investments as of June 30, 2022. The combined total of all investments has decreased quarter to quarter from $137.4 million to $137 million. This $400,000 decrease is attributable to $14.5 million in capital expenditures, partially offset by $8.2 million in American Rescue Plan Act of 2021 (ARPA), $2 million in restricted cash for PRONTO Stored Value and State Transit Assistance State of Good Repair revenue, as well as normal timing differences between other payments and receipts.

As listed in Attachment A, the first column provides details about investments restricted for capital improvement projects and PRONTO Stored Value.

The second column, unrestricted investments, reports the working capital for MTS operations allowing payments for employee payroll and vendors' goods and services.

MTS remains in compliance with Board Policy 30 "Investment Policy" and is able to meet expenditure requirements for a minimum of the next six months as required.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Investment Report for the Quarter Ending June 30, 2022

San Diego Metropolitan Transit System
Investment Report
June 30, 2022

Institution / Issuer	Function	Investment Type	Restricted	Unrestricted	Total	Avg. Rate of Return		Benchmark
J.P. Morgan Chase	Operating Funds	Depository Bank	-	61,526,730	61,526,730	0.08%	*	0.140% WSJ Money Market
U.S. Bank - Retention Trust Account	Restricted for Capital Support	Depository Bank	8,531,874	-	8,531,874	N/A	**	-
Local Agency Investment Fund (LAIF)	Restricted (Stored Value)	Investment Pool	3,179,338		3,179,338	0.861%		0.179% S&P US T-Bill 0-3 Mth Index
San Diego County Treasurer's Office	State Grant Funds	Investment Pool	17,488,812	-	17,488,812	1.130%		0.179% S&P US T-Bill 0-3 Mth Index
Subtotal: Restricted for Capital Support / Stored Value			**29,200,024**	**-**	**29,200,024**			
Local Agency Investment Fund (LAIF)	Investment of Surplus Funds	Investment Pool	-	27,356,543	27,356,543	0.861%		0.179% S&P US T-Bill 0-3 Mth Index
San Diego County Treasurer's Office	Investment of Surplus Funds	Investment Pool	-	18,870,134	18,870,134	1.130%		0.179% S&P US T-Bill 0-3 Mth Index
Subtotal: Investment Surplus Funds			**-**	**46,226,677**	**46,226,677**			
Grand Total Cash and Investments			**$ 29,200,024**	**$ 107,753,406**	**$ 136,953,430**			

*-The .08% is an annual percentage yield on the average daily balance that exceeds $30 million
** - Per trust agreements, interest earned on retention account is allocated to trust beneficiary (contractor)

Agenda Item No. 12

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

RAIL WELDING SERVICES - CONTRACT AWARD

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. PWL359.0-22 (in substantially the same format as Attachment A), with Morrison Metalweld Process Corp. (Morrison), a Small Business (SB), in the amount of $438,933.00, for a five (5) year period from October 18, 2022 to October 17, 2027 for rail welding services.

Budget Impact

The total budget for this project shall not exceed $438,933.00. This project will be funded by the San Diego Trolley Maintenance of Way (MOW) Operations Budget 370016-571210.

DISCUSSION:

MTS needs continuous service to provide in-track and out-of-track welding repairs to switch points, frogs, joints and other track components used within the light rail system. Over the course of normal operations, track components deteriorate and need to be welded to proper specifications. Maintenance of these items helps extend the life of the track components and reduce costly replacements.

The total track length on the MTS light rail system is 136 miles, including the tracks in maintenance yards A and C, as well as auxiliary tracks. This contract will provide the rail welding services required to properly maintain the MTS system in compliance with Federal Railroad Administration (FRA) and the State Public Utilities Commission (PUC) requirements.

On June 15, 2022, MTS issued a Request for Proposals (RFP) for Rail Welding Services on PlanetBids. In addition, MTS emailed 23 interested firms, including those that performed rail welding services for other public agencies.

On June 23, 2022 MTS advertised on the Daily Journal – a news service serving businesses in California and Arizona.

By July 15, 2022 MTS received a single proposal from Morrison, a SB. To ascertain whether or not the solicitation was restrictive, MTS conducted a post bid survey to prospective proposers. No firms responded to the request. Therefore, MTS determined that competition was adequate, and neither

the RFP nor MTS's procurement processes played a role in its decision not to submit a proposal for the solicitation. Staff proceeded with this as a competitive solicitation.

On August 4, 2022, a selection committee consisting of representatives from MTS Maintenance of Way (MOW) and Finance evaluated the proposal based on the following criteria:

Evaluation Criteria	Possible Points
Organizational Structure, Qualifications and Experience	30
Staffing and Management Plan	20
Methodology and Work Plan	25
Cost/Price	25
Total Score	**100%**

The selection committee scored Morrison's proposal as follows:

Firm Name	Technical Score	Cost Score	Total Score
Morrison	35.00	21.31	56.31%

Although the technical score is low, the source selection committee attributed this to the very brief technical proposal that was submitted, which included limited detail regarding the staffing/management plan or the methodology and work plan requested in the RFP document. However, Morrison is the incumbent rail welding vendor for MTS with good internal and external references. Therefore, notwithstanding the low technical score based on the written proposal submitted by Morrison, the source selection committee is confident that Morrison has the expertise to complete the work, and that they understand and will be able to meet the staffing and work plan aspects of the service agreement.

Morrison's initial proposal was $438,933.00. On August 4, 2022, MTS requested Morrison to provide a Best and Final Offer (BAFO). Morrison replied and remained with its initial offer. A price analysis was performed to determine fair and reasonableness by comparing Morrison's pricing to other similar transit agencies' costs. Based on the price analysis, staff determined that the proposed costs are in line with market rates; therefore, staff deemed Morrison's cost proposal to be fair and reasonable. There are no subcontractors for this agreement.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute MTS Doc. No. PWL359.0-22 (in substantially the same format as Attachment A), with Morrison, a SB, in the amount of $438,933.00, for a five (5) year period from October 18, 2022 to October 17, 2027 for rail welding services.

/S/Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Draft Agreement MTS Doc. No. PWL359.0-22
B. Scope of Work

C. Cost Form

STANDARD AGREEMENT

FOR

MTS DOC. NO. PWL359.0-22

RAIL WELDING SERVICES

THIS AGREEMENT is entered into this _____ day of _____, 2022 in the State of California by and between San Diego Metropolitan Transit System ("MTS"), a California public agency, and the following, hereinafter referred to as "Contractor":

Name: Morrison Metalweld Process Corp.

Address: 3685 Stutz Dr. Suite 102

Canfield OH 44406
City State Zip

Form of Business: Corporation

Email: robin@morrisonmetalweld.com

Telephone: (330) 519 – 4311

Authorized person to sign contracts

Robin Eisenbrei — President & CEO
Name — Title

The Contractor agrees to provide services as specified in the conformed Scope of Work/Technical Specification (Exhibit A), Contractor's Cost/Pricing Form (Exhibit B), and in accordance with the Standard Agreement, including Standard Conditions (Exhibit C), Federal Requirements (Exhibit D), and Forms (Exhibit E).

The contract term is for up to five (5) years effective October 18, 2022 through October 17, 2027.

Payment terms shall be net 30 days from invoice date. The total cost of this contract shall not exceed $438,933.00 without the express written consent of MTS.

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	MORRISON METALWELD PROCESS CORP.
By: _____ Sharon Cooney, Chief Executive Officer	By _____
Approved as to form:	
By: _____ Karen Landers, General Counsel	Title: _____

5. SCOPE OF WORK/TECHNICAL SPECIFICATIONS

San Diego Trolley Inc. (SDTI) is seeking to obtain a competent contractor to provide Rail Welding Maintenance Services for a five (5) year contract period.

5.1. SERVICES

A. This contract involves in-track and out-of-track welding repairs of rail and track components used within the light rail system. The total track mileage is 136, this will also include tracks in maintenance yards A and C, as well as, and auxiliary tracks. The entire rail has been either electrically flash butt-welded or thermite welded. The individual areas of work and the type of welding process to be used will be determined through discussion with San Diego Trolley Inc. (SDTI) Maintenance of Way (MOW) Manager or his designee. Work will be performed only during non-revenue hours.

B. Tunnel requirements:

Work performed in the 1-mile twin bore tunnel will only be able to be accomplished during non-revenue hours when trains are not operating. This generally will mean tunnel work will only be done at night. Because of the environment, gasoline engines are not allowed on any equipment nor may flammable liquids be transported into the tunnel in any container. All equipment must be either diesel powered with a functional scrubber or compressed natural gas powered.

5.2. WELDING REQUIREMENTS AND SPECIFICATIONS

A. Contractor must be a licensed California contractor in good standing with a C60 welding classification.

B. Contractor must have an approved FRA 219 random drug and alcohol plan.

C. Contractor shall provide qualified welders with a minimum of five (5) years of track welding experience that conforms to Federal Railroad Administration (FRA) and American Railroad Engineers Association (AREA) specifications. The individual welder's certifications must be submitted with the proposal.

D. Contractor must assure all work practices meet all OSHA standards.

E. Contractor must be capable of performing both stick weld and wire feed arc welding. (Wire feed welding for rail repair is the method preferred by SDTI).

F. Contractor shall make repair on 115lb rail and frogs, switch points, stock rails and other components of wood/concrete tie and ballast track as well as embedded track.

G. Contractor shall reply to work requests within five calendar days.

H. Contractor must be able to work within constraints of normal MTS's Light Rail train schedule.

I. Contractor must be able to perform work at night and on weekends as the need arises. Typically the MTS project manager will notify the contractor ahead of time for services two weeks in June and two weeks in December. MTS reserves the right to request emergency services if needed during other months.

J. Contractor must be able to work in a tunnel environment, approximately 260 feet below the surface at the deepest point. (See additional requirements for tunnel work).

K. Contractor shall guarantee all work for a minimum of ninety (90) days.

L. Contractor must be able to make all weld repairs either on track, in the field or out of track, in a shop.

M. Contractor will be required to use manganese electrodes or wire. Manganese would be used on Manganese frogs. The welder should be trained and experienced to tell the difference between the different materials.

N. Contractor will be required to use 110/18 carbon. 110/18 carbon would be used on frogs and switch points that are not made of Manganese.

O. Contractor shall perform laboratory quality testing of their arc welds. SDTI will provide the rail while the cost of testing will be at the Contractor's expense.

P. Contractor shall adhere to SDTI method and standards, as defined within the track welding Scope of Work. Contractor will submit for approval to SDTI a copy of contractor's welding procedure (for each type of rail and for each method of construction) including pre-heat, post-heat and cooling of repair areas. Include list of equipment used.

5.3. REQUIRED TOOLS AND EQUIPMENT PROVIDED BY THE CONTRACTOR

A. Welder capable of amperage ranges (found in welding parameters) with C type clamp to affixed to the field and gauge side of ball of rail only.

B. SDTI approved welding rod or wire.

C. Grinder with 1" flat stone.

D. Profile grinder.

E. Generator (if welder is not equipped).

F. Tent or umbrella.

G. Pre-heat and post-heat equipment.

H. Carbon backing strips (to be used in welding of flange ways).

I. Copper strap and SDTI approved method/equipment for clamping to rail.

J. 36” straight edge and taper gage.

K. Tong type volt/amperage meter (for verifying welding amperage source).

L. Welding Curtain

M. Tempilstiks

5.4. REPAIRING WHEEL BURNS

A. Arc welding or oxy-acetylene welding are excepted procedures.

B. Wheel burns must not be welded if air temperature is below 32°F; not when rain or snow is falling unless protection is provided.

C. Sufficient distressed metal must be removed by grinding to eliminate all cracks and damaged metal.

D. Rail having burns more than .35 inches deep must not be repaired, but must be removed from the track, unless otherwise directed by Rail MOW Manager.

E. When a wheel burn is over 3 inches long it will be welded in stages and allowed to cool to 700°F between stages, the length of a stage must not exceed 3 inches.

F. After normalizing, the weld must be surface ground to the railhead contour within .0005 in. Any flow or batter on either side of the head of the rail must be removed.

G. No more than 4-wheel burns in 39 ft. shall be welded within 8 hours. Wheel burns may be welded consecutively only if they are more than 10 ft. apart.

5.5. ELECTRIC ARC WELDING OF RAIL AND CASTINGS

TRACK COMPONENTS

A. Switch Points

1. Switch points must be repaired or built up by welding other than in the shop. Only the heel ends of switch points may be built up using the procedures specified for rail-end welding unless directed otherwise by a Rail MOW Manager.

2. Contractor will be expected to complete welding and grinding of switch points in one (1) hour, frog guards and switch point guards in two (2) hours.

B. Frogs

1. Bolted rail frogs, solid manganese frogs, manganese insert of rail bound manganese frogs and manganese knuckles may be required by welding.

2. Chipped or battered rail ends at the toe and heel ends of rail bound manganese frogs and bolted rail frogs may be built up using the procedures specified for rail-end welding.

3. Contractor will be expected to complete normal wear frog repairs in two (2) hours, severe wear frog in three (3) hours, extensive wear frog in five (5) hours, extreme wear frog in six (6) hours.

4. Frogs may be repaired in place in any track.

C. Guard Rails

1. Guardrails must be repaired or built up by welding in the field. Defective guardrails or those having excessive wear must be replaced.

2. Contractor will be expected to complete welding and grinding of frog guards and switch point guards in two (2) hours.

D. General Instructions for Welding by the Electric Arc Process

1. The ground clamp must be applied to the same rail as the one which the welding is to be performed, and as near as possible to the area being welded.

2. Ground clamps must have ample capacity to handle the welding current without undue heating; ground clamp contacts to which the clamp is attached must be thoroughly clean.

3. At insulated joints care must be taken to avoid establishing an electrical connection between the two rails separated by the joint. An arc must not be struck on either rail without first attaching the ground clamp to rail upon which the arc is to be struck.

4. Both cables (electrode and ground) must be completely insulated throughout their entire length.

5. Approved electrical tong testers must be used periodically to ensure that the proper current is being delivered to the electrode.

6. When the electrode holder is not in use it must not be permitted to contact any rail, frog or metallic part connected thereto.

7. The supervisor in charge and the welders must observe that signal operated by the track circuits within which they are welding are operating normally. If any abnormal condition is noticed, they must immediately protect traffic, whether railway, highway or both, and advise Control of the circumstances.

8. Signal Maintainers must carefully observe conditions when welding is performed on their territory and repost any deviations from the instructions or any practice, which in their opinion endangers the proper operation of signal circuits or apparatus.

9. Electrodes must be stored in a dry, warm location. Deterioration will result if the electrode coating absorbs dampness.

5.6. CARBON STEEL FROGS & DIAMOND CROSSINGS

A. Preparation

After determining the areas that require restoration, remove all fatigued, spalled or defective metal by grinding or by the air carbon arc process (Arcair). Arc or oxy-acetylene torch cutting is not permitted. When the air carbon arc process removes the defective metal, ensure that all slag is removed by grinding and that the parent surface is sound in preparation for the weld deposit.

B. Welding Procedure

The technique of deposition will vary with the application. The first bead application shall be laid on the gauge side with successive beads being applied toward the field side with sufficient overlay to ensure complete fusion. Rebuild worn areas high enough to allow sufficient material for finish grinding.

Welding of frog points shall commence at the point and continue to the runout; that is, the same as for rail ends. Use proper techniques to end the welds so as to avoid end craters and undercutting.

C. Finishing Grinding

Running surfaces shall be ground the shape and contour of the railhead, particularly with regard to the gauge line and the guard side of the flangeways. In turnout frogs only, the point should be ¼ inch lower than the adjacent wing rails and slope upward to where the point and wing rails are at the same level at a distance back from the point equal in inches to ¾ the frog number, but in no case less than 5 inches

5.7. PAYMENT TERMS

Unless otherwise stated in the specifications or bid forms, one hundred (100%) of the contract price for each unit or units of material or equipment furnished and delivered under these specifications, will be paid to the Contractor within thirty (30) days after delivery to and acceptance by MTS of the unit or units ordered, as herein provided, and after the statements covering the unit or units have been presented to MTS by the Contractor.

Cash discounts as shown on the bid form shall be accepted at the option of MTS. Otherwise the terms will be Net thirty (30) from acceptance. Payment terms less than ten (10) days from acceptance will not be considered. ***Advanced Payment is Not Allowable.***

5.8. INVOICES

Invoices must be sent to AP@sdmts.com. All invoices must have the Purchase Order and contract number clearly displayed to ensure timely payment. *The absence of the Purchase Order and/or the Contract Number on invoices will cause payments to be delayed*. MTS will not pay on packing

slips, receiving documents, delivery documents, or other similar documents. Invoices must be submitted for payment.

RETURN THIS FORM WITH YOUR BID

COST/PRICING FORM (CONTINUED)

PROPOSER NAME: Morrison Metalweld Process Corporation

Year One

Item	Description	Qty.	Unit Price	Extended Price
1	Hourly Labor Rate	200 Hrs.	$ 324.00 ph	$ 64,800.00
2	Option Hourly Labor Rate	Up to 16 Hrs.	$ 324.00 ph	$ 5184.00
3	Mobilizations and Transportation Fees	3	$ 4,600.00 eA	$ 13800.00
			Year One Total:	$ 83,784.00

Year Two

Item	Description	Qty.	Unit Price	Extended Price
1	Hourly Labor Rate	200 Hrs.	$ 324.00 ph	$ 64,800.00
2	Option Hourly Labor Rate	Up to 16 Hrs.	$ 324.00 ph	$ 5,184.00
3	Mobilizations and Transportation Fees	3	$ 4600.00 eA	$ 13,800.00
			Year Two Total:	$ 83,784.00

Year Three

Item	Description	Qty.	Unit Price	Extended Price
1	Hourly Labor Rate	200 Hrs.	$ 343.00 ph	$ 68,600.00
2	Option Hourly Labor Rate	Up to 16 Hrs.	$ 343.00 ph	$ 5,488.00
3	Mobilizations and Transportation Fees	3	$ 4876.00 eA	$ 14,628.00
			Year Three Total:	$ 88,716.00

RETURN THIS FORM WITH YOUR BID

Year Four

Item	Description	Qty.	Unit Price	Extended Price
1	Hourly Labor Rate	200 Hrs.	$343.00 ph	$ 68,600 00
2	Option Hourly Labor Rate	Up to 16 Hrs.	$343 00 ph	$ 5,488 00
3	Mobilizations and Transportation Fees	3	$4,876 00 ea	$ 14,628 00
			Year Four Total:	$ 88,716 00

Year Five

Item	Description	Qty.	Unit Price	Extended Price
1	Hourly Labor Rate	200 Hrs.	$ 363 00 ph	$ 72,600 00
2	Option Hourly Labor Rate	Up to 16 Hrs.	$ 363 00 ph	$ 5808 00
3	Mobilizations and Transportation Fees	3	$ 5175 00 ea	$ 15,525 00
			Year Five Total:	$ 93,933 00

Total Year 1:	$ 83,784 00
Total Year 2:	$ 83,784 00
Total Year 3:	$ 88,716 00
Total Year 4:	$ 88,716 00
Total Year 5:	$ 93,933 00
Grand Total	$ 438,933.00

PROPOSER ACCEPTS RESPONSIBILITY FOR ACCURACY OF THE ABOVE NUMBERS

NOTE: Unit prices will prevail regardless of extensions submitted by the PROPOSER.

Agenda Item No. 13

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

JOINT DEFENSE AND FUNDING AGREEMENT WITH SANDAG

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize increased funding of up to $190,000 for the Joint Defense and Common Interest Agreement between MTS, North County Transit District (NCTD), and San Diego Association of Governments (SANDAG) related to the litigation titled *Anna Avenue Associates, LLC, et al., v. SANDAG, et al.,* San Diego Superior Court Case No. 37-2018-00000231-CU-EI-CTL; consolidated with Case No. 37-2016-00009321-CU-EI-CTL.

Budget Impact

MTS's share of the final defense costs related to this litigation are estimated to be between $180,000 and $190,000. MTS's share of the legal settlement in the underlying litigation was $75,000, bringing the estimated total cost for this case to $255,000 to $265,000.

DISCUSSION:

In 2018, MTS, NCTD and SANDAG were collectively sued in a lawsuit related to property adjacent to the MTS and NCTD railroad right-of-way. (See *Anna Avenue Associates, LLC, et al., v. SANDAG, et al.,* San Diego Superior Court Case No. 37-2018-00000231-CU-EI-CTL; consolidated with Case No. 37-2016-00009321-CU-EI-CTL). Plaintiffs own real property adjacent to the Rail Right-of-Way ("Subject Property") and contended that SANDAG's construction of the San Diego River Double-Track Project and the Mid-Coast Light Rail Extension Project ("Projects") caused drainage issues on their property and that MTS and NCTD have allowed encroachments in the Rail Right-of-Way to block a historic drainage path. Plaintiffs' lawsuit included claims for inverse condemnation, nuisance, and trespass.

The City of San Diego was also named as a defendant related to drainage coming from Anna Avenue and pooling on the Subject Property. The City was represented by the City Attorney's Office in this case.

Because the lawsuit related to SANDAG's Projects, but also MTS and NCTD's status as owners of the right-of-way, MTS, NCTD, and SANDAG entered into a joint defense and common interest agreement. Under that agreement, the three agencies agreed to hire one law firm to defend the agencies, to cooperate in the defense of the litigation, and to split the costs of defense as follows: SANDAG (50%), MTS (25%), and NCTD (25%). SANDAG was responsible for hiring defense counsel and then seeking reimbursement from MTS and NCTD according to the cost share.

This litigation recently settled prior to trial[1] and is in the final stages of being closed out.

Rather than submit monthly reimbursement invoices to MTS during the course of this litigation, SANDAG paid the full defense costs on an ongoing basis, but held the reimbursement request until the conclusion of the case. The current accounting from SANDAG identifies MTS's cost share through March 2022, with MTS's twenty-five percent share at $179,894.74. This included over three years of attorneys' fees and costs related to this complicated and highly contested litigation case. The attorney rates were set through a competitive negotiation process for SANDAG's legal services panel and have been paid in full by SANDAG.

Therefore, staff recommends that the MTS Board of Directors authorize increased funding of up to $190,000 for the Joint Defense and Common Interest Agreement between MTS, NCTD, and SANDAG related to the Anna Avenue Associates LLC lawsuit.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

[1] Settlement authority in this case was approved by the Board in Closed Session Agenda Item 24b on February 10, 2022. A global Settlement Agreement amongst all parties was fully executed on July 29, 2022. MTS's settlement payment of $75,000 was made on August 8, 2022. The final settlement shares of the four defendants were: City of San Diego - $325,000, SANDAG - $175,000, NCTD - $75,000, and MTS - $75,000.

Agenda Item No. 14

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

FARE COLLECTION (VARIOUS AMENDMENTS) – CONTRACT AMENDMENTS

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors:

1) Ratify Amendment 12 to MTS Doc. No. G2091.0-18, with Innovations in Transportation, Inc. (INIT), in the amount of $14,012.50 (Attachment A);

2) Authorize the Chief Executive Officer (CEO) to execute Amendment 13 to MTS Doc. No. G2091.0-18, with INIT, in the amount of $129,600.00, (in substantially the same format as Attachment B); and

3) Authorize the CEO to execute Amendment 14 to MTS Doc. No. G2091.0-18, with INIT, in the amount of $91,941.44, in substantially the same format as Attachment C.

Budget Impact

The total budget for this project shall not exceed $45,448,761.87. The total amount for Amendments 12, 13 and 14 is $235,553.94, bringing the total Board approved contract amount to $45,448,761.87. This project is funded by Capital Improvement Program (CIP) 1009004902 – Fare System Upgrades.

Amendment details shown below:

Date Issued	Board Approval Date	Document	Description	Amount
01/1/19	12/13/18	Original Agreement	Fare collection system	$37,667,727.57
12/12/19	12/13/18	AM 1	Commence work on options previously approved on 12/13/18	Included in agreement
12/18/19	12/12/19	AM 2	Commence work on new options	$1,093,731.49
05/26/20	09/17/20	AM 3	Change Order - Integrate	$57,681.00

Date Issued	Board Approval Date	Document	Description	Amount
			Conduent's CAD/AVL solution	
09/17/20	09/17/20	AM 4	Change Order - Rail validator masts	$907,267.08
1/13/21	12/10/20	AM 5	Adds California (CA) sales tax; and Change Orders - revises TVM spare parts & cashless conversion kits, and adds gateway services	$2,478,990.86
03/18/21	03/11/21	AM 6	Change Orders - Adds customer and institution website scope updates, adds a new reduced fares program enrollment, adds driver control unit screen flow changes, adds SAGE operator separation, adds Customer Relationship Module (CRM) payment encryption changes and applies the fare media capital credit	$765,271.76
06/28/21	06/17/21	AM 7	Change Orders – Adds transfer and business rule changes to website and CRM; modified 2 phase bus validator and Driver Control Unit (DCU) installation; installation of modified ticket validator arm	$270,050.09
09/13/21	11/18/21	AM 8	Change Orders - Additional SAGE software; and Salesforce licenses	$37,816.95
11/18/21	11/18/21	AM 9	Change Order – PRONTO fare media card order	$166,624.60
5/10/22	6/16/22	AM 10	Amend gateway services to add security and fraud prevention features at no additional cost; add new/revised federal requirements; and credit back to MTS $902.11 from Amendment 9's incorrect tax amount	($902.11)
6/22/22	6/16/22	AM 11	Purchase 60 validators with polycarbonate; purchase 750K extended use cards & 150K limited use cards	$1,768,948.64
6/22/22	*9/15/22*	*AM 12 (ratify)*	*Change Orders - Display prepayments on invoices and monthly capping report*	*$14,012.50*
TBD	*9/15/22*	*AM 13 (approve)*	*Purchase twenty (20) permanent salesforce licenses, 36-month renewal period, from 8/24/2022 to 8/23/2025*	*$129,600.00*
TBD	*9/15/22*	*AM 14 (approve)*	*TVM fare validation*	*$91,941.44*
			Total Board Approved Amount	**$45,448,761.87**

DISCUSSION:

On December 13, 2018 (AI 31), the MTS Board approved MTS Doc. No. G2091.0-18 with INIT for the design and implementation of a new fare collection system. This includes provision of services, equipment, software, parts, and support. The new fare system, PRONTO, was launched in September 2021, with the conversion from the prior Compass Card system complete on October 1, 2021.

Amendments 1-11 have subsequently been Board-approved to provide additional functionality, integration, and scope modifications.

Today's proposed action would ratify Amendment 12, which was previously issued under the CEO's Policy 41 "Signature Authority," and approve new Amendments 13 and 14 as described below.

Amendment 12 (Ratify):

Amendment 12 (Attachment A) was issued on June 22, 2022 for $14,012.50 for a change order to display prepayments on invoices and track monthly capping.

1) MTS requested the prepayments and balance due be correctly displayed on customer invoices. INIT will create a crystal report invoice template so that invoices created will match the customer information in the accounts receivable subsidiary ledger for original invoice amount, prepayments, and balance due;

2) MTS also requested a report to track monthly capping. INIT will create a report in the VASA application in the MOBILEvario system. This report will allow staff to better understand how "Best Fare" thresholds are being utilized.

3) MTS's Independent Cost Estimate (ICE) was $12,891.54, which is a difference of $1,120.96, and a cost that staff deemed fair and reasonable. Subcontractor Braincell is estimated to perform $5,400 of this work.

Amendment 13 (Approve):

Amendment 13 (Attachment B) for $129,600.00 purchases twenty (20) permanent Salesforce licenses from 8/24/2022 to 8/23/2025.

1) The PRONTO program utilizes a Salesforce integrated customer relationship module (CRM) to help MTS manage customer accounts and is accessed by the Support Services Center, Transit Store Supervisors, Finance and PRONTO program administrators. Since the launch of the PRONTO program, MTS has continued to experience high call volumes making it necessary to add additional users to CRM in order to appropriately serve the region's public transit riders.

2) MTS is requesting to increase the Salesforce licenses by 20 annual licenses over the next three years. This will increase the current capacity from 25 to 45 licenses, ensuring flexibility to add additional resources as needed.

3) Fair and reasonableness determination: INIT's proposal is $129,600.00 or $180 per month per license, which matches MTS's ICE on historical pricing for Salesforce licenses purchased in August 2021, which is a cost that staff deems to be fair and reasonable.

Amendment 14 (Approve):

Amendment 14 (Attachment C) for $91,941.44 is for Ticket Vending Machine (TVM) validation changes.

1) PRONTO allows customers to load fares to their accounts in real-time through a variety of sales channels, physically, and online. The customer is then able to use their pass or deduct their fare for the current trip by simply tapping their card or scanning the app on an electronic "validator." The validators are mounted to all buses and installed on all rail stations across the region. In addition to validators, there are over 160 in-service ticket vending machines (TVMs) across the system that currently function as points of sale.

   MTS is currently experiencing low fare tapping rates by customers. This means value is not deducted from customer accounts, which is resulting in a material loss of revenue. The current TVM design does not allow for PRONTO tapping, it only allows for new card purchases and reloads. This scope modification would make it possible for TVMs to allow for tapping of physical PRONTO cards, which account for about 75% of all validation attempts (the other 25% of accounts are accessed through smart phone mobile apps). This means MTS will be able to provide customers with an additional 160 points of validation across the system with the goal of providing a more convenient way to validate PRONTO cards. In addition, it will reduce customer confusion since passengers often believe they are supposed to tap their PRONTO card on the TVM, but just cannot find the right method to do so.

2) Fair and reasonableness determination: MTS's ICE at $115,184.64 utilized the contracted engineering rates and assumed 16 hours of work over 16 weeks until delivery. This includes all of the testing and support needed to ensure a successful implementation. INIT's proposal is $91,941.44 or 20.2% lower than the ICE, which is a cost that staff deems fair and reasonable.

The MTS Board approval costs are summarized below:

	Total
Amendment 12	$14,012.50
Amendment 13	$129,600.00
Amendment 14	$91,941.44
Overall Board Approval	**$235,553.94**

Therefore, staff recommends that the MTS Board of Directors:

1) Ratify Amendment 12 to MTS Doc. No. G2091.0-18, with INIT in the amount of $14,012.50 as shown in Attachment A;

2) Authorize the CEO to execute Amendment 13 to MTS Doc. No. G2091.0-18, with INIT, in the amount of $129,600.00, in substantially the same format as Attachment B; and

3) Authorize the CEO to execute Amendment 14 to MTS Doc. No. G2091.0-18, with INIT, in the amount of $91,941.44, in substantially the same format as Attachment C.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Amendment 12 - MTS Doc. No. G2091.12-18
B. Draft Amendment 13 - MTS Doc. No. G2091.13-18
C. Draft Amendment 14 - MTS Doc. No. G2091.14-18

Metropolitan Transit System

Amendment 12

June 22, 2022 MTS Doc No. G2091.12-18

ACCOUNT BASED FARE COLLECTION SYSTEM

INIT Innovations in Transportation, Inc.
Roland Staib
President and CEO
424 Network Station
Chesapeake, VA 23320

This shall serve as Amendment No.12 to the original agreement G2091.0-18 as further described below.

SCOPE

The services under this Amendment No. 12 are as follows:

1. Display Prepayments on Invoices: MTS is requesting the prepayments and balance due be correctly displayed on customer invoices. BrainSell will create a Crystal Report invoice template so that invoices created with this template will match the customer information in the Accounts Receivable subsidiary ledger for original invoice amount, prepayments and balance due, as shown in image in Exhibit A.

2. Monthly Capping Report: MTS is requesting a report to track monthly capping. INIT will create a report in the VASA application in the MOBILEvario system. The pricing is shown in Exhibit B.

SCHEDULE

There are no changes to the overall schedule provision of the agreement. The contract termination date remains December 31, 2028.

PAYMENT

The payment provision is revised as follows:

1. Display Prepayments on Invoices: The total for these services is $8,320.00 as shown in Exhibit A.

2. Monthly Capping Report: The total for these services is $5,692.50, which includes extended support maintenance, as shown in Exhibit B.

The overall total for Amendment No. 12 is $14,012.50.

This increases the overall contract amount approved/options exercised by MTS from $32,117,359.39 to $32,131,371.89.

This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney

Digitally signed by Sharon Cooney
DN: cn=Sharon Cooney, o=San Diego Metropolitan Transit System, ou, email=sharon.cooney@sdmts.com, c=US
Date: 2022.07.08 14:38:19 -07'00'

Sharon Cooney, Chief Executive Officer

Agreed:

Roland Staib, President and CEO
INIT Innovations in Transportation, Inc.

Date: 7/18/2022

Attachment: A. Exhibit A (Display Prepayments on Invoices)
B. Exhibit B (Monthly Capping Report)

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

MTS – Display Prepayments on Invoices

Customer: MTS San Diego, CA
Requested by: Israel Maldonado
Prepared by: Jennifer Wallman
Proposal #: 2022-127-03
Date: 5/09/2022
Validity: 60 days

Warranty: Not applicable
Delivery: See below
Invoicing Milestones: 100% Upon Delivery

Existing Contract G2091.0-18 Terms & Conditions apply

Description:
MTS is requesting the prepayments and balance due be correctly displayed on customer invoices. Currently they are wrong when there are multiple prepayments which was a result of implementing the consolidated invoicing functionality.

Statement of work:
BrainSell will create a Crystal Report invoice template so that invoices created with this template will match the customer information in the Accounts Receivable subsidiary ledger for original invoice amount, prepayments and balance due. See attached image.

Final Total, Prepayments and Balance due will take the form of:

Total Invoice	$792.00
Prepayments	(273.00)
Balance Due	**$519.00**

Pricing:

Item	Description	Qty	Price per unit USD	Price Total USD
1	**Display Prepayments on Invoices**			
1.1	Modify Crystal Report	1	6,480.00	6,480.00
1.2	Project Management	1	1,840.00	1,840.00
			GRAND TOTAL	**$8,320.00**

California taxes do not apply to software licenses.

Support Maintenance:
No additional Support Maintenance is required for this enhancement.

Delivery:
Delivery will be determined after the notice to proceed and PO from MTS is received.

Proposal is valid only in its entirety.

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

INIT Contact
Name: Jennifer Wallman
Title: Account Manager
Phone: 757-413-9100 x421
Email: jwallman@initusa.com

Signature:

Julie Allison
Director, Account Management

Roland Staib
CEO

Proposal is valid only in its entirety.

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

Metropolitan Transit System

PRONTO

INVOICE

PRONTOAR@sdmts.com

Options for All
5050 Murphy Canyon Rd Suite 2020
San Diego, CA92123

Customer ID	100012
Invoice No.	IN0000004708
Date	February 21, 2022
MTS Contract	
Customer PO	
Terms	NET30

ORDER NUMBER	PRODUCT	QUANTITY	TOTAL
ON202202-005533	Adult Regional Monthly Pass	2	144.00
			144.00
ON202202-005534	Adult Regional Monthly Pass	6	432.00
			432.00
ON202202-005535	Adult Regional Monthly Pass	3	216.00
			216.00

Remit to: Metropolitan Transit System (MTS)
1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490

Total Invoice	$792.00
Prepayments	(273.00)
Balance Due	**$519.00**

Please reference the invoice number with your payment .

Proposal is valid only in its entirety.

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

MTS – Monthly Capping Report

Customer: MTS San Diego, CA
Requested by: Israel Maldonado
Prepared by: Jennifer Wallman
Proposal #: 2022-100-02
Date: 5/16/2022
Validity: 90 days

Warranty: Not applicable
Delivery: See below
Invoicing Milestones: 100% Upon Delivery

Existing Contract G2091.0-18 Terms & Conditions apply

Description:

MTS is requesting a report to track monthly capping.

Scope of Work:

INIT will create a report for tracking monthly capping in the VASA application in the MOBILEvario system.

Pricing:

Item	Description	Qty	Price per unit USD	Price Total USD
1	**Monthly Capping Report**			
1.1	MOBILEvario statistics VASA Report creation	1	4,550.00	$4,550.00
2	**Services**			
2.1	Project Management	1	460.00	$460.00
			GRAND TOTAL	**$5,010.00**

California taxes do not apply to software licenses.

Extended Support Maintenance: (to be added to future maintenance contracts)

Year 2	Extended Maintenance	Lump Sum	$682.50

Delivery:

Delivery will be determined after the notice to proceed and PO from MTS is received.

Proposal is valid only in its entirety.

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

INIT Contact
Name: Jennifer Wallman
Title: Account Manager
Phone: 757-413-9100 x421
Email: jwallman@initusa.com

Signature:

Julie Allison
Director, Account Management

Roland Staib
CEO

Proposal is valid only in its entirety.

Metropolitan Transit System

Amendment 13

August 9, 2022 MTS Doc No. G2091.13-18

ACCOUNT BASED FARE COLLECTION SYSTEM

INIT Innovations in Transportation, Inc.
Roland Staib
President and CEO
424 Network Station
Chesapeake, VA 23320

This shall serve as Amendment No.13 to the original agreement G2091.0-18 as further described below.

SCOPE

The temporary Salesforce licenses MTS purchased in August of 2021 are expiring August 23, 2022. This amendment purchases twenty (20) permanent Salesforce licenses a 36-month renewal period, from August 24, 2022 to August 23, 2025.

SCHEDULE

There are no changes to the overall schedule provision of the agreement. The contract termination date remains December 31, 2028.

PAYMENT

The total for Amendment No. 13 is $129,600.00. This increases the overall contract amount approved/options exercised by MTS from $32,131,371.89 to $32,260,971.89. This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Roland Staib, President and CEO
INIT Innovations in Transportation, Inc.

Date: _____

Attachment: A. Exhibit A – Salesforce Licenses

DRAFT

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

MTS – Salesforce Licenses

Customer: MTS San Diego, CA
Requested by: Israel Maldonado
Prepared by: Jennifer Wallman
Proposal #: 2022-421-01
Date: 7/21/2022
Validity: 30 days

Warranty: N/A
Delivery: On or before 8/24/2022
Invoicing Milestones: 100% Upon Delivery

Existing Contract G2091.0-18 Terms & Conditions apply

Description:
The temporary Salesforce licenses MTS purchased in August of 2021 are expiring 8/23/2022. This proposal contains twenty (20) permanent Salesforce licenses a 36-month renewal period, from 8/24/2022 to 8/23/2025.

Scope of Work:
Install twenty (20) permanent Salesforce licenses prior to the expiration of the temporary licenses.

Pricing:

Item	Description	Qty	Price per license for 36 months USD	Price total USD
1	**Salesforce Licenses**	**20**	**6,480.00**	**129,600.00**
	Sales Cloud Enterprise Edition 8/24/22-8/23/25			
			Total	**$129,600.00**

California taxes do not apply to software licenses.

INIT Contact
Name: Jennifer Wallman
Title: Account Manager
Phone: 757-413-9100 x421
Email: jwallman@initusa.com

Signature:

Carl Commons
Chief Sales Officer

Roland Staib
President & CEO

Proposal is valid only in its entirety.

Metropolitan Transit System

Amendment 14

August 16, 2022 MTS Doc No. G2091.14-18

ACCOUNT BASED FARE COLLECTION SYSTEM

INIT Innovations in Transportation, Inc.
Roland Staib
President and CEO
424 Network Station
Chesapeake, VA 23320

This shall serve as Amendment No.14 to the original agreement G2091.0-18 as further described below.

SCOPE

MTS would like to use the TVM as an additional validation device and is requesting INIT to validate smart cards on the TVMs. The detailed scope of work is shown in Exhibit A.

INIT will:

1. Set up a new screen for validation when validation is happening.
2. Implement API call for Validation.
3. Implement a report to track the KPI (transit summaries / audit register).
    - The TVM counts total transactions and does not differentiate between sales and validation transactions.
4. Add a new sales channel to the system for the TVM validation, if technically necessary.

SCHEDULE

There are no changes to the overall schedule provision of the agreement. The contract termination date remains December 31, 2028.

PAYMENT

The cost for TVM Fare Validation is $46,718.00. The extended warranty/maintenance cost is $45,223.44, bringing the total for Amendment No. 14 to $91,941.44 as shown in Exhibit A.

This increases the overall contract amount approved/options exercised by MTS from $32,260,971.89 to $32,352,913.33. This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

DRAFT

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Roland Staib, President and CEO
INIT Innovations in Transportation, Inc.

Date: _____

Attachment: A. Exhibit A – TVM Fare Validation

DRAFT

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

MTS – TVM Fare Validation

Customer: MTS San Diego, CA
Requested by: Israel Maldonado
Prepared by: Jennifer Wallman
Proposal #: 2022-194-01
Date: 6/30/2022
Validity: 90 days

Warranty: 1 year included; Extended Warranty Quoted below
Delivery: TBD after receipt of PO
Invoicing Milestones: 100% Upon Delivery

Existing Contract G2091.0-18 Terms & Conditions apply

Description:
MTS would like to use the TVM as an additional validation device and is requesting INIT to validate smart cards on the TVMs.

Scope of Work:
Summary:

- INIT will set up a new screen for validation when validation is happening.
- INIT will implement API call for Validation.
- INIT will implement a report to track the KPI (transit summaries / audit register).
    - The TVM counts total transactions and does not differentiate between sales and validation transactions.
- INIT will add a new sales channel to the system for the TVM validation, if technically necessary.

Details:
The validation will be possible if the TVM screen is in the home screen or screen saver mode. The validation will be indicated by a dedicated screen and sound, which is similar to the screen and sound of the validator. After the sales process, an additional screen will be provided which asks the rider if they want to validate the cards directly.

To integrate the TVM's as a validation device, an additional Sales Channel will be set up, if technically necessary.

The TVMs will be able to validate fares on Limited Use cards, but it will not be possible to top up Limited Use cards or add passes to them. When the TVMs are validating fares, they will also subject to KPI reporting and must therefore submit KPI relevant transaction summaries and audit registers to the back-office (similar to the PROXmobile3). When a Fare Media gets presented to the TVM, the TVM will validate the fare. The text on the home screen will change from "Tap below" to "Tap below to Validate."

- TVM will validate the fare immediately when a card gets presented to mimic the behavior of the previous system.
- TVM will not distinguish whether or not it currently displays the home screen or the screen saver
- TVM will display feedback to the customer in a similar way as the validators do
- If the TVM is on one of the sales screens (except for the card top up screen) and a card gets presented, it will validate the fare
- If a customer purchases a card at a TVM (customer buys card and loads either a pass or Stored Value), or tops up: after the receipt option screen is displayed, the TVM will prompt the customer to validate the fare "Tap below to Validate" (text will be manageable by the agency (e.g., through tariff text management)

Proposal is valid only in its entirety.

INIT Innovations in Transportation, Inc.
424 Network Station
Chesapeake, VA, 23320

Phone: 757-413-9100
sales@initusa.com
www.initusa.com

Pricing:

Item	Description	Qty	Price per unit USD	Price total USD
1	**TVM Fare Validation**			**46,718.00**
	MOBILEvario statistics VASA Report creation	1		
	MOBILEvario - extension by an additional distribution channel - Setup of the distribution channel - Without initial provision of fare data	1		
	Coding / Clarification / Configuration	LS		
	Installation / Testing / Documentation	LS		
	System Engineering / Project Management	LS		
			Total	**$46,718.00**

California taxes do not apply to software licenses.

Extended Warranty/Maintenance (to be added to future maintenance contracts):

1	Year 1 Maintenance	$4,130.10
2	Year 2 Maintenance	$4,212.70
3	Year 3 Maintenance	$4,296.96
4	Year 4 Maintenance	$4,382.90
5	Year 5 Maintenance	$4,470.55
6	Year 6 Maintenance	$4,559.96
7	Year 7 Maintenance	$4,651.16
8	Year 8 Maintenance	$4,744.19
9	Year 9 Maintenance	$4,839.07
10	Year 10 Maintenance	$4,935.85

INIT Contact
Name: Jennifer Wallman
Title: Account Manager
Phone: 757-413-9100 x421
Email: jwallman@initusa.com

Signature:

Julie Allison
Director, Account Management

Roland Staib
President & CEO

Proposal is valid only in its entirety.

Agenda Item No. 15

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

ZERO-EMISSION BUS (ZEB) PROCUREMENT PROJECT: 60-FOOT LOW-FLOOR ELECTRIC BUSES – CONTRACT AMENDMENT

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0722.4-21 (in substantially the same format as Attachment A) with New Flyer, Inc, ("New Flyer"), to approve a 4%, or $704,775.08, increase for the purchase of twelve (12) 60-foot ZEB buses for a new contract total of $19,512,289.29.

Budget Impact

The total budget for this contract shall not exceed $19,512,289.29, inclusive of estimate sales tax. This contract increase is funded by the MTS Capital Improvement Program (CIP) 3001119201 – FY23 Bus Procurement -Rapid. Funding for this project consists of Federal Transit Administration (FTA) Section 5307 and Transportation Development Act (TDA) funding.

DISCUSSION:

On February 11, 2021 (AI 8), the MTS Board approved MTS Doc. No. B0722.0-21 with New Flyer for the purchase of twelve (12) 60-foot low-floor electric battery-powered buses, including tools, training, and sales tax in the amount of $18,558,245.40. This purchase was for the Iris Rapid Project, which will operate using zero-emission battery electric buses. The award to New Flyer was through the State of California Department of General Services (DGS) statewide contract, which resulted after a formal competitive Request for Proposal (RFP) process (ref: RFP #0000014840). The MTS order was officially placed via a purchase order on June 24, 2021.

In July 2022, New Flyer notified MTS that although the current Producer Price Index (PPI) had increased by over 12% in the prior year, New Flyer was requesting a 7% increase on the 12 buses currently on order because of the unprecedented disruptions from the COVID-19 pandemic and resulting global supply chain and logistics disruptions, political unrest in Eastern Europe, and now momentous and continuously increasing costs. In addition, suppliers of components and subcomponents have also seen an increase in costs for commodities such as

carbon steel for the chassis structure, resin for fiberglass, and copper, which are increases that are passed on to New Flyer.

FTA recognizes there are times when unusual inflationary risks may call for fixed-price contracts with economic price-adjustment provisions. When permitted to modify a contract, it is FTA's expectation that recipients are responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements.

To perform its due diligence, MTS staff surveyed other transit agencies to see their responses to price increase requests from bus manufacturers. In considering whether to increase or not, agencies gave considerations to factors such as funding availability, number of buses on order and schedule for the next solicitation.

Under the DGS RFP, all prices are a firm-fixed maximum for the contract term, including any optional year extensions, unless a price adjustment is granted. Price adjustments are based upon the applicable PPI. No price increase will be granted within the first twelve (12) months after contract award or after an approved price increase. No price increase would be granted unless final PPI data increased no less than 5%. Although no price adjustments would apply to quantities ordered from the contract prior to the effective date of the price adjustment, MTS considered these inflationary times compounded by supply chain issues and therefore staff recommends approving this increase as there have not been any PPI increases on this contract.

In this case, extraordinary supply chain price increases have impacted the heavy duty vehicle equipment manufacturing sector. The *Producer Price Index by Commodity: Transportation Equipment: Truck and Bus Bodies, Index Dec 1982=100, Monthly, Not Seasonally Adjusted (Series WPU1413)* from June 2021 to June 2022 is 17.26% as shown below:

	PPI	**% change**	**Cumulative %**
June 2021	272.500		
June 2022	319.536	17.26%	17.26%

This substantial increase is well beyond what is typical in the market and is not what manufacturers would normally consider foreseeable and factor into product pricing. In general, a bus does not begin its production cycle until 12-18 months after an order is placed, which also impacts this pricing vs. production cost disparity. MTS staff began negotiations with New Flyer about a potential post-order price adjustment in light of the PPI increase over the prior year. These negotiations resulted in a proposed 4% price increase for MTS's bus order (Attachment B). Staff deems this increase as fair and reasonable by comparison to New Flyer's price increase requests from other agencies (both approved and pending approval) ranging from 3.4% to 7%, and the actual PPI increase of 17.26%.

The cost summary is shown below:

Base bus price	$1,428,248.47
4% increase	$57,129.94
New/Revised bus price with 4% increase (Total)	**$1,485,378.41**
Modifications/changes to specification not subject to 4% increase	$77,920.71
Sales Tax at 3.8125% on price bus price excluding ADA and delivery ($1,500,516.63)	$57,207.20
Final bus price	**$1,620,506.32**

The new total for the 12 buses is $19,446,075.84 ($1,620,506.32 x 12). With training costs at $66,213.45, the new overall contract total increases by $704,775.08 to $19,512,289.29.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute MTS Doc. No. B0722.4-21 (in substantially the same format as Attachment A) with New Flyer, to approve a 4% increase for the purchase of twelve (12) 60-foot ZEB buses for a total of $19,512,289.29.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Draft Amendment MTS Doc. No. B0722.4-21
B. New Flyer letter

Metropolitan Transit System

Amendment 4

Date: August 8, 2022 MTS Doc No. B0722.4-21

12 60FT BATTERY ELECTRIC BUSES (BEB)

New Flyer of America, LLC
Ms. Jennifer McNeill
V.P., Sales and Marketing
711 Kernaghan Avenue
Winnipeg, Manitoba, CANADA R2C 3T4

This shall serve as Amendment No.4 to the original agreement B0722.0-21 (Ref: PO #4500040166) as further described below.

SCOPE OF WORK

There are no changes to the scope of work of the agreement.

SCHEDULE

There are no changes to the schedule provision of the overall agreement. The contract term remains from June 24, 2021 to March 31, 2023.

PRODUCTION SCHEDULE

There shall be no changes to the bus production schedule. The last bus is tentatively scheduled to arrive the week of January 30 – February 3, 2023.

PAYMENT

Both parties have agreed to a 4% increase on the 12 BEB buses currently on order and under production. The cost summary is shown below:

Base bus price	$1,428,248.47
4% increase	$57,129.94
New/Revised bus price with 4% increase	$1,485,378.41
Modifications/changes approved by MTS	$77,920.71
Sales Tax at 3.8125% on price bus price excluding ADA and delivery ($1,500,516.63)	$57,207.20
Final bus price	**$1,620,506.32**

The new total for the 12 buses is $19,446,075.84 ($1,620,506.32 x 12).
With training costs at $66,213.45, the new overall contract total is $19,512,289.29.

DRAFT

Please sign and return the copy marked *original* to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

_____

Sharon Cooney, Chief Executive Officer

Agreed:

_____

Ms. Jennifer McNeill, V.P., Sales and Marketing
New Flyer of America, LLC

Date: _____

Cc: W. Wells, M. Wygant, Contract File

NEW FLYER OF AMERICA

August 19, 2022

Diana Singleton, MBA, CPPB
Principal Contract Administrator
Metropolitan Transit System (MTS)
1255 Imperial Avenue, #1000
San Diego, CA 92101

SENT VIA EMAIL

Subject: Surcharge Contract Price Adjustment for SR-2664 MTS

The below summary reflects price changes accrued by requested changes, and a 4% surcharge.

Base Bus Price	$1,428,248
Surcharge @ 4% of base bus price	$57,130
Change Request per bus	$77,921
Sales Tax @ 3.8125%	$57,207
Revised Final Per Bus Price	$1,620,506
Training Total Contract	$66,213

SR-2664 12 XE 60 Revised Contract Total: $19,512,285

Please let me know if anything further is needed in processing a revised PO for SR-2664.

New Flyer appreciates the partnership with Metropolitan Transit System in sharing these unexpected surcharge costs.

Sincerely,
Tonya Rinehart
Customer Program Manager

Metropolitan Transit System

Agenda Item No. 16

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

FEDERAL TRANSIT ADMINISTRATION (FTA) SECTION 5310 GRANT APPLICATION

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors:

1) Adopt Resolution No. 22-07 agreeing to comply with all terms and conditions of the Federal Transit Administration (FTA) Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities Program as set forth by the FTA and the San Diego Association of Governments (SANDAG);

2) Authorize the Chief Executive Officer (CEO) to submit the following applications and execute any grant agreements awarded by SANDAG:

   a. $600,000 in federal fiscal year (FFY) 2021 FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities funding for paratransit vehicle replacement;

   b. $600,000 in FFY 2022 FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities funding for paratransit vehicle replacement;

3) Authorize the commitment of up to $300,000 in local matching funds to fully fund the purchase of 7 paratransit vehicles.

Budget Impact

Section 5310 requires that at least 20 percent of the total project cost is funded by local matching funds. SANDAG has set a maximum Section 5310 request amount of $1,200,000 for Capital Projects. The project will require $300,000 in local matching funds for the replacement of seven (7) paratransit vehicles.

DISCUSSION:

The FTA provides capital and operating assistance to agencies providing transportation through Section 5310, Enhanced Mobility of Seniors and Individuals with Disabilities Program. These funds are to be apportioned by the Metropolitan Planning Organization (MPO) through a competitive grant application process. SANDAG is the local MPO for San Diego county. SANDAG is currently accepting applications for the available funding for FFY 2021 and 2022. SANDAG requirements include submission of a resolution by the MTS Board of Directors agreeing to comply with the terms and conditions of the Section 5310 program, authorizing the CEO to submit applications and execute any grant agreements, and authorizing the commitment of local matching funds to the project. Applications are due October 5, 2022 by 5:00 p.m. PST.

In order to keep the fleet in a state of good repair, MTS replaces a certain number of paratransit vehicles every year according to their age and mileage. MTS is scheduled to purchase 23 replacement vehicles in Fiscal Year (FY) 2024. This funding would be used to purchase 7 of those 23 vehicles if fully awarded. Therefore, staff recommends that the Board of Directors approve Resolution No. 22-07, authorizing the application and use of $1,200,000 in FFY 2021 and FFY 2022 Section 5310 funding for MTS Access Replacement, specifically for the replacement of seven (7) paratransit vehicles.

Therefore, staff recommends that the MTS Board of Directors:

1) Adopt Resolution No. 22-07 agreeing to comply with all terms and conditions of FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities Program as set forth by the FTA and the SANDAG;

2) Authorize the Chief Executive Officer (CEO) to submit the following applications and execute any grant agreements awarded by SANDAG:

   a. $600,000 in FFY 2021 FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities funding for paratransit vehicle replacement;

   b. $600,000 in FFY 2022 FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities funding for paratransit vehicle replacement;

3) Authorize the commitment of up to $300,000 in local matching funds to fully fund the purchase of 7 paratransit vehicles.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Resolution No. 22-07

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

RESOLUTION NO. 22-07

Resolution Approving the Filing of an Application for Grant Funds from the San Diego Association of Governments, Committing the Necessary Local Match for the Project(s), and Accepting the Terms of the Grant Agreement

WHEREAS, the San Diego Association of Governments (SANDAG) is making available funds for a Specialized Transportation Grant Program (STGP) through a competitive process; and

WHEREAS, San Diego Metropolitan Transit System wishes to receive grant funds through the STGP; and

WHEREAS, San Diego Metropolitan Transit System understands that the STGP funding is fixed at the programmed amount, and therefore any cost increase cannot be expected to be funded through the STGP; and

Whereas, San Diego Metropolitan Transit System understands that all funds awarded from SANDAG are subject to a use it or lose it policy enunciated in SANDAG Board of Directors Policy No. 035: Competitive Grant Program Procedures; and

WHEREAS San Diego Metropolitan Transit System understands that projects funded through the STGP require matching funds to be provided by Name Of Organization;

NOW THEREFORE BE IT RESOLVED by Name of Governing Board that San Diego Metropolitan Transit System is authorized to submit the following grant Application(s) to SANDAG; and

Grant Program	Project Type	Project Name
Section 5310	Capital	FY24 ADA Bus Procurement

BE IT FURTHER RESOLVED that if an award is made by SANDAG to fund these projects, San Diego Metropolitan Transit System commits to provide matching funds per project that adheres to the Minimum Match Percentage in the amount of the Net Project Cost less the grant award per project; and

BE IT FURTHER RESOLVED that, if a grant award is made by SANDAG, San Diego Metropolitan Transit System authorizes staff to accept the grant funds, execute the Grant Agreement(s) with no exceptions in substantially the same form as provided through the Call for Projects, and complete the Project(s); and

BE IT FURTHER RESOLVED that, San Diego Metropolitan Transit System understands and agrees to comply with all applicable requirements in the SANDAG Program Management Plan; and

BE IT FURTHER RESOLVED that, San Diego Metropolitan Transit System understands and agrees that SANDAG shall have no liability for costs that may arise associated with the Project(s), which are not included in the Grant Agreement(s), including but not limited to costs stemming from claims, litigation, changes in law, or force majeure events.

PASSED AND ADOPTED, by the Board of Directors this 15th day of September 2022, by the following vote:

AYES:

NAYS:

ABSENT:

ABSTAINING:

_____
Chairperson
San Diego Metropolitan Transit System

Filed by:

_____
Clerk of the Board
San Diego Metropolitan Transit System

Approved as to form:

_____
Office of the General Counsel
San Diego Metropolitan Transit System

Resolution 22-07

Agenda Item No. 17

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

FISCAL YEAR (FY) 2022-2023 CALIFORNIA SENATE BILL (SB) 1 STATE OF GOOD REPAIR (SGR) FUNDING

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors approve Resolution No. 22-08 (in substantially the same format as Attachment A) in order to:

1) Authorize the use of and application of the estimated $5,095,907 in FY 2022-23 State of Good Repair funding to be used for the ongoing SD100 Light Rail Vehicle (LRV) Replacement Project; and

2) Approve the acceptance of additional FY 2022-23 SB1-SGR funding if made available to MTS.

Budget Impact

The State Controller's Office estimates that MTS will receive $5,095,907 in FY 2022-23 in SB1-SGR funding. There are no matching requirements.

DISCUSSION:

The Road Repair and Accountability Act of 2017, Senate Bill (SB) 1 (Chapter 5, Statues of 2017), signed by the Governor on April 28, 2017, includes a program that will provide additional revenues for transit infrastructure repair and service improvements. This investment in public transit is referred to as the SGR Program. This program provides funding of approximately $120 million annually to the State Transit Assistance (STA) account. These funds are to be made available for eligible transit maintenance, rehabilitation, and capital projects.

The SGR Program is funded from a portion of a new Transportation Improvement Fee on vehicle registrations due on or after January 1, 2018. A portion of this fee is transferred to the State Controller's Office (SCO) for the SGR Program. These funds are allocated under the STA Program formula to eligible agencies pursuant to Public Utilities

Code (PUC) section 99312.1. Half is allocated to the population and half according to transit operator revenues.

The SGR funding program requires agencies to agree to comply with all conditions and requirements set forth in the SGR Program Recipient Certifications and Assurances. The SGR Program also requires that the MTS governing body authorize the Chief Executive Officer (CEO) or designated representative to execute all required documents of the SGR Program.

The SGR Program requires that transit operators submit a list of all projects that will be funded with SGR funding by September 1, 2022.

MTS staff has identified the SD100 LRV Replacement Project as a project meeting the SGR funding requirements. The project will replace 47 LRVs between 2021 and 2027. The MTS Board approved a contract with Siemens Mobility, Inc. on June 13, 2019 (AI 34) for the purchase of these vehicles. The total budget for this procurement is currently estimated at $216.4 million. MTS has identified a combination of Federal 5307, Federal 5337, Federal RSTP, and local funding (including $9.91 million from SGR) to fund this project. The FY 2023 Capital Improvement Project (CIP) approved by the Board on April 14, 2022 (Agenda Item 31) included $167.9 million in funding through FY 2023 and identified sufficient funding to complete the project for inclusion in the FY 2023 through FY 2025 CIPs. The FY 2022-2023 SGR funding identified in Resolution No. 22-08 will be included in the FY 2024 CIP funding allocation presented to the Board in or about April 2023.

Therefore, staff recommends that the MTS Board of Directors approve Resolution No. 22-08 in order to:

1) Authorize the use of and application of the estimated $5,095,907 in FY 2022-23 State of Good Repair funding to be used for the ongoing SD100 LRV Replacement Project; and

2) Approve the acceptance of additional FY 2022-23 SB1-SGR funding if made available to MTS.

/S/Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Resolution Number 22-08

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

Resolution No. 22-08

Resolution Approving the Fiscal Year (FY) 2022-2023 SB1 State of Good Repair Claim

WHEREAS the San Diego Metropolitan Transit System (MTS) is an eligible project sponsor and may receive State Transit Assistance (STA) funding from the State of Good Repair Account (SGR) for transit projects; and

WHEREAS, the statutes related to state-funded transit projects require a local or regional implementing agency to abide by various regulations; and

WHEREAS, Senate Bill 1 (2017) named the Department of Transportation (Caltrans) as the administrative agency for the SB1-SGR program; and

WHEREAS, the Department has developed guidelines for the purpose of administering and distributing SGR funds to eligible project sponsors (local agencies); and

WHEREAS, MTS wishes to delegate authorization to execute these documents and any amendments there to the Chief Executive Officer; and

WHEREAS, in order to qualify for the SB1-SGR funding allocation, MTS is required to submit a proposed project list to Caltrans on an annual basis and for FY 2022-2023, MTS propose to fund the ongoing SD100 Light Rail Vehicle (LRV) Replacement Project; and

WHEREAS, MTS wishes to authorize the use of, and application for the estimated, $5,095,907 in FY 2022-2023 SB1-SGR funding to be used for the SD100 LRV Replacement Project

NOW, THEREFORE, BE IT RESOLVED, DETERMINED, AND ORDERED that the MTS Board does hereby direct and empower MTS staff to prepare and transmit allocation instructions to the County Auditor to disburse to MTS the FY 2022-2023 SGR amounts totaling $5,095,907 for the SD100 LRV Replacement Project.

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PASSED AND ADOPTED, by the Board of Directors this 15th day of September 2022, by the following vote:

AYES:

NAYS:

ABSENT:

ABSTAINING:

_____
Chairperson
San Diego Metropolitan Transit System

Filed by:

_____
Clerk of the Board
San Diego Metropolitan Transit System

Approved as to form:

_____
Office of the General Counsel
San Diego Metropolitan Transit System

Resolution 22-08

Agenda Item No. 18

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

AMERICA PLAZA PEDESTRIAN ENHANCEMENTS PROJECT CONSTRUCTION MANAGEMENT SERVICES – WORK ORDER

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute Work Order No. WOA2497-CM04 under MTS Doc. No. G2497.0-21 (in substantially the same format as Attachment A) with Jacobs Project Management Co. for the America Plaza Pedestrian Enhancements Project Construction Management (CM) Services in the amount of $575,591.29.

Budget Impact

The total budget for this project shall not exceed $575,591.29. This contract is funded by MTS Capital Improvement Project (CIP) 2009108001 – America Plaza Pedestrian Enhancements.

DISCUSSION:

As part of its grant application to the State of California for the Transit and Intercity Rail Capital Program (TIRCP), MTS identified a need to improve pedestrian connections between America Plaza and Santa Fe Depot. As a gateway to San Diego for travelers arriving downtown by passenger rail or bus, including connections to the San Diego International Airport via MTS Route 992, the America Plaza/Santa Fe Depot Station area is a critical transportation center for the region. The existing public walkways and wayfinding do not adequately accommodate pedestrian demand currently. The State of California awarded MTS just over $4.2 million for the project in a 2018 TIRCP Grant.

On February 11, 2021 (AI 14), the MTS Board authorized a work order for Mott MacDonald to generate complete detailed design drawings, technical specifications, and cost estimates. The final documents resulting from this work order will be used to advertise the project to obtain competitive bids and ultimately construct the project. The design drawings are currently at 90% completion, and the intention is to start construction in May 2023.

As part of the construction project, MTS requires construction management (CM) services to assist staff with the coordination, control, and oversight of the construction contractor from beginning of work through completion (collectively "CM Services"). The proposed Work Order for CM Services includes preconstruction services, civil and stormwater inspections, geotechnical testing, and the assistance of a resident engineer and field inspector at various times throughout construction.

On January 11, 2021, San Diego Association of Governments (SANDAG) and MTS issued a joint Request for Statement of Qualifications (RFSQ) for On-Call CM Services. The RFSQ resulted in the approval of five (5) firms qualified to perform CM services. Tasks are assigned to the firms through a work order process.

MTS sought mini proposals from the On-Call List firms to provide CM Services for the America Plaza Pedestrian Enhancements Project. MTS evaluated proposals from five (5) CM firms and after scoring each firm based on the required criteria, Jacobs Project Management Co. was chosen as the highest qualified.

Ranking	Proposer Name	Firm Certifications	Total Score
1	**Jacobs**	**None**	**90.00**
2	AECOM	None	73.33
3	Kleinfelder	None	83.00
4	PGH WONG	Minority Business Enterprise (MBE)	80.00
5	TRC	None	77.00

Jacob's proposed amount of $575,591.29 is deemed to be fair and reasonable in comparison to MTS's Independent Cost Estimate (ICE) of $531,422.00. The list of subconsultants is included within Attachment A.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute Work Order No. WOA2497-CM04 under MTS Doc. No. G2497.0-21 (in substantially the same format as Attachment A) with Jacobs Project Management Co. for the America Plaza Pedestrian Enhancements Project Construction Management (CM) Services in the amount of $575,591.29.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Draft Work Order WOA2497-CM04 - MTS Doc. No. G2497.0-21

Metropolitan Transit System

August 16, 2022

MTS Doc. No. G2497.0-21
Work Order No. WOA2497-CM04

Tyler Sheldon
Vice President
Jacobs Project Management Co.
401 B St. Ste. 1560
San Diego, CA 92101

Dear Mr. Starling:

Subject: MTS DOC. NO. G2497.0-21, WOA2497-CM04, AMERICAN PLAZA, CONSTRUCTION MANAGEMENT (CM) SERVICES WORK ORDER AGREEMENT

This letter shall serve as our agreement MTS Doc. No. G2497.0-21, WOA2497-CM04, for Construction Management services under the Construction Management Consultant Agreement, as further described below.

SCOPE OF SERVICES

Provide construction management and inspection staff for American Plaza Construction, in accordance with MTS and SANDAG policies and procedures. Please see Attachment A, Scope of Services, for a detailed summary of the services to be provided.

SCHEDULE

The project schedule shall follow the contract for American Plaza Construction.

PAYMENT

Payment shall be based on actual costs in the amount not-to-exceed $575,591.29 without prior written authorization of MTS

Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

_____

Sharon Cooney
Chief Executive Officer

Accepted:

Tyler Sheldon – Vice President
Jacobs Project Management Co.

Date:

Attachments: A. Scope of Services
B. Negotiated Fee Proposal

ATTACHMENT A

SAN DIEGO METROPOLITAN TRANSIT SYSTEM (MTS)

SCOPE OF WORK

AMERICAN PLAZA CM AND INSPECTION SERVICES

I. PROJECT DESCRIPTION

The America Plaza Pedestrian Enhancements Project is intended to promote pedestrian comfort, safety & security, streamline connections between all transportation services, and create a wayfinding program to connect passengers between the America Plaza and Santa Fe Depot as well as major destinations and points of interest near the transit plazas.

The project generally consists of improvements along Kettner Blvd. between Broadway and B St. in downtown San Diego between America Plaza and the Santa Fe Depot. The work consists of civil roadway improvements as well as landscaping, irrigation, underground storm drain piping, sidewalk construction, new crosswalks, striping, signaling, and paving. This work order is to provide construction management services to aid in the management of the project.

As of the creation of this SOW, the design is progressed to 90% and is anticipated to be at 100% in June with construction starting in early January 2023. Construction is estimated to be roughly $2.5M.

II. EXPECTED RESULTS

Contractor is expected to provide the scope of work and deliverables as needed to provide complete project oversight.

III. SCOPE OF WORK

The scope of work shall consist of the following tasks and deliverables:

Construction Management and Inspection Services

- Oversee and Monitor construction activities performed by the contractor per project plans and specifications, including periodic job site safety reviews. Tasks include but aren't limited to the following:
    - Resident Engineering
        - Preconstruction Meeting and project set-up
        - RFI and Submittal Log coordination with Designer and MTS
        - Construction Change Order negotiations and approval
        - Weekly Progress Meetings – taking and distributing of meeting minutes
        - QA Inspection Oversight
        - Post Construction, Project close-out support and coordination
    - Field Inspection
        - Civil
        - Electrical
        - Landscape
        - Stormwater
    - Office Engineering

- Project Scheduling Analysis
- Stormwater Permit Compliance Reporting
- City of San Diego permit compliance and coordination
- Geotechnical Testing and Observations
  - Compaction testing of subgrade, aggregate base, and footing bottoms.
  - Asphalt Concrete Compaction
  - Soil and Aggregate Laboratory Testing
  - Reinforced Concrete Inspection and Sampling (plus Sample Pickup)
- QA Source Inspection
  - Steel Fabrication Audit
  - Welding Submittal Reviews (Shop Drawings, Welding Quality Control Plan)
  - QA CWI Inspections – Startup
  - QA CWI/NDT Inspections (Intermittent)
- QA Field Inspection
  - Field Welding Submittal Reviews (Welding Quality Control Plan)
  - Field Welding Inspections (Intermittent)
  - Field Post-Installed Anchors

Staffing:

1. Resident Engineer
2. Assistant Resident Engineer/Office Engineer
3. Field Inspectors -Civil, Electrical, Landscape
4. QA Inspectors
5. Scheduler
6. Stormwater Compliance Specialist
7. Materials Testers/Engineers

IV. PERIOD OF PERFORMANCE

The period of performance shall be approximately 315 calendar days (270 Construction Days and 45 Close-Out Days)

V. DELIVERABLES

Deliverables will consist of the work products produced under direct supervision by MTS management which include:

Deliverables will consist of the daily work products produced under direct supervision by MTS management which include:

1. Inspector's daily reports and photographs

2. Residents Engineers' daily or weekly status reports and updates.

3. A set of 11x17 size prints of the project marked on the front "RESIDENT ENGINEER COPY"

4. Correspondence files.

5. Testing submittal reviews and Inspection

6. Request for Information (RFIs) and responses.

7. Approved submittals.

8. Other pertinent files established and maintained that would normally be required for a project of this scope.

VI. SCHEDULE OF SERVICES/MILESTONES/DELIVERABLES

A. Tasks Schedule

Task	Begin/End Dates
Construction Management Services	See American Plaza Construction
Project Closeout and Final Records Transmittal	See American Plaza Construction

VII. MATERIALS TO BE PROVIDED BY MTS AND/OR SANDAG

1. Project drawings, specifications, and other pertinent project documents.

2. Necessary forms for project flaggers.

3. Flagging personnel for work alongside the MTS right-of-way.

4. MTS Roadway Worker training (if not current) for personnel to be working on the project, at all sites, alongside the MTS right-of-way.

5. Access to all signal and highway grade crossing facilities as required.

VIII. SPECIAL CONDITIONS

Not Applicable.

IX. MTS ACCEPTANCE OF SERVICES:

Firm shall not be compensated at any time for unauthorized work outside of this Work Order. Firm shall provide notice to MTS' Project Manager upon 100% completion of this Work Order. Within five (5) business days from receipt of notice of Work Order completion, MTS' Project Manager shall review, for acceptance, the 100% completion notice. If Firm provides final service(s) or final work product(s) which are found to be unacceptable due to Firms and/or Firms subcontractors negligence and thus not 100% complete by MTS' Project Manager, Firm shall be required to make revisions to said service(s) and/or work product(s) within the Not to Exceed (NTE) Budget. MTS reserves the right to withhold payment associated with this Work Order until the Project Manager

provides written acceptance for the 100% final completion notice. Moreover, 100% acceptance and final completion will be based on resolution of comments received to the draft documents and delivery of final documentation which shall incorporate all MTS revisions and comments.

Monthly progress payments shall be based on hours performed for each person/classification identified in the attached Fee Schedule and shall at no time exceed the NTE. Firm shall only be compensated for actual performance of services and at no time shall be compensated for services for which MTS does not have an accepted deliverable or written proof and MTS acceptance of services performed.

X. DEFICIENT WORK PRODUCT:

Throughout the design and/or implementation phases associated with the services rendered by the Firm, if MTS finds any work product provided by Firm to be deficient and the deficiently delays any portion of the project, Firm shall bear the full burden of their deficient work and shall be responsible for taking all corrective actions to remedy their deficient work product including but not limited to the following:

- Paying applicable delay fees,
- Revising provided documents,

At no time will MTS be required to correct any portion of the Firms deficient work product and shall bear no costs or burden associated with Firms deficient performance and/or work product.

XI. DELIVERABLE REQUIREMENTS

Firm will be required to submit any and all documentation required by the Scope of Work. The deliverables furnished shall be of a quality acceptable to MTS. The criteria for acceptance shall be a product of neat appearance, well-organized, and procedurally, technically and grammatically correct. MTS reserves the right to request a change in the format if it doesn't satisfy MTS's needs. All work products will become the property of MTS. MTS reserves the right to disclose any reports or material provided by the Firm to any third party.

Firm shall provide with each task, a work plan showing the deliverables schedule as well as other relevant date needed for Firm's work control, when and as requested by MTS.

Firm's computer data processing and work processing capabilities and data storage should be compatible with Windows compatible PC's, text files readable in Microsoft Word, and standard and customary electronic storage. Firm shall maintain backup copies of all data conveyed to MTS.

Firm shall provide MTS with hard copy or electronic versions of reports and/or other material as requested by MTS.

XII. ADDITIONAL INFORMATION

List additional information as applicable to the specific Work Order scope of services.

- Electrical System Start-Up and Testing services not included in scope of work
- Skilled and Trained Workforce requirements do not apply to consultant services
- QA Source and Specialty Inspections based on single fabricator local within Southern California.
- QA Source and Specialty Inspections based on an adequate Quality Control fabrication program. If determined necessary and agreed upon by MTS, QA inspections may be increased.
- Scope and Costs based on approximately 270 Calendar Days for Construction. Contract time may be extended by weather or unforeseen delays that arise during construction.

Work Order Estimate
Summary

MTS Doc. No.	**G2497.0-21**
Work Order No.	**WOA2497-CM04**
Attachment:	**B**
Change Order:	

Work Order Title: **CM Services for America Plaza**

Project No:	**W9Y36003**

Table 1 - Cost Codes Summary (Costs & Hours)

Item	Cost Codes	Cost Codes Description	Labor Hrs	Total Costs
1	0100	ADMINISTRATION	1,165	$ 216,797.41
2	0255	INSPECTION	2,072	358,793.88
		Totals =	**3,237**	**$ 575,591.29**

Table 2 - TASKS/WBS Summary (Costs & Hours)

Item	TASKS/WBS	TASKS/WBS Description	Labor Hrs	Total Costs
1.1	ADMIN	Preconstruction Services	116	$ 20,904.92
1.2	ADMIN	Construction Phase	776	$ 143,056.84
1.3	ADMIN	Closeout Phase	168	$ 31,397.76
1.4	ADMIN	INVOICING / SCHEDULING / PROGRESS REPORTING / ADMIN	89	$ 18,112.85
2.1	ENGINEERING	Civil Inspection	1,664	$ 278,424.88
2.2	ENGINEERING	Storm Water Inspection	88	$ 15,234.00
2.4	ENGINEERING	INSPECTION	168	$ 34,190.36
2.5	ENGINEERING	INVOICING / SCHEDULING / PROGRESS REPORTING / ADMIN	16	$ 3,325.04
2.6	ENGINEERING	MATERIAL TESTING	152	$ 30,944.64
		Totals =	**3,237**	**$ 575,591.29**

Table 3 - Consultant/Subconsultant Summary (Costs & Hours)

(If Applicable, Select One)				Consultant	Labor Hrs	Total Costs
DBE	DVBE	SBE	Other			
			X	Jacobs	2,812	$ 489,018.40
X		X		Destination Enterprises	257	$52,303.21
X		X		S2 Engineering	168	$34,269.68
				Totals =	**3,237**	**$ 575,591.29**

Work Order Estimate
Summary

Total Hours =	1,676.00
Total Costs =	$287,588.80

Consultant/Subconsultant:	JACOBS PROJECT MANAGEMENT CO.
Work Order Title:	CM Services for America Plaza

MTS Doc. No.:	G2497.0-21
Work Order No.:	WOA2497-CM04
Attachment:	B
Change Order:	

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Michael Albanese	Steve Gilbert	Jean Shin	Tom Lamere Straight Time	Tom Lamere Overtime	Scott Marquardt			Total Hours	Totals
				Contract Manager	Engineer Supervising	Engineer II	Senior Civil Inspector (PW)	Senior Civil Inspector (PW)	Storm Water Inspector				
				$ 309.85	$ 206.57	$ 144.60	$ 155.10	$ 232.65	$ 171.43				
1	ADMIN	PM & COORDINATION											
1.1	0100	Preconstruction Services		4	56	56						116	$ 20,904.92
1.2	0100	Construction Phase		24	240	240						504	$91,717.20
1.3	0100	Closeout Phase											$ -
1.4													
													$ -
		Subtotals (Hours) =	620	28	296	296						620	
		Subtotals (Costs) =		$ 8,675.80	$ 61,144.72	$ 42,801.60	$ -	$ -	$ -	$ -	$ -		$ 112,622.12
2	ENGINEERING	INSPECTION											
2.1	0255	Civil Inspection	$ 7,785.00				968	32				1,000	$165,366.60
2.2	0255	Storm Water Inspection							56			56	$9,600.08
2.3													
		Subtotals (Hours) =	1056				968	32	56			1,056	
		Subtotals (Costs) =	$7,785.00	$ -	$ -	$ -	$ 150,136.80	$ 7,444.80	$ 9,600.08	$ -	$ -		$174,966.68
		Totals (Summary) =										1,676	$ 287,588.80
		Total (Hours) =	1676	28	296	296	968	32	56				
		Total (Costs) =	$ 7,785.00	$ 8,675.80	$ 61,144.72	$ 42,801.60	$ 150,136.80	$ 7,444.80	$ 9,600.08	$ -	$ -		
		Percentage of Total (Hours) =	0.58%	2%	18%	18%	58%	2%	3%				100%
		Percentage of Total (Costs) =	2.71%	3%	21%	15%	52%	3%	3%				100%

Work Order Estimate
Summary

Total Hours =	1,136.00
Total Costs =	$201,429.60

Consultant/Subconsultant: **JACOBS PROJECT MANAGEMENT CO.**

Work Order Title: **CM Services for America Plaza**

MTS Doc. No.:	G2497.0-21
Work Order No.:	WOA2497-CM04
Attachment:	B
Change Order:	

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Michael Albanese	Steve Gilbert	Jean Shin	Tom Lamere Straight Time	Tom Lamere Overtime	Scott Marquardt				Total Hours	Totals
				Contract Manager	Engineer Supervising	Engineer II	Senior Civil Inspector (PW)	Senior Civil Inspector (PW)	Storm Water Inspector					
				$ 318.22	$ 212.15	$ 148.50	$ 159.28	$ 238.92	$ 176.06					
1	ADMIN	PM & COORDINATION												
1.1	0100	Preconstruction Services												$ -
1.2	0100	Construction Phase		12	140	120							272	$ 51,339.64
1.3	0100	Closeout Phase		8	80	80							168	$ 31,397.76
1.4														$ -
		Subtotals (Hours) =	440	20	220	200							440	
		Subtotals (Costs) =	$ -	$ 6,364.40	$ 46,673.00	$ 29,700.00	$ -	$ -	$ -	$ -	$ -	$ -		$ 82,737.40
2	ENGINEERING	INSPECTION												
2.1	0255	Civil Inspection	$ 5,385.00				640	24					664	$ 113,058.28
2.2	0255	Storm Water Inspection	$ -						32				32	$ 5,633.92
2.3														$ -
		Subtotals (Hours) =	696				640	24	32				696	
		Subtotals (Costs) =	$ 5,385.00	$ -	$ -	$ -	$ 101,939.20	$ 5,734.08	$ 5,633.92	$ -	$ -	$ -		$ 118,692.20
		Totals (Summary) =											1,136	$ 201,429.60
		Total (Hours) =	1136	20	220	200	640	24	32					
		Total (Costs) =	$ 5,385.00	$ 6,364.40	$ 46,673.00	$ 29,700.00	$ 101,939.20	$ 5,734.08	$ 5,633.92	$ -	$ -	$ -		
		Percentage of Total (Hours) =	0.56%	2%	19%	18%	56%	2%	3%					98%
		Percentage of Total (Costs) =		3%	23%	15%	51%	3%	3%					97%

Work Order Estimate
Summary

Consultant/ Subconsultant:	**JACOBS PROJECT MANAGEMENT CO.**
Work Order Title:	**CM Services for America Plaza**

Contract No:	**G2497.0-21**
Task Order No.	**WOA2497-CM04**
Attachment:	**B**
Change Order:	

TASKS/WBS (1-5)

ODC Item	Description	Unit	Unit Cost	Task 2 Quantity	Task 2 Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	HOTEL	Days	$ -		$ -		$ -						
2	AIRFARE	ea	$ -		$ -		$ -						
3	RENTAL CAR	ea	$ -		$ -		$ -						
4	MEALS/INCIDENTALS	ea	$ -		$ -		$ -						
5	VEHICLES	Month	$ 1,200.00	6	$ 7,200.00		$ -						
6	VEHICLES	Mile	$ 0.585	1,000	$ 585.00		$ -						
7					$ -		$ -						
8					$ -		$ -						
9					$ -		$ -						
10					$ -		$ -						
				Subtotal =	**$ 7,785.00**	Subtotal =	**$ -**	Subtotal =		Subtotal =		Subtotal =	

TASKS/WBS (6-10)

ODC Item	Description	Task 6 Quantity	Task 6 Total	Task 7 Quantity	Task 7 Total	Task 8 Quantity	Task 8 Total	Task 9 Quantity	Task 9 Total	Task 10 Quantity	Task 10 Total	Totals Quantity	Totals Total
2.1	Track Inspection											**6**	**$ 7,785.00**
2.2	Special Track Inspection												**$ -**
		Subtotal =		Subtotal =		Subtotal =		Subtotal =		Subtotal =		**Totals =**	**$ 7,785.00**

Consultant/ Subconsultant:	**JACOBS PROJECT MANAGEMENT CO.**	Contract No:	**G2497.0-21**
		Task Order No.	**WOA2497-CM04**
Work Order Title:	**CM Services for America Plaza**	Attachment:	**B**
		Change Order:	

TASKS/WBS (1-5)

ODC Item	Description	Unit	Unit Cost	Task 2 Quantity	Task 2 Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	HOTEL	Days	$ -		$ -	0	$ -	0	$0.00	0	$0.00		$0.00
2	AIRFARE	ea	$ -		$ -	0	$ -		$0.00		$0.00		$0.00
3	RENTAL CAR	ea	$ -		$ -	0	$ -		$0.00		$0.00		$0.00
4	MEALS/INCIDENTALS	ea	$ -		$ -	0	$ -		$0.00		$0.00		$0.00
5	VEHICLES	Month	$ 1,200.00	4	$ 4,800.00	0	$ -	0	$0.00		$0.00		$0.00
6	VEHICLES	Mile	$ 0.585	1,000	$ 585.00		$ -	0	$0.00		$0.00		$0.00
7					$ -		$ -		$0.00		$0.00		$0.00
8					$ -		$ -		$0.00		$0.00		$0.00
9					$ -		$ -		$0.00		$0.00		$0.00
10					$ -		$ -		$0.00		$0.00		$0.00
				Subtotal =	**$ 5,385.00**	Subtotal =	**$ -**	Subtotal =	**$0.00**	Subtotal =	**$0.00**	Subtotal =	**$0.00**

TASKS/WBS (6-10)

ODC Item	Description	Task 6 Quantity	Task 6 Total	Task 7 Quantity	Task 7 Total	Task 8 Quantity	Task 8 Total	Task 9 Quantity	Task 9 Total	Task 10 Quantity	Task 10 Total	Totals Quantity	Totals Total
2.1	Track Inspection		$0.00		$0.00		$0.00		$0.00		$0.00	**4**	**$ 5,385.00**
2.2	Special Track Inspection		$0.00		$0.00		$0.00		$0.00		$0.00	**0**	**$ -**
		Subtotal =	**$0.00**	Subtotal =	**$0.00**	Subtotal =	**$0.00**	Subtotal =	**$0.00**	Subtotal =	**$0.00**	**Totals =**	**$ 5,385.00**

Work Order Estimate
Summary

Total Hours =	147
Total Costs =	$29,590.47

Consultant/Subconsultant:	Destination Enterprises
Work Order Title:	CM Services for America Plaza

MTS Doc. No.:	G2497.0-21
Work Order No.:	WOA2497-CM04
Attachment:	B
Change Order:	

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Marcy Szarama	Mark Crowley	George Flowers						Total Hours	Totals
				Task Manager	PW-Inspector Straight Time	PW-Inspector Straight Time							
				$ 200.01	$ 200.29	$ 205.68							
1	Admin	Work Order Management											
1.1	0100	INVOICING / SCHEDULING / PROGRESS REPORTING / ADMIN		11	32	8						51	$ 10,254.83
		Subtotals (Hours) =	51	11	32	8						51	
		Subtotals (Costs) =		$ 2,200.11	$6,409.28	$1,645.44							$ 10,254.83
2	Engineering	Field Survey											
2.4	0255	INSPECTION	$ -		76	20						96	$ 19,335.64
2.5			$ -										$ -
		Subtotals (Hours) =	96		76	20						96	
		Subtotals (Costs) =	$ -	$ -	$ 15,222.04	$ 4,113.60	$ -	$ -	$ -	$ -	$ -		$ 19,335.64
		Totals (Summary) =										147	$ 29,590.47
		Total (Hours) =	147	11	108	28						147	
		Total (Costs) =	$ -	$ 2,200.11	$ 21,631.32	$ 5,759.04	$ -	$ -	$ -	$ -	$ -		
		Percentage of Total (Hours) =	0.50%	7%	73%	19%							93%
		Percentage of Total (Costs) =		7%	73%	19%							100%

Total Hours =	**110**
Total Costs =	**$22,712.74**

Consultant/Subconsultant: **Destination Enterprises**

Work Order Title: **CM Services for America Plaza**

MTS Doc. No.:	**G2497.0-21**
Work Order No.:	**WOA2497-CM04**
Attachment:	**B**
Change Order:	

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Marcy Szarama	Mark Crowley	George Flowers						Total Hours	Totals
				Task Manager	PW-Inspector Straight Time	PW-Inspector Straight Time							
				$ 205.41	$ 205.70	$ 211.24							
1	**Admin**	**Work Order Management**											
1.1	0100	INVOICING / SCHEDULING / PROGRESS REPORTING / ADMIN		10	20	8						38	$ 7,858.02
		Subtotals (Hours) =		10	20	8	0	0	0	0	0	38	
		Subtotals (Costs) =	**$0.00**	**$ 2,054.10**	**$4,114.00**	**$1,689.92**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**		**$ 7,858.02**
2	**Engineering**	**Field Survey**											
2.4	0255	INSPECTION	$ -		64	8						72	$ 14,854.72
2.5			$ -									0	$ -
		Subtotals (Hours) =		**0**	**64**	**8**	**0**	**0**	**0**	**0**	**0**	**72**	
		Subtotals (Costs) =	**$ -**	**$ -**	**$ 13,164.80**	**$ 1,689.92**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**		**$ 14,854.72**
Totals (Summary) =												**110**	**$ 22,712.74**
Total (Hours) =			**0**	**10**	**84**	**16**	**0**	**0**	**0**	**0**	**0**	**110**	
Total (Costs) =			**$ -**	**$ 2,054.10**	**$ 17,278.80**	**$ 3,379.84**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**		
Percentage of Total (Hours) =			**0.00%**	**9%**	**76%**	**15%**	**0%**	**0%**	**0%**	**0%**	**0%**		**91%**
Percentage of Total (Costs) =			**0.00%**	**9%**	**76%**	**15%**	**0%**	**0%**	**0%**	**0%**	**0%**		**100%**

Total Hours =	88
Total Costs =	$20,768.40

Consultant/Subconsultant: **S2 Engineering**

Work Order Title: **CM Services for America Plaza**

MTS Doc. No.:	G2497.0-21
Work Order No.:	WOA2497-CM04
Attachment:	B
Change Order:	

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Subramony Krishnamoorthy	Ikechi Okoro	Ikechi Okoro	Ikechi Okoro							Total Hours	Totals
				Engineer, Supervising	PW-Material Tester Straight Time	PW-Material Tester Overtime Time	PW-Material Tester Double Time								
				$ 205.05	$ 161.60	$ 234.82	$ 308.05								
1	Admin	Work Order Management													
1.1	0100	INVOICING / SCHEDULING / PROGRESS REPORTING / ADMIN		8										8	$ 1,640.40
		Subtotals (Hours) =		8										8	$ 1,640.40
		Subtotals (Costs) =		$ 1,640.40	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	8	$ 1,640.40
2	Engineering	Field Survey													
2.6	0255	MATERIAL TESTING	$ 6,200.00		80									80	$ 19,128.00
															$ -
		Subtotals (Hours) =			80									80	$ 19,128.00
		Subtotals (Costs) =	$ 6,200.00	$ -	$ 12,928.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	80	$ 19,128.00
		Totals (Summary) =												88	$ 20,768.40
		Total (Hours) =		8	80									88	
		Total (Costs) =	$ 6,200.00	$ 1,640.40	$ 12,928.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 20,768.40
		Percentage of Total (Hours) =		9%	91%										91%
		Percentage of Total (Costs) =		8%	62%										70%

Total Hours =	80
Total Costs =	$13,501.28

Consultant/Subconsultant: **S2 Engineering**

Work Order Title: **CM Services for America Plaza**

MTS Doc. No.:	G2497.0-21
Work Order No.:	WOA2497-CM04
Attachment:	B
Change Order:	

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Subramony Krishnamoorthy	Ikechi Okoro	Ikechi Okoro	Ikechi Okoro							Total Hours	Totals
				Engineer, Supervising	PW-Material Tester Straight Time	PW-Material Tester Overtime Time	PW-Material Tester Double Time								
				$ 210.58	$ 164.12	$ 238.61	$ 313.10								
1	Admin	Work Order Management													
1.1	0100	INVOICING / SCHEDULING / PROGRESS REPORTING / ADMIN		8										8	$ 1,684.64
		Subtotals (Hours) =		8	0	0	0	0	0	0	0	0	0	8	$ 1,684.64
		Subtotals (Costs) =	$0.00	$ 1,684.64	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	8	$ 1,684.64
2	Engineering	Field Survey													
2.6	0255	MATERIAL TESTING	$ -		72	0	0							72	$ 11,816.64
														0	$ -
		Subtotals (Hours) =		0	72	0	0	0	0	0	0	0	0	72	$ 11,816.64
		Subtotals (Costs) =	$ -	$ -	$ 11,816.64	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	72	$ 11,816.64
		Totals (Summary) =												80	$ 13,501.28
		Total (Hours) =	0	8	72	0	0	0	0	0	0	0	0	80	
		Total (Costs) =	$ -	$ 1,684.64	$ 11,816.64	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 13,501.28
		Percentage of Total (Hours) =	0.00%	10%	90%	0%	0%	0%	0%	0%	0%	0%	0		90%
		Percentage of Total (Costs) =	0.00%	12%	88%	0%	0%	0%	0%	0%	0%	0%	0		100%

Work Order Estimate
Summary

Consultant/ Subconsultant:	**S2 Engineering**
Work Order Title:	**CM Services for America Plaza**

Contract No:	**G2497.0-21**
Task Order No.	**WOA2497-CM04**
Attachment:	**B**
Change Order:	

TASKS/WBS (1-5)

ODC Item	Description	Unit	Unit Cost	Task 1		Task 2		Task 3		Task 4		Task 5	
				Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	VEHICLES	LS	$ 1,200.00	1	$ 1,200.00								
2	Lab-Lump Sum	LS	$ 5,000.000	1	$ 5,000.00								
3													
4													
5													
6													
7													
8													
9													
10													
				Subtotal =	**$ 6,200.00**	Subtotal =		Subtotal =		Subtotal =		Subtotal =	

TASKS/WBS (6-10)

ODC Item	Description	Task 6		Task 7		Task 8		Task 9		Task 10		Totals	
		Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	MATERIAL TESTING											**1.0**	**$ 1,200.00**
		Subtotal =		Subtotal =		Subtotal =		Subtotal =		Subtotal =		**Totals =**	**$ 6,200.00**

Agenda Item No. 19

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

SAN DIEGO STATE UNIVERSITY (SDSU) UNINTERRUPTIBLE POWER SUPPLY (UPS) AND INVERTERS SYSTEM REPLACEMENT – WORK ORDER

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute Work Order MTSJOC311-03 to MTS Doc. No. PWL311.0-20 (in substantially the same format as Attachment A) with HMS Construction, Inc. (HMS) in the amount of $496,883.90 for replacing the obsolete UPS and inverters at the SDSU Station.

Budget Impact

The total budget for this contract is $496,883.90. Under separate MTS Doc No. L1282.0-16 with The Gordian Group, MTS will pay a 1.95% Job Order Contract (JOC) software license fee in the amount of $10,494.19. This project is funded by MTS Capital Improvement Project (CIP) number 2008114601 – SDSU UPS and Inverters Replacement.

DISCUSSION:

The SDSU 20KVA UPS and 30KVA inverter systems in the east and west electrical rooms have reached the end of their useful life and require replacement to remain in compliance with the National Fire Protection Association (NFPA). Replacement of these components is necessary because they provide power to critical infrastructure and lighting at the SDSU station. The lead time for materials for this work is approximately 25 weeks.

On April 16, 2020, MTS issued an Invitation for Bids (IFB) seeking a contractor to provide general railroad electrical and communications work contracting services, including network communications, fiber-optic network installations, Variable Message Sign (VMS), Closed-Circuit Television (CCTV), fare system, train to wayside communications, traffic lights, traffic signalization and synchronization systems, and all required incidental and supplemental professional and technical services and work.
JOC is a procurement method under which public agencies may accomplish frequently encountered repairs, maintenance, and construction projects through a single, competitively procured long-term agreement.

The JOC program includes a catalog of pricing for a variety of potential tasks to be performed under the contract that have been pre-priced by the contractor, The Gordian Group. All potential contractors are subject to the pricing within this catalog. Each contractor then includes an adjustment factor, escalating their proposed price from the catalog price, to determine the total cost of the task order. The adjustment factor represents an average percentage increase over the catalog price (i.e. 1.25 adjustment factor represents 25% above the catalog price) for that respective task within the project. In order to select the lowest responsive and responsible bidder, MTS staff compares each contractor's proposed adjustment factor.

One (1) bid was received from HMS. On June 18, 2020 (Agenda Item No. 15), the MTS Board authorized the CEO to execute MTS Doc. No. PWL311.0-20 with HMS for railroad general electrical, communication, and traffic signal construction services.

Today's proposed action would issue a work order to HMS under this JOC master agreement. Pricing for this repair work order was reviewed and determined to be fair and reasonable. HMS will provide all materials, labor, and equipment for the replacement of the obsolete UPS and inverters at SDSU. Work is expected to be completed by June 2023. For this work order, HMS will be utilizing subcontractor Moor Electric, Inc., a Minority Business Enterprise (MBE) (see Exhibit C of Attachment A).

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute Work Order MTSJOC311-03 to MTS Doc. No. PWL311.0-20 (in substantially the same format as Attachment A) with HMS Construction, Inc. (HMS) in the amount of $496,883.90 for replacing the obsolete UPS and inverters at the SDSU Station.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Draft Work Order MTSJOC311-03

Metropolitan Transit System

JOB ORDER CONTRACT
WORK ORDER

PWL311.0-20
CONTRACT NUMBER

MTSJOC311-03
WORK ORDER NUMBER

THIS AGREEMENT is entered into this _____ day of _____, 2022 in the State of California by and between San Diego Metropolitan Transit System ("MTS"), a California public agency, and the following, hereinafter referred to as "Contractor":

Name: HMS Construction, Inc.

Address: 2885 Scott St.
Vista, CA 92081

Form of Business: Corporation
(Corporation, Partnership, Sole Proprietor, etc.)

Email : mike@hmsconco.com

Telephone: 760.727.9808

Authorized person to sign contracts Michael C. High (Name) President (Title)

Pursuant to the existing Job Order Contract (MTS Doc. No. PWL311.0-20), MTS issues a Work Order to Contractor to complete the detailed Scope of Work (attached as Exhibit A.), the Cost Breakdown for the Scope of Work (attached as Exhibit B.), and the subcontractor listing form applicable to this Work Order (attached as Exhibit C.)

TOTAL PAYMENTS TO CONTRACTOR SHALL NOT EXCEED $496,883.90

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	HMS CONSTRUCTION, INC.
By: _____ Sharon Cooney, Chief Executive Officer	By _____
Approved as to form: By: _____ Karen Landers, General Counsel	Title: _____

EXHIBIT A
(Scope of Work)

San Diego Metropolitan Transit System
1255 Imperial Ave
San Diego, California 92101

Final Scope of Work

Date: 8/2/2022

Job Order Contracting

To: **From:**

Contract No:	PWL311.0-20
Job Order No:	MTSJOC311-03
Job Order Title:	SDSU UPS and Inverters Replacement
Location:	Green Line ROW 1255 Imperial Ave San Diego, CA 92101
Brief Scope of Work:	SDSU UPS and Inverters System Upgrade: The components for this project consist of, (2) 20KVA UPS system and the 30KVA inverter systems which are located in the SDSU east and west electrical rooms. These systems have reached their end of life cycle usage and are in need of replacement. This upgrade needed to be done to remain in compliance with the (NFPA) National Fire Protection Association and other local codes and their requirements. These components provide the power to critical infrastructure and lighting for the SDSU campus in the identified areas.

The following items detail the scope of work as discussed at the site. All requirements necessary to accomplish the items set forth below shall be considered part of this scope of work.

The Contractor shall provide all labor, materials, equipment to complete the work in accordance with the Scope of Work below. All work shall be in compliance with all loca, State and Federal rules and regulations, as applicable.

Scope of work:

1. Contractor shall verify and identify, label the existing equipment, also identify areas that will be impacted at the time of this upgrade. This project installation for the new Uninterruptable Power System (UPS) with inverters is the final main component of a UPS management system. This device accepts the D/C from the D/C bus, which is supplied by the rectifier and the batteries, for the (site-specific) design requirements of this project.
2. This assessment shall include, but not be limited to the following:
3. The contractor shall Identify complete existing UPS and inverter components systems for the East and West Electrical rooms, that shall be deemed for removal and replacement as part of this upgraded project.
4. The contractor shall identify systems and components that require monitoring and temporary power requirements during the removal of old units and installation of new equipment and any other conditions that need to be monitored during construction. [TQN1] [AT2]
5. The contractor shall identify exact routing of all new electrical distribution power wiring to the UPS and related components and the upgrades required for any existing electrical system component and provide a set of as-built drawings and applicable warranties at the completion of the project to the owner representatives.
6. System Replacement
7. Provide a replacement for the existing UPS and inverter for both East and West Electrical Rooms.
8. All programmable devices must be able to have their addresses identified and set without special equipment, tools, or programs. Changing of devices must be able to be completed by facility

maintenance staff without the requirement of special software or tools.

9. The (New Upgraded) UPS and **(Programable)** inverter shall be appropriate for the institutional and approved by facility staff. [TQN3] [AT4]
10. Any new low voltage wiring added for the UPS and inverter system, to any peripheral devices shall be concealed and run in a separate raceway or conduit, whichever is code compliant and appropriate for these building conditions. The security requirements, efficiency, and cost-effectiveness regarding this project are of utmost paramount. Any exposed wiring installed above the ceiling shall be plenum fire-rated cable so marked and identified in accordance with NEC code (Article 760) and other applicable codes must be protected within the conduit. Protect any exposed wiring from potential respective rodent damages.
11. It may become necessary for the Contractor to assist MTS' staff with providing (A Fire-Watch Senior) during working hours for designated work areas, which are impacted and taken offline. The Contractor shall notify in advance MTS to ensure proper coverage protocol is being arranged and maintained during that time. MTS staff shall provide the fire watch for areas outside the work zoned area and during non-business hours if the coverage system is disabled. (NOTE)! Any disabling of the security life safety system shall be shown in advance in a written scheduled and shown in the project meeting protocol.
12. Upon completion of this project, the Contractor shall provide to the owner representative a 100% completion verified test of the system in writing and provide the necessary certification to MTS with proper signoff.

Thang Nguyen, Systems Engineer **Date**

EXHIBIT B
(Cost Breakdown)

Price Proposal Detail
By Division Report
Version: Working Version

Proposal Value: $496,883.90
Approved Date:

Job Order: Job Order: MTSJOC311-03

Job Order Name: Job Order Name: SDSU UPS and Inverters Replacement

Location: 20-Green Line ROW 1255 Imperial Ave San Diego, CA 92101

Contractor: HMS Construction Inc.
Contract Number: PWL311.0-20
Contract Name: JOC Railroad General Electrical, Communication & Traffic Signal Construction Services - Option 1

Division		Install Total	NPP Total	Demo Total	Division Total
01	General Requirements	$37,173.97	$0.00	$0.00	$37,173.97
26	Electrical	$0.00	$459,709.93	$0.00	$459,709.93
Line Count: 8			**Proposal Total:**		**$496,883.90**
		The Percentage of Non Pre-Priced on this Proposal:			**92.52%**

** Includes Price Changes due to Construction Task Catalog update*

Price Proposal Detail
By Division Report
Version: Working Version

Proposal Value: $496,883.90
Approved Date:

Job Order: Job Order: MTSJOC311-03

Job Order Name: Job Order Name: SDSU UPS and Inverters Replacement

Location: 20-Green Line ROW 1255 Imperial Ave San Diego, CA 92101

Contractor: HMS Construction Inc.
Contract Number: PWL311.0-20
Contract Name: JOC Railroad General Electrical, Communication & Traffic Signal Construction Services - Option 1

01 General Requirements **$37,173.97**

Record #	CSI Number	Description	Type	Quanity	Unit Price	UOM	Factor	Line Total
1	012220000010	Electrician	Installation	240.00	$74.76	HR	1.0583	$18,988.44
			Demo:	0.00	$0.00	HR	1.0583	$0.00

Includes Labor Yes **Includes Equipment No** **Includes Materials No**

Total: $18,988.44

2	012220000012	High Voltage Electrician, (Utility Lineman)	Installation	60.00	$97.66	HR	1.0583	$6,201.21
			Demo:	0.00	$0.00	HR	1.0583	$0.00

Contractor Comments: *V:1.1-1 Lineman support during voltage work / testing*

Includes Labor Yes **Includes Equipment No** **Includes Materials No**

Total: $6,201.21

3	012220000027	Laborer	Installation	40.00	$73.42	HR	1.0583	$3,108.02
			Demo:	0.00	$0.00	HR	1.0583	$0.00

Contractor Comments: *V:1.1-1 man assisting with unloading / pedestrian controls*

Includes Labor Yes **Includes Equipment No** **Includes Materials No**

Total: $3,108.02

4	012220000067	Specialty Engineer, for Testing and Commisioning Railway Signaling Systems	Installation	0.00	$200.00	HR	1.0583	$0.00
			Demo:	0.00	$0.00	HR	1.0583	$0.00

Contractor Comments: *V:1.1-Commissioning included in Moor proposal / contract*

Includes Labor No **Includes Equipment No** **Includes Materials No**

Total: $0.00

** Includes Price Changes due to Construction Task Catalog update*

Price Proposal Detail
By Division Report
Version: Working Version

Proposal Value: $496,883.90
Approved Date:

Job Order: Job Order: MTSJOC311-03

Job Order Name: Job Order Name: SDSU UPS and Inverters Replacement

Location: 20-Green Line ROW 1255 Imperial Ave San Diego, CA 92101

Contractor: HMS Construction Inc.
Contract Number: PWL311.0-20
Contract Name: JOC Railroad General Electrical, Communication & Traffic Signal Construction Services - Option 1

5	012223001306	3/4 Ton, 4 x 4 Crew Cab Pickup Truck With Full-Time Truck Driver	Installation	15.00	$226.23	DAY	1.0583	$3,591.29
			Demo:	0.00	$0.00	DAY	1.0583	$0.00

Contractor Comments: *V:1.1-HMS Crew Truck*

Includes Labor No **Includes Equipment No** **Includes Materials Yes**

Total: $3,591.29

6	015219000002	Portable Chemical Toilet	Installation	3.00	$63.29	WK	1.0583	$200.94
			Demo:	0.00	$0.00	WK	1.0583	$0.00

Includes Labor No **Includes Equipment No** **Includes Materials Yes**

Total: $200.94

7	015526000054	Up To 10' Wide A Frame Barricade	Installation	200.00	$24.02	MO	1.0583	$5,084.07
			Demo:	0.00	$0.00	MO	1.0583	$0.00

Contractor Comments: *V:1.1-Fence System for Pedestrian Safety*

Includes Labor No **Includes Equipment No** **Includes Materials Yes**

Total: $5,084.07

26 Electrical **$459,709.93**

Record #	CSI Number	Description	Type	Quanity	Unit Price	UOM	Factor	Line Total
8	Non-PrePriced Item	SDSU Inverter Package MTS JOC 311.0-20-03		1.00	$459,709.93	EA	1.0000	$459,709.93
			Demo:	0.00	$0.00	EA	1.0000	$0.00

Contractor Comments: *V:1.1-NOTE: Expiration dates may impact final costs.*

Includes Labor No **Includes Equipment No** **Includes Materials No**

User Note: Subcontractor Quote

Item Note:

Total: $459,709.93

Proposal Total: $496,883.90

** Includes Price Changes due to Construction Task Catalog update*

Price Proposal Detail
By Division Report
Version: Working Version

Proposal Value: $496,883.90
Approved Date:

Job Order: Job Order: MTSJOC311-03

Job Order Name: Job Order Name: SDSU UPS and Inverters Replacement

Location: 20-Green Line ROW 1255 Imperial Ave San Diego, CA 92101

Contractor: HMS Construction Inc.
Contract Number: PWL311.0-20
Contract Name: JOC Railroad General Electrical, Communication & Traffic Signal Construction Services - Option 1

Div	The Percentage of Non Pre-Priced on this Proposal:	92.52%

** Includes Price Changes due to Construction Task Catalog update*

Estimate

Moor Electric, Inc.
1244 Manchester Street
National City, CA 91950
(619) 250-0380
infor@moorelectric-sd.com

INV #
7/1/2022

BILL TO

HMS Construction Inc.
2885 Scott Street
Vista, CA 92081

SITE / LOCATION

SDSU MTS EAST & WEST
San Diego, CA 92182

DESCRIPTION		NOTES	UNIT PRICE / RATE	TOTAL
UPS/Inverter East (Supply & Install)			1.00	$ 181,641.38
UPS/Inverter West (Supply & Install)			1.00	$ 182,141.38
Rigging Sub (Corovan)			1.00	$ 16,265.00
Concrete Pad Modification (East & West)			1.00	$ 6,500.00
Manufacture Start Up/Testing & Commissioning (East & West)			1.00	$ 8,910.00
			1.00	
			1.00	$ -
			1.00	$ -
			1.00	$ -
			1.00	$ -
			1.00	$ -
			1.00	$ -
Tax (San Diego rate 7.75%)			1.00	$ 22,460.36
				$ -
				$ -
				$ -
RETENTION RECEIVABLE				

Remarks / Payment Instructions:

includes labor, material, & equipment. Refer to backup sheets (Moor Labor)for more details

417918.12

Balance Due **Balance Due**

EXHIBIT C
(Subcontractor Listing)

San Diego Metropolitan Transit System
1255 Imperial Ave
San Diego, CA 92101

Subcontractor Report

Date: 8/2/2022

Job Order Contracting

Contract #: PWL311.0-20

Job Order #: MTSJOC311-03

Job Order Title: SDSU UPS and Inverters Replacement

Location: Green Line ROW

Contractor: HMS Construction Inc.

Subcontractor: Moor Electric, Inc.

Subcontractor Name	License Number	Describe Nature of Work (Trade)	Certifications	Subcontractor Total	%
Moor Electric, Inc. 1244 Manchester St, National City, CA 91950	797985	Electrician		$417,918.12	0.00%

Agenda Item No. 20

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

DIGITAL SIGNAGE AND VARIABLE MESSAGE SIGN (VMS) MAINTENANCE AND AS-NEEDED REPAIRS - CONTRACT AMENDMENT

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to:

1) Ratify Amendment No. 1 to MTS Doc. No. PWG318.0-20 (in substantially the same format as Attachment A), with Brault, Inc., dba Electro Specialty Systems (ESS), a Small Business (SB), in the amount of $33,787.90 to add Mid-Coast VMS maintenance during contract year 2; and

2) Execute Amendment No. 2 to MTS Doc. No. PWG318.0-20 (in substantially the same format as Attachment B), with ESS, an SB, in the amount of $246,402.33 to add Mid-Coast VMS maintenance for remaining contract and option years.

Budget Impact

The total budget for this contract, including the proposed Amendment 2, is $1,443,071.01. This project is funded by the Information Technology (IT) Operations Budget 661010 – 571250.

DISCUSSION:

Currently, MTS utilizes nearly 399 Digital Signage (DS) and VMS signs throughout its service area. The signs are a valuable tool for MTS patrons, as they provide route and travel-time information for the Bus Rapid Transit (BRT) and Trolley services. They require routine maintenance and repairs to ensure they work properly.

On November 12, 2020 (AI 16), the MTS Board of Directors approved a contract award with ESS for the maintenance and as-needed repair of the existing signs. The contract covers a seven (7) year period: December 15, 2020 to December 14, 2025 (base period) and December 15, 2025 to December 14, 2027 (option years). Since the contract award, MTS expanded its

service area with the opening of the Mid-Coast extension. As a result of the Mid-Coast opening, MTS added 47 additional signs.

Amendment No. 1 (Ratify)
On June 21, 2022, under MTS Board Policy 41, the MTS CEO approved Amendment No. 1 that provided quarterly maintenance for Mid-Coast extension's forty-seven (47) additional NANOV VMS units for base year two only, and the quarterly maintenance of two (2) additional Daktronics VMS units for base years three through five. The Amendment also revised the scope of services to have the contractor responsible for diagnosing the hardware and software problems and making the necessary repairs and warehousing MTS's inventory of spare Daktronics parts.

Amendment No. 2 (Approve)
Amendment No. 2 provides quarterly maintenance of the Mid-Coast extension's forty-seven (47) additional NANOV VMS units for base years three through five, and option years one and two, and the quarterly maintenance of two (2) additional Daktronics VMS units for option years one and two. Option years shall be exercised at the sole discretion of MTS.

The contract and amendments are summarized below:

Contract No.	Purpose	Amount	Board Approval Date
PWG318.0-20	Original Contract	$1,162,880.78	11/12/20, Item 16
PWG318.1-20	Amendment 1 – Add signs and revisions to the scope of work	$33,787.90	Today's proposed action (ratify)
PWG318.2-20	Amendment 2 – Add funds for maintenance of additional signs for base and option years		Today's proposed action (approve)
	Base Years	$141,548.94	
	Option Years (if exercised by MTS)	$104,853.39	
	Total	$1,443,071.01	

The pricing for maintenance of the additional signs is the same as unit prices in the original agreement, which was procured via a competitive Request for Proposals (RFP) process. Thus, staff deems the pricing for the proposed Amendment 2 to be fair and reasonable.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to:

1) Ratify Amendment No. 1 to MTS Doc. No. PWG318.1-20 (in substantially the same format as Attachment A), with ESS, an SB, in the amount of $33,787.90 to add Mid-Coast VMS maintenance during contract year 2; and

2) Execute Amendment No. 2 to MTS Doc. No. PWG318.2-20 (in substantially the same format as Attachment B), with ESS, an SB, in the amount of $246,402.33 to add Mid-Coast VMS maintenance for remaining contract and option years.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Amendment No. 1 MTS Doc. No. PWG318.1-20
B. Draft Amendment No. 2 MTS Doc. No. PWG318.2-20
C. Cost Form

Metropolitan Transit System

Amendment 1

June 6, 2022 MTS Doc No. PWG318.1-20

Brault, Inc., dba Electro Specialty Systems
Dan Brault, President
7940 Convoy Ct.
San Diego, CA 92111

This shall serve as Amendment No. 1 to the original agreement as further described below.

SCOPE
Pursuant to the Scope of Work of, THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM (MTS) shall revise the agreement as follows:

#	DESCRIPTION	AMOUNT
1.	Add 47 NANOV units to the bid form as line item number 6 (Attachment B). These items shall be serviced quarterly beginning April 1, 2022, in accordance with the manufacturers sign maintenance manual (Attachment C).	$32,700.72 BASE YEAR TWO
2.	Add 2 Daktronics units to line item 10 of the bid form (Attachment B). These items shall be serviced quarterly beginning March 1, 2023, in accordance with the manufacturers sign maintenance manual.	$1,087.18 BASE YEARS 3-5
3.	Update Service Schedule to include new units servicing of 47 new units on the Blue Line, and 2 additional bus stop units (Attachment D).	$0.00
4.	Revise Section 5.7.4 of Scope of Work to have the contractor responsible for diagnosing and the hardware and software problems and making the necessary repairs (Attachment A). Effective July 1, 2022.	$0.00
5.	Revise Section 5.7.4, E., Replacement Parts, of Scope of Work to have the contractor responsible for warehousing MTS's inventory of spare Daktronics parts (Attachment E). Effective July 1, 2022.	$0.00
	Total	$33,787.90

SCHEDULE

There shall be no change to the schedule as a result of this amendment. Base period of the agreement shall remain effective through December 14, 2025.

PAYMENT

This contract amendment shall authorize additional costs not to exceed $33,787.90. The total value of this contract including this amendment shall be in the amount of $837,134.15. This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney

Digitally signed by Sharon Cooney
DN: cn=Sharon Cooney, o=San Diego Metropolitan Transit System, ou, email=sharon.cooney@sdmts.com, c=US
Date: 2022.06.22 06:21:44 -07'00'

Sharon Cooney, Chief Executive Officer

Agreed:

Dan Brault, President
Electro Specialty Systems

Date: 06/23/2022

Attachments: A. Revised Scope Sections
B. Revised Bid Form
C. Nanov Display LCD Sign Maintenance
D. Revised Service Schedule
E. MTS Parts Inventory List

ATTACHMENT A
REVISED SCOPE SECTIONS

5.7.4 AS-NEEDED REPAIR SERVICES

Contractor shall be responsible for diagnosing both hardware and software problems. In the event of a hardware issue, contractor shall make the necessary repairs. However, in the event of a software related issue, contractor shall contact MTS IT to resolve the issue. Contractor shall supply all labor materials necessary to provide as needed repair services on a Time and Materials basis. Services may be requested 24 hours a day, seven (7) days a week including holidays. Contractor shall consider this when submitting its pricing.

A. General Requirements

1. Contractor shall comply with all City, County, State, or Federal building laws, regulations, and code requirements in the performance of their work.

2. Contractor shall be responsible for diagnosing the problem and making the necessary repairs.

3. Contractor shall only perform work that is approved by MTS. Approval by the MTS Project Manager is required prior to any work being performed.

- Prior to performing any repair services, Contractor shall provide a quote for the services to be performed. The quote shall include at minimum the following information:
  - Estimated hour(s) and hourly rate
  - At cost part(s) amount
  - Part percentage mark up
  - Date the service is to be performed and completed
- Any work in excess of $5,000 requires approval from MTS Procurement prior to commencement of services.

a. Contractor shall perform and complete each work order in the agreed upon manner and time period.

b. In the event of accidental site damage by the Contractor, Contractor shall be responsible to return the site to its original condition at no cost to MTS.

c. Contractor shall remove all debris generated while making repairs, replacement, or installation and leave the work area clean, “broom swept” state.

d. Unless otherwise stated, Contractor shall remove all equipment, materials, etc. as directed by MTS.

e. Contractor is responsible for clarifying with the MTS Project Manager any questions regarding the work that is to be performed.

f. All parts furnished in connection with repair of equipment shall be new and at least equal quality to the parts being replaced, and must be unconditionally guaranteed for a minimum period of 1 year or manufacturer’s warranty, whichever is longer.

g. All equipment removed or salvaged in conjunction with replacements (other than cabling and wires) must be returned to MTS Storeroom within five (5) days, along with a packaging slip describing where the parts were taken from, who replaced them under what work order number(s), and what parts were being replaced. MTS parts clerk must receive and sign off on all packing slips in person. Upon award MTS will inform the Contractor the location and contact information for the returns.

h. Contractor shall be paid only for time spent on the premises performing the services required under the contract. Travel time, or related expenses, such as fuel, etc. will not be reimbursed.

i. When the use of a scissor lift is needed to access signs, the Contractor may charge MTS for the hourly cost of the equipment at the billing rates set forth in the Contractor's Cost Proposal Form.

j. Repairing Nanov signs. Joe will check with Thang.

B. Non-Emergency Service Calls

1. MTS expects the Contractor to give "priority" to service requests. Contractor is responsible for arriving at MTS site within twenty-four (24) hours of call, or at the beginning of the next business day.

2. The non-emergency service calls shall be provided Monday through Friday, 7:00 am and 4:00 pm (excluding MTS holidays,).

3. All repairs must be made at the time of the service call, unless otherwise agreed upon by MTS. Equipment cannot be removed without leaving a replacement that will keep the systems operational.

C. Emergency Service Calls:

1. For purposes of this contract, an emergency situation is any condition that requires immediate action to eliminate life or serious injury hazards to personnel, prevent loss or damage to MTS property, or restore essential services.

2. For any service calls considered emergency by the MTS, Contractor must arrive within two (2) hours of the service call request. In the event that there are more requests than can be responded within two (2) hours, the contractor shall prioritize the emergency service requests.

D. Hourly Rates

All estimated travel subsistence costs (i.e. mileage, fuel surcharge, etc.), projected to be utilized by the Contractor during the term of performance of any resultant Contract are to be absorbed, amortized, and incorporated into the Proposer's fully burdened unit per hour rates as set forth in the Cost Proposal Form.

1. Emergency and Non-Emergency Call Back Services shall be billed at the labor rates as set forth in the Cost/Price Proposal for the following categories:

   a. Single Person Crew - Straight Time Hourly Rate

   b. Single Person Crew - Outside of MTS Normal Business Hours (evenings, weekends and holidays) Hourly Rate

   c. Two Person Crew - Straight Time Hourly Rate

   d. Two Person Crew - Outside of MTS Normal Business Hours (evenings, weekends and holidays) Hourly Rate

E. Replacement Parts

In the event that the Contractor need to purchase replacement parts (not covered in the scope of the contract) to repair equipment parts, materials and supplies shall be reimbursed by MTS based on actual cost plus the percent provided in the proposer's proposal. All pass-through expenses must be authorized by the designated MTS Project Manager. The maximum cost plus percent allowed shall not be more than a mark-up expense provided in the contractor's Cost/Price Proposal.

Contractor shall be responsible for warehousing MTS's spare Daktronics parts as listed in ATT18 at no additional cost. During the term of the agreement, the Contractor, shall list the MTS part used (if, any) on any subsequent invoices. MTS parts shall be billed at zero cost to the agency.

During the term of the agreement, Contractor shall be responsible for ensuring MTS Daktronics parts remain in the same condition, as when they were received.

At the end of the agreement, Contractor shall return any unused MTS parts to MTS. Both parties shall reconcile the Daktronics parts inventory. Contractor shall be responsible for paying MTS the actual cost of any Daktronics not accounted for in said reconciliation.

F. Special Conditions

1. The Contractor shall secure flagger requests as necessary for the execution of the work within Trolley stations.

2. All work must be performed in such a manner as to minimize downtime of the DS and VMS system. The Contractor shall coordinate with MTS for normal working conditions and activities in progress and shall conduct the work in the least disruptive manner.

3. The Contractor shall at its own expense, wherever necessary or required, provide safety devices and take such other precautions as may be necessary to protect life and property of the Contractor and

MTS.

4. MTS shall require correction of defective work or damages to any part of the DS and VMS unit or its appurtenances when caused by the Contractor's employees, approved subcontractors, equipment or suppliers. The Contractor shall correct all defective work and repair damages incurred immediately. Failure of the Contractor to proceed promptly with the necessary corrections, may result in liquidated damages.

5. MTS may require the Contractor to dismiss from the work such employees as they deem incompetent, careless, insubordinate, or otherwise objectionable, or whose continued employment on the work is deemed to be contrary to the public interest or inconsistent with the best interest of security.

ATTACHMENT B
REVISED BID FORM

COST PROPOSAL FORM - DS AND VMS Maintenance and As-Needed Repair Services

Instructions: For Table I, please provide the Unit price for preventive maintenance for each type of equipment in the columns labeled "Unit Price". The Unit Price will be multiplied by the equipment quantity and then by the Annual Service Frequency to determine the Item Total. **Proposers may enter an alternative Annual Service Frequency based on their knowledge of each equipment type, locations, and site conditions.** For Table II, please enter the hourly rate for each type of as-needed labor, and equipment in the column labled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundreth) in the *% Mark Up* field for each year. The annual *As-Needed Materials/Parts* amount is the sum of Items 1 and 2 for each year. For Table IV, please enter the hourly rate for the cost of floater equipment. The *Grand Total* is the sum of the *Subtotals* for Tables I, II & III . This table contains formulas that will automatically calculate your pricing.

Table I:DS & VMS PREVENTIVE MAINTENANCE SERVICES						Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22	Year Three	12/15/22 - 12/14/23	Year Four	12/15/23 - 12/14/24	Year Five	12/15/24 - 12/14/25	Optional Year One	12/15/25 - 12/14/26	Optional Year Two	12/15/26 - 12/14/27
Group	Item	Make	Model	Qty	Annual Service Frequency	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
Trolley	1	Daktronics	PD 192x40x7.62 UBA DS	118	1	$ 117.00	$ 13,806.00	$ 121.68	$ 14,358.24	$ 126.55	$ 14,932.57	$ 131.61	$ 15,529.87	$ 136.87	$ 16,151.07	$ 142.35	$ 16,797.11	$ 148.04	$ 17,468.99
	2	Daktronics	AF-6700-40-192-8-a-DF	8	1	$ 117.00	$ 936.00	$ 121.68	$ 973.44	$ 126.55	$ 1,012.38	$ 131.61	$ 1,052.87	$ 136.87	$ 1,094.99	$ 142.35	$ 1,138.79	$ 148.04	$ 1,184.34
	3	Daktronics	PD 192x40x7.62 UBA SS	23	1	$ 117.00	$ 2,691.00	$ 121.68	$ 2,798.64	$ 126.55	$ 2,910.59	$ 131.61	$ 3,027.01	$ 136.87	$ 3,148.09	$ 142.35	$ 3,274.01	$ 148.04	$ 3,404.97
	4	Daktronics	PD 192x40x7.62 DS UBS	64	1	$ 117.00	$ 7,488.00	$ 121.68	$ 7,787.52	$ 126.55	$ 8,099.02	$ 131.61	$ 8,422.98	$ 136.87	$ 8,759.90	$ 142.35	$ 9,110.30	$ 148.04	$ 9,474.71
	5	Daktronics	PD 192x40x7.62 SMT/A D/S	21	1	$ 117.00	$ 2,457.00	$ 121.68	$ 2,555.28	$ 126.55	$ 2,657.49	$ 131.61	$ 2,763.79	$ 136.87	$ 2,874.34	$ 142.35	$ 2,989.32	$ 148.04	$ 3,108.89
	6	NANOV	NBSDM-460LC-125-SAN[1]	47	4			$ 231.92	$ 32,700.72										
BRT	7	Daktronics	AF-6300-32X48-8-A-DF	24	1	$ 117.00	$ 2,808.00	$ 121.68	$ 2,920.32	$ 126.55	$ 3,037.13	$ 131.61	$ 3,158.62	$ 136.87	$ 3,284.96	$ 142.35	$ 3,416.36	$ 148.04	$ 3,553.02
	8	Samsung	Samsung LH460MD (Pylon)	22	4	$ 273.00	$ 24,024.00	$ 283.92	$ 24,984.96	$ 295.28	$ 25,984.36	$ 307.09	$ 27,023.73	$ 319.37	$ 28,104.68	$ 332.15	$ 29,228.87	$ 345.43	$ 30,398.02
	9	Keyser	BRT47 47" DISPLAY	9	4	$ 223.00	$ 8,028.00	$ 231.92	$ 8,349.12	$ 241.20	$ 8,683.08	$ 250.84	$ 9,030.41	$ 260.88	$ 9,391.62	$ 271.31	$ 9,767.29	$ 282.17	$ 10,157.98
	10	Daktronics	PD 128x40x05 UBA[2]	35	1	$ 161.00	$ 5,313.00	$ 167.44	$ 5,525.52	$ 174.14	$ 6,094.82	$ 181.10	$ 6,338.61	$ 188.35	$ 6,592.15	$ 195.88	$ 6,855.84	$ 203.72	$ 7,130.07
	11	NANOV	NISDM-460LH-SAN	28	4	$ 223.00	$ 24,976.00	$ 231.92	$ 25,975.04	$ 241.20	$ 27,014.04	$ 250.84	$ 28,094.60	$ 260.88	$ 29,218.39	$ 271.31	$ 30,387.12	$ 282.17	$ 31,602.61
					Table I Subtotals		$ 92,527.00		$ 128,928.80		$ 100,425.48		$ 104,442.50		$ 108,620.20		$ 112,965.01		$ 117,483.61
				118	399														

Table II: AS-NEEDED LABOR & EQUIPMENT			Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22	Year Three	12/15/22 - 12/14/23	Year Four	12/15/23 - 12/14/24	Year Five	12/15/24 - 12/14/25	Optional Year One	12/15/25 - 12/14/26	Optional Year Two	12/15/26 - 12/14/27
Item	Description	Est. Qty/Annual No. of Hours	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
1	Single Person Crew - Straight Time Hourly Rate	120	$ 108.00	$ 12,960.00	$ 112.32	$ 13,478.40	$ 116.81	$ 14,017.54	$ 121.49	$ 14,578.24	$ 126.34	$ 15,161.37	$ 131.40	$ 15,767.82	$ 136.65	$ 16,398.53
2	Single Person Crew - Outside of MTS Normal Business Hours	20	$ 124.00	$ 2,480.00	$ 128.96	$ 2,579.20	$ 134.12	$ 2,682.37	$ 139.48	$ 2,789.66	$ 145.06	$ 2,901.25	$ 150.86	$ 3,017.30	$ 156.90	$ 3,137.99
3	Two Person Crew - Straight Time Hourly Rate	40	$ 184.00	$ 7,360.00	$ 191.36	$ 7,654.40	$ 199.01	$ 7,960.58	$ 206.97	$ 8,279.00	$ 215.25	$ 8,610.16	$ 223.86	$ 8,954.57	$ 232.82	$ 9,312.75
4	Two Person Crew - Outside of MTS Normal Business Hours	20	$ 208.00	$ 4,160.00	$ 216.32	$ 4,326.40	$ 224.97	$ 4,499.46	$ 233.97	$ 4,679.43	$ 243.33	$ 4,866.61	$ 253.06	$ 5,061.28	$ 263.19	$ 5,263.73
5	Scissor Lift - Hourly Rate	10	$ 160.00	$ 1,600.00	$ 166.40	$ 1,664.00	$ 173.06	$ 1,730.56	$ 179.98	$ 1,799.78	$ 187.18	$ 1,871.77	$ 194.66	$ 1,946.64	$ 202.45	$ 2,024.51
		Table II Subtotals:		$ 28,560.00		$ 29,702.40		$ 30,890.50		$ 32,126.12		$ 33,411.16		$ 34,747.61		$ 36,137.51

Table III: AS-NEEDED REPLACEMENT PARTS		Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22	Year Three	12/15/22 - 12/14/23	Year Four	12/15/23 - 12/14/24	Year Five	12/15/24 - 12/14/25	Optional Year One	12/15/25 - 12/14/26	Optional Year Two	12/15/26 - 12/14/27
Item	Description	% Mark Up	Item Total	% Mark Up	Item Total	% Mark Up	Item Total	% Mark Up	Item Total	% Mark Up	Item Total	% Mark Up	Item Total	% Mark Up	Item Total
1	Annual Materials/Parts Allowance	18%	$ 25,000.00	18%	$ 25,000.00	18%	$ 25,000.00	18%	$ 25,000.00	18%	$ 25,000.00	18%	$ 25,000.00	18%	$ 25,000.00
2	Materials markup		$ 4,500.00		$ 4,500.00		$ 4,500.00		$ 4,500.00		$ 4,500.00		$ 4,500.00		$ 4,500.00
	Table III Subtotals:		$ 29,500.00		$ 29,500.00		$ 29,500.00		$ 29,500.00		$ 29,500.00		$ 29,500.00		$ 29,500.00

Total Base Years	$ 837,134.15
Total Option Years	$ 360,333.73
Grand Total	$ 1,197,467.87

[1] Added 47 NANOV units to the bid form. These items shall be serviced quarterly beginning April 1, 2022.

[2] Added 2 Daktronics units to the bid form. These items shall be serviced quarterly beginning March 1, 2023.

ATTACHMENT C
NANOV DISPLAY LCD SIGN MAINTENANCE

NANOV DISPLAY LCD Sign Maintenance Manual

Description: Manuals for firmware updates, filter replacements, cable checklist, and dust cleaning.

May 19, 2021

Prepared by: Compliance@nanovdisplay.com

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3. Cable Checklist.....9

4. Filter Replacement.....17

5. Firmware Updates.....23

Maintenance Cabling Checklist

LCD	Back light blinking (Frame Rate Control B/D primary)	Check Analog to Digital B/D set LED	Analog to Digital B/D	Analog to Digital B/D - Green	
				OFF	Analog to Digital Adapter power check - Green
			Frame Rate Control B/D	Green - Normal	
				OFF	Change B/D
		Check cable	Inverter Cable	Master cable	Two-pin controller check
				Slave cable	
			Low Voltage Differential System Cable	Flexible Flat Cable	
				Frame Rate Control cable	
				Analog to Digital B/D cable	
			HDMI Connection check		
	Back light OFF - Refer manual	Check cable (overload)	Inverter Cable	Master cable	Two-pin controller check
				Slave cable	
		Check power	Switched Mode Power Supply LED check - green	Check with testing device	
				Terminal connecting cable check (including terminal block)	
	LCD Screen Lining	Analog to Digital B/D set LED check	Analog to Digital B/D	Analog to Digital B/D - Green	
				OFF	Analog to Digital Adapter power
			Frame Rate Control B/D	Green - Normal	
				OFF	Change B/D
			Flat Flexible Cable B/D	Status check	
		Cable check	Inverter Cable	Master cable	Two-pin controller
				Slave cable	
			Low Voltage Differential System Cable	Flat Flexible Cable	
				Frame Rate Control cable	
				Analog to Digital B/D	
			HDMI Connection check		
	LCD OFF	Remote controller test	Input signal switching		
			Power ON OFF		
			Brightness control		
		Infared B/D color check	Green - input normal		
			Red - No input	HDMI cable check	
				PC check	Check with extra monitor and opposite monitor
			Yellow - No input		
			No color - Cable and B/D connection check		
		Analog to Digital B/D set LED check	Analog to Digital B/D	Analog to Digital B/D - Green	
				OFF	Analog to Digital adapter power check - Green
			Frame Rate Control B/D - Green		
		Check power	Switched Mode Power Supply LED check - green	Test power with testing device	
			RCB power board relay check - Green		
		Cable check	Inverter cable	Master cable	Two-pin controller check
				Slave cable	
			Low Voltage Differential System Cable	Flat Flexible cable	
				Frame Rate Control cable	
				Analog to Digital B/D cable	
			HDMI Connection check		

Controller (RCB)	Brightness	Light sensor check	Sensor B/D connection check	
			Server setting check	
	FAN Control	Temperature sensor check	Server setting check	
			Connection cable check	
		RCB power B/D relay status check	Switched Mode Power Supply check	
			Power connecting cable wiring check (RCB power - DC12V)	
		Check FAN extension B/D wiring		
	Temperature sensor	Temperature sensor check	Server setting check	
			Connection cable check	
	Pixel sensor	Sensor check	Connection cable check	
			Pixel sensor attached location check	
	Door sensor	Door switch check	Connection cable check	
	RCB power B/D power control	Relay status check	ON	Main power AC input cable connection check
			OFF	RCB main adapter power check
				Cable check
	SUB power B/D power control	Relay status check	ON	Main power AC input cable connection check
			OFF	RCB main adapter power check
				Check cable
	LED controller	Power cable check		
		Communication cable check		
		Server's control status check		
	Analog to Digital B/D observation control	RS232 B/D connection check		
		Analog to Digital B/D cable connection check		
		Main RCB UPT cable connection check		
	ON-LINE connecting	Main RCB UPT cable		
		Check HUB	Connection check	
			Power adapter connection check	
		Check LTE router		
		MAC address check		
		IP collision check (double side)		

NANOV DISPLAY DUST CLEANING

AUGUST 05, 2020

NBSDM-460LC-125-SAN

46" OUTDOOR DOUBLE-SIDED VMS LCD SIGNS
SAN DIEGO MTS MODEL

Dust Cleaning Manual

CLEANING AND MANAGEMENT METHODS

1. Filter Exchange
    a. Prefilter
        i. Replace every 3 to 4 months (Dependent on location)
    b. Hepa filter
        i. Replace the Hepa filter every 6 months

2. External cleaning
    a. Cleaning methods and precautions
        i. After washing the water, wipe with a dry towel.

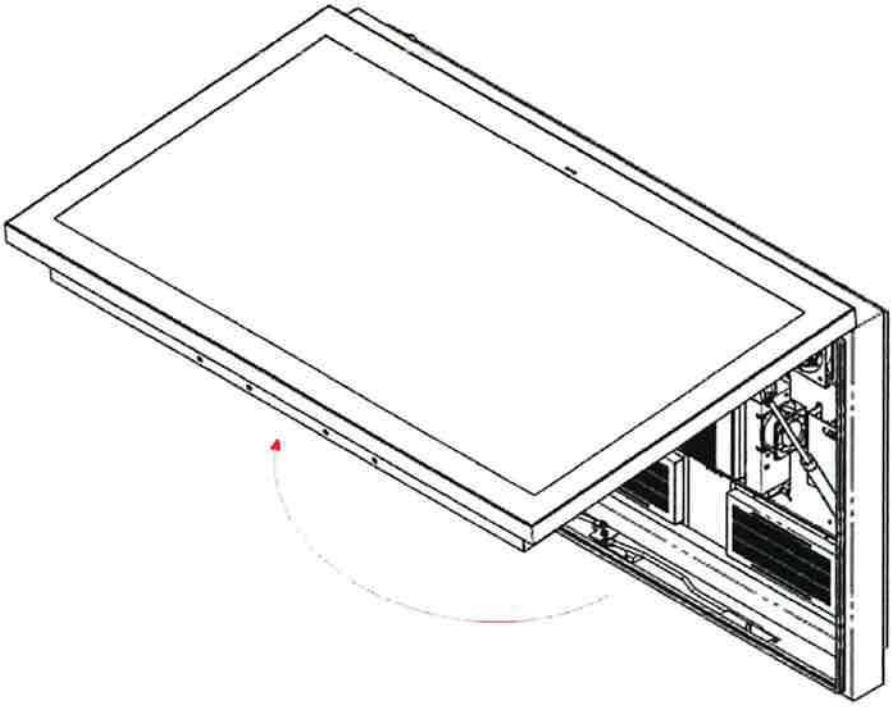
3. Interior cleaning
    a. Clean the inside with an air gun.

PRECAUTIONS FOR CLEANING

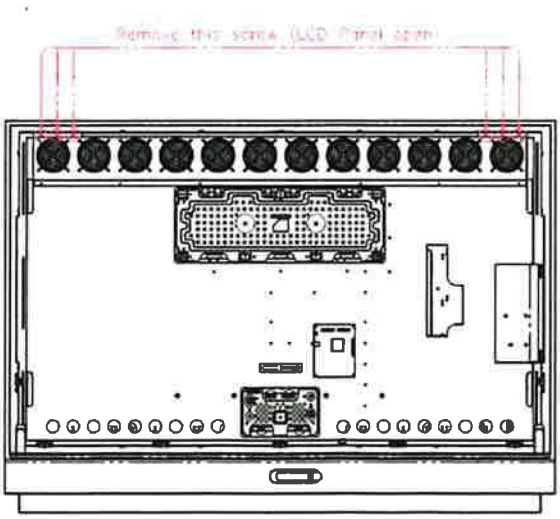
- Do NOT Use an Iron Brush
- NO high-pressure water injection

STEPS

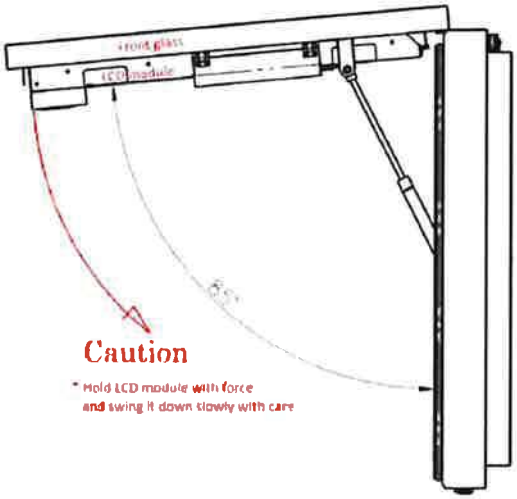
1. Open the front door.

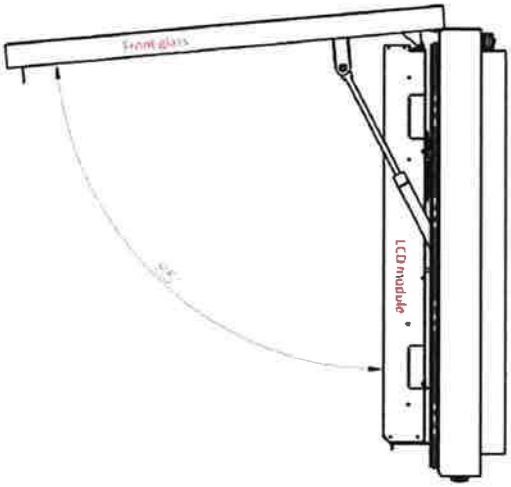


2. Remove screws.

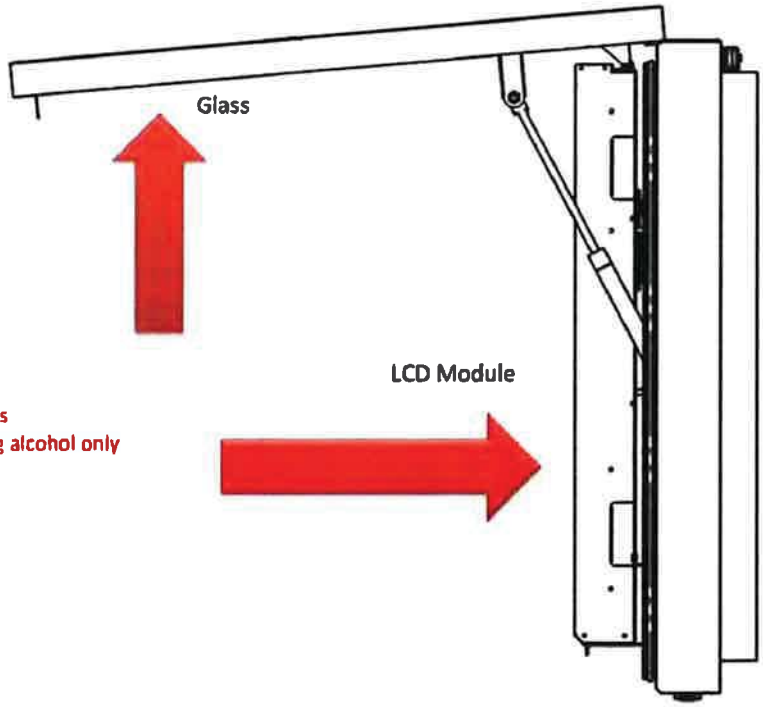


3. Separate LCD module from the front glass.





4. Clean.



* Clean LCD module and glass
with soft cloth and cleaning alcohol only

NANOV DISPLAY CABLE CHECKLIST

AUGUST 05, 2020

NBSDM-460LC

46" OUTDOOR DOUBLE-SIDED VMS LCD SIGNS
SAN DIEGO MTS MODEL

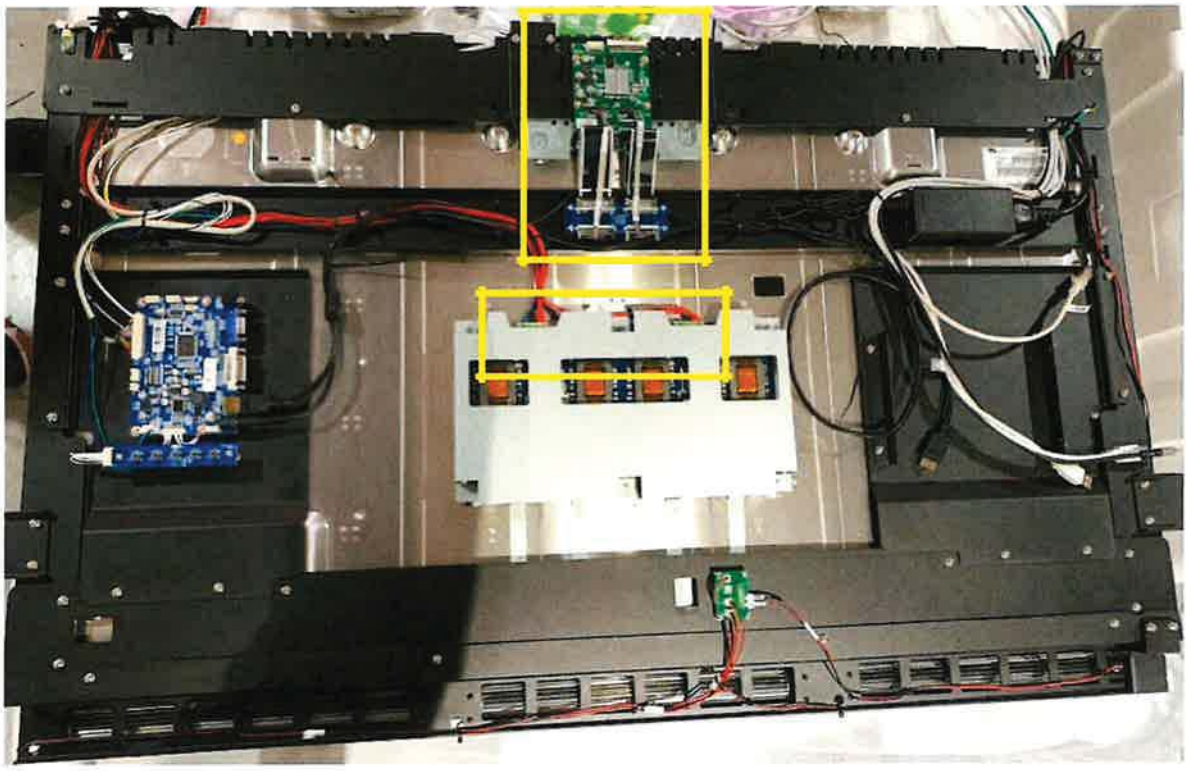
Cabling Check List AD Boards to LCD Panel

TABLE OF CONTENTS

1. Cable and Ribbon Connections
   a. FRC Board
   b. LCD Power
2. Checking the Power Status Indicators
   a. AD Board Power
   b. FRC Board Power
   c. SMPS Power
   d. RCB Power Board

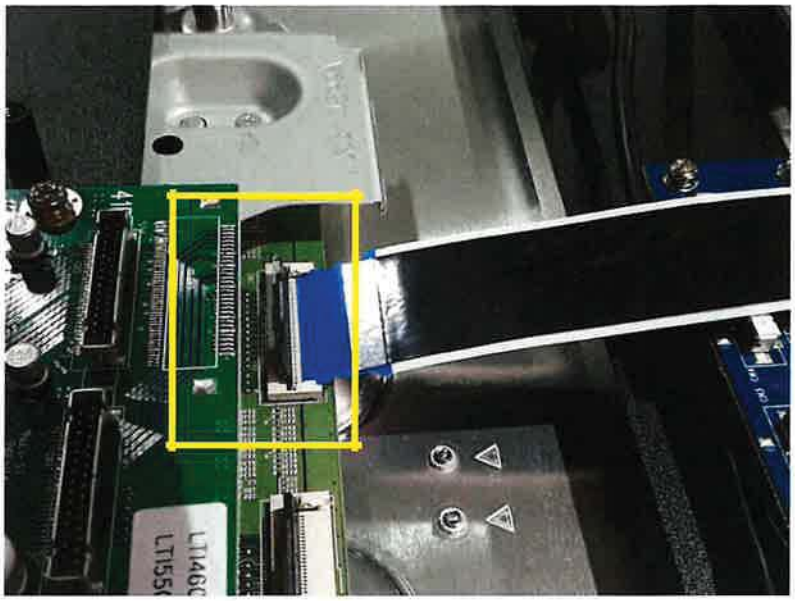
CABLE AND RIBBON CONNECTIONS

1. Locate the FRC board as well as the LCD power cables as shown in the image below.
2. Verify that all cables are correctly and securely fastened.

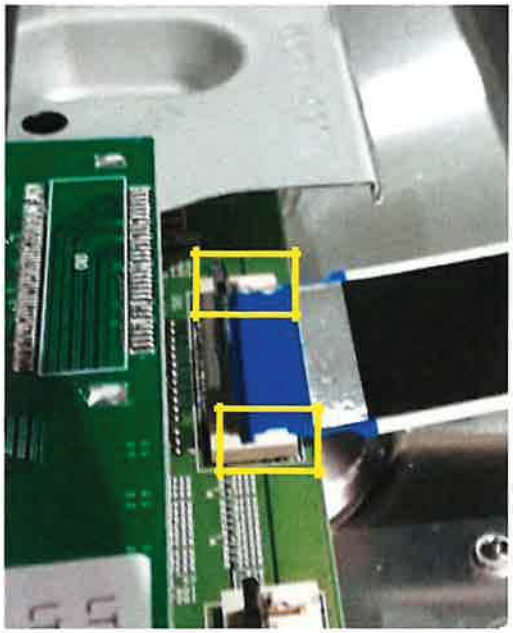


FRC BOARD

1. Locate the Ribbons connected to the FRC board and verify that they are properly connected.
2. Lift the cover holding the ribbon in place.

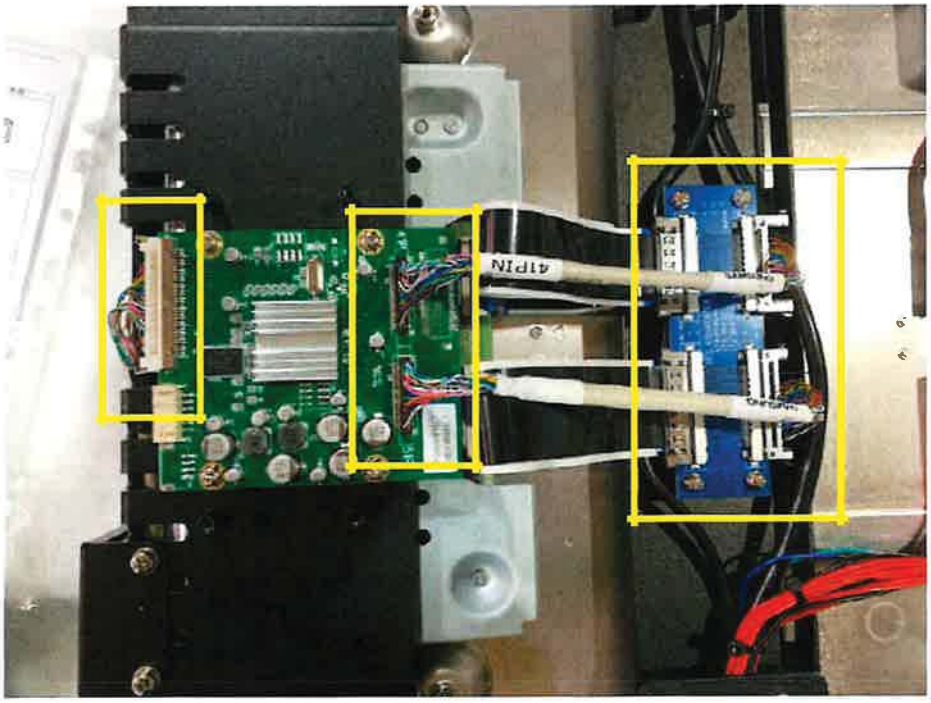


3. Verify that the ribbon is placed all the way in and properly into the slots.



4. Close the cover to secure the ribbon in place.

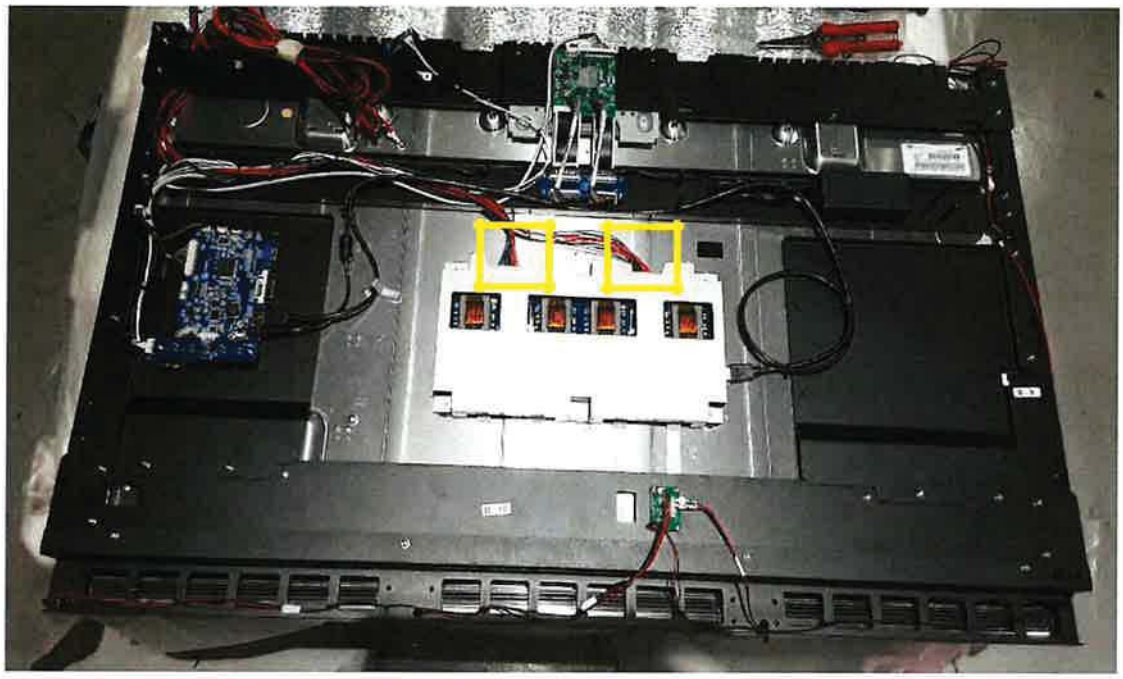
5. Be sure to verify that all other cables connected to the FRC Board are not loose.



LCD POWER

1. One of these connections may have become loose resulting in the LCD panel not receiving any power.

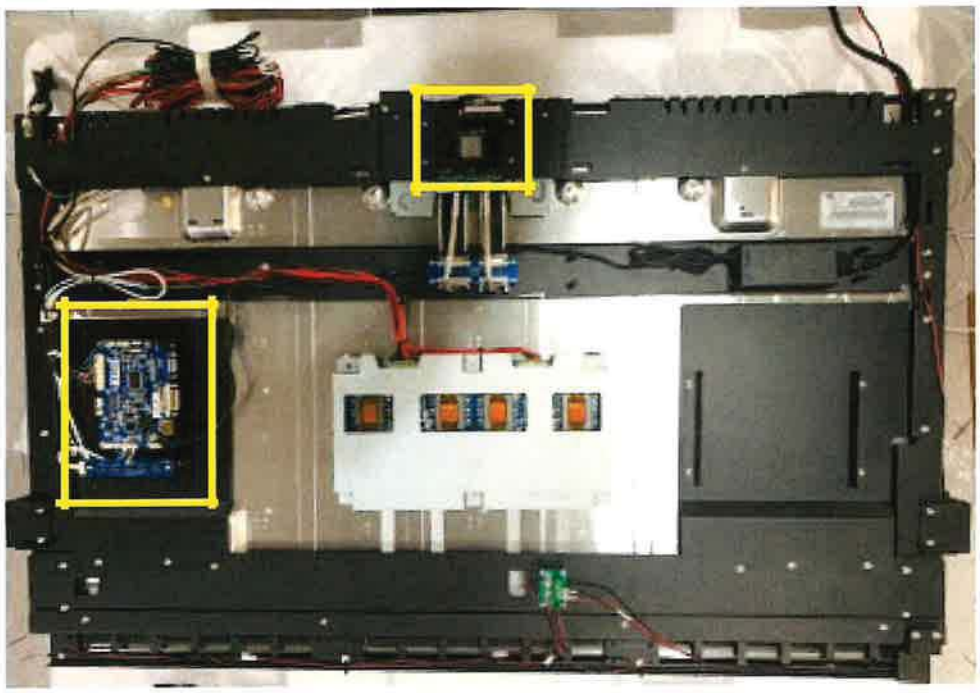
2. Locate the power supply cables for the LCD panel Below the FRC board



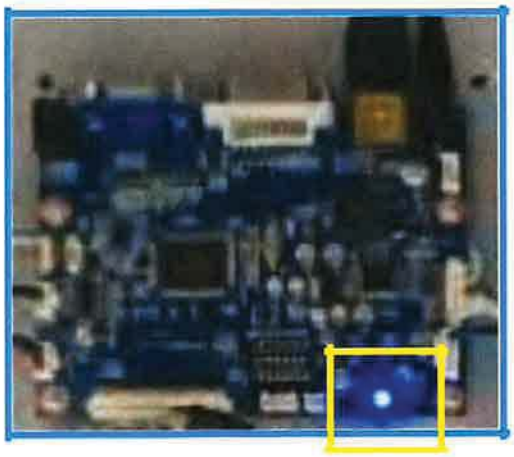
3. Make sure that both cables are secure, you may want to try disconnecting and reconnecting the cables.

CHECKING THE POWER STATUS INDICATORS

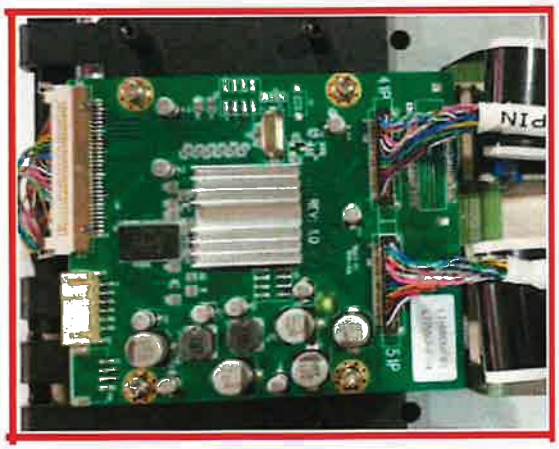
1. After checking the cables. Power on the unit and verify the following LED indicators are on.



AD BOARD POWER

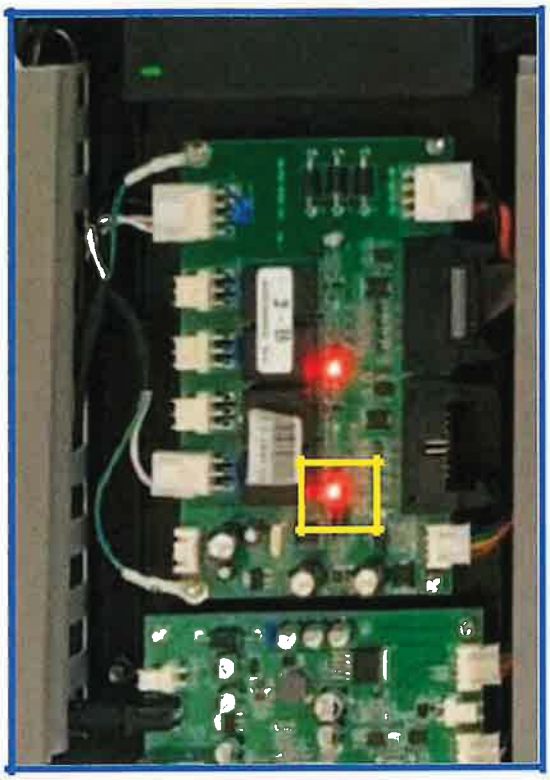


FRC BOARD POWER



SMPS POWER

RCB POWER BOARD



NANOV DISPLAY
FILTER REPLACEMENT

AUGUST 05, 2020

NISDM-460LC-125-SAN

46" OUTDOOR DOUBLE-SIDED VMS LCD SIGNS
SAN DIEGO MTS MODEL

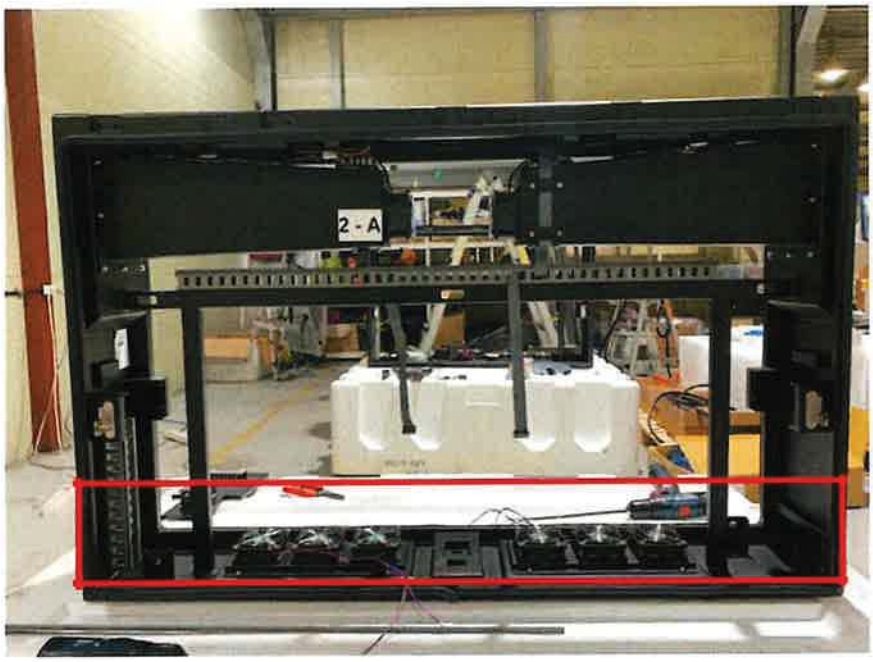
Filter Replacement Manual

TABLE OF CONTENTS

1. Disassembly process
2. Filter removal method
3. Filter replacement method
4. Reassembly process

DEASSEMBLY PROCESS

1. Remove bolts.



SEMS (N) M4-10L

(N) : Nickel
(S) : SUS

FILTER REMOVAL

1. Remove the fan bracket and Hepa filter.

2. Remove the pre-filter

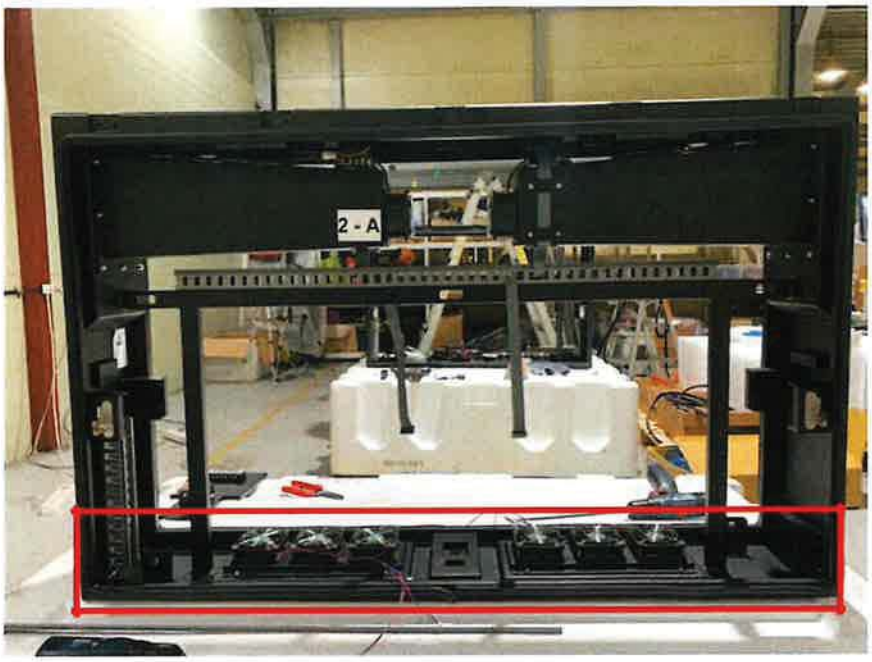
FILTER REPLACEMENT METHOD

1. Install the prefilter.

2. Install the HEPA filter.

REASSEMBLY PROCESS

1. Check the direction of the fans.
2. Install the fan bracket by Screw bolts.



SEMS (N) M4-10L

(N) : Nickel
(S) : SUS

NANOV DISPLAY FIRMWARE UPDATES

AUGUST 05, 2020

NBSDM-460LC-125-SAN

46" OUTDOOR DOUBLE-SIDED VMS LCD SIGNS
SAN DIEGO MTS MODEL

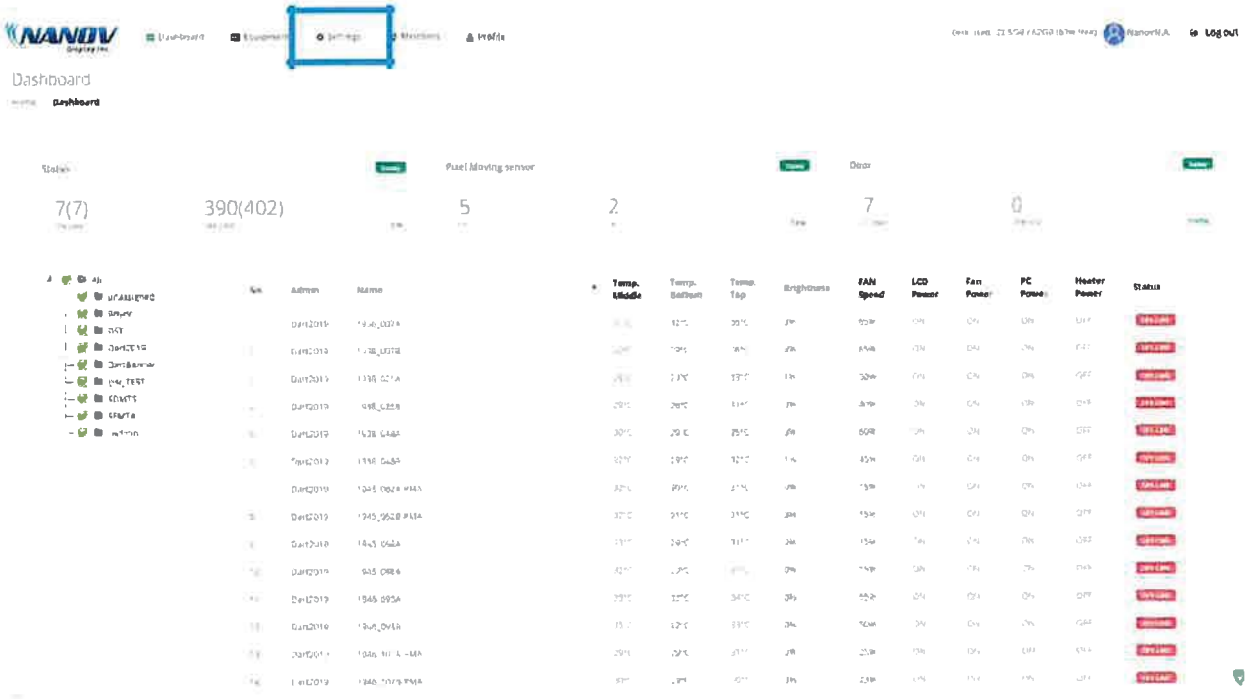
Firmware Update Manual

TABLE OF CONTENTS

1. Server Login
2. Firmware Selection
3. Product Selection
4. How to Activate Updates
5. After Firmware Update Success
6. Firmware Selection Cable and Ribbon Connections

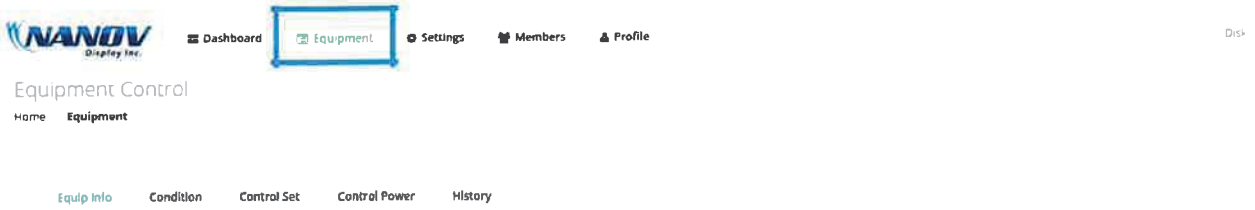
SERVER

1. Log in to the server. http://amazong3.nanov.info
2. Click SETTINGS at the top.

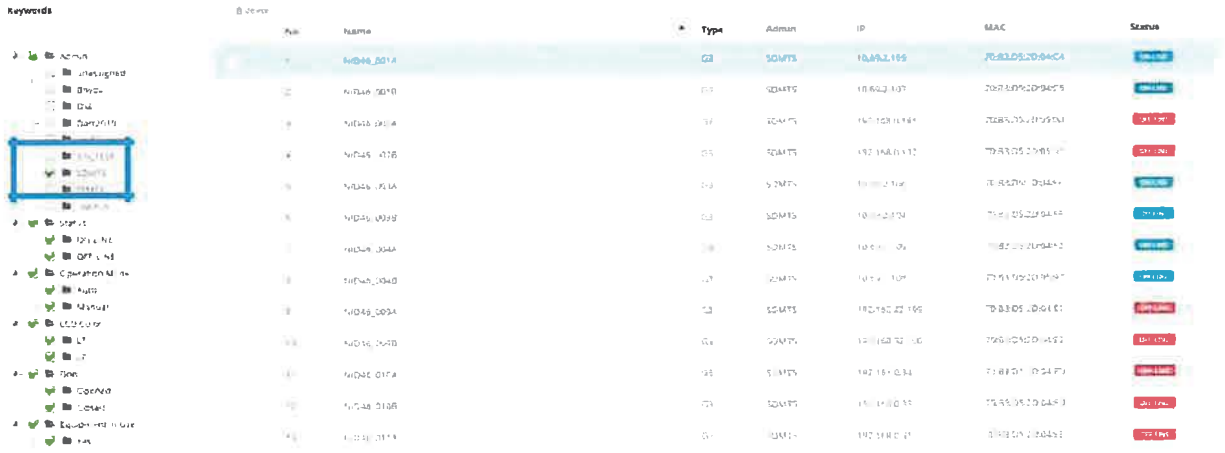


3. Activate the firmware to be installed by clicking on the button.

4. Go to the EQUIPMENT page from the top menu bar..

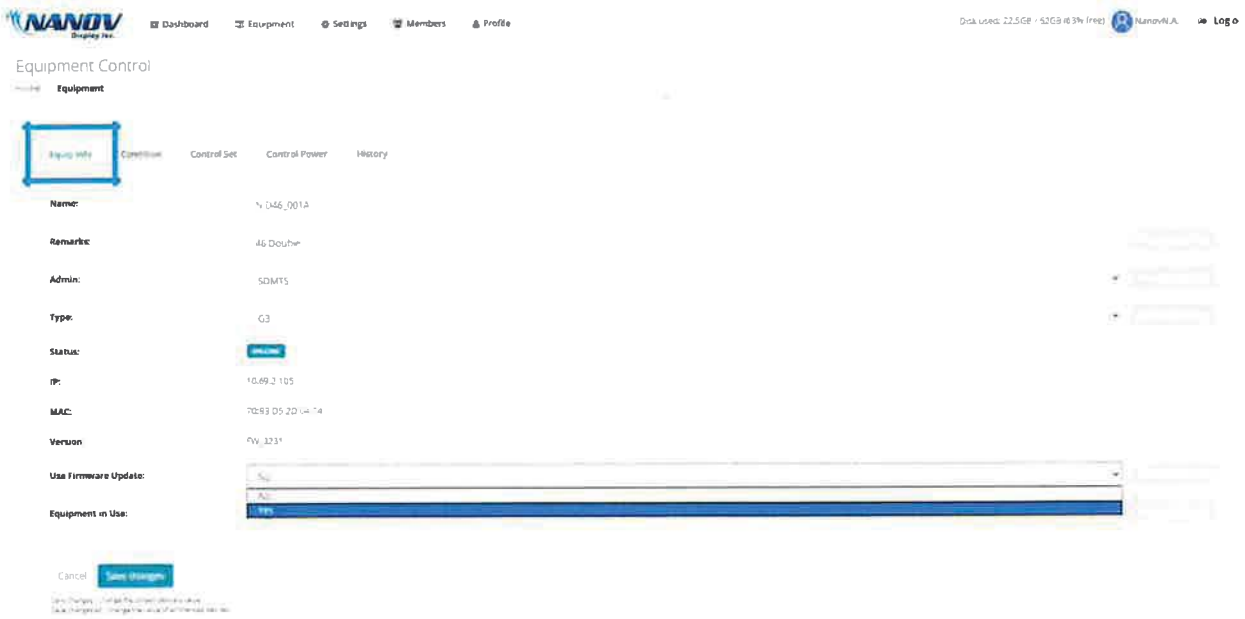


5. Select an administrator. (choose one manager at a time)



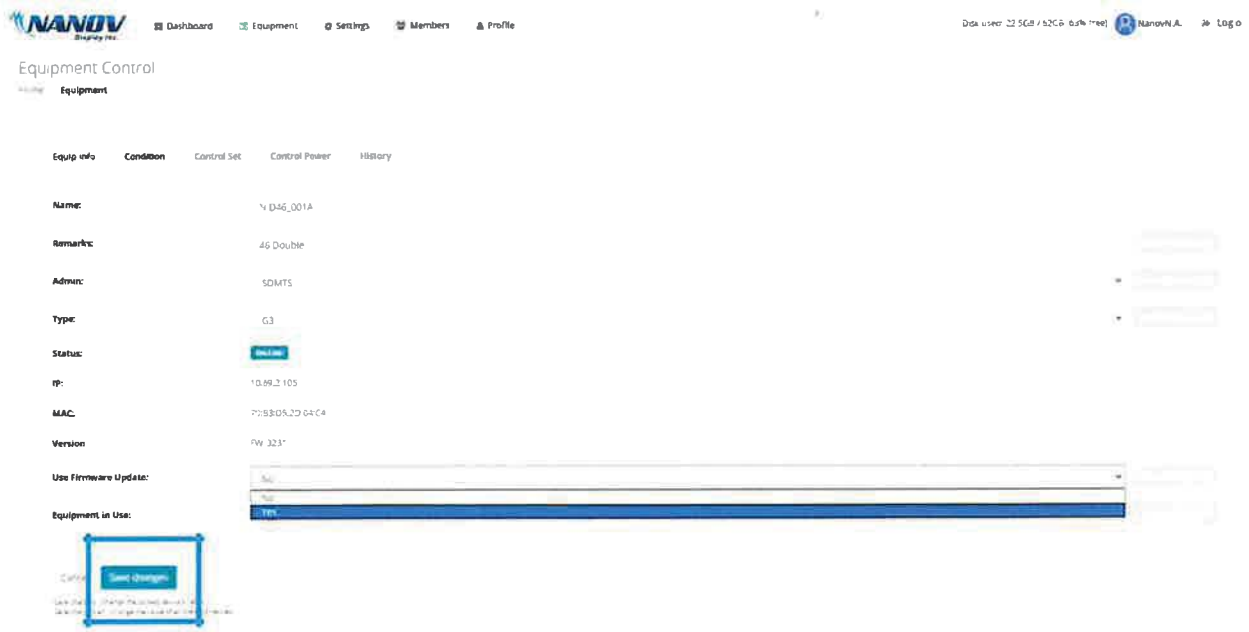
6. Select products to install. (online access required)

5. Click on EQUIPMENT INFORMATION



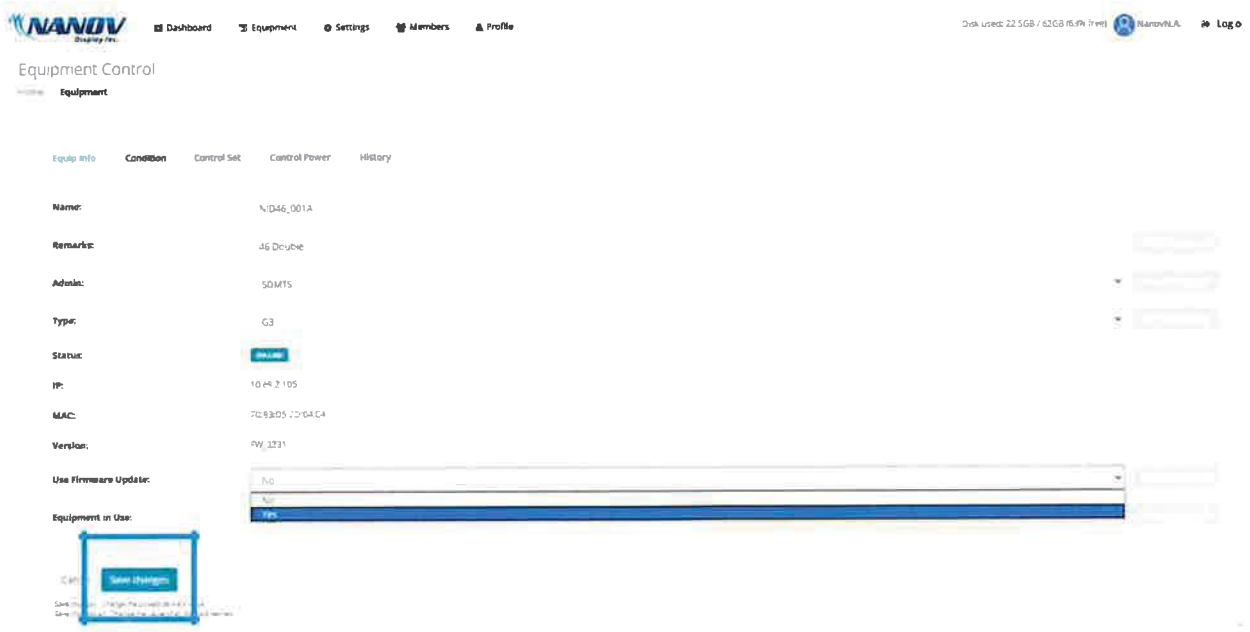
6. Activate firmware update to "YES".

7. Save the changes by clicking SAVE CHANGES.

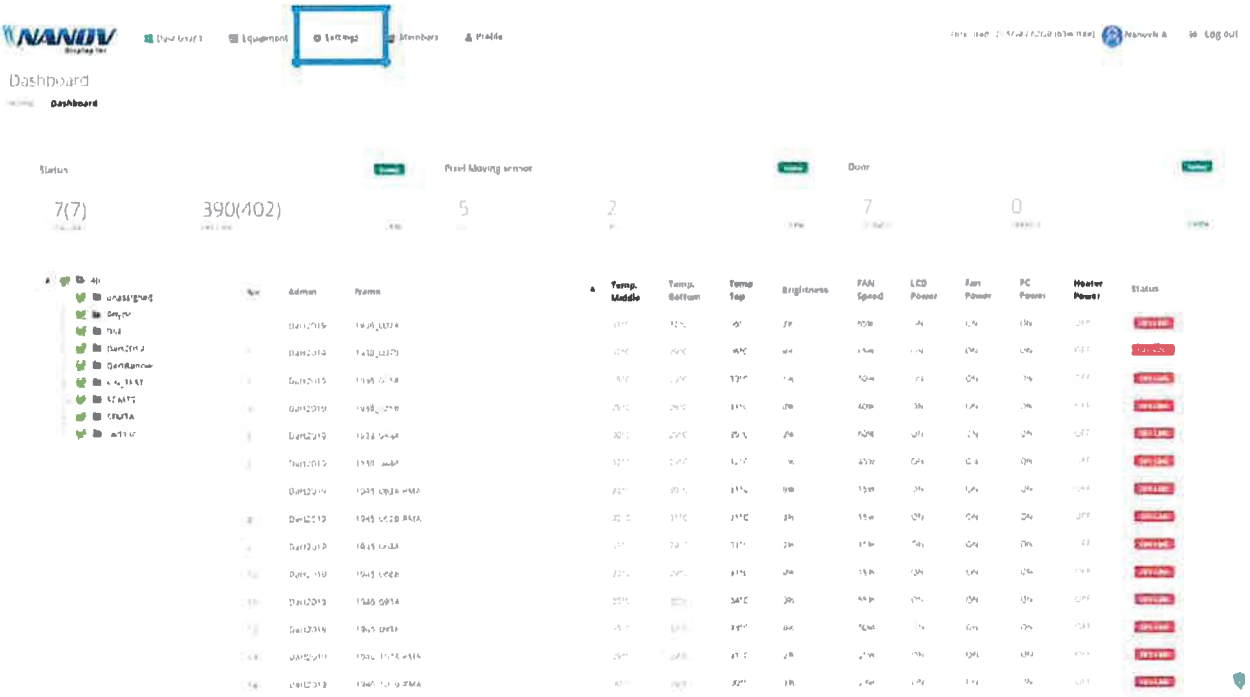


8. Firmware will be installed within 5 to 10 minutes.
9. Refresh your browser and return to the same page.
10. Check to see if the firmware has been updated. If so, disable firmware update by selecting "NO"

11. Save the changes by clicking SAVE CHANGES.



12. Click SETTINGS at the top.



5. Disable completed firmware.

ATTACHMENT D
REVISED SERVICE SCHEDULE

DS & VMS Service Schedule

#	Station/Name	Stop	Description	Location	Route	Type	Dimension	Model	Service Intervals Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Notes
1	Otay Mesa Transit Center	OMTC-1	Otay Mesa Transit Center	TC-Bus	225 (non BRT 905/ 909/950)	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
2	Otay Mesa Transit Center	OMTC-2	Otay Mesa Transit Center	TC-Bus	225 (non BRT 905/ 909/950)	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
3	Otay Mesa Transit Center	OMTC-3	Otay Mesa Transit Center	TC-Bus	225 (non BRT 905/ 909/950)	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
4	Otay Mesa Transit Center	OMTC-3	Otay Mesa Transit Center	TC-Bus	225 (non BRT 905/ 909/950)	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
5	Millenia Station	88959-1	Millenia Station	E/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
6	Millenia Station	88959-2	Millenia Station	E/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
7	Otay Ranch Station	88957-1	Otay Ranch Station	N/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
8	Otay Ranch Station	88957-2	Otay Ranch Station	N/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
9	Santa Venetia Station	88955-1	Santa Venetia Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
10	Santa Venetia Station	88955-2	Santa Venetia Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
11	Lomas Verdes Station	88953-1	Lomas Verdes Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
12	Lomas Verdes Station	88953-2	Lomas Verdes Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
13	Heritage Station	88951-1	Heritage Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
14	Heritage Station	88951-2	Heritage Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
15	East Palomar Station	90515-1	East Palomar Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
16	East Palomar Station	90515-2	East Palomar Station	W/B	225 NB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
17	East Palomar Station	90514-1	East Palomar Station	E/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
18	Heritage Station	88950-1	Heritage Station	E/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
19	Heritage Station	88950-2	Heritage Station	E/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
20	Lomas Verdes Station	88952-1	Lomas Verdes Station	E/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
21	Lomas Verdes Station	88952-2	Lomas Verdes Station	E/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
22	Santa Venetia Station	88954-1	Santa Venetia Station	E/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
23	Santa Venetia Station	88954-2	Santa Venetia Station	E/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
24	Otay Ranch Station	88956-1	Otay Ranch Station	S/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
25	Otay Ranch Station	88956-2	Otay Ranch Station	S/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
26	Millenia Station	88958-1	Millenia Station	W/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
27	Millenia Station	88958-2	Millenia Station	W/B	225 SB	NANOV	47.24x30.12x12.04	NISDM-460LH-SAN		1			1			1			1		
28	San-Ysidro-WB1	75000-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS						1							
29	San-Ysidro-WB2	75000-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS						1							
30	San-Ysidro-WB3	75000-3	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS						1							
31	San-Ysidro-WB4	75000-4	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS						1							
32	Beyer-Blvd-EB1	75003-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
33	Beyer-Blvd-EB2	75003-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
34	Beyer-Blvd-WB1	75002-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
35	Beyer-Blvd-WB2	75002-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
36	Iris-Avenue-EB1	75005-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
37	Iris-Avenue-EB2	75005-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
38	Iris-Avenue-WB1	75004-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
39	Iris-Avenue-WB2	75004-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
40	Palm-Avenue-EB1	75007-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
41	Palm-Avenue-EB2	75007-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
42	Palm-Avenue-WB1	75006-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
43	Palm-Avenue-WB2	75006-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
44	Palomar-Street-EB1	75009-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
45	Palomar-Street-EB2	75009-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
46	Palomar-Street-WB1	75008-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
47	Palomar-Street-WB2	75008-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
48	H-Street-EB1	75011-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
49	H-Street-EB2	75011-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
50	H-Street-WB1	75010-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
51	H-Street-WB2	75010-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
52	E-Street-EB1	75013-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
53	E-Street-EB2	75013-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
54	E-Street-WB1	75012-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
55	E-Street-WB2	75012-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
56	24th-Street-EB1	75015-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
57	24th-Street-EB2	75015-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
58	24th-Street-WB1	75014-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
59	24th-Street-WB2	75014-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
60	8th-Street-EB1	75017-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
61	8th-Street-EB2	75017-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
62	8th-Street-WB1	75016-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
63	8th-Street-WB2	75016-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
64	Pacific-Fleet-EB1	75107-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
65	Pacific-Fleet-EB2	75107-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
66	Pacific-Fleet-WB1	75106-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
67	Pacific-Fleet-WB2	75106-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
68	Harborside-EB1	75105-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
69	Harborside-EB2	75105-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
70	Harborside-WB1	75104-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
71	Harborside-WB2	75104-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
72	Barrio-Logan-EB1	75019-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
73	Barrio-Logan-EB2	75019-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
74	Barrio-Logan-WB1	75018-1	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
75	Barrio-Logan-WB2	75018-2	Blue Line	SouthLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS						1							
76	12th-Imperial-EB1	75103-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
77	12th-Imperial-EB2	75103-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
78	12th-Imperial-EB3	75103-3	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
79	12th-Imperial-EB4	75103-4	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
80	12th-Imperial-WB1	75102-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
81	12th-Imperial-WB2	75102-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
82	12th-Imperial-WB3	75102-3	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
83	12th-Imperial-WB4	75102-4	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
84	Mills-Building-INFO (Parking)	IMT-1	Green Line	IMT_INFO	1	Daktronics	192x40	AF-6700-40-192-8-a-DF			1										
85	Imperial-Terminal-EB1	75100-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS			1										
86	Imperial-Terminal-EB2	75100-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS			1										
87	Imperial-Terminal-EB3	75100-3	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS			1										
88	Park-Market-EB1	75093-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
89	Park-Market-EB2	75093-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
90	Park-Market-WB1	75092-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
91	Park-Market-WB2	75092-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
92	City-College-EB1	75091-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S			1										
93	City-College-EB2	75091-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S			1										
94	City-College-WB1	75090-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
95	City-College-WB2	75090-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S			1										
96	Fifth-Avenue-EB1	75089-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
97	Fifth-Avenue-EB2	75089-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
98	Fifth-Avenue-WB1	75088-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
99	Fifth-Avenue-WB2	75088-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS			1										
100	Civic-Center-EB1	75086-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
101	Civic-Center-EB2	75086-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
102	Civic-Center-WB1	75087-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
103	Civic-Center-WB2	75087-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
104	Courthouse-EB1	75109-1	Orange Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
105	Courthouse-EB2	75109-2	Orange Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
106	America-Plaza-INFO	75084-3	Blue Line	AMP_INFO	1	Daktronics	192x40	AF-6700-40-192-8-a-DF			1										
107	America-Plaza-EB1	75084-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
108	America-Plaza-EB2	75084-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
109	America-Plaza-WB1	75085-1	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
110	America-Plaza-WB2	75085-2	Blue Line	Downtown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS			1										
111	SantaFe-Depot-INFO1	SFD-1	Green Line	SFD_INFO	1	Daktronics	192x40x7.62	AF-6700-40-192-8-a-DF			1										
112	SantaFe-Depot-INFO2	SFD-2	Green Line	SFD_INFO	1	Daktronics	192x40x7.62	AF-6700-40-192-8-a-DF			1										
113	Gaslamp-Quarter-EB1	75098-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
114	Gaslamp-Quarter-EB2	75098-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
115	Gaslamp-Quarter-WB1	75099-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
116	Gaslamp-Quarter-WB2	75099-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
117	Convention-Center-EB1	75096-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
118	Convention-Center-EB2	75096-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				OK - (A SIDE Active - B SIDE Blank)
119	Convention-Center-WB1	75097-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
120	Convention-Center-WB2	75097-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
121	Seaport-Village-EB1	75095-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
122	Seaport-Village-EB2	75095-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
123	Seaport-Village-WB1	75094-1	Green Line	Bayside	1	Daktronics	192x40	AF-6700-40-192-8-a-DF									1				
124	Seaport-Village-WB2	75094-2	Green Line	Bayside	1	Daktronics	192x40	AF-6700-40-192-8-a-DF									1				
125	Santa-Fe-Depot-EB1	75083-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
126	Santa-Fe-Depot-EB2	75083-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
127	Santa-Fe-Depot-WB1	75082-1	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
128	Santa-Fe-Depot-WB2	75082-2	Green Line	Bayside	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
129	Little-Italy-EB1	75080-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
130	Little-Italy-EB2	75080-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
131	Little-Italy-WB1	75081-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
132	Little-Italy-WB2	75081-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S									1				
133	Middletown-EB1	75078-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
134	Middletown-EB2	75078-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
135	Middletown-WB1	75079-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
136	Middletown-WB2	75079-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
137	Washington-Street-EB1	75076-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
138	Washington-Street-EB2	75076-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
139	Washington-Street-WB1	75077-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				

DS & VMS Service Schedule

#	Station/Name	Stop	Description	Location	Route	Type	Dimension	Model	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Notes
									Service Intervals												
140	Washington-Street-WB2	75077-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
141	Old-Town-EB1	75042-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS							1						
142	Old-Town-EB2	75042-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS							1						
143	Old-Town-WB1	75043-1	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS							1						
144	Old-Town-WB2	75043-2	Green Line	OldTown	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS							1						
145	Old Town West-S1		Blue Line	OldTown	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
146	Old Town West-S2		Blue Line	OldTown	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
147	Old Town West-S3		Blue Line	OldTown	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
148	Tecolote-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
149	Tecolote-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
150	Tecolote-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
151	Tecolote-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
152	Tecolote-PL1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
153	Tecolote-PL2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
154	Tecolote-PL3		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
155	Clairemont-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
156	Clairemont-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
157	Clairemont-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
158	Clairemont-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
159	Balboa-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
160	Balboa-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
161	Balboa-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
162	Balboa-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
163	Balboa-PL1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
164	Balboa-PL2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
165	Nobel-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
166	Nobel-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
167	Nobel-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
168	Nobel-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
169	VA-Medical-Center-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
170	VA-Medical-Center-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
171	VA-Medical-Center-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
172	VA-Medical-Center-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
173	UCSD-Central-Campus-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
174	UCSD-Central-Campus-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
175	UCSD-Central-Campus-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
176	UCSD-Central-Campus-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
177	UCSD-Central-Campus-PL1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
178	UCSD-Health-LaJolla-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
179	UCSD-Health-LaJolla-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
180	UCSD-Health-LaJolla-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
181	UCSD-Health-LaJolla-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
182	UCSD-Health-LaJolla-PL1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
183	UCSD-Health-LaJolla-PL2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
184	UCSD-Health-LaJolla-PL3		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
185	Executive-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
186	Executive-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
187	Executive-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
188	Executive-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
189	UTC-EB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
190	UTC-EB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
191	UTC-WB1		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
192	UTC-WB2		Blue Line	BlueLineNorth	1	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
193	UTC-PL1		Blue Line	BlueLineNorth	2	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN	1			1			1			1			
194	UTC Transit Center	UTC-1	UTC Transit Center	M-TC-Bus	201/202/204	Pylon	23x40	Samsung LH460MD	1			1			1			1			Single-Sided
195	UTC Transit Center	UTC-2	UTC Transit Center	M-TC-Bus	201/202/204	Pylon	23x40	Samsung LH460MD	1			1			1			1			Single-Sided
196	UTC Transit Center	UTC-3	UTC Transit Center	M-TC-Bus	201/202/204	Pylon	23x40	Samsung LH460MD	1			1			1			1			Single-Sided
197	SS-TestSign (Emily's Office)	N/A	Green Line	TEST_SIGN	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS													
198	Santee-WB1	75020-1	Green Line	EastCounty	1	Daktronics	192x40	AF-6700-40-192-8-a-DF												1	
199	Santee-WB2	75020-2	Green Line	EastCounty	1	Daktronics	192x40	AF-6700-40-192-8-a-DF												1	
200	Gillespie-Field-EB1	75022-1	Green Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
201	Gillespie-Field-EB2	75022-2	Green Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
202	Gillespie-Field-WB1	75023-1	Green Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
203	Gillespie-Field-WB2	75023-2	Green Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
204	Arnele-Avenue-EB1	75024-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
205	Arnele-Avenue-EB2	75024-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
206	Arnele-Avenue-WB1	75025-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
207	Arnele-Avenue-WB2	75025-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
208	El-Cajon-EB1	75026-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
209	El-Cajon-EB2	75026-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
210	El-Cajon-WB1	75027-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
211	El-Cajon-WB2	75027-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
212	Amaya-Drive-EB1	75029-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
213	Amaya-Drive-EB2	75029-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
214	Amaya-Drive-WB1	75028-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
215	Amaya-Drive-WB2	75028-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
216	Grossmont-EB1	75030-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
217	Grossmont-EB2	75030-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
218	Grossmont-WB1	75031-1	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
219	Grossmont-WB2	75031-2	Orange Line	EastCounty	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
220	LaMesa-Boulevard-EB1	75034-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
221	LaMesa-Boulevard-EB2	75034-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
222	LaMesa-Boulevard-WB1	75035-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
223	LaMesa-Boulevard-WB2	75035-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
224	Spring-Street-EB1	75036-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
225	Spring-Street-EB2	75036-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
226	Spring-Street-WB1	75037-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
227	Spring-Street-WB2	75037-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
228	Lemon-Grove-Depot-EB1	75038-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
229	Lemon-Grove-Depot-EB2	75038-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
230	Lemon-Grove-Depot-WB1	75039-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
231	Lemon-Grove-Depot-WB2	75039-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
232	Massachusetts-Avenue-EB1	75040-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
233	Massachusetts-Avenue-EB2	75040-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
234	Massachusetts-Avenue-WB1	75041-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
235	Massachusetts-Avenue-WB2	75041-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
236	Encanto-62nd-Street-EB1	75067-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
237	Encanto-62nd-Street-EB2	75067-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
238	Encanto-62nd-Street-WB1	75066-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
239	Encanto-62nd-Street-WB2	75066-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
240	Euclid-Avenue-EB1	75069-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
241	Euclid-Avenue-EB2	75069-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
242	Euclid-Avenue-WB1	75068-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
243	Euclid-Avenue-WB2	75068-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
244	47th-Street-EB1	75070-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
245	47th-Street-EB2	75070-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
246	47th-Street-WB1	75071-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 SMT/A D/S												1	
247	47th-Street-WB2	75071-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
248	32nd-Commercial-EB1	75073-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
249	32nd-Commercial-EB2	75073-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
250	32nd-Commercial-WB1	75072-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
251	32nd-Commercial-WB2	75072-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS												1	
252	25th-Commercial-EB1	75074-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
253	25th-Commercial-EB2	75074-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
254	25th-Commercial-WB1	75075-1	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
255	25th-Commercial-WB2	75075-2	Orange Line	EastLine	1	Daktronics	192x40x7.62	PD 192x40x7.62 DS UBS												1	
256	70th-Street-EB1	75032-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
257	70th-Street-EB2	75032-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
258	70th-Street-WB1	75033-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	AF-6700-40-192-8-a-DF									1				
259	70th-Street-WB2	75033-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	AF-6700-40-192-8-a-DF									1				
260	Alvarado-Medical-Center-EB1	75064-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
261	Alvarado-Medical-Center-EB2	75064-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
262	Alvarado-Medical-Center-WB1	75065-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
263	Alvarado-Medical-Center-WB2	75065-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
264	SDSU-EB1	75063-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
265	SDSU-EB2-B	75063-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
266	SDSU-EB3	75063-3	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
267	SDSU-EB4-B	75063-4	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
268	SDSU-EB5	75063-5	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
269	SDSU-WB1	75062-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
270	SDSU-WB2-A	75062-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
271	SDSU-WB3	75062-3	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
272	SDSU-WB4-A	75062-4	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
273	SDSU-WB5	75062-5	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS									1				
274	Grantville-EB1	75060-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
275	Grantville-EB2	75060-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
276	Grantville-WB1	75061-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
277	Grantville-WB2	75061-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
278	Mission-San-Diego-EB1	75059-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				

DS & VMS Service Schedule

#	Station/Name	Stop	Description	Location	Route	Type	Dimension	Model	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Notes
									Service Intervals												
279	Mission-San-Diego-EB2	75059-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
280	Mission-San-Diego-WB1	75058-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
281	Mission-San-Diego-WB2	75058-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
282	Qualcomm-Stadium-EB1	75056-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS									1				
283	Qualcomm-Stadium-EB2	75056-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
284	Qualcomm-Stadium-WB1	75057-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
285	Qualcomm-Stadium-WB2	75057-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
286	Fenton-Parkway-EB1	75055-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
287	Fenton-Parkway-EB2	75055-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
288	Fenton-Parkway-WB1	75054-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
289	Fenton-Parkway-WB2	75054-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
290	Rio-Vista-EB1	75053-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
291	Rio-Vista-EB2	75053-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
292	Rio-Vista-WB1	75052-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
293	Rio-Vista-WB2	75052-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
294	Mission-Valley-Center-EB1	75050-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
295	Mission-Valley-Center-EB2	75050-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
296	Mission-Valley-Center-WB1	75051-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
297	Mission-Valley-Center-WB2	75051-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
298	Hazard-Center-EB1	75048-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
299	Hazard-Center-EB2	75048-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
300	Hazard-Center-WB1	75049-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
301	Hazard-Center-WB2	75049-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
302	Fashion-Valley-EB1	75047-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
303	Fashion-Valley-EB2	75047-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
304	Fashion-Valley-EB3	75047-3	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
305	Fashion-Valley-EB4	75047-4	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
306	Fashion-Valley-WB1	75046-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
307	Fashion-Valley-WB2	75046-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
308	Fashion-Valley-WB3	75046-3	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
309	Fashion-Valley-WB4	75046-4	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA SS											1		
310	Morena-Linda-Vista-EB1	75044-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
311	Morena-Linda-Vista-EB2	75044-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
312	Morena-Linda-Vista-WB1	75045-1	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
313	Morena-Linda-Vista-WB2	75045-2	Green Line	MissionValley	1	Daktronics	192x40x7.62	PD 192x40x7.62 UBA DS											1		
314	Gilman Dr / Myers Dr	10772	Gilman Dr / Myers Dr	N-W/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
315	Executive Dr / Regents Rd	99459	Executive Dr / Regents Rd	N-W/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											Stop discontinued
316	Medical Center Dr / Health Sciences Dr	99461	Medical Center Dr / Health Sciences Dr	F-N/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											Stop discontinued
317	Voigt Dr / Scripps Memorial Hospital	13092	Voigt Dr / Scripps Memorial Hospital	N-W/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											Stop discontinued
318	Villa La Jolla Dr / Gilman Dr	99463	Villa La Jolla Dr / Gilman Dr	F-E/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
319	Nobel Dr / La Jolla Village Square Drwy	13024	Nobel Dr / La Jolla Village Square Drwy	N-E/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
320	Nobel Dr / Lebon Dr	10034	Nobel Dr / Lebon Dr	N-E/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
321	Palmilla Dr / Lebon Dr	11909	Palmilla Dr / Lebon Dr	F-S/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
322	Regents Rd / Arriba St	12662	Regents Rd / Arriba St	F-N/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
323	Nobel Dr / Regents Rd	10399	Nobel Dr / Regents Rd	F-E/B	201	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
324	Gilman Dr / Myers Dr	10374	Gilman Dr / Myers Dr	F-E/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
325	Regents Rd / Nobel Dr	11915	Regents Rd / Nobel Dr	F-S/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
326	Arriba St / Regents Rd	11154	Arriba St / Regents Rd	F-W/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
327	Lebon Dr / Palmilla Dr	99932	Lebon Dr / Palmilla Dr	F-N/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
328	Nobel Dr / Lebon Dr	11151	Nobel Dr / Lebon Dr	F-W/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
329	Nobel Dr / La Jolla Village Square Drwy	13058	Nobel Dr / La Jolla Village Square Drwy	F-W/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
330	Gilman Dr / Villa La Jolla Dr	12326	Gilman Dr / Villa La Jolla Dr	F-N/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
331	Voigt Dr / Scripps Memorial Hospital	99200	Voigt Dr / Scripps Memorial Hospital	M-E/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											Stop discontinued
332	Medical Center Dr / Health Sciences Dr	99462	Medical Center Dr / Health Sciences Dr	N-S/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											Stop discontinued
333	Executive Dr / Regents Rd	99460	Executive Dr / Regents Rd	F-E/B	202	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											Stop discontinued
334	Executive Dr / Executive Wy	99075	Executive Dr / Executive Wy	F-E/B	204	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
335	Judicial Dr / Golden Haven Dr	99586	Judicial Dr / Golden Haven Dr	F-S/B	204	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
336	Judicial Dr / Research Pl	99194	Judicial Dr / Research Pl	F-S/B	204	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
337	Nobel Dr / Towne Centre Dr	13267	Nobel Dr / Towne Centre Dr	F-W/B	204	Daktronics	32x48	AF-6300-32X48-8-A-DF		1											
338	11th Av / Broadway	12782-1	11th Av / Broadway	F-N/B	215	Pylon	23x40	Samsung LH460MD		1			1			1			1		Single-Sided
339	11th Av / Broadway	12782-2	11th Av / Broadway	F-N/B	215	Pylon	23x40	Samsung LH460MD		1			1			1			1		Single-Sided
340	11th Av / B St	99367	11th Av / B St	N-N/B	280/290	Pylon	23x40	Samsung LH460MD		1			1			1			1		Single-Sided
341	I-15 Centerline Sta / University Av	88916-1	I-15 Centerline Sta / University Av	F-N/B	235 NB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
342	I-15 Centerline Sta / University Av	88916-2	I-15 Centerline Sta / University Av	F-N/B	235 NB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
343	I-15 Centerline Sta / El Cajon Bl	88918-1	I-15 Centerline Sta / El Cajon Bl	F-N/B	235 NB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
344	I-15 Centerline Sta / El Cajon Bl	88918-2	I-15 Centerline Sta / El Cajon Bl	F-N/B	235 NB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
345	Miramar College Transit Station	23001-1	Miramar College Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
346	Miramar College Transit Station	23001-2	Miramar College Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
347	Miramar College Transit Station	23001-3	Miramar College Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
348	Miramar College Transit Station	23001-4	Miramar College Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
349	Miramar College Transit Station	23001-5	Miramar College Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
350	Miramar College Transit Station	23001-6	Miramar College Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
351	Miramar College Transit Station	23001-7	Miramar College Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
352	Sabre Springs / Penasquitos Station	23015-1	Sabre Springs / Penasquitos Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
353	Sabre Springs / Penasquitos Station	23015-2	Sabre Springs / Penasquitos Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
354	Rancho Bernardo Transit Station	99475-1	Rancho Bernardo Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
355	Rancho Bernardo Transit Station	99475-2	Rancho Bernardo Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
356	Del Lago Transit Station	99497-1	Del Lago Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
357	Del Lago Transit Station	99497-2	Del Lago Transit Station	TC-Bus	235 NB	VMS	128x40x05	PD 128x40x05 UBA								1					
358	Escondido Transit Center	99496	Escondido Transit Center	TC-Bus	235 SB	VMS	128x40x05	PD 128x40x05 UBA								1					
359	I-15 Centerline Sta / El Cajon Bl	88919-1	I-15 Centerline Sta / El Cajon Bl	F-S/B	235 SB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
360	I-15 Centerline Sta / El Cajon Bl	88919-2	I-15 Centerline Sta / El Cajon Bl	F-S/B	235 SB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
361	I-15 Centerline Sta / University Av	88917-1	I-15 Centerline Sta / University Av	F-S/B	235 SB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
362	I-15 Centerline Sta / University Av	88917-2	I-15 Centerline Sta / University Av	F-S/B	235 SB	Keyser	29.639x13.796x49.656	BRT47 47" DISPLAY		1			1			1			1		
363	Clairemont Mesa Bl / Ruffin Rd	10183	Clairemont Mesa Bl / Ruffin Rd	F-E/B	235 SB	NANOV	47.24x30.12x12.04	NBSDM-460LC-125-SAN		1			1			1			1		
364	Park Bl / University Av	13550	Park Bl / University Av	F-N/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
365	Park Bl / Howard Av	13552	Park Bl / Howard Av	F-N/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
366	El Cajon Bl / Texas St	13554	El Cajon Bl / Texas St	F-E/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
367	El Cajon Bl / 30th St	10543	El Cajon Bl / 30th St	F-E/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
368	El Cajon Bl / 35th St	10190	El Cajon Bl / 35th St	F-E/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
369	El Cajon Bl / 43rd St	10609	El Cajon Bl / 43rd St	F-E/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
370	El Cajon Bl / Winona Av	13555	El Cajon Bl / Winona Av	F-E/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
371	El Cajon Bl / 54th St	10250	El Cajon Bl / 54th St	F-E/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
372	College Av / El Cajon Bl	10262	College Av / El Cajon Bl	F-N/B	215 EB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
373	El Cajon Bl / College Av	11412	El Cajon Bl / College Av	F-W/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
374	El Cajon Bl / 54th St	11389	El Cajon Bl / 54th St	F-W/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
375	El Cajon Bl / Winona Av	11377	El Cajon Bl / Winona Av	F-W/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
376	El Cajon Bl / 43rd St	10986	El Cajon Bl / 43rd St	N-W/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
377	El Cajon Bl / 35th St	11334	El Cajon Bl / 35th St	F-W/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
378	El Cajon Bl / 30th St	11296	El Cajon Bl / 30th St	F-W/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
379	El Cajon Bl / Texas St	99199	El Cajon Bl / Texas St	F-W/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
380	Park Bl / Howard Av	13553	Park Bl / Howard Av	F-S/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
381	Park Bl / University Av	13551	Park Bl / University Av	N-S/B	215 WB	New Daktronics	128x40x05	PD 128x40x05 UBA					1								
382	Park Bl / Broadway	91107-1	Park Bl / Broadway	N-S/B	215 WB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
383	Santa Fe Depot Transit Center	99589-1	Santa Fe Depot Transit Center	N-S/B	215/225/235 EB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
384	Santa Fe Depot Transit Center	99589-2	Santa Fe Depot Transit Center	N-S/B	215/225/235 EB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
385	Broadway / 1st Av	13314-1	Broadway / 1st Av	N-E/B	215/225/235 EB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
386	Broadway / 1st Av	13314-2	Broadway / 1st Av	N-E/B	215/225/235 EB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
387	Broadway / 5th Av	10097-1	Broadway / 5th Av	N-E/B	215/225/235 EB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
388	Broadway / 5th Av	10097-2	Broadway / 5th Av	N-E/B	215/225/235 EB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
389	Broadway / 4th Av	10841-1	Broadway / 4th Av	N-W/B	215/225/235 WB	Pylon	23x40	Samsung LH460MD			1			1			1			1	Single-Sided
390	Broadway / 4th Av	10841-2	Broadway / 4th Av	N-W/B	215/225/235 WB	Pylon	23x40	Samsung LH460MD			1			1			1			1	Centertrack
391	Broadway / Union St	10839-1	Broadway / Union St	N-W/B	215/225/235 WB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
392	Broadway / Union St	10839-2	Broadway / Union St	N-W/B	215/225/235 WB	Pylon	23x40	Samsung LH460MD			1			1			1			1	Centertrack
393	India St / C St	99791-1	India St / C St	F-N/B	215/225/235 WB	Pylon	23x40	Samsung LH460MD			1			1			1			1	Single-Sided
394	Broadway / Park Bl	10109-1	Broadway / Park Bl	N-E/B	225/235 NB	Pylon	23x40	Samsung LH460MD			1			1			1			1	Single-Sided
395	Broadway / Park Bl	10109-2	Broadway / Park Bl	N-E/B	225/235 NB	Pylon	23x40	Samsung LH460MD			1			1			1			1	Centertrack
396	Broadway / Park Bl	99342-1	Broadway / Park Bl	F-W/B	225/235 SB	Pylon	23x40	Samsung LH460MD			1			1			1			1	
397	Broadway / Park Bl	99342-2	Broadway / Park Bl	F-W/B	225/235 SB	Pylon	23x40	Samsung LH460MD			1			1			1			1	Centertrack
398	12th-Imperial-Bus-SB1		12th & Imperial Bus Stop	SB		New Daktronics	128x40x05	PD 128x40x05 UBA			1										
399	12th-Imperial-Bus-SB2		12th & Imperial Bus Stop	SB		New Daktronics	128x40x05	PD 128x40x05 UBA			1										
									52	63	55	52	57	64	56	53	71	52	70	74	719

ATTACHMENT E
MTS PARTS INVENTORY LIST

INVENTORY BY SERIAL NUMBER

Description	Part Number	Revision Number	Serial Number	Status
Controller Assembly	0A-1940-0047	0	133	Good
Controller Assembly	0A-1940-0015	1	3489	Good
236 & 237 Controller Assembly	0A-1940-0072	1	3528	Good
236 & 237 Controller Assembly	0A-1940-0072	1	3277	Good
Controller Assembly	0A-1940-0048	0	669	Good
LED Panel (Long) (New)	0A-1936-0208	1	2356	Good
LED Panel (Long) (New)	0A-1936-0208	1	2358	Good
LED Panel (Long) (New)	0A-1936-0208	1	2357	Good
Led Panel (Small) (New)	0P-1572-1567	0	1251	Good
LED Panel (Long) (New)	0A-1936-0208	1	2337	Good
LED Panel (Long) (New)	0A-1936-0208	1	2344	Good
LED Panel (Long) (New)	0A-1936-0208	1	2343	Good
LED Panel (Long) (New)	0A-1936-0208	1	2349	Good
LED Panel (Long) (New)	0A-1936-0208	1	2361	Good
LED Panel (Long) (New)	0A-1936-0208	1	2374	Good
LED Panel (Long) (New)	0A-1936-0208	1	2354	Good
LED Panel (Long) (New)	0A-1936-0208	1	2341	Good
LED Panel (Long) (New)	0A-1936-0208	1	2355	Good
LED Panel (Long) (New)	0A-1936-0208	1	2340	Good
LED Panel (Long) (New)	0A-1936-0208	1	2335	Good
LED Panel (Long) (Old)	S-014740/1	0	56260-64	Good
LED Panel (Long) (New)	0A-1936-0208	1	2376	Good
LED Panel (Long) (New)	0A-1936-0208	1	2375	Good
LED Panel (Long) (New)	0A-1936-0208	1	2388	Good
LED Panel (Long) (New) 2	0A-1936-0417	0	1006	Good
LED Panel (Long) (New) 2	0A-1936-0417	0	1005	Good
LED Panel (Long) (New)	0A-1936-0208	1	2382	Good
LED Panel (Long) (New)	0A-1936-0208	1	2372	Good
LED Panel (Long) (New)	0A-1936-0208	1	2385	Good
LED Panel (Long) (New)	0A-1936-0208	1	2359	Good
LED Panel (Long) (New)	0A-1936-0208	1	2339	Good
LED Panel (Long) (New)	0A-1936-0208	1	2353	Good
LED Panel (Long) (New)	0A-1936-0208	1	2369	Good
LED Panel (Long) (New)	0A-1936-0208	1	2377	Good
LED Panel (Long) (New) 2	0A-1936-0417	0	1007	Good
LED Panel (Long) (New)	0A-1936-0208	1	2366	Good
LED Panel (Long) (New)	0A-1936-0208	1	2367	Good
LED Panel (Long) (New)	0A-1936-0208	1	2380	Good
LED Panel (Long) (New)	0A-1936-0208	1	2387	Good
LED Panel (Long) (New)	0A-1936-0208	1	1524	Good
LED Panel (Long) (New)	0A-1936-0208	1	2333	Good
LED Panel (Long) (New)	0A-1936-0208	1	2334	Good
LED Panel (Long) (New)	0A-1936-0208	1	2386	Good
LED Panel (Long) (New)	0A-1936-0208	1	2346	Good

INVENTORY BY SERIAL NUMBER

Description	Part Number	Revision Number	Serial Number	Status
LED Panel (Long) (New)	0A-1936-0208	1	2371	Good
LED Panel (Long) (New) 2	0A-1936-0417	0	1004	Good
LED Panel (Long) (New)	0A-1936-0208	1	2347	Good
LED Panel (Long) (New)	0A-1936-0208	1	2360	Good
LED Panel (Long) (New)	0A-1936-0208	1	2364	Good
LED Panel (Long) (New)	0A-1936-0208	1	2348	Good
LED Panel (Long) (New)	0A-1936-0208	1	2362	Good
LED Panel (Long) (New)	0A-1936-0208	1	2342	Good
LED Panel (Long) (New)	0A-1936-0208	1	2345	Good
LED Panel (Long) (New)	0A-1936-0208	1	2384	Good
LED Panel (Long) (New) 2	0A-1936-0417	0	1008	Good
LED Panel (Long) (New) 2	0A-1936-0417	0	1010	Good
LED Panel (Long) (New)	0A-1936-0208	1	2363	Good
LED Panel (Long) (New)	0A-1936-0208	1	2381	Good
LED Panel (Long) (New)	0A-1936-0208	1	2383	Good
LED Panel (Long) (New)	0A-1936-0208	1	2370	Good
LED Panel (Long) (New)	0A-1936-0208	1	2373	Good
Led Panel (Small) (New)	0P-1572-1567	0	1259	Good
Led Panel (Small) (New)	0P-1572-1567	0	1247	Good
Led Panel (Small) (New)	0P-1572-1567	0	1276	Good
Led Panel (Small) (New)	0P-1572-1567	0	1286	Good
Led Panel (Small) (New)	0P-1572-1567	0	1277	Good
Led Panel (Small) (New)	0P-1572-1567	0	1248	Good
Led Panel (Small) (New)	0P-1572-1567	0	1238	Good
Led Panel (Small) (New)	0P-1572-1567	0	1241	Good
Led Panel (Small) (New)	0P-1572-1567	0	1250	Good
Power Supply	RS-150-3.3	0	SC1A4Q5737	Good
Power Supply	RS-150-3.3	0	SC1A4Q5B03	Good
Power Supply	RS-150-3.3	0	SC1A4Q5735	Good
Power Supply	RS-150-3.3	0	SC1A4Q5739	Good
Power Supply	RS-150-3.3	0	SC1A4Q5733	Good
SBC - Superloop	14S628310F	0	C11407978	Good
SBC - Superloop	14S628310F	0	C11408006	Good
SBC - Superloop	14S628310F	0	C11407977	Good
SBC - Superloop	14S628310F	0	C11303449	Good
SBC - Superloop	14S628310F	0	C11407985	Good
SBC - Superloop	14S628310F	0	C11407976	Good
SBC - Superloop	14S628310F	0	C11704458	Good
SBC - El Cajon Blvd	1462GLN5B0	0	C14704333	Good

INVENTORY BY QUANTITY

Description	Part Number	Quantity
236 & 237 Controller Assembly	0A-1940-0072	2
Controller Assembly	0A-1940-0047	1
Controller Assembly	0A-1940-0015	1
Controller Assembly	0A-1940-0048	1
LED Panel (Long) (New)	0A-1936-0208	48
Led Panel (Small) (New)	0P-1572-1567	10
LED Panel (Long) (Old)	S-014740/1	1
LED Panel (Long) (New) 2	0A-1936-0417	6
Power Supply	RS-150-3.3	5
SBC - Superloop	14S628310F	7
SBC - El Cajon Blvd	1462GLN5B0	1

Metropolitan Transit System

Amendment 2

June 3, 2022 MTS Doc No. PWG318.2-20

Brault, Inc., dba Electro Specialty Systems
Dan Brault, President
7940 Convoy Ct.
San Diego, CA 92111

This shall serve as Amendment No.2 to the original agreement as further described below.

SCOPE
Pursuant to the Scope of Work of, THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM (MTS) shall add quarterly maintenance of forty-seven (47) additional NANOV VMS units for base years three through five.

SCHEDULE

There shall be no change to the Schedule, as a result of this Amendment.

PAYMENT
This contract amendment shall authorize additional costs not to exceed $141,548.94. These costs are for the base years only. (MTS will exercise the option year costs of $104,853.39 during the option term). The total base value of this contract including this amendment shall be in the amount of $978,683.09. This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney, Chief Executive Officer

Agreed:

Dan Brault, President
Electro Specialty Systems

Date: _____

Attachments: A. Revised Bid Form

DRAFT

COST PROPOSAL FORM - DS AND VMS Maintenance and As-Needed Repair Services

Instructions: For Table I, please provide the Unit price for preventive maintenance for each type of equipment in the columns labeled "Unit Price". The Unit Price will be multiplied by the equipment quantity and then by the Annual Service Frequency to determine the Item Total. **Proposers may enter an alternative Annual Service Frequency based on their knowledge of each equipment type, locations, and site conditions.** For Table II, please enter the hourly rate for each type of as-needed labor, and equipment in the column labled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundreth) in the *% Mark Up* field for each year. The annual *As-Needed Materials/Parts* amount is the sum of Items 1 and 2 for each year. For Table IV, please enter the hourly rate for the cost of floater equipment. The *Grand Total* is the sum of the *Subtotals* for Tables I, II & III . This table contains formulas that will automatically calculate your pricing.

Table I:DS & VMS PREVENTIVE MAINTENANCE SERVICES						Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22
Group	Item	Make	Model	Qty	Annual Service Frequency	Unit Price	Item Total	Unit Price	Item Total
Trolley	1	Daktronics	PD 192x40x7.62 UBA DS	118	1	$ 117.00	$ 13,806.00	$ 121.68	$ 14,358.24
	2	Daktronics	AF-6700-40-192-8-a-DF	8	1	$ 117.00	$ 936.00	$ 121.68	$ 973.44
	3	Daktronics	PD 192x40x7.62 UBA SS	23	1	$ 117.00	$ 2,691.00	$ 121.68	$ 2,798.64
	4	Daktronics	PD 192x40x7.62 DS UBS	64	1	$ 117.00	$ 7,488.00	$ 121.68	$ 7,787.52
	5	Daktronics	PD 192x40x7.62 SMT/A D/S	21	1	$ 117.00	$ 2,457.00	$ 121.68	$ 2,555.28
	6	NANOV	NBSDM-460LC-125-SAN[1]	47	4			$ 231.92	$ 32,700.72
BRT	7	Daktronics	AF-6300-32X48-8-A-DF	24	1	$ 117.00	$ 2,808.00	$ 121.68	$ 2,920.32
	8	Samsung	Samsung LH460MD (Pylon)	22	4	$ 273.00	$ 24,024.00	$ 283.92	$ 24,984.96
	9	Keyser	BRT47 47" DISPLAY	9	4	$ 223.00	$ 8,028.00	$ 231.92	$ 8,349.12
	10	Daktronics	PD 128x40x05 UBA[2]	35	1	$ 161.00	$ 5,313.00	$ 167.44	$ 5,525.52
	11	NANOV	NISDM-460LH-SAN	28	4	$ 223.00	$ 24,976.00	$ 231.92	$ 25,975.04
					Table I Subtotals		$ 92,527.00		$ 128,928.80

Table I:DS & VMS PREVENTIVE MAINTENANCE SERVICES						Year Three	12/15/22 - 12/14/23	Year Four	12/15/23 - 12/14/24
Group	Item	Make	Model	Qty	Annual	Unit Price	Item Total	Unit Price	Item Total
Trolley	1	Daktronics	PD 192x40x7.62 UBA DS	118	1	$ 126.55	$ 14,932.57	$ 131.61	$ 15,529.87
	2	Daktronics	AF-6700-40-192-8-a-DF	8	1	$ 126.55	$ 1,012.38	$ 131.61	$ 1,052.87
	3	Daktronics	PD 192x40x7.62 UBA SS	23	1	$ 126.55	$ 2,910.59	$ 131.61	$ 3,027.01
	4	Daktronics	PD 192x40x7.62 DS UBS	64	1	$ 126.55	$ 8,099.02	$ 131.61	$ 8,422.98
	5	Daktronics	PD 192x40x7.62 SMT/A D/S	21	1	$ 126.55	$ 2,657.49	$ 131.61	$ 2,763.79
	6	NANOV	NBSDM-460LC-125-SAN[1]	47	4	$ 241.20	$ 45,345.00	$ 250.84	$ 47,158.80
BRT	7	Daktronics	AF-6300-32X48-8-A-DF	24	1	$ 126.55	$ 3,037.13	$ 131.61	$ 3,158.62
	8	Samsung	Samsung LH460MD (Pylon)	22	4	$ 295.28	$ 25,984.36	$ 307.09	$ 27,023.73
	9	Keyser	BRT47 47" DISPLAY	9	4	$ 241.20	$ 8,683.08	$ 250.84	$ 9,030.41
	10	Daktronics	PD 128x40x05 UBA[2]	35	1	$ 174.14	$ 6,094.82	$ 181.10	$ 6,338.61
	11	NANOV	NISDM-460LH-SAN	28	4	$ 241.20	$ 27,014.04	$ 250.84	$ 28,094.60
					Table I Subtotals		$ 145,770.48		$ 151,601.30

Table I:DS & VMS PREVENTIVE MAINTENANCE SERVICES						Year Five	12/15/24 - 12/14/25	Optional Year One	12/15/25 - 12/14/26	Optional Year Two	12/15/26 - 12/14/27
Group	Item	Make	Model	Qty	Annual	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
Trolley	1	Daktronics	PD 192x40x7.62 UBA DS	118	1	$ 136.87	$ 16,151.07	$ 142.35	$ 16,797.11	$ 148.04	$ 17,468.99
	2	Daktronics	AF-6700-40-192-8-a-DF	8	1	$ 136.87	$ 1,094.99	$ 142.35	$ 1,138.79	$ 148.04	$ 1,184.34
	3	Daktronics	PD 192x40x7.62 UBA SS	23	1	$ 136.87	$ 3,148.09	$ 142.35	$ 3,274.01	$ 148.04	$ 3,404.97
	4	Daktronics	PD 192x40x7.62 DS UBS	64	1	$ 136.87	$ 8,759.90	$ 142.35	$ 9,110.30	$ 148.04	$ 9,474.71
	5	Daktronics	PD 192x40x7.62 SMT/A D/S	21	1	$ 136.87	$ 2,874.34	$ 142.35	$ 2,989.32	$ 148.04	$ 3,108.89
	6	NANOV	NBSDM-460LC-125-SAN[1]	47	4	$ 260.88	$ 49,045.15	$ 271.31	$ 51,006.96	$ 282.17	$ 53,047.23
BRT	7	Daktronics	AF-6300-32X48-8-A-DF	24	1	$ 136.87	$ 3,284.96	$ 142.35	$ 3,416.36	$ 148.04	$ 3,553.02
	8	Samsung	Samsung LH460MD (Pylon)	22	4	$ 319.37	$ 28,104.68	$ 332.15	$ 29,228.87	$ 345.43	$ 30,398.02
	9	Keyser	BRT47 47" DISPLAY	9	4	$ 260.88	$ 9,391.62	$ 271.31	$ 9,767.29	$ 282.17	$ 10,157.98
	10	Daktronics	PD 128x40x05 UBA[2]	35	1	$ 188.35	$ 6,592.15	$ 195.88	$ 6,855.84	$ 203.72	$ 7,130.07
	11	NANOV	NISDM-460LH-SAN	28	4	$ 260.88	$ 29,218.39	$ 271.31	$ 30,387.12	$ 282.17	$ 31,602.61
					Table I Subtotals		$ 157,665.35		$ 163,971.96		$ 170,530.84
				118	399						

COST PROPOSAL FORM - DS AND VMS Maintenance and As-Needed Repair Services

Instructions: For Table I, please provide the Unit price for preventive maintenance for each type of equipment in the columns labeled "Unit Price". The Unit Price will be multiplied by the equipment quantity and then by the Annual Service Frequency to determine the Item Total. **Proposers may enter an alternative Annual Service Frequency based on their knowledge of each equipment type, locations, and site conditions.** For Table II, please enter the hourly rate for each type of as-needed labor, and equipment in the column labled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundreth) in the *% Mark Up* field for each year. The annual *As-Needed Materials/Parts* amount is the sum of Items 1 and 2 for each year. For Table IV, please enter the hourly rate for the cost of floater equipment. The *Grand Total* is the sum of the *Subtotals* for Tables I, II & III . This table contains formulas that will automatically calculate your pricing.

Table I:DS & VMS PREVENTIVE MAINTENANCE SERVICES			Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22
Table II: AS-NEEDED LABOR & EQUIPMENT			Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22
Item	Description	Est. Qty/Annual No. of Hours	Unit Price	Item Total	Unit Price	Item Total
1	Single Person Crew - Straight Time Hourly Rate	120	$ 108.00	$ 12,960.00	$ 112.32	$ 13,478.40
2	Single Person Crew - Outside of MTS Normal Business Hours (evenings,	20	$ 124.00	$ 2,480.00	$ 128.96	$ 2,579.20
3	Two Person Crew - Straight Time Hourly Rate	40	$ 184.00	$ 7,360.00	$ 191.36	$ 7,654.40
4	Two Person Crew - Outside of MTS Normal Business Hours (evenings,	20	$ 208.00	$ 4,160.00	$ 216.32	$ 4,326.40
5	Scissor Lift - Hourly Rate	10	$ 160.00	$ 1,600.00	$ 166.40	$ 1,664.00
		Table II Subtotals:		$ 28,560.00		$ 29,702.40

Table II: AS-NEEDED LABOR & EQUIPMENT			Year Three	12/15/22 - 12/14/23	Year Four	12/15/23 - 12/14/24
Item	Description	Est.	Unit Price	Item Total	Unit Price	Item Total
1	Single Person Crew - Straight Time Hourly Rate	120	$ 116.81	$ 14,017.54	$ 121.49	$ 14,578.24
2	Single Person Crew - Outside of MTS Normal Business Hours (evenings,	20	$ 134.12	$ 2,682.37	$ 139.48	$ 2,789.66
3	Two Person Crew - Straight Time Hourly Rate	40	$ 199.01	$ 7,960.58	$ 206.97	$ 8,279.00
4	Two Person Crew - Outside of MTS Normal Business Hours (evenings,	20	$ 224.97	$ 4,499.46	$ 233.97	$ 4,679.43
5	Scissor Lift - Hourly Rate	10	$ 173.06	$ 1,730.56	$ 179.98	$ 1,799.78
		Table II Subtotals:		$ 30,890.50		$ 32,126.12

Table II: AS-NEEDED LABOR & EQUIPMENT			Year Five	12/15/24 - 12/14/25	Optional Year One	12/15/25 - 12/14/26	Optional Year Two	12/15/26 - 12/14/27
Item	Description	Est.	Unit Price	Item Total	Unit Price	Item Total	Unit Price	Item Total
1	Single Person Crew - Straight Time Hourly Rate	120	$ 126.34	$ 15,161.37	$ 131.40	$ 15,767.82	$ 136.65	$ 16,398.53
2	Single Person Crew - Outside of MTS Normal Business Hours (evenings,	20	$ 145.06	$ 2,901.25	$ 150.86	$ 3,017.30	$ 156.90	$ 3,137.99
3	Two Person Crew - Straight Time Hourly Rate	40	$ 215.25	$ 8,610.16	$ 223.86	$ 8,954.57	$ 232.82	$ 9,312.75
4	Two Person Crew - Outside of MTS Normal Business Hours (evenings,	20	$ 243.33	$ 4,866.61	$ 253.06	$ 5,061.28	$ 263.19	$ 5,263.73
5	Scissor Lift - Hourly Rate	10	$ 187.18	$ 1,871.77	$ 194.66	$ 1,946.64	$ 202.45	$ 2,024.51
		Table II Subtotals:		$ 33,411.16		$ 34,747.61		$ 36,137.51

Table III: AS-NEEDED REPLACEMENT PARTS		Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22
Item	Description	% Mark Up	Item Total	% Mark Up	Item Total
1	Annual Materials/Parts Allowance	18%	$ 25,000.00	18%	$ 25,000.00
2	Materials markup		$ 4,500.00		$ 4,500.00
	Table III Subtotals:		$ 29,500.00		$ 29,500.00

Table III: AS-NEEDED REPLACEMENT PARTS		Year Three	12/15/22 - 12/14/23	Year Four	12/15/23 - 12/14/24
Item	Description	% Mark Up	Item Total	% Mark Up	Item Total
1	Annual Materials/Parts Allowance	18%	$ 25,000.00	18%	$ 25,000.00
2	Materials markup		$ 4,500.00		$ 4,500.00
	Table III Subtotals:		$ 29,500.00		$ 29,500.00

Table III: AS-NEEDED REPLACEMENT PARTS		Year Five	12/15/24 - 12/14/25	Optional Year One	12/15/25 - 12/14/26	Optional Year Two	12/15/26 - 12/14/27
Item	Description	% Mark Up	Item Total	% Mark Up	Item Total	% Mark Up	Item Total
1	Annual Materials/Parts Allowance	18%	$ 25,000.00	18%	$ 25,000.00	18%	$ 25,000.00
2	Materials markup		$ 4,500.00		$ 4,500.00		$ 4,500.00
	Table III Subtotals:		$ 29,500.00		$ 29,500.00		$ 29,500.00

COST PROPOSAL FORM - DS AND VMS Maintenance and As-Needed Repair Services

Instructions: For Table I, please provide the Unit price for preventive maintenance for each type of equipment in the columns labeled "Unit Price". The Unit Price will be multiplied by the equipment quantity and then by the Annual Service Frequency to determine the Item Total. **Proposers may enter an alternative Annual Service Frequency based on their knowledge of each equipment type, locations, and site conditions.** For Table II, please enter the hourly rate for each type of as-needed labor, and equipment in the column labled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundreth) in the *% Mark Up* field for each year. The annual *As-Needed Materials/Parts* amount is the sum of Items 1 and 2 for each year. For Table IV, please enter the hourly rate for the cost of floater equipment. The *Grand Total* is the sum of the *Subtotals* for Tables I, II & III . This table contains formulas that will automatically calculate your pricing.

Table I:DS & VMS PREVENTIVE MAINTENANCE SERVICES	Year One	12/15/20 - 12/14/21	Year Two	12/15/21 - 12/14/22		
Yearly Subtotals	**Year One**	$ 150,587.00	Year Two	$ 188,131.20		
Yearly Subtotals	Year Three	$ 206,160.97	Year Four	$ 213,227.41		
Yearly Subtotals	Year Five	$ 220,576.51	Option Year One	$ 228,219.57	Option Year Two	$ 236,168.35

Total Base Years	$ 978,683.09
Total Option Years	$ 464,387.92
Grand Total	$ 1,443,071.01

[1] Added 47 NANOV units to the bid form. These items shall be serviced quarterly beginning April 1, 2022.

[2] Added 2 Daktronics units to the bid form. These items shall be serviced quarterly beginning March 1, 2023.

Agenda Item No. 21

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

SIEMENS COMPUTER AIDS SIGNALING (SICAS) S7 COMPONENTS - SOLE SOURCE CONTRACT AWARD

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. L1625.0-23, (in substantially the same format as Attachment A) a sole source award to Siemens Mobility, Inc. (Siemens) in the amount of $265,762.11 for the purchase of Siemens computer aids signaling components for the Maintenance of Way (MOW) department.

Budget Impact

The total value of this agreement shall not exceed $265,762.11. This project is funded by the Maintenance of Way Operating Budget 360016-545500.

DISCUSSION:

When the Trolley system was first established in San Diego, it was built to meet design criteria set by MTS. The design criteria are based in part on recommendations and practices established for the railroad industry by the Association of American Railroads (AAR) and American Railway Engineering and Maintenance-of-Way Association (AREMA). The design criteria are also drafted to comply with or exceed all codes and standards established by the Federal Railroad Administration and the California Public Utilities Commission. San Diego Association of Governments (SANDAG) currently serves as the designated design engineer for the region and works with MTS, NCTD, and other railroad operators to update the design criteria over time so that it continues to meet current requirements and safety needs.

Through a procurement process performed by SANDAG, certain Signal System equipment was procured during the Blue Line Crossover and Signal Retrofit project, which was part of the Blue Line State of Good Repair Upgrades program of projects. Siemens was the successful manufacturer of the Programmable Logic Controllers equipment – SICAS S7. Between 2009 and 2014, the SICAS S7 equipment was installed on the Blue Line corridor between 12th & Imperial and San Ysidro, at the Broadway Wye, and at the C Street Crossover. This equipment

provides vital and non-vital functions to the Signal System, Grade Crossings and Interlockings to allow the safe movement of trains in these locations.

On March 15, 2022, MTS was informed that the SICAS S7 product line is being discontinued by Siemens. MTS is developing a plan to convert or upgrade the locations using this equipment to other supported systems. In the interim, Siemens informed MTS that it will shortly stop production of the spare parts that make up the system. MTS Maintenance of Way (MOW) staff determined that a parts order is needed to ensure that MTS has a sufficient stock of such items to properly maintain the SICAS S7 system for the rest of its useful life.

Today's proposed action awards a sole source contract to Siemens for the purchase of these highly specialized components. These parts are only available from Siemens, the original manufacturer. Siemens has provided pricing for each part, including lead time for deliveries. Staff has performed a price analysis and deemed the cost to be fair and reasonable.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute MTS Doc. No. L1625.0-23, (in substantially the same format as Attachment A) a sole source award to Siemens in the amount of $265,762.11 for the purchase of Siemens computer aids signaling components for the MOW department.

_____

Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Draft MTS Doc. No. L1625.0-23
B. Scope of Work
C. Quote

Metropolitan Transit System

STANDARD AGREEMENT

FOR

SIEMENS COMPUTER AIDS SIGNALING (SICAS) S7 COMPONENTS

MTS DOC. NO. L1625.0-23

THIS AGREEMENT is entered into this _____ day of _____, 2022 in the State of California by and between San Diego Metropolitan Transit System ("MTS"), a California public agency, and the following, hereinafter referred to as "Contractor":

Name: Siemens Mobility, Inc. Address: 5301 Price Avenue

McClellan CA 95652
City State Zip

Form of Business: Corporation
(Corporation, Partnership, Sole Proprietor, etc.)

Email: Reiner.G.Martin@siemens.com

Telephone: (916) 273-2960

Authorized person to sign contracts: Martin Reiner — Name; Director of Rail Services — Title

The Contractor agrees to provide goods as specified in the conformed Scope of Work (Exhibit A), Contractor's Bid Pricing Form (Exhibit B), and in accordance with the Standard Agreement, including Standard Conditions (Exhibit C), and signed MTS Forms (Exhibit D).

The contract is effective October 1, 2022 to December 31, 2023. Delivery of all orders must be shipped in a timely manner. The lead time is shown in Exhibit B.

Payment terms shall be net 30 days from invoice date. The total contract cost shall not exceed $265,762.11 without the express written consent of MTS.

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	SIEMENS MOBILITY, INC.
By: _____ Sharon Cooney, Chief Executive Officer	By _____
Approved as to form: By: _____ Karen Landers, General Counsel	Title: _____

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SICAS S7 SPARES PURCHASE

ATTACHMENT A - SCOPE OF WORK (SOW)

1. OBJECTIVE

Siemens will provide the spares for the SICAS S7 system shown in Attachment B.

The Purchase Order will be effective October 1, 2022 to December 31, 2023 to allow for the parts delivery and final invoicing.

The parts will be delivered by Siemens over the period of the quoted lead time across each part.

2. DELIVERY

All parts shall be delivered to the following address:

San Diego Metropolitan Transit System
1341 Commercial Street
San Diego CA 92113
Phone: 619-595 4933

3. INVOICES/PAYMENT

Invoices must be sent to the MTS Accounting Department, via email, at ap@sdmts.com. All invoices must have the Purchase Order and contract number clearly displayed to ensure timely payment. MTS will not pay on packing slips, receiving documents, delivery documents, or other similar documents. Invoices must be submitted for payment.

MTS shall process the invoice for payment within thirty (30) days of the final invoice approval date. Advanced Payment is Not Allowable.

Contractors must also indicate if any of the invoiced amount(s) is for service or work provided by a subcontractor and indicate the amount that will be paid to the subcontractor. Contractors must also comply with the prompt payment requirements in the Prompt Progress Payments section of the Standard Conditions.

4. LABELING AND SHIPPING

Each shipped item shall have the below information listed on the shipping label:

1. OEM part number
2. MTS part number
3. Part description
4. PO number
5. Quantity
6. Unit of Measure

All shipments shall be FOB destination and an all materials shall be packaged sufficiently to arrive undamaged at its destination.

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SIEMENS COMPUTER AIDS SIGNALING (SICAS) S7 COMPONENTS

Siemens Part #	MTS Material	Description	Lead Time	QTY	Unit cost	Extended total
A2V00002172544	70202722	COMMUNICATION PROCESSOR CP PRO	11 Months	10	$ 3,580.41	$ 35,804.10
A2V00082037679	70202723	SICAS Terminalmodul TM-P15C23-A0	11 Months	10	$ 103.13	$ 1,031.30
A2V00002106081	70202724	Sicas TM-E15C24-O1 f. ET 200S	11 Months	10	$ 279.95	$ 2,799.50
A2V00082037675	70202735	SICAS TERMINAL MODULE TM-E30C4	11 Months	10	$ 250.47	$ 2,504.70
A2V00082037695	70202737	TERMINATING MODULE FOR ET 200S	11 Months	10	$ 300.57	$ 3,005.70
A2V00001788217	70199340	SICAS Vital 12V Electronic Input Module	11 Months	21	$ 662.11	$ 13,904.31
A2V00001788219	70199347	SICAS DO 12 V (OUTPUT MODULE)	11 Months	23	$ 757.94	$ 17,432.62
A2V00001788135	70199342	SICAS 24 INPUT MODULE USA	11 Months	13	$ 470.45	$ 6,115.85
A2V00001788218	70199346	SICAS 24 V OUTPUT MODULE USA	11 Months	13	$ 531.43	$ 6,908.59
A2V00082049352	70200854	COBO MODULE	48 Weeks	10	$ 7,339.29	$ 73,392.90
A2V00082049349	70200855	SIGNAL INTERFACE MODULE	48 Weeks	10	$ 8,374.74	$ 83,747.40

	$ 246,646.97
Tax	$ 19,115.14
Overall total	**$ 265,762.11**

Agenda Item No. 22

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

PARKING USAGE AND ALTERNATIVES MARKET STUDY – WORK ORDER

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute Work Order WOA357-AE-02 (in substantially the same format as Attachment A) under MTS Doc No. PWL357.0-22 with Chen Ryan Associates, Inc., (CRA), a Disadvantaged Business Enterprise (DBE), in the amount of $136,864.86, to conduct a parking usage study and analysis.

Budget Impact

The total budget for this work order shall not exceed at $136,864.86. This project is funded by the FY 2023 Planning Department Operating Budget 451010-571140.

DISCUSSION:

MTS maintains a portfolio of properties, many of which include park-and-ride lots, that are available for joint development opportunities. MTS Board Policy No. 18 enables MTS to make these parcels available for redevelopment projects, including multi-family housing with low-income and affordable units at the maximum possible density. Promoting quality transit-oriented development on or near MTS's system can generate new opportunities to create direct and indirect revenue for MTS, while contributing to environmentally sustainable and livable communities focused on transit accessibility.

The availability of park-and-ride spaces allows some MTS riders to use the system who wouldn't otherwise have nearby access to transit. Parking also uses space that could be developed with more housing or other uses, and many stations have robust feeder transit service. As interest in redeveloping MTS station properties with residential projects has increased, staff has been challenged with quantifying the number of parking spots at each station that need to be preserved for transit riders after development.

Under this proposed WOA357-AE-02, CRA will conduct a detailed analysis of various MTS stations with parking facilities and corresponding rider catchment areas. These will be combined with a demand estimation to determine the appropriate amount of replacement park-and-ride

spaces that should be required when future joint development projects are proposed. Alternative strategies for meeting first-mile/last-mile travel needs will also be examined.

On September 15, 2021, MTS issued a solicitation for On-Call Architectural and Engineering (A&E) Design Services by Requesting Statements of Qualifications (RFSQ) from firms with expertise in a variety of A&E design and related consulting services separated into the following three (3) categories:

Category A: Comprehensive/Full Service - Five (5) prime contracts
Category B: Small Business (SB) Set Aside - Three (3) prime contracts awarded to a certified SB or a DBE certified firm (which is also considered to be an SB)
Category C: Specialty Prime – Up to Five (5) specialty service contracts

As a result of the RFSQ, seven (7) firms were selected to perform various A&E services. For projects requiring A&E Services, work orders will be issued to these firms.

On June 15, 2022, MTS issued a Request for Proposals (RFP) from the on-call consultant bench to the Category B firms, Pacific Rail Enterprises, Inc. (PRE), and CRA.

CRA was the single proposer. Staff deemed this proposal to be responsive and met the requirements of the RFP, including experienced staff that has substantial experience in analyzing park-and-ride needs for transit and other projects.

Through negotiations, CRA lowered its cost proposal from $159,218.29 to $136,864.86, which is a savings to MTS of $22,353.43 that staff deemed to be fair and reasonable.

For this project, CRA will not utilize subcontractors.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute Work Order WOA357-AE-02 (in substantially the same format as Attachment A) under MTS Doc No. PWL357.0-22 with CRA, a DBE, in the amount of $136,864.86, to conduct a parking usage study and analysis.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Draft Work Order
B. Costs

Metropolitan Transit System

September 15, 2022

MTS Doc. No. PWL357.0-22
WOA357-AE-02

Mr. Matt Capuzzi, PE
Executive Vice President/Principal
Chen Ryan Associates, Inc.
3900 Fifth Avenue, Suite 310
San Diego, CA 92103

Dear Mr. Capuzzi:

Subject: WORK ORDER WOA357-AE-02, TO MTS DOC. NO. PWL357.0-22, ENGINEERING SERVICES FOR PARKING USAGE AND ALTERNATIVES MARKET STUDY

This letter shall serve as Work Order WOA357-AE-02, under the General Engineering Consultant Agreement, MTS Doc. No. PWL357.0-22, as further described below.

SCOPE OF SERVICES

This Work Order shall provide engineering services for parking usage and alternatives market study (Attachment A).

SCHEDULE

The Scope of Services, as described above, shall be for a period of twelve (12) weeks from the date of the Notice to Proceed.

PAYMENT

Payment shall be based on actual costs in the amount not to exceed $136,864.86 without prior authorization of MTS (Attachment B).

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Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

Sharon Cooney
Chief Executive Officer

Accepted:

_____
Matt Capuzzi, PE
Executive Vice President/Principal

Date: _____

Attachments: Attachment A, Scope of Services
Attachment B, Negotiated Fee Proposal

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ATTACHMENT A
SCOPE OF SERVICES

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I. PROJECT DESCRIPTION

Per the direction of the MTS Board of Directors, MTS staff seeks a consultant to conduct a study of MTS park-and-ride facilities to determine the parking needs at each parking facility in the MTS transit system. Addressing increasing demand for affordable housing in the San Diego Region, MTS Policy 18 enables the agency to make MTS-owned facilities available for joint development for multi-family housing with low-income and affordable units at the maximum possible density. MTS maintains a portfolio of properties, including MTS park-and-ride lots, which are available for joint development opportunities. MTS seeks to have a detailed analysis of each MTS parking facility and its rider catchment area in order to make informed decisions regarding parking at MTS facilities when joint development projects are proposed.

Per MTS Policy 18, joint development projects proposed at MTS facilities must support the goal of generating transit ridership. To maximize transit ridership, the profiles for each facility will quantify critical thresholds of parking availability and effects on transit ridership to inform decisions regarding parking supply levels. Additionally, the selected consultant will develop parking replacement strategies for each facility that encourage transit ridership, which may include off-site parking locations, mobility hubs, active transportation facilities, opportunities for ride share, and opportunities for micro-transit or micro-mobility.

The parking-and-ride rider catchment profiles and parking demand forecasts conducted by the selected consultant will provide critical information to make decisions regarding park-and-ride facilities in the near future; however, proposals for joint development projects may surface decades after the study has concluded. To enable MTS to maintain accurate parking demand estimates over time, the selected consultant will propose and develop a methodology for MTS to assess parking needs at park-and-ride facilities as future joint development projects are proposed.
Goals:

II. EXPECTED RESULTS

1. Identify the parking needs to maximize transit ridership for each MTS parking facility
2. Develop profiles for the rider catchment areas around each MTS parking facility
3. Identify parking replacement strategies for each MTS parking facility
4. Develop methodology for MTS to calculate amount of parking needed at MTS parking facilities for future proposed joint development projects.
5. Offer parking policy recommendations for maximizing utility of Park and Ride spaces for MTS riders

III. SCOPE OF WORK

The scope of work shall consist of the following tasks and deliverables:

TASK 1 - PROJECT MANAGEMENT
Task 1 of the scope of work is associated with project management and quality control. A detailed description of our approach to this task is provided in Section 2 of the original proposal.

TASK 2 – EXISTING CONDITIONS
In order to gain a holistic understanding of the variables which may influence park-and-ride necessity, and the possible effects of parking displacement at any of the MTS transit stations, CRA will first comprehensively assess existing conditions for each of the agency's stations with transit parking grouped by the six transit corridors identified in the RFP. This effort will consist of hourly parking occupancy data collection, GIS analysis of the surrounding environs of each transit station to examine population, land

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use/destination, employment, transportation, and other characteristics, and a park-and-ride user survey. The methods to be used in this task are described further in the following sub-tasks.

TASK 2.1 HOURLY PARKING OCCUPANCY DATA COLLECTION

There are approximately several dozen park-and-ride facilities in MTS's inventory. To best maintain the project's schedule and to save the agency on the expense of a massive data collection effort, CRA recommends limiting new parking data collection to up to 16 transit stations identified in the attached fee and make use of historically collected parking data to supplement for the remaining stations.

The stations which should be prioritized for new commissioned parking data collection should be locations with planned or with high potential for development and any neighboring stations which may possibly capture displaced parking from the redeveloping stations. As a part of Policy 18, MTS has done a great degree of legwork for assessing each site's development potential.

The CRA team will conduct one (1) day of parking data collection at facilities targeted for data collection, using mounted license plate reader cameras. The CRA team will coordinate with MTS to mount high resolution cameras at the entrance and exit of each transit station parking lot to collect license plate information at up to 15 of the 16 transit stations and conduct a drive through validation during the morning (7 AM – 9 AM, noon (11 AM – 1 PM), and evening (4 PM – 6 PM) at 1 station (Iris Avenue Station). Note that due to the multiple entrances/exits at the Iris Avenue Transit Station, it is not economical to mount and process license plate information at this station. Rather, CRA proposes to collect parking occupancy manually to establish the base line parking demand at this station. The license plate information will be aggregated and compared against each other to determine parking occupancy and turn over. This approach will also require manual data collection to account for the vehicles already parked at the station prior to the installation of the cameras. The collection at hourly intervals will facilitate our team's understanding of the typical length-of-stay of parking-to-transit trips and help us estimate the total transit trips generated by the parking.

Since the beginning of the pandemic, transit ridership, and hence transit parking usage, have been lower than pre-2020 conditions. Parking counts may need to be adjusted using historical parking data from MTS. CRA is familiar with the MTS database having previously used historical parking data to evaluate development feasibility for several MTS's stations, such as the Spring Street and Amaya Drive stations in La Mesa.

To develop an understanding of residential parking occupancy at stations with existing transit-oriented residential development, our team will also conduct an occupancy count of the residential parking spaces at Encanto/62nd Street Station. Collection at this location will provide an indication of whether the residential parking is "right-sized" at current transit-oriented developments in the region and provide concrete data on how adjacent residential parking and commuter parking demands overlap during the peak periods. Collection at this location will help provide an understanding of the influence of residential parking demand at transit stations with TODs, to inform the parking demand assessment and data products of Task 3.4.

TASK 2.2 STATION AREA GEOGRAPHIC ANALYSIS

CRA will determine the geographic catchment area of the stations along each of the six transit corridors identified in the study. CRA has extensive experience working with modal network datasets for driving, transit and walking in ArcGIS Network Analyst. In various past projects, CRA has calculated network catchment areas using Network Analyst's tools to approximate service areas for public facilities (e.g., areas closest to fire stations, parks and libraries), nearest territories to businesses for market analyses informing VMT assessments, and identification of nearest exit/access points in residential areas to

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determine traffic worst case scenarios for evacuation studies. One unique consideration for determining catchment areas for transit stations (if it is assumed a transit line will have peak demand only in one direction per peak) is that the network analysis must account for excluding transit stations which are closest to potential users but may ultimately result in a longer travel time if they are in the opposite direction of the presumed peak destination. Calculating the most precise park-and-ride catchment areas upholding this assumption would require a multi-modal network dataset which includes both driving and transit travel time attributes. To ground-truth the validity of the GIS-developed catchment areas, the coverage areas will be compared to home origin locations and origin stations reported by survey respondents from past SANDAG on-board transit passenger surveys.

Once the catchment areas are developed, various indicators within will be collected, calculated or summarized to further develop understanding of the station's use characteristics and the nature of its transit demand (e.g., whether there is all-day/two-way demand, peak period/peak direction or something else). Data to be collected, calculated or summarized within the catchment areas will include:

- Population and demographics – including age and various socio-economic characteristics
- Employment and point of interest/destination accessibility – calculated separately within the station catchment area and within a 45-minute transit trip from the station
- Station boardings and alightings
- Commuting transportation mode share
- Transit user mode of access to the stations
- Vehicle ownership per household
- Mileage of bicycle facilities and documentation of other alternative transportation amenities
- Commute trip destinations
- Other relevant information obtained from the 2015 SANDAG's On-Board Transit Passenger Survey

These assessments will help characterize each station area's potential user base, current travel behavior, whether the station attracts many transit trips from other parts of the system, and the general mobility characteristics of the area (e.g., the usefulness of taking transit for purposes other than downtown commute trips, and suitability for walking and bicycling). Additional features which could be examined are destinations accessible by transit trips using transit travelsheds to capture data and commute destinations from each catchment area – available from US Census LEHD OnTheMap. The latter dataset, in addition to identifying where commuters from each catchment area commute to, can also help determine which station catchment areas are inhabited by the highest concentration of downtown commuters – who, due to high parking costs and traffic congestion, are the prototypical park-and-ride users.

All spatial characteristics collected and summarized in this task will be provided as map exhibits and can be hosted on an ArcGIS Online viewer. The purpose of gathering these characteristics should help reveal which stations genuinely have no alternative to driving for station access (the most suitable scenario for park-and-ride), and which stations are most primed to succeed as residential development sites for car-free or car-light households/lifestyles, and where transit parking can be eliminated or reduced without

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negatively impacting daily transit trips. The characteristics collected here will inform the Task 3 Needs Assessment.

DELIVERABLES
Draft and final technical memorandum documenting the following:

- Parking occupancy data collection at park-and-ride facilities
- Characteristics profiles of each transit station's catchment area based on extensive geographic analysis, with map exhibits and/or hosted in an ArcGIS Online viewer

TASK 3 – PARKING NEEDS ASSESSMENT
As a part of Task 3, CRA will synthesize the data and station profile characteristics collected from Task 2 and examine the site characteristics and development potential of each station site to produce a parking needs assessment framework that accounts for the variability of each station's possible transit user parking demand and a reasonably expected parking supply each redeveloped station site could reasonably provide.

TASK 3.1 TRANSIT RIDERSHIP PROFILE & PARKING DEMAND FORECASTING
Informed by the extensive parking occupancy, station area character profiles, and any other supplemental data sources used in the completion of Task 2, CRA will conduct a parking needs assessment that will estimate the elasticity of transit usage due to parking loss at each station. The analysis will factor all the possible travel behavior outcomes which may occur in response to the loss of parking supply. These possible outcomes include the potential loss rate of transit riders to other commute modes, an estimate of transit mode share and ridership gain provided by the new development, transit riders who shift their park-and-ride usage to a different station, transit riders who park in the neighborhood (creating potential spillover parking issues), and transit riders who choose a different mode to access the station.

These behavior responses are presumed to be shaped by the different characteristic profiles of each station area and the geography and built environment of the transit corridor on which the station is located. Each will be factored into the baseline observed parking demand at each station to determine what the effects are for transit usage and to formulate the parking demand forecasting.

CRA will use the parking occupancy data collection, each station area's characteristics profile, Big Data (REPLICA), and SANDAG ABM model data to develop a refined baseline estimate of transit parking demand for each station. For this task, CRA can apply multiple regression analysis with the data and variables collected in Task 2 to determine a statistically significant model for anticipated park-and-ride need at each station.

TASK 3.2 DEVELOPMENT SITE CHARACTERISTICS AND PARKING SUPPLY NEED
CRA will develop potential development profiles based factors such as comparative development proposals, constructed projects, and the station's site envelope and characteristics, and typical parking generation rates, shared parking rates, and temporal peak periods by land use. This task will help quantify the parking supply that can feasibly be provided on site (without structured parking) and the prevailing or expected quantity of parking needed to support the commercial and residential land uses at each site. This information will also be used to develop the parking demand projection for each of the potential development profile. Up to five (5) different development potential profiles are assumed as a part of this task.

TASK 3.3 PARKING DEMAND ASSESSMENT AND PARKING CALCULATOR

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Based on the inputs from Task 3.1 and Task 3.2, CRA will develop a parking need estimation tool for MTS, the purpose of which is to help MTS systematically assess the quantity of parking a developer should provide during the joint development process. This tool will be calibrated against the studied sites to ensure that the minimum parking requirements is grounded on field conditions. The tool will provide MTS the following capabilities:

- Estimates of parking generation per station based on the size and type of development. CRA will incorporate parking generation rates from Institute of Transportation Engineer Parking Generation Manual for typical redevelopment land uses such as multi-family residential, local serving retail, and single-tenant office.
- Adjustment of parking generation based on shared parking potential, using Urban Land Institute's Shared Parking Manual which blends temporal demand variations from different land use types.
- Provide parking supply recommendations for each station based on the station's existing parking demand, geographic characteristics, and development potential.
- Provide estimates of the parking needs based on transit ridership at each site.
- Capability for MTS staff to update the tool based on the monthly/yearly parking surveys (already conducted by MTS).

DELIVERABLES

- Draft and Final Parking demand calculator tool
- Draft and final technical memorandum documenting:
  - the parking needs assessment for each station based on baseline parking demand and estimation of different travel behavior outcomes in response to the loss of station area parking.
  - The parking demand based on different development profiles
  - Parking need estimation tool user guide and documentation

TASK 4 – PARKING REPLACEMENT PLAN, STRATEGIES FOR PARKING ALTERNATIVES

Strategies will be a direct response to parking need identified in Task 3, which may include parking management strategies that could be used in high demand settings that can get more efficient productivity out of the parking supply and/or stimulate shift "marginal" park-and-ride users toward other methods of station access, additional strategies will be general recommendations to improve first/last mile infrastructure, wayfinding, programs and/or policies to improve the conditions of mobility alternatives to parking, such as walking, bicycling and convenient short-term loading for pick-up and drop-off (including home-based and TNC).

TASK 4.1 PARKING MANAGEMENT STRATEGIES AND BEST PRACTICES

CRA will assess the applicability of various parking management strategies to improve the productivity of its transit parking supply. An assessment of past MTS experience and the experiences of other transit agencies will help inform the best practices to advance to advance for this study.

Parking management strategies would use parking supply more efficiently, helping mitigate the impacts from the inevitable decrease in supply from station area development.

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Various options can be explored and potentially applied to the most appropriate station – based on our analysis in the previous tasks which will provide a profile of users, their parking lot preference, location and hourly usage of the lot, availability of alternative access modes and adjacent land uses.
A summary of best practices parking demand strategies will be provided as a part of this task, and assess each strategy's ease of implementation.

TASK 4.2 MOBILITY ALTERNATIVE STRATEGIES
While strategies which improve mobility alternatives to driving should be considered at all transit stations regardless of parking necessity or likelihood of development, such measures should be prioritized where a need due to parking loss has been identified from Task 3. We will examine first/last mile connectivity by applying tools CRA has developed that consider priority paths for improved safety and to provide connections to adjacent neighborhoods and regional bicycle and pedestrian networks.

Another strategy are mobility hubs at each station, which often contain amenities which can eliminate some of the anxiety of getting to and from the station without driving. Mobility hubs can be installed by MTS in the parking lots they own or requested of developers as a condition of being awarded development rights, making them a low hanging fruit opportunity. Ideal mobility hubs should feature expanded capacity for secure long term high quality bicycle parking, shared micro-mobility, and convenient drop-off, pick-up and waiting areas. Mobility hubs also serve transit-oriented developments well, making it easier for residents live without a vehicle and thereby reducing the overall need for parking.

TASK 4.3 MTS PARK-AND-RIDE SUMMARY AND POLICY WHITE PAPER
Content from the tasks previously described will be incorporated into a draft and final Summary Document and Policy White Paper. The White Paper will document the policies associated with potential suggested strategies resulting from the analysis, parking demand and parking calculation guidelines, mobility alternative strategies (e.g., mobility hubs), and summary of parking management strategy best practices, and potential policy changes that could be made to improve MTS utilization of park-and-ride facilities for highest and best use for the transit system.

DELIVERABLES
Park-and-Ride Summary and Policy White Paper

IV. PERIOD OF PERFORMANCE

All required services shall be completed within six (6) months from the date of the Notice to Proceed.

V. DELIVERABLES

Deliverables are anticipated to include the following:

a. Profiles of each MTS park-and-ride facility grouped by corridor or sub-region, detailing each facility, transit service, alternative transportation, the rider catchment area, demographics of rider catchment area, and major employers. Profiles must include GIS maps showing rider catchment areas, population density, major employers/trip generators, transit ridership, demographic data, and active transportation access.
b. Report detailing the amount of parking spaces needed at each park-and-ride facility to sustain transit ridership and the effects of reductions in parking for transit ridership, the surrounding community, and nearby park-and-ride facilities.

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c. Parking replacement plan with strategies to incentivize alternative travel modes to and from park-and-ride facilities.
d. Technical memorandum detailing parking demand forecasting methodology
e. White paper offering recommendations for MTS parking policy changes to maximize utility of MTS-owned spaces for MTS riders.

VI. SCHEDULE OF SERVICES/MILESTONES/DELIVERABLES

A. Tasks Schedule

Task	**Begin/End Dates**
Task 1: Project Management and Coordination	10/1/2022 - 4/1/2023
Task 2: Existing Conditions Assessment	10/1/2022 - 11/1/2022
Task 3: Parking Needs Assessment	11/1/2022 – 1/31/2023
Task 4: Parking Replacement Plan and Strategies for Parking Alternatives	2/1/2023 – 4/1/2023

B. Milestones/Deliverables Schedule

Milestone/Deliverable	**Due Date**
Task 2: MTS Park-and-Ride facility profiles.	11/7/2022
Task 3: Parking Needs Assessment Report	1/31/2023
Task 4: Parking Replacement Plan	4/12/2023
Task 4: Technical Memorandum: Parking Demand Forecasting Methodology	4/12/2023
Task 5: White Paper recommending MTS parking policy changes	4/12/2023

VII. MATERIALS TO BE PROVIDED BY MTS AND/OR THE OTHER AGENCY

a. Ridership data for MTS transit system.
b. Schedule/service frequency data for transit MTS system.
c. Historic Park-and-Ride usage data.

VIII. SPECIAL CONDITIONS

Not Applicable.

IX. MTS ACCEPTANCE OF SERVICES:

Contractor shall not be compensated at any time for unauthorized work outside of this Work Order. Contractor shall provide notice to MTS' Project Manager upon 100% completion of this Work Order. Within five (5) business days from receipt of notice of Work Order completion, MTS' Project Manager shall review, for acceptance, the 100% completion notice. If Contractor provides final service(s) or final work product(s) which are found to be unacceptable due to Contractors and/or Contractors subcontractors negligence and thus not 100% complete by MTS' Project Manager, Contractor shall be required to make revisions to said service(s) and/or work product(s) within the Not to Exceed (NTE) Budget. MTS reserves the right to withhold payment associated with this Work Order until the Project Manager provides written acceptance for the 100% final completion notice. Moreover, 100% acceptance

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and final completion will be based on resolution of comments received to the draft documents and delivery of final documentation which shall incorporate all MTS revisions and comments.

Monthly progress payments shall be based on hours performed for each person/classification identified in the attached Fee Schedule and shall at no time exceed the NTE. Contractor shall only be compensated for actual performance of services and at no time shall be compensated for services for which MTS does not have an accepted deliverable or written proof and MTS acceptance of services performed.

X. DEFICIENT WORK PRODUCT:

Throughout the construction management and/or implementation phases associated with the services rendered by the Contractor, if MTS finds any work product provided by Contractor to be deficient and the deficiently delays any portion of the project, Contractor shall bear the full burden of their deficient work and shall be responsible for taking all corrective actions to remedy their deficient work product including but not limited to the following:

- Revising provided documents,

At no time will MTS be required to correct any portion of the Contractors deficient work product and shall bear no costs or burden associated with Contractors deficient performance and/or work product.

XI. DELIVERABLE REQUIREMENTS

Contractor will be required to submit any and all documentation required by the Scope of Work. The deliverables furnished shall be of a quality acceptable to MTS. The criteria for acceptance shall be a product of neat appearance, well-organized, and procedurally, technically and grammatically correct. MTS reserves the right to request a change in the format if it doesn't satisfy MTS's needs. All work products will become the property of MTS. MTS reserves the right to disclose any reports or material provided by the Contractor to any third party.

Contractor shall provide with each task, a work plan showing the deliverables schedule as well as other relevant date needed for Contractor's work control, when and as requested by MTS.

Contractor's computer data processing and work processing capabilities and data storage should be compatible with Windows compatible PC's, text files readable in Microsoft Word, and standard and customary electronic storage. Contractor shall maintain backup copies of all data conveyed to MTS.

Contractor shall provide MTS with hard copy or electronic versions of reports and/or other material as requested by MTS.

XII. PRICING

Pricing shall be firm and fixed for the duration of the Work Order and any subsequent Change Orders/Amendments to the Work Order. There shall be no escalation of rates or fees allowed.

XIII. ADDITIONAL INFORMATION

List additional information as applicable to the specific Work Order scope of services.

XIV. PREVAILING WAGE

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Prevailing wage rates apply to certain personnel for these services? ☐ Yes x No

If yes, please list classification subject to prevailing wage rates:

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Work Order Estimate Summary

MTS Doc. No.	PWL357.0-22
Work Order No.	WOA357-AE-02
Attachment:	B

Work Order Title: MTS PARK-AND-RIDE PARKING USAGE AND ALTERNATIVES MARKET STUDY

Table 1 - Cost Codes Summary (Costs & Hours)

Item	Cost Codes	Cost Codes Description	Total Costs
1		CR Associates	$136,864.86
2			
3			
4			
5			
6			
7			
		Totals =	**$136,864.86**

Table 2 - TASKS/WBS Summary (Costs & Hours)

Item	TASKS/WBS	TASKS/WBS Description	Labor Hrs	Total Costs
1		Project Management	86.0	$14,676.92
2		Existing Conditions	305.0	$54,218.70
3		Parking Needs Assessment	257.0	$38,849.69
4		Parking Replacement Plan and Strategies for Parking Alternatives	173.0	$29,119.55
5				
5				
6				
7				
8				
9				
10				
		Totals =	**821.0**	**$136,864.86**

Table 3 - Consultant/Subconsultant Summary (Costs & Hours)

(If Applicable, Select One)				Consultant	Labor Hrs	Total Costs
DBE	DVBE	SBE	Other			
				CR Associates	821.0	$136,864.86
				Totals =	**821.0**	**$136,864.86**

Agenda Item No. 23

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

STORMWATER MANAGEMENT SERVICES - CONTRACT AMENDMENT

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to:

1) Ratify Amendment No. 1 to MTS Doc. No. PWG332.0-21 (in substantially the same format as Attachment A) with SoCal Stormwater Runoff Solution Services, Inc. (SoCal), a Small Business (SB), in the amount of $48,939.62 for the addition of (4) Bus Rapid Transit (BRT) locations and updated various inspection and maintenance services;

2) Ratify Amendment No. 2 to MTS Doc. No. PWG332.0-21 (in substantially the same format as Attachment B), with SoCal for increases in as-needed services and filters. This is a no-cost amendment; and

3) Execute Amendment No. 3 to MTS Doc. No. PWG332.0-21 (in substantially the same format as Attachment C) with SoCal in the amount of $232,884.65 for additional funds to cover increased services.

Budget Impact

The total budget for this contract shall not exceed $1,459,024.45. This project is funded by the Storm Water Operations Budget 122010 – 571140.

DISCUSSION:

MTS has been mandated by State Resources Water Quality Control Board (SRWQCB) to protect navigational waterways. As part of this mandate, MTS is required to enroll its three (3) impacted facilities under the Industrial General Permit (IGP). These facilities include Imperial Avenue Division (IAD), Kearny Mesa Division (KMD), and Trolley Yard resulting in the issuance of three separate permits from the SRWQCB. The permits require storm water inspections, monitoring, sampling, best management practices (BMP) optimization, facility audits, training,

Stormwater Pollution Prevention Plans (SWPPP) updates, and preparation of required reports each year to the SRWQCB.

Additionally, the SRWQCB has identified surface waters that are considered impaired, which means the surface water does not meet water quality standards. The SRWQCB has summarized these impaired surface waters to identify those requiring monitoring for total maximum daily load (TMDL). A TMDL establishes a water quality target intended to restore the water body and allocates the available pollutant loading to point and non-point source discharges into that waterbody, natural background sources, and a margin of safety. Within MTS's jurisdictional area, two (2) TMDLs have been incorporated into the National Pollutant Discharge Elimination System (NPDES) permits that cover MTS.

On June 17, 2021 (AI 6), the MTS Board of Directors approved a contract award to SoCal for stormwater management services for the successful implementation and execution of the agency's three (3) facilities SWPPP, and the monitoring for TMDL of impaired surface waters identified by the agency's TMDL Compliance Plan.

On November 18, 2021, the CEO approved Amendment No. 1, which added BRT locations to the agreement and updated inspection requirements. Furthermore, the Amendment corrected an error on the original agreement in which $49,020.09 was accidentally included in the option year amount, but not included in the base value as intended. This amount, however, was part of the Board-approved amount.

On April 7, 2022, the CEO approved Amendment No. 2, which increased the various estimated quantities in the agreement. Costs associated with increased quantities were to be absorbed by the currently available as-needed funds in the agreement. Since then, however, staff determined for contract management purposes, it was more prudent not to mix the two funding sources.

Today's proposed actions are shown below:

1) Ratify Amendment No. 1 in the amount of $48,939.62 for:

    a. the addition of inspection and maintenance services four (4) BRT locations for base years 1-5 for Items 10-13 to Table I of the Bid Form;
    b. the addition of Item 15 to Table II of the bid form for base years 1-5 for as-needed vac truck cleaning of the Stormcepter HDS units;
    c. the revision Section 5.4,f of the Scope of Work to update the requirements for requesting a flagger;
    d. the revision Section 5.6,b of the Scope of Work to include protocols for accessing and performing inspections at MTS locations;
    e. the revision Item 9, Table II of the Bid Form to replace the LIDMIX Media Pillow BMP with RUBBERIZER by ClearTec™ BMP; and
    f. reassignment of $49,020.09 from the option years to the base amount of agreement that were unintentionally omitted from the original executed agreement but approved by the Board.

2) Ratify Amendment No. 2. This amendment increases various estimated quantities in the agreement. This was a no-cost amendment as the costs associated with increased

quantities were absorbed by the currently available as-needed funds in the agreement. The changes are:

a. The increase of the number of filters in Item 6, Table I, Scheduled Services of the bid form from 20 to 24. As a result, the pricing will be increased by $315.00 per month beginning in February 2022;
b. The increase of the estimated quantities in Items 1 and 2, Table II, As-Needed Services of the bid form from 4 to 12; and
c. the increase of the estimated quantities in Item 15, Table II, As-Needed Services of the bid form from 20 to 40. The increased cost for these items was absorbed by the available as-needed funds in the agreement.

3) Execute Amendment No. 3 in the amount of $232,884.65 for:

a. the addition of funds for option years 1-5 that were not included in Amendment No. 1 for the inspection and maintenance services four (4) BRT locations for Items 10-13 to Table I of the bid form;
b. the addition of funds for option years 1-5 that were not included in Amendment No. 1 for the addition of Item 15 to Table II of the bid form for as-needed vac truck cleaning of the Stormcepter HDS units;
c. the addition of funds that were not included in Amendment No. 2 for both base and option years 1-5 for the increase of the number of filters in Item 6, Table I, Scheduled Services of the bid form from 20 to 24;
d. the addition of funds that were not included in Amendment No. 2 for both base and option years 1-5 for the increase the estimated quantities in Items 1 and 2, Table II, As-Needed Services of the bid form from 4 to 12;
e. the addition of funds that were not included in Amendment No. 2 for both base and option years 1-5 for the increase the estimated quantities in Item 15, Table II, As-Needed Services of the bid form from 20 to 40;
f. the addition of funds for base year 2 for a 2% pricing increase for all items in Tables I and II; and
g. the addition of funds for both base and option years 1-5 for the addition of one (1) concrete swale that requires bi-annual inspection and a report, and one (1) additional drop inlet with no filter that requires bi-annual inspection and cleaning beginning in Year 2.

The contract and amendments are summarized below:

Contract No.	Purpose	Amount	Board Approval Date
PWG332.0-21	Original Contract	$1,177,200.18	06/17/21, Item 6
PWG332.1-21	Amendment 1 – Add service locations and revise to the Scope of Work	$48,939.62	Today's proposed action (ratify)
	Reverse funds from option years intended for base years	($49,020.09)	
	Assign funds from option years intended for base years	$49,020.09	
PWG332.2-21	Amendment 2 – Increase quantities of various line items in the bid form	$0.00	Today's proposed action (ratify)

	Base Years		
	Option Years (if exercised by MTS)	$104,853.39	
PWG332.3-21	Amendment 3 – Add service locations, and increase quantities of various line items in the bid form		Today's proposed action (approve)
	Base Years	$80,057.58	
	Option Years	$152,827.07	
	TOTAL CONTRACT	$1,459,024.45	

The pricing for maintenance of the additional signs is the same as unit prices in the original agreement, which was procured via a competitive Request for Proposals (RFP) process. Thus, staff deemed the pricing fair for the proposed Amendment fair and reasonable.

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to:

1) Ratify Amendment No. 1 to MTS Doc. No. PWG332.0-21 (in substantially the same format as Attachment A) with SoCal Stormwater Runoff Solution Services, Inc. (SoCal), a SB, in the amount of $48,939.62 for the addition of (4) Bus Rapid Transit (BRT) locations and updated various inspection and maintenance services;

2) Ratify Amendment No. 2 to MTS Doc. No. PWG332.0-21 (in substantially the same format as Attachment B), with SoCal for increases in as-needed services and filters. This is a no-cost amendment; and

3) Execute Amendment No. 3 to MTS Doc. No. PWG332.0-21 (in substantially the same format as Attachment C) with SoCal in the amount of $232,884.65 for additional funds to cover increased services.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachments: A. Executed Amendment No. 1
B. Executed Amendment No. 2
C. Draft Amendment No. 3
D. Revised Bid Form

Metropolitan Transit System

Amendment 1

Effective Date: September 28, 2021 MTS Doc No. PWG332.1-21

STORM WATER MANAGEMENT SERVICES

SoCal Stormwater Runoff Solution Services, Inc.
Ram Mohseni
CEO
15030 Ventura Blvd., #669
Sherman Oaks, CA 91403

This shall serve as Amendment No.1 to the original agreement PWG332.0-21 as further described below.

SCOPE
Pursuant to the Scope of Work of the San Diego Metropolitan Transit System (MTS) shall:

#	Description	Amount
1.	Revise Section 5.4, f) of the Scope of Work to update the requirements for requesting a flagger.	$0.00
2.	Revise Section 5.6, b) of the Scope of Work to include protocols for accessing, and performing inspections at MTS locations (Attachment A).	$0.00
3.	Add inspection and maintenance services four (4) Bus Rapid Transit (BRT) locations for as Items 10-13 to Table I of the Bid Form (Attachment B). *Amount included in this Amendment is for base years 1-5. Amounts provided in optional years in Attachment B will be exercised at the sole discretion of MTS.*	$32,693.66
4.	Revise Item 9, Table II of the Bid Form to replace the LIDMIX Media Pillow (Best Management Practice) BMP, with RUBBERIZER by ClearTec™ BMP (Attachment B).	$0.00
5.	Add Item 15 to Table II of the Bid Form for as-needed vac truck cleaning of the Stormcepter HDS Units (Attachment B). *Amount included in this Amendment is for base years 1-5. Amounts provided in optional years in Attachment B will be exercised at the sole discretion of MTS.*	$16,245.96
6.	Add funds to base amount of agreement that were unintentionally omitted from the original executed agreement.	$49,020.09
	Total	**$97,959.70**

SCHEDULE
There shall be no change to the schedule as a result of this Amendment.

PAYMENT

This contract amendment shall authorize additional costs not to exceed $97,959.70. The total value of this contract including this amendment shall be in the amount of $596,151.39. This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney

Digitally signed by Sharon Cooney
DN: cn=Sharon Cooney, o=San Diego Metropolitan Transit System, ou, email=sharon.cooney@sdmts.com, c=US
Date: 2021.11.18 12:24:57 -08'00'

Sharon Cooney, Chief Executive Officer

Agreed:

Ram Mohseni, CEO
SoCal Stormwater Runoff Solution Services, Inc.

Date: 12-29-2021

Attachment: A. Revised Scope of Work
B. Revised Bid Form

ATTACHMENT A
REVISED SCOPE OF WORK

5.4. MINIMUM REQUIREMENTS

f) Any work within fifteen (15) feet of active rail, or as otherwise identified by MTS, shall require a MTS flagger. An MTS Flagger Request form must be submitted to FlagRequest@sdmts.com no later than 72 hours prior to the commencement of the work. The MTS Flagger Request shall include: the specific location, time(s) and date(s) for when a MTS flagger(s) will be necessary. The MTS Flagger will be provided at the expense of the party requesting the work. The requester will be responsible to contact SDTI Assignment Office at (619) 595-4956 no later than 24 hours prior to beginning of work for all cancellations and may be subject to SDTI labor reporting costs.

5.6. DETAILED SCOPE OF WORK

Contractor shall provide all required services to assist in MTS achieving its industrial storm water compliance requirements, including but not limited to routine facility inspections, Qualifying Storm Event (QSE) and BMP monitoring, sampling, and analysis of storm water discharges, training, and maintenance of existing systems. Additionally, Contractor shall be required to prepare annual, Exceedance Response Action (ERA) and rain event ad hoc reports, for each reporting period to be submitted by MTS to the RWQCB in accordance with the current SWPPP. The scope shall include the following:

b) **Routine Inspections:** Contractor shall independently perform monthly facility inspections per the "visual" observation procedures" in the SWPPPs, to include monitoring of the condition of existing BMPs, and upload monthly reports via MTS's inspection tracking portal. Furthermore, Contractor shall access MTS sites following the protocols provided by MTS. For the IAD and KMD locations, Contractor shall follow the safety protocols listed in ATT18_IAD_KMD-SAFETY_PROTOCOLS. For the Trolley location, Contractor shall request a flagger following the protocols provided in Flagperson Right of Way Request form.

ATT18_IAD_KMD-SAFETY_PROTOCOLS

Safety: Every Trip, Every Day *Seguridad: Cada Viaje, Cada Día*

MTS Transit Services Parking Lot Safety

September 2021

Our commitment to safety every trip and every day encompasses all of our employees, contractors, and visitors. Safety awareness is critical while driving, walking, and working on facility parking lots. All individuals on the facility parking lot must adhere to the following requirements.

<u>While driving any vehicle:</u>

- Keep alert and avoid unnecessary distractions
- Give pedestrians the right of way, whether in a designated crosswalk or not
- Make a complete stop at all stop signs and/or painted limit lines
- Observe posted speed limits
- Ensure the parking brake is set before leaving the driver seat
- Use a “spotter” when backing/reversing a bus
- Utilize designated driveways and follow one-way markings correctly
- Park vehicles in marked or designated spaces only

<u>While walking or working:</u>

- Keep alert and avoid unnecessary distractions
- Use marked crosswalks as much as practicable
- Watch your step when exiting buses and going around parked vehicles
- Utilize safety vests when working on the lot for extended periods of time and at night

Violation of this policy is subject to progressive discipline.
As always, see your supervisor or myself if you have any suggestions, questions, or concerns.
Thank you for your continued commitment and focus to safety and assuring that everyone remains safe at MTS.

Michael Wygant
Chief Operating Officer, Transit Services

ATTACHMENT B
REVISED BID FORM

COST PROPOSAL FORM - STORM WATER MANAGEMENT SERVICES

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundreth) in the *% Mark Up* field for each year. The annual *As-Needed Materials/Parts* amount is the sum of Items 1 and 2 for each year. The *Grand Total* is the sum of the *Subtotals* for Tables I, II & III. This table contains formulas that will automatically calculate your pricing.

Table I: SCHEDULED SERVICES

Item	Description	UOM	Annual Service Frequency	Year One 7/1/21 - 6/30/22 Unit Price	Year One Item Total	Year Two 7/1/22-6/30/23 Unit Price	Year Two Item Total	Year Three 7/1/23 - 6/30/24 Unit Price	Year Three Item Total	Year Four 7/1/24 - 6/30/25 Unit Price	Year Four Item Total	Year Five 7/1/25 - 6/30/26 Unit Price	Year Five Item Total
1	Monthly Inspections (All Three Locations)	EA	12	$ 1,350.00	$ 16,200.00	$ 1,390.50	$ 16,686.00	$ 1,432.22	$ 17,186.58	$ 1,475.18	$ 17,702.18	$ 1,519.44	$ 18,233.24
2	Monthly Reporting (All Three Locations)	EA	12	$ 150.00	$ 1,800.00	$ 154.50	$ 1,854.00	$ 159.14	$ 1,909.62	$ 163.91	$ 1,966.91	$ 168.83	$ 2,025.92
3	Annual SWPPP Review/Revision (All Three Locations)	EA	1	$ 2,400.00	$ 2,400.00	$ 2,472.00	$ 2,472.00	$ 2,546.16	$ 2,546.16	$ 2,622.54	$ 2,622.54	$ 2,701.22	$ 2,701.22
4	Annual Comprehensive Site Compliance Eval (All Three Locations)	EA	1	$ 2,000.00	$ 2,000.00	$ 2,060.00	$ 2,060.00	$ 2,121.80	$ 2,121.80	$ 2,185.45	$ 2,185.45	$ 2,251.02	$ 2,251.02
5	Annual Storm Water Training (All Three Locations)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,699.50	$ 1,699.50	$ 1,750.49	$ 1,750.49	$ 1,803.00	$ 1,803.00	$ 1,857.09	$ 1,857.09
6	BMP Monthly Maintenance (Trolley location only/20 filters)	EA	12	$ 1,575.00	$ 18,900.00	$ 1,622.25	$ 19,467.00	$ 1,670.92	$ 20,051.01	$ 1,721.05	$ 20,652.54	$ 1,772.68	$ 21,272.12
7	Annual Inspection Contech Vault (IAD Location Only)	EA	1	$ 475.00	$ 475.00	$ 489.25	$ 489.25	$ 503.93	$ 503.93	$ 519.05	$ 519.05	$ 534.62	$ 534.62
8	Annual Report (All Three Locations)	EA	1	$ 1,350.00	$ 1,350.00	$ 1,390.50	$ 1,390.50	$ 1,432.22	$ 1,432.22	$ 1,475.18	$ 1,475.18	$ 1,519.44	$ 1,519.44
9	BMP Monthly Maintenance (KMD location only - located at the northern boundary of the property, adjacent Opportunity Road/6 filters)	EA	12	$ 341.25	$ 4,095.00	$ 351.49	$ 4,217.85	$ 362.03	$ 4,344.39	$ 372.89	$ 4,474.72	$ 384.08	$ 4,608.96
10	Clean and Inspect - 7x Curb Inlets, No Filter & 1x V-Ditch (Del Lago Location)[1]	EA	2	$ 690.00	$ 1,380.00	$ 710.70	$ 1,421.40	$ 732.02	$ 1,464.04	$ 753.98	$ 1,507.96	$ 776.60	$ 1,553.20
11	Clean and Inspect - 1x Curb Inlet, No Filter & 2x Filterra Tree Units with Curb Bypass (Miramar College Location)[1]	EA	2	$ 480.00	$ 960.00	$ 494.40	$ 988.80	$ 509.23	$ 1,018.46	$ 524.51	$ 1,049.02	$ 540.24	$ 1,080.49
12	Clean and Inspect - 5x Grated Inlet, No Filter, 3x Curb Inlet, No Filter & 900ft V-Ditch & Inspect and Report - Stormceptor HDS Unit (Rancho Bernardo Location)[1]	EA	2	$ 1,230.00	$ 2,460.00	$ 1,266.90	$ 2,533.80	$ 1,304.91	$ 2,609.81	$ 1,344.05	$ 2,688.11	$ 1,384.38	$ 2,768.75
13	Clean and Inspect - 3x Grated Inlet, No Filter, 2x Curb Inlet, No Filter & 300ft Trench Drain & Inspect and Report - 3x Vegetated Bioswales, & 1x Stormceptor HDS Unit (Sabre Springs Location)[1]	EA	2	$ 679.00	$ 1,358.00	$ 699.37	$ 1,398.74	$ 720.35	$ 1,440.70	$ 741.96	$ 1,483.92	$ 764.22	$ 1,528.44
			Table I Subtotals		$ 55,028.00		$ 56,678.84		$ 58,379.21		$ 60,130.58		$ 61,934.50

Item	Optional Year One 7/1/26 - 6/30/27 Unit Price	Optional Year One Item Total	Optional Year Two 7/1/27 - 6/30/28 Unit Price	Optional Year Two Item Total	Optional Year Three 7/1/28 - 6/30/29 Unit Price	Optional Year Three Item Total	Optional Year Four 7/1/29 - 6/30/30 Unit Price	Optional Year Four Item Total	Optional Year Five 7/1/30 - 6/30/31 Unit Price	Optional Year Five Item Total
1	$ 1,565.02	$ 18,780.24	$ 1,611.97	$ 19,343.65	$ 1,660.33	$ 19,923.96	$ 1,710.14	$ 20,521.68	$ 1,761.44	$ 21,137.33
2	$ 173.89	$ 2,086.69	$ 179.11	$ 2,149.29	$ 184.48	$ 2,213.77	$ 190.02	$ 2,280.19	$ 195.72	$ 2,348.59
3	$ 2,782.26	$ 2,782.26	$ 2,865.73	$ 2,865.73	$ 2,951.70	$ 2,951.70	$ 3,040.25	$ 3,040.25	$ 3,131.46	$ 3,131.46
4	$ 2,318.55	$ 2,318.55	$ 2,388.10	$ 2,388.10	$ 2,459.75	$ 2,459.75	$ 2,533.54	$ 2,533.54	$ 2,609.55	$ 2,609.55
5	$ 1,912.80	$ 1,912.80	$ 1,970.19	$ 1,970.19	$ 2,029.29	$ 2,029.29	$ 2,090.17	$ 2,090.17	$ 2,152.88	$ 2,152.88
6	$ 1,825.86	$ 21,910.28	$ 1,880.63	$ 22,567.59	$ 1,937.05	$ 23,244.62	$ 1,995.16	$ 23,941.95	$ 2,055.02	$ 24,660.21
7	$ 550.66	$ 550.66	$ 567.17	$ 567.17	$ 584.19	$ 584.19	$ 601.72	$ 601.72	$ 619.77	$ 619.77
8	$ 1,565.02	$ 1,565.02	$ 1,611.97	$ 1,611.97	$ 1,660.33	$ 1,660.33	$ 1,710.14	$ 1,710.14	$ 1,761.44	$ 1,761.44
9	$ 395.60	$ 4,747.23	$ 407.47	$ 4,889.64	$ 419.69	$ 5,036.33	$ 432.29	$ 5,187.42	$ 445.25	$ 5,343.05
10	$ 799.90	$ 1,599.80	$ 823.90	$ 1,647.79	$ 848.61	$ 1,697.23	$ 874.07	$ 1,748.14	$ 900.29	$ 1,800.59
11	$ 556.45	$ 1,112.90	$ 573.15	$ 1,146.29	$ 590.34	$ 1,180.68	$ 608.05	$ 1,216.10	$ 626.29	$ 1,252.58
12	$ 1,425.91	$ 2,851.81	$ 1,468.68	$ 2,937.37	$ 1,512.74	$ 3,025.49	$ 1,558.13	$ 3,116.25	$ 1,604.87	$ 3,209.74
13	$ 787.15	$ 1,574.29	$ 810.76	$ 1,621.52	$ 835.08	$ 1,670.17	$ 860.14	$ 1,720.27	$ 885.94	$ 1,771.88
Table I Subtotals		$ 63,792.53		$ 65,706.31		$ 67,677.50		$ 69,707.82		$ 71,799.06

Table II: AS-NEEDED SERVICES

Item	Description	UOM	Estimated Quantities	Year One 7/1/21 - 6/30/22 Unit Price	Year One Item Total	Year Two 7/1/22-6/30/23 Unit Price	Year Two Item Total	Year Three 7/1/23 - 6/30/24 Unit Price	Year Three Item Total	Year Four 7/1/24 - 6/30/25 Unit Price	Year Four Item Total	Year Five 7/1/25 - 6/30/26 Unit Price	Year Five Item Total
1	Rain Event Monitoring	EA	4	$ 450.00	$ 1,800.00	$ 463.50	$ 1,854.00	$ 477.41	$ 1,909.62	$ 491.73	$ 1,966.91	$ 506.48	$ 2,025.92
2	Rain Event Sampling	EA	4	$ 450.00	$ 1,800.00	$ 463.50	$ 1,854.00	$ 477.41	$ 1,909.62	$ 491.73	$ 1,966.91	$ 506.48	$ 2,025.92
3	Lab Sampling Fees	EA	4	$ 2,469.60	$ 9,878.40	$ 2,543.69	$ 10,174.75	$ 2,620.00	$ 10,479.99	$ 2,698.60	$ 10,794.39	$ 2,779.56	$ 11,118.23
4	ERA Technical Report - Level 1, or Level 2 (per location)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,699.50	$ 1,699.50	$ 1,750.49	$ 1,750.49	$ 1,803.00	$ 1,803.00	$ 1,857.09	$ 1,857.09
5	ERA Action Plan - Level 1, or Level 2 (per location)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,699.50	$ 1,699.50	$ 1,750.49	$ 1,750.49	$ 1,803.00	$ 1,803.00	$ 1,857.09	$ 1,857.09
6	TMDL Sampling - Rain Event Sampling	EA	2	$ 450.00	$ 900.00	$ 463.50	$ 927.00	$ 477.41	$ 954.81	$ 491.73	$ 983.45	$ 506.48	$ 1,012.96
7	TMDL Sampling - Lab Fee	EA	2	$ 2,493.75	$ 4,987.50	$ 2,568.56	$ 5,137.13	$ 2,645.62	$ 5,291.24	$ 2,724.99	$ 5,449.98	$ 2,806.74	$ 5,613.48
8	BMP Replacement - Fabco Cartridges (KMD Location only)	EA	6	$ 389.79	$ 2,338.74	$ 401.48	$ 2,408.90	$ 413.53	$ 2,481.17	$ 425.93	$ 2,555.60	$ 438.71	$ 2,632.27
9	BMP Replacement - RUBBERIZER by ClearTec (Media pillow only, IAD and Trolley Locations only)[2]	EA	22	$ 117.60	$ 2,587.20	$ 121.13	$ 2,664.82	$ 124.76	$ 2,744.76	$ 128.50	$ 2,827.10	$ 132.36	$ 2,911.92
10	BMP Replacement - 2x Sediment Traps (Trolley Location only)	EA	2	$ 727.60	$ 1,455.20	$ 749.43	$ 1,498.86	$ 771.91	$ 1,543.82	$ 795.07	$ 1,590.14	$ 818.92	$ 1,637.84
11	BMP Replacement - ZPG Cartridges (IAD Location only)	EA	35	$ 418.43	$ 14,645.05	$ 430.98	$ 15,084.40	$ 443.91	$ 15,536.93	$ 457.23	$ 16,003.04	$ 470.95	$ 16,483.13
12	As-Needed Repairs - Single Person Crew - Straight Time	HR	16	$ 73.50	$ 1,176.00	$ 75.71	$ 1,211.28	$ 77.98	$ 1,247.62	$ 80.32	$ 1,285.05	$ 82.72	$ 1,323.60
13	As-Needed Repairs - Two Person Crew - Straight Time	HR	16	$ 147.00	$ 2,352.00	$ 151.41	$ 2,422.56	$ 155.95	$ 2,495.24	$ 160.63	$ 2,570.09	$ 165.45	$ 2,647.20
14	As-Needed QISP Consulting Services - Straight Time	HR	20	$ 90.00	$ 1,800.00	$ 92.70	$ 1,854.00	$ 95.48	$ 1,909.62	$ 98.35	$ 1,966.91	$ 101.30	$ 2,025.92
15	As-Needed Vac Truck Cleaning - Stormcepter HDS Units[1]	EA	1	$ 3,060.00	$ 3,060.00	$ 3,151.80	$ 3,151.80	$ 3,246.35	$ 3,246.35	$ 3,343.74	$ 3,343.74	$ 3,444.06	$ 3,444.06
			Table II Subtotals:		$ 52,080.09		$ 53,642.49		$ 55,251.77		$ 56,909.32		$ 58,616.60

Item	Optional Year One 7/1/26 - 6/30/27 Unit Price	Optional Year One Item Total	Optional Year Two 7/1/27 - 6/30/28 Unit Price	Optional Year Two Item Total	Optional Year Three 7/1/28 - 6/30/29 Unit Price	Optional Year Three Item Total	Optional Year Four 7/1/29 - 6/30/30 Unit Price	Optional Year Four Item Total	Optional Year Five 7/1/30 - 6/30/31 Unit Price	Optional Year Five Item Total
1	$ 521.67	$ 2,086.69	$ 537.32	$ 2,149.29	$ 553.44	$ 2,213.77	$ 570.05	$ 2,280.19	$ 587.15	$ 2,348.59
2	$ 521.67	$ 2,086.69	$ 537.32	$ 2,149.29	$ 553.44	$ 2,213.77	$ 570.05	$ 2,280.19	$ 587.15	$ 2,348.59
3	$ 2,862.94	$ 11,451.77	$ 2,948.83	$ 11,795.33	$ 3,037.30	$ 12,149.19	$ 3,128.42	$ 12,513.66	$ 3,222.27	$ 12,889.07
4	$ 1,912.80	$ 1,912.80	$ 1,970.19	$ 1,970.19	$ 2,029.29	$ 2,029.29	$ 2,090.17	$ 2,090.17	$ 2,152.88	$ 2,152.88
5	$ 1,912.80	$ 1,912.80	$ 1,970.19	$ 1,970.19	$ 2,029.29	$ 2,029.29	$ 2,090.17	$ 2,090.17	$ 2,152.88	$ 2,152.88
6	$ 521.67	$ 1,043.35	$ 537.32	$ 1,074.65	$ 553.44	$ 1,106.89	$ 570.05	$ 1,140.09	$ 587.15	$ 1,174.30
7	$ 2,890.94	$ 5,781.88	$ 2,977.67	$ 5,955.34	$ 3,067.00	$ 6,134.00	$ 3,159.01	$ 6,318.02	$ 3,253.78	$ 6,507.56
8	$ 451.87	$ 2,711.24	$ 465.43	$ 2,792.58	$ 479.39	$ 2,876.36	$ 493.77	$ 2,962.65	$ 508.59	$ 3,051.53
9	$ 136.33	$ 2,999.27	$ 140.42	$ 3,089.25	$ 144.63	$ 3,181.93	$ 148.97	$ 3,277.39	$ 153.44	$ 3,375.71
10	$ 843.49	$ 1,686.98	$ 868.79	$ 1,737.58	$ 894.86	$ 1,789.71	$ 921.70	$ 1,843.40	$ 949.35	$ 1,898.71
11	$ 485.08	$ 16,977.63	$ 499.63	$ 17,486.96	$ 514.62	$ 18,011.56	$ 530.05	$ 18,551.91	$ 545.96	$ 19,108.47
12	$ 85.21	$ 1,363.31	$ 87.76	$ 1,404.21	$ 90.40	$ 1,446.33	$ 93.11	$ 1,489.72	$ 95.90	$ 1,534.41
13	$ 170.41	$ 2,726.61	$ 175.53	$ 2,808.41	$ 180.79	$ 2,892.66	$ 186.22	$ 2,979.44	$ 191.80	$ 3,068.83
14	$ 104.33	$ 2,086.69	$ 107.46	$ 2,149.29	$ 110.69	$ 2,213.77	$ 114.01	$ 2,280.19	$ 117.43	$ 2,348.59
15	$ 3,547.38	$ 3,547.38	$ 3,653.80	$ 3,653.80	$ 3,763.41	$ 3,763.41	$ 3,876.32	$ 3,876.32	$ 3,992.61	$ 3,992.61
Table II Subtotals:		$ 60,375.10		$ 62,186.35		$ 64,051.94		$ 65,973.50		$ 67,952.70

Table III: AS-NEEDED REPLACEMENT PARTS

Item	Description	Year One 7/1/21 - 6/30/22 % Mark Up	Year One Item Total	Year Two 7/1/22-6/30/23 % Mark Up	Year Two Item Total	Year Three 7/1/23 - 6/30/24 % Mark Up	Year Three Item Total	Year Four 7/1/24 - 6/30/25 % Mark Up	Year Four Item Total	Year Five 7/1/25 - 6/30/26 % Mark Up	Year Five Item Total
1	Annual Materials/Parts Allowance	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2	Materials markup		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00
	Table III Subtotals:		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00

Item	Optional Year One 7/1/26 - 6/30/27 % Mark Up	Optional Year One Item Total	Optional Year Two 7/1/27 - 6/30/28 % Mark Up	Optional Year Two Item Total	Optional Year Three 7/1/28 - 6/30/29 % Mark Up	Optional Year Three Item Total	Optional Year Four 7/1/29 - 6/30/30 % Mark Up	Optional Year Four Item Total	Optional Year Five 7/1/30 - 6/30/31 % Mark Up	Optional Year Five Item Total
1	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00
Table III Subtotals:		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00

ANNUAL TOTALS	$ 112,608.09
BASE PERIOD TOTAL	$ 596,151.40
OPTION YEARS TOTAL	$ 686,722.82
Grand Total	$ 1,282,874.22

[1] Items added for BRT program, via Amendment No. 1

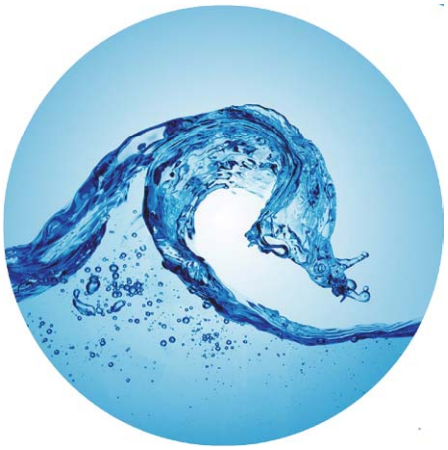
[2] This replaces LIDMIX Media Pillow that is no longer available by the manufacturer, as part of Amendment No. 1.

CLEARTEC TECHNICAL MANUAL

ClearTec

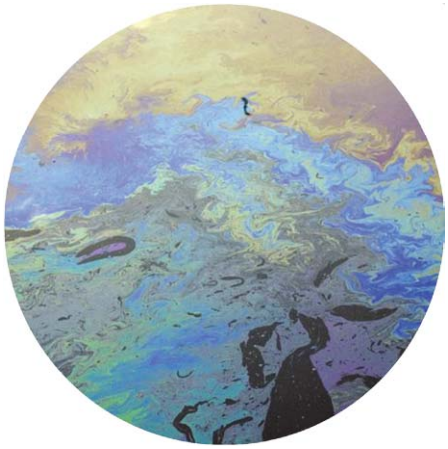
TECHNICAL MANUAL

RUBBERIZER® and TECULITE® Filter Media



WATER QUALITY

STORM-WATER



SPILL REMEDIATION

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HAZMAT RESPONSE TECHNOLOGIES

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Introduction

ClearTec™ Overview

Haz-Mat Response Technologies, Inc is the manufacturer of the RUBBERIZER® by ClearTec™ Product Line, the Only Fully Sorbent Solidifier™ that transforms spilled hydrocarbons into a rubber-like solid on contact. RUBBERIZER® is EPA approved as a sorbent due to ClearTec's Trade Secret and non-chemical sorption and solidification process. It is used throughout the world and is patented in 22 countries.

ClearTec also manufactures and advanced mineral and phosphorous filter product called TECULITE®. TECULITE® filter pouches and mats , either stand-alone or combined with RUBBERIZER®, remove more than 95 % of Total Suspended Solids, Aluminum, Copper, Zinc, and Phosphorus.

ClearTec's revolutionary line of products have been used in oil spill clean-up and storm-water filtration operations around the world for 25 years. Our unique RUBBERIZER® sorbent is formulated from modern non-toxic, non-hazardous polymers capable of high sorption efficiencies and will transform hydrocarbons into a rubber-like solid on contact, including:

RUBBERIZER® Filtration

- Gasoline
- Jet Fuel
- Aromatic Solvents
- Diesel Fuels
- Transformer Oils
- Hydraulic Oils
- Lube Oils
- Chlorinated Solvents
- Light Crudes

TECULITE® Filtration

- TSS
- Aluminum
- Copper
- Zinc
- Phosphorus

Product Highlights

- Works on land and water borne spills
- Does not release solidified oils under pressure
- Does not leach
- Remains buoyant
- Reduces clean-up time and overall costs
- Incinerates with less than .1% residual ash

Industry Applications:

- Oil Spill Response
- Heavy Industry & Manufacturing
- Transportation
- Storm Water Filtration
- Secondary Containment
- Airports
- Marinas & Shipyards
- Power Generation
- Custom Filtration Applications

Product Overview

RUBBERIZER® Particulate

ClearTec RUBBERIZER® Particulate is a mixture of hydrocarbon polymers plus additives resulting in a grainy material used primarily for cleanup operations where sweeping and shoveling are involved. It can also be used for clarification of various emulsions or solidification and removal of various petroleum-based slicks from the surface of water which is in a controlled state. One pound of this product will solidify into a rubber-like material up to 2/3 gallon of jet fuel, diesel, gasoline, transformer oil, hydraulic oils, light crudes and many other hydrocarbons. This product, (and the booms, pillows, and mats in which it is the filler), exhibit characteristics that include:

- **Light weight:** ClearTec RUBBERIZER® Particulate is made of a light weight polymer that enables rapid deployment and retrieval. It's apparent specific gravity is approximately 0.4.
- **Hydrophobic:** RUBBERIZER® has no affinity for water and will therefore not absorb it.
- **Permanently buoyant:** RUBBERIZER® remains buoyant both before and after sorption.
- **Leach Resistant:** RUBBERIZER® Particulate will not release sorbed and solidified liquids even under landfill pressures and will not leach solidified liquids upon aqueous contact.
- **Efficient:** ClearTec RUBBERIZER® has low volume increases of sorbed liquids (15% in lab tests, 25% in field applications).

Product Overview

RUBBERIZER® Booms

ClearTec RUBBERIZER® Booms use the ClearTec RUBBERIZER® Particulate as a filler and have a 100% polypropylene tubular fabric encasement. Boom connectors are also provided for boom-to-boom linking and response for larger spills requiring multiple booms for containment and collection. ClearTec RUBBERIZER® Booms are multifunctional and can be used for mitigation on water while sorbing the spill. Once fully saturated, they continue to function as containment barriers and remain significantly above water level for maximum effectiveness. ClearTec RUBBERIZER® Booms are soft and conform well to textured surfaces enabling them to act as containment barriers on airport runways or vehicle roadways. Booms can also be used for bulk cleanup operations. ClearTec RUBBERIZER® Booms exhibit characteristics that include:

- **Single Waste Stream:** ClearTec RUBBERIZER® Booms contain, absorb, and solidify for easy disposal.
- **No Waste:** ClearTec RUBBERIZER® Booms saturate to the core and are the only Fully Sorbent Solidifier™ booms on the market.
- **Permanently Buoyant:** ClearTec RUBBERIZER® Booms remain buoyant even once fully sorbed and solidified.
- **Leach Resistant:** Once the booms sorb and solidify hydrocarbons (typically within 20 minutes), they are retrievable without loss of their contents caused by handling and the consequent dripping associated with other products on the market.
- **Versatile:** ClearTec RUBBERIZER® Booms are equally effective on land or water borne spills, and they are extremely effective at removing sheen from the surface of the water.

ClearTec RUBBERIZER® Boom Diameter	Hydrocarbon Sorbtion Capacity
1.5″	.15 Gallons per Square Foot
2.25″	1/4 Gallons per Square Foot
3.25″	2/3 Gallons per Square Foot
5″	1 Gallon per Square Foot

Product Overview

RUBBERIZER® Pillows

ClearTec RUBBERIZER® Pillows are made with particulate as a filler and a 100% polypropylene fabric encasement. They can be used to catch drips and leaks, clean up large spill areas, or be placed in sumps for emulsion clarification. Standard size pillows are 12" by 12" and will sorb and solidify up to one gallon each. They exhibit characteristics that include:

- **Single Waste Stream:** ClearTec RUBBERIZER® Pillows contain, absorb and solidify which allows for easy disposal.
- **Permanently Buoyant:** ClearTec RUBBERIZER® Pillows remain buoyant even once hydrocarbons are fully sorbed and solidified.
- **Leach Resistant:** ClearTec RUBBERIZER® Pillows are retrievable without loss of their contents caused by handling and consequent dripping.
- **Versatile:** ClearTec RUBBERIZER® Pillows are equally effective on land or water borne spills.

RUBBERIZER® Filters and Mats

The advantage of the ClearTec RUBBERIZER® Filters and Mats over a boom or pillow is the large surface areas which they cover. They can be used as sweeps for fuel pits or on puddles, lakes, rivers, bays, and other areas of pooling water with oil contamination problems. They are designed to absorb and solidify up to 3/4 gallon of hydrocarbons per square foot. They are constructed from high-strength fiberglass mesh screen and contain ClearTec RUBBERIZER® Filter Media as a filler. They are available in a variety of sizes and can be customized to fit virtually any situation. They exhibit characteristics that include:

- **Single Waste Stream:** ClearTec RUBBERIZER® Mats contain, absorb and solidify which allows for easy disposal.
- **Permanently Buoyant:** ClearTec RUBBERIZER® Mats remain buoyant even once hydrocarbons are fully sorbed and solidified.
- **Versatile:** ClearTec RUBBERIZER® Mats have ribbon loops so multiple mats can be tethered together to cover virtually any spill area.
- **Leach Resistant:** ClearTec RUBBERIZER® Mats are retrievable without loss of their contents caused by handling and consequent dripping.

Product Overview

ClearTec™ Spill Kits To Fit Virtually Any Application

ClearTec RUBBERIZER® Spill Kits are designed to provide the oil spill response professional with the tools they need in an emergency. From a minor spill to a spill of 12 barrels or more, you can be assured that our kits will be fast, effective, and easy to deploy. Our spill kits typically include a combination of ClearTec RUBBERIZER® Booms, Mats and Particulate.

ClearTec RUBBERIZER® Tanker Spill Kits

These spill kits are packaged in large drums and are designed to help both crude and product tankers stay in compliance with OPA '90 regulations which are as follows:

Vessels UNDER 400 Feet LOA

- Required to have enough materials on board to clean up at least 7 barrels of hydrocarbons

Vessels OVER 400 Feet LOA

- Required to have enough materials on board to clean up at least 12 barrels of hydrocarbons

ClearTec RUBBERIZER® Emergency Spill Kits

We also offer a wide range of spill kits packaged in small plastic pails and collapsible bags in order to suit the following types of applications:

- Airport & Marina fueling stations
- Utility & transportation vehicles
- Industrial/manufacturing shop spills
- Bilge clean-up
- Construction sites
- Wrecking & ship yards

TECULITE® Filters and Mats

The ClearTec TECULITE® Filters and Mats as a combination filter with RUBBERIZER® provides the industries only complete solution for hydro carbon solidification and complete removal of solids and metals. They are designed to absorb and solidify up to 3/4 gallon of hydrocarbons per square foot and remove up to 95% of Total Suspended Solids, Aluminum, Copper, Zinc, and Phosphorus. The filters are constructed from high-strength fiberglass mesh screen and contain ClearTec RUBBERIZER® Filter Media and TECULITE® as a filler. They are available in a variety of sizes and can be customized to fit virtually any situation. TECULITE® filters can also be purchased without the addition of RUBBERIZER® to aid in areas where hydrocarbon removal is not neccessary.

RUBBERIZER® Filter Media

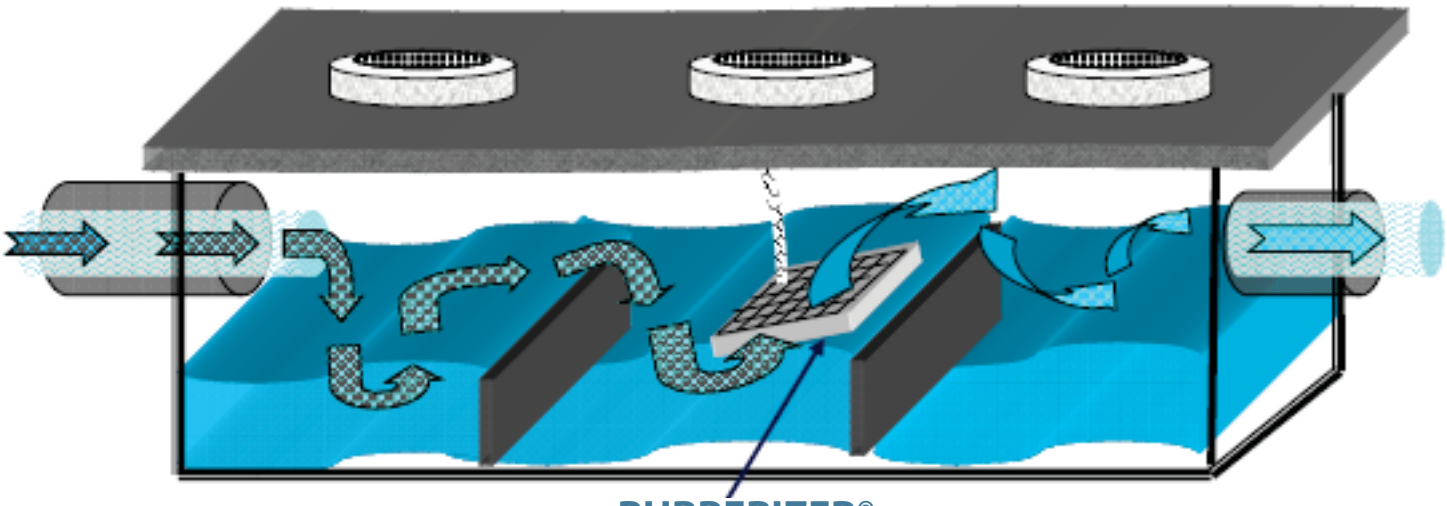
Overview

ClearTec RUBBERIZER® patented products are available in a variety of water treatment and filtration medias. They are making headway in filtration applications saving material costs, labor and disposal volume by as much as 75%. They are formulated from modern, non-toxic, non-hazardous polymers capable of very high sorption efficiencies. These products absorb and solidify a wide variety of fuels, oils, and chlorinated solvents including paraffins, BTEX, TCE, and PCBs.

RUBBERIZER® is exempt from CFR regulatory certification for spill response and licensing and can be placed in any California state waters. This illustrates RUBBERIZER's environmentally friendly nature. Much of this can be attributed to the relatively inert characteristics of the polymers and non-chemical nature of the solidification process. Laboratory sorption efficiencies of 500% (5 grams pollutant to 1 gram of RUBBERIZER®) are common for spill response type applications.

Filter media is available in fine (32-8), medium (8-4), and coarse (4-2) grades

Example Storm Vault Application



RUBBERIZER® Filter Media Performance Test

Test Background

A four inch diameter by four foot length tube with a fine screen across one end was erected vertically. The tube was placed above a catch basin which was filled with tap water. A small pump was used to circulate water from the catch basin to the top of the tube. A 500 ml separator funnel was erected above the top of the tube. The separator funnel was filled with napthenic lubricating oil 30.1/cSt at 40°C viscosity. The tube was filled on each run with RUBBERIZER® Filter Media to a depth of 42 inches. The initial water flow rate was set at approximately 6 liters/minute. The tests were run until the flow rate had been reduced to approximately 2 liters/minute. The input pressure at cessation was approximately .25 psi. The oil input rate was set at 4-5 drops per second (approximately 1/2 liter/hour.)

Results

The following table summarizers the results.

Media Size	Core Saturation Depth	Weight of Media	Volume of Oil Absorption	Weight of Oil Absorbed	% Efficiency
4 to 2 Mesh	16″	793 g	1160 mL	1056 g	133%
8 to 4 Mesh	10″	528 g	702 mL	640 g	121%
32 to 8 Mesh	8″	452 g	538 mL	490 g	108%

ClearTec's medium grade (8 to 4) filter media is the most popular as its uniform size allows water to pass through quickly as it absorbs hydrocarbons.

Solidification Capacity of ClearTec RUBBERIZER® Particulate

Experimental Procedure

The purpose of this experiment was to determine what quantity of ClearTec RUBBERIZER® Particulate was needed to solidify various fuels and industrial liquids to the point at which they would pass the EPA 50 PSI landfill pressure test. 8.1 ml, 12.2 ml, and 16.3 ml volumes of the liquids to be tested were transferred by pipette to a 50 ml Erienmeyer flask and stoppered with neoprene stoppers. These test samples were allowed to come to thermal equilibrium at 65° F. To each test sample, a weighed 3.0 gram sample of ClearTec RUBBERIZER® Particulate was added and agitated. The samples were allowed to stand for 21 hours at 65° F . The samples were than subjected to a pressure test in excess of 100 PSI. The results of this work are summarized in Table I below.

Table I
Pounds of RUBBERIZER® Particulate to Gallons of Test Liquids

Fuels	Results
Bunkers	1 pound sorbent to 2/3 gallon range
Jet Fuel	1 pound sorbent to 2/3 gallon range
Diesel	1 pound sorbent to 2/3 gallon range
Gasoline	1 pound sorbent to 2/3 gallon range
Oils	**Results**
Light Crudes	1 pound sorbent to 2/3 gallon range
Alphatic	1 pound sorbent to 1/2 gallon range
Aromatic	1 pound sorbent to 2/3 gallon range
Napthenic	1 pound sorbent to 1/2 gallon range
Cutting	1 pound sorbent to 2/3 gallon range
Transformer	1 pound sorbent to 2/3 gallon range
Motor (10w/40 unused)	1 pound sorbent to 1/2 gallon range
Chlorated Liquids	**Results**
Carbon Tetrachloride	1 pound sorbent to 2/3 gallon range
Chloroform	1 pound sorbent to 1/2 gallon range
Trichloroethane	1 pound sorbent to 2/3 gallon range
Tetrachloroethane	1 pound sorbent to 1/2 gallon range
Trichloroethelene	1 pound sorbent to 2/3 gallon range
Miscellaneous Liquids	**Results**
Benzene	1 pound sorbent to 2/3 gallon range
Toluene	1 pound sorbent to 1/2 gallon range
Xylene	1 pound sorbent to 2/3 gallon range
Hexane's (Mixture)	1 pound sorbent to 1/2 gallon range
Petroleum Ether	1 pound sorbent to 2/3 gallon range
Turpentine	1 pound sorbent to 2/3 gallon range

Leach & Extraction Laboratory Report

Leach Test

A solidified sample of diesel fuel representing one pound of ClearTec RUBBERIZER® Particulate to 2/3 gallon of diesel fuel was prepared by transferring 18.3 ml of diesel fuel by pipette into a 50 ml Erienmeyer flask and adding a weighed 3.0 gram sample of ClearTec RUBBERIZER® Particulate. This sample was allowed to stand for four days at 65° F. Twenty-five ml of tap water was then added and the ppm hydrocarbon in the leachate was periodically determined. The results of this work are presented in Table I.

Table I
Leachate PPM Hydrocarbon

1 Day	<5 ppm
7 Days	<5 ppm
14 Days	<5 ppm

Emulsion Clarification Test

An approximate 1,000 PPM emulsion of diesel fuel and water was prepared by transferring by pipette 0.55 ml of diesel to 500 ml of tap water that was being agitated in a blender. 40 ml of the emulsion was then transferred to a 50 ml Erienmeyer flask and 2.0 grams of ClearTec RUBBERIZER® Particulate was added. The sample was briefly agitated three times daily and maintained at 65° F. The ppm hydrocarbon remaining in the emulsion was periodically determined and the results are presented in Table II.

Table II
Emulsion Phase PPM Hydrocarbon

1 Day	100 ppm >emulsion > 50 ppm
2 Days	100 ppm >emulsion > 50 ppm
3 Days	100 ppm >emulsion > 50 ppm
4 Days	100 ppm >emulsion > 50 ppm

PCB/TCB Solidification, Emulsion Extraction, and Leach Tests

Tests using the active ingredient polymer of the ClearTec RUBBERIZER® products on PCB and TCB mixtures have indicated solidification ratios of one pound ClearTec RUBBERIZER® Particulate to one gallon PCB/TCB mixtures. Furthermore, two week leach tests using the aforementioned equivalent ratio indicated less than 2 ppm PCB/TCB in the aqueous phase. Additionally, extraction tests from an aqueous emulsion of PCB using the ClearTec RUBBERIZER® products active ingredient polymer have indicated clarification of the emulsion to less than 2 ppm PCB remaining.

Temperature Stabilization Laboratory Report

Introduction

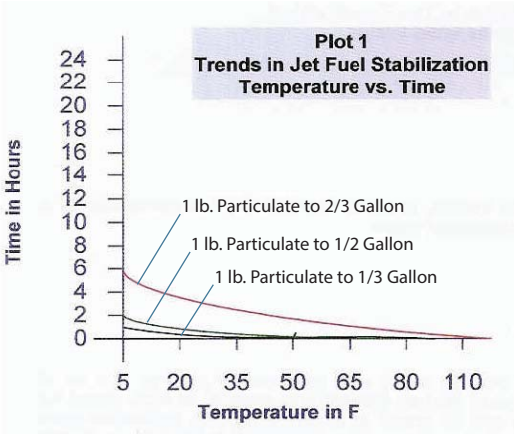
The purpose of this experiment was to evaluate the effect of temperature on the stabilization rates of ClearTec RUBBERIZER® Particulate on jet fuel (JP4 and JP5), diesel fuel, gasoline, transformer oil and hydraulic oil. Three experimental temperatures (5° F, 55° F, and 105° F) and three experimental ratios of ClearTec RUBBERIZER® Particulate to test liquid (1 lb. ClearTec RUBBERIZER® Particulate to 1/3 gallon, 1/2 gallon and 2/3 gallon) were chosen. The samples were examined periodically, observations recorded and the data evaluated. The results of this work are presented herein. For the purpose of this experiment, stabilization is defined as that point which retrieval of the tested liquids in a real cleanup operation could be effected without the release of the same.

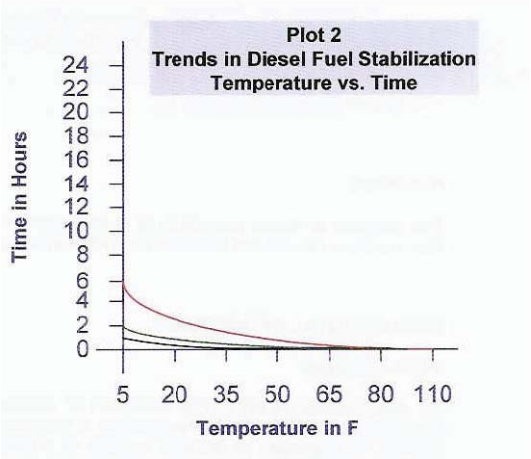
Experimental Procedure

8.1 ml, 12.2 ml and 16.3 ml volumes of the liquids to be tested were transferred by pipette to 50 ml Erienmeyer flasks and stoppered with neoprene stoppers. One collection of each of the test liquid's volume series was then brought to thermal equilibrium at 5° F, 55° F, and 105° F. To each test liquid sample a weighed 3.0 gram sample of ClearTec RUBBERIZER® Particulate was added and agitated. An initial observation at 3 minutes and successive observations at 30 minutes, 2 hours, 4 hours, 6 hours, 8 hours, 16 hours, and 24 hours were made on each sample with the samples being maintained at their respective temperatures between observation periods. The data acquired were analyzed and the resultant analysis presented herein.

Jet Fuel (JP4 and JP5)

Stabilization of both JP4 and JP5 was complete within the 24 hour observation period at all test temperatures and all ratios of ClearTec RUBBERIZER® Particulate to liquid. Only minor temperature effects on stabilization were observed, with the rates being slightly slower with decreasing temperature. (See Plot 1.) As a result of these tests it has been concluded that a ratio of 1 lb. of ClearTec RUBBERIZER® Particulate to 2/3 gallon of jet fuel is appropriate for most cleanup operations within the test temperature range.





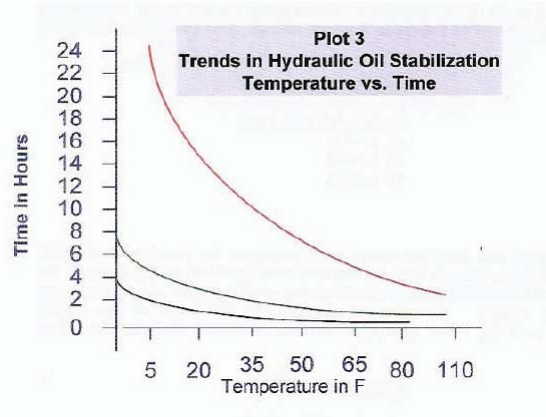
Diesel Fuel

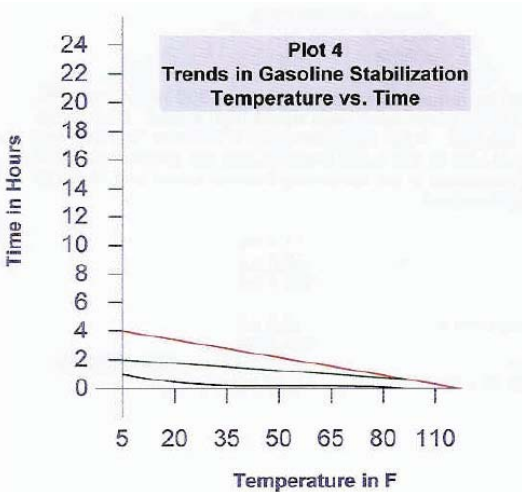
Stabilization of diesel fuel was complete within the 24 hour observation period at all test temperatures and all test ratios of ClearTec RUBBERIZER® Particulate to liquid. Only minor temperature effects on stabilization rates were observed, with the rates being slightly slower with decreasing temperature (See Plot 2.) As a result of these tests it has been concluded that a ratio of 1 lb. of ClearTec RUBBERIZER® Particulate to 2/3 gallon of diesel fuel is appropriate for most cleanup operations within the test temperature range.

Temperature Stabilization Laboratory Report, cont.

Hydraulic Oil

Stabilization rates of hydraulic oil were found to be influenced by temperature, with high temperature (105° F) being rapid in ratios up to 1 lb. of ClearTec RUBBERIZER® Particulate to 2/3 gallon hydraulic oil. At 55° F rapid stabilization required ratios of 1 lb. of ClearTec RUBBERIZER® Particulate to 1/2 gallon hydraulic oil. At 5°F stabilization was inhibited for the 1 lb. ClearTec RUBBERIZER® Particulate to 2/3 gallon hydraulic oil ratio within the testing period (See Plot 3).



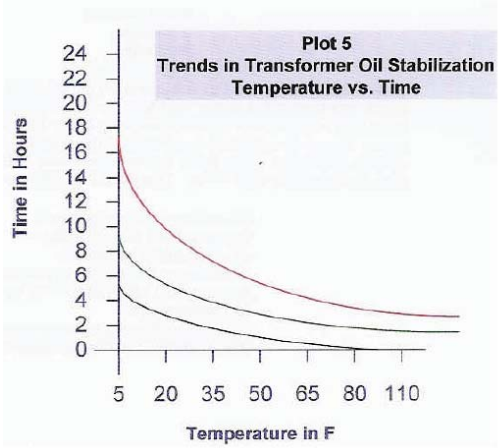


Gasoline

Stabilization of gasoline was complete within the 24 hour test period for all temperatures tested at all ClearTec RUBBERIZER® Particulate to gasoline ratios tested. Only minor temperature effects on stabilization rates were observed, with the rates being slightly slower with decreasing temperature (See Plot IV). As a result of these tests it has been concluded that a ratio of 1 lb. of ClearTec RUBBERIZER® Particulate to 2/3 gallon of gasoline is appropriate for most cleanup operations within the test temperature range.

Transformer Oil

Stabilization rates of transformer oil were found to be influenced by temperature, with the rates being slightly slower with decreasing temperature. The rate was rapid and complete at 105° F and 55° F within the test period at ratios up to 1 lb. of ClearTec RUBBERIZER® Particulate to 2/3 gallon transformer oil. The stabilization rate was significantly inhibited at the ratio of 1 lb. of ClearTec RUBBERIZER® Particulate to 2/3 gallon transformer oil at the 5° F test temperature (See Plot 5.)



Hydrocarbon Contaminated Water Test

Purpose

The purpose of these experiments is to determine the viability of using ClearTec RUBBERIZER® Particulate as a filter medium/treatment medium for hydrocarbon contaminated water.

Experimental Procedure

Part I - Benzene

An approximate 10,000 ppm emulsion of Benzene and tap water was prepared by placing 11.4 ml of Benzene and 990 ml of tap water into a Hamilton Beach kitchen blender and agitated at high speed for approximately 10 minutes. A 250 ml sample of emulsion and 65 grams of ClearTec RUBBERIZER® Particulate were placed in a 600 ml beaker. The beaker contents were then agitated with a hand held Sunbeam egg beater set on high speed. Samples of approximately 50 ml each of the Benzene contaminated water were periodically taken and sent to Quality Assurance Laboratory for ppm Benzene determination. The following data was recorded:

Residence Time I	PPM Benzene
Initial Sample	Approx. 10,000 ppm
1 minute	31.4 ppm
3 minutes	19.7 ppm
5 minutes	12.3 ppm

Part II - Diesel Fuel

An approximate 10,000 ppm emulsion of diesel fuel and tap water was prepared by placing 11.4 ml of diesel fuel and 990 ml of tap water into a Hamilton Beach kitchen blender and agitated at high speed for approximately 10 minutes. A 100 gram sample of ClearTec RUBBERIZER® Particulate was added to the aforementioned emulsion and the blender agitated at high speed. Samples of approximately 50 ml each of the diesel contaminated water were periodically taken and the ppm hydrocarbon contamination determined. The following data was recorded:

Residence Time I	PPM Hydrocarbon
Initial Sample	Approx. 10,000 ppm
3 minutes	40 ppm
5 minutes	4 ppm

Diesel fuel was placed in a burette. The blender, with its remaining contents (approximately 900 ml of > 4 ppm diesel contaminated water and 100 grams ClearTec RUBBERIZER® Particulate was run at high speed. Diesel fuel from the burette was then allowed to drain into the blender. After approximately 5 minutes, the blender motor began to seriously overload. The draining diesel was at this point stopped an the blender stopped shortly thereafter.

Hydrocarbon Contaminated Water Test, cont.

Results

The ppm hydrocarbon was then determined in the remaining blender water and found to be approximately 250 ppm. The following data was recorded:

Diesel from initial sample =	11.4 ml
Diesel added from burette =	95.0 ml
Ml sub-total in blender =	107.4 ml
LESS diesel remaining in solution (approx. 900 ml @ 250 ppm hydrocarbon =	-2.6 ml
Net absorbed =	104.8 ml
Density of Diesel (.88) x (ml diesel) =	92.2 (approx. grams diesel)
Grams diesel / grams ClearTec RUBBERIZER® x 100 =	92.2 % by weight

Discussion

A review of the data acquired in Part I shows a significant reduction in the ppm Benzene contamination (99.7%) during the first minute of treatment. Reduction in ppm Benzene contamination thereafter, while significant, was substantially reduced. Similar results were observed in Part II while 99.6% of the contaminants were removed in the first sample taken at the 3 minute point. The overload of the blender motor in Part II caused an early sensation of agitation, thereby interfering with the active treatment process, resulting in a 250 ppm hydrocarbon contamination level in the remaining sample. It is unknown at this time as to what the hydrocarbon level might have been had the process gone on uninterrupted.

Conclusion

The experiment established that ClearTec RUBBERIZER® Particulate may be a very effective replacement for treatment or pretreatment of hydrocarbon contaminated water in place of conventional treatment materials and/or processes (i.e. activated carbon). Further experimentation with potential applications is warranted.

Oil Leachate Test

Introduction

Various sorption media are available on the market today for the removal of hydrocarbons from storm water. Many of these materials can subsequently degrade and release hydrocarbons after capture because they don't permanently encapsulate. ClearTec RUBBERIZER® however does not deteriorate with long-term exposure to oil-contaminated water and will not release captured oil.

Leach Test Method

This method consists of saturating the media in a hydrocarbon mixture of 50% diesel and 50% used motor oil for approximately 20 hours. Then clear water is passed through the media at about 1/2 gallon per minute (gpm) flow rate with live discrete samples for oil and grease collected at two-minute intervals. A media will pass this test if the leachate water samples contain less than 10 mg/L oil and grease.

The 1/2 gpm water flow used to produce the leachate samples was generated with a small submersible pump in a 5-gallon water reservoir. The flow was moderated with a PVC ball valve attached to the discharge tubing of the pump and the flow was calibrated by observing the time required to fill a 1/2 gallon volume.

All aspects of the leach test methodology were performed by John Mac Pherson (professional analytical chemist) for Foss Environmental Services (Now SeaCor) of Seattle, Washington. All procedures performed were done in strict accordance with the King County Oil Leach Test Method.

Weight of ClearTec RUBBERIZER® Media:	421 grams
Volume of Media:	1 Liter
Volume of Oil Used:	300 mL
Volume of Oil Retained in Media:	244 mL
Oil/Media Ratio:	1.10 mL/gm
Observation While Adding Oil Mixture:	Oil flowed through media at a moderate rate but absorbed rapidly. Oil dripped into receiver in 68 seconds.

Oil Leachate Test, cont.

Results

The results of the testing are recorded in the following table.

Sample 1 Water flow rate through the media was .5 gpm. No reduction of flow due to reduced media transmissivity was observed throughout the entire test with both media types. Both medias could have supported higher flow rates.	**FES-A1** No oil sheen observed on leachate sample. Leachate clear and colorless. Leachate oil = < 1.0 mg/L
Sample 2 Water flow rate through the media was .5 gpm. No reduction of flow due to reduced media transmissivity was observed throughout the entire test with both media types. Both medias could have supported higher flow rates.	**FES-A2** No oil sheen observed on leachate sample. Leachate clear and colorless. Leachate oil = < 1.0 mg/L
Sample 3 Water flow rate through the media was .5 gpm. No reduction of flow due to reduced media transmissivity was observed throughout the entire test with both media types. Both medias could have supported higher flow rates.	**FES-A3** No oil sheen observed on leachate sample. Leachate clear and colorless. Leachate oil = < 1.0 mg/L
Sample 4 Water flow rate through the media was .5 gpm. No reduction of flow due to reduced media transmissivity was observed throughout the entire test with both media types. Both medias could have supported higher flow rates.	**FES-A4** No oil sheen observed on leachate sample. Leachate clear and colorless. Leachate oil = < 1.2 mg/L
Sample 5 Water flow rate through the media was .5 gpm. No reduction of flow due to reduced media transmissivity was observed throughout the entire test with both media types. Both medias could have supported higher flow rates.	**FES-A5** No oil sheen observed on leachate sample. Leachate clear and colorless. Leachate oil = < 1.0 mg/L

Abalone Larval Development Short-Term Toxicity Test

Test Summary

Species: Haliotis rufescens
Protocol: CSWRCB
Test Type: Static
Test Chamber: Dispo. culture dishes
Temperature: 15 +/- 1° C
Number of Embryos Per Chamber: Approx. 400
QA/QC Batch No.: RT-960117 (ran concurrently)

Source: Pacific Mariculture
Dilution Water: Lab seawater
End Points: NOEC at 48 hours
Test Volume: 50 ml
Aeration: None.
Number of replicates: 5

Results Summary

Test Concentration (Nominal)	Percent of Abalone Larvae with Normal Development
Blank	98.1%
Control	96.7%
0.1%	97.1%
1%	98.1%
5%	97.1%
10%	98.1%
20%	98.2%
40%	97.6%
60%	97.3%
80%	96.4%
100%	96.1%

Note:

A 1:100 sample extract was made by placing 8 grams of sample into 800 mL of filtered sea water in a one liter extraction vessel and continuously shaken for 24 hours. Sample mixture was then allowed to settle for three hours. Sample extract was then filtered through a Whatman #1 filter. Test dilutions were made with lab sea water. An extract blank was made by following the same protocol (but without the sample).

Nominal test concentrations are serial dilutions of the sea water extract.

* Denotes values significantly less than control at P = 0.05%.

Note: No test concentration significantly less than control.

Chronic Toxicity

NOEC	100% extract
LOEC	> 100% extract

TECULITE® Testing Laboratory Report

Purpose of Performance Evaluation

In order to evaluate the performance level of a TECULITE® filter media, a laboratory simulation was performed using known concentrations of common contaminants associated with stormwater runoff.

Laboratory Methods

Independent laboratory testing was performed by an accredited laboratory with the National Environmental Laboratory Accreditation Program (NELAP).

A 50 gallon stock solution of laboratory reagent water containing known concentrations of total suspended solids (TSS) aluminum, copper, zinc and phosphorus was gravity fed from a 50-gallon sterile polypropylene holding tank. The container was gently stirred with an electric motor turning a paddle at approximately 25°C (77°F). The container was fitted at the base with a manually operated PVC flow discharge nozzle. An open ended, tube shaped, PVC filtration cartridge was held in place below the discharge nozzle by the use of standard laboratory clamp devices. A three inch (7.62 cm) head space was maintained between the discharge nozzle and the top of the filtration cartridge. The filtration cartridge dimensions were six inches (15.24 cm) in diameter and eight inches (20.32 cm) in length, and occupied a volume of 226 cubic inches (3,705 cubic
cm). The cartridge contained 370 grams of consolidated (not packed) TECULITE®. Both ends of the cartridge were covered with a thin flexible nylon screen having one millimeter (0.0394 inch) square openings to retain the TECULITE® filter media.

Target influent concentrations were based on the maximum concentration from two years of sampling a commercial parking lot (Table 1). All test constituents were insoluble forms. The simulation used sediment (TSS) particle sizes of 19, 45 and 75 microns, ranging from silt to very finegrained sand. Particle sizes for the aluminum, phosphorus and zinc were <10 microns, while the copper particle size was <5 microns.

Table 1: Target Influent Concentrations

Contaminant	Maximum Concentration
TSS	44 mg/L
Aluminum	786 µg/L
Copper	21.9 µg/L
Zinc	118 µg/L
Phosphorus	50 mg/L

Water passed through the filtration cartridge at an assigned flow, or loading rate of approximately 17.8 gpm/ft^2 and at five gallon increments. One gallon effluent (filtered) water samples were collected in new, sterile polypropylene containers at the terminus of the filtration cartridge at pre-determined discharge volume intervals between the 4th and 5th, 24th and 25th gallon, and 49th and 50th gallon. Each effluent water sample was analyzed for the contaminant constituents and within their established holding times. Prior to testing, the filtration cartridge was rinsed with five gallons of reagent water to establish background levels for each constituent. The sampling for the "blanks" occurred between the 4th and 5th gallon.

Table 2: TECULITE® Filter Performance Summary

Contaminant*	Average Influent	Average Effluent	Removal Efficiency %
TSS	50	2**	96.0
Aluminum	800	33	95.9
Copper	25	2.5**	90.0
Zinc	120	2.5**	97.9
Phosphorus	50	2	96.0

* TSS, P in mg/L; Al, Cu and Zn in >g/L ** Listed value = ½ MDL

Conclusion

Laboratory performance testing using approximately 100,000 gallons of simulated stormwater passing through a 4 ft^3 filtration cartridge in a 24 hour period demonstrates that the TECULITE® filter medium provides outstanding water quality treatment against the tested contaminants. The TSS removal efficiency is calculated to be 96%, while excellent treatment was also achieved against aluminum, copper, zinc and phosphorus with removal efficiencies ranging from 90 to 97.9%.

Material Safety Data Sheet (MSDS) *RUBBERIZER®*

Material Safety Data Sheet May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910 1200 Standard Must be consulted for specific requirements	**US Department of Labor** Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB NO. 1218-0072
Section I - Identity Information	
IDENTITY: RUBBERIZER® by ClearTec™ Booms, Mats, Pillows, and Particulate	EMERGENCY PHONE NUMBER: 1-800-542-3036
MANUFACTURER'S NAME: Haz-Mat Response Technologies, Inc.	ADDRESS: 14175 W Indian School Rd STE B4-537 Goodyear, AZ 85395
Section II - Hazardous Ingredients	
HAZARDOUS COMPONENTS (Specific Chemical Identity, Common Name(s)) N/A - There are no chemicals present in this product at a concentration of 0.1% or more classified as a carcinogenic by IARC, NYP, or OSHA. This product is not considered a hazardous substance by the EPA.	

Section III - Physical/Chemical Characteristics			
BOILING POINT:	N/A	SPECIFIC GRAVITY:	Apparent - 0.4 Real - 0.8
VAPOR PRESSURE:	N/A	MELTING POINT:	N/A
VAPOR DENSITY:	N/A	EVAPORATION RATE:	N/A
SOLUBILITY IN WATER: Insoluble			
APPEARANCE AND ODOR: White grainy material, mild sweet odor			

Section IV - Fire and Explosion Hazard Data			
FLASH POINT METHOD USED: ASTM D 92 325° Cleveland open cup	FLAMMABLE LIMITS: Not yet established	LEL: No data	UEL: No data
EXTINGUISHING MEDIA: CO2, water, foam, and dry chemical			
SPECIAL FIRE FIGHTING PROCEDURES: Protect against inhalation of combustion products			
UNUSUAL FIRE AND EXPLOSION HAZARDS: None known			

Section V - Reactivity Data	
STABILITY: Stable	CONDITIONS TO AVOID: Ignition sources, excessive heat. Do not allow contact with strong oxidization agents.
INCOMPATIBILITY (Materials to Avoid): Strong oxidizing agents (i.e, concentrated nitric acid)	
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Thermal decomposition/combustion may release hydrocarbons, aldehydes, keystones, alcohols, carboxylic acids, carbon monoxide and unidentified organic compounds	

Material Safety Data Sheet (MSDS) *RUBBERIZER®*, cont.

Section VI - Health Hazard Data			
ROUTES OF ENTRY:	Inhalation: Primary	Skin: N/A	Ingestion: Possible
HEALTH HAZARDS (Acute & Chronic): None that are known			
CARCINOGENICITY: No	NTP: No	IARC MONOGRAPHS: No	OSHA REGULATED: No
SIGNS & SYMPTOMS OF EXPOSURE: Respiratory conditions and eye irritation are possible and skin irritation with exposure to any fine or grainy material			
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to this product.			
EMERGENCY & FIRST AID PROCEDURES: Flush affected areas thoroughly with water and consult physician if irritation persists.			
Section VII - Precautions for Safe Handling and Use			
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: If material has not been contaminated it may be swept up and returned to its container. If material is contaminated, dispose accordingly.			
WASTE DISPOSAL METHOD: Incinerate or landfill according to government waste disposal regulations (Local, State, and Federal)			
PRECAUTIONS TO BE TAKEN IN HANDLING & STORING: Product should be stored away from excessive heat and/or ignition source, preferable long term storage should be below 125° F			
OTHER PRECAUTIONS: None.			
Section VIII - Control Measures			
RESPIRATORY PROTECTION (Specify Type): Dust mask for airborne particulate			
VENTILATION:	Local Exhaust: Sufficient	Mechanical (General): None	Special/Other: None
PROTECTIVE GLOVES: Optional		EYE PROTECTION: Goggles for dust protection	
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: None			
WORK/HYGIENIC PRACTICES: Working procedures should minimize airborne particles.			

*As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state laws. However, no warranty or representation with respect to such information is intended or given.

Material Safety Data Sheet (MSDS) *TECULITE®*

Material Safety Data Sheet May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910 1200 Standard Must be consulted for specific requirements	**US Department of Labor** Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB NO. 1218-0072
Section I - Identity Information	
IDENTITY: TECULITE® by ClearTec™ Particulate and Filters CAS: 93763-70-3	EMERGENCY PHONE NUMBER: 1-800-542-3036
MANUFACTURER'S NAME: Haz-Mat Response Technologies, Inc.	ADDRESS: 14175 W Indian School Rd STE B4-537 Goodyear, AZ 85395
Section II - Hazardous Ingredients	
HAZARDOUS COMPONENTS (Specific Chemical Identity, Common Name(s)) This product may contain crystalline silica (quartz) at below detectable levels (<0.1%) CAS No. 14808-60-7; OSHA PEL 0.1 mg/m^3 (respirable).	

Section III - Physical/Chemical Characteristics			
BOILING POINT:	N/A	SPECIFIC GRAVITY:	2.33
VAPOR PRESSURE:	N/A	MELTING POINT:	N/A
VAPOR DENSITY:	N/A	pH:	Neutral
SOLUBILITY IN WATER: Insoluble			
APPEARANCE AND ODOR: Dry, white to off-white grains and or powder material, no odor			

Section IV - Fire and Explosion Hazard Data			
FLASH POINT: Non flammable	FLAMMABLE LIMITS: N/A	LEL: None	UEL: None
EXTINGUISHING MEDIA: N/A			
SPECIAL FIRE FIGHTING PROCEDURES: N/A			
UNUSUAL FIRE AND EXPLOSION HAZARDS: N/A			

Section V - Reactivity Data	
STABILITY: Stable	CONDITIONS TO AVOID: None in designed use. Avoid contact with hydroflouric acid.
INCOMPATIBILITY (Materials to Avoid): Hydroflouric Acid	
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: May react with hydroflouric acid to form a toxic silicon tetra-flouride gas.	
HAZARDOUS POLYMERIZATION: _____ May Occur __X__ May Not Occur	

Material Safety Data Sheet (MSDS) *TECULITE®*, cont.

Section VI - Health Hazard Data			
ROUTES OF ENTRY:	Inhalation: Coughing	Skin: N/A	Ingestion: N/A
HEALTH HAZARDS (Acute & Chronic): None that are known			
CARCINOGENICITY: No	NTP: No	IARC MONOGRAPHS: No	OSHA REGULATED: No
SIGNS & SYMPTOMS OF EXPOSURE: Possible eye irritation from dust particles; wear eye protection.			
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Excessive inhalation over long periods may cause harmful irritation; use mask suitable for nuisance dust.			
EMERGENCY & FIRST AID PROCEDURES: Flush affected areas thoroughly with water and consult physician if irritation persists. Remove affected individual from dusty area to area with clean air.			
Section VII - Precautions for Safe Handling and Use			
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: If material has not been contaminated it may be swept up and returned to its container. If material is contaminated, dispose accordingly.			
WASTE DISPOSAL METHOD: Dispose in accordance with federal, state, and local regulations. TECULITE is not considered a hazardous waste under RCRA (40CFR Part 261).			
PRECAUTIONS TO BE TAKEN IN HANDLING & STORING: N/A			
OTHER PRECAUTIONS: None			
Section VIII - Control Measures			
RESPIRATORY PROTECTION (Specify Type): Dust mask for airborne particulate			
VENTILATION: Maintain below TLV	Local Exhaust: Sufficient	Mechanical (General): None	Special/Other: None
PROTECTIVE GLOVES: None		EYE PROTECTION: Goggles for dust protection	
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Adequate protective devise, such as N95 respirator, are recommended when the PEL is exceeded and/or when airborne dust is present.			
WORK/HYGIENIC PRACTICES: Working procedures should minimize airborne particles.			

*As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state laws. However, no warranty or representation with respect to such information is intended or given.

Brunei Shell RUBBERIZER® Test Report

Background

ClearTec RUBBERIZER® Booms have been proposed as a line of defense against leakage of condensates, Oil Based Muds, and other hydrocarbons from various BSP facilities. To test the effectiveness of the product for BSPs requirements, tests were conducted in house. This note describes the results of the tests.

Test Procedure

In the absence of any standard test procedures, HSE/5 developed its own tests which demonstrate the efficiency of the product for the purposes to which it is intended in BSP.

A) Condensate
The ClearTec RUBBERIZER® Boom was inserted inside a 1 L measuring cylinder. Condensate-Water, mixture of varying initial concentrates were poured down through the boom and the filtrate was collected at the bottom (See Pictures 1 and 2). The concentrate of hydrocarbons was measured in the filtrate.

B) Oil Based Mud Cuttings
Testing of the boom for OBM was done by taking fresh OBM in a 2 Liter beaker and dipping the boom in it for 2 minutes. The flow time of the 500 ml OBM through a standard orifice at the bottom of the cone was measured before and after passing it through the boom.

Results

A) Condensate
The results are presented in Production Chemistry Report #97E3SRB of 15-04-97. The results indicate that the ClearTec RUBBERIZER® Boom is extremely effective to absorb hydrocarbons, providing absorption of 99.8% to 99.99 % when influent concentration was ranging from 1,000 to 100,000 ppm.

B) Oil Based Mud Cuttings
The flow time for 500 ml changed from 55 seconds (before passing through the boom) to 110 seconds (after passing through the boom).

Conclusion

The ClearTec RUBBERIZER® Boom is an appropriate defense mechanism to absorb hydrocarbons from concentrate-water mixtures and oil based muds.

Brunei Shell RUBBERIZER® Test Report, Cont.

TO: HSE/51
FROM: DRO/41
DATE RECEIVED: 04-14-97
DATE TESTED: 04-14-97

REF. I.D.: 97E35RB
DATE: 04-15-97
PAGE: 1 OF 1

Shell Oil's Production Chemistry Lab Results

Method I.D.		P047
Sample	**Sampling Date**	**Total Petroleum Hydrocarbon PPM**
1,000 ppm condensate in tap water (1st run)	04-14-97	2
1,000 ppm condensate in tap water (2nd run)	04-14-97	<1
10,000 ppm condensate in tap water (1st run)	04-14-97	14
100,000 ppm condensate in tap water (1st run)	04-14-97	78

Test performed by Shell Oil, Brunei

RUBBERIZER® Certifications & Awards

Classified as a Sorbent by the United States Environmental Protection Agency

Licensed as an Oil Spill Clean Up Agent by the State of California Department of Fish & Game

Classified as a non-toxic, food-grade polymer by the Federal Drug Administration

Approved for use in oil spill emergencies by the Federal Emergency Management Agency

Pre-approved for use on California highways by the California Department of Transportation

Six-time recipient of the Defense Supply Center Best Value Gold Medal

Client Testimonials

Hear What Our Clients Are Saying...

"The material you provided was a real lifesaver for us and all those involved with the cleanup of approximately 800 gallons of diesel fuel that was spilled during onload of fuel on the Ex-Davidson. In this day and age, it is a real treat when you find someone that sells something that does what it is supposed to do. I'm sold on RUBBERIZER®!"

Matthew C., California Marine Cleaning, Inc.

"Obviously I need your boom to effectively remove sheen, because the other materials just do not work. I have used your product on spills ranging from heavy bunker fuel to rainbow sheen cleanups. I feel that we could effectively use your booms for all the remaining cleanup and save Chevron a lot of money in the process especially in the area of disposal since your product can either go to the landfill or to H-power."

DeWayne H., AAA Island Environmental Inc.

"We have found that toward the end of a spill, RUBBERIZER® is the only product that is effective in the removal of light ends or sheen. Our customers have been very pleased with the results of the RUBBERIZER® product because it removed the final product and reduced the overall clean-up time and costs."

Harry B., Foss Environmental (Now SeaCor)

"This Marine Safety Office has found the RUBBERIZER® product to be very effective in the cleanup of oil spills of lighter end products such as diesel fuel and gasoline. Specific use of the product by this office includes pleasure crafts which sink in their slip leaking either diesel or gasoline, where the RUBBERIZER® is placed in the slip, thus cleaning up the fuel from the water and preventing spread of sheen."

J.A. W. IV, US Coast Guard

"Recently MPC conducted a large scale spill response following a release of PCB-contaminated mineral oil into a drainage ditch running through farmland. RUBBERIZER® was used to perform a variety of containment and recovery processes on the site. When the project was over and the filter box removed for disposal, the culvert was revealed to have been kept free of contamination."

Michael P., Marine Pollution Control

Case Studies

Waste Water Treatment - Marseilles, France

Background

Approximately 700 Liters of diesel fuel spilled into a microbiological waste water treatment pond near Marseilles, France. Initial sampling established an emulsified pollution level of 1790 PPM hydrocarbons. This contamination level was high enough to cause the cessation of discharging treated wastewater for a month or more.

Results

The waste water treatment ponds were treated with approximately 250 lbs of ClearTec RUBBERIZER® Particulate and one ClearTec RUBBERIZER® Boom. With the addition of both of these products, the hydrocarbon contamination was rapidly reduced thereby facilitating a reduction in foaming and the re-opening of discharge outlets in less than 21 hours.

Storm Water Treatment, Port of Seattle, WA, USA

Background

In an effort to reduce the amount of oil, grease, and sediment in storm water runoff, the Port of Seattle installed catch basin inserts filled with ClearTec RUBBERIZER® filter media in several storm drains located in the passenger pick up area at the Seattle/Tacoma International Airport. Prior to installation of the catch basins, the average total oil and grease concentration in the storm water was 42 mg/L, and the average total suspended solids were 126 mg/L.

Results

The treated water was sampled for two years at a point downstream from the catch basins. The results showed that with the addition of RUBBERIZER®, the average oil and grease concentration decreased from 42 mg/L to 2.6 mg/L, and the average total suspended solids decreased from 128 mg/L to 24.7 mg/L.

Case Studies

Pine River Oil Spill - Chetwynd, BC, Canada

Background

A crude oil pipeline ruptured spilling an estimated 6,289 liters of black crude oil into the Pine River located about 21 miles south of Chetwynd, BC. Initially, the response crews tried to clean up the spill using polypropylene pads and barrier booms. However, after a few days of using these products, it became clear that they needed a product that would not only contain the oil but also solidify it so that it would not be re-released into the water. One of the contractors that was called to the scene, Foss Environmental (now SeaCor) had previously used our ClearTec RUBBERIZER ® products and knew they could do just that. They contacted us and ordered 1,200 feet of our 3.25" diameter ClearTec RUBBERIZER ® Booms which were rushed to the site and deployed immediately.

Results

The ClearTec RUBBERIZER® Booms performed as promised, and no sheen ever reached the town of Chetwynd. The booms remained in place for a few months and continued to contain and solidify oil as it leached from log jams where it had collected with debris.

Storm Water Treatment - Wayne County, MI, USA

Background

The Rouge River and its watershed are a primary source of pollution to the Great Lakes. In an effort to make these waterways "fishable and swimmable" as intended by the Clean Water Act of 1972, the Cities of Livonia and Westland, Michigan tested 4 different filter device inserts to sift sediments and absorb hydrocarbons from storm water runoff. Two of the four inserts tested, Hydro-Cartridge® and StreamGuard™ , were filled with our ClearTec RUBBERIZER® filter media.

Results

The oil collected at each catch basin was analyzed once a week for a period of 19 months. Of the four devices tested, the Hydro-Cartridge® and StreamGuard™, which were both filled with ClearTec RUBBERIZER® filter media, removed the most oil per gallon of storm water. These results indicate that the two devices absorbed anywhere from 3 to 13 times more oil than the other two devices.

Case Studies

Ship Spill - San Diego, CA, USA

Background

A ship in San Diego Bay spilled approximately 800 gallons of diesel into a containment area around the ship. ClearTec RUBBERIZER® Booms were used to span gaps in the existing containment boom. Additional ClearTec RUBBERIZER® Booms (5" X 10') were thrown into the spill area.

Results

While some of this spill had already been retrieved with vac-trucks, the remainder was pushed into the booms using spray from fire hoses. Just hours later, the booms were swollen with solidified diesel and were retrieved. There was no remaining sheen on the surface of the water.

Ship Spill - Kodiak, AK, USA

Background

A ship in Kodiak, Alaska spilled approximately 150 gallons of lube oil. This water borne spill was contained with a series of 3.25" X 20' ClearTec RUBBERIZER® Booms that were tied together. ClearTec RUBBERIZER® Pillows were tossed into the spill containment area, and polypropylene pads were used until daylight ceased.

Results

The booms and pillows remained buoyant and continued to sorb and solidify the remaining lube oil until the following morning, at which time the booms and pillows, swollen with solidified lube oil, were removed. It was reported that all the lube oil had been sorbed and solidified with no remaining sheen.

Case Studies

Highway Spill - San Diego, CA, USA

Background

A tanker truck collided with another vehicle and spilled 30 gallons of diesel fuel on the highway. Because it was raining heavily that day, the fire department set up a berm to contain the fuel and large quantities of water.

Results

The berm that the fire department set up was not capable of solidifying the oil so they deployed two of our 2.25" X 20' ClearTec RUBBERIZER® Booms. All 30 gallons of the diesel was sorbed, solidified, and retrieved within 20 minutes.

ClearTec

Haz-Mat Response Technologies, Inc.
14175 W Indian School Road
STE B4-537
Goodyear, AZ 85395
(800) 542-3036
(619) 567-6388 (Fax)
www.hmrtinc.com

HAZ MAT RESPONSE TECHNOLOGIES

Metropolitan Transit System

Amendment 2

Effective Date: February 1, 2022 MTS Doc No. PWG332.2-21

STORM WATER MANAGEMENT SERVICES

SoCal Stormwater Runoff Solution Services, Inc.
Ram Mohseni
CEO
15030 Ventura Blvd., #669
Sherman Oaks, CA 91403

This shall serve as Amendment No.2 to the original agreement PWG332.0-21 as further described below.

SCOPE
Pursuant to the Scope of Work of the San Diego Metropolitan Transit System (MTS) shall:

#	Description
1.	Increase the number of filters in Item 6, Table I, Scheduled Services of the bid form from 20 to 24. As a result, the pricing will be increased by $315.00 per month, beginning in February 2022 (Attachment B). *The increased cost will be absorbed by the available as-needed funds in the agreement.*
2.	Increase the estimated quantities in Items 1 and 2, Table II, As-Needed Services of the bid form from 4 to 12 (Attachment B).
3.	Increase the estimated quantities in Item 14, Table II, As-Needed Services of the bid form from 20 to 40 (Attachment B).
	Total

SCHEDULE
There shall be no change to the schedule as a result of this amendment.

PAYMENT

There shall be no change to the value as a result of this amendment. The total value of this contract including this amendment shall be in the amount of $596,151.39. This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney

Digitally signed by Sharon Cooney
DN: cn=Sharon Cooney, o=San Diego Metropolitan Transit System, ou, email=sharon.cooney@sdmts.com, c=US
Date: 2022.04.08 06:40:48 -07'00'

Sharon Cooney, Chief Executive Officer

Agreed:

Ram Mohseni, CEO
SoCal Stormwater Runoff Solution Services, Inc.

Date: 04/08/2022

Attachment: B. Revised Bid Form

ATTACHMENT B
REVISED BID FORM

COST PROPOSAL FORM - STORM WATER MANAGEMENT SERVICES

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundreth) in the *% Mark Up* field for each year. The annual *As-Needed Materials/Parts* amount is the sum of Items 1 and 2 for each year. The *Grand Total* is the sum of the *Subtotals* for Tables I, II & III . This table contains formulas that will automatically calculate your pricing.

Table I: SCHEDULED SERVICES

Item	Description	UOM	Annual Service Frequency	Year One 7/1/21 - 6/30/22 Unit Price	Year One Item Total	Year Two 7/1/22-6/30/23 Unit Price	Year Two Item Total	Year Three 7/1/23 - 6/30/24 Unit Price	Year Three Item Total	Year Four 7/1/24 - 6/30/25 Unit Price	Year Four Item Total	Year Five 7/1/25 - 6/30/26 Unit Price	Year Five Item Total	Optional Year One 7/1/26 - 6/30/27 Unit Price	Optional Year One Item Total	Optional Year Two 7/1/27 - 6/30/28 Unit Price	Optional Year Two Item Total	Optional Year Three 7/1/28 - 6/30/29 Unit Price	Optional Year Three Item Total	Optional Year Four 7/1/29 - 6/30/30 Unit Price	Optional Year Four Item Total	Optional Year Five 7/1/30 - 6/30/31 Unit Price	Optional Year Five Item Total
1	Monthly Inspections (All Three Locations)	EA	12	$ 1,350.00	$ 16,200.00	$ 1,390.50	$ 16,686.00	$ 1,432.22	$ 17,186.58	$ 1,475.18	$ 17,702.18	$ 1,519.44	$ 18,233.24	$ 1,565.02	$ 18,780.24	$ 1,611.97	$ 19,343.65	$ 1,660.33	$ 19,923.96	$ 1,710.14	$ 20,521.68	$ 1,761.44	$ 21,137.33
2	Monthly Reporting (All Three Locations)	EA	12	$ 150.00	$ 1,800.00	$ 154.50	$ 1,854.00	$ 159.14	$ 1,909.62	$ 163.91	$ 1,966.91	$ 168.83	$ 2,025.92	$ 173.89	$ 2,086.69	$ 179.11	$ 2,149.29	$ 184.48	$ 2,213.77	$ 190.02	$ 2,280.19	$ 195.72	$ 2,348.59
3	Annual SWPPP Review/Revision (All Three Locations)	EA	1	$ 2,400.00	$ 2,400.00	$ 2,472.00	$ 2,472.00	$ 2,546.16	$ 2,546.16	$ 2,622.54	$ 2,622.54	$ 2,701.22	$ 2,701.22	$ 2,782.26	$ 2,782.26	$ 2,865.73	$ 2,865.73	$ 2,951.70	$ 2,951.70	$ 3,040.25	$ 3,040.25	$ 3,131.46	$ 3,131.46
4	Annual Comprehensive Site Compliance Eval (All Three Locations)	EA	1	$ 2,000.00	$ 2,000.00	$ 2,060.00	$ 2,060.00	$ 2,121.80	$ 2,121.80	$ 2,185.45	$ 2,185.45	$ 2,251.02	$ 2,251.02	$ 2,318.55	$ 2,318.55	$ 2,388.10	$ 2,388.10	$ 2,459.75	$ 2,459.75	$ 2,533.54	$ 2,533.54	$ 2,609.55	$ 2,609.55
5	Annual Storm Water Training (All Three Locations)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,699.50	$ 1,699.50	$ 1,750.49	$ 1,750.49	$ 1,803.00	$ 1,803.00	$ 1,857.09	$ 1,857.09	$ 1,912.80	$ 1,912.80	$ 1,970.19	$ 1,970.19	$ 2,029.29	$ 2,029.29	$ 2,090.17	$ 2,090.17	$ 2,152.88	$ 2,152.88
6	BMP Monthly Maintenance (Trolley location only/22 filters) and (IAD location/2 filters)[3]	EA	12	$ 1,890.00	$ 22,680.00	$ 1,946.70	$ 23,360.40	$ 2,005.10	$ 24,061.21	$ 2,065.25	$ 24,783.05	$ 2,127.21	$ 25,526.54	$ 2,191.03	$ 26,292.34	$ 2,256.76	$ 27,081.11	$ 2,324.46	$ 27,893.54	$ 2,394.20	$ 28,730.35	$ 2,466.02	$ 29,592.26
7	Annual Inspection Contech Vault (IAD Location Only)	EA	1	$ 475.00	$ 475.00	$ 489.25	$ 489.25	$ 503.93	$ 503.93	$ 519.05	$ 519.05	$ 534.62	$ 534.62	$ 550.66	$ 550.66	$ 567.17	$ 567.17	$ 584.19	$ 584.19	$ 601.72	$ 601.72	$ 619.77	$ 619.77
8	Annual Report (All Three Locations)	EA	1	$ 1,350.00	$ 1,350.00	$ 1,390.50	$ 1,390.50	$ 1,432.22	$ 1,432.22	$ 1,475.18	$ 1,475.18	$ 1,519.44	$ 1,519.44	$ 1,565.02	$ 1,565.02	$ 1,611.97	$ 1,611.97	$ 1,660.33	$ 1,660.33	$ 1,710.14	$ 1,710.14	$ 1,761.44	$ 1,761.44
9	BMP Monthly Maintenance (KMD location only - located at the northern boundary of the property, adjacent Opportunity Road/6 filters)	EA	12	$ 341.25	$ 4,095.00	$ 351.49	$ 4,217.85	$ 362.03	$ 4,344.39	$ 372.89	$ 4,474.72	$ 384.08	$ 4,608.96	$ 395.60	$ 4,747.23	$ 407.47	$ 4,889.64	$ 419.69	$ 5,036.33	$ 432.29	$ 5,187.42	$ 445.25	$ 5,343.05
10	Clean and Inspect - 7x Curb Inlets, No Filter & 1x V-Ditch (Del Lago Location)[1]	EA	2	$ 690.00	$ 1,380.00	$ 710.70	$ 1,421.40	$ 732.02	$ 1,464.04	$ 753.98	$ 1,507.96	$ 776.60	$ 1,553.20	$ 799.90	$ 1,599.80	$ 823.90	$ 1,647.79	$ 848.61	$ 1,697.23	$ 874.07	$ 1,748.14	$ 900.29	$ 1,800.59
11	Clean and Inspect - 1x Curb Inlet, No Filter & 2x Filterra Tree Units with Curb Bypass (Miramar College Location)[1]	EA	2	$ 480.00	$ 960.00	$ 494.40	$ 988.80	$ 509.23	$ 1,018.46	$ 524.51	$ 1,049.02	$ 540.24	$ 1,080.49	$ 556.45	$ 1,112.90	$ 573.15	$ 1,146.29	$ 590.34	$ 1,180.68	$ 608.05	$ 1,216.10	$ 626.29	$ 1,252.58
12	Clean and Inspect - 5x Grated Inlet, No Filter, 3x Curb Inlet, No Filter & 900ft V-Ditch & Inspect and Report - Stormceptor HDS Unit (Rancho Bernardo Location)[1]	EA	2	$ 1,230.00	$ 2,460.00	$ 1,266.90	$ 2,533.80	$ 1,304.91	$ 2,609.81	$ 1,344.05	$ 2,688.11	$ 1,384.38	$ 2,768.75	$ 1,425.91	$ 2,851.81	$ 1,468.68	$ 2,937.37	$ 1,512.74	$ 3,025.49	$ 1,558.13	$ 3,116.25	$ 1,604.87	$ 3,209.74
13	Clean and Inspect - 3x Grated Inlet, No Filter, 2x Curb Inlet, No Filter & 300ft Trench Drain & Inspect and Report - 3x Vegetated Bioswales, & 1x Stormceptor HDS Unit (Sabre Springs Location)[1]	EA	2	$ 679.00	$ 1,358.00	$ 699.37	$ 1,398.74	$ 720.35	$ 1,440.70	$ 741.96	$ 1,483.92	$ 764.22	$ 1,528.44	$ 787.15	$ 1,574.29	$ 810.76	$ 1,621.52	$ 835.08	$ 1,670.17	$ 860.14	$ 1,720.27	$ 885.94	$ 1,771.88
			Table I Subtotals:		$ 58,808.00		$ 60,572.24		$ 62,389.41		$ 64,261.09		$ 66,188.92		$ 68,174.59		$ 70,219.83		$ 72,326.42		$ 74,496.21		$ 76,731.10

Table II: AS-NEEDED SERVICES

Item	Description	UOM	Estimated Quantities	Year One 7/1/21 - 6/30/22 Unit Price	Year One Item Total	Year Two 7/1/22-6/30/23 Unit Price	Year Two Item Total	Year Three 7/1/23 - 6/30/24 Unit Price	Year Three Item Total	Year Four 7/1/24 - 6/30/25 Unit Price	Year Four Item Total	Year Five 7/1/25 - 6/30/26 Unit Price	Year Five Item Total	Optional Year One 7/1/26 - 6/30/27 Unit Price	Optional Year One Item Total	Optional Year Two 7/1/27 - 6/30/28 Unit Price	Optional Year Two Item Total	Optional Year Three 7/1/28 - 6/30/29 Unit Price	Optional Year Three Item Total	Optional Year Four 7/1/29 - 6/30/30 Unit Price	Optional Year Four Item Total	Optional Year Five 7/1/30 - 6/30/31 Unit Price	Optional Year Five Item Total
1	Rain Event Monitoring[4]	EA	12	$ 450.00	$ 5,400.00	$ 463.50	$ 5,562.00	$ 477.41	$ 5,728.86	$ 491.73	$ 5,900.73	$ 506.48	$ 6,077.75	$ 521.67	$ 6,260.08	$ 537.32	$ 6,447.88	$ 553.44	$ 6,641.32	$ 570.05	$ 6,840.56	$ 587.15	$ 7,045.78
2	Rain Event Sampling[4]	EA	12	$ 450.00	$ 5,400.00	$ 463.50	$ 5,562.00	$ 477.41	$ 5,728.86	$ 491.73	$ 5,900.73	$ 506.48	$ 6,077.75	$ 521.67	$ 6,260.08	$ 537.32	$ 6,447.88	$ 553.44	$ 6,641.32	$ 570.05	$ 6,840.56	$ 587.15	$ 7,045.78
3	Lab Sampling Fees	EA	4	$ 2,469.60	$ 9,878.40	$ 2,543.69	$ 10,174.75	$ 2,620.00	$ 10,479.99	$ 2,698.60	$ 10,794.39	$ 2,779.56	$ 11,118.23	$ 2,862.94	$ 11,451.77	$ 2,948.83	$ 11,795.33	$ 3,037.30	$ 12,149.19	$ 3,128.42	$ 12,513.66	$ 3,222.27	$ 12,889.07
4	ERA Technical Report - Level 1, or Level 2 (per location)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,699.50	$ 1,699.50	$ 1,750.49	$ 1,750.49	$ 1,803.00	$ 1,803.00	$ 1,857.09	$ 1,857.09	$ 1,912.80	$ 1,912.80	$ 1,970.19	$ 1,970.19	$ 2,029.29	$ 2,029.29	$ 2,090.17	$ 2,090.17	$ 2,152.88	$ 2,152.88
5	ERA Action Plan - Level 1, or Level 2 (per location)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,699.50	$ 1,699.50	$ 1,750.49	$ 1,750.49	$ 1,803.00	$ 1,803.00	$ 1,857.09	$ 1,857.09	$ 1,912.80	$ 1,912.80	$ 1,970.19	$ 1,970.19	$ 2,029.29	$ 2,029.29	$ 2,090.17	$ 2,090.17	$ 2,152.88	$ 2,152.88
6	TMDL Sampling - Rain Event Sampling	EA	2	$ 450.00	$ 900.00	$ 463.50	$ 927.00	$ 477.41	$ 954.81	$ 491.73	$ 983.45	$ 506.48	$ 1,012.96	$ 521.67	$ 1,043.35	$ 537.32	$ 1,074.65	$ 553.44	$ 1,106.89	$ 570.05	$ 1,140.09	$ 587.15	$ 1,174.30
7	TMDL Sampling - Lab Fee	EA	2	$ 2,493.75	$ 4,987.50	$ 2,568.56	$ 5,137.13	$ 2,645.62	$ 5,291.24	$ 2,724.99	$ 5,449.98	$ 2,806.74	$ 5,613.48	$ 2,890.94	$ 5,781.88	$ 2,977.67	$ 5,955.34	$ 3,067.00	$ 6,134.00	$ 3,159.01	$ 6,318.02	$ 3,253.78	$ 6,507.56
8	BMP Replacement - Fabco Cartridges (KMD Location only)	EA	6	$ 389.79	$ 2,338.74	$ 401.48	$ 2,408.90	$ 413.53	$ 2,481.17	$ 425.93	$ 2,555.60	$ 438.71	$ 2,632.27	$ 451.87	$ 2,711.24	$ 465.43	$ 2,792.58	$ 479.39	$ 2,876.36	$ 493.77	$ 2,962.65	$ 508.59	$ 3,051.53
9	BMP Replacement - RUBBERIZER by ClearTec (Media pillow only, IAD and Trolley Locations only)[2]	EA	22	$ 117.60	$ 2,587.20	$ 121.13	$ 2,664.82	$ 124.76	$ 2,744.76	$ 128.50	$ 2,827.10	$ 132.36	$ 2,911.92	$ 136.33	$ 2,999.27	$ 140.42	$ 3,089.25	$ 144.63	$ 3,181.93	$ 148.97	$ 3,277.39	$ 153.44	$ 3,375.71
10	BMP Replacement - 2x Sediment Traps (Trolley Location only)	EA	2	$ 727.60	$ 1,455.20	$ 749.43	$ 1,498.86	$ 771.91	$ 1,543.82	$ 795.07	$ 1,590.14	$ 818.92	$ 1,637.84	$ 843.49	$ 1,686.98	$ 868.79	$ 1,737.58	$ 894.86	$ 1,789.71	$ 921.70	$ 1,843.40	$ 949.35	$ 1,898.71
11	BMP Replacement - ZPG Cartridges (IAD Location only)	EA	35	$ 418.43	$ 14,645.05	$ 430.98	$ 15,084.40	$ 443.91	$ 15,536.93	$ 457.23	$ 16,003.04	$ 470.95	$ 16,483.13	$ 485.08	$ 16,977.63	$ 499.63	$ 17,486.96	$ 514.62	$ 18,011.56	$ 530.05	$ 18,551.91	$ 545.96	$ 19,108.47
12	As-Needed Repairs - Single Person Crew - Straight Time	HR	16	$ 73.50	$ 1,176.00	$ 75.71	$ 1,211.28	$ 77.98	$ 1,247.62	$ 80.32	$ 1,285.05	$ 82.72	$ 1,323.60	$ 85.21	$ 1,363.31	$ 87.76	$ 1,404.21	$ 90.40	$ 1,446.33	$ 93.11	$ 1,489.72	$ 95.90	$ 1,534.41
13	As-Needed Repairs - Two Person Crew - Straight Time	HR	16	$ 147.00	$ 2,352.00	$ 151.41	$ 2,422.56	$ 155.95	$ 2,495.24	$ 160.63	$ 2,570.09	$ 165.45	$ 2,647.20	$ 170.41	$ 2,726.61	$ 175.53	$ 2,808.41	$ 180.79	$ 2,892.66	$ 186.22	$ 2,979.44	$ 191.80	$ 3,068.83
14	As-Needed QISP Consulting Services - Straight Time[5]	HR	40	$ 90.00	$ 3,600.00	$ 92.70	$ 3,708.00	$ 95.48	$ 3,819.24	$ 98.35	$ 3,933.82	$ 101.30	$ 4,051.83	$ 104.33	$ 4,173.39	$ 107.46	$ 4,298.59	$ 110.69	$ 4,427.55	$ 114.01	$ 4,560.37	$ 117.43	$ 4,697.18
15	As-Needed Vac Truck Cleaning - Stormcepter HDS Units[1]	EA	1	$ 3,060.00	$ 3,060.00	$ 3,151.80	$ 3,151.80	$ 3,246.35	$ 3,246.35	$ 3,343.74	$ 3,343.74	$ 3,444.06	$ 3,444.06	$ 3,547.38	$ 3,547.38	$ 3,653.80	$ 3,653.80	$ 3,763.41	$ 3,763.41	$ 3,876.32	$ 3,876.32	$ 3,992.61	$ 3,992.61
			Table II Subtotals:		$ 61,080.09		$ 62,912.49		$ 64,799.87		$ 66,743.86		$ 68,746.18		$ 70,808.56		$ 72,932.82		$ 75,120.81		$ 77,374.43		$ 79,695.66

Table III: AS-NEEDED REPLACEMENT PARTS

Item	Description	Year One % Mark Up	Year One Item Total	Year Two % Mark Up	Year Two Item Total	Year Three % Mark Up	Year Three Item Total	Year Four % Mark Up	Year Four Item Total	Year Five % Mark Up	Year Five Item Total	Optional Year One % Mark Up	Optional Year One Item Total	Optional Year Two % Mark Up	Optional Year Two Item Total	Optional Year Three % Mark Up	Optional Year Three Item Total	Optional Year Four % Mark Up	Optional Year Four Item Total	Optional Year Five % Mark Up	Optional Year Five Item Total
1	Annual Materials/Parts Allowance	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2	Materials markup		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00		$ 500.00
	Table III Subtotals:		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00		$ 5,500.00

Grand Total $ 1,429,382.59

[1]Items added for BRT program, via Amendment No. 1

[2]This replaces LIDMIX Media Pillow that is no longer available by the manufacturer, as part of Amendment No. 1.

[3]Increases the number of filters from 20 to 24 as part of Amendment No. 2.

[4]Increased the quantities from 4 to 12 as part of Amendment No. 2.

[5]Increased the quantity from 20 to 40 as part of Amendment No. 2.

Metropolitan Transit System

Amendment 3

Effective Date: September 15, 2022 MTS Doc No. PWG332.3-21

STORM WATER MANAGEMENT SERVICES

SoCal Stormwater Runoff Solution Services, Inc.
Ram Mohseni
CEO
15030 Ventura Blvd., #669
Sherman Oaks, CA 91403

This shall serve as Amendment No.3 to the original agreement PWG332.0-21 as further described below.

SCOPE
Pursuant to the Scope of Work of the San Diego Metropolitan Transit System (MTS) shall:

#	Description	Amount
1.	Add funds for base Year 2 only for a 2% increase for unit prices for items in Tables I and II, and (Attachment B).	$2,397.96
2.	Add funds for base years 2-5 for the addition of one (1) concrete swale that requires bi-annual inspection and a report, and one (1) additional drop inlet with no filter that requires bi-annual inspection and cleaning beginning in Year 2 (Attachment B).	$2,289.11
	Option Years 1-5	$3,269.55
3.	The addition of funds for base years 1-5 for the increase of the number of filters in Item 6, Table I, Scheduled Services of the bid form from 20 to 24, for the increase the estimated quantities in Items 1 and 2, Table II, As-Needed Services of the bid form from 4 to 12, and for the increase of the estimated quantities in Item 15, Table II, As-Needed Services of the bid form from 20 to 40	$75,370.51
	Option Years 1-5	$149,557.51
	Subtotal (Base Years):	**$80,057.58**
	Subtotal (Option Years):	**$152,827.07**
	Grand Total:	**$232,884.65**

DRAFT

SCHEDULE
There shall be no change to the schedule as a result of this amendment.

PAYMENT

This contract amendment shall authorize additional costs not to exceed $80,057.58. These costs apply to the base years only (MTS will exercise the option year costs of $152,827.07 during the option term).

The total value of the base years including this amendment shall be in the amount of $676,208.97. This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,	Agreed:
_____	_____
Sharon Cooney, Chief Executive Officer	Ram Mohseni, CEO SoCal Stormwater Runoff Solution Services, Inc.
	Date: _____

Attachment: A. Revised Bid Form

DRAFT

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit formulas that will automatically calculate your pricing.

Table I: SCHEDULED SERVICES					Year One	7/1/21 - 6/30/22	Year Two[6]	7/1/22-6/30/23
	Item	Description	UOM	Annual Service Frequency	Unit Price	Item Total	Unit Price	Item Total
	1	Monthly Inspections (All Three Locations)	EA	**12**	$ 1,350.00	$ 16,200.00	$ 1,417.50	$ 17,010.00
	2	Monthly Reporting (All Three Locations)	EA	**12**	$ 150.00	$ 1,800.00	$ 157.50	$ 1,890.00
	3	Annual SWPPP Review/Revision (All Three Locations)	EA	**1**	$ 2,400.00	$ 2,400.00	$ 2,520.00	$ 2,520.00
	4	Annual Comprehensive Site Compliance Eval (All Three Locations)	EA	**1**	$ 2,000.00	$ 2,000.00	$ 2,100.00	$ 2,100.00
	5	Annual Storm Water Training (All Three Locations)	EA	**1**	$ 1,650.00	$ 1,650.00	$ 1,732.50	$ 1,732.50
	6	BMP Monthly Maintenance (Trolley location only/22 filters) and (IAD location/2 filters)[3]	EA	**12**	$ 1,890.00	$ 22,680.00	$ 1,984.50	$ 23,814.00
	7	Annual Inspection Contech Vault (IAD Location Only)	EA	**1**	$ 475.00	$ 475.00	$ 498.75	$ 498.75
	8	Annual Report (All Three Locations)	EA	**1**	$ 1,350.00	$ 1,350.00	$ 1,417.50	$ 1,417.50
	9	BMP Monthly Maintenance (KMD location only - located at the northern boundary of the property, adjacent Opportunity Road/6 filters)	EA	**12**	$ 341.25	$ 4,095.00	$ 358.31	$ 4,299.75
	10	Clean and Inspect - 7x Curb Inlets, No Filter & 1x V-Ditch (Del Lago Location)[1]	EA	**2**	$ 690.00	$ 1,380.00	$ 724.50	$ 1,449.00
	11	Clean and Inspect - 1x Curb Inlet, No Filter & 2x Filterra Tree Units with Curb Bypass (Miramar College Location)[1]	EA	**2**	$ 480.00	$ 960.00	$ 504.00	$ 1,008.00
	12	Clean and Inspect - 5x Grated Inlet, No Filter, 3x Curb Inlet, No Filter & 900ft V-Ditch & Inspect and Report - Stormceptor HDS Unit (Rancho Bernardo Location)[1]	EA	**2**	$ 1,230.00	$ 2,460.00	$ 1,291.50	$ 2,583.00
	13	Clean and Inspect - 3x Grated Inlet, No Filter, 2x Curb Inlet, No Filter & 300ft Trench Drain & 1x Drop Inlet, no filter & Inspect and Report - 3x Vegetated Bioswales, & 1x Stormceptor HDS Unit 1x concrete swale (Sabre Springs Location)[1,7]	EA	**2**	$ 679.00	$ 1,358.00	$ 972.95	$ 1,945.90
				Table I Subtotals		$ 58,808.00		$ 62,268.40

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit formulas that will automatically calculate your pricing.

Table I: SCHEDULED SERVICES					Year Three	7/1/23 - 6/30/24	Year Four	7/1/24 - 6/30/25
	Item	Description	UOM	Annual	Unit Price	Item Total	Unit Price	Item Total
	1	Monthly Inspections (All Three Locations)	EA	12	$ 1,460.03	$ 17,520.30	$ 1,503.83	$ 18,045.91
	2	Monthly Reporting (All Three Locations)	EA	12	$ 162.23	$ 1,946.70	$ 167.09	$ 2,005.10
	3	Annual SWPPP Review/Revision (All Three Locations)	EA	1	$ 2,595.60	$ 2,595.60	$ 2,673.47	$ 2,673.47
	4	Annual Comprehensive Site Compliance Eval (All Three Locations)	EA	1	$ 2,163.00	$ 2,163.00	$ 2,227.89	$ 2,227.89
	5	Annual Storm Water Training (All Three Locations)	EA	1	$ 1,784.48	$ 1,784.48	$ 1,838.01	$ 1,838.01
	6	BMP Monthly Maintenance (Trolley location only/22 filters) and (IAD location/2	EA	12	$ 2,044.04	$ 24,528.42	$ 2,105.36	$ 25,264.27
	7	Annual Inspection Contech Vault (IAD Location Only)	EA	1	$ 513.71	$ 513.71	$ 529.12	$ 529.12
	8	Annual Report (All Three Locations)	EA	1	$ 1,460.03	$ 1,460.03	$ 1,503.83	$ 1,503.83
	9	BMP Monthly Maintenance (KMD location only - located at the northern	EA	12	$ 369.06	$ 4,428.74	$ 380.13	$ 4,561.60
	10	Clean and Inspect - 7x Curb Inlets, No Filter & 1x V-Ditch (Del Lago Location)[1]	EA	2	$ 746.24	$ 1,492.47	$ 768.62	$ 1,537.24
Table I: SCHEDULED SERVICES					**Year Five**	**7/1/25 - 6/30/26**	**Optional Year One**	**7/1/26 - 6/30/27**
	Item	**Description**	**UOM**	**Annual**	**Unit Price**	**Item Total**	**Unit Price**	**Item Total**
	1	Monthly Inspections (All Three Locations)	EA	12	$ 1,548.94	$ 18,587.29	$ 1,595.41	$ 19,144.90
	2	Monthly Reporting (All Three Locations)	EA	12	$ 172.10	$ 2,065.25	$ 177.27	$ 2,127.21
	3	Annual SWPPP Review/Revision (All Three Locations)	EA	1	$ 2,753.67	$ 2,753.67	$ 2,836.28	$ 2,836.28
	4	Annual Comprehensive Site Compliance Eval (All Three Locations)	EA	1	$ 2,294.73	$ 2,294.73	$ 2,363.57	$ 2,363.57
	5	Annual Storm Water Training (All Three Locations)	EA	1	$ 1,893.15	$ 1,893.15	$ 1,949.94	$ 1,949.94
	6	BMP Monthly Maintenance (Trolley location only/22 filters) and (IAD location/2	EA	12	$ 2,168.52	$ 26,022.20	$ 2,233.57	$ 26,802.87
	7	Annual Inspection Contech Vault (IAD Location Only)	EA	1	$ 545.00	$ 545.00	$ 561.35	$ 561.35
	8	Annual Report (All Three Locations)	EA	1	$ 1,548.94	$ 1,548.94	$ 1,595.41	$ 1,595.41
	9	BMP Monthly Maintenance (KMD location only - located at the northern	EA	12	$ 391.54	$ 4,698.45	$ 403.28	$ 4,839.41
	10	Clean and Inspect - 7x Curb Inlets, No Filter & 1x V-Ditch (Del Lago Location)[1]	EA	2	$ 791.68	$ 1,583.36	$ 815.43	$ 1,630.86
	11	Clean and Inspect - 1x Curb Inlet, No Filter & 2x Filterra Tree Units with Curb	EA	2	$ 550.73	$ 1,101.47	$ 567.26	$ 1,134.51
	12	Clean and Inspect - 5x Grated Inlet, No Filter, 3x Curb Inlet, No Filter & 900ft V-	EA	2	$ 1,411.26	$ 2,822.51	$ 1,453.59	$ 2,907.19
	13	Clean and Inspect - 3x Grated Inlet, No Filter, 2x Curb Inlet, No Filter & 300ft	EA	2	$ 1,063.17	$ 2,126.34	$ 1,095.06	$ 2,190.13
				Table I Subtotals		$ 68,042.36		$ 70,083.63

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit formulas that will automatically calculate your pricing.

Table I: SCHEDULED SERVICES					Optional Year Two 7/1/27 - 6/30/28		Optional Year Three 7/1/28 - 6/30/29	
	Item	Description	UOM	Annual	Unit Price	Item Total	Unit Price	Item Total
	1	Monthly Inspections (All Three Locations)	EA	12	$ 1,643.27	$ 19,719.25	$ 1,692.57	$ 20,310.83
	2	Monthly Reporting (All Three Locations)	EA	12	$ 182.59	$ 2,191.03	$ 188.06	$ 2,256.76
	3	Annual SWPPP Review/Revision (All Three Locations)	EA	1	$ 2,921.37	$ 2,921.37	$ 3,009.01	$ 3,009.01
	4	Annual Comprehensive Site Compliance Eval (All Three Locations)	EA	1	$ 2,434.48	$ 2,434.48	$ 2,507.51	$ 2,507.51
	5	Annual Storm Water Training (All Three Locations)	EA	1	$ 2,008.44	$ 2,008.44	$ 2,068.70	$ 2,068.70
	6	BMP Monthly Maintenance (Trolley location only/22 filters) and (IAD location/2	EA	12	$ 2,300.58	$ 27,606.95	$ 2,369.60	$ 28,435.16
	7	Annual Inspection Contech Vault (IAD Location Only)	EA	1	$ 578.19	$ 578.19	$ 595.53	$ 595.53
	8	Annual Report (All Three Locations)	EA	1	$ 1,643.27	$ 1,643.27	$ 1,692.57	$ 1,692.57
	9	BMP Monthly Maintenance (KMD location only - located at the northern	EA	12	$ 415.38	$ 4,984.59	$ 427.84	$ 5,134.13
	10	Clean and Inspect - 7x Curb Inlets, No Filter & 1x V-Ditch (Del Lago Location)[1]	EA	2	$ 839.89	$ 1,679.79	$ 865.09	$ 1,730.18
	11	Clean and Inspect - 1x Curb Inlet, No Filter & 2x Filterra Tree Units with Curb	EA	2	$ 584.27	$ 1,168.55	$ 601.80	$ 1,203.60
	12	Clean and Inspect - 5x Grated Inlet, No Filter, 3x Curb Inlet, No Filter & 900ft V-	EA	2	$ 1,497.20	$ 2,994.40	$ 1,542.12	$ 3,084.24
	13	Clean and Inspect - 3x Grated Inlet, No Filter, 2x Curb Inlet, No Filter & 300ft	EA	2	$ 1,127.92	$ 2,255.83	$ 1,161.75	$ 2,323.51
				Table I Subtotals		$ 72,186.14		$ 74,351.73

Table I: SCHEDULED SERVICES					Optional Year Four 7/1/29 - 6/30/30		Optional Year Five 7/1/30 - 6/30/31	
	Item	Description	UOM	Annual	Unit Price	Item Total	Unit Price	Item Total
	1	Monthly Inspections (All Three Locations)	EA	12	$ 1,743.35	$ 20,920.15	$ 1,795.65	$ 21,547.76
	2	Monthly Reporting (All Three Locations)	EA	12	$ 193.71	$ 2,324.46	$ 199.52	$ 2,394.20
	3	Annual SWPPP Review/Revision (All Three Locations)	EA	1	$ 3,099.28	$ 3,099.28	$ 3,192.26	$ 3,192.26
	4	Annual Comprehensive Site Compliance Eval (All Three Locations)	EA	1	$ 2,582.74	$ 2,582.74	$ 2,660.22	$ 2,660.22
	5	Annual Storm Water Training (All Three Locations)	EA	1	$ 2,130.76	$ 2,130.76	$ 2,194.68	$ 2,194.68
	6	BMP Monthly Maintenance (Trolley location only/22 filters) and (IAD location/2	EA	12	$ 2,440.68	$ 29,288.22	$ 2,513.91	$ 30,166.86
	7	Annual Inspection Contech Vault (IAD Location Only)	EA	1	$ 613.40	$ 613.40	$ 631.80	$ 631.80
	8	Annual Report (All Three Locations)	EA	1	$ 1,743.35	$ 1,743.35	$ 1,795.65	$ 1,795.65
	9	BMP Monthly Maintenance (KMD location only - located at the northern	EA	12	$ 440.68	$ 5,288.15	$ 453.90	$ 5,446.79
	10	Clean and Inspect - 7x Curb Inlets, No Filter & 1x V-Ditch (Del Lago Location)[1]	EA	2	$ 891.04	$ 1,782.09	$ 917.77	$ 1,835.55
	11	Clean and Inspect - 1x Curb Inlet, No Filter & 2x Filterra Tree Units with Curb	EA	2	$ 619.86	$ 1,239.71	$ 638.45	$ 1,276.90
	12	Clean and Inspect - 5x Grated Inlet, No Filter, 3x Curb Inlet, No Filter & 900ft V-	EA	2	$ 1,588.38	$ 3,176.76	$ 1,636.03	$ 3,272.07
	13	Clean and Inspect - 3x Grated Inlet, No Filter, 2x Curb Inlet, No Filter & 300ft	EA	2	$ 1,196.61	$ 2,393.21	$ 1,232.50	$ 2,465.01
				Table I Subtotals		$ 76,582.28		$ 78,879.75

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit formulas that will automatically calculate your pricing.

Table II: AS-NEEDED SERVICES

				Year One	7/1/21 - 6/30/22	Year Two[6]	7/1/22-6/30/23
Item	**Description**	**UOM**	**Estimated Quantities**	**Unit Price**	**Item Total**	**Unit Price**	**Item Total**
1	Rain Event Monitoring[4]	EA	12	$ 450.00	$ 5,400.00	$ 472.50	$ 5,670.00
2	Rain Event Sampling[4]	EA	12	$ 450.00	$ 5,400.00	$ 472.50	$ 5,670.00
3	Lab Sampling Fees	EA	4	$ 2,469.60	$ 9,878.40	$ 2,593.08	$ 10,372.32
4	ERA Technical Report - Level 1, or Level 2 (per location)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,732.50	$ 1,732.50
5	ERA Action Plan - Level 1, or Level 2 (per location)	EA	1	$ 1,650.00	$ 1,650.00	$ 1,732.50	$ 1,732.50
6	TMDL Sampling - Rain Event Sampling	EA	2	$ 450.00	$ 900.00	$ 472.50	$ 945.00
7	TMDL Sampling - Lab Fee	EA	2	$ 2,493.75	$ 4,987.50	$ 2,618.44	$ 5,236.88
8	BMP Replacement - Fabco Cartridges (KMD Location only)	EA	6	$ 389.79	$ 2,338.74	$ 409.28	$ 2,455.68
9	BMP Replacement - RUBBERIZER by ClearTec (Media pillow only, IAD and Trolley Locations only)[2]	EA	22	$ 117.60	$ 2,587.20	$ 123.48	$ 2,716.56
10	BMP Replacement - 2x Sediment Traps (Trolley Location only)	EA	2	$ 727.60	$ 1,455.20	$ 763.98	$ 1,527.96
11	BMP Replacement - ZPG Cartridges (IAD Location only)	EA	35	$ 418.43	$ 14,645.05	$ 439.35	$ 15,377.30
12	As-Needed Repairs - Single Person Crew - Straight Time	HR	16	$ 73.50	$ 1,176.00	$ 77.18	$ 1,234.80
13	As-Needed Repairs - Two Person Crew - Straight Time	HR	16	$ 147.00	$ 2,352.00	$ 154.35	$ 2,469.60
14	As-Needed QISP Consulting Services - Straight Time[5]	HR	40	$ 90.00	$ 3,600.00	$ 94.50	$ 3,780.00
15	As-Needed Vac Truck Cleaning - Stormcepter HDS Units[1]	EA	1	$ 3,060.00	$ 3,060.00	$ 3,213.00	$ 3,213.00
			Table II Subtotals:		$ 61,080.09		$ 64,134.09

				Year Three	7/1/23 - 6/30/24	Year Four	7/1/24 - 6/30/25
Item	**Description**	**UOM**	**Estimated**	**Unit Price**	**Item Total**	**Unit Price**	**Item Total**
1	Rain Event Monitoring[4]	EA	12	$ 486.68	$ 5,840.10	$ 501.28	$ 6,015.30
2	Rain Event Sampling[4]	EA	12	$ 486.68	$ 5,840.10	$ 501.28	$ 6,015.30
3	Lab Sampling Fees	EA	4	$ 2,670.87	$ 10,683.49	$ 2,751.00	$ 11,003.99
4	ERA Technical Report - Level 1, or Level 2 (per location)	EA	1	$ 1,784.48	$ 1,784.48	$ 1,838.01	$ 1,838.01
5	ERA Action Plan - Level 1, or Level 2 (per location)	EA	1	$ 1,784.48	$ 1,784.48	$ 1,838.01	$ 1,838.01
6	TMDL Sampling - Rain Event Sampling	EA	2	$ 486.68	$ 973.35	$ 501.28	$ 1,002.55
7	TMDL Sampling - Lab Fee	EA	2	$ 2,696.99	$ 5,393.98	$ 2,777.90	$ 5,555.80
8	BMP Replacement - Fabco Cartridges (KMD Location only)	EA	6	$ 421.56	$ 2,529.35	$ 434.20	$ 2,605.23
9	BMP Replacement - RUBBERIZER by ClearTec (Media pillow only, IAD and Trolley	EA	22	$ 127.18	$ 2,798.06	$ 131.00	$ 2,882.00
10	BMP Replacement - 2x Sediment Traps (Trolley Location only)	EA	2	$ 786.90	$ 1,573.80	$ 810.51	$ 1,621.01
11	BMP Replacement - ZPG Cartridges (IAD Location only)	EA	35	$ 452.53	$ 15,838.62	$ 466.11	$ 16,313.78
12	As-Needed Repairs - Single Person Crew - Straight Time	HR	16	$ 79.49	$ 1,271.84	$ 81.87	$ 1,310.00
13	As-Needed Repairs - Two Person Crew - Straight Time	HR	16	$ 158.98	$ 2,543.69	$ 163.75	$ 2,620.00
14	As-Needed QISP Consulting Services - Straight Time[5]	HR	40	$ 97.34	$ 3,893.40	$ 100.26	$ 4,010.20
15	As-Needed Vac Truck Cleaning - Stormcepter HDS Units[1]	EA	1	$ 3,309.39	$ 3,309.39	$ 3,408.67	$ 3,408.67
			Table II Subtotals:		$ 66,058.12		$ 68,039.86

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit formulas that will automatically calculate your pricing.

				Year Five	7/1/25 - 6/30/26	Optional Year One	7/1/26 - 6/30/27
Item	**Description**	**UOM**	**Estimated**	**Unit Price**	**Item Total**	**Unit Price**	**Item Total**
1	Rain Event Monitoring[4]	EA	12	$ 516.31	$ 6,195.76	$ 531.80	$ 6,381.63
2	Rain Event Sampling[4]	EA	12	$ 516.31	$ 6,195.76	$ 531.80	$ 6,381.63
3	Lab Sampling Fees	EA	4	$ 2,833.53	$ 11,334.11	$ 2,918.53	$ 11,674.14
4	ERA Technical Report - Level 1, or Level 2 (per location)	EA	1	$ 1,893.15	$ 1,893.15	$ 1,949.94	$ 1,949.94
5	ERA Action Plan - Level 1, or Level 2 (per location)	EA	1	$ 1,893.15	$ 1,893.15	$ 1,949.94	$ 1,949.94
6	TMDL Sampling - Rain Event Sampling	EA	2	$ 516.31	$ 1,032.63	$ 531.80	$ 1,063.61
7	TMDL Sampling - Lab Fee	EA	2	$ 2,861.24	$ 5,722.47	$ 2,947.07	$ 5,894.15
8	BMP Replacement - Fabco Cartridges (KMD Location only)	EA	6	$ 447.23	$ 2,683.38	$ 460.65	$ 2,763.89
9	BMP Replacement - RUBBERIZER by ClearTec (Media pillow only, IAD and Trolley	EA	22	$ 134.93	$ 2,968.46	$ 138.98	$ 3,057.51
10	BMP Replacement - 2x Sediment Traps (Trolley Location only)	EA	2	$ 834.82	$ 1,669.64	$ 859.87	$ 1,719.73
11	BMP Replacement - ZPG Cartridges (IAD Location only)	EA	35	$ 480.09	$ 16,803.19	$ 494.49	$ 17,307.29
12	As-Needed Repairs - Single Person Crew - Straight Time	HR	16	$ 84.33	$ 1,349.30	$ 86.86	$ 1,389.78
13	As-Needed Repairs - Two Person Crew - Straight Time	HR	16	$ 168.66	$ 2,698.60	$ 173.72	$ 2,779.56
14	As-Needed QISP Consulting Services - Straight Time[5]	HR	40	$ 103.26	$ 4,130.51	$ 106.36	$ 4,254.42
15	As-Needed Vac Truck Cleaning - Stormcepter HDS Units[1]	EA	1	$ 3,510.93	$ 3,510.93	$ 3,616.26	$ 3,616.26
			Table II Subtotals:		$ 70,081.06		$ 72,183.49

				Optional Year Two	7/1/27 - 6/30/28	Optional Year Three	7/1/28 - 6/30/29
Item	**Description**	**UOM**	**Estimated**	**Unit Price**	**Item Total**	**Unit Price**	**Item Total**
1	Rain Event Monitoring[4]	EA	12	$ 547.76	$ 6,573.08	$ 564.19	$ 6,770.28
2	Rain Event Sampling[4]	EA	12	$ 547.76	$ 6,573.08	$ 564.19	$ 6,770.28
3	Lab Sampling Fees	EA	4	$ 3,006.09	$ 12,024.36	$ 3,096.27	$ 12,385.09
4	ERA Technical Report - Level 1, or Level 2 (per location)	EA	1	$ 2,008.44	$ 2,008.44	$ 2,068.70	$ 2,068.70
5	ERA Action Plan - Level 1, or Level 2 (per location)	EA	1	$ 2,008.44	$ 2,008.44	$ 2,068.70	$ 2,068.70
6	TMDL Sampling - Rain Event Sampling	EA	2	$ 547.76	$ 1,095.51	$ 564.19	$ 1,128.38
7	TMDL Sampling - Lab Fee	EA	2	$ 3,035.49	$ 6,070.97	$ 3,126.55	$ 6,253.10
8	BMP Replacement - Fabco Cartridges (KMD Location only)	EA	6	$ 474.47	$ 2,846.80	$ 488.70	$ 2,932.21
9	BMP Replacement - RUBBERIZER by ClearTec (Media pillow only, IAD and Trolley	EA	22	$ 143.15	$ 3,149.24	$ 147.44	$ 3,243.71
10	BMP Replacement - 2x Sediment Traps (Trolley Location only)	EA	2	$ 885.66	$ 1,771.32	$ 912.23	$ 1,824.46
11	BMP Replacement - ZPG Cartridges (IAD Location only)	EA	35	$ 509.33	$ 17,826.51	$ 524.61	$ 18,361.30
12	As-Needed Repairs - Single Person Crew - Straight Time	HR	16	$ 89.47	$ 1,431.47	$ 92.15	$ 1,474.42
13	As-Needed Repairs - Two Person Crew - Straight Time	HR	16	$ 178.93	$ 2,862.94	$ 184.30	$ 2,948.83
14	As-Needed QISP Consulting Services - Straight Time[5]	HR	40	$ 109.55	$ 4,382.06	$ 112.84	$ 4,513.52
15	As-Needed Vac Truck Cleaning - Stormcepter HDS Units[1]	EA	1	$ 3,724.75	$ 3,724.75	$ 3,836.49	$ 3,836.49
			Table II Subtotals:		$ 74,348.99		$ 76,579.46

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit formulas that will automatically calculate your pricing.

Item	Description	UOM	Estimated	Unit Price	Item Total	Unit Price	Item Total
1	Rain Event Monitoring[4]	EA	12	$ 581.12	$ 6,973.38	$ 598.55	$ 7,182.59
2	Rain Event Sampling[4]	EA	12	$ 581.12	$ 6,973.38	$ 598.55	$ 7,182.59
3	Lab Sampling Fees	EA	4	$ 3,189.16	$ 12,756.65	$ 3,284.84	$ 13,139.34
4	ERA Technical Report - Level 1, or Level 2 (per location)	EA	1	$ 2,130.76	$ 2,130.76	$ 2,194.68	$ 2,194.68
5	ERA Action Plan - Level 1, or Level 2 (per location)	EA	1	$ 2,130.76	$ 2,130.76	$ 2,194.68	$ 2,194.68
6	TMDL Sampling - Rain Event Sampling	EA	2	$ 581.12	$ 1,162.23	$ 598.55	$ 1,197.10
7	TMDL Sampling - Lab Fee	EA	2	$ 3,220.35	$ 6,440.70	$ 3,316.96	$ 6,633.92
8	BMP Replacement - Fabco Cartridges (KMD Location only)	EA	6	$ 503.36	$ 3,020.17	$ 518.46	$ 3,110.78
9	BMP Replacement - RUBBERIZER by ClearTec (Media pillow only, IAD and Trolley	EA	22	$ 151.86	$ 3,341.03	$ 156.42	$ 3,441.26
10	BMP Replacement - 2x Sediment Traps (Trolley Location only)	EA	2	$ 939.60	$ 1,879.20	$ 967.79	$ 1,935.57
11	BMP Replacement - ZPG Cartridges (IAD Location only)	EA	35	$ 540.35	$ 18,912.14	$ 556.56	$ 19,479.51
12	As-Needed Repairs - Single Person Crew - Straight Time	HR	16	$ 94.92	$ 1,518.65	$ 97.76	$ 1,564.21
13	As-Needed Repairs - Two Person Crew - Straight Time	HR	16	$ 189.83	$ 3,037.30	$ 195.53	$ 3,128.42
14	As-Needed QISP Consulting Services - Straight Time[5]	HR	40	$ 116.22	$ 4,648.92	$ 119.71	$ 4,788.39
15	As-Needed Vac Truck Cleaning - Stormcepter HDS Units[1]	EA	1	$ 3,951.58	$ 3,951.58	$ 4,070.13	$ 4,070.13
			Table II Subtotals:		$ 78,876.85		$ 81,243.15

Table III: AS-NEEDED REPLACEMENT PARTS

Item	Description	Year One 7/1/21 - 6/30/22 % Mark Up	Item Total	Year Two[6] 7/1/22-6/30/23 % Mark Up	Item Total
1	Annual Materials/Parts Allowance	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2	Materials markup		$ 500.00		$ 500.00
	Table III Subtotals:		$ 5,500.00		$ 5,500.00

Table III: AS-NEEDED REPLACEMENT PARTS

Item	Description	Year Three 7/1/23 - 6/30/24 % Mark Up	Item Total	Year Four 7/1/24 - 6/30/25 % Mark Up	Item Total
1	Annual Materials/Parts Allowance	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2	Materials markup		$ 500.00		$ 500.00
	Table III Subtotals:		$ 5,500.00		$ 5,500.00

Table III: AS-NEEDED REPLACEMENT PARTS

Item	Description	Year Five 7/1/25 - 6/30/26 % Mark Up	Item Total	Optional Year One 7/1/26 - 6/30/27 % Mark Up	Item Total
1	Annual Materials/Parts Allowance	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2	Materials markup		$ 500.00		$ 500.00
	Table III Subtotals:		$ 5,500.00		$ 5,500.00

Instructions: For Table I, please provide the Unit price for each service listed in the columns labeled "Unit Price." For Table II, please enter the unit price for each type of as-needed service in the column labled "Unit formulas that will automatically calculate your pricing.

Table III: AS-NEEDED REPLACEMENT PARTS		Optional Year Two 7/1/27 - 6/30/28		Optional Year Three 7/1/28 - 6/30/29	
Item	Description	% Mark Up	Item Total	% Mark Up	Item Total
1	Annual Materials/Parts Allowance	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2	Materials markup		$ 500.00		$ 500.00
	Table III Subtotals:		$ 5,500.00		$ 5,500.00

Table III: AS-NEEDED REPLACEMENT PARTS		Optional Year Four 7/1/29 - 6/30/30		Optional Year Five 7/1/30 - 6/30/31	
Item	Description	% Mark Up	Item Total	% Mark Up	Item Total
1	Annual Materials/Parts Allowance	10.00%	$ 5,000.00	10.00%	$ 5,000.00
2	Materials markup		$ 500.00		$ 500.00
	Table III Subtotals:		$ 5,500.00		$ 5,500.00

ANNUAL TOTALS	Year One	$ 125,388.09	Year Two	$131,902.49
	Year Three	$ 135,694.57	Year Four	$139,600.41
	Year Five	$143,623.42	Option Year One	$147,767.12
	Option Year Two	$152,035.13	Option Year Three	$156,431.19
	Option Year Four	$160,959.12	Option Year Five	$165,622.90
BASE PERIOD TOTALS	$ 676,208.98			
OPTION YEARS TOTALS	$ 782,815.47			
Grand Total	$ 1,459,024.45			

[1]Items added for BRT program, via Amendment No. 1

[2]This replaces LIDMIX Media Pillow that is no longer available by the manufacturer, as part of Amendment No. 1.

[3]Increases the number of filters from 20 to 24 as part of Amendment No. 2.

[4]Increased the quantities from 4 to 12 as part of Amendment No. 2.

[5]Increased the quantity from 20 to 40 as part of Amendment No. 2.

[6]Increased unit pricing for Tables I & II for Year 2 by 2% as part of Amendment No. 3. The negotiated annual increase was 3%. With the additional increase, the total escalator is for the Unit prices in Tables I & II for Y

[7]Adds one (1) concrete swale that requires bi-annual inspection and a report, and one (1) additional drop inlet with no filter that requires bi-annual inspection and cleaning beginning in Year 2 as part of Amendment I

CONTRACT HISTORY				
DESC	ORG AMT	AMD 1	AMD 2	AMD 3
BY	$ 547,211.78	$ 48,939.62	$ -	$ 80,057.58
OY	$ 629,988.40	$ -	$ -	$ 152,827.07
TOT	$ 1,177,200.18	$ 48,939.62	$ -	$ 232,884.65

Agenda Item No. 24

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

IMPERIAL AVENUE DIVISION (IAD) RAM BUS MAINTENANCE BUILDING HEATING VENTILATION/AIR CONDITIONING (HVAC) REPLACEMENT – WORK ORDER

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute Work Order MTSJOC324-13 to MTS Doc. No. PWG324.0-21 (in substantially the same format as Attachment A) with ABC General Contractor, Inc. (ABCGC) in the amount of $378,294.06, plus an additional project contingency of $150,000.00, for a total amount of $528,294.06 for the removal and replacement of the HVAC units at the IAD RAM bus maintenance building.

Budget Impact

The total budget for this contract shall not exceed $378,294.06 plus $150,000.00 contingency reserve for a total amount of $528,294.06. Under separate MTS Doc No. L1282.0-16, with The Gordian Group, MTS will pay a 1.95% Job Order Contract (JOC) software license fee in the amount of $7,376.73. This project is funded by MTS Capital Improvement Project (CIP) number 3008113801 – IAD RAM HVAC Replacement.

DISCUSSION:

The existing rooftop package units and air-handling units at the RAM bus maintenance building at IAD were installed in the year 2000. The units are approaching the end of their useful life and need replacement.

This project consists of the demolition and replacement of six (6) Air Conditioning (AC) units and three air-handling units. The AC replacement units will consist of one 4-ton, one 3-ton, two 5-ton, and one 10-ton unit. The three (3) replacement air-handling units will be 100% outside air direct-filled air-handling units of various sizes.

Installation of the new replacement AC units by ABCGC will include all labor and materials to remove and dispose six existing units, establish connection for the new units to existing gas and

electrical utilities, provide all necessary control wiring and thermistors for localized control, and balance and startup testing of new units.

The current market for equipment and construction materials is volatile and suppliers will not guarantee pricing for more than 7-14 days. In addition, the original proposed heating units have now been discontinued by the manufacturer. Based on availability, the contractor will need to purchase different units which may require modifications to the existing roof infrastructure. Due to the current market and concerns over equipment availability, the requested higher-than-typical contingency reserve is intended to keep the project on schedule.

On October 6, 2020, MTS issued an Invitation for Bids (IFB) seeking a contractor to provide JOC building and facilities construction services that primarily consists of repair, remodeling, or other repetitive work, and general building and facility contracting services. These services include, but are not limited to, demolition, maintenance, and modification of existing buildings and facilities, as well as any required incidental professional and technical services.

JOC is a procurement method under which public agencies may accomplish frequently encountered repairs, maintenance, and construction projects through a single, competitively procured long-term agreement.

The JOC program includes a catalog of pricing for a variety of potential tasks to be performed under the contract that have been pre-priced by the contractor, The Gordian Group. All potential contractors are subject to the pricing within this catalog. Each contractor then includes an adjustment factor, escalating their proposed price from the catalog price, to determine the total cost of the task order. The adjustment factor represents an average percentage increase over the catalog price (i.e. 1.25 adjustment factor represents 25% above the catalog price) for that respective task within the project. In order to select the lowest responsive and responsible bidder, MTS staff compares each contractor's proposed adjustment factor.

Nine (9) bids were received and MTS determined that ABCGC was the lowest responsive and responsible bidder. On December 10, 2020 (AI 11), the MTS Board authorized the CEO to execute MTS Doc. No. PWG324.0-21 with ABCGC for General Building Construction Services.

Today's proposed action will issue a work order to ABCGC under this JOC master agreement. Staff has reviewed the pricing for this repair work order and determined it to be fair and reasonable. ABCGC will be providing all materials, labor and equipment for the HVAC replacement. Work is expected to be completed by May 2023. For this work order, ABCGC will utilize the Comfort Mechanical, Inc., a Small Business (SB), and The Doctor of Electricity as its subcontractors (as shown in Exhibit C of Attachment A).

Therefore, staff recommends that the MTS Board of Directors authorize the CEO to execute Work Order MTSJOC324-13 to MTS Doc. No. PWG324.0-21 (in substantially the same format as Attachment A) with ABCGC in the amount of $378,294.06, plus an additional project contingency of $150,000, for a total amount of $528,294.06 for the removal and replacement of the HVAC units at the IAD RAM bus maintenance building.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Draft Work Order

Metropolitan Transit System

JOB ORDER CONTRACT
WORK ORDER

PWG324.0-21
CONTRACT NUMBER

MTSJOC324-13
WORK ORDER NUMBER

THIS AGREEMENT is entered into this _____ day of _____ 2022, in the state of California by and between San Diego Metropolitan Transit System ("MTS"), a California public agency, and the following, hereinafter referred to as "Contractor":

Name: ABC General Contractor, Inc.

Address: 3120 National Avenue
San Diego, CA 92113

Form of Business: Corporation
(Corporation, partnership, sole proprietor, etc.)

Telephone: (619) 247-7113

Authorized person to sign contracts: Kenneth Czubernat (Name) President (Title)

Pursuant to the existing Job Order Contract (MTS Doc. No. PWG324.0-21), MTS issues a Work Order to Contractor to complete the detailed Scope of Work (attached as Exhibit A.), the Cost Breakdown for the Scope of Work (attached as Exhibit B.), and the subcontractor listing form applicable to this Work Order (attached as Exhibit C.)

TOTAL PAYMENTS TO CONTRACTOR SHALL NOT EXCEED $378,294.06

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	ABC GENERAL CONTRACTOR, INC.
By: _____ Sharon Cooney, Chief Executive Officer	Firm: _____
Approved as to form:	By: _____ Signature
By: _____ Karen Landers, General Counsel	Title: _____

EXHIBIT A
(Scope of Work)

San Diego Metropolitan Transit System
1255 Imperial Ave
San Diego, California 92101

Final Scope of Work

Date: 8/15/2022

Job Order Contracting

To: **From:**

Contract No:	PWG324.0-21
Job Order No:	MTSJOC324-13
Job Order Title:	IAD RAM HVAC Replacement
Location:	RAM Building 100 16th Street San Diego, CA 92101
Brief Scope of Work:	

The following items detail the scope of work as discussed at the site. All requirements necessary to accomplish the items set forth below shall be considered part of this scope of work.

Natalie Ven, Project Manager **Date**

SECTION 7- SCOPE OF WORK/MINIMUM TECHNICAL SPECIFICATIONS

SECTION 7-1 GENERAL

Within the bus maintenance facility at the Imperial Ave Division, the existing rooftop package units and air handling units are approaching their useful life and are needing replacement. This project generally consists of the installation of HVAC equipment within the maintenance building. Work is to occur within the maintenance building located at 12 100 16th St. located in San Diego, CA.

SECTION 7-2 STAGING

Contractor is to keep and store all materials and equipment within the work area as much as possible. All property stored onsite is the responsibility of the contractor and MTS shall not be held liable for any and all equipment, material, tools, etc.

SECTION 7-3 TEMP FACILITIES

The contractor may use the onsite restrooms and may use available onsite power and water.

SECTION 7-4 SAFETY AND ACCESS

Diligent caution must be taken during the undertaking of this work. All work will occur within the active lot. Key personnel will be granted badges for access. Only vehicles necessary for the performance of the work shall be parked in approved parking spots. The equipment crane pick hall be coordinated and approved by MTS's Project Manager prior to equipment delivery and site access.

SECTION 7-5 WASTE

The contractor is responsible for legally disposing of any and all waste in relation to the work. The contractor shall not use any onsite receptacles to dispose of material generated during the performance of this contract. Contractor is responsible for general cleanup at the end of each work day.

SECTION 7-6 SCHEDULE AND SEQUENCING

All work shall be completed within one hundred and eighty (180) calendar days from issuance of Notice to Proceed. The work shall commence once all material is available and the work can proceed without stoppages. Contractor is to provide a schedule for the work.

SECTION 7-7 HVAC INSTALLATION

Rooftop Package Units

Demolish and install six (6) rooftop package units per Attachment A with the following salient characteristics. Electrical, gas, and condensate point of connections shall be reused:

AC #1:

- Cooling capacity: 4 tons/48,000 British Thermal Units (BTU) Total Capacity at standard Air-Conditioning, Heating, and Refrigeration Institute (AHRI) conditions. R-410a refrigerant. Unit efficiency to meet 2019 T24 Part 6, California Energy Code.
- Heating Capacity: 60,000 BTU; gas fired furnace. Minimum 80% annual fuel utilization efficiency (AFUE).
- Minimum .75" external static pressure (ESP) at 1,675 cubic feet per minute (CFM). Fan and motor shall be direct drive, electronically commutated motor (ECM) type.
- Supply and return shall be down discharge.
- Power requirements: 460V-3PH-60HZ; Not to exceed (NTE) 15-amp max overcurrent protection (MOCP).
- Provide with new, unit mounted fused disconnect. Disconnects shall be rated for outdoor and coastal environments. New fuses shall be provided.
- Provide with dry bulb temperature controlled low leak economizer. Provide all necessary control wiring and thermistors for localized control
- Coils and fins shall be provided with a factory dipped epoxy for coastal environments. Field or 3rd party applied will not be acceptable.
- Outside air damper minimum positioned shall be balanced at 250 CFM.

AC #2:

- Cooling capacity: 3 tons/36,000 British Thermal Units (BTU) Total Capacity at standard Air-Conditioning, Heating, and Refrigeration Institute (AHRI) conditions. R-410a refrigerant. Unit efficiency to meet 2019 T24 Part 6, California Energy Code.
- Heating Capacity: 72,000 BTU; gas fired furnace. Minimum 80% annual fuel utilization efficiency (AFUE).
- Minimum .75" external static pressure (ESP) at 1,200 cubic feet per minute (CFM). Fan and motor shall be direct drive, electronically commutated motor (ECM) type.
- Supply and return shall be down discharge.
- Power requirements: 460V-3PH-60HZ; Not to exceed (NTE) 15-amp max overcurrent protection (MOCP).
- Provide with new, unit mounted fused disconnect. Disconnects shall be rated for outdoor and coastal environments. New fuses shall be provided.
- Provide with dry bulb temperature controlled low leak economizer. Provide all necessary control wiring and thermistors for localized control
- Coils and fins shall be provided with a factory dipped epoxy for coastal environments. Field or 3rd party applied will not be acceptable.
- Outside air damper minimum positioned shall be balanced at 25% of max airflow.

AC #3, 5, 6:

- Cooling capacity: 5 tons/60,000 British Thermal Units (BTU) Total Capacity at standard Air-Conditioning, Heating, and Refrigeration Institute (AHRI) conditions. R-410a refrigerant. Unit efficiency to meet 2019 T24 Part 6, California Energy Code.
- Heating Capacity: 72,000 BTU; gas fired furnace. Minimum 80% annual fuel utilization efficiency (AFUE).
- AC-3: Minimum .75" external static pressure (ESP) at 1,745 cubic feet per minute (CFM). Fan and motor shall be direct drive, electronically commutated motor (ECM) type.
- AC-5: Minimum .75" external static pressure (ESP) at 1,970 cubic feet per minute (CFM). Fan and motor shall be direct drive, electronically commutated motor (ECM) type.

- AC-6: Minimum .75” external static pressure (ESP) at 1,570 cubic feet per minute (CFM). Fan and motor shall be direct drive, electronically commutated motor (ECM) type.
- Supply and return shall be down discharge.
- Power requirements: 460V-3PH-60HZ; Not to exceed (NTE) 30-amp max overcurrent protection (MOCP).
- Provide with new, unit mounted fused disconnect. Disconnects shall be rated for outdoor and coastal environments. New fuses shall be provided.
- Provide with dry bulb temperature controlled low leak economizer. Provide all necessary control wiring and thermistors for localized control
- Coils and fins shall be provided with a factory dipped epoxy for coastal environments. Field or 3rd party applied will not be acceptable.
- AC-3: Outside air damper minimum positioned shall be balanced at 200 CFM.
- AC-5: Outside air damper minimum positioned shall be balanced at 405 CFM.
- AC-6: Outside air damper minimum positioned shall be balanced at 200 CFM.

AC-4:

- Cooling capacity: 10 tons/120,000 British Thermal Units (BTU) Total Capacity at standard Air-Conditioning, Heating, and Refrigeration Institute (AHRI) conditions. R-410a refrigerant. Unit efficiency to meet 2019 T24 Part 6, California Energy Code.
- Heating Capacity: 180,000 BTU; gas fired furnace. Minimum 80% annual fuel utilization efficiency (AFUE).
- Minimum .75” external static pressure (ESP) at 3540 CFM. Motor shall be ODP, premium efficiency. Unit shall have a VFD and variable capacity control. Unit shall include a power exhaust matching supply air characteristics.
- Supply and return shall be down discharge.
- Power requirements: 460V-3PH-60HZ; Not to exceed (NTE) 30-amp max overcurrent protection (MOCP).
- Provide with new, unit mounted fused disconnect. Disconnects shall be rated for outdoor and coastal environments. New fuses shall be provided.
- Provide with dry bulb temperature controlled low leak economizer. Provide all necessary control wiring and thermistors for localized control
- Coils and fins shall be provided with a factory dipped epoxy for coastal environments. Field or 3rd party applied will not be acceptable.
- Outside air damper minimum positioned shall be balanced at 600 CFM.

100% OA Direct-Fired Air Handling Units

Demolish and install three (3) 100% outside air direct-fired air handling units with the following salient characteristics. Electrical and gas point of connections shall be reused:

HV-1:

- Unit not to exceed 5000 lbs.
- Heating output capacity: 1015 MBH; gas fired furnace. Minimum 80% annual fuel utilization efficiency (AFUE).
- Minimum .75” external static pressure (ESP) at 23,500 cubic feet per minute (CFM). Motor shall be open drip proof (ODP), premium efficiency. Unit shall be side/front discharge.
- Power requirements: 460V-3PH-60HZ.
- Provide with new, unit mounted fused disconnect. Disconnects shall be rated for outdoor and coastal environments. New fuses shall be provided.

- Provide new 316 stainless steel braided flexible gas hose to unit gas point of connection.
- Units shall be coastal rated.
- Inlet shall be provided with a bird screen and inlet/rain hood.
- Unit shall be interlocked and integrated with existing gas methane detection system.
- Unit shall include BACnet and integrated with the existing Trane building BMS. Sequence of operations (SOO) shall meet original operational intent per Attachment A, sheet M-1.1
- Provide with “V” configuration filter rack with 2” pleated minimum efficiency reporting value (MERV) 11 filters. Filter pressure drop shall be included in unit total static pressure.

HV-2:

- Unit not to exceed 1900 lbs.
- Heating output capacity: 523 MBH; gas fired furnace. Minimum 80% annual fuel utilization efficiency (AFUE).
- Minimum 1.25” ESP at 12,115 CFM. Motor shall be ODP, premium efficiency. Unit shall be side/front discharge.
- Power requirements: 460V-3PH-60HZ.
- Provide with new, unit mounted fused disconnect. Disconnects shall be rated for outdoor and coastal environments. New fuses shall be provided.
- Provide new 316 stainless steel braided flexible gas hose to unit gas point of connection.
- Units shall be coastal rated.
- Inlet shall be provided with a bird screen and inlet/rain hood.
- Unit shall be interlocked and integrated with existing gas methane detection system.
- Unit shall include BACnet and integrated with the existing Trane building BMS. SOO shall meet original operational intent per Attachment A, sheet M-1.1
- Provide with “V” configuration filter rack with 2” pleated MERV 11 filters. Filter pressure drop shall be included in unit total static pressure.
-

HV-3:

- Unit not to exceed 1300 lbs.
- Heating output capacity: 324 MBH; gas fired furnace. Minimum 80% annual fuel utilization efficiency (AFUE).
- Minimum .75” ESP at 7,500 CFM. Motor shall be ODP, premium efficiency. Unit shall be side/front discharge.
- Power requirements: 460V-3PH-60HZ.
- Provide with new, unit mounted fused disconnect. Disconnects shall be rated for outdoor and coastal environments. New fuses shall be provided.
- Provide new 316 stainless steel braided flexible gas hose to unit gas point of connection.
- Units shall be coastal rated.
- Inlet shall be provided with a bird screen and inlet/rain hood.
- Unit shall be interlocked and integrated with existing gas methane detection system.
- Unit shall include BACnet and integrated with the existing Trane building management system (BMS). SOO shall meet original operational intent per Attachment A, sheet M-1.1
- Provide with “V” configuration filter rack with 2” pleated MERV 11 filters. Filter pressure drop shall be included in unit total static pressure.

SECTION 7-8 ATTACHMENTS

Attachment A - Bus Maintenance Facility Imperial Avenue Division As-Builts

SAN DIEGO

METROPOLITAN TRANSIT DEVELOPMENT BOARD

AS-BUILTS

BUS MAINTENANCE FACILITY
IMPERIAL AVENUE DIVISION
CONTRACT BUS-443B

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

JANUARY 2001

PACKAGED AIR CONDITIONING UNIT

MARK	DESCRIPTION	CFM	OSA CFM	ESP (IN. WG.)	SEER / AFUE %	COOLING CAPACITY (MBH) TOTAL	COOLING CAPACITY (MBH) SENSIBLE	EDB / EWB	LDB / LWB	HEATING CAPACITY (MBH) INPUT	HEATING CAPACITY (MBH) OUTPUT	ELECTRICAL DATA MCA	MCOP	VOLT	PH	HZ	AMB. TEMP. (°F.)	OPER. WEIGHT (LBS.)	BASED ON: MANUFACTURER	MODEL	REMARKS
AC 1	GAS HEATING ELECTRIC COOLING	1,675	250	.50	9.7 / 80	48.96	36.02	76.4 / 63.6	56.5 / 53.7	72.0	59.2	11.4	15	460	3	60	90	730	CARRIER	48TJD 005	WITH ROOF CURB, ECONOMIZER, COPPER/COPPER COIL
AC 2	GAS HEATING ELECTRIC COOLING	1,200	600	.50	8.7 / 80	35.0	26.0	79.1 / 66.5	53.6 / 53.1	72.0	59.2	8.5	15	460	3	60	90	720	CARRIER	48TJD 004	WITH ROOF CURB, ECONOMIZER, COPPER/COPPER COIL
AC 3	GAS HEATING ELECTRIC COOLING	1,745	180	.50	8.5 / 80	56.54	44.67	75.6 / 62.7	53.4 / 53.1	72.0	59.2	14.8	20	460	3	60	90	760	CARRIER	48TJD 006	WITH ROOF CURB, ECONOMIZER, COPPER/COPPER COIL
AC 4	GAS HEATING ELECTRIC COOLING	3,535	600	.75	9.0 / 80	113.85	88.84	76.2 / 63.4	53.6 / 53.1	180.0	144.0	23.4	30	460	3	60	90	2105	CARRIER	48TJD 012	WITH ROOF CURB, ECONOMIZER, COPPER/COPPER COIL, POWER EXHAUST
AC 5	GAS HEATING ELECTRIC COOLING	1,970	405	.75	8.5 / 80	56.54	44.67	75.8 / 62.7	53.6 / 53.0	72.0	59.2	14.8	20	460	3	60	90	760	CARRIER	48TJD 006	WITH ROOF CURB, ECONOMIZER, COPPER/COPPER COIL
AC 6	GAS HEATING ELECTRIC COOLING	1,570	150	-	8.5 / 80	56.22	44.38	75.5 / 62.5	53.6 / 53.0	72.0	59.2	14.8	20	460	3	60	90	760	CARRIER	48TJD 006	WITH ROOF CURB, ECONOMIZER, COPPER/COPPER COIL

GAS FIRED MAKE-UP AIR UNIT SCHEDULE

MARK	DESCRIPTION	SERVICE	CFM	CFM OSA	ESP (IN. WG.)	FUEL	HEATING CAPACITY MBH INPUT	HEATING CAPACITY MBH OUTPUT	AFUE (%)	ELECTRICAL DATA HP	VOLT	PH	HZ	OPER. WEIGHT (LBS.)	BASED ON: MANUFACTURER	MODEL	REMARKS
HV 1	DIRECT-FIRED	MAINTENANCE BAY	2335 0	100 %	1.0	NATURAL GAS	121 0	100 8	80	10	460	3	60	4900	WEATHER RITE	HH224	HORIZONTAL DISCHARGE DAMPER, FILTER RACK, REMOTE CONTROLER
HV 2	DIRECT-FIRED	STORAGE, LOCKERROOM	1211 5	100 %	1.25	NATURAL GAS	671	560	80	7-1/2	460	3	60	1850	WEATHER RITE	HH218	HORIZONTAL DISCHARGE DAMPER, FILTER RACK, REMOTE CONTROLER
HV 3	DIRECT-FIRED	PAINT BOOTH	750 0	100 %	.75	NATURAL GAS	388	324	80	5	460	3	60	1250	WEATHER RITE	HH215	HORIZONTAL DISCHARGE DAMPER, FILTER RACK, REMOTE CONTROLER

NOTE: PROVIDE WITH OUTSIDE AIR HOOD WITH 2 POSITION MOTORIZED OUTSIDE AIR DAMPER.
PROVIDE FILTER RACK WITH 2" PLEATED FILTERS. MOTORS TO BE SPARK RESISTANT AND EXPLOSION PROF.

FAN SCHEDULE

MARK	DESCRIPTION	QUANTITY	CFM	ESP	RPM	ELECTRICAL DATA HP	VOLT	PH	HZ	OPER WEIGHT (LBS.)	BASED ON: MANUFACTURER	MODEL	REMARKS
EF 1	UTILITY	8	3960	.375	1800	3/4	460	3	60	450	GREENHECK	SWB 20	W/ WEATHER HOOD, DRAIN, EXPLOSION PROOF MOTOR, 2 SPEED MOTOR & (2) SPEED STARTERS AMCA RATING, ALUMINUM WHEEL, INLET CONE, BACKDRAFT DAMPER.
EF 2	ROOF EXHAUSTER	8	2000	25	520	1/4	120	1	60	101	GREENHECK	GB-200	W/ ROOF CURB AND BACKDRAFT DAMPER
EF 3	UTILITY	1	7100	4.0	1200	7 1/2	460	3	60	775	CARMON	CMB-40F	BACKDRAFT DAMPER, EXPLOSION PROOF MOTOR. WEATHER HOOD, EPOXY COATING
EF 4	ROOF EXHAUSTER	1	1400	25	665	1/4	120	1	60	90	GREENHECK	GB-160	W/ ROOF CURB AND BACKDRAFT DAMPER EXPLOSION PROOF
EF 5	ROOF EXHAUSTER	1	2880	.5	930	3/4	460	3	60	101	GREENHECK	GB-180	W/ ROOF CURB AND BACKDRAFT DAMPER
EF 6	ROOF EXHAUSTER	1	10850	.875	480	3	480	3	60	331	GREENHECK	GB-420	W/ ROOF CURB AND BACKDRAFT DAMPER
EF 7	ROOF EXHAUSTER	1	500	25	960	1/4	460	3	60	30	GREENHECK	GB-90	W/ ROOF CURB AND BACKDRAFT DAMPER
EF 8	ROOF EXHAUSTER	1	700	25	1160	1/4	120	1	60	30	GREENHECK	GB-90	W/ ROOF CURB AND BACKDRAFT DAMPER
EF 9	UTILITY	1	8000	1.0	850	3	460	3	60	600	GREENHECK	SWB 27	W/ WEATHER HOOD, DRAIN, EXPLOSION PROOF MOTOR AMCA RATING, ALUMINUM WHEEL, BACKDRAFT DAMPER
EF 10	UTILITY	1	600	3.0	2,795	3/4	120	3	60	120	CARMON	CMB-10	W/EXOPY COATING, WEATHER HOOD, DRAIN, EXPLOSION PROOF MOTOR BACKDRAFT DAMPER
EF 11	ROOF EXHAUSTER	1	700	0.35	1,200	1/4	120	1	60	30	GREENHECK	GB-90	W/ ROOF CURB AND BACKDRAFT DAMPER

DIFFUSERS, GRILLES & REGISTERS

MARK	NECK SIZE	DAMPER	BASED ON: MANUFACTURER	MODEL	REMARKS	MARK	NECK SIZE	DAMPER	BASED ON: MANUFACTURER	MODEL	REMARKS
A	8"X8"	-	TITUS	MCD	-	AA	22"X22"	-	TITUS	50F	-
B	10"X10"	-	TITUS	MCD		BB	10"X10"		TITUS	50F	
C	12"X12"	-	TITUS	MCD		CC	12"X12"		TITUS	50F	
D	14"X14"	-	TITUS	MCD		DD	14"X14"		TITUS	50F	
E	12"X12"	-	THERMA-FUSER	TFC-HC		EE	24"X16"		TITUS	50F	
						FF	24"X12"		TITUS	350RL	FOR BLADE ADJUSTMENT SEE DETAIL #3 SHEET M-6

NOTE: DIFFUSERS & GRILLES SHALL HAVE FRAMES TO MATCH THE CEILINGS IN WHICH THEY ARE INSTALLED.
I.E.: T-BAR CEILING: LAY-IN FRAMES, GYPSUM BOARD CEILING: FLUSH MOUNTED FRAMES.

GENERAL NOTES

1. DUCT FABRICATION AND INSTALLATION SHALL CONFORM TO THE "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" AS PUBLISHED BY SMACNA 1991 EDITION.
2. DUCT LINER APPLICATION SHALL CONFORM TO THE "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" AS PUBLISHED BY SMACNA 1991 EDITION.
3. MECHANICAL SYSTEM SEISMIC RESTRAINTS SHALL CONFORM TO "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS" AS PUBLISHED BY SMACNA 1976 EDITION OSA APPROVED MARCH 1976.
4. BRANCHES TO DIFFUSER, REGISTERS AND GRILLES SHALL BE SUPPLIED WITH MANUAL VOLUME DAMPERS, DAMPER QUADRANT SHALL BE 3/8 MINIMUM, POSITION TO BE INDICATED BY QUADRANT. ALL DAMPERS THAT ARE INACCESSIBLE SHALL BE PROVIDED WITH REMOTE OPERATORS SIMILAR TO YOUNG REGULATOR.
5. EQUIPMENT ACCESS SHALL CONFORM TO UMC SECTION 503.
6. MISCELLANEOUS METAL, ANGLES, BRACING OR SUPPORTS EXPOSED TO THE WEATHER SHALL BE GALVANIZED IRON OR BLACK IRON PAINTED WITH ONE COAT OF RUST INHIBITING PAINT AND ONE COAT OF GRAY PRIMER.
7. FIRE DAMPERS SHALL BE INSTALLED IN DUCTS PENETRATING RATED FIRE SEPARATIONS. ACCESS DOORS SHALL BE PROVIDED FOR INSPECTION AND REPLACEMENT OF THE FUSIBLE LINK. FIRE DAMPER ASSEMBLIES, INCLUDING SLEEVES, AND INSTALLATION PROCEDURES SHALL BE APPROVED BY THE BUILDING INSPECTOR PRIOR TO INSTALLATION.
8. ALL SUPPLY AND RETURN AND EXHAUST DUCTS SHALL BE SEALED AIRTIGHT AT ALL DUCT JOINTS, BRANCH TAKEOFFS AND CONNECTIONS TO EQUIPMENT WITH A NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT, AS RECOMMENDED BY THE MANUFACTURER SPECIFICALLY FOR SEALING JOINTS AND SEAMS IN DUCTWORK. DUCT TAPE SHALL NOT BE USED AS A SEALER.
9. DUCT SEAMS AND JOINTS EXPOSED TO WEATHER SHALL BE CAULKED WATERTIGHT WITH ACRYLIC SEALANT AND SHALL HAVE 4 INCH MINIMUM WIDTH OF 6 OUNCE CANVAS PASTED ON WITH LAGGING ADHESIVE. PAINT WITH ASPHALT BASED ALUMINUM PAINT TO MATCH ADJACENT WORK.
10. GAS FIRED EQUIPMENT SHALL HAVE CLEARANCES PER MANUFACTURER'S SPECIFICATIONS BASED ON AGA APPROVAL.
11. MECHANICAL CONTRACTOR SHALL COORDINATE THEIR INSTALLATION LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION OF EQUIPMENT.
12. INSULATED DUCT SHALL REMAIN UNCOVERED UNTIL DUCT JOINTS HAVE BEEN APPROVED BY THE ENGINEER. IF WORK REQUIRED TO BE INSPECTED IS COVERED BEFORE THE APPROVAL OF THE ENGINEER, IT SHALL BE UNCOVERED FOR INSPECTION AT THIS CONTRACTOR'S EXPENSE.
13. ALL CONTROL WIRING SHALL BE IN CONDUIT AND ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ALL THERMOSTATS SHALL BE MOUNTED 48 INCHES ABOVE FINISHED FLOOR.
14. INTERCONNECTING WIRING SAFETY SWITCHES, RELAYS, CONTROLLERS AND MOTOR STARTERS WHICH ARE INTEGRAL COMPONENTS OF PACKAGED EQUIPMENT SHALL BE PROVIDED AS AN INTEGRAL PART OF THAT EQUIPMENT.
15. ALL ELECTRICAL, MECHANICAL AND PLUMBING PENETRATIONS THROUGH FIRE RATED AREA SEPARATION AND CORRIDOR ASSEMBLIES INCLUDING CONDUITS AND PIPING SHALL BE TIGHTLY AND SOLIDLY SEALED WITH FIRESTOPPING WALLBOARD COMPOUND AND SHALL BE AN APPROVED MATERIAL AS PRESCRIBED IN STATE FIRE MARSHAL STANDARD 7-1. WHERE PLUMBING PENETRATES AN AREA SEPARATION WALL SURFACE, THE SECTION PASSING THROUGH THE WALL SURFACE AND THE FIXTURE CONNECTIONS THERETO SHALL BE ONLY OF METAL.
16. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH:

    ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THESE CODES AND ALL APPLICABLE LOCAL ORDINANCES. WHERE CONTRACT DOCUMENTS EXCEED WITHOUT VIOLATING CODE AND REGULATION REQUIREMENTS, CONTRACT DOCUMENTS TAKE PRECEDENCE, WHERE CODES CONFLICT, THE MORE STRINGENT SHALL APPLY.

    UNIFORM BUILDING CODE - 1994 EDITION
    UNIFORM MECHANICAL CODE - 1994 EDITION
    UNIFORM PLUMBING CODE - 1994 EDITION
    UNIFORM FIRE CODE - 1994 EDITION
    NATIONAL ELECTRICAL CODE - 1993 EDITION

LEGEND

SYMBOL	ABBR.	DESCRIPTION
X / X		EQUIPMENT SYMBOL NUMBER
		DUCT (RECTANGULAR OR ROUND)
	(L)	DUCT (LINED)
	(L)	DUCT (LINED)
		FLEXIBLE DUCT
	FC	DUCT FLEXIBLE CONNECTION
		SQUARE ELBOW WITH TURNING VANES
		RADIUS ELBOW
		DUCT TRANSITION
		45 DEGREE BRANCH TAKE-OFF
		END DOUBLE BRANCH WITH TURNING VANES
	VD	MANUAL VOLUME DAMPER
M	MD	MOTORIZED DAMPER
	FSD	FIRE SMOKE/DAMPER
	FD	FIRE DAMPER
	SA	SUPPLY AIR DIFFUSER/DUCT
	RA	RETURN AIR GRILLE/DUCT
	EA	EXHAUST AIR GRILLE/DUCT
	UP	DUCT RISE/UP THRU ROOF OR FLOOR
	DN	DUCT DROP/DOWN THRU ROOF OR FLOOR
	SM	SHEETMETAL
SD		SMOKE DETECTOR
$		SWITCH
T		THERMOSTAT (MOUNT @ 48" A.F.F.)
	CFM	CUBIC FEET PER MINUTE
	D/L	DOOR LOUVER
	AD	ACCESS DOOR
	POC	POINT OF CONNECTION
	U/C	UNDERCUT
	ϕ	DIAMETER
	DWG	DRAWING
	ARCH	ARCHITECTURAL
	AFF	ABOVE FINISHED FLOOR

T-24 NOTES

THE FOLLOWING SHALL BE COMPLIED WITH UNLESS MORE RESTRICTIVE REQUIREMENTS ARE SHOWN ON THE PLANS OR CALLED FOR IN THE SPECIFICATIONS.

1. INSULATION MATERIAL SHALL MEET THE CALIFORNIA QUALITY STANDARD PER SECTION 118 E.E.S.
2. ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF SECTIONS 118, 123 AND 124 E.E.S. AND TABLE 10D.U.M.C.
3. ALL HVAC SYSTEMS SHALL MEET THE CONTROL REQUIREMENTS PER SECTIONS 112 AND 122 E.E.S.
4. ALL HVAC EQUIPMENT AND APPLIANCES SHALL MEET THE REQUIREMENTS PER SECTIONS 111-113, 115 AND 120-129 E.E.S.

AS-BUILT
A. deBerard
Contract No. BUS-443B
Date NOV. 2000

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 2000.017
TELEPHONE (858) 271-9808
FAX: (858) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131
tmad@cts.com

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WILSHIRE BOULEVARD, SUITE 1455
LOS ANGELES, CALIFORNIA 90017-2499

LICENSED ARCHITECT UN SOO KIM C-24485 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY	DATE
BM	
DRAWN BY TW	
CHECKED BY BM	
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

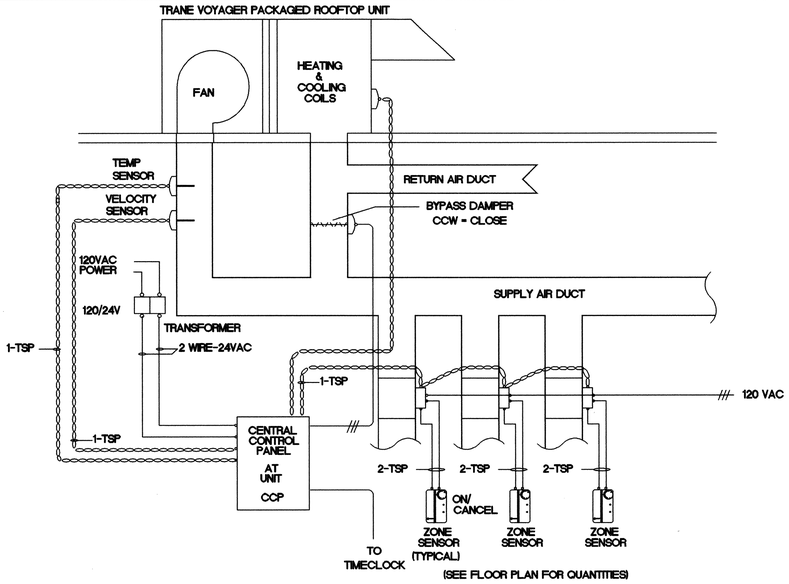
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANCAL SCHEDULES
LEGEND AND NOTES

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-1
SHEET NO. 61

VOLUME AND BYPASS DAMPERS

MARK	AREA SERVED	TERMINAL UNIT SIZE	TOTAL AIR PRESSURE DROP IN. W.G.	MAXIMUM CFM	MINIMUM CFM	TYPE OF CONTROL	BASED ON: MANUFACTURER	BASED ON: MODEL	REMARKS
VD 1	COMPUTER TRAINING ROOM 22	12"ϕ	0.035	615	300	ELECTRIC	CARRIER	DAMPBAR12INC	-
VD 2	DRIVERS CLASSROOM	12"ϕ	0.035	630	305	ELECTRIC	CARRIER	DAMPBAR12INC	-
VD 3	OFFICES 224 AND 226	12"ϕ	0.035	740	370	ELECTRIC	CARRIER	DAMPBAR12INC	-



WT SYSTEM FOR AC-5

NO SCALE

CERTIFICATE OF COMPLIANCE — PART 1 OF 2 — ENV-1

PROJECT NAME: MTDB BMF IAD
DATE: 22 JUNE 1998
PROJECT ADDRESS: IMPERIAL AVE., SAN DIEGO, CA.
PRINCIPLE DESIGNER–ENVELOPE: STV
TELEPHONE:
DOCUMENTATION AUTHOR: TMAD ENGINEERS, INC.
TELEPHONE: 619-271-9808
BUILDING PERMIT #
CHECKED BY/DATE
ENFORCEMENT AGENCY USE

GENERAL INFORMATION

DATE OF PLANS: 22 JUNE 1998
BUILDING CONDITIONED FLOOR AREA: 44,816 sqft.
CLIMATE ZONE: #07

BUILDING TYPE: [X] NONRESIDENTIAL [ ] HIGH RISE RESIDENTIAL [ ] HOTEL/MOTEL GUEST ROOM
PHASE OF CONSTRUCTION: [X] NEW CONSTRUCTION [ ] ADDITION [ ] ALTERATION [ ] UNCONDITIONED (FILE AFFIDAVIT)
METHOD OF ENVELOPE COMPLIANCE: [X] COMPONENT [ ] OVERALL ENVELOPE [ ] PERFORMANCE

STATEMENT OF COMPLIANCE

THIS CERTIFICATE OF COMPLIANCE LISTS THE BUILDINGS FEATURES AND PERFORMANCE SPECIFICATIONS NEEDED TO COMPLY WITH TITLE 24, PARTS 1 AND 6 OF THE CALIFORNIA CODE OF REGULATIONS. THIS CERTIFICATE APPLIES ONLY TO THE BUILDING ENVELOPE REQUIREMENTS.

THE PRINCIPLE ENVELOPE DESIGNER HEREBY CERTIFIES THAT THE PROPOSED BUILDING DESIGN REPRESENTED IN THIS SET OF CONSTRUCTION DOCUMENTS IS CONSISTENT WITH THE OTHER COMPLIANCE FORMS AND WORKSHEETS, WITH THE SPECIFICATIONS, AND WITH ANY OTHER CALCULATIONS SUBMITTED WITH THIS PERMIT APPLICATION. THE PROPOSED BUILDING HAS BEEN DESIGNED TO MEET THE ENVELOPE REQUIREMENTS CONTAINED IN SECTIONS 110, 116 THROUGH 118, AND 143 OR 149 PART 6, CHAPTER 1.

PLEASE CHECK ONE:

[ ] I HEREBY AFFIRM THAT I AM ELIGIBLE UNDER THE PROVISIONS OF DIVISION 3 OF THE BUSINESS AND PROFESSIONAL CODE TO SIGN THIS DOCUMENT AS THE PERSON RESPONSIBLE FOR ITS PREPARATION: AND THAT I AM A CIVIL ENGINEER OR ARCHITECT.

[ ] I AFFIRM THAT I AM ELIGIBLE UNDER THE EXEMPTION TO DIVISION 3 OF THE BUSINESS AND PROFESSIONAL CODE BY SECTION 5537.2 OF THE BUSINESS AND PROFESSIONAL CODE TO SIGN THIS DOCUMENT AS THE PERSON RESPONSIBLE FOR ITS PREPARATION: AND THAT I AM A LICENSED CONTRACTOR PREPARING DOCUMENTS FOR WORK THAT I HAVE CONTRACTED TO PREFORM.

[ ] I AFFIRM THAT I AM ELIGIBLE UNDER THE EXEMPTION TO DIVISION 3 OF THE BUSINESS AND PROFESSIONAL CODE BY SECTION_____ OF THE_____ CODE TO SIGN THIS DOCUMENT AS THE PERSON RESPONSIBLE FOR ITS PREPARATION: AND FOR THE FOLLOWING REASON_____.

PRINCIPAL ENVELOPE DESIGNER–NAME	SIGNATURE	LICENSE NO.	DATE
KEVIN KIM			

ENVELOPE MANDATORY MEASURES

INDICATE LOCATION ON PLANS OF NOTE BLOCK FOR MANDATORY MEASURES:

INSTRUCTIONS TO APPLICANT

FOR DETAILED INSTRUCTIONS ON THE USE OF THIS AND ALL ENERGY EFFICIENCY STANDARDS COMPLIANCE FORMS, PLEASE REFER TO THE NONRESIDENTIAL MANUAL PUBLISHED BY THE CALIFORNIA ENERGY COMMISSION.

ENV–1: REQUIRED ON PLANS FOR ALL SUBMITTALS. PART 2 MAY BE INCORPORATED IN SCHEDULES ON PLANS.
ENV–2: USED FOR ALL SUBMITTALS; CHOOSE APPROPRIATE VERSION DEPENDING ON METHOD OF ENVELOPE COMPLIANCE.
ENV–3: OPTIONAL. USE IF DEFAULT U–VALUES ARE NOT USED. CHOOSE APPROPRIATE VERSION FOR ASSEMBLY U–VALUE TO BE CALCULATED.

NONRESIDENTIAL COMPLIANCE FORM — DECEMBER 1991

CERTIFICATE OF COMPLIANCE — PART 1 OF 3 — MECH-1

PROJECT NAME: MTDB BMF IAD
DATE: 22 JUNE 1998
PROJECT ADDRESS: IMPERIAL AVE., SAN DIEGO, CA.
PRINCIPLE DESIGNER–MECHANICAL: TMAD ENGINEERS, INC.
TELEPHONE: 619-271-9808
DOCUMENTATION AUTHOR: TMAD ENGINEERS, INC.
TELEPHONE: 619-271-9808
BUILDING PERMIT #
CHECKED BY/DATE
ENFORCEMENT AGENCY USE

GENERAL INFORMATION

DATE OF PLANS: 22 JUNE 1998
BUILDING CONDITIONED FLOOR AREA: 44,816 SQ. FT.

BUILDING TYPE: [X] NONRESIDENTIAL [ ] HIGH RISE RESIDENTIAL [ ] HOTEL/MOTEL GUEST ROOM
PHASE OF CONSTRUCTION: [X] NEW CONSTRUCTION [ ] ADDITION [ ] ALTERATION [ ] UNCONDITIONED (FILE AFFADAVIT)
METHOD OF MECHANICAL COMPLIANCE: [X] PRESCRIPTIVE [ ] PERFORMANCE
PROOF OF ENVELOPE COMPLIANCE: [ ] PREVIOUS ENVELOPE PERMIT [X] ENVELOPE COMPLIANCE ATTACHED

STATEMENT OF COMPLIANCE

THIS CERTIFICATE OF COMPLIANCE LISTS THE BUILDINGS FEATURES AND PERFORMANCE SPECIFICATIONS NEEDED TO COMPLY WITH TITLE 24, PARTS 1 AND 6 OF THE CALIFORNIA CODE OF REGULATIONS. THIS CERTIFICATE APPLIES ONLY TO THE BUILDING MECHANICAL REQUIREMENTS.

THE DOCUMENTATION PREPARER HEREBY CERTIFIES THAT THE DOCUMENTATION IS ACCURATE AND COMPLETE

DOCUMENTATION AUTHOR	SIGNATURE	DATE
BONG MANLULU		22 JUNE 1998

THE PRINCIPLE MECHANICAL DESIGNER HEREBY CERTIFIES THAT THE PROPOSED BUILDING DESIGN REPRESENTED IN THIS SET OF CONSTRUCTION DOCUMENTS IS CONSISTENT WITH THE OTHER COMPLIANCE FORMS AND WORKSHEETS, WITH THE SPECIFICATIONS, AND WITH ANY OTHER CALCULATIONS SUBMITTED WITH THIS PERMIT APPLICATION. THE PROPOSED BUILDING HAS BEEN DESIGNED TO MEET THE MECHANICAL REQUIREMENTS CONTAINED IN SECTIONS 110 THROUGH 115, 120 THROUGH 124, 140 THROUGH 142,144 AND 145.

PLEASE CHECK ONE:

[ ] I HEREBY AFFIRM THAT I AM ELIGIBLE UNDER THE PROVISIONS OF DIVISION 3 OF THE BUSINESS AND PROFESSIONAL CODE TO SIGN THIS DOCUMENT AS THE PERSON RESPONSIBLE FOR ITS PREPARATION: AND THAT I AM A CIVIL ENGINEER. MECHANICAL ENGINEER, OR ARCHITECT.

[ ] I AFFIRM THAT I AM ELIGIBLE UNDER THE EXEMPTION TO DIVISION 3 OF THE BUSINESS AND PROFESSIONAL CODE BY SECTION 5537.2 OF THE BUSINESS AND PROFESSIONAL CODE TO SIGN THIS DOCUMENT AS THE PERSON RESPONSIBLE FOR ITS PREPARATION: AND THAT I AM A LICENSED CONTRACTOR PREPARING DOCUMENTS FOR WORK THAT I HAVE CONTRACTED TO PREFORM.

[ ] I AFFIRM THAT I AM ELIGIBLE UNDER THE EXEMPTION TO DIVISION 3 OF THE BUSINESS AND PROFESSIONAL CODE BY SECTION_____ OF THE_____ CODE TO SIGN THIS DOCUMENT AS THE PERSON RESPONSIBLE FOR ITS PREPARATION: AND FOR THE FOLLOWING REASON_____.

PRINCIPAL MECHANICAL DESIGNER–NAME	SIGNATURE	LICENSE NO.	DATE
CHRIS RADTKE, PE		M24519	9/30/02

MECHANICAL MANDATORY MEASURES

INDICATE LOCATION ON PLANS OF NOTE BLOCK FOR MANDATORY MEASURES: M-1

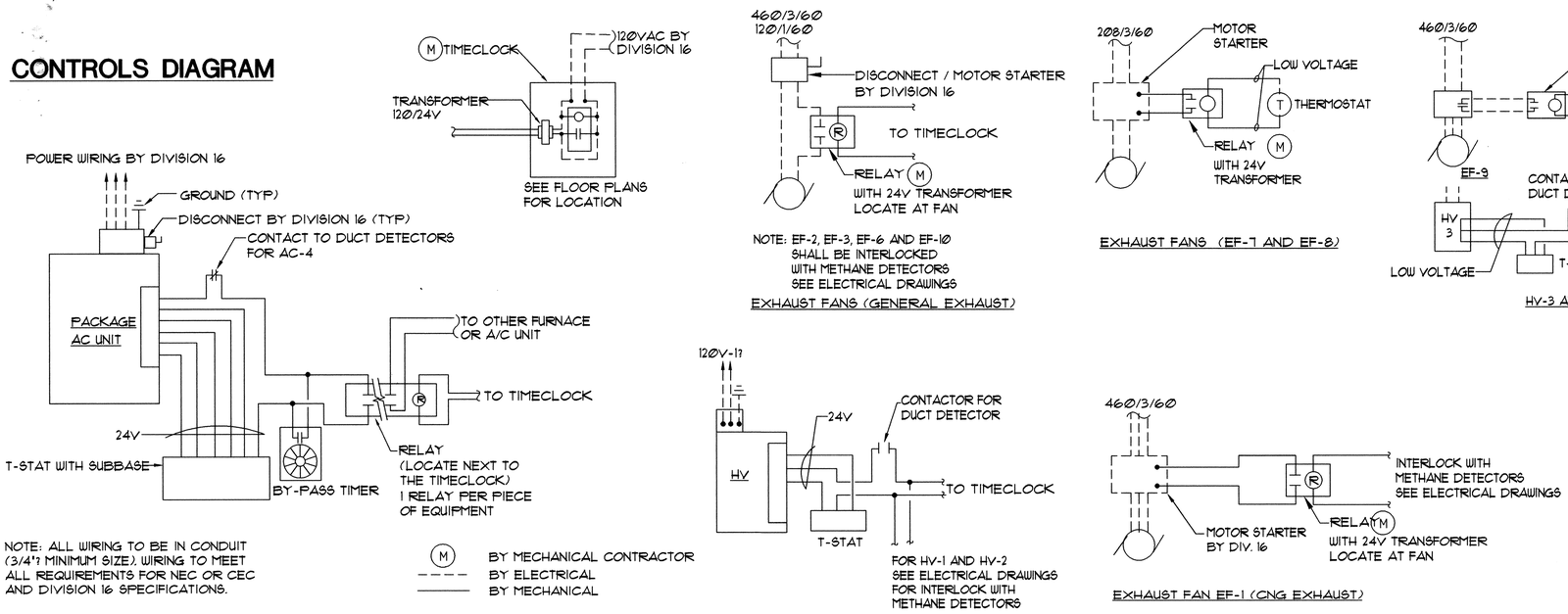
INSTRUCTIONS TO APPLICANT

FOR DETAILED INSTRUCTIONS ON THE USE OF THIS AND ALL ENERGY EFFICIENCY STANDARDS COMPLIANCE FORMS, PLEASE REFER TO THE NONRESIDENTIAL MANUAL PUBLISHED BY THE CALIFORNIA ENERGY COMMISSION.

MECH–1: REQUIRED ON PLANS FOR ALL SUBMITTALS. PARTS 2 & 3 MAY BE INCORPORATED IN SCHEDULES ON PLANS.
MECH–2: REQUIRED FOR ALL SUBMITTALS; CHOOSE APPROPRIATE VERSION DEPENDING ON METHOD OF MECHANICAL COMPLIANCE.
MECH–3: REQUIRED FOR ALL SUBMITTALS, BUT FORM DOES NOT HAVE TO BE COMPLETED IF LOCATION OF MECHANICAL EQUIPMENT SCHEDULE IS INDICATED ON THE FORM PER SECTION 4.3.3.
MECH–4: REQUIRED FOR ALL SUBMITTALS UNLESS REQUIRED OUTDOOR VENTILATION RATES AND AIRFLOWS ARE SHOWN ON PLANS PER SECTION 4.3.4.

NONRESIDENTIAL COMPLIANCE FORM — DECEMBER 1991

CONTROLS DIAGRAM



NOTE: ALL WIRING TO BE IN CONDUIT (3/4"? MINIMUM SIZE). WIRING TO MEET ALL REQUIREMENTS FOR NEC OR CEC AND DIVISION 16 SPECIFICATIONS.

(M) BY MECHANICAL CONTRACTOR
---- BY ELECTRICAL
—— BY MECHANICAL

SEQUENCE OF OPERATION

AC-1 to 6, EF-2, 3. 4, 5, 6 AND 10, HV-1, 2 SHALL BE STARTED/STOPPED BY AN AUTOMATIC TIME SWITCH WITH 4 HOUR BYPASS TIMER FOR OFF-HOURS OPERATION. THE TIME SWITCH SHALL BE CAPABLE OF PROGRAMMING DIFFERENT SCHEDULE FOR WEEKDAYS, WEEKENDS, AND HOLIDAYS. AC UNITS SHALL THEN BE CONTROLLED BY THEIR RESPECTIVE THERMOSTAT. THERMOSTAT SHALL BE SET PER TITLE 24.

EXHAUST FANS AND MAKE-UP AIR UNITS, WILL RUN SIMULTANEOUSLY. HEATING WILL BE PROVIDED WHEN THERMOSTAT SENSES A DROP IN TEMPERATURE BELOW 65 DEGREES F. THERMOSTAT WILL HAVE ON/OFF SWITCH WHICH WILL BE OVERRIDDEN BY METHANE DETECTOR CONTROL SYSTEM (HV-142). THERMOSTAT FOR MAKE-UP AIR UNITS WILL HAVE SWITCHING FOR ON/OFF AND HEAT.

INTERLOCK EXHAUST FANS (EF-1) WITH THE METHANE DETECTORS AND ALARM SYSTEM. UPON METHANE DETECTION OF 20 PERCENT OF LEL, THE MAKE-UP AIR UNIT WILL BE ENERGIZED AND THE EXHAUST FANS WILL BE AT HIGH SPEED TO PROVIDE A MINIMUM OF 5 AIR CHANGES PER HOUR OF VENTILATION. UPON A 40 PERCENT LEL READING, AN AUTOMATIC SWITCH WILL SHUT OFF ALL POWER TO MAINTENANCE BAYS, EXCEPT FOR VENTILATION SYSTEM.

THERMOSTATS TO HAVE FAN CONTROLS OF ON/OFF, AND AUTO CHANGEOVER FOR HEATING AND COOLING. AND 5 DEGREES DEADBAND.

HV-3 & EF-9 SHALLL INTERLOCK AND RUN CONTINOUSLY. A MANUAL SHUTOFF (SEE PLAN FOR LOCATION) W/ BREAKABLE GLASS , SHALL DE-ENERGIZE AND ENERGIZE HV-3 AND EF-9.

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 2000.017
TELEPHONE (858) 271-9808
FAX: (858) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131
tmad@cts.com

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WILSHIRE BOULEVARD, SUITE 1455
LOS ANGELES, CALIFORNIA 90017-2499

LICENSED ARCHITECT — TUN SOO KIM — C-24485 — RENEWAL DATE — STATE OF CALIFORNIA

DESIGNED BY	DATE
BM	
DRAWN BY TW	
CHECKED BY BM	
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANCAL SCHEDULES
LEGEND AND NOTES

SCALE: NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-1.1
SHEET NO. 62

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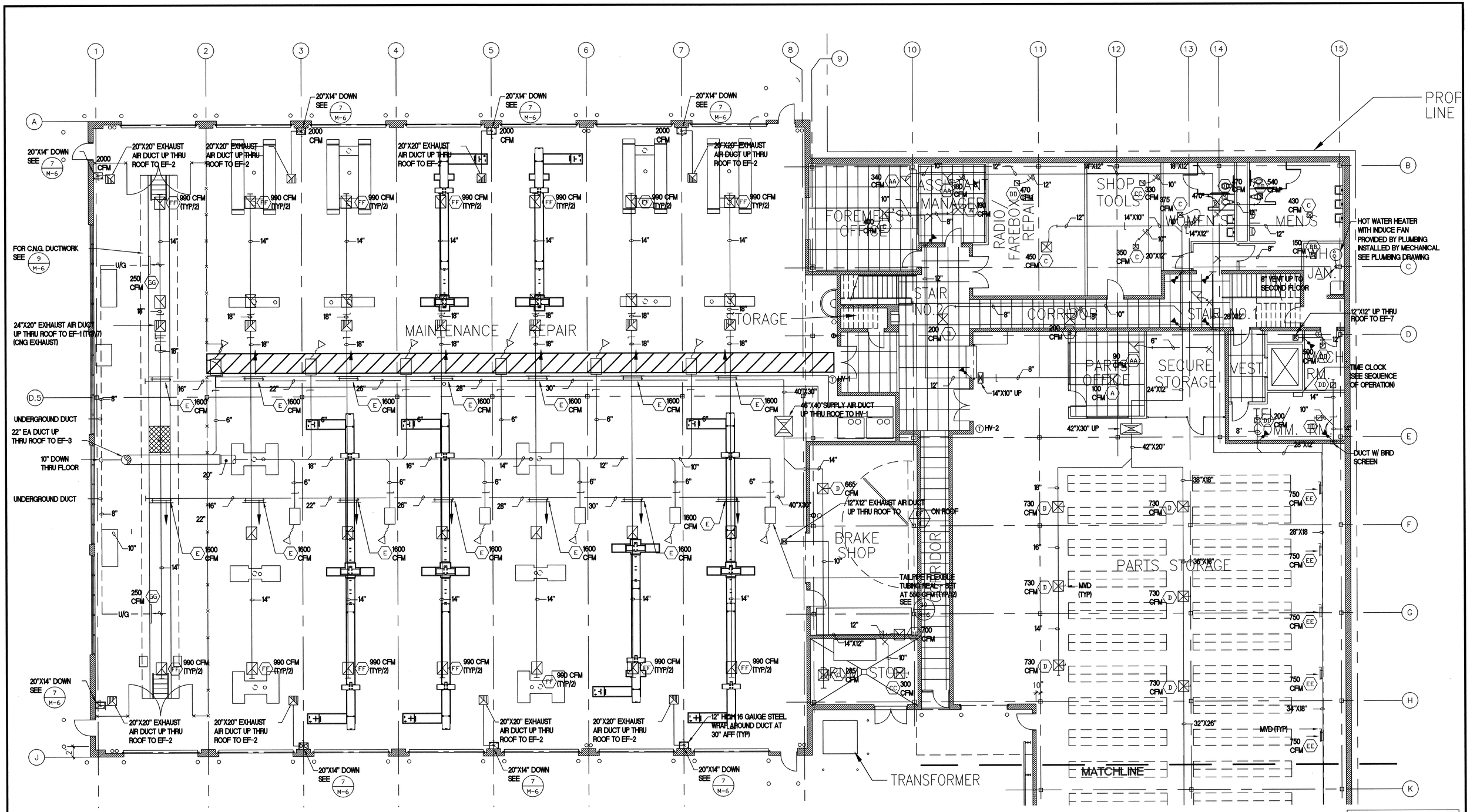

GROUND FLOOR PLAN 1 / M-2
1/8"=1'-0"

NOTE: ALL DUCTWORK IN NO CEILING SHALL BE TIGHT TO STRUCTURE.

AS-BUILT
A. deBernard
Contract No. BUS-443B
Date NOV. 2000

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TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY	BM	DATE 12/18/98
DRAWN BY	TW	12/18/98
CHECKED BY	MK	12/18/98
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANICAL GROUND FLOOR PLANS

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-2
SHEET NO. 63

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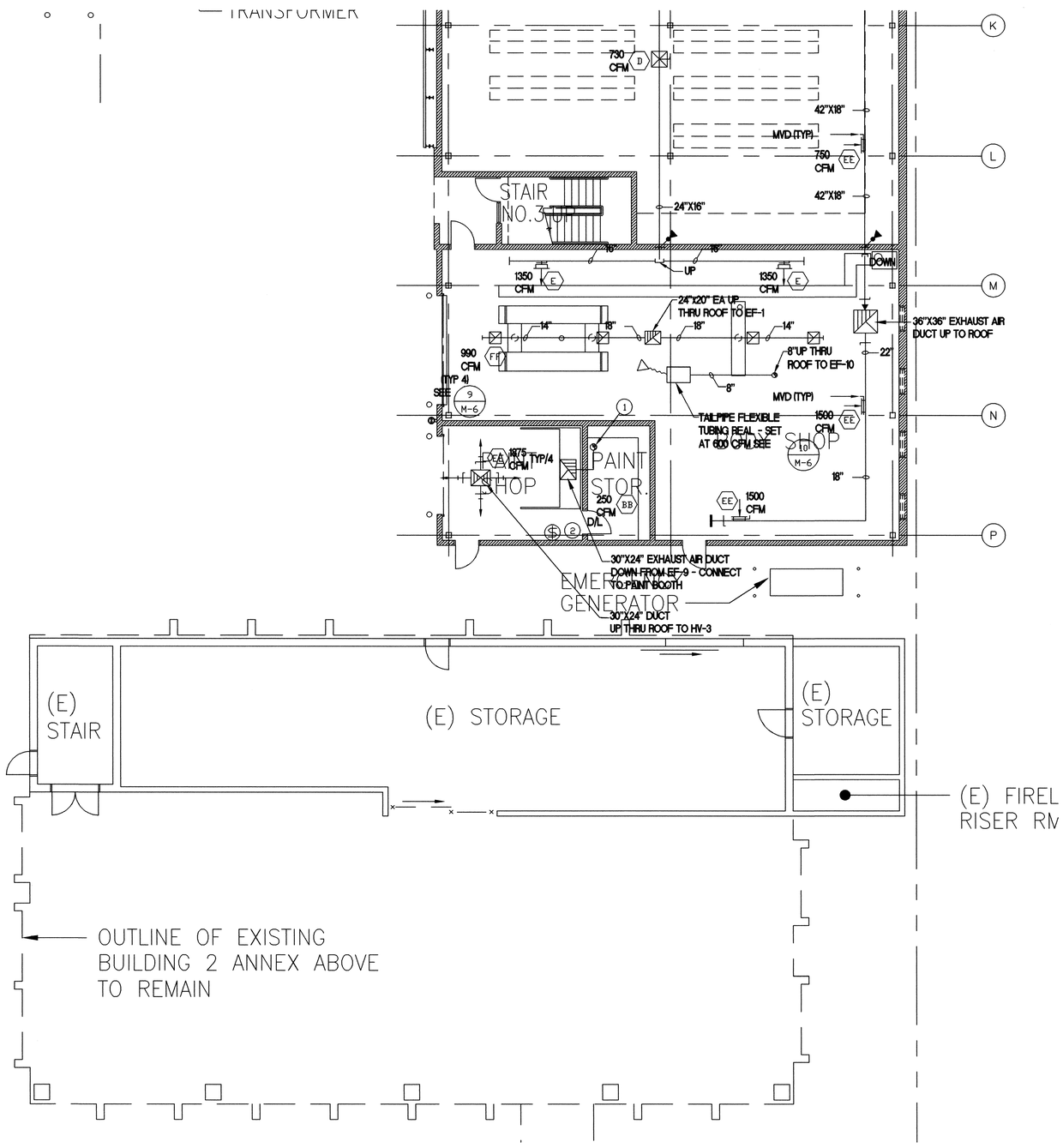

GROUND FLOOR PLAN 1/8"=1'-0" (1 / M-3)

KEYNOTES

1. 10" DN W/ BIRDSCREEN. TERMINATE AT 12" AFF.
2. MANUAL SWITCH WITH BREAKABLE GLASS AND LABEL "VENTILATION SYSTEM EMERGENCY SHUTOFF". SEE SEQUENCE OF OPERATION.

AS-BUILT
A. deBerard
Contract No BUS-443B
Date NOV. 2000

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Project Number 97087
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FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY BM	DATE 12/18/98	
DRAWN BY TW	12/18/98	
CHECKED BY MK	12/18/98	
MTDB PRJ. ENG.		

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Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECANICHAL GROUND FLOOR PLANS

SCALE 1/18"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-3
SHEET NO. 64

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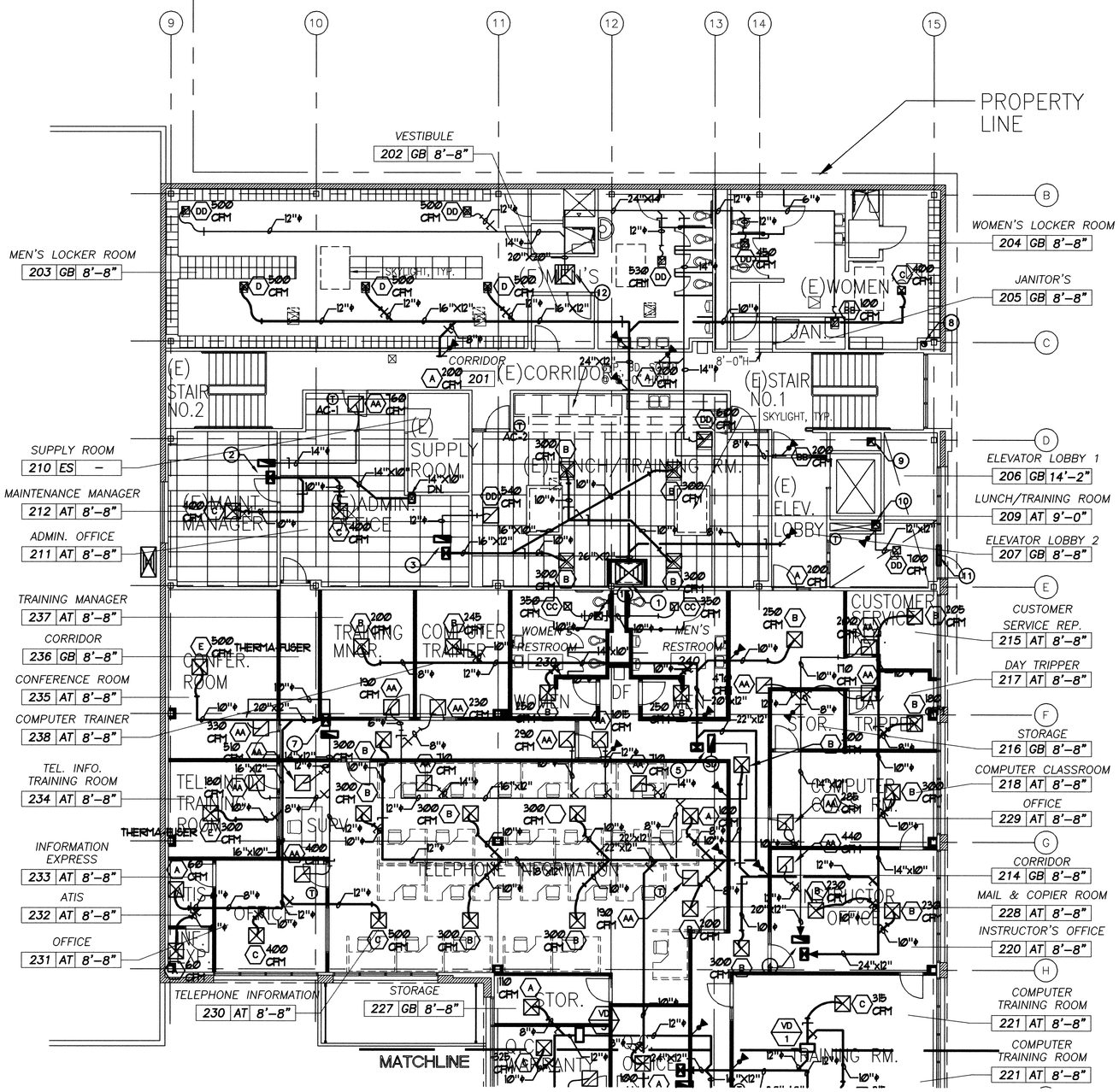

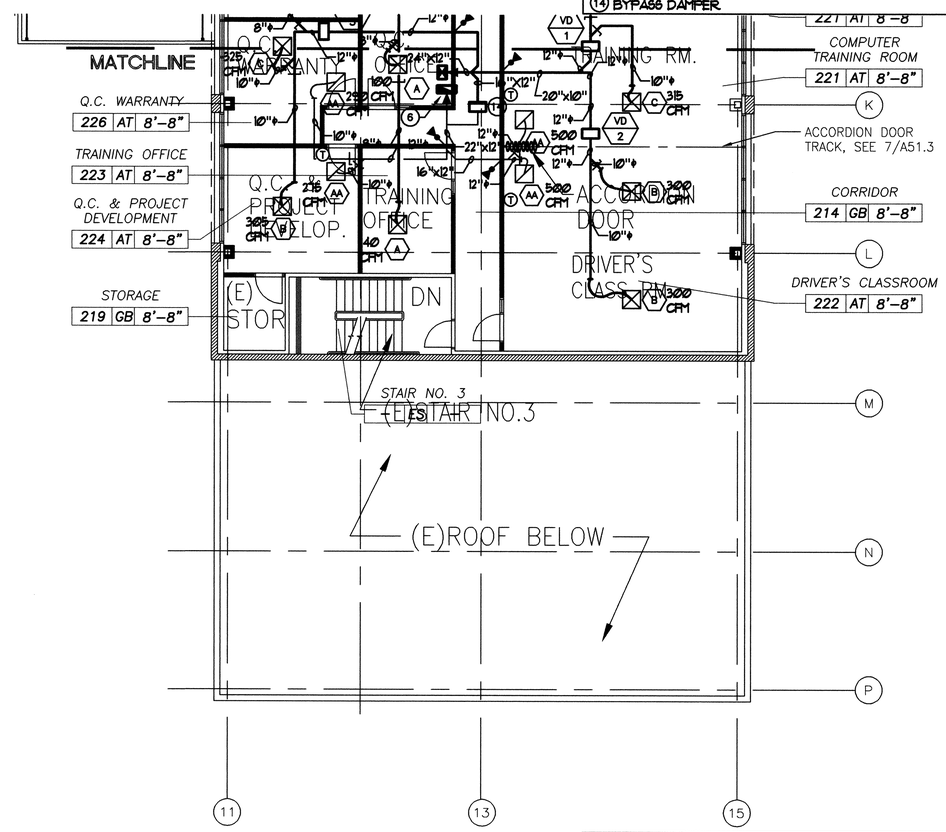

AS-BUILT
a. deBonnet
Contract No BUS-443B
Date NOV. 2000

KEYNOTES

1. 42"x36" SUPPLY AIR DUCT UP THRU ROOF AND 42"x30" DOWN TO GROUND FLOOR.
2. 18"x12" SUPPLY AIR DUCT, 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-1.
3. 18"x12" SUPPLY AIR DUCT AND 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-2.
4. 36"x12" SUPPLY AIR DUCT AND 24"x14" RETURN AIR DUCT UP THRU ROOF TO AC-3, CAP FOR FUTURE.
5. 36"x12" SUPPLY AIR DUCT AND 24"x14" RETURN AIR DUCT UP THRU ROOF TO AC-4, CAP FOR FUTURE.
6. 18"x12" SUPPLY AIR DUCT AND 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-5, CAP FOR FUTURE.
7. 18"x12" SUPPLY AIR DUCT AND 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-6, CAP FOR FUTURE.
8. 8"ϕ VENT THRU ROOF.
9. 12"x12" EXHAUST AIR DUCT UP THRU ROOF.
10. 12"x12" EXHAUST AIR DUCT UP THRU ROOF.
11. WALL LOUVER, SEE ARCHITECTURAL DRAWINGS.
12. 20"x20" UP EXHAUST AIR DUCT UP THRU ROOF.
13. 12"x12" EXHAUST AIR DUCT UP THRU ROOF TO EF-11.
14. BYPASS DAMPER.

SECOND FLOOR REFLECTED CEILING PLAN
1/8"=1'-0"
1 / A13.2

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sandiego@tmadengineers.com

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4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WILSHIRE BOULEVARD, SUITE 1455
LOS ANGELES, CALIFORNIA 90017-2499

LICENSED ARCHITECT JON SOO KIM C-24485 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY	DATE
BM	5/2/00
DRAWN BY TW	5/2/00
CHECKED BY BM	5/2/00
MTDB PRJ. ENG.	

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Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SECOND FLOOR
REFLECTED CEILING PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-4
SHEET NO. 65

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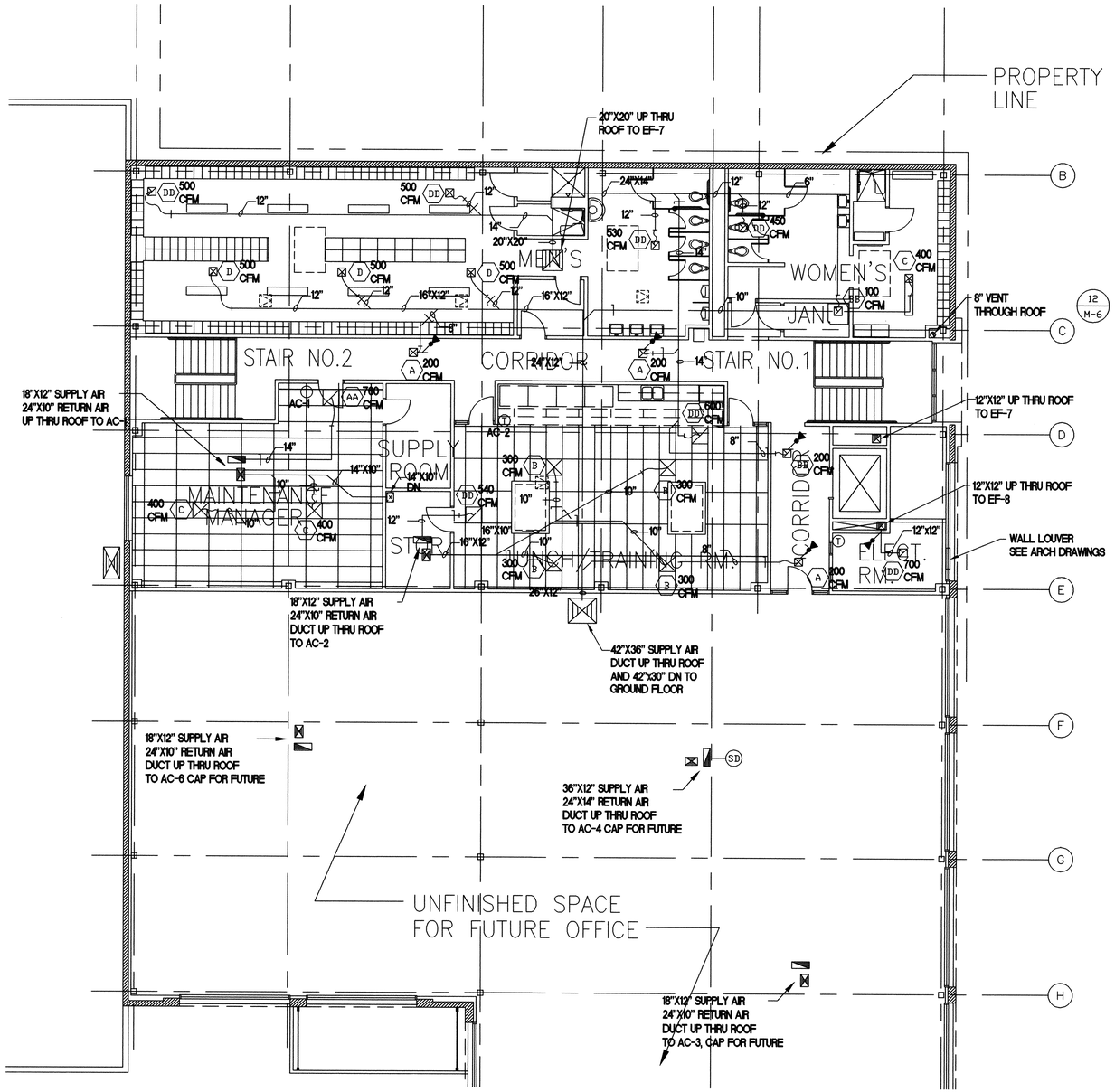

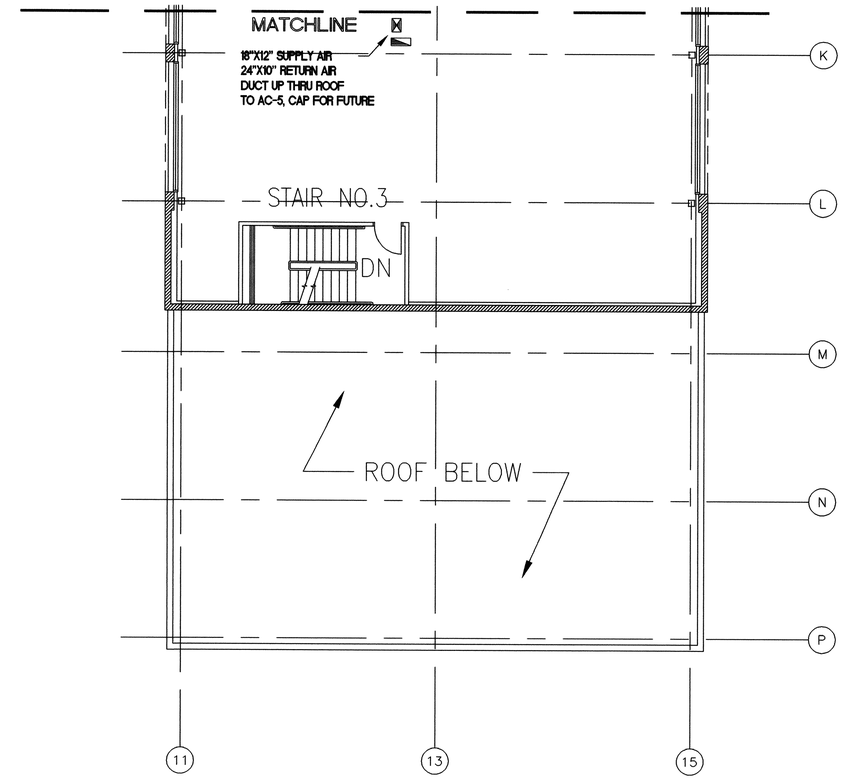

SECOND FLOOR PLAN – HVAC 1/M-4
1/8"=1'-0"

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE		
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Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808 FAX: (619) 271-9932
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DESIGNED BY	DATE
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DRAWN BY TW	12/18/98
CHECKED BY MK	12/18/98
MTDB PRJ. ENG.	

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IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

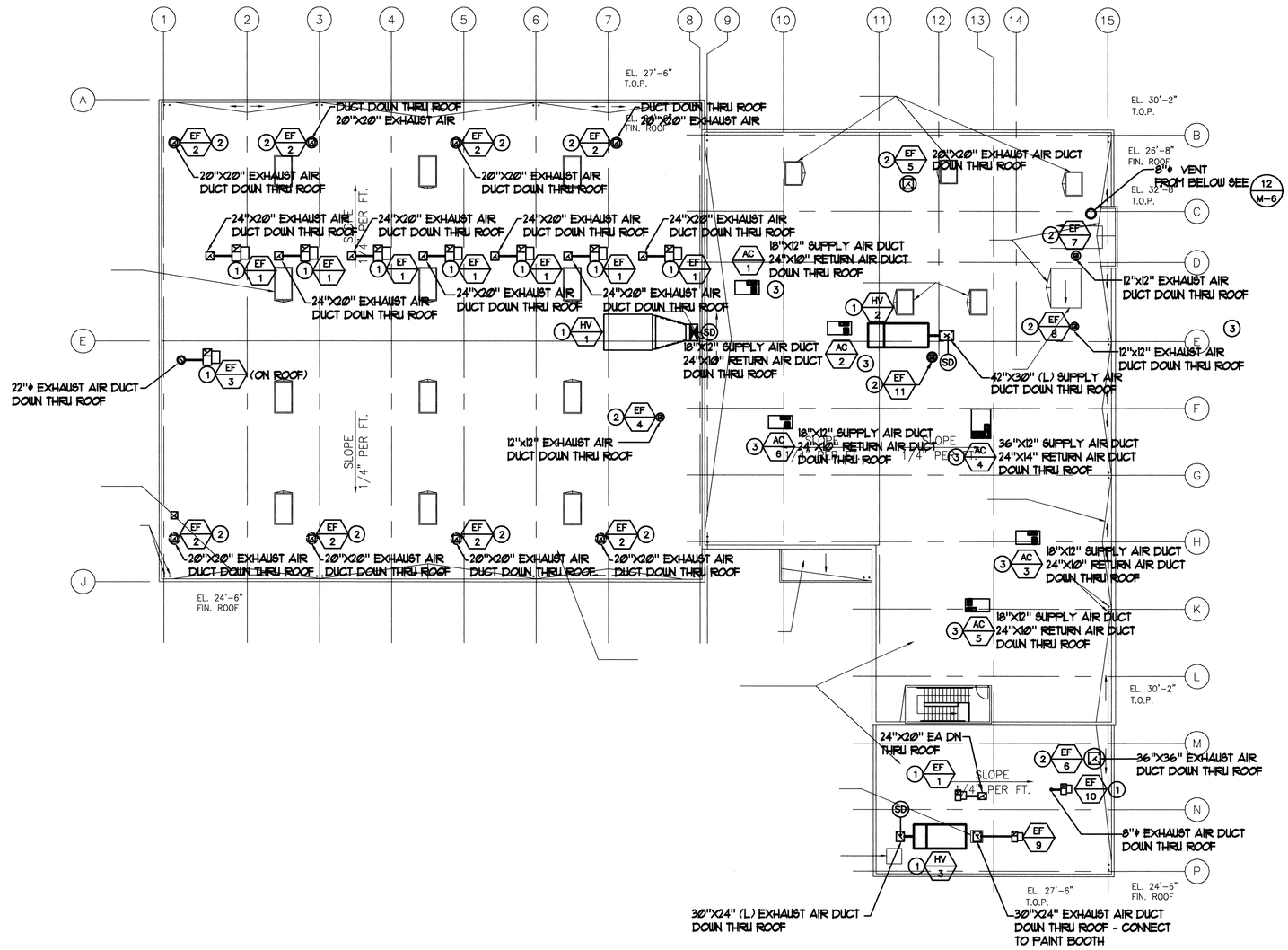
MECHANICAL SECOND FLOOR PLANS

SCALE 1/18"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-4
SHEET NO. 65

X:\97087\MPE\7/8/MFP-3.DWG 01/21/99 3:41PM

KEYNOTES

1. MOUNT ON PLATFORM WITH VIBRATION ISOLATOR SEE DETAIL 6/M-6
2. FOR MOUNTING SEE DETAIL 3/M-6
3. FOR MOUNTING SEE DETAIL 4/M-6



ROOF PLAN 1/16"=1'-0" (1/M-5)

AS-BUILT
Contract No BUS-443B
Date NOV. 2000

TMAD Engineers, Inc.
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sandiego@tmadengineers.com

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STV Incorporated
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1055 WILSHIRE BOULEVARD, SUITE 1455
LOS ANGELES, CALIFORNIA 90017-2499

LICENSED ARCHITECT TON SOO KIM C-24485 RENEWAL DATE STATE OF CALIFORNIA

	DATE
DESIGNED BY BM	5/2/00
DRAWN BY TW	5/2/00
CHECKED BY BM	5/2/00
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANICAL
ROOF PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-5
SHEET NO. 66

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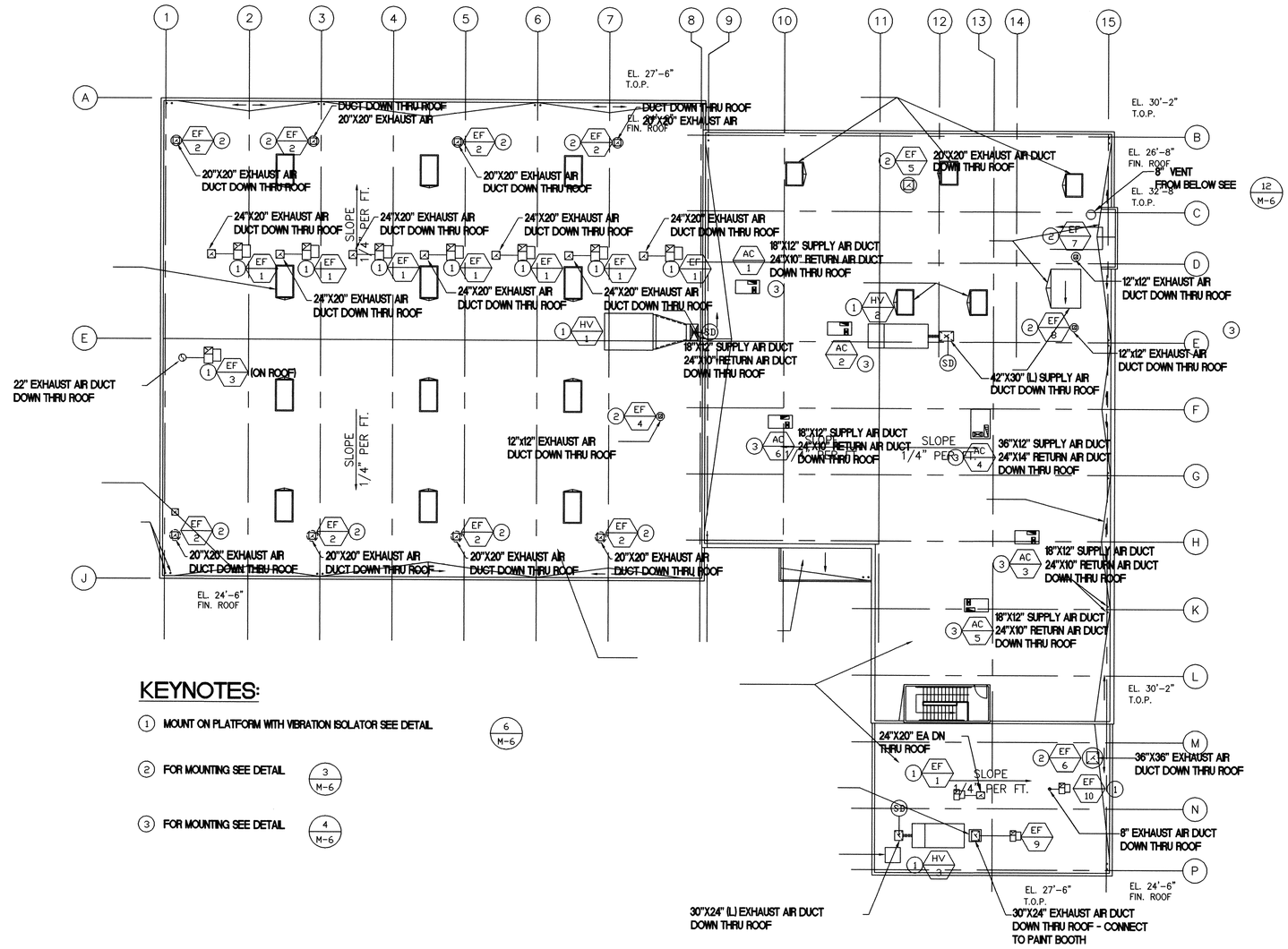

KEYNOTES:

1. MOUNT ON PLATFORM WITH VIBRATION ISOLATOR SEE DETAIL 6/M-6
2. FOR MOUNTING SEE DETAIL 3/M-6
3. FOR MOUNTING SEE DETAIL 4/M-6

ROOF PLAN 1/M-5
1/16"=1'-0"

AS-BUILT
Contract No BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

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Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY	DATE
BM	12/18/98
DRAWN BY TW	12/18/98
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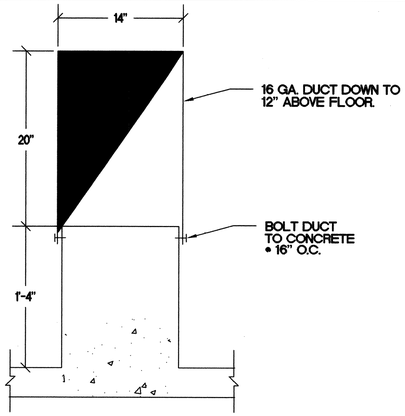
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

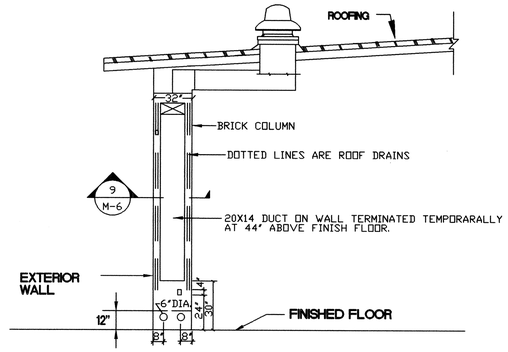
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANICAL ROOF PLANS

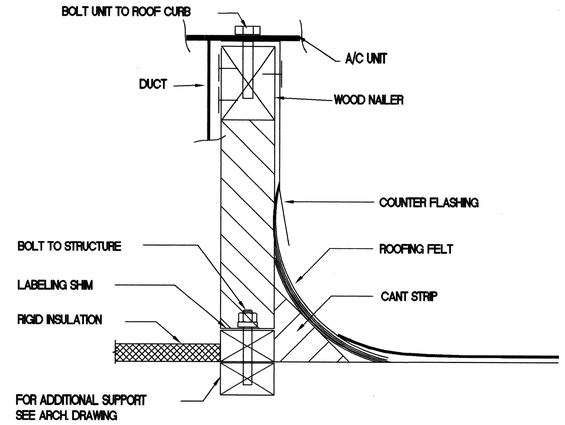
SCALE 1/16"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-5
SHEET NO. 66



10 WALL PLAN VIEW
NO SCALE

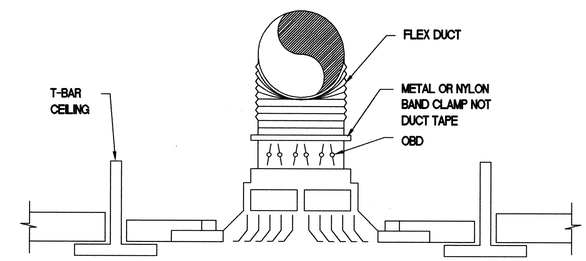


7 WALL SECTION
NO SCALE

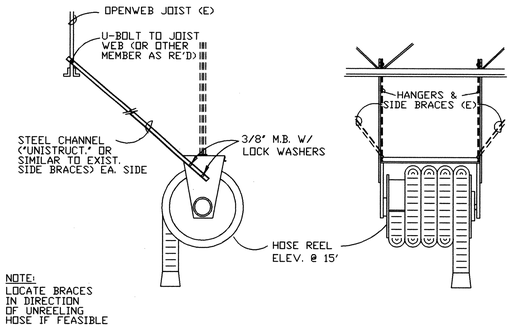


4 A/C UNIT MOUNTING
NO SCALE

NOTE: PROVIDE ROUND TO SQUARE ADAPTER AND FILLER PANEL IF REQUIRED. SIMILAR WITH RETURN AIR GRILLE

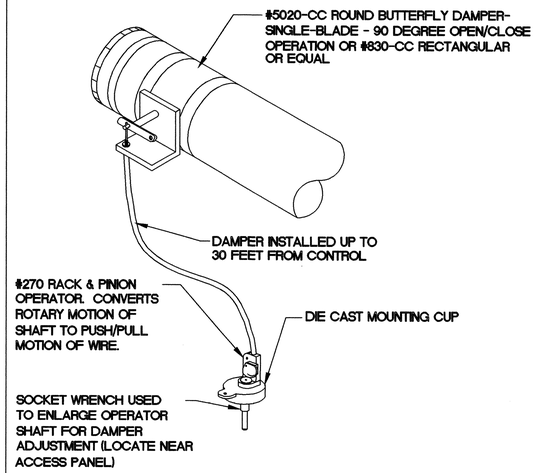


1 DIFFUSER MOUNTING
NO SCALE

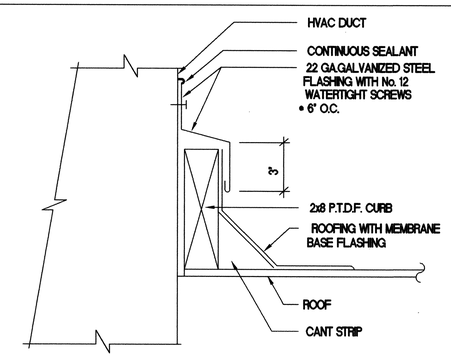


NOTE:
LOCATE BRACES IN DIRECTION OF UNREELING HOSE IF FEASIBLE

11 EXHAUST HOSE REEL BRACES
NO SCALE

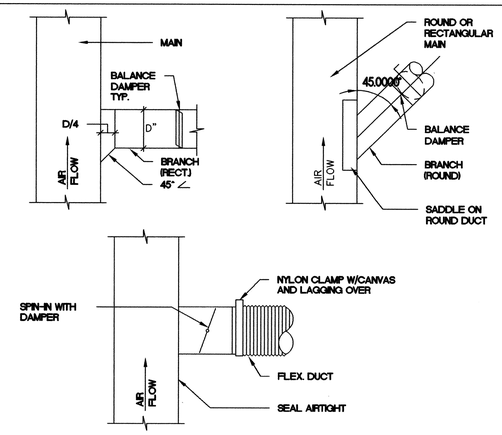


8 REMOTE VOLUME CONTROLLER
NO SCALE

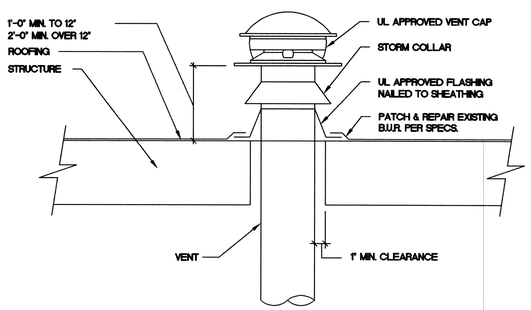


MD103

5 DUCT THRU ROOF
NO SCALE

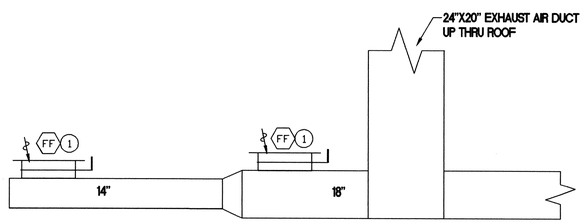


2 TYPICAL DUCT TAKEOFFS
NO SCALE

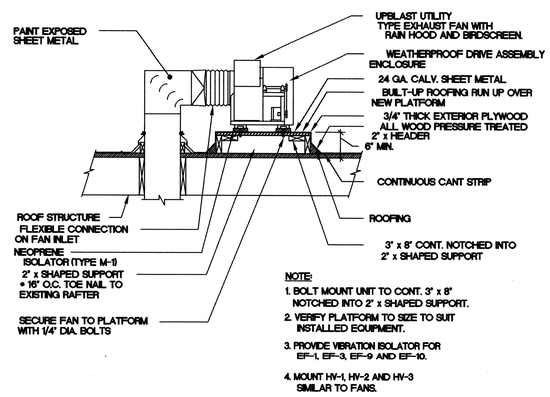


12 VENT THRU ROOF
NO SCALE

① ANGLE 1/2 OF THE REGISTER BLADES 45° TO THE LEFT AND 1/2 OF THE REGISTER BLADES 45° TO THE RIGHT TYPICAL FOR ALL REGISTERS.

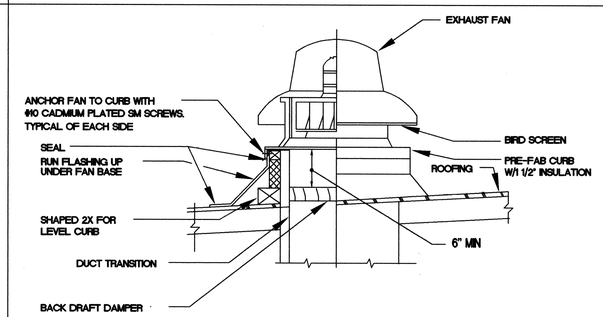


9 CNG EXHAUST SYSTEM
NO SCALE



NOTE:
1. BOLT MOUNT UNIT TO CONT. 3" x 8" NOTCHED INTO 2" x SHAPED SUPPORT.
2. VERIFY PLATFORM TO SIZE TO SUIT INSTALLED EQUIPMENT.
3. PROVIDE VIBRATION ISOLATOR FOR EF-1, EF-3, EF-9 AND EF-10.
4. MOUNT HV-1, HV-2 AND HV-3 SIMILAR TO FANS.

6 UTILITY EXHAUST FAN
NO SCALE



3 EXHAUST FAN MOUNTING
NO SCALE

AS-BUILT
A. Deterrar
Contract No. BUS-443B
Date NOV. 2000

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CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

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Mechanical and Electrical Consulting Engineers
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TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY	BM	DATE 12/18/98
DRAWN BY	TW	12/18/98
CHECKED BY	MK	12/18/98
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANICAL DETAILS

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-6
SHEET NO. 67

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REGULATORY NOTES

FIRE PROTECTION SYSTEM

A. THE INSTALLATION OF THE FIRE SPRINKLER SYSTEM SHALL NOT COMMENCE UNTIL DETAILED PLANS, CALCULATIONS AND SPECIFICATIONS HAVE BEEN APPROVED BY THE LOCAL FIRE PREVENTION DIVISION.

B. THE DETAILED PLANS, CALCULATIONS AND SPECIFICATIONS SHALL BE STAMPED AND SIGNED BY THE ARCHITECT AND ENGINEER OF RECORD PRIOR TO SUBMITTAL TO THE LOCAL FIRE PREVENTION DIVISION.

CODE ANALYSIS

THE CONSTRUCTION OF THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF:

A. UNIFORM BUILDING CODE - 1994 EDITION
B. UNIFORM PLUMBING CODE - 1994 EDITION
C. UNIFORM FIRE CODE - 1994 EDITION
D. AMERICANS WITH DISABILITIES ACT (ADA) TITLE III, 1990 EDITION.

SEISMIC RESTRAINTS

PIPING

A. SEISMIC BRACING AND ANCHORAGE OF FIRE SPRINKLER, PLUMBING PIPING SHALL BE IN ACCORDANCE WITH THE "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS," PUBLISHED BY SMACNA.

SERVICE WATER HEATING EQUIPMENT

A. WATER HEATERS AND STORAGE TANKS SHALL BE ANGHORED AND/OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION.

AREA SEPARATION PENETRATIONS

LOCATION AND RATING OF WALLS, ARE IDENTIFIED ON ARCHITECTURAL FLOOR PLANS.

FIXTURES

A. FIXTURE CONNECTIONS TO THE AREA SEPARATION WALL SURFACES OR THE SECTION PASSING THROUGH THE WALL SHALL ONLY BE OF METAL.

PIPING

A. WHERE PIPING PENETRATES THE AREA SEPARATION WALL, FLOOR OR ROOF SURFACE THE SECTION PASSING THROUGH THE WALL SHALL BE ONLY OF METAL.

B. PENETRATIONS OF RATED ASSEMBLIES SHALL INCLUDE UL THROUGH-PENETRATION FIRE STOP DEVICES AND OR [FIRE STOP] SYSTEM ADDITIONAL REQUIREMENTS AS FOLLOWS:

1. THROUGH-PENETRATION FIRE STOP DEVICES:

PIPING MAT.	PENETRATION TYPE	ASSEMBLY TYPE	HR RATING SYSTEM	UL SYS#
CAST IRON	FLOOR	CONC. MTL DECK	3/3	CAJ1146
COPPER	FLOOR	CONC. MTL DECK	3/0	CAJ1106
COPPER	WALL	FRAMED	2/0	WL1038

A) FIRE STOPPING DEVICES SHALL BE COMPLETE FACTORY BUILT PRODUCTS

MANUFACTURER	UL FILE #	CSFM LISTING #
PROSET SYSTEMS	R10338(N)	N/A

2. THROUGH-PENETRATION FIRE STOP SYSTEMS:

PIPING MAT.	PENETRATION TYPE	ASSEMBLY TYPE	HR RATING SYSTEM	UL SYS#
CAST IRON	FLOOR	CONC. MTL DECK	3/0	CAJ1001
COPPER	FLOOR	CONC. MTL DECK	3/0	CAJ1001
COPPER INSUL.	FLOOR	MTL DECK	3/1	CAJ5001
COPPER	WALL	FRAMED	2/0	WL1001
COPPER INSUL.	WALL	FRAMED	2/1-1/2	WL5001

A) FIRE STOPPING SHALL BE UL LISTED CAULK FILL MATERIAL.

MANUFACTURER	UL FILE #	CSFM LISTING #
MINNESOTA MINING & MFG	R9700(N)	04485-0944101-106

C. FIRE STOPPING DEVICES AND MATERIALS SHALL BE APPLIED PER MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.

D. FIRE RATING SHALL BE EQUAL TO AREA SEPARATION RATING.

MANDATORY CONSERVATION MEASURES

WATER

A. WATER CLOSETS SHALL BE WATER CONSERVING 1.6 GALLONS PER FLUSH TYPE.

B. URINALS SHALL BE WATER CONSERVING 1.0 GALLON PER FLUSH TYPE.

C. LAVATORY, SINK FITTINGS AND SHOWER ASSEMBLIES SHALL BE LISTED AS "APPROVED" BY THE CALIFORNIA ENERGY COMMISSION.
1. FITTINGS AND SHOWER HEADS SHALL INCLUDE INTEGRAL FLOW RESTRICTING DEVICES TO LIMIT FLOW AS FOLLOWS:
   A) FITTINGS - 2.2. GPM MAXIMUM
   B) SHOWER HEADS - 2.5 GPM MAXIMUM

D. PUBLIC LAVATORY FITTINGS SHALL BE SELF CLOSING TYPE.

ENERGY

A. SERVICE WATER HEATING EQUIPMENT AND DOMESTIC HOT WATER PIPING INSULATION SHALL BE LISTED AS "APPROVED" BY THE CALIFORNIA ENERGY COMMISSION.

B. SERVICE WATER HEATING SYSTEM PIPING DOMESTIC HOT WATER SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF THE CALIFORNIA ENERGY COMMISSION - ENERGY EFFICIENCY STANDARDS SECTIONS 118 AND 123.

C. SERVICE WATER HEATING EQUIPMENT SHALL INCLUDE AUTOMATIC TEMPERATURE CONTROLS CAPABLE OF ADJUSTMENT FROM THE LOWEST TO THE HIGHEST ACCEPTABLE TEMPERATURE SETTINGS FOR THE INTENDED USE AS LISTED IN TABLE 3, CHAPTER 44 OF THE 1991 ASHRAE HANDBOOK, HVAC SYSTEMS AND APPLICATIONS.

D. SERVICE WATER HEATING RECIRCULATION PUMP SHALL INCLUDE TIME CLOCK AND OR AQUA-STAT CONTROL CAPABLE OF AUTOMATICALLY TURNING OFF THE CIRCULATING PUMP WHEN HOT WATER IS NOT REQUIRED.

MANDATORY ACCESSIBILITY MEASURES

FIXTURES

A. ACCESSIBLE PLUMBING FIXTURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH CALIFORNIA PLUMBING CODE, 1994 EDITION, CHAPTER 15, PLUMBING REQUIREMENTS FOR THE DESIGN SAFETY FOR ACCESSIBILITY.

FITTINGS AND TRIM

A. EXPOSED P-TRAP ASSEMBLY AND HOT & COLD WATER SUPPLIES SHALL BE COVERED FOR SAFETY.

B. THE FORCE REQUIRED TO OPERATE LAVATORY OR SINK FAUCETS SHALL BE NO GREATER THAN 5 LBS. SELF CLOSING FAUCETS SHALL HAVE MINIMUM 10 SECOND CYCLE TIME.

CROSS CONNECTION CONTROL MEASURES

PUBLIC WATER SYSTEM

A. PUBLIC WATER SYSTEM SHALL BE PROTECTED BY AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE.

MECHANICAL EQUIPMENT

A. MAKE-UP WATER SUPPLIES TO MECHANICAL EQUIPMENT SHALL BE PROTECTED BY AN APPROVED BACKFLOW PREVENTION DEVICE.

FIRE RESISTIVE BUILDING MATERIALS

PIPING INSULATION

A. INSULATION, INSULATION JACKETS, ADHESIVES, TAPES, ETC SHALL HAVE A FLAME SPREAD CLASSIFICATION NOT TO EXCEED 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50 PER UBC STANDARD 8-1 AND AS TESTED BY UNDERWRITERS LABORATORIES.

MFR	UL FILE #	CSFM #
CERTAINTEED CORP	R6152(N)	2550-0185
MANVILLE SALES	R5760(N)	2550-1014100

B. INSULATION, INSULATION JACKET, ADHESIVES, TAPES, ETC. SHALL BE APPLIED PER MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.

THERMAL EXPANSION CONTROL

WATER DISTRIBUTION SYSTEM

A. SERVICE WATER HEATING EQUIPMENT INSTALLATIONS WHICH INCLUDE STORAGE TANKS SHALL INCLUDE AN APPROVED LISTED EXPANSION TANK OR OTHER DEVICE DESIGNED FOR INTERMITTENT OPERATION FOR THERMAL EXPANSION CONTROL. INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 608.3 UPC 1994 EDITION.

PROJECT NOTES

GENERAL

A. VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF ANY WORK. IN THE EVENT OF ANY DISCREPANCIES THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED IN WRITING. IN NO CASE SHALL DIMENSIONS BE SCALED FROM THE PLANS, SECTIONS, ELEVATIONS OR DETAILS ON THE PLUMBING DRAWINGS.

B. ALL OMISSIONS AND OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF AND RESOLVED WITH THE ARCHITECT PRIOR TO PROCEEDING WITH ANY OF THE AFFECTED WORK.

C. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF UBC AND UPC.

D. THE PLUMBING CONSTRUCTION DOCUMENTS REPRESENT THE PLUMBING AND PIPING SYSTEMS, NOT THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, MATERIALS, EQUIPMENT AND ACCESSORIES NECESSARY TO ACHIEVE THE FINISHED SYSTEMS.

STRUCTURAL ELEMENTS

A. NO PIPES, SLEEVES, ETC SHALL BE PLACED IN SLABS, BEAMS OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES.

B. FOR UNDERGROUND PIPING ROUTED AT OR NEAR FOOTINGS OR GRADE BEAMS - SEE STRUCTURAL DRAWINGS FOR DETAILS.

ELECTRICAL POWER CONNECTIONS

A. FIELD VERIFY AND COORDINATE WITH ELECTRICAL SYSTEMS INSTALLER EXACT ELECTRICAL REQUIREMENTS OF ALL FIRE PROTECTION, PLUMBING PRODUCTS REQUIRING POWER.

B. CONFIRM ELECTRICAL VOLTAGES AND LOADS WITH AVAILABLE VOLTAGES AND LOADS IN ORDER TO ENSURE THAT CAN BE CONNECTED.

C. ELECTRICAL POWER CONNECTIONS SHALL BE MADE BY ELECTRICAL SYSTEMS INSTALLER UNDER PROVISIONS OF DIVISION 16.

EXISTING SITE CONDITIONS

SITE UNDERGROUND STRUCTURES AND UTILITIES

A. THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THE CONSTRUCTION DRAWINGS IS BASED ON EXISTING CONSTRUCTION DOCUMENTS.

B. ATTENTION IS CALLED TO THE POSSIBLE EXISTING OF OTHER UNDERGROUND STRUCTURES AND/OR UTILITIES NOT KNOWN OR IN A LOCATION DIFFERENT FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS.

C. PRECAUTIONARY MEASURES HALL BE TAKEN TO PROTECT FROM DAMAGE UNDERGROUND STRUCTURES UTILITIES SHOWN ON THE CONSTRUCTION DRAWINGS AND ANY OTHER UNDERGROUND STRUCTURES AND UTILITIES NOT SHOWN.

D. DAMAGED UNDERGROUND STRUCTURES AND OR UTILITIES SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER.

BUILDING SERVICE CONNECTIONS

A. LOCATION AND ELEVATION OF EXISTING BUILDING SEWER, STORM DRAIN AND WATER SERVICE SHALL BE CONFIRMED BY FIELD MEASUREMENTS AND EXPLORATORY EXCAVATION PRIOR TO THE COMMENCEMENT OF ANY UNDERGROUND PLUMBING WORK.

B. ALL NEW BUILDING SEWER AND STORM DRAIN LINES SHALL BE THOROUGHLY FLUSHED OF AL FOREIGN MATERIALS PRIOR TO CONNECTION TO THE EXISTING SITE SEWER AND STORM DRAIN SYSTEM.

GENERAL NOTES

1. WATER HAMMER ARRESTERS SHALL BE LOCATED, SIZED AND CERTIFIED ACCORDING TO PDI-WH-201 STANDARD.
2. ALL VENTS THROUGH ROOF SHALL BE METAL TYPE.
3. STOP VALVES SHALL BE PROVIDED AT ALL FIXTURES TO ENABLE REGULATION OF FLOW AND SHUT DOWN OF SUPPLY TO FIXTURES.
4. GALVANIZED PIPE AND FITTING SHALL BE USED FOR GAS PIPING WHICH IS EXPOSED TO THE WEATHER.
5. PENETRATIONS OF PIPES, CONDUITS, ETC IN WALLS, FLOORS OR CEILING ASSEMBLIES REQUIRING PROTECTED OPENINGS SHALL BE A TESTED ASSEMBLY.
6. LABEL MEDIUM PRESSURE GAS EVERY FIVE FEET.

PIPE SIZE SCHEDULE

SIZE	GPM	FT. F.U.	FV F.U.
1/2"	2	---	---
3/4"	4	4	---
1"	12	16	---
1-1/4"	20	30	5
1-1/2"	32	58	15
2"	55	151	60

PIPING SIZE FROM CHARTS A-3 AND A-4, 1994 UPC BASED ON 4 PSI/ 100 FT. MAXIMUM ALLOWABLE PRESSURE DROP AT MAXIMUM VELOCITY OF 6 FPS.

LEGEND

SYMBOL	ABBREV.	DESCRIPTION
	S, SD OR W	SOIL, STORM OR WASTE BELOW GRADE
	S, SD, OD, OR W	SOIL, STORM, OVERFLOW, OR WASTE ABOVE FLOOR
	VT	SANITARY VENT
	C.W.	COLD WATER
	H.W.	HOT WATER
CD	C.D.	CONDENSATE DRAIN
	S.O.V.	SHUT OFF VALVE/ISOLATION
	C.V.	CHECK VALVE
	F.C.O.	FLOOR CLEANOUT
	W.C.O.	WALL CLEANOUT
	H.B.	HOSE-BIBB
		PIPE-UP
		PIPE-DOWN
		UNION
	P.O.C.	POINT OF CONNECTION
		DETAIL & SHEET NUMBERS
	ABV.	ABOVE
	BEL.	BELOW
	CLG.	CEILING
	FIN.	FINISH
	FLR.	FLOOR
	GR.	GRADE
	I.E.	INVERT ELEVATION
	TYP.	TYPICAL
	V.T.R.	VENT THROUGH ROOF
G		GAS PIPING
	HWR	HOT WATER RETURN
FS	FS	FIRE SERVICE
	FD	FLOOR DRAIN
D		DRAIN
		BACKFLOW PREVENTER
CNG-OIL	CNG-OIL	COMPRESSED NATURAL GAS ENGINE OIL
40WT OIL	40WT OIL	40 WEIGHT OIL PIPING
ATF	ATF	AUTOMATIC TRANSMISSION FLUID PIPING
CA	CA	COMPRESSED AIR
LUBE	LUBE	LUBE
COOLANT	COOLANT	COOLANT
MPG	MPG	MEDIUM PRESSURE GAS
DIFF-OIL	DIFF-OIL	DIFFERENTIAL OIL

WATER CALCULATION

PRESSURE ANALYSIS

FIXTURE UNITS (F.U.) / F.V.(U)	198 F.V
DEMAND FLOW (G.P.M.)	92
DEVELOPED LENGTH (FT.)	182
NOTE: FROM 5'-0" OUTSIDE OF BUILDING OR REGULATOR	
PRESSURE LOSSES:	
(A) ELEVATION 0.43 X __ FT.	7
(B) RESIDUAL	35
PRESSURE REGULATOR: __YES,X__ NO	
MINIMUM MAIN SUPPLY PRESSURE (P.S.I.)	68
REGULATED PRESSURE (P.S.I.)	50
PRESSURE AVAILABLE (P.S.I.)	8
CALCULATED ALLOWABLE DROP __ P.S.I. X 100 / ___ FT. (DEVELOPED LENGTH) __ P.S.I. / 100 FT.	44
MAXIMUM ALLOWABLE DROP (LBS./100 FT.)	4

AS-BUILT
G. Durand
Contract No. BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY	MS	DATE 12/18/98
DRAWN BY	EB/TW	12/18/98
CHECKED BY	MK	12/18/98
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING LEGEND, REGULATORY, GENERAL, PROJECT, NOTES.

SCALE NONE
MTDB CONTRACT NO. BUS-443B .
DRAWING NO. P-1
SHEET NO. 68

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FIXTURE

MARK	DESCRIPTION	MOUNTING	MIN. ROUGH-IN/CONN. W	V	HW	CW	TRAP	BASED ON MANUFACTURER & MODEL NO. FIXTURE	SUPPORT	FLUSH VALVE/FITTING	REMARKS
WC 1	WATER CLOSET	WALL	4"	2"	-	1-1/2"	INT.	AMERICAN STANDARD 2257.103 AFWALL EL 1.6	JAY R SMITH 210/230	SLOAN #111	(10) 1.6 GAL./FLUSH
WC 1H	WATER CLOSET (HANDICAPPED)	WALL	4"	2"	---	1-1/2"	INT	AMERICAN STANDARD 2257.103 AFWALL EL 1.6	JAY R SMITH 210/230	SLOAN #111	(4)(6)(10) 1.6 GAL./FLUSH
UR 1	URINAL	WALL	2"	2"	---	3/4"	INT.	AMERICAN STANDARD 6541.132 ALLBROOK 1.0	JAY R. SMITH 637	SLOAN 186-1	1.0 GAL./FLUSH
UR 1H	URINAL (HANDICAPPED)	WALL	2"	2"	---	3/4"	INT.	AMERICAN STANDARD 6541.132 ALLBROOK 1.0	JAY R. SMITH 637	SLOAN 186-1	1.0 GAL./FLUSH
LV 1H	LAVATORY (HANDICAPPED) PUBLIC	WALL	2"	1-1/2"	1/2"	1/2"	1-1/4" X 1-1/2"	AMERICAN STANDARD 0355.012 LUCERNE	JAY R. SMITH 700	SYMMONS S-60-H	(1)(2)(5)(7)(8)
EWC 1H	ELECTRIC WATER COOLER	WALL	2"	1-1/2"	---	1/2"	INT	SUNROC NWCA-8	MOUNTING PLATE	---	(9)(11)
S 1	SEMI CIRCULAR	FLOOR	2"	1-1/2"	1/2"	1/2"	1-1/4" X 1-1/2"	ACORN 3413-DO-FG-MXT-SPX	---	---	3 STATION MULTI-LAV
S 2	SEMI CIRCULAR	FLOOR	2"	1-1/2"	1/2"	1/2"	1-1/4" X 1-1/2"	ACORN 3434-ADA-H-FG-SPX	---	---	4 STATION MULTI-LAV
SS 1	SERVICE SINK	FLOOR	3"	2"	1/2"	1/2"	3"	AMERICAN STANDARD FLORWELL 7741.000	---	AMERICAN STANDARD 8344.111 & 7796.176	
KS 1	KITCHEN SINK (DBL. COMP)	WALL	2"	1-1/2"	1/2"	1/2"	1-1/4" X 1-1/2"	"JUST" VDL-1933-B-GR	---	"CHICAGO" 786-FC JUST J-35FS	
ES 1	EMERGENCY EYEWASH AND SAFETY SHOWER	FLOOR	2"	1-1/2"	-	1-1/4"	1-1/4" X 1-1/2"	GUARDIAN EQUIPMENT GBF-1909	---	---	
ES 2	EMERGENCY EYEWASH	WALL	2"	1-1/2"	-	1/2"	1-1/4" X 1-1/2"	GUARDIAN EQUIPMENT GBF-1721	INCLUDE STAINLESS STEEL BRACKET	---	
SH 1	SHOWER	FLOOR/WALL	2"	1-1/2"	1/2"	1/2"	2"	PRE-FAB SHOWER UNIT SPECIFIED BY ARCHITECT	---	SYMMONS S-96-1-131-X	
SH 1H	SHOWER HANDICAPPED	FLOOR/WALL	2"	1-1/2"	1/2"	1/2"	2"	PRE-FAB SHOWER UNIT SPECIFIED BY ARCHITECT	---	SYMMONS S-96-300-B24-X-V-L	

GAS FIRED WATER HEATER

MARK	DESCRIPTION	LOCATION	SERVICE	STORAGE CAPACITY	RECOVERY GAL/HR	GAS TYPE	BTUH INPUT	FLUE SIZE	CONNECTIONS INLET	OUTLET	GAS	OPERATING WEIGHT	BASED ON: MANUFACTURER & MODEL	REMARKS
WH 1	TANK TYPE POWER VENTED	JAN. ROOM	DOMESTIC WATER	65 GAL.	606 @ 100° F	NATURAL	625,000	8"	1-1/2"	1-1/2"	1"	1195 LBS	LOCHINVAR CNR-625-065-DF9 TJERNLUND IPS 1505 WITH 95-1016 RELAY	PROVIDE ARMSTRONG MODEL 30 EXPANSION TANK (4.4 GALLONS) 120 VOLTS REQUIRED BAROMETRIC DRAFT INDUCER (IN-LINE)

SPECIALTIES

MARK	DESCRIPTION	MIN.ROUGH-IN/CONN. W	V	HW	CW	OTHER	TRAP	BASED ON: MANUFACTURER & MODEL	REMARKS
HB 1	HOSE BIBB	---	---	---	3/4"	---	---	ACORN 8121	HOSE BIBB WITH VACUUM BREAKER
FD 1	FLOOR DRAIN	2"	2"	---	---	VIA LAVATORY	2"	JAY R. SMITH 2005-A	DUCO CAST-IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE STRAINER HEAD
RD 1	ROOF DRAIN	4"	---	---	---	---	---	JAY R. SMITH 1070-CID-C	DUCO CAST-IRON BODY FLASHING CLAMP AND GRAVEL STOP, WITH CAST-IRON DOME, UNDERDECK CLAMP
OD 1	OVERFLOW DRAIN	4"	---	---	---	---	---	JAY R. SMITH 1080-CID-CIS-C	DUCO CAST-IRON BODY FLASHING CLAMP AND GRAVEL STOP, WITH CAST-IRON DOME, CAST-IRON STANDPIPE, UNDERDECK CLAMP
FD 2	FLOOR DRAIN	4"	---	---	---	---	---	JAY R. SMITH 2120	DUCO CAST-IRON BODY FLASHING COLLAR WITH CAST-IRON TRACTOR GRATE

WATER HEATING SYSTEM RECIRCULATION PUMP

MARK	DESCRIPTION	LOCATION	SERVICE	FLUID TEMP	FLOW GPM	TOTAL HD FT	CONNECTIONS SUCTION	DISCHARGE	HP	ELECTRICAL DATA VOLT	PH	Hz	CONTROLS	OVERALL DIMENSION	MOUNTING	BASED ON: MANUFACTURER & MODEL	REMARKS
CP 1	CIRCULATING PUMP	JAN ROOM	DOMESTIC WATER	120° F	-	-	3/4"	3/4"	1/6	115	SINGLE	60	AQUA-STAT	13-3/4"x6-1/2"	IN-LINE	BELL AND GOSSETT SERIES 100	BRONZE

REMARKS

1. THE HEIGHT OF ACCESSIBLE LAVATORIES SHALL BE 34 INCHES MAXIMUM MEASURED TO THE TOP OF THE LAVATORY FROM THE FLOOR.
2. PROVIDE HANDY-SHIELD INSULATION KIT MANUFACTURED BY PLUMBEREX SPECIALTY PRODUCTS.
3. NOT USED
4. WATER CLOSET CONTROLS SHALL BE OPERABLE WITH ONE HAND, AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. CONTROLS FOR THE FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS, NO MORE THAN 44 INCHES ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS.
5. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
6. THE HEIGHT OF ACCESSIBLE WATER CLOSETS SHALL BE A MINIMUM OF 17 INCHES AND A MAXIMUM OF 19 INCHES MEASURED TO THE TOP OF THE TOILET SEAT.
7. PROVIDE "AMERICAN STANDARD" 7723.018 GRID DRAIN FOR WHEELCHAIR LAVATORY IN ORDER TO COMPLY WITH ADA REQUIREMENTS.
8. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS. LEVER OPERATED, PUSH TYPE, AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.
9. DRINKING FOUNTAIN BUBBLE DEVICES SHALL BE ACTIVATED BY CONTROLS WHICH ARE EASILY OPERATED BY A HANDICAPPED PERSON SUCH AS A HAND-OPERATED LEVER TYPE CONTROL LOCATED WITHIN 6 INCHES OF THE FRONT OF THE FOUNTAIN, A PUSH BAR CONTROL ALONG THE FRONT OF THE DRINKING FOUNTAIN, ETC. BUBBLER OUTLET ORIFICES SHALL BE LOCATED WITHIN 6 INCHES OF THE FRONT OF STUDENT DRINKING FOUNTAINS AND SHALL BE A MAXIMUM OF 31 INCHES OFF THE FLOOR. WATER STREAMS FROM BUBBLERS SHALL BE SUBSTANTIALLY PARALLEL TO THE FRONT EDGE OF DRINKING FOUNTAINS.
10. PROVIDE "OLSONITE" #95 TOILET SEAT
11. ELECTRICAL DATA: 115 VOLTS, SINGLE PHASE, 1/5 HORSEPOWER.

HOSE REEL SCHEDULE

MARK	SERVICE
R-1	(2) CA, (1) LUBE, (1) COOLANT, (1) ATF, (1) 40 WT. OIL, (1) CNG OIL, (1) DIFFERENTIAL OIL
R-2	(1) CA, (1) LUBE, (1) COOLANT (1) 40 WT. OIL, (1) ATF (1) CNG OIL
R-3	(1) CA, (1) LUBE

NOTE:
PROVIDE 75 FEET OF HOSE FOR REELS ON THE SOUTH SIDE OF BAYS AND 50 FEET OF HOSE FOR REELS ON THE NORTH SIDE BAYS.

AS-BUILT
A. deBrard
Contract No. BUS-443B
Date NOV. 2000

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
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9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY	BM	DATE 12/18/98
DRAWN BY	TW/	12/18/98
CHECKED BY	MK	12/18/98
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING SCHEDULES

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-2
SHEET NO. 69

"ZURN" Z-806-DG-JC PRE-SLOPED DRAINAGE SYSTEM (14'-0" LONG x 6" WIDE) WITH E-1 CLOSED END CAPS AND U4 CENTER BOTTOM OUTLET (TYP)

FOR DOMESTIC COLD AND HOT WATER PIPING SEE (1/P-9)

FOR DWV, SANITARY PIPING SEE (2/P-9)

NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR COMBUSTION AIR (SIZE OF OPENINGS HIGH AND LOW)

NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR 1-HR OCCUPANCY SEPARATION FOR WATER HEATER ROOM

ROUTE 2"WASTE FROM LAVATORY TO FLOOR DRAIN IN ORDER TO MAINTAIN THE TRAP SEAL FOR THE FLOOR DRAIN (TYP/2)

2"CA INTERCONNECTION FROM BLDG. #4 TO BLDG. #7 SYSTEM

3/4"CA DOWN ALONG WALL W/ SHUT-OFF VALVE AND TERMINATE WITH QUICK CONNECT (TYP)

"WEILS" 1431 SUBMERSIBLE SUMP PUMP, 1/3 HP, 115 VOLTS, IN 2'x2'x2 DEEP PIT WITH CI GRATING

SERVICE PIPING MAINS
1" LUBE
1-1/2"CA
1" COOLANT
1" ATF
1-1/2" 40WT OIL
1" CNG OIL
1" DIFF-OIL

2"CA-UP FROM BELOW W/ SHUT-OFF VALVE INSTALLED IN VERTICAL (BACK-UP FOR REDUNDANCY)

TO OIL SEPARATOR
I.E. 6'-6" BELOW FLOOR

APPROXIMATE LOCATION OF EXISTING CAPPED PRODUCT LINES UNDERNEATH 3'-0"X3'-0" UTILITY VAULT STEEL COVER 2" ATF, 2" 40 WT. OIL, 2" COOLANT, 2" CNG OIL 2"CA AND 2" SPARE

4" STORM AND OVERFLOW DRAIN LINES DOWN FROM ROOF AND OVERFLOW DRAINS ABOVE DOWN ALONG WALL AND THRU AND TERMINATE AT SIX INCHES ABOVE GRADE (TYP.)

FOR HOSE REEL ASSEMBLY SEE (4/P-8)

1-1/2"CA-UP FROM BELOW GRADE. PROVIDE SHUT-OFF VALVE IN VERTICAL

ROUTE 2"WASTE FROM LAVATORY ABV. TO FLOOR DRAIN IN ORDER TO MAINTAIN THE TRAP SEAL (TYP/2)

FOR CHASSIS LUBE DRUM SEE (5/P-10)

FOR DIFFERENTIAL OIL DRUM (5/P-10)

ABOVE GROUND WASTE OIL STORAGE TANK BY MTDB

LOCATION OF EXISTING GAS METER SUPPLIED WITH 1" MPG SERVICE

CONNECT 3"-COLD WATER TO EXISTING DOMESTIC SERVICE WITH 2"-"WATER METER AND BACKFLOW PREVENTER INSTALLED INLINE

4" STORM & OVERFLOW DRAIN LINES DOWN FROM ROOF AND OVERFLOW DRAINS ABOVE. CONTINUE 4" STORM DRAIN TO BELOW FLOOR/GRADE. 4" OVERFLOW STORM DRAIN DOWN ALONG WALL AND THRU AND TERMINATE AT SIX INCHES ABOVE GRADE (TYP)

CONNECT 4" STORM DRAIN TO PERFORATED DRAIN PIPING (SUB DRAINAGE SYSTEM) ALONG EXTERIOR WALL (TYP)

1"CA TO BODY SHOP

MATCHLINE

GROUND FLOOR PLAN – PLUMBING

1/8"=1'-0"

RENOVATION KEY NOTE

1. PROVIDE AND INSTALL FLUID SOLENOID AND PULSE METER IN CNG-OIL, 40WT OIL, ATF, LUBE, COOLANT AND DIFF-OIL BRANCH PIPING FOR SENSING FLUID FLOW THROUGH DISPENSING LOCATION "LINCOLN" MODEL Nos. 63623 AND 84458
2. FURNISH AND INSTALL "SUN" PRESSURE REDUCING VALVE (CARTRIDGE VALVE WIHT IN-LINE BODY) #PBHB-LNN (VALVE) WITH HCF (BODY) SIZE 1-1/4 INCH
3. ROUTE 1/4-INCH (STAINLESS STEEL) FROM DRAIN PORT ON PRESSURE REDUCING VALVES TO APPROVED POINT OF DISPOSAL AS DIRECTED BY MTDB.

AS-BUILT
Contract No BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY MS	DATE 12/18/98	
DRAWN BY EB/TW	12/18/98	
CHECKED BY MK	12/18/98	
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING FLOOR PLANS

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-3
SHEET NO. 70

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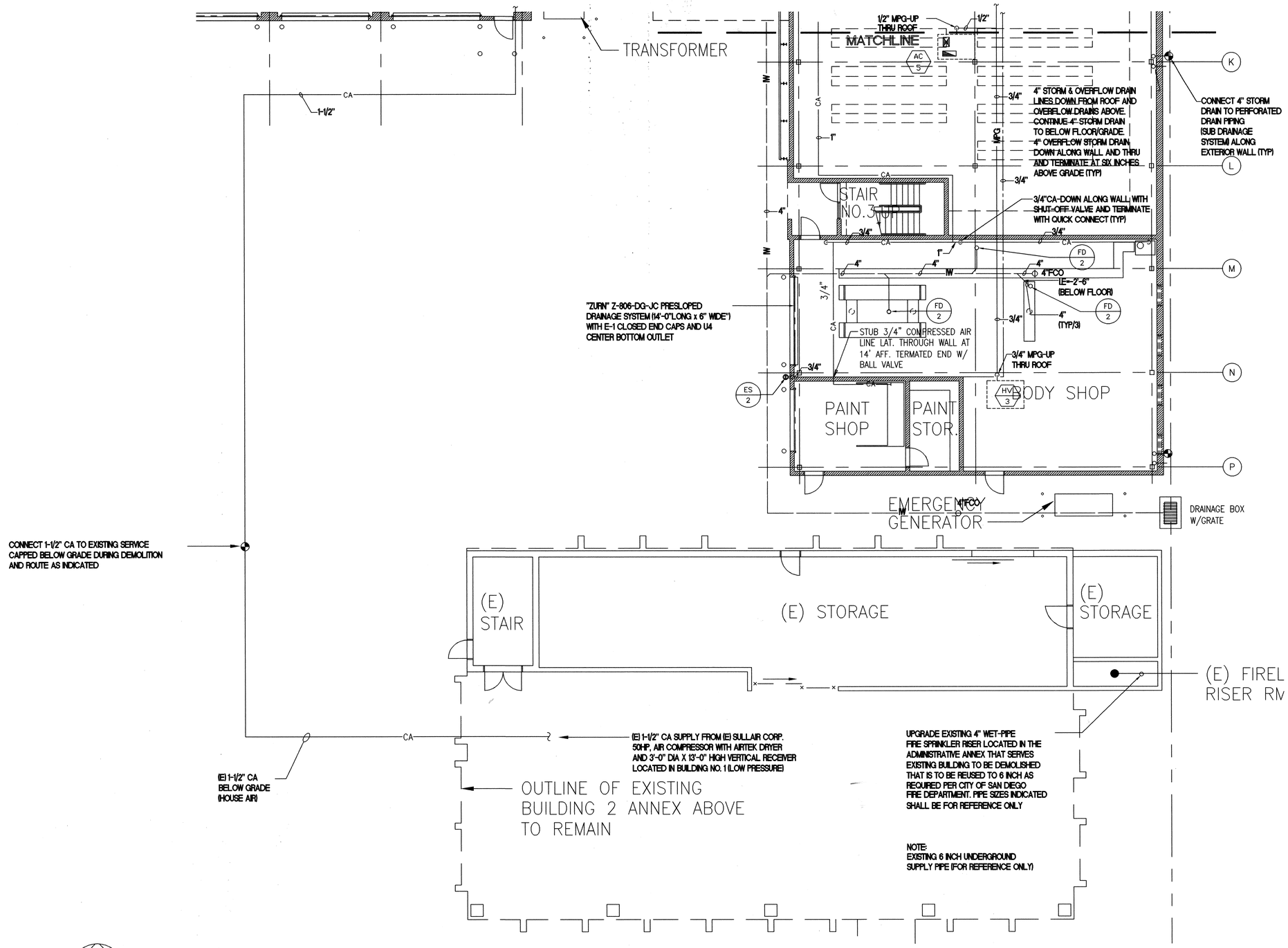

GROUND FLOOR PLAN – PLUMBING
1/8"=1'-0"

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY MS	DATE 12/18/98
DRAWN BY EB/TW	12/18/98
CHECKED BY MK	12/18/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING FLOOR PLANS

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-4
SHEET NO. 71

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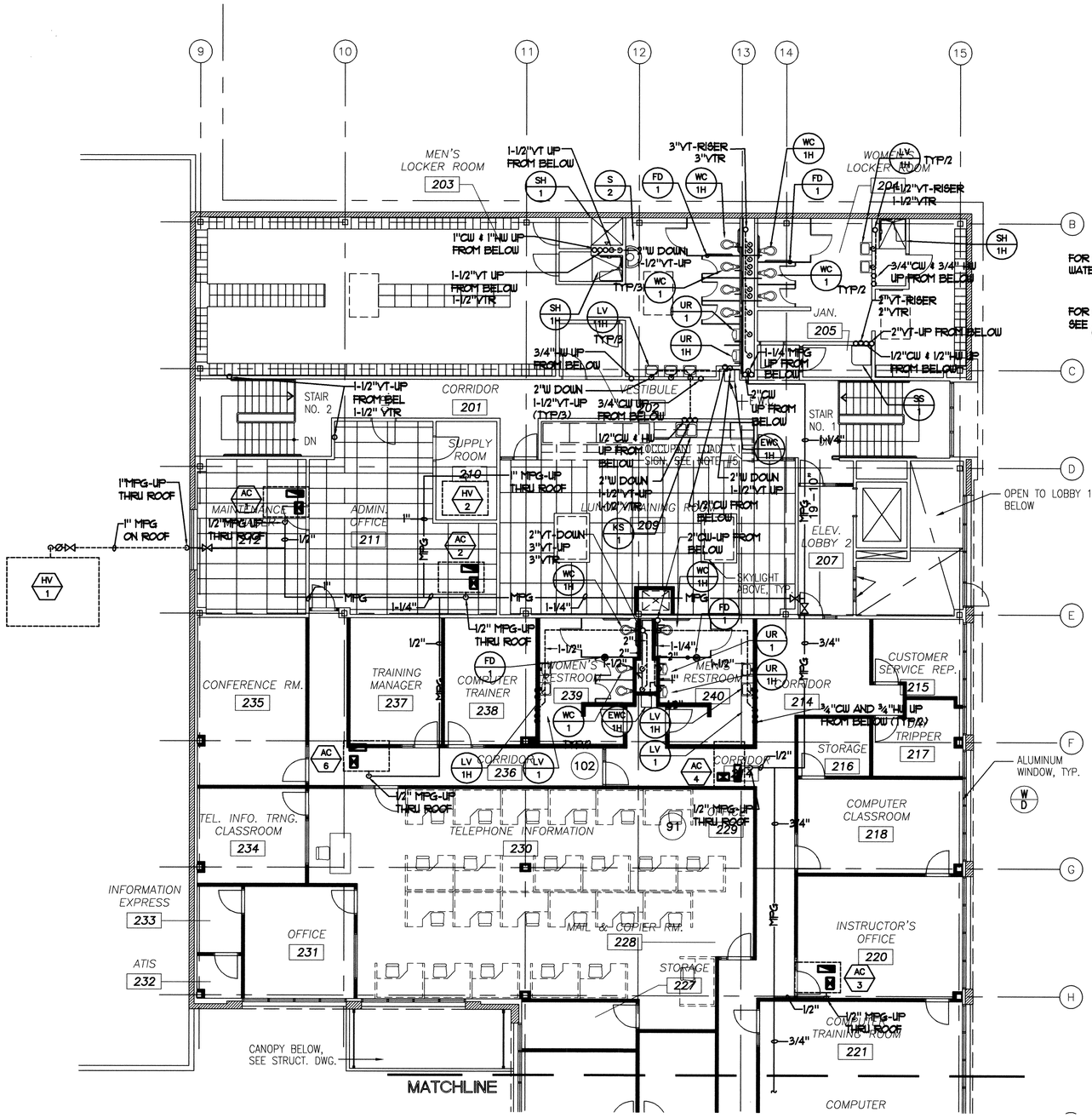

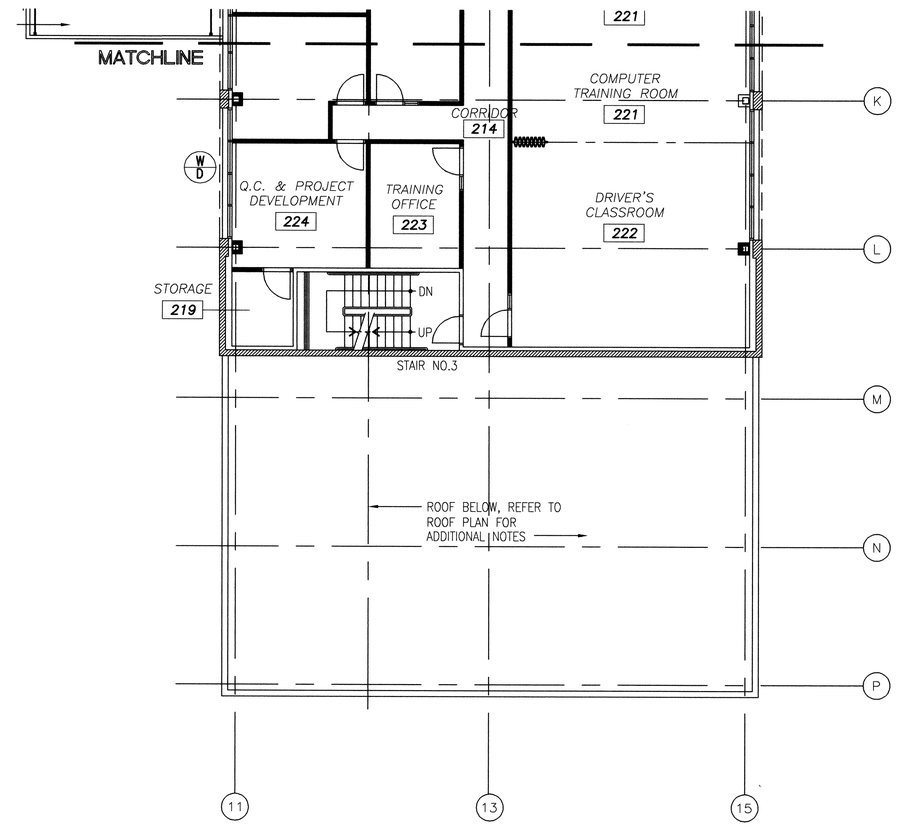

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

SECOND FLOOR REFLECTED CEILING PLAN

1/8"=1'-0"

1 / A13.2

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 2000.017
TELEPHONE (858) 271-9808, FAX: (858) 271-9632
9845 ERMA ROAD, SUITE 200, SAN DIEGO, CA 92131
sandiego@tmadengineers.com

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WILSHIRE BOULEVARD, SUITE 1455
LOS ANGELES, CALIFORNIA 90017-2499

LICENSED ARCHITECT YUN SOO KIM C-24485 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY	BM	DATE 5/2/00
DRAWN BY	TW	5/2/00
CHECKED BY	BM	5/2/00
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SECOND FLOOR
PLUMBING FLOOR PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-5
SHEET NO. 72

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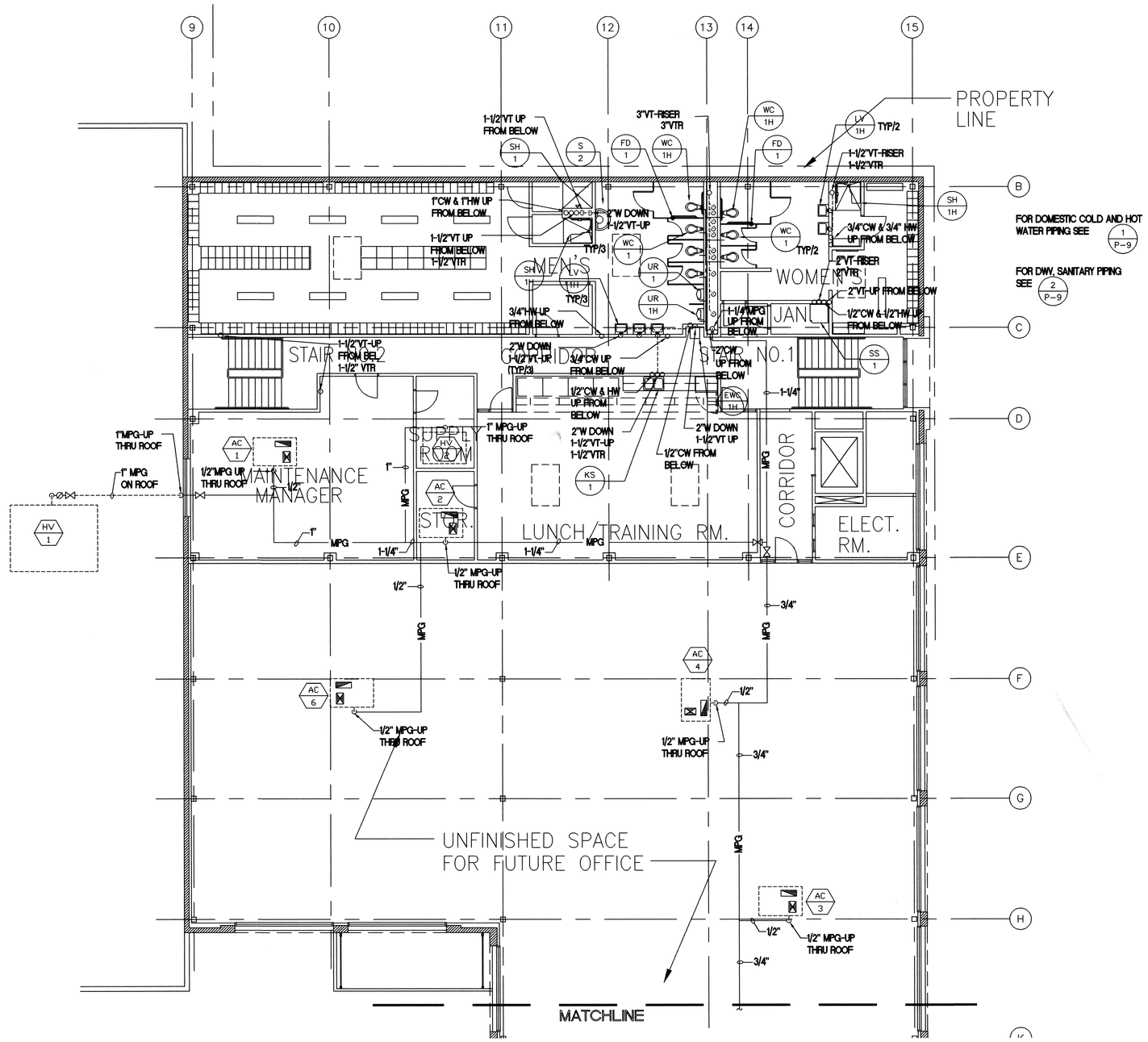
Att.A, AI 24, 09/13/22



SECOND FLOOR PLAN – PLIMBING
1/8"=1'-0"

AS-BUILT
A. deBerard
Contract No. BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808 FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY MS	DATE 12/18/98
DRAWN BY EB/TW	12/18/98
CHECKED BY MK	12/18/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING FLOOR PLANS

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-5
SHEET NO. 72

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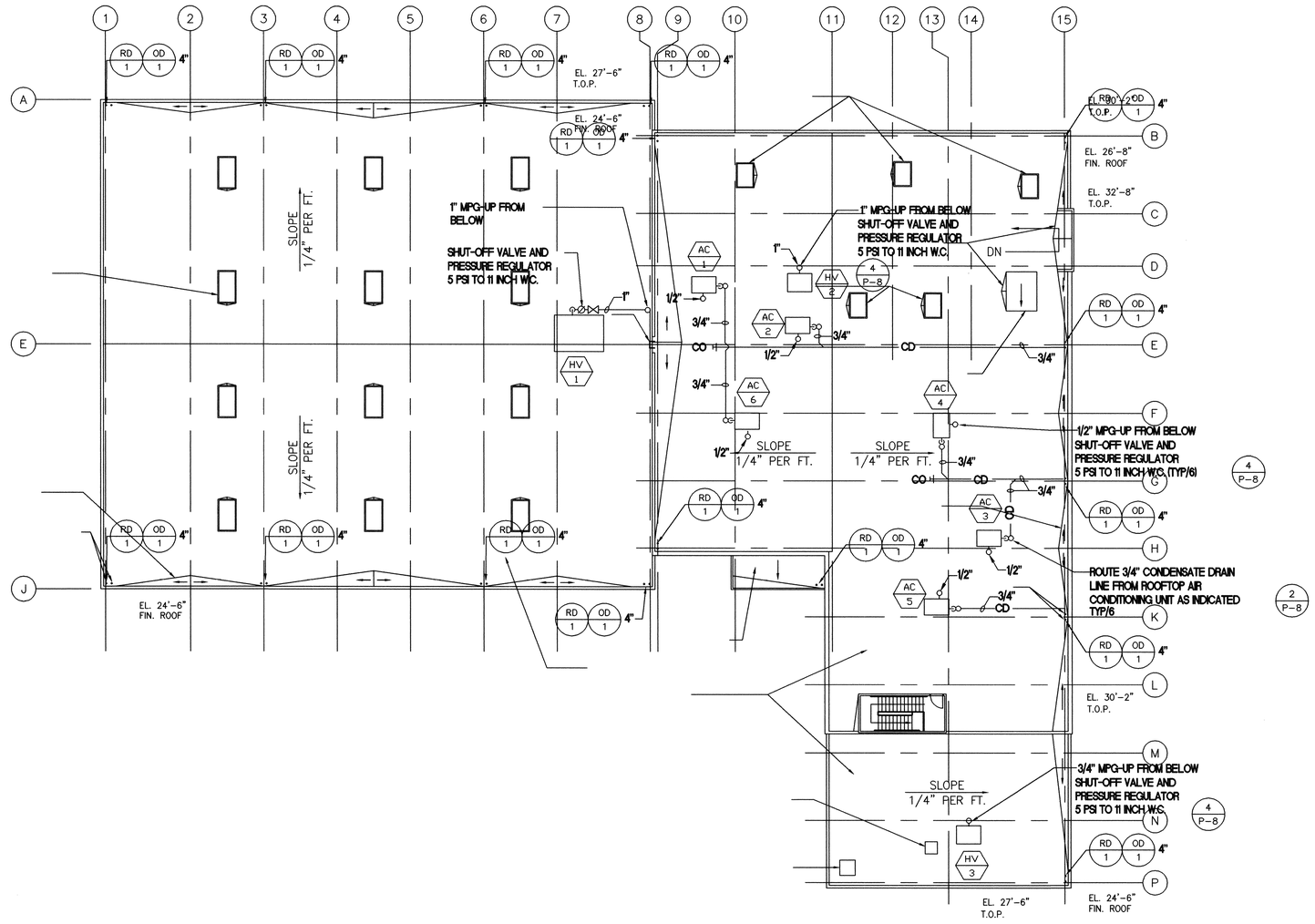

PLUMBING ROOF PLAN
1/16"=1'-0"

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY MS	DATE 12/18/98
DRAWN BY EBF	12/18/98
CHECKED BY MK	12/18/98
MTDB PRJ. ENG.	

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Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING ROOF PLANS

SCALE 1/16"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-6
SHEET NO. 73

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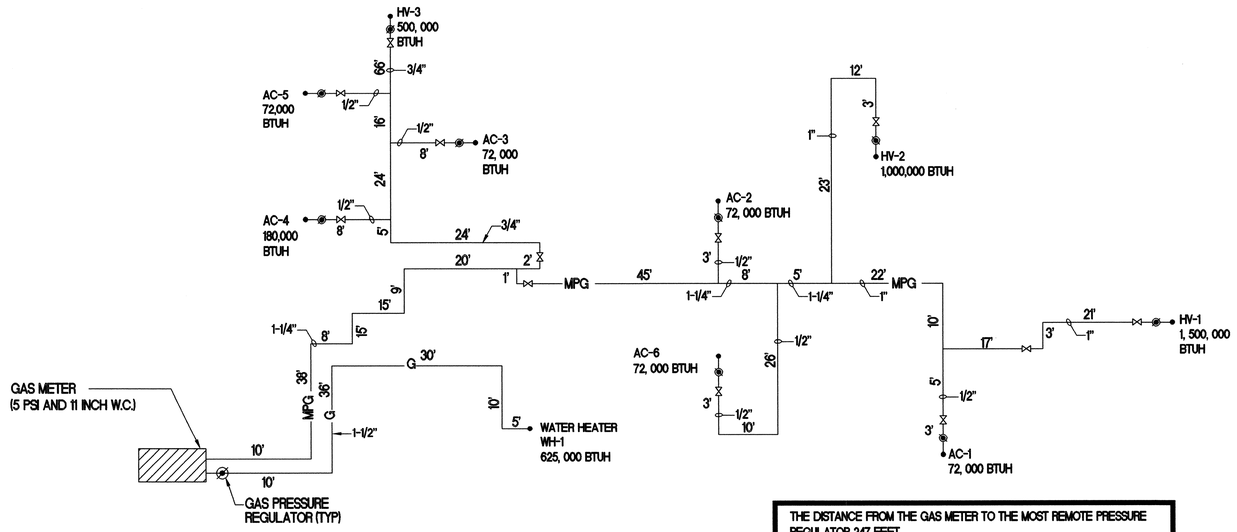


THE DISTANCE FROM THE GAS METER TO THE MOST REMOTE PRESSURE REGULATOR 247 FEET.

SIZING OF THE GAS PIPING BASED ON 300 FEET. THE SIZING OF THE GAS PIPING IS IN ACCORDNACE WITH THE UNIFORM PLUMBING CODE 1994 EDITION CHAPTER 12 FUEL GAS PIPING.

THE DISTANCE FROM THE GAS PRESSURE REGULATOR TO THE MOST OUTLET IS 91 FEET.

1 GAS PIPING DIAGRAM
NO SCALE

AS-BUILT
A. deBrand
Contract No. BUS-443B
Date NOV. 2000

W:\97087\MPE\787PDET1.DWG 12/18/98 10:57

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number
97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD
SUITE 200
SAN DIEGO, CA 92131

	DATE
DESIGNED BY MS	12/18/98
DRAWN BY EB/TW	12/18/98
CHECKED BY MK	12/18/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS, DIAGRAM

SCALE NONE
MTDB CONTRACT NO. BUS-443B .
DRAWING NO. P-7
SHEET NO. 74

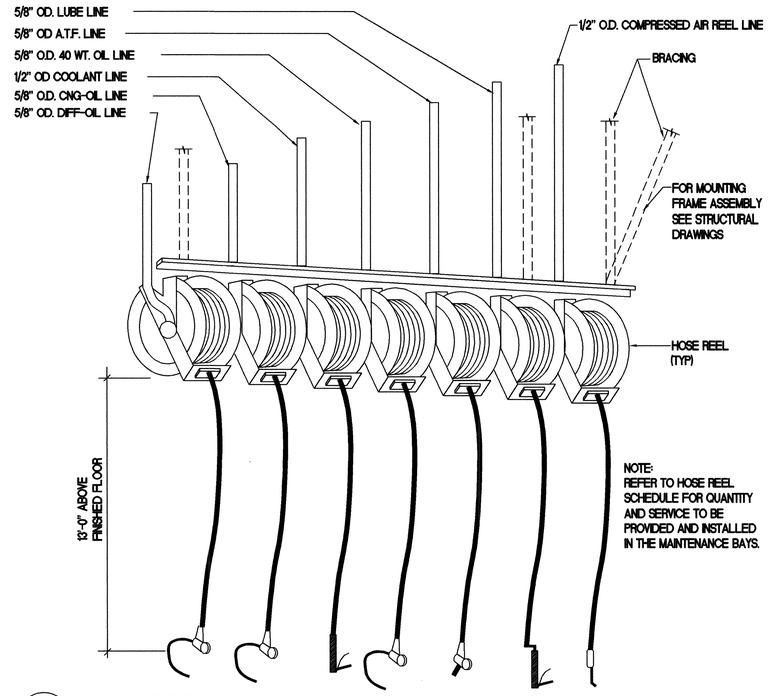
NOTES

FOR COMPRESSED AIR HOSE REEL SEE (1 / P-10)

FOR COOLANT HOSE REEL SEE (2 / P-10)

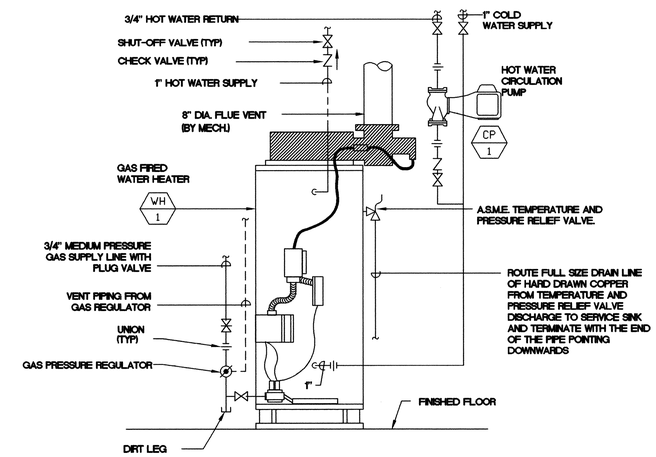
FOR LUBE HOSE REEL SEE (3 / P-10)

FOR ATF, 40WT. OIL, DIFF-OIL AND CNG-OIL HOSE REEL SEE (4 / P-10)



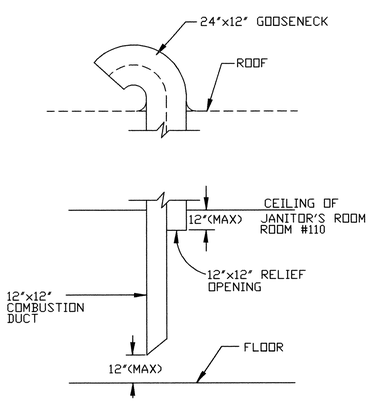
3 HOSE REEL ASSEMBLY
NO SCALE

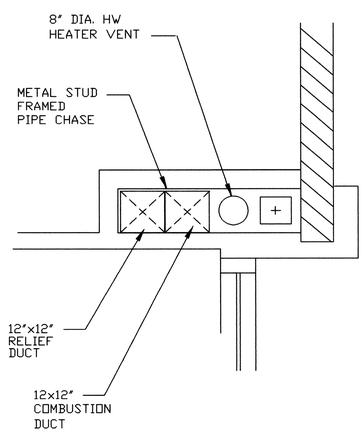
NOTE:
PROVIDE AND INSTALL (2) STRAPS TO ADEQUATELY BRACE THE WATER HEATER TO RESIST SEISMIC FORCES. ONE STRAP AT TOP 1/3 OF TANK AND ONE STRAP AT THE BOTTOM 1/3 OF THE TANK ANCHORED TO THE WALL.



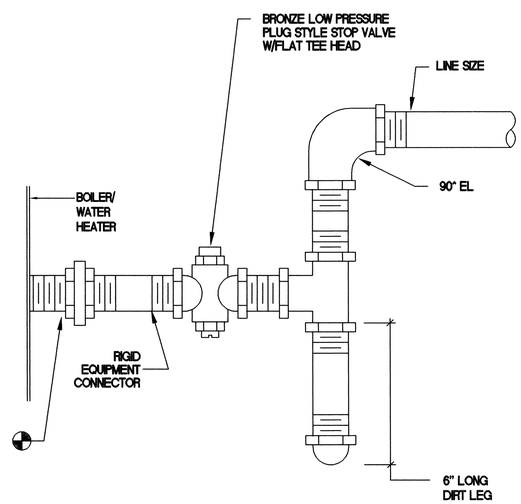
NOTE:
1. SEE MECHANICAL DRAWINGS M-2 AND M-4 FOR ROUTING OF FLUE
2. PROVIDE OPENINGS FOR COMBUSTION AIR 32"x20" HIGH AND LOW

1 GAS FIRED WATER HEATER W/ RECIRCULATION PUMP
NO SCALE

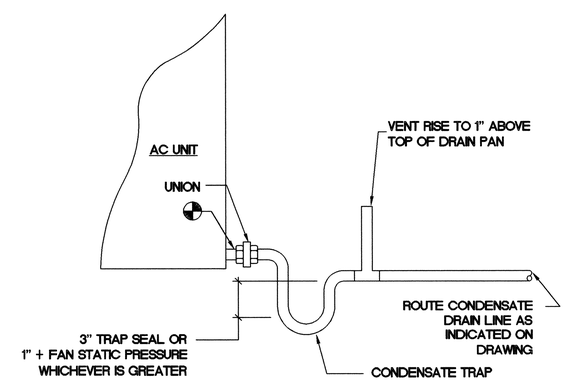




COMBUSTION AIR INTAKE
NO SCALE



4 GAS PIPING CONNECTION
NO SCALE



2 CONDENSATE DRAIN DETAIL
NO SCALE

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

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Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY MS	DATE 12/18/98	
DRAWN BY EB/TW	12/18/98	
CHECKED BY MK	12/18/98	
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS

SCALE NONE
MTDB CONTRACT NO. BUS-443B .
DRAWING NO. P-8
SHEET NO. 75

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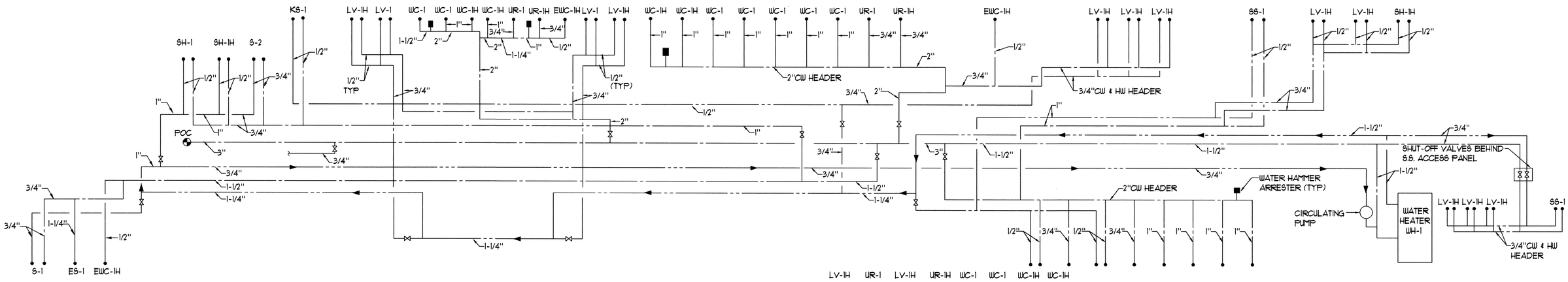
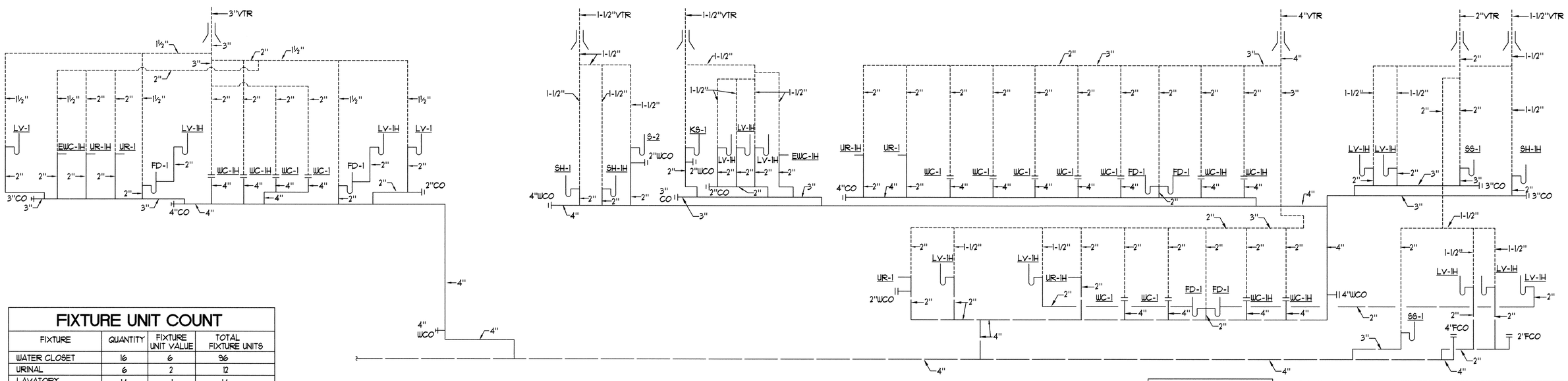


1 DOMESTIC COLD AND HOT WATER PIPING DIAGRAM

NO SCALE



2 DWV, SANITARY PIPING DIAGRAM

NO SCALE

FIXTURE UNIT COUNT

FIXTURE	QUANTITY	FIXTURE UNIT VALUE	TOTAL FIXTURE UNITS
WATER CLOSET	16	6	96
URINAL	6	2	12
LAVATORY	14	1	14
SHOWER	3	2	6
SERVICE SINK	2	6	12
DRINKING FOUNTAIN	3	1	3
KITCHEN SINK	1	2	2
SINK	2	3	6
FLOOR DRAIN	4	2	8
			159 F.U. TOTAL

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 2000.017
TELEPHONE (858) 271-9808
FAX: (858) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131
tmad@cts.com

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WILSHIRE BOULEVARD, SUITE 1455
LOS ANGELES, CALIFORNIA 90017-2499

LICENSED ARCHITECT TUN SOO KIM C-24485 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY MS	DATE
DRAWN BY EB/TW	
CHECKED BY MK	
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS

SCALE: NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-9
SHEET NO. 76

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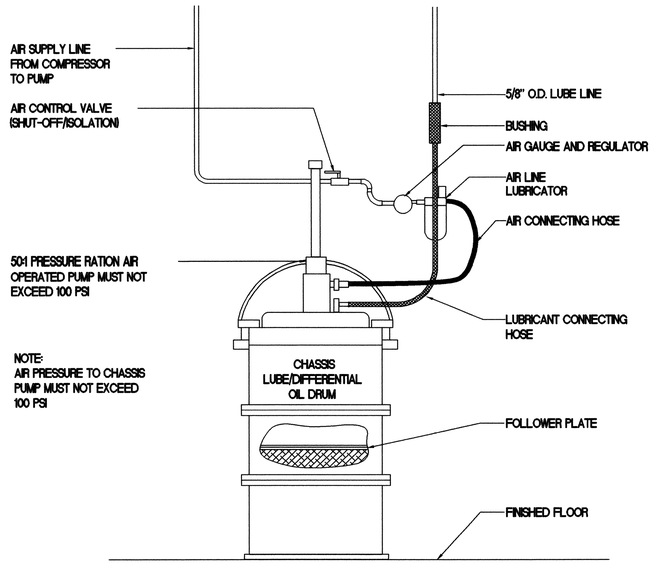
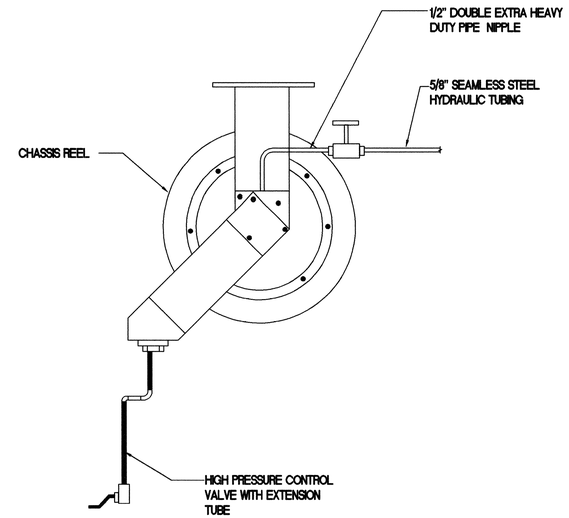
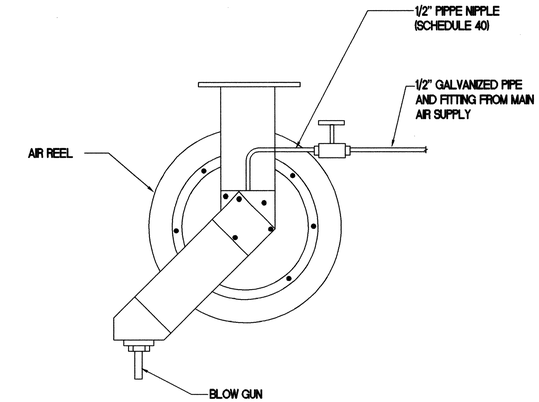


5 PUMP HOOKUP DETAIL
NO SCALE



3 LUBE HOSE REEL
NO SCALE



1 COMPRESSED AIR HOSE REEL
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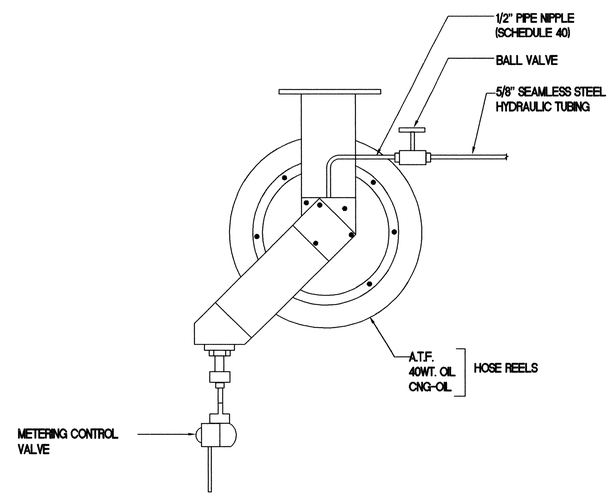
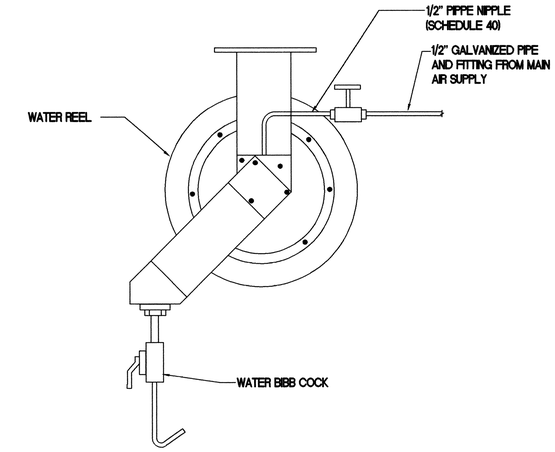


4 ATF, 40WT. OIL, DIFF-OIL AND CNG-OIL HOSE REEL
NO SCALE



2 COOLANT HOSE REEL
NO SCALE

AS-BUILT
A. deBerard
Contract No. BUS-443B
Date NOV. 2000

W:\97087\MPE\787PDET4.DWG 12/18/98 10:58

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

TMAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808
FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

	DATE
DESIGNED BY MS	12/18/98
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IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS

SCALE NONE
MTDB CONTRACT NO. BUS-443B .
DRAWING NO. P-10
SHEET NO. 77

SYMBOL	DESCRIPTION
	2'x4' RECESSED FLUORESCENT LIGHT FIXTURE
	SURFACE MOUNTED FLUORESCENT LIGHT FIXTURE
	SURFACE MOUNTED FLUORESCENT STRIP LIGHT
	HID, FLUORESCENT, INCANDESCENT LIGHT FIXTURE, PENDENT MOUNTED ON CEILING
	HID, FLUORESCENT, INCANDESCENT LIGHT FIXTURE, WALL MOUNTED ON FLUSH BOX
	LIGHT FIXTURE ON EMERGENCY CIRCUIT
	RECESSED HID, FLUORESCENT OR INCANDESCENT DOWNLIGHT
	CEILING MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROWS, DARKENED AREA INDICATES FACE LIT
	WALL MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROWS, DARKENED AREA INDICATES FACE LIT
J	CEILING MOUNTED JUNCTION BOX
J	JUNCTION BOX, FLUSH MOUNTED AT +15" U.N.O.
J	JUNCTION BOX WITH FLEXIBLE CONNECTION
\$ a,b,c	SPST TOGGLE SWITCH. LETTERS INDICATE THE NUMBER OF SWITCHES THEY CONTROL. MOUNTED FLUSH IN BOX AT +42" U.N.O.
\$ M	MANUAL MOTOR STARTER, +42" U.N.O
\$ 3	THREE WAY SWITCH, +42" U.N.O
	COMBINATION MOTOR STARTER/DISCONNECT
	DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED IN FLUSH BOX AT +24" U.N.O.
	DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED IN SURFACE BOX AR +24" U.N.O.
	DOUBLE DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED IN SURFACE BOX AT +24" U.N.O.
GFI	DUPLEX GROUNDED CONVENIENCE OUTLET WITH GROUND FAULT INTERRUPTER
	RECEPTACLE 20A, 125VAC, CLASS 1, DIVISION 2
S	DUPLEX GROUNDED SURGE SUPPRESSION OUTLET AT 15" U.N.O.
C	DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED ABOVE COUNTER BACKSPLASH
R	CORD REEL SUSPENDED FROM CEILING – SEE PLUMBING PLAN FOR LOCATION
I	INTRUSION DETECTION ALARM HORN
MS	MAGNETIC DOOR ALARM SWITCH
K	DOOR ALARM KEY OVERRIDE SWITCH
	SPECIAL PURPOSE GROUNDED CONVENIENCE OUTLET MOUNTED IN FLUSH BOX AT +15" U.N.O.
	MOTOR OUTLET
	BRANCH CIRCUIT CONDUIT CONCEALED IN WALL OR CEILING
	BRANCH CIRCUIT CONDUIT CONCEALED IN FLOOR OR UNDERGROUND
	BRANCH CIRCUIT CONDUIT CONDUIT RUN EXPOSED
	TICKS INDICATE THE NO. OF #12 WIRE. NO TICKS INDICATES 1/2"C-2#12. PROVIDE SEPARATE GROUND WIRE IN EACH BRANCH CIRCUIT CONDUIT
— E —	EMERGENCY SYSTEM CONDUIT
— FA —	FIRE ALARM SYSTEM CONDUIT,
— S —	SECURITY SYSTEM CONDUIT
— T —	TELEPHONE SYSTEM CONDUIT,
— PA —	PUBLIC ADDRESS SYSTEM CONDUIT,
— C —	COMPUTER SYSTEM CONDUIT
	CONDUIT RUN TURNED UP
	CONDUIT RUN TURNED DOWN
A-1,3	BRANCH CIRCUIT CONDUIT HOMERUN WITH PANEL AND CIRCUIT DESIGNATED
	FLUSH MOUNTED LIGHTING OR POWER PANEL
	SURFACE MOUNTED LIGHTING OR POWER PANEL
	SWITCHBOARD, MOTOR CONTROL CENTER
	TELEPHONE BACKBOARD 8'H X 8'W X 3/4 THICK PLYWOOD U.N.O.
	TELEPHONE OUTLET AT +15" U.N.O. WITH 1/2"C. STUBBED ABOVE CEILING

SYMBOL	DESCRIPTION
F	WALL MOUNTED FIRE ALARM MANUAL PULL STATION AT +48" U.N.O.
H	WALL MOUNTED FIRE ALARM HORN
S	WALL MOUNTED FIRE ALARM MINI-HORN AND STROBE AT +80" U.N.O.
FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM ANNUNCIATOR PANEL
SD	SMOKE DETECTOR
WF	WATER FLOW SWITCH
TS	TAMPER/TROUBLE SWITCH
	CLOSED CIRCUIT TELEVISION CAMERA
	DATA/COMPUTER SYSTEM OUTLET WITH 1/2"C. STUBBED ABOVE CEILING
M	CCTV MONITOR
7	NOTE REFERENCE
AC 7	EQUIPMENT IDENTIFICATION
	NORTH ARROW
7 E-3	DETAIL REFERENCE
7 E-5	SECTION REFERENCE
	SWITCH
	FUSE
	TRANSFORMER WITH GROUND
F-100	FEEDER DESIGNATION
M	UTILITY CO. METER
	TRANSFER SWITCH
42000AIC SYM	AMPS INTERRUPTING CAPACITY SYMMETRICAL
3P / 225AF / 225AT / 10	CIRCUIT BREAKER —NUMBER OF POLES —AMPS TRIP —AMPS FRAME —KAIC RATING
3P / 100 / 100 / JJN	SWITCH AND FUSE DESIGNATION —NUMBER OF POLES —SWITCH SIZE —FUSE SIZE —FUSE CLASS
F 3P / 100 / 60 / RK5	DISCONNECT SWITCH 'F' INDICATES FUSED TYPE —NUMBER OF POLES —SWITCH SIZE —FUSE SIZE —FUSE TYPE
	CONDUIT STUB-UP & CAPPED
AMP	PUBLIC ADDRESS AMPLIFIER CONSOLE
S	SURFACE CEILING MOUNTED P.A. SPEAKER
S	RECESSED CEILING MOUNTED P.A. SPEAKER
S	WALL MOUNTED P.A. SPEAKER
INT	INTRUSION DETECTION CONTROL PANEL
GDCP	GAS DETECTOR CONTROL PANEL
G	GAS DETECTOR ALARM HORN AND STROBE
M	WALL MOUNTED MICROPHONE OUTLET
	RECEPTACLE 20A. 208V,2P,3W AT +24" U.N.O.
M	MOTION SENSOR FOR LIGHT CONTROL
FD	FIRE SMOKE DAMPER

ABBREVIATIONS

A	AMP
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BC	BARE COPPER
BKBD	BACKBOARD
C	CONDUIT
CAT 5	CATAGORY 5 CABLE
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TV
CKT	CIRCUIT
COMB.	COMBINATION
C.O.	CONDUIT ONLY
CU	COPPER
DISC.	DISCONNECT
EQUIP	EQUIPMENT
EP	EXPLOSION PROOF
FA	FIRE ALARM
G	GROUND
GND	GROUND
HPS	HIGH PRESSURE SODIUM
IC	INTERCOM
IDS	INTRUSION DETECTION SYSTEM
IG	ISOLATED GROUND
J-BOX	JUNCTION BOX
LPS	LOW PRESSURE SODIUM
LTG	LIGHTING
MTD	MOUNTED
P	POLE OR PHASE
PNL	PANEL
SW	SWITCH
SWBD	SWITCHBOARD
TEL	TELEPHONE
TYP	TYPICAL
U/C	UNDERCOUNTER
UG	UNDERGROUND
UGPS	UNDERGROUND PULL SECTION
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS
W	WATTS OR WIRES
WP	WEATHERPROOF
XFMR	TRANSFORMER

LIGHTING MANDATORY MEASURES NOTES CHECKLIST

BUILDING LIGHTING SHUT-OFF
THE BUILDING IS A 24 HOUR OPPERATIONAL MAINTENANCE FACILITY WHERE AUTOMATIC LIGHTING SHUT OFF COULD BE A SAFETY HAZARD. THE BUILDING LIGHTING SHUT-OFF SYSTEM FOR NON SAFETY HAZARD AREAS SHALL CONSISTS OF OCCUPANT-SENSORS.

OVERRIDE FOR BUILDING LIGHTING SHUT-OFF
NOT APPLICABLE

AUTOMATIC CONTROL DEVICES CERTIFIED
ALL AUTOMATIC CONTROL DEVICES SPECIFIED ARE CERTIFIED BY THE STATE OF CALIFORNIA. ALL ALTERNATE EQUIPMENT SHALL BE CERTIFIED BY THE STATE OF CALIFORNIA AND LISTED IN THE ADIRECTORY OF AUTOMATIC LIGHTING CONTROL DEVICES@ AND INSTALLED AS DIRECTED BY THE MANUFACTURER.

FLUORESCENT BALLAST AND LUMINAIRES CERTIFIED
ALL FLUORESCENT FIXTURES SPECIFIED FOR THE PROJECT ARE CERTIFIED BY THE STATE OF CALIFORNIA, AND LISTED IN THE ADIRECTORY OF CERTIFIED LUMINAIRES AND BALLASTS.@ ALL INSTALLED FIXTURES SHALL BE CERTIFIED.

TANDEM WIRING FOR TWO-LAMP BALLAST'S
ALL ONE AND THREE LAMP FLUORESCENT FIXTURES ARE TANDEM WIRED WITH TWO (2) LAMP BALLAST WHERE REQUIRED BY STANDARDS 132; OR LUMINAIRIES USE ELECTRONIC HIGH FREQUENCY BALLAST ARE NOT REQUIRED TO BE TANDEM WIRED.

INDIVIDUAL ROOM/AREA CONTROLS
EACH ROOM AND AREA IN THESE BUILDING WITH FLOOR-TO-CEILING WALLS IS EQUIPPED WITH A SEPARATE SWITCH OR OCCUPANCY SENSOR DEVICE.

UNIFORM REDUCTION FOR INDIVIDUAL ROOMS
ALL ROOMS AND AREAS GREATER THAN 100 SQUARE FEET OR MORE THAN 1.2 WATTS PER SQUARE FOOT OF LIGHTING LOAD SHALL BE CONTROLLED WITH BI-LEVEL SWITCHING FOR UNIFORM REDUCTION OF LIGHTING WITHIN THE ROOM OR CONTROLLED BY OCCUPANT SENSING DEVICE. CORRIDORS ARE NOT REQUIRED TO BE BI-LEVEL SWITCHED.

DAYLIT AREA CONTROL
ALL ROOMS WITH WINDOWS AND SKYLIGHTS, THAT ARE GREATER THAN 250 SQUARE FEET, AND THAT ALLOW FOR THE EFFECTIVE USE OF DAYLIGHT IN THE AREA SHALL HAVE 50% OF THE LAMPS IN EACH DAYLIT AREA CONTROLLED BY A SEPARATE SWITCH.

CONTROL OF EXTERIOR LIGHTS
EXTERIOR MOUNTED FIXTURES SERVED FROM THE ELECTRICAL PANEL INSIDE THE BUILDING ARE CONTROLLED WITH A DIRECTIONAL PHOTOCELL OR TIME SWITCH, WHICH CONTROLS THE LIGHTING DURING THE HOURS OF DARKNESS.

ELECTRICAL GENERAL NOTES

1. HASH MARKS ON RACEWAY RUN INDICATE NUMBER OF #12 CONDUCTORS.
2. NO HASH MARKS ON RACEWAY RUN INDICATES 1/2 INCH CONDUIT AND TWO #12 CONDUCTORS. CONDUCTOR SIZES OTHER THAN TWO #12 ARE NOTED ON PLANS. CONDUIT SIZES SHALL BE AS PER NEC.
3. A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC, SHALL BE PROVIDED IN EACH FEEDER AND BRANCH CIRCUIT INSTALLED IN THE SAME CONDUIT OR RACEWAY SUPPLYING SUCH FEEDER OR BRANCH CIRCUIT.
4. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS, ELEVATIONS, EXISTING CONDITIONS AND POINTS OF CONNECTION. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
5. COORDINATE ALL ELECTRICAL WORK WITH THE OTHER TRADES. NO SUBSEQUENT ALLOWANCE WILL BE MADE BY THE OWNER FOR FAILURE OF THE CONTRACTOR TO COORDINATE HIS WORK WITH OTHER TRADES AND OBTAIN ALL OTHER PERTINENT INFORMATION REQUIRED TO MEET ACTUAL BUILDING OR FIELD CONDITIONS.
6. CONNECTIONS TO ALL EQUIPMENT FURNISHED BY OWNER OR OTHERS SHALL BE COORDINATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURERS SHOP DRAWINGS PRIOR TO ROUGH IN OF CONDUITS, DEVICES AND EQUIPMENT.
7. WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT DEVICES, CIRCUIT BREAKERS, TRANSFORMERS, GROUND FAULT PROTECTION SYSTEMS, ETC. (ALL MATERIALS), THAT ARISES ON THE DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON DRAWINGS AND/OR IN THE SPECIFICATIONS TO INSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ENGINEER.
8. ALL ELECTRICAL PENETRATIONS THROUGH FIRE RATED AREA SEPARATION AND CORRIDOR ASSEMBLIES INCLUDING CONDUITS AND PIPING SHALL BE TIGHTLY AND SOLIDLY SEALED WITH FIRESTOPPING WALLBOARD COMPOUND AND SHALL BE AN APPROVED MATERIAL AS PRESCRIBED IN THE STATE FIRE MARSHAL STANDARD 43.1.
9. ALL EQUIPMENT INSTALLED UNDER OR PERMITTED BY THE ELECTRICAL CODE SHALL BE LISTED, LABELED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
10. ALL TELEPHONE WORK SHALL BE IN COMPLIANCE WITH THESE DRAWINGS AND THE REQUIREMENTS OF THE TELEPHONE COMPANY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE TELEPHONE COMPANY AND RECEIVE COMPLETE INFORMATION ON THEIR REQUIREMENTS PRIOR TO THE SUBMISSION OF BID. THE ACT OF SUBMITTING THE BID SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO INSTALL SERVICE IN COMPLIANCE WITH THE SERVING UTILITY.
11. ALL ELECTRICAL SERVICE WORK SHALL BE IN COMPLIANCE WITH THESE DRAWINGS AND THE REQUIREMENTS OF THE POWER COMPANY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE POWER COMPANY AND RECEIVE COMPLETE INFORMATION ON THE POWER COMPANY'S REQUIREMENTS PRIOR TO THE SUBMISSION OF BID. THE ACT OF SUBMITTING THE BID SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO INSTALL SERVICE IN COMPLIANCE WITH THE SERVING UTILITY. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY FOR REQUIRED SUBMITTALS, INSPECTIONS AND FINAL CONNECTION.
12. ALL UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED PRIOR TO TRENCHING. ANY SERVICE INTERRUPTION SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCHING AND BACKFILLING AS REQUIRED TO PERFORM HIS WORK. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN TRENCHING SO AS NOT TO INTERFERE WITH EXISTING UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED.
14. EXACT LOCATION OF ALL CEILING MOUNTED LIGHTING FIXTURES SHALL BE AS INDICATED ON THE ARCHITECTURAL REFLECTED CEILING PLANS. ALL OUTLET LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH IN.
15. THE FIRE ALARM SYSTEMS SHOWN ON THESE DRAWINGS ARE FOR BIDDING PURPOSES ONLY AND SHALL NOT BE USED FOR CONSTRUCTION. FIRE ALARM SHOP DRAWINGS SHALL BE SUBMITTED TO THE FIRE MARSHAL FOR APPROVAL PRIOR TO INSTALLATION. THE DRAWINGS FOR SUBMITTAL TO THE FIRE MARSHALL SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
    1. POINT TO POINT WIRING DIAGRAM.
    2. FIRE ALARM RISER DETAILS.
    3. NUMBER OF CONDUCTORS PER CIRCUIT.
    4. SIZE (GAUGE) OF ELECTRICAL CONDUCTORS.
    5. SYSTEM BATTERY CALCULATIONS.
    6. WORST-CASE VOLTAGE DROP CALCULATIONS.
    7. CSFM LISTING SHEET FOR EACH COMPONENT.
    8. MANUFACTURERS CUT SHEET FOR EACH COMPONENT.
    9. OTHER: (ARTICLE 14, 1991 UFC)
16. ALL ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION USING THE FOLLOWING CRITERIA:
    1. EQUIPMENT ON GRADE – 20% OF OPERATING WEIGHT
    2. EQUIPMENT ON STRUCTURE – 30% OF OPERATING WEIGHT
    3. FOR FLEXIBLY MOUNTED EQUIPMENT USED FOUR (4) TIMES THE ABOVE VALUES, AND FOR SIMULTANEOUS VERTICAL FORCE USE ONE-THIRD (1/3) TIMES THE HORIZONTAL FORCE.
    4. THE ABOVE VALUES ARE FOR AN IMPORTANCE FACTOR I = 1.0 AND SEISMIC ZONE Z = 0.4.
    5. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND THE FIELD ENGINEER OF THE OFFICE OF THE STATE ARCHITECT.
17. CONDUIT SHALL NOT BE RUN THROUGH ANY STRUCTURAL MEMBER OF THE BUILDING, EXCEPT AS SPECIFICALLY DIRECTED BY THE OWNER'S REPRESENTATIVE. UNDER NO CIRCUMSTANCE SHALL CONDUIT RUN THROUGH COLUMNS, FOOTINGS OR GRADE BEAMS.
18. ALL ELECTRICAL DEVICES AND APPARATUS MOUNTED IN THE MAINTENANCE/REPAIR SHOP OR THE BODY SHOP SHALL BE MOUNTED AT LEAST 18" ABOVE THE FLOOR UNLESS OTHERWISE NOTED. ALL ELECTRICAL DEVICES, INCLUDING CONDUITS, MOUNTED BELOW 18" AFF SHALL HAVE A HAZARDOUS CLASSIFICATION OF CLASS 1, DIVISION 2.

AS-BUILT
A. deBernard
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
KWOK WAI KAN
No. 9304
Exp. 9-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

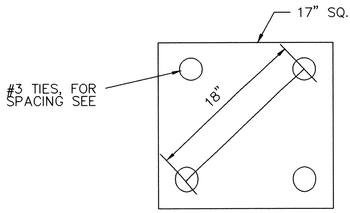
	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

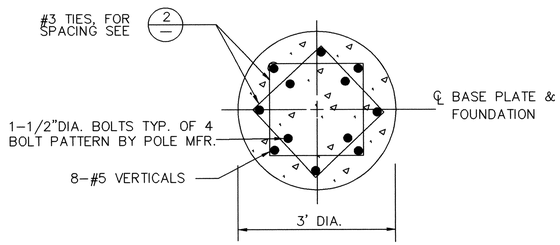
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

ELECTRICAL LEGEND AND ABBREVIATIONS

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E-10.1
SHEET NO. 78



ANCHOR BASE DETAIL — D / E-4
SCALE: NONE



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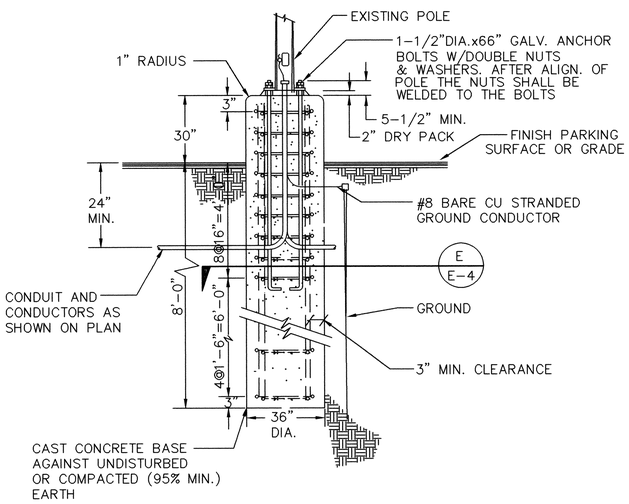
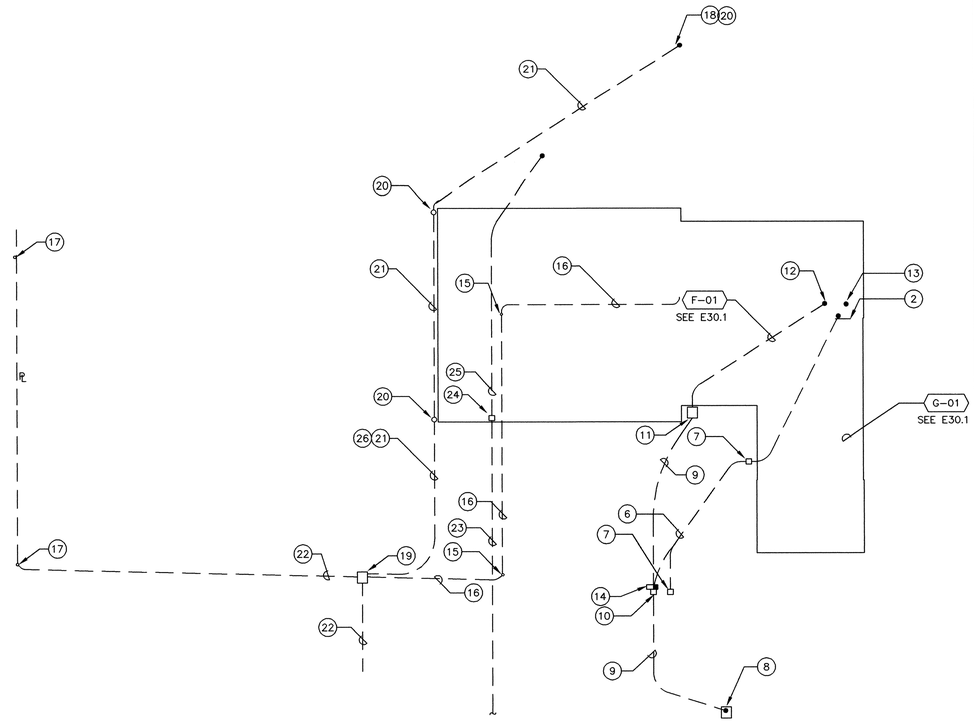


POLE BASE DETAIL — 2 / E10.2
SCALE: NONE



ELECTRICAL SITE PLAN — 1 / E10.2
1"=40'-0"

NOTES

1. NOT USED.
2. NEW TELEPHONE BACKBOARD.
3. NOT USED.
4. NOT USED.
5. NOT USED.
6. PROVIDE NEW 2-4" PVC SCHEDULE 40 CONDUITS. BURY MINIMUM 24" BELOW GRADE. CUT AND PATCH EXISTING ASPHALT CONCRETE PAVING TO MATCH.
7. PROVIDE NEW 2'-0"x3'-0"x2'-6" DEEP PRECAST CONCRETE PULL BOX WITH BOLT DOWN TYPE GALVANIZED STEEL SAFETY PLATE TRAFFIC COVER, WITH "TELEPHONE" INSCRIBED ON COVER.
8. EXISTING POWER CO. PAD MOUNT TRANSFORMER. RUN NEW CONDUITS INTO PRIMARY SIDE OF PULL BOX. (BY OTHERS).
9. PROVIDE NEW 2-4" PVC SCHEDULE 40 CONDUITS. BURY PER SDG&E REQUIREMENTS . CUT AND PATCH CONCRETE AND ASPHALT PAVING TO MATCH.
10. PROVIDE NEW PRECAST CONCRETE PULL BOX PER SDG&E REQUIREMENTS.
11. PROVIDE NEW PRECAST CONCRETE PAD AND GROUNDING FOR POWER CO. PAD MOUNT TRANSFORMER PER SDG&E REQUIREMENTS.
12. STUB-UP CONDUITS INTO BOTTOM OF UNDERGROUND PULL SECTION. CONCRETE ENCASE CONDUITS WHERE THEY PASS THROUGH FIRST FLOOR.
13. STUB-UP CONDUITS INTO BOTTOM OF AUTOMATIC TRANSFER SWITCH.
14. 60KW GENERATOR.
15. REMOVE EXISTING (4) 1000W. HPS LIGHT POLE, BASE AND CONDUIT. POLE & LIGHTS ARE TO BE RELOCATED.
16. REMOVE EXISTING UNDERGROUND WIRE. ABANDON CONDUIT.
17. DEMOLISH EXISTING LIGHT STANDARD & FOUNDATION RECONSTRUCT NEW LIGHT STANDARD AS SHOWN
18. INTERCEPT EXISTING CONDUIT OUT OF POLE BASE AND CONNECT TO NEW CONDUIT AND WIRE.
19. EXISTING HANDHOLE TO REMAIN. MAKE NECESSARY CONNECTION FOR RELOCATED LIGHTS.
20. RELOCATE POLE WITH (4) 1000W. HPS FLOODLIGHT FIXTIRES. MOUNTING ON NEW POLE BASE PER DETAIL 2/E10.2.
21. RECONNECT SITE LIGHTS WITH NEW 1" PVC SCHEDULE 40, 4#6 & 1#6 GND. BURY A MINIMUM 24" BELOW GRADE.
22. EXISTING UNDERGROUND SITE LIGHTING CONDUIT & WIRE TO REMAIN.
23. EXISTING UNDERGROUND CONDUIT & WIRE TO BE ABANDON IN PLACE.
24. EXISTING HANDHOLE TO BE REMOVED.
25. EXISTING CONDUIT & WIRE TO BE REMOVED.
26. REPAIR PAVING TO MATCH EXISTING.

AS-BUILT
A. deKarand
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
KWOK WAI KAN
No. 9304
Exp. 9-30-01
ELECTRICAL
STATE OF CALIFORNIA

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STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA 90017

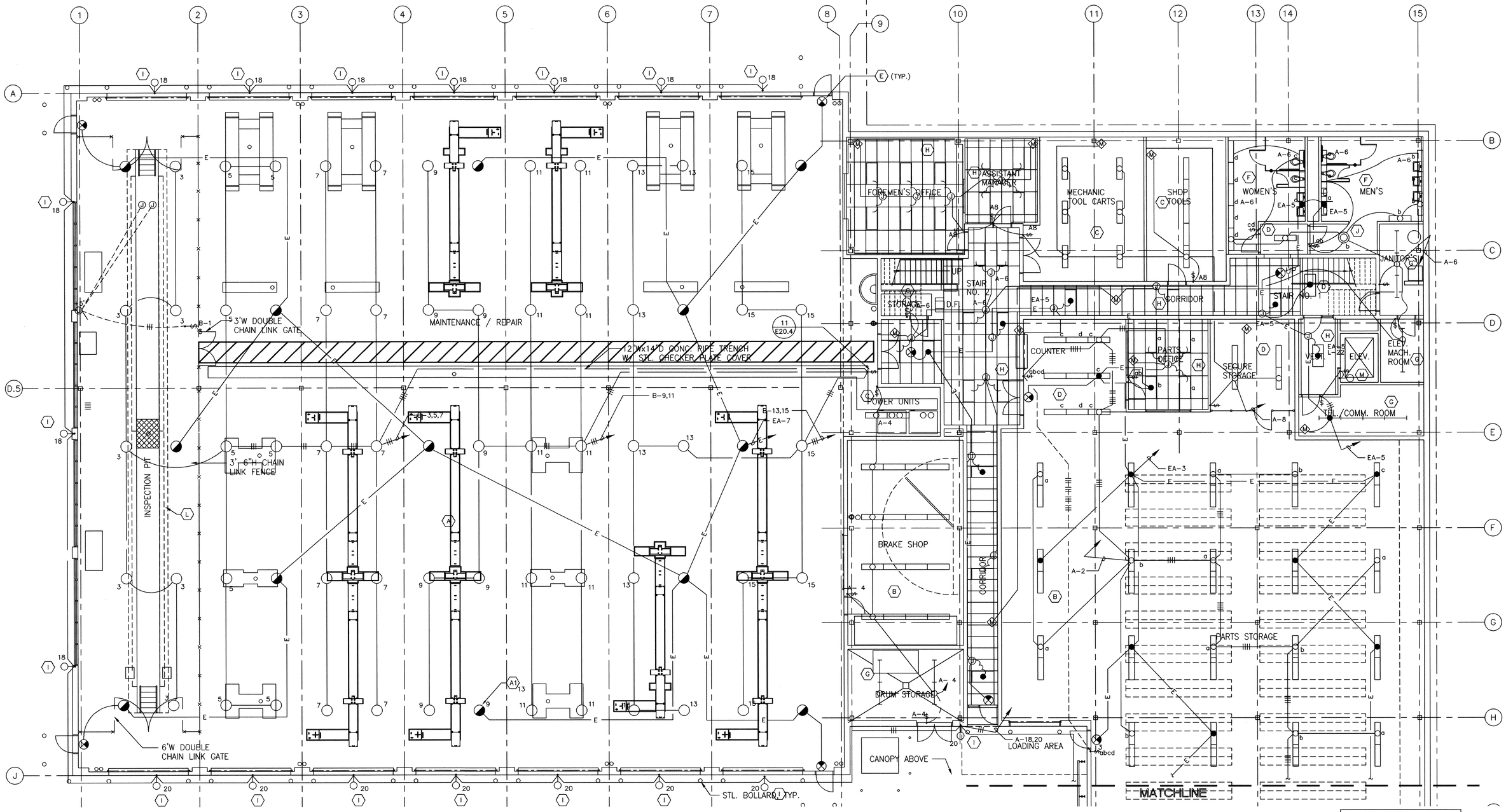
DESIGNED BY S. CONNER	DATE 11/98	
DRAWN BY K. SPRADLING	11/98	
CHECKED BY M. NIEDERHAUS	11/98	
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

ELECTRICAL
SITE PLAN

SCALE 1"=40'-0"	
MTDB CONTRACT NO. BUS-443B	
DRAWING NO. E-10.2	SHEET NO. 79



GROUND FLOOR NORTH LIGHTING PLAN 1/8"=1'-0" (1 / E11.1)

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAY KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

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LOS ANGELES, CA. 90017

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Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

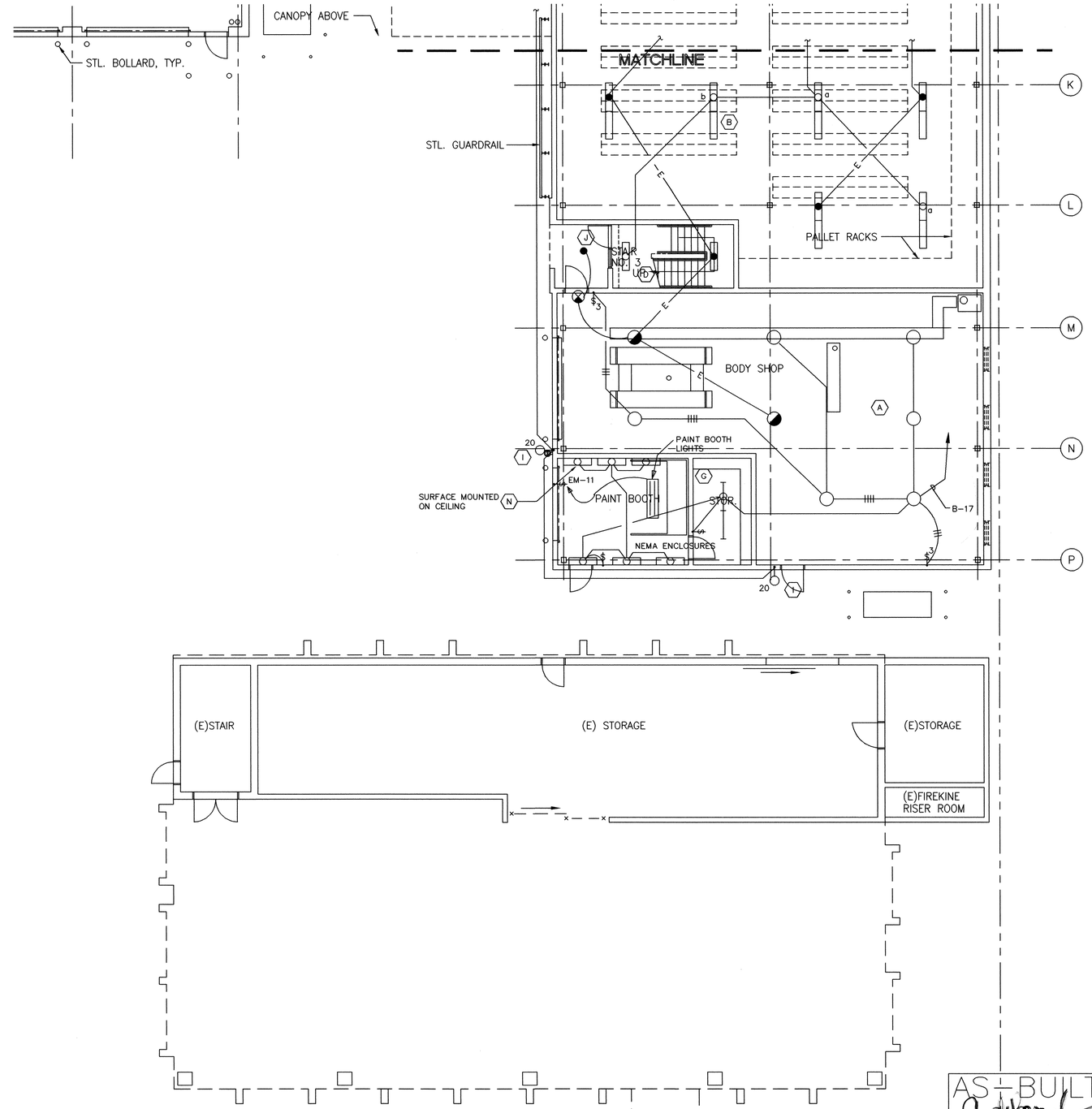
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

GROUND FLOOR NORTH LIGHTING PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E11.1
SHEET NO. 80

NOTE:

(1) PROVIDE CLASS 1, DIV 1 WALL SWITCH.



GROUND FLOOR SOUTH LIGHTING PLAN 1/8"=1'-0" (1 / E11.2)

AS-BUILT
Contract No BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER YNOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

DESIGNED BY S. CONNER	DATE 11/98	
DRAWN BY K. SPRADLING	11/98	
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MTDB PRJ. ENG.		

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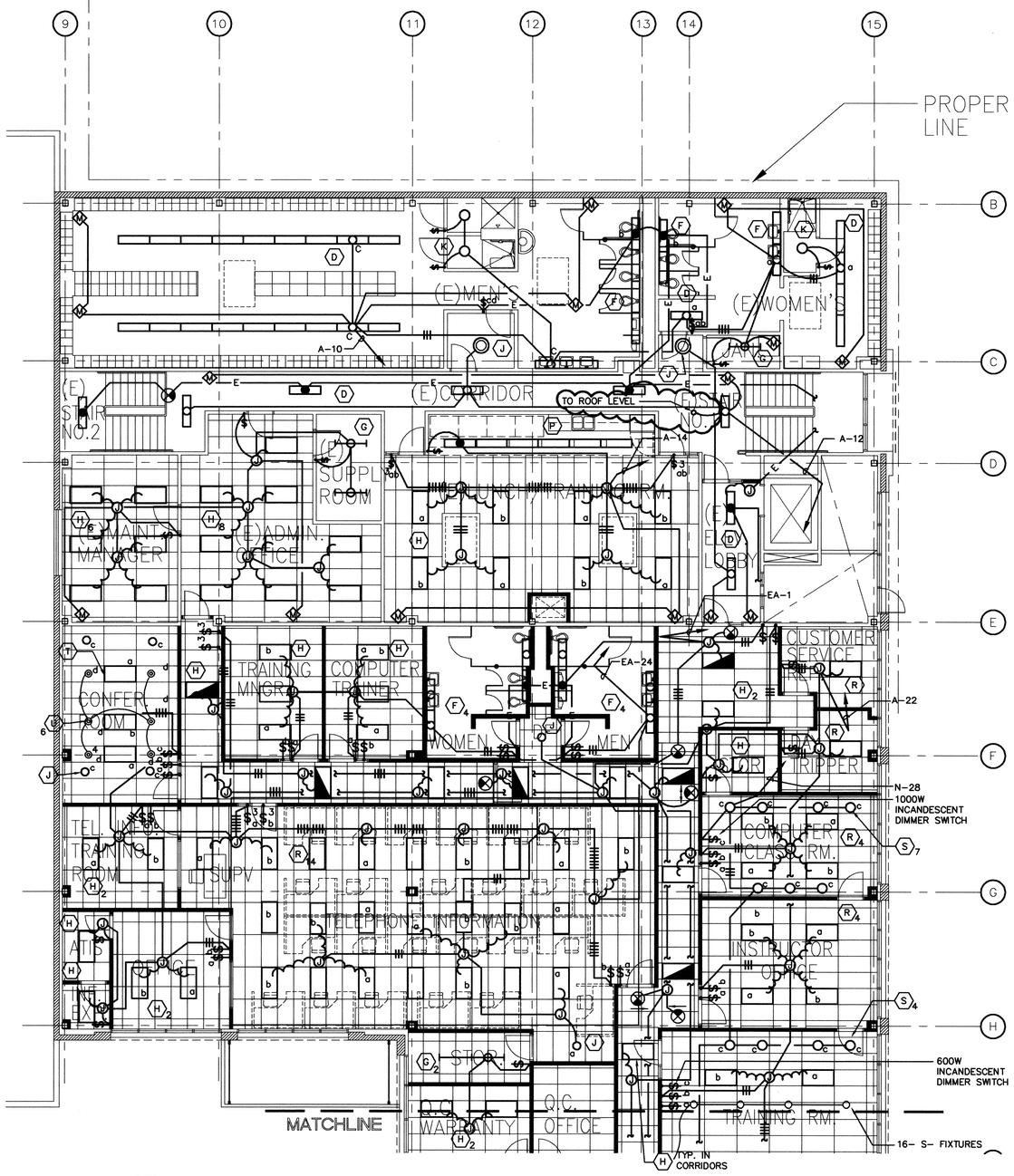
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

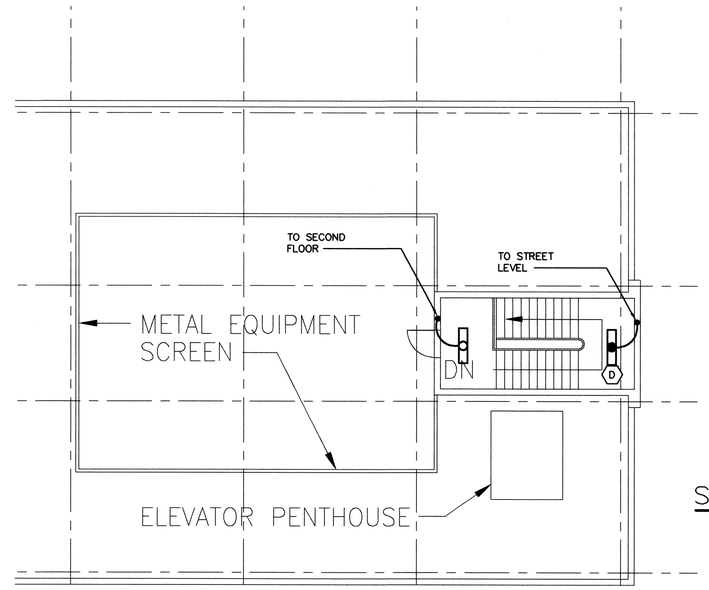
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

GROUND FLOOR SOUTH LIGHTING PLAN

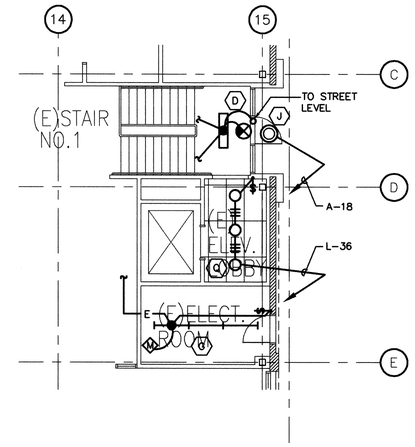
SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E11.2
SHEET NO. 81



SECOND FLOOR LIGHTING PLAN 1 E11.3
1/8"=1'-0"

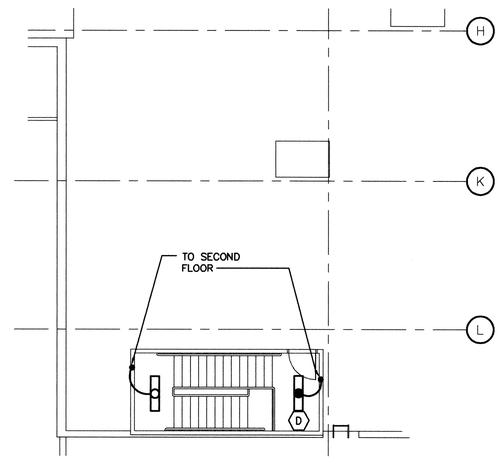


ROOF LEVEL LIGHTING PLAN 2 E11.3
1/8"=1'-0"

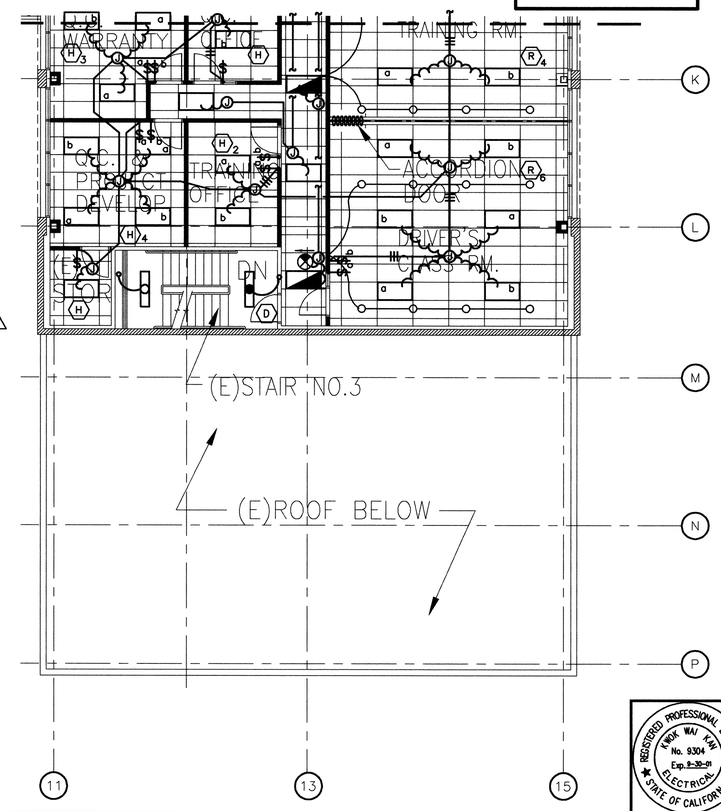


STREET LEVEL LIGHTING PLAN 3 E11.3
1/8"=1'-0"

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000



ROOF LEVEL LIGHTING PLAN 4 E11.3
1/8"=1'-0"



REGISTERED PROFESSIONAL ENGINEER
KWOK WAI KWI
No. 9304
Exp. 9-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS & PLANNERS:
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

	DATE
DESIGNED BY M. NIEDERHAUS	6/00
DRAWN BY K. SPRADLING	6/00
CHECKED BY M. NIEDERHAUS	6/00
MTDB PRJ. ENG.	

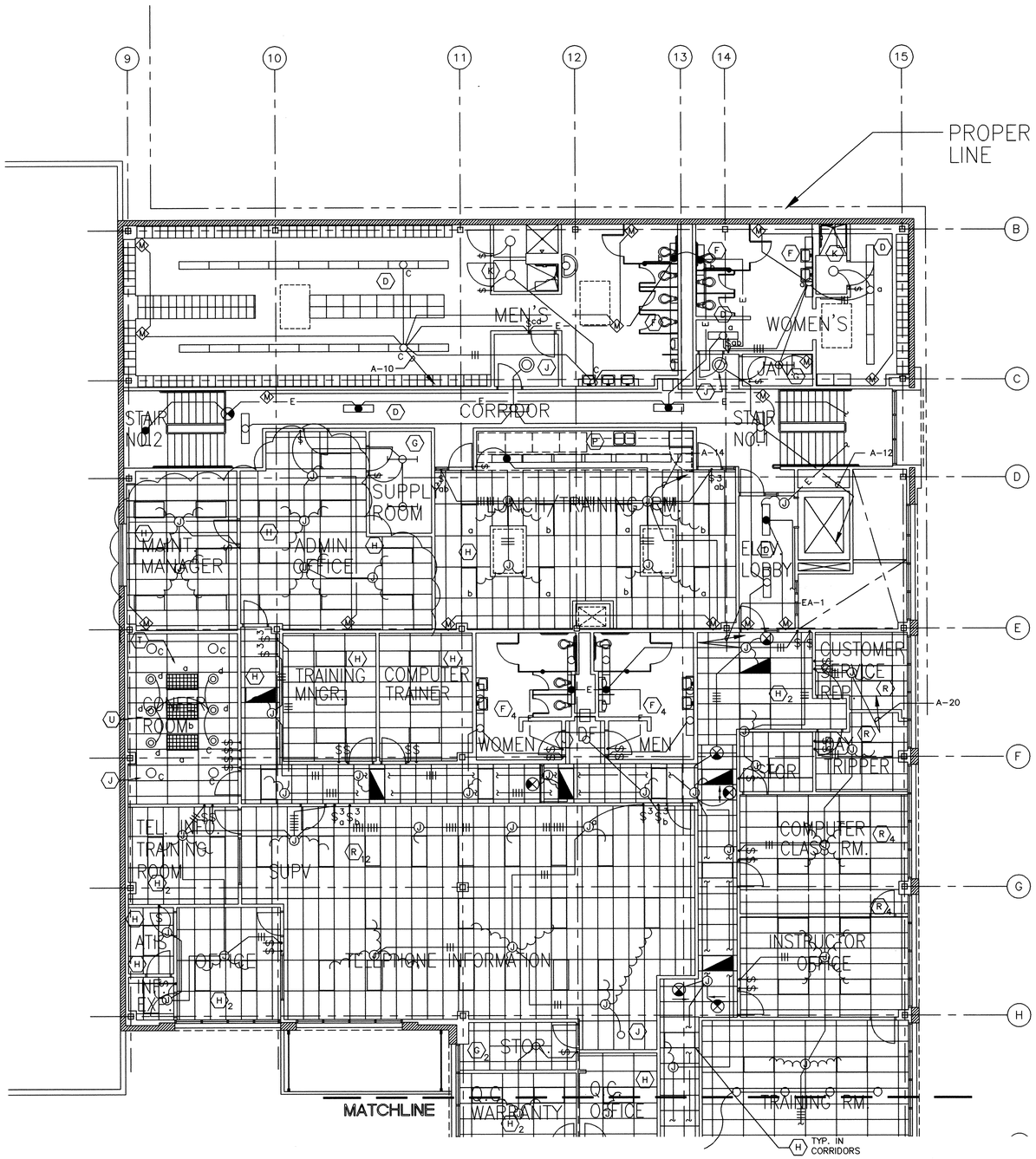
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

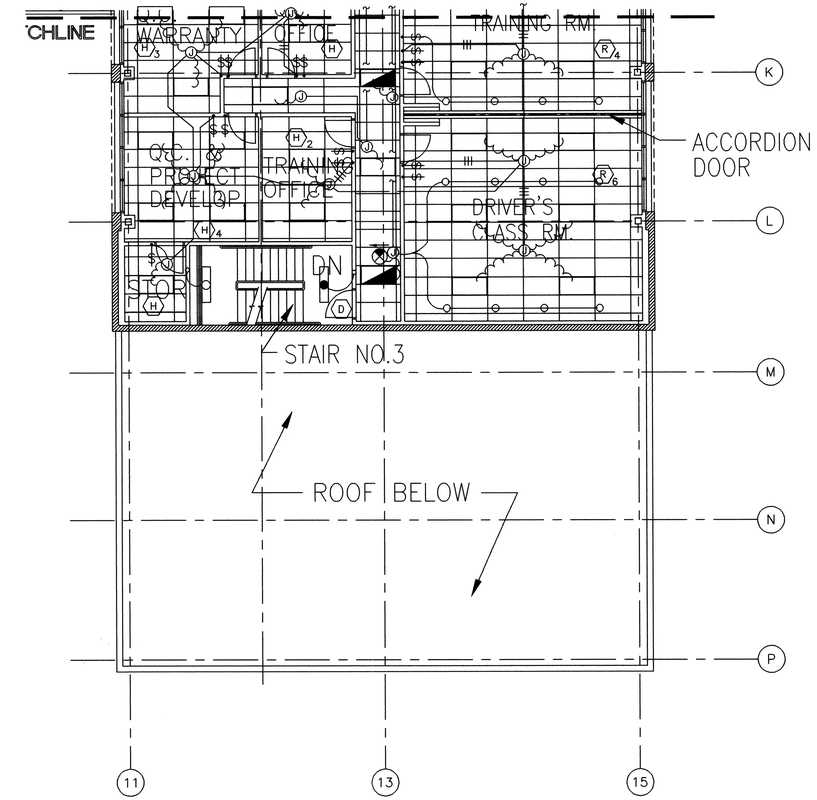
SECOND FLOOR LIGHTING PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E11.3
SHEET NO. 82

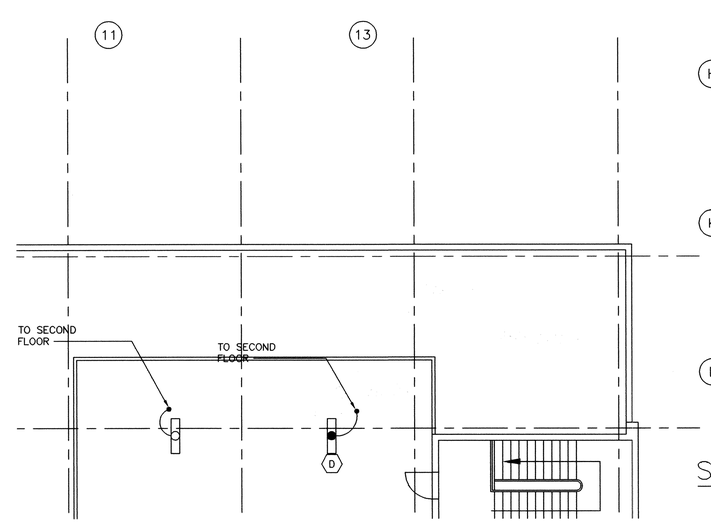
KANFAD PROJECT NUMBER 16007

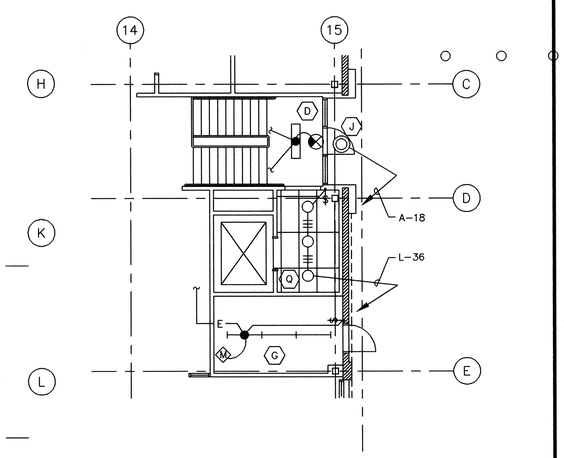


SECOND FLOOR LIGHTING PLAN 1 E11.3
1/8"=1'-0"



ROOF LEVEL LIGHTING PLAN 2 E11.3
1/8"=1'-0"





STREET LEVEL LIGHTING PLAN 3 E11.3
1/8"=1'-0"

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA 90017

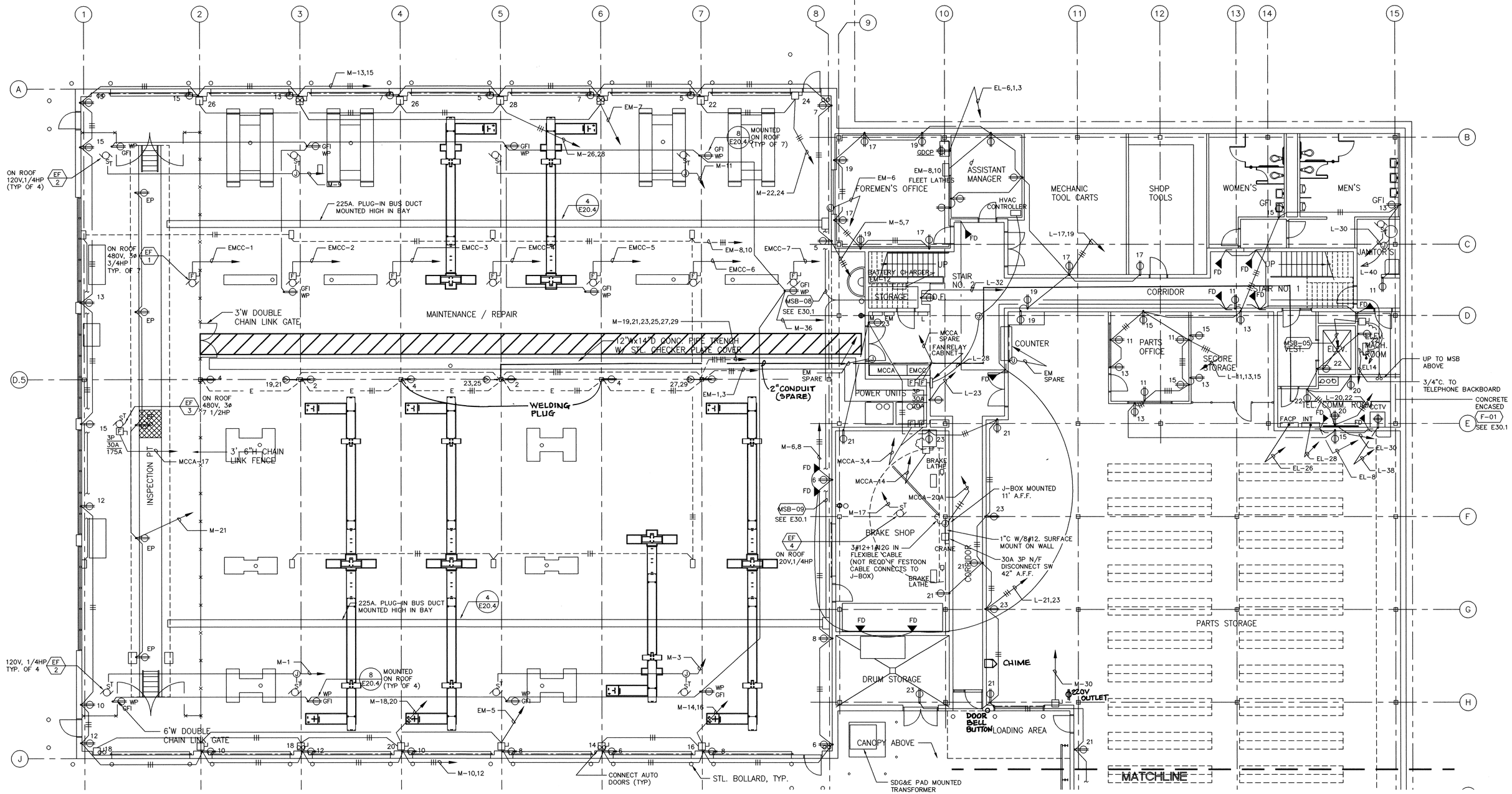
	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SECOND FLOOR LIGHTING PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E11.3
SHEET NO. 82



GROUND FLOOR NORTH POWER PLAN

1/8"=1'-0"

1 / E12.1

AS-BUILT

Contract No. BUS-443B

Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

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Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

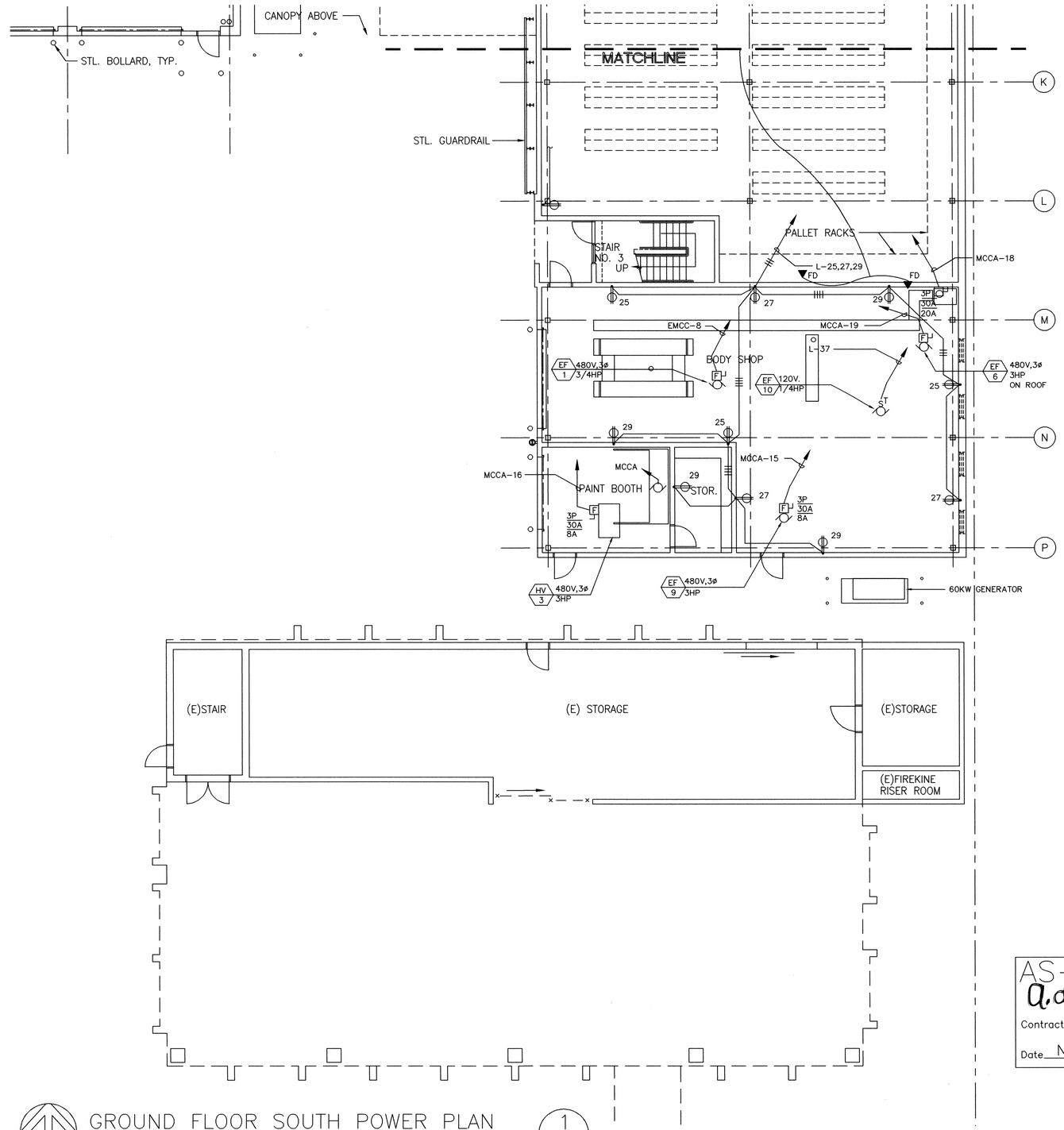
GROUND FLOOR NORTH POWER PLAN

SCALE 1/8"=1'-0"

MTDB CONTRACT NO. BUS-443B

DRAWING NO. E12.1

SHEET NO. 83



GROUND FLOOR SOUTH POWER PLAN 1/8"=1'-0" (1 / E12.2)

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD. SUITE 1455
LOS ANGELES, CA. 90017

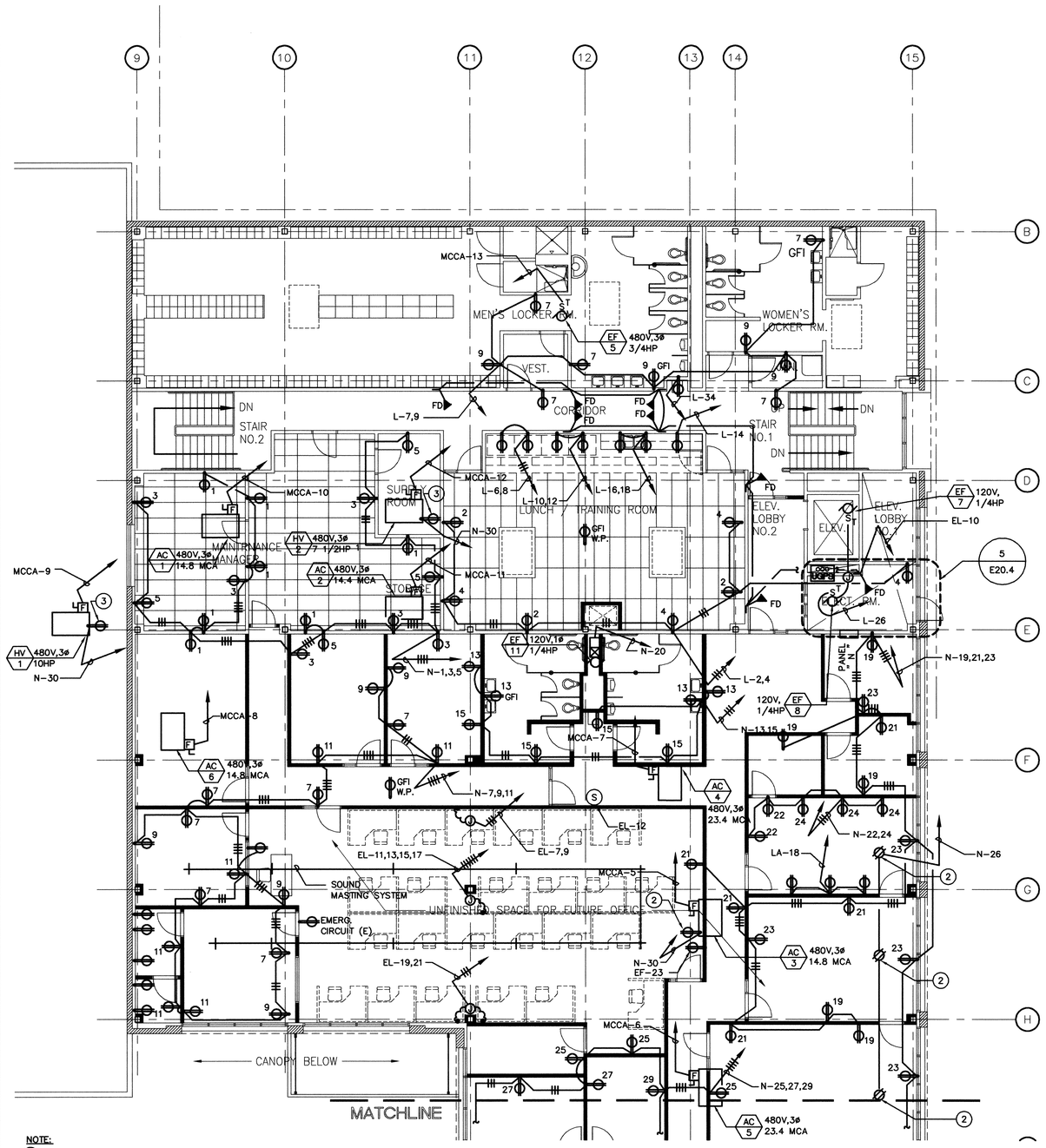
DESIGNED BY S. CONNER	DATE 11/98	
DRAWN BY K. SPRADLING	11/98	
CHECKED BY M. NIEDERHAUS	11/98	
MTDB PRJ. ENG.		

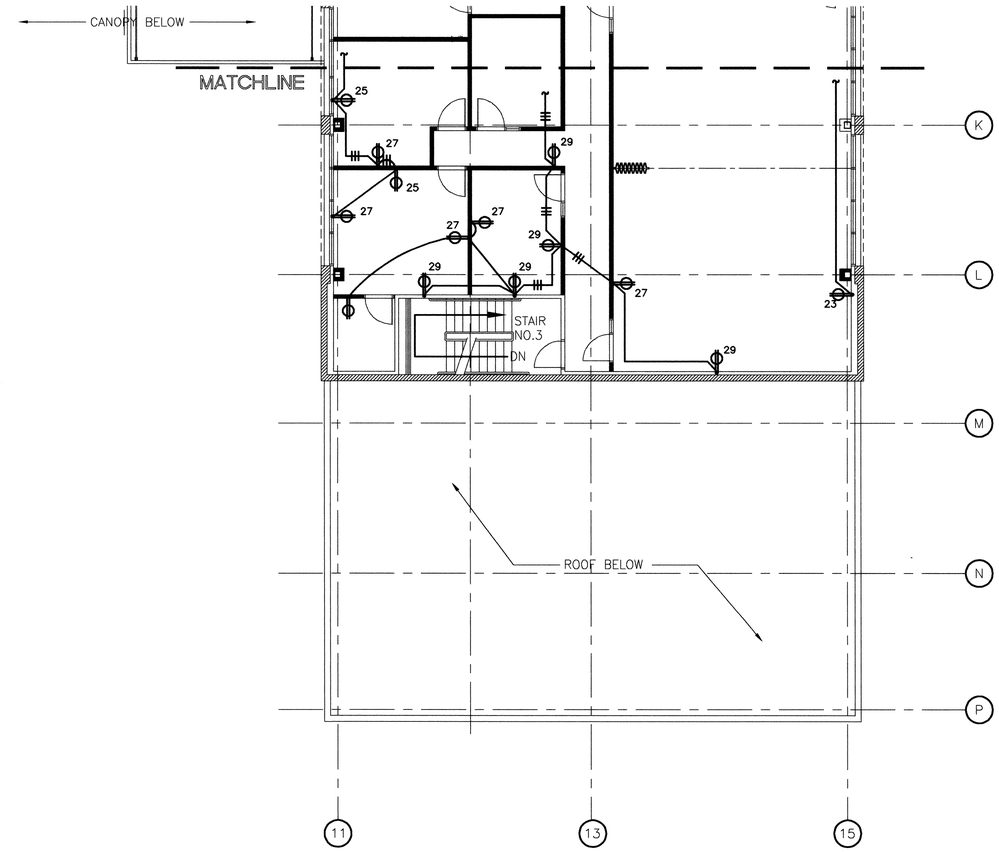
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

GROUND FLOOR SOUTH POWER PLAN

SCALE 1/8"=1'-0"	
MTDB CONTRACT NO. BUS-443B	
DRAWING NO. E12.2	SHEET NO. 84





NOTE:
SEE MCC SCHEDULES FOR SWITCH AND FUSE SIZE FOR DISCONNECTS. ALL ROOF MOUNTED DISCONNECTS SHALL BE WEATHERPROOF.

NOTE:

1. CONNECT TO RECEPTACLE RACEWAY.
2. PROVIDE DUPLEX RECEPTACLE FLUSH IN CEILING FOR OVERHEAD PROJECTOR. VERIFY EXACT LOCATION WITH OWNER REPRESENTATIVE PRIOR TO INSTALLATION.
3. PROVIDE GROUND FAULT PROTECTED DUPLEX RECEPTACLE IN WEATHERPROOF ENCLOSURE, ON ROOF, PER MECHANICAL CODE.

SECOND FLOOR POWER PLAN

1/8"=1'-0"

1 / E12.3

AS-BUILT
A. deBarros
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
MARK WAI KAN
No. 9304
Exp. 6-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS & PLANNERS,
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

		DATE
DESIGNED BY	M. NIEDERHAUS	6/00
DRAWN BY	K. SPRADLING	6/00
CHECKED BY	M. NIEDERHAUS	6/00
MTDB PRJ. ENG.		

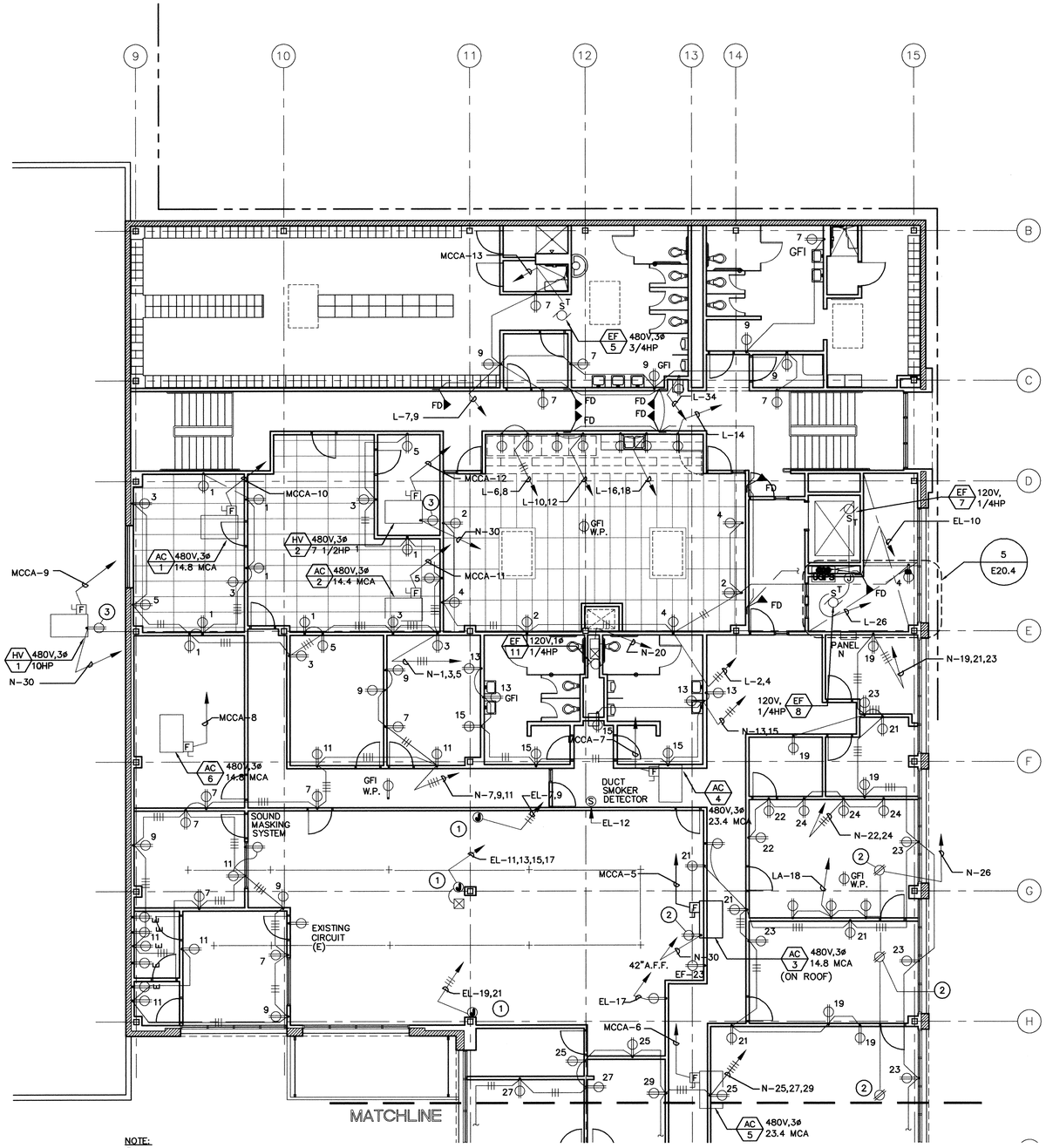
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

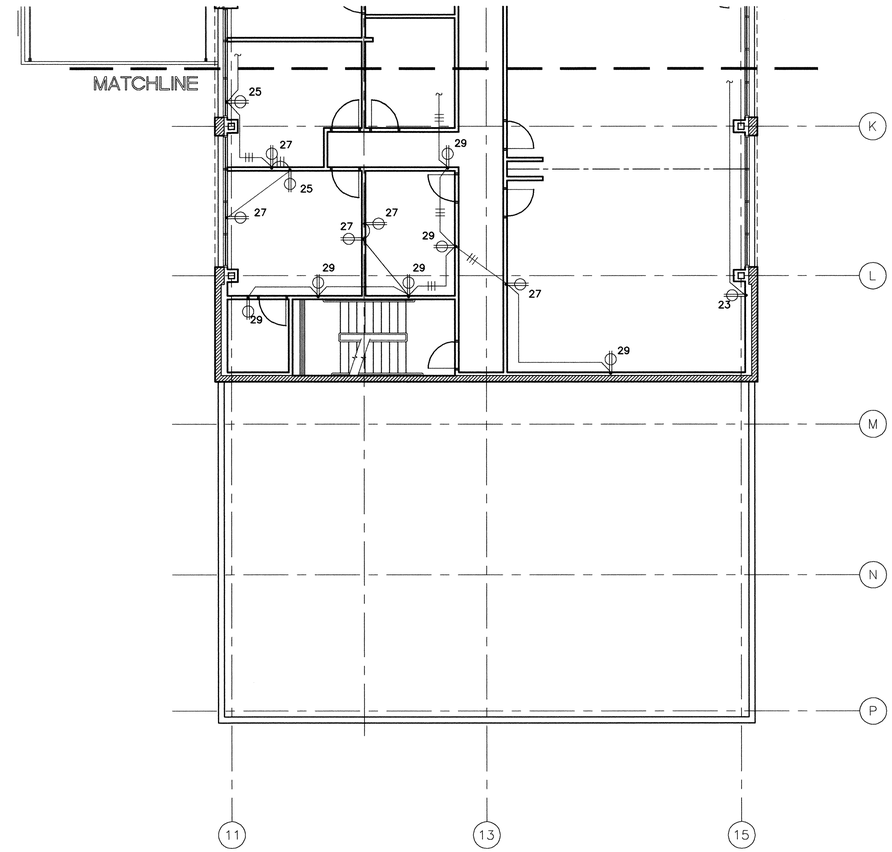
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SECOND FLOOR POWER PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO.
DRAWING NO. E12.3
SHEET NO. 85

KANPAD PROJECT NUMBER: 16007





NOTE:
SEE MCC SCHEDULES FOR SWITCH AND FUSE SIZE FOR DISCONNECTS. ALL ROOF MOUNTED DISCONNECTS SHALL BE WEATHERPROOF.

NOTE:

1. CONNECT TO RECEPTACLE RACEWAY.
2. PROVIDE DUPLEX RECEPTACLE FLUSH IN CEILING FOR OVERHEAD PROJECTOR. VERIFY EXACT LOCATION WITH OWNER REPRESENTATIVE PRIOR TO INSTALLATION.
3. PROVIDE GROUND FAULT PROTECTED DUPLEX RECEPTACLE IN WEATHERPROOF ENCLOSURE, ON ROOF, PER MECHANICAL CODE.

SECOND FLOOR POWER PLAN

1/8"=1'-0"

1 / E12.3

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
NICK WAI KAI
No. 9304
Exp. 9-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
1	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS
2	8/2/00	ADDED ELECT OUTLETS

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

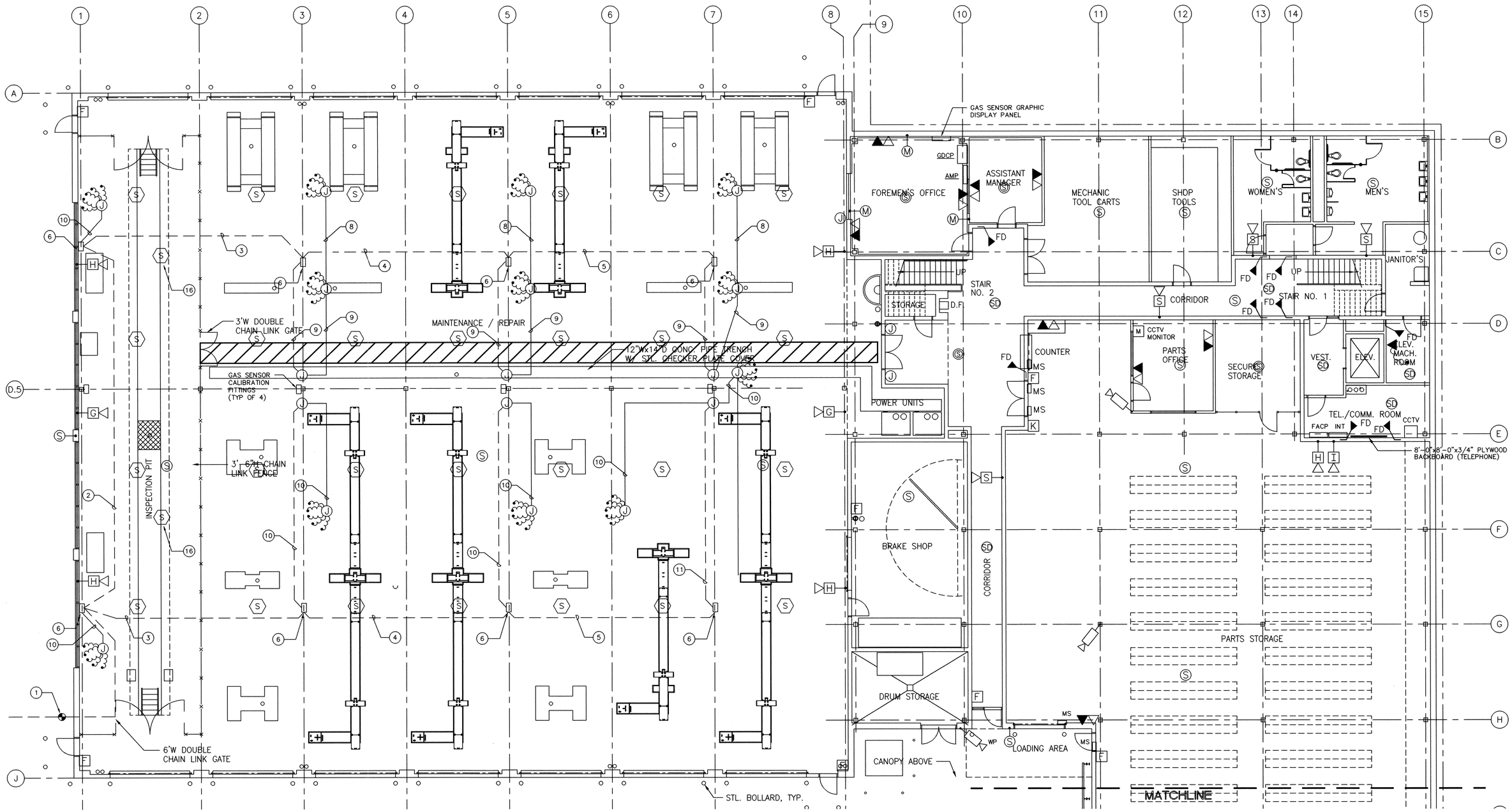
	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SECOND FLOOR POWER PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E12.3
SHEET NO. 85



NOTE:
SEE NOTES AND GENERAL NOTES ON SHEET E20.1

GROUND FLOOR NORTH SIGNAL PLAN
1/8"=1'-0"
1
E13.1

NOTE:
FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
KWOK WAI KAN
No. 9304
Exp. 9-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

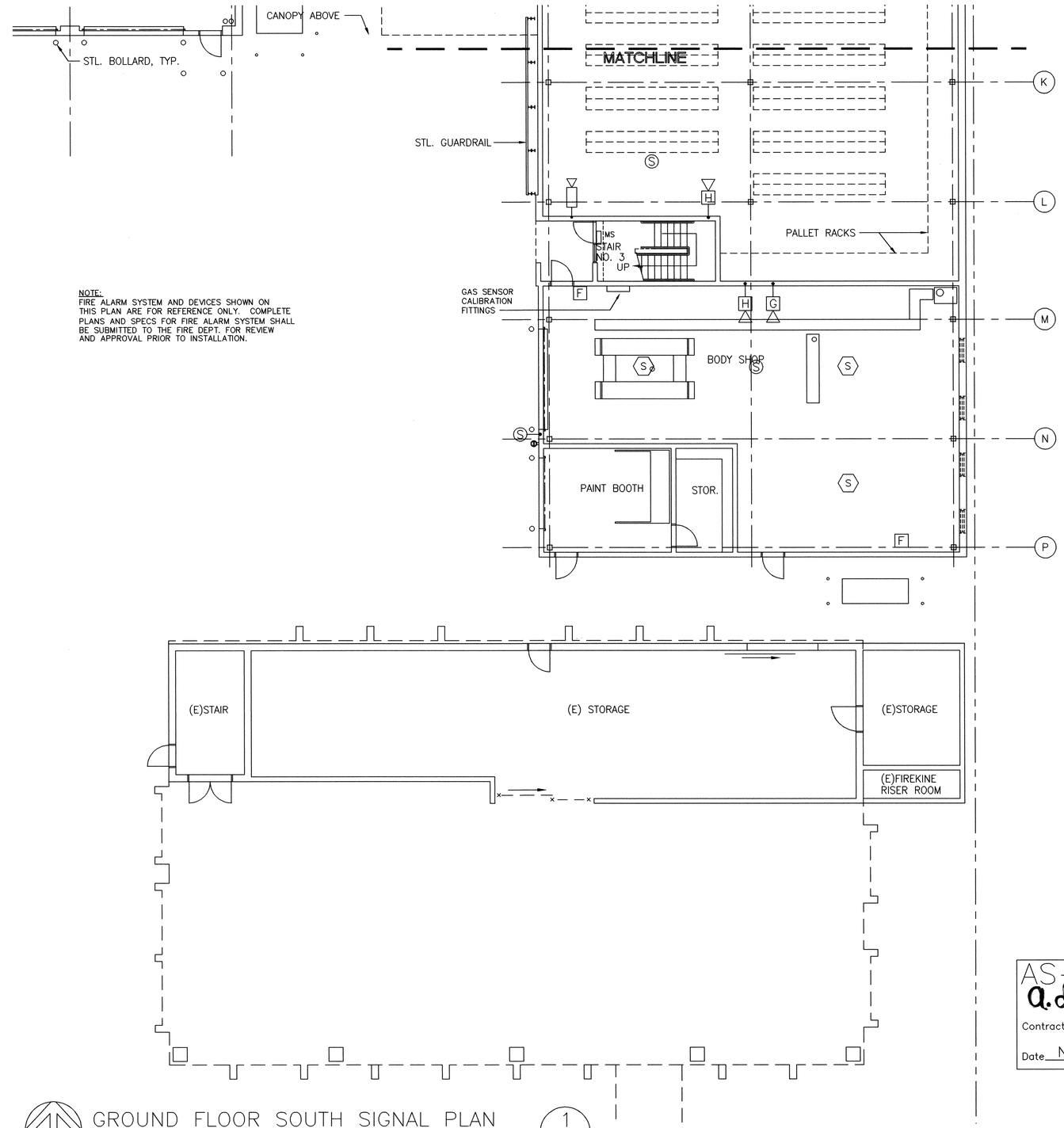
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

GROUND FLOOR NORTH SIGNAL PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E13.1
SHEET NO. 86



NOTE:
FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

GROUND FLOOR SOUTH SIGNAL PLAN 1/8"=1'-0" 1 E13.2

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

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DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
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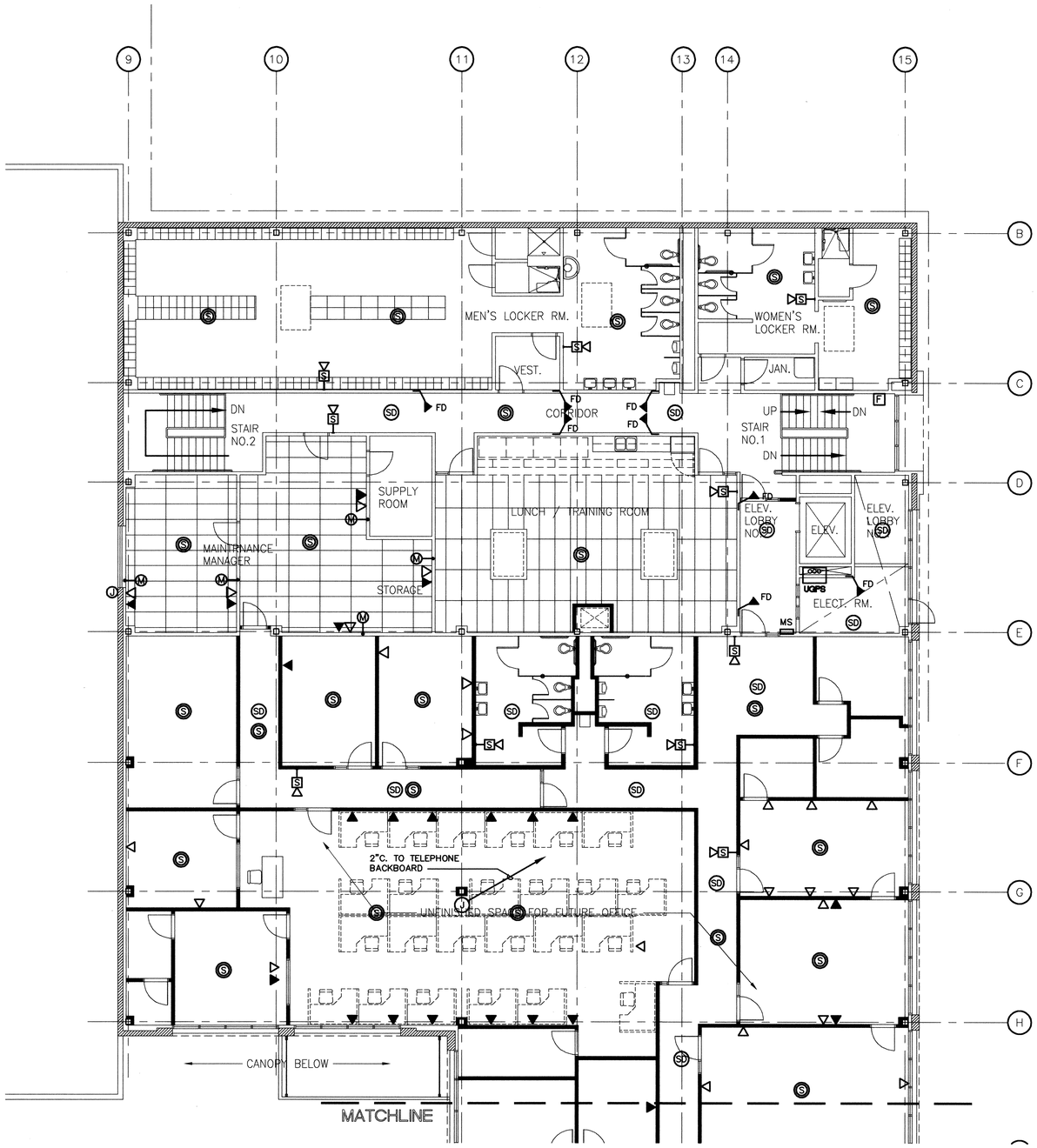
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

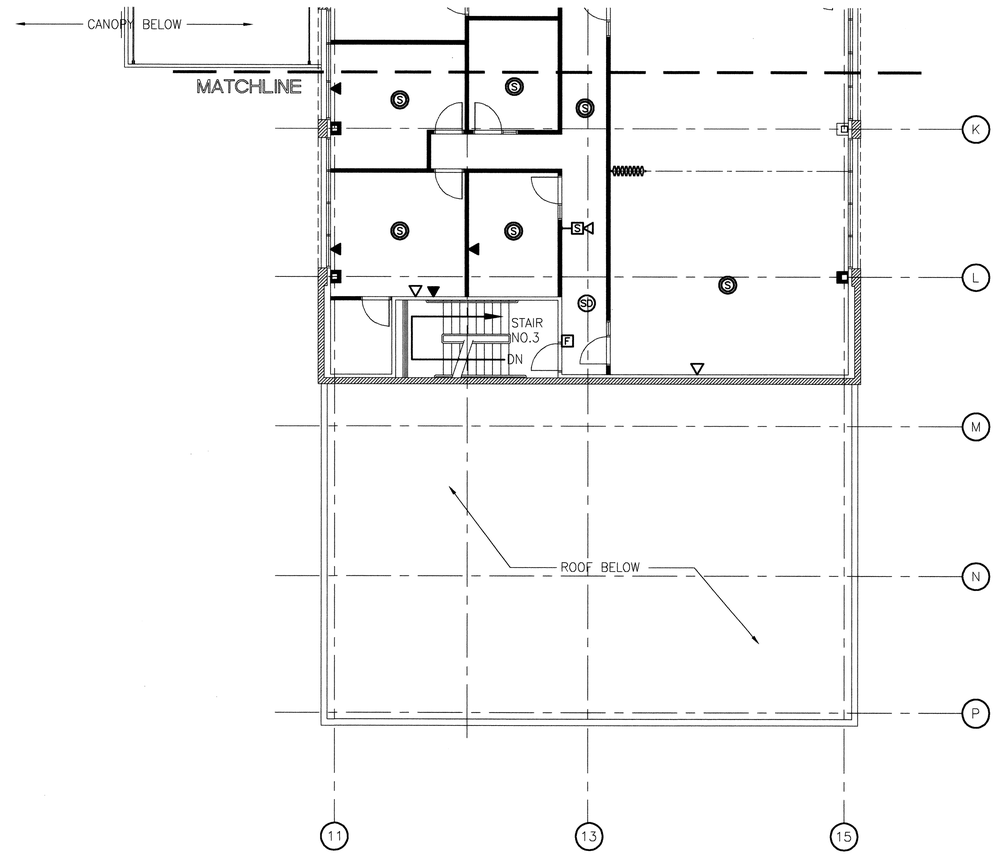
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

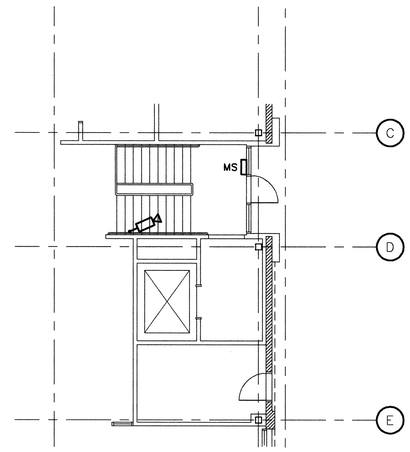
GROUND FLOOR SOUTH SIGNAL PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E13.2
SHEET NO. 87



SECOND FLOOR SIGNAL PLAN 1/8"=1'-0" 1 E13.3





STREET LEVEL SIGNAL PLAN 1/8"=1'-0" 2 E13.3

NOTES:

1. FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
2. ALL TELEPHONE OUTLETS SHALL HAVE 1/2"C. TO TELEPHONE BACKBOARD.

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

KANRAD PROJECT NUMBER 16007

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS & PLANNERS, 1055 WILSHIRE BLVD., SUITE 1455 LOS ANGELES, CA. 90017

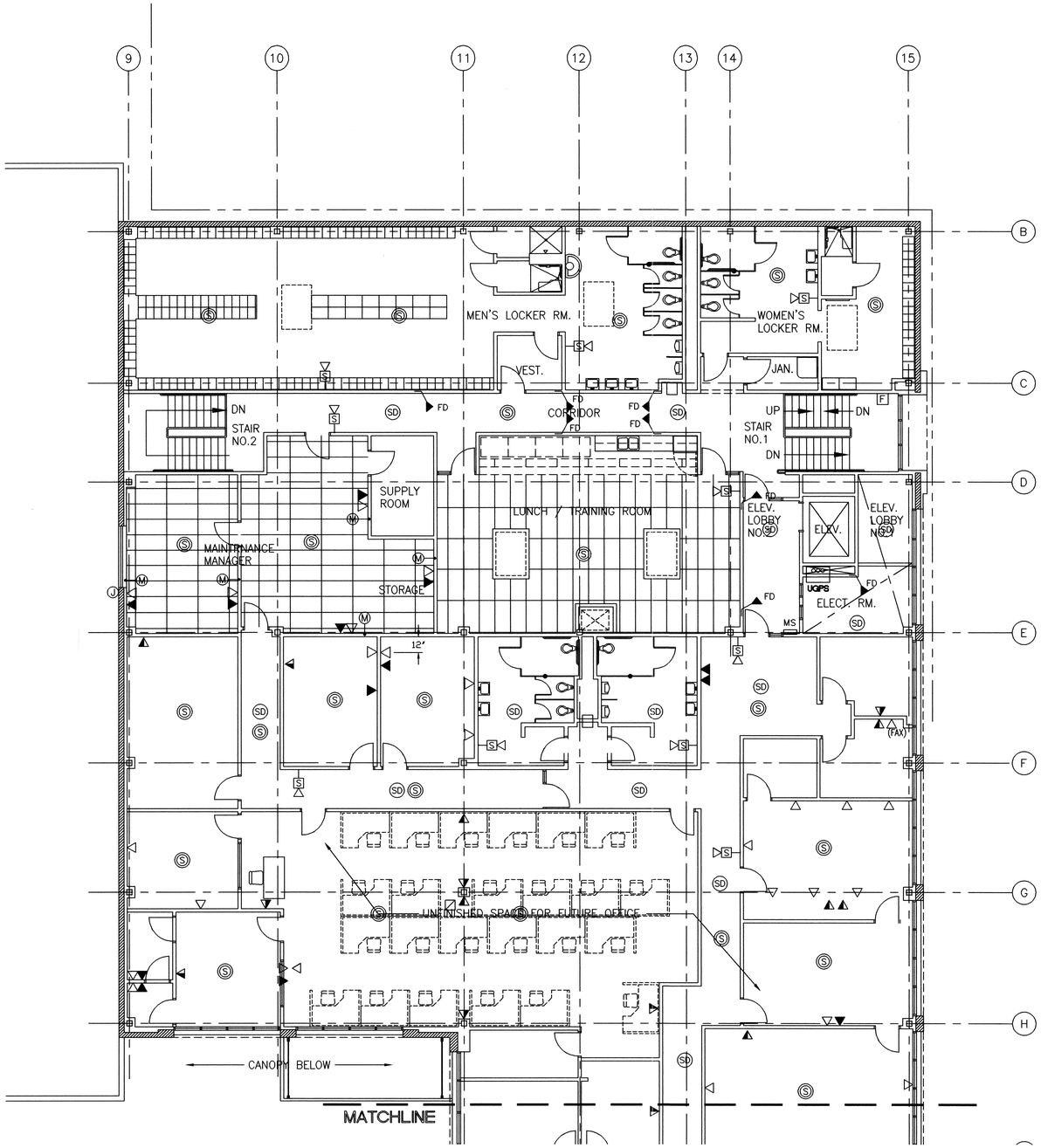
	DATE
DESIGNED BY M. NIEDERHAUS	6/00
DRAWN BY K. SPRADLING	6/00
CHECKED BY M. NIEDERHAUS	6/00
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

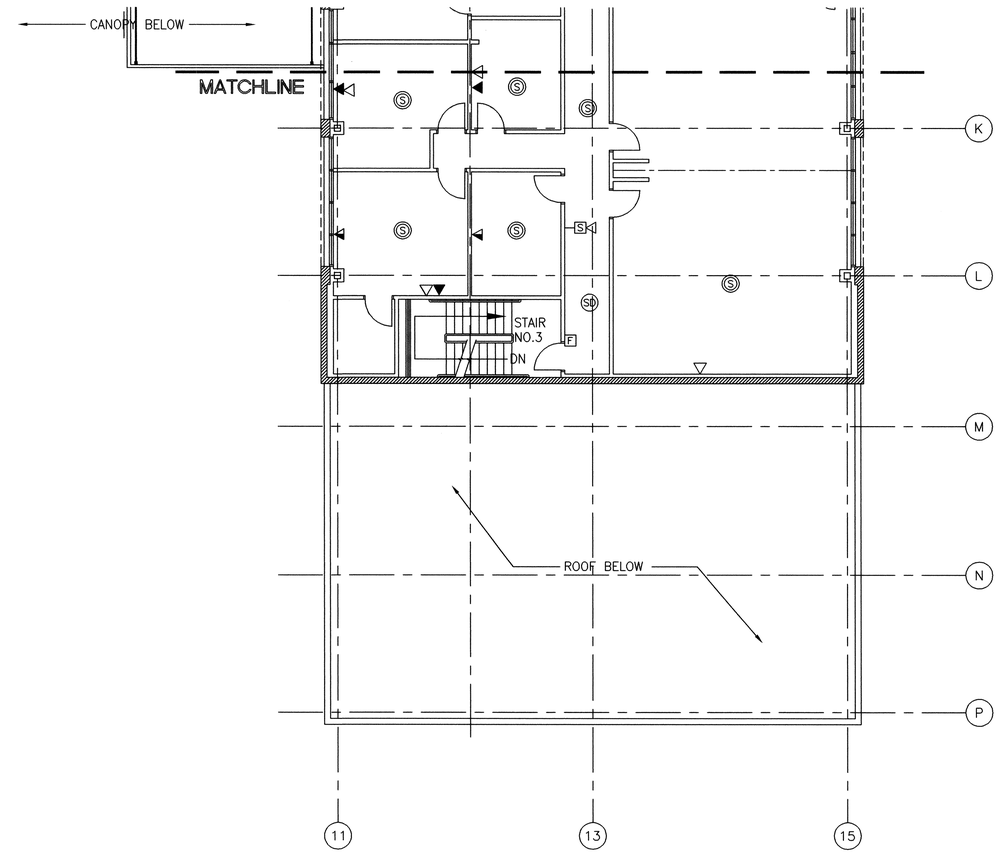
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SECOND FLOOR SIGNAL PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO.
DRAWING NO. E13.3
SHEET NO. 88



SECOND FLOOR SIGNAL PLAN 1 E13.3
1/8"=1'-0"

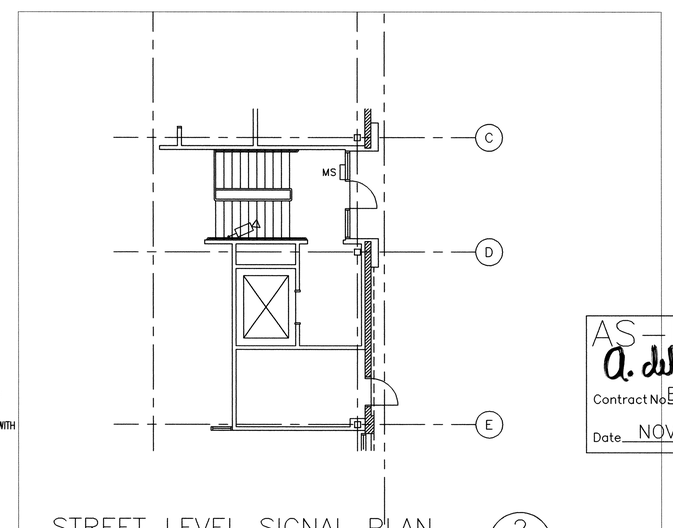


NOTE:
FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

◁ TELEPHONE OUTLET 15" A.F.F. UNLESS OTHERWISE NOTED, WITH 1/2"C STUBBED ABOVE CEILING.

◀ COMPUTER DATA PORT 15" A.F.F. UNLESS OTHERWISE NOTED, WITH 1/2"C STUBBED ABOVE CEILING.

◀ DUPLEX TEL./ DATA PORT 15" A.F.F. UNLESS OTHERWISE NOTED, WITH 1/2"C STUBBED ABOVE CEILING.



STREET LEVEL SIGNAL PLAN 2 E13.3
1/8"=1'-0"

AS-BUILT
A. deFrancet
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
	8/2/00	REVISED TELEPHONE & DATA PORT OUTLETS

STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SECOND FLOOR SIGNAL PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E13.3
SHEET NO. 88

LIGHTING FIXTURE SCHEDULE

TYPE	FIXTURE						VOLTS				LAMPS			MOUNTING					DESCRIPTION	MFR & CATALOG NO.
	FLUOR	INCAN	HPS	LPS	MH	LED	120	277	12	480	NO.	TYPE	WATTS	REC	SURF	PEND	WALL	POLE		
A					X			X			1	250W M.H.	295			X			HIGH BAY INDUSTRIAL WITH BOROSILICATE GLASS OPTICS. 25% UPLIGHT & 75% DOWNLIGHT FIXTURE TO BE MOUNTED 20' A.F.F.	HOLOPHANE #CG250MPXXPDB
A1					X			X			1 1	250W M.H. 250W QUARTZ	295			X			SAME AS FIXTURE TYPE "A" EXCEPT WITH A QUARTZ RESTRIKE SYSTEM	HOLOPHANE #CG250MPXXPDB-ER
B	X							X			2	F32T8	62			X			2-LAMP INDUSTRIAL FLUORESCENT	LITHONIA #AF10232/277GEB10
C	X							X			2	F32T8	62		X				2-LAMP INDUSTRIAL FLUORESCENT	LITHONIA #AF10232/277GEB10
D	X							X			2	F32T8	62		X				2-LAMP PLASTIC WRAPAROUND FLUORESCENT	LITHONIA #LB232/277GEB10
E						X		X			–	LED	1				X		EXIT LIGHT WITH LED AND BATTERY PACK	LITHONIA #LQMLEDSWIR120/277EL
F	X							X			2	F32T8	62				X		2-LAMP FLUORESCENT, WALL MOUNT AT CEILING	LITHONIA #WS232A12/277GEB10
G	X							X			1	F32T8	31		X				2-LAMP FLUORESCENT STRIP	LITHONIA #C232/277GEB10
H	X							X			2	F32T8	62	X					2x4 FLUORESCENT LAY-IN	LITHONIA #2GT232A12/277GEB10SSR
I			X					X			1	250W HPS	295				X		HIGH PRESSURE SODIUM WALL PACK	LITHONIA #TWH250S277
J	X							X			1	26DTT	31	X					6" OPEN DOWNLIGHT, DAMP LOCATION LABEL	LITHONIA #AF1/26DTTGAR277GEB
K	X							X			2	26DTT	62	X					7" ROUND LENSED SHOWER LIGHT	LITHONIA #LGF2/26DTT7RWFFL277GEB
L					X			X			1	250W MH	295				X		42 FOOT LONG LIGHT PIPE CLASS 1, DIVISION 2, GROUP D	TIR #T8400
M		X					X				1	100W IF	100				X		PORCELAIN SOCKET WITH WIRE GUARD	LEVITON #9875
N	X							X			2	F32T8	62		X				2-LAMP FLUORESCENT CLASS-1, DIVISION 1, GROUP D	APPLETON #ARS232-277
P	X							X			1	F32T8	31	X					1x4 FLUORESCENT LAY-IN	LITHONIA #2FT132A12/277GEB10SSR
Q		X					X				1	50W MR16	50			X			GLASS RLM WITH AIRCRAFT CABLE HANGER FIXTURE AT +8'-0"	LSI #CRYBD 50HL 12V OQ CH72BLK SWAG

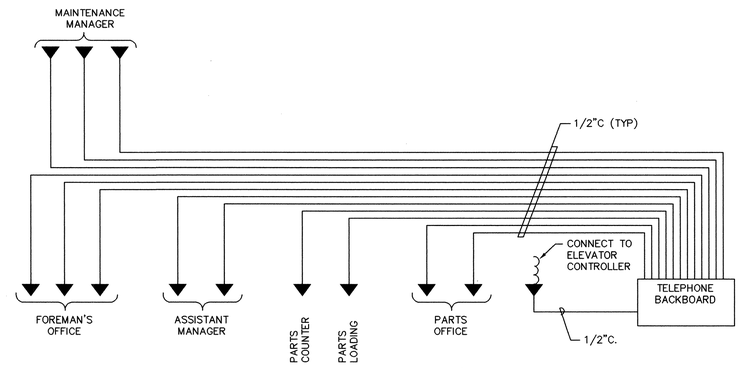
NOTES

1. INTERCEPT EXISTING UNDERGROUND CONDUIT FROM EXISTING FLEET WATCH CONTROLLER C50 LOCATED IN BUILDING 4. EXTEND TO REMOTE ISLAND HEAD UNIT WITH 1 1/4". PROVIDE NEW (8) 3 TSP #18.
2. PROVIDE NEW 1"C-(4) 3 TSP #18.
3. PROVIDE NEW 3/4"C-(3) 3 TSP #18.
4. PROVIDE NEW 3/4"C-(2) 3 TSP #18.
5. PROVIDE NEW 3/4"C-(1) 3 TSP #18.
6. PROVIDE REMOTE ISLAND HEAD UNIT (FLEET WATCH R1H20) MOUNT AT +4'-6" AFF ON GALVANIZED "C" CHANNEL MOUNTING BRACKET TO FLOOR (TYPICAL).
7. CONNECT EACH FLUID SOLENOID WITH 1/2" FLEX 2#14 AND EACH PULSE METER WITH 1/2" FLEX CONDUIT WITH 2#18. TYPICAL ALL LOCATIONS. FLUID SOLENOID & PULSE METER PROVIDED UNDER DIVISION 15.
8. PROVIDE 3/4"C-8#14, 8#18.
9. PROVIDE 1"C-18#14, 18#18.
10. PROVIDE 3/4"C-10#14, 10#18.
11. PROVIDE 1 1/4"C-20#14, 20#18.
12. NOT USED.
13. NOT USED.
14. NOT USED.
15. NOT USED.
16. PROVIDE GAS SENSORS IN PIT.

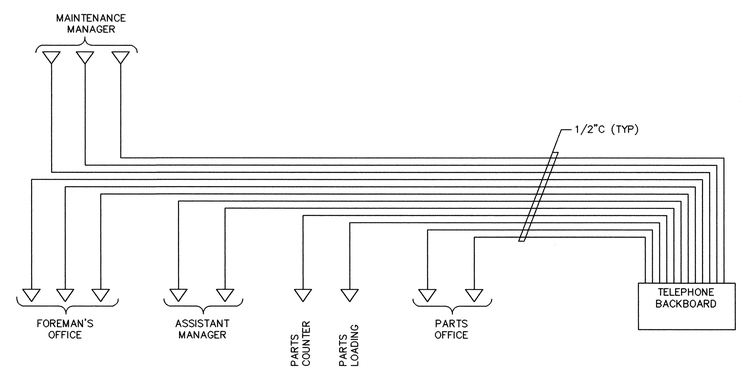
GENERAL NOTES

1. COORDINATE INSTALLATION OF FLEET WATCH SYSTEM WITH S & A SYSTEM, INC. MR. JAMES SRYGLEY (972) 722-1009.
2. MODIFY SOFTWARE IN EXISTING FLEET WATCH CONTROLLER C50 LOCATED IN BUILDING 4 TO ACCEPT NEW ISLAND HEAD UNITS, FLUID SOLENOIDS AND PULSE METERS.

RISER DIAGRAM - TELEPHONE



RISER DIAGRAM - DATA



AS-BUILT
A. deLeonard
Contract No BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
WOA WAI KAN
No. 9304
Exp. 9-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

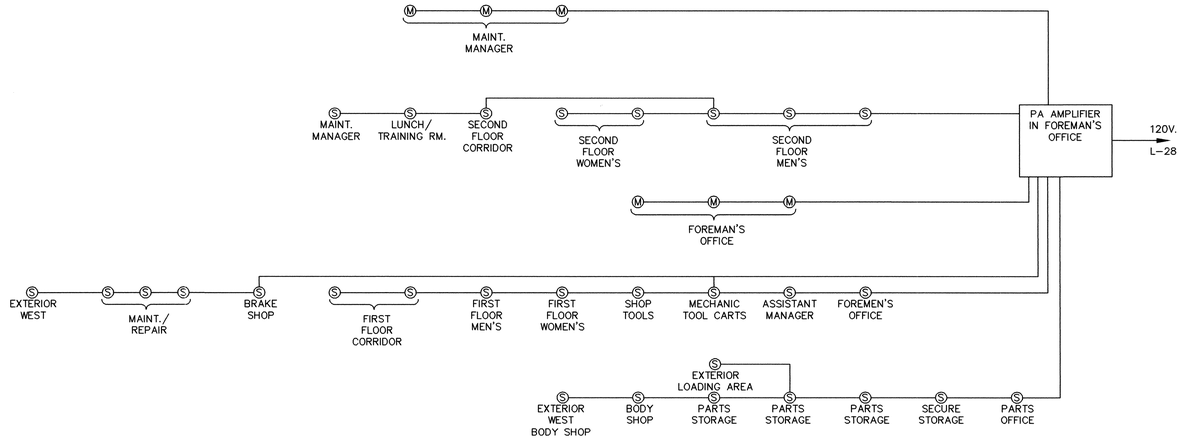
	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

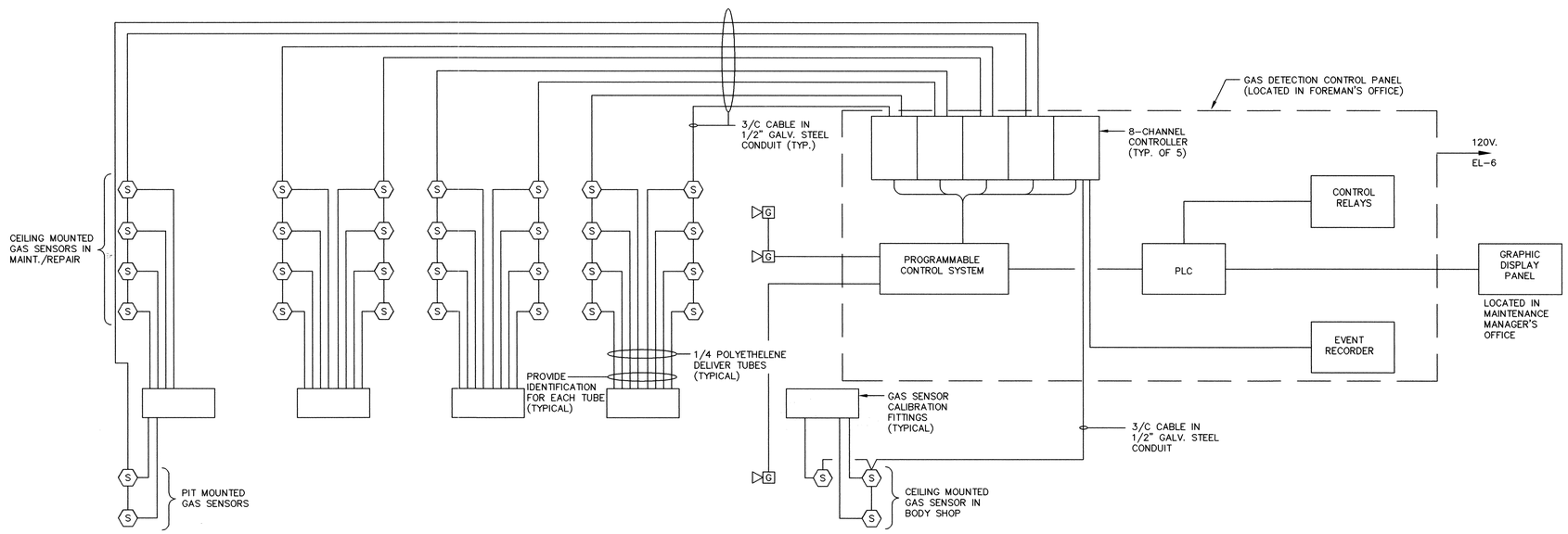
IMPERAIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

FIXTURE SCHEDULE & RISER DIAGRAMS

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E20.1
SHEET NO. 89



RISER DIAGRAM – P.A. SYSTEM (1 / E20.2)
NONE



RISER DIAGRAM – CNG. DETECTION SYSTEM (2 / E20.2)
NONE

NOTE:
PROVIDE CONTROL CONTACTS AND WIRING TO SELECTED MOTOR STARTERS AND OPERATIONS. SEE SEQUENCE OF OPERATION.

CNG DETECTION SYSTEM NOTES:

1. CONTRACTOR SHALL SUBMIT COMPLETE PLANS AND SPECIFICATIONS FOR THE CNG DETECTION SYSTEM TO THE CITY OF SAN DIEGO FIRE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. PROVIDE PERMIT NUMBER: TA _____

SEQUENCES OF OPERATION

1. LOW LEVEL ALARM (20% LEL) –
   - SOUND ALL GAS ALARM HORNS (95db) AND STROBES.
   - TURN ON ALL GAS EVACUATION EXHAUST FANS IN MAINTENANCE/REPAIR AND BODY SHOP.
   - TURN OFF ALL REGULAR EXHAUST FANS IN MAINTENANCE/ REPAIR AND BODY SHOP.
   - ACTIVATE SELECTED ROLL UP DOORS TO OPEN POSITION. (DOORS ON EMERGENCY POWER)
2. HIGH LEVEL ALARM (40% LEL) –
   - SHUNT TRIP ALL CIRCUIT BREAKERS ON CIRCUITS TO MAINTENANCE/REPAIR AND BODY SHOP.

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

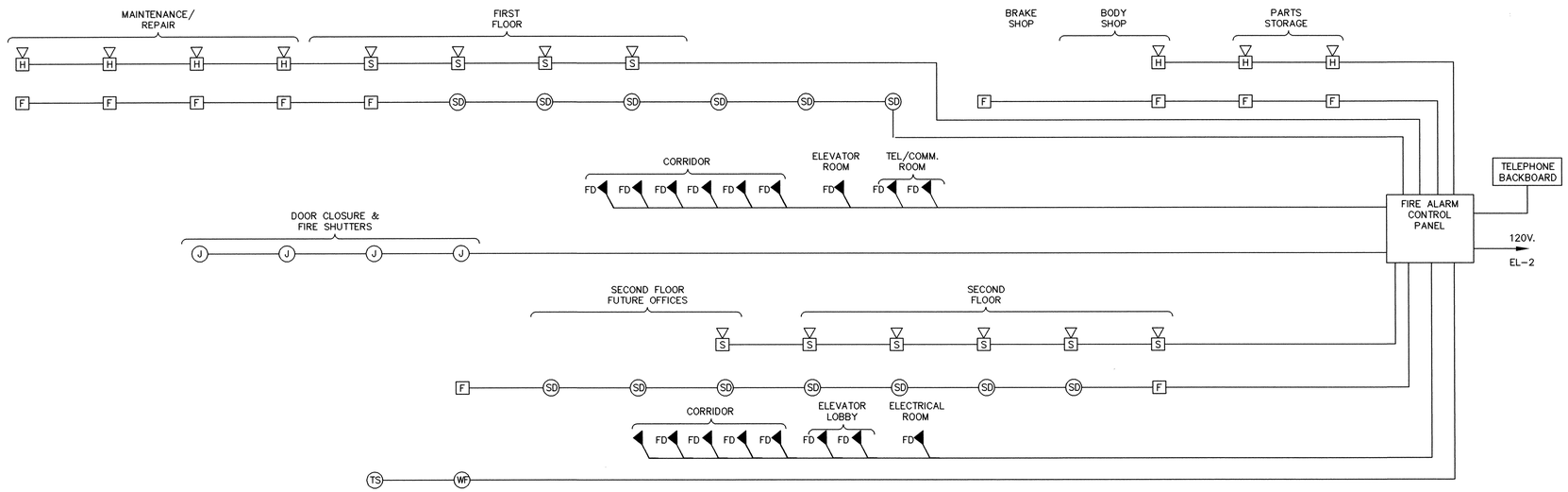
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

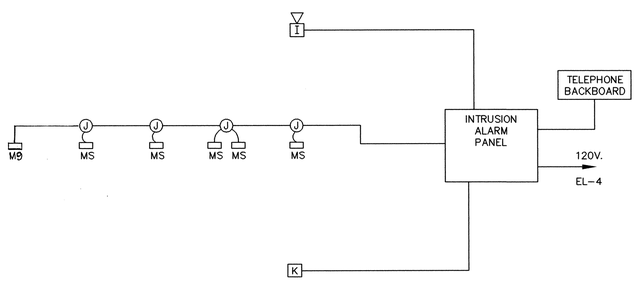
RISER DIAGRAMS

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E20.2
SHEET NO. 90

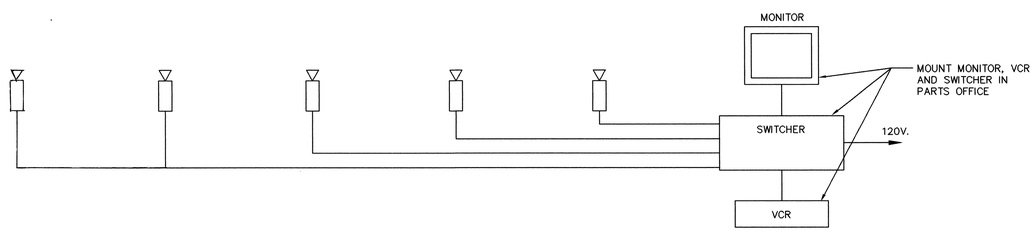
NOTE:
FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.



RISER DIAGRAM – FIRE ALARM SYSTEM (1 / E20.3)
NONE



RISER DIAGRAM – INTRUSION ALARM SYSTEM (2 / E20.3)
NONE



RISER DIAGRAM – CCTV SYSTEM (3 / E20.3)
NONE

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
MOK WAI KAN
No. 9304
Exp. 9-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS,
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

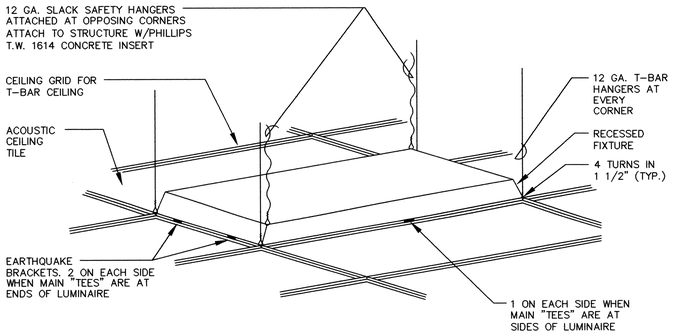
DESIGNED BY S. CONNER	DATE 11/98	
DRAWN BY K. SPRADLING	11/98	
CHECKED BY M. NIEDERHAUS	11/98	
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

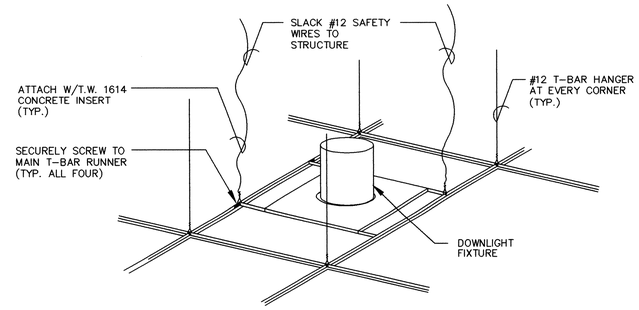
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

RISER DIAGRAMS

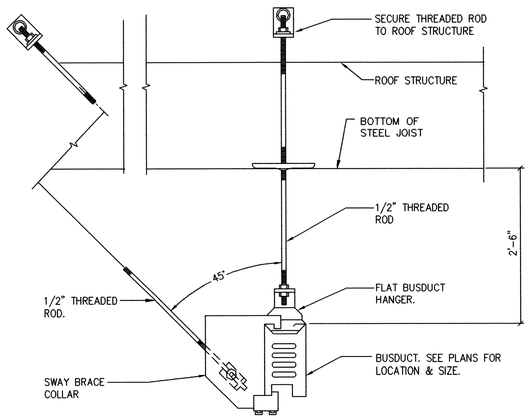
SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E20.3
SHEET NO. 91



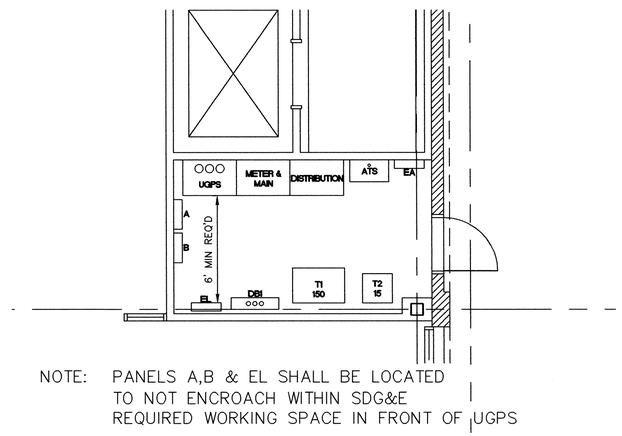
SEISMIC RESTRAINT SUPPORT DETAIL 1 / E20.4
NONE



SEISMIC RESTRAINT SUPPORT DETAIL 2 / E20.4
NONE

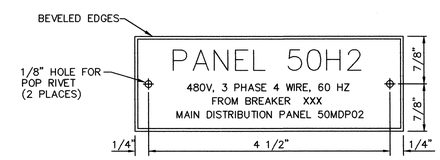


BUS DUCT SUPPORT DETAIL 4 / E20.4
NONE



NOTE: PANELS A,B & EL SHALL BE LOCATED TO NOT ENCROACH WITHIN SDG&E REQUIRED WORKING SPACE IN FRONT OF UGPS

ELECTRICAL ROOM ENLARGED PLAN 5 / E20.4
SCALE: 1/4" = 1'-0"



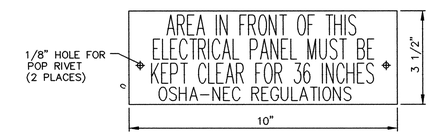
TOP ROW: 3/8" LETTERS
OTHER ROWS: 1/8" LETTERS
1/4" SPACING BETWEEN FIRST 2 ROWS
1/8" SPACING BETWEEN OTHER ROWS

COLOR SCHEDULE

PANEL TYPE	BACKGROUND	LETTERING
208/120 VOLT, 60 HZ	GREEN	BLACK
480 VOLT, 60 HZ	GREEN	BLACK
EMERGENCY SERVICES	RED	BLACK

REQUIRED DATA
FIRST LINE: PANEL DESIGNATION
SECOND LINE: PHASE, VOLTAGE, FREQUENCY
THIRD & FOURTH LINES: POWER SOURCE & BREAKER
XXX = BASED ON FINAL DESIGN SHOP DRAWING

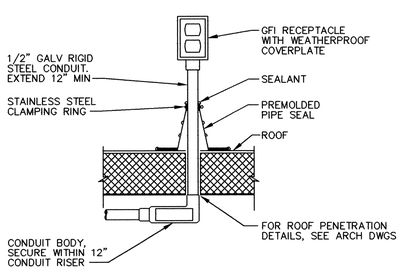
PANELBOARD NAMEPLATE DETAIL 6 / E20.4
NONE



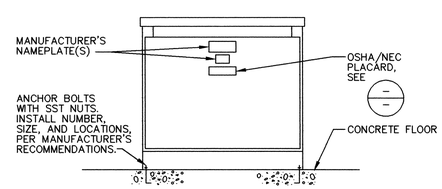
TOP 3 ROWS: 3/4" LETTERS
BOTTOM ROW: 1/2" LETTERS

BLACK LETTERING ON WHITE BACKGROUND

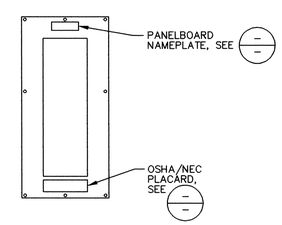
OSHA/NEC PLCARD DETAIL 7 / E20.4
NONE



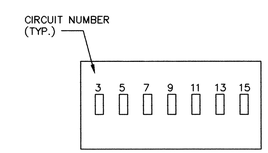
RECEPTACLE AT ROOF DETAIL 8 / E20.4
NONE



TRANSFORMER DETAIL 9 / E20.4
NONE



TYP. PANELBOARD DOOR 10 / E20.4
NONE



MAINTENANCE BAY SWITCHES 11 / E20.4
NONE

AS-BUILT
A. Lebarand
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
1	9/29/99	CHG DOOR SWING, ADD NOTES, RM 208

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

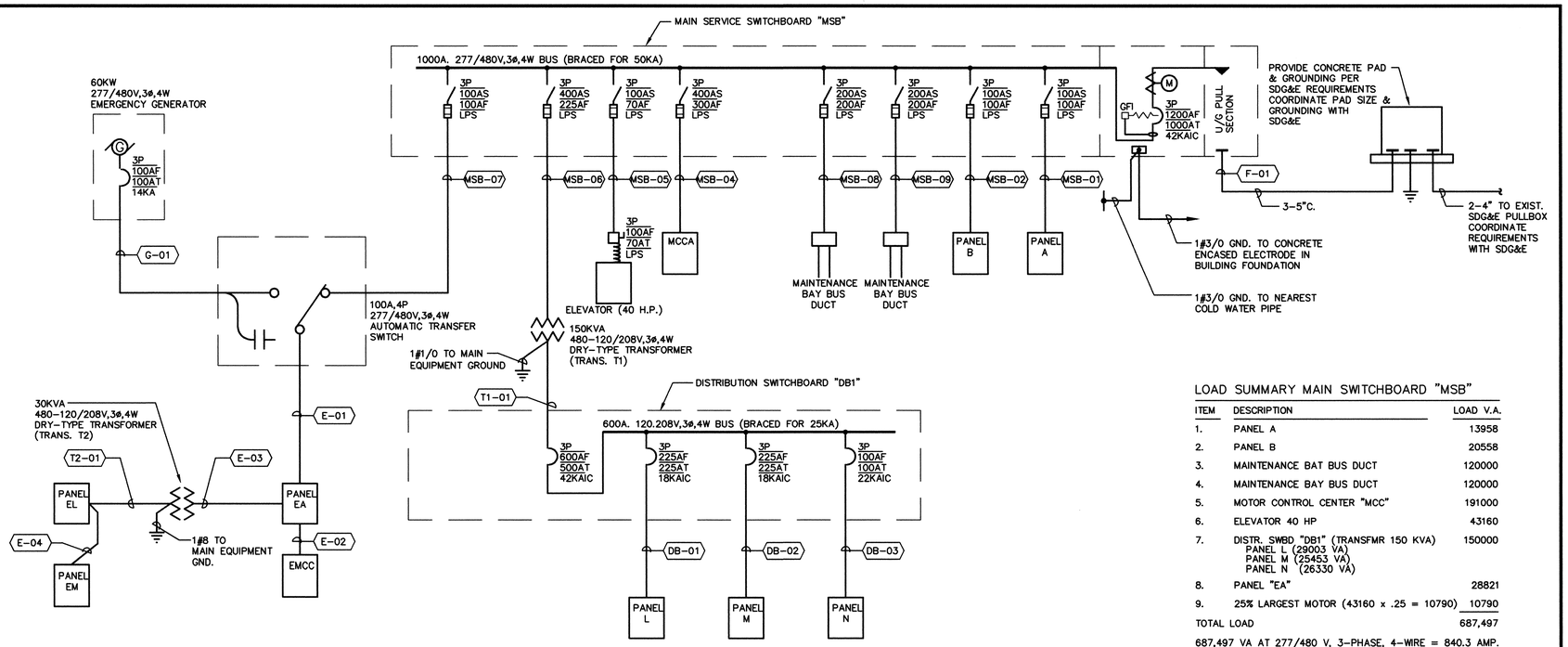
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

DETAILS AND ENLARGED PLAN

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E20.4
SHEET NO. 92

FEEDER SCHEDULE

NO.	CONDUIT QUANTITY	CONDUIT SIZE	CONDUCTORS (EACH CONDUIT)	FROM	TO
F-01	3	5"	BY POWER CO.	PAD MOUNT TRANS.	MAIN SWITCHBOARD "MSB"
MSB-01	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL "A"
MSB-02	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL "B"
MSB-04	1	2 1/2"	4#350MCM, 1#4	MAIN SWITCHBOARD "MSB"	MOTOR CONTROL CENTER MCCA
MSB-05	1	1"	3#4, 1#8 GND.	MAIN SWITCHBOARD "MSB"	ELEVATOR
MSB-06	1	2"	3#4/0, 1#4 GND.	MAIN SWITCHBOARD "MSB"	TRANS. T1
MSB-07	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	AUTOMATIC TRANSFER SWITCH
MSB-08	1	2"	4#3/0, 1#4 GND.	MAIN SWITCHBOARD "MSB"	BUS DUCT
MSB-09	1	2"	4#3/0, 1#4 GND.	MAIN SWITCHBOARD "MSB"	BUS DUCT
DB-01	1	2 1/2"	4#4/0, 1#4 GND.	DIST. SWITCHBOARD "DB1"	PANEL "L"
DB-02	1	2 1/2"	4#4/0, 1#4 GND.	DIST. SWITCHBOARD "DB1"	PANEL "M"
DB-03	1	1 1/4"	4#2, 1#8 GND.	DIST. SWITCHBOARD "DB1"	PANEL "N"
G-01	1	1 1/4"	4#2, 1#8 GND.	EMERGENCY GENERATOR SWITCH	AUTOMATIC TRANSFER SWITCH
E-01	1	1 1/4"	4#2, 1#8 GND.	AUTOMATIC TRANSFER SWITCH	PANEL "EA"
E-02	1	1 1/4"	3#2, 1#8 GND.	PANEL "EA"	PANEL EMCC
E-03	1	3/4"	3#6, 1#10 GND.	PANEL "EA"	TRANS. T2
E-04	1	1"	4#4, 1#8 GND.	PANEL "EL"	PANEL "EM"
T1-01	2	2 1/2"	4-250MCM, 1#2 GND.	TRANS. T1	DIST. SWITCHBOARD "DB1"
T2-01	1	1 1/4"	4#2, 1#8 GND.	TRANS. T2	PANEL "EL"

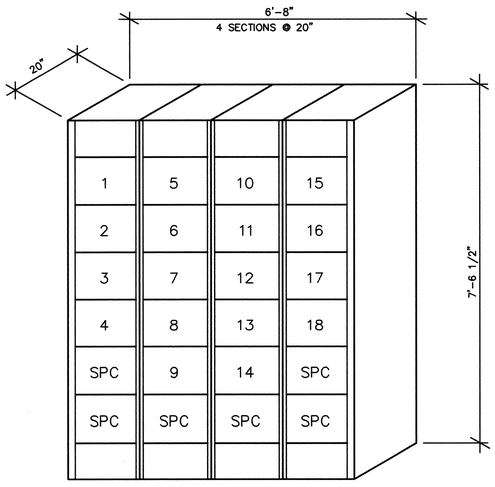


SINGLE LINE DIAGRAM 1 E30.1
NONE

LOAD SUMMARY MAIN SWITCHBOARD "MSB"

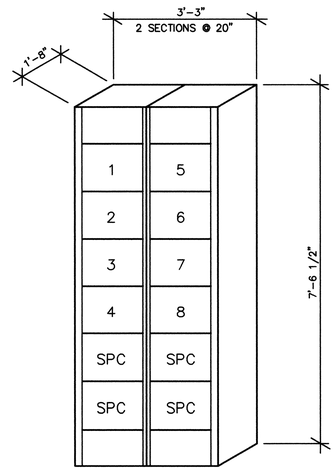
ITEM	DESCRIPTION	LOAD V.A.
1.	PANEL A	13958
2.	PANEL B	20558
3.	MAINTENANCE BAT BUS DUCT	120000
4.	MAINTENANCE BAY BUS DUCT	120000
5.	MOTOR CONTROL CENTER "MCC"	191000
6.	ELEVATOR 40 HP	43160
7.	DISTR. SWBD "DB1" (TRANSFMR 150 KVA) PANEL L (29003 VA) PANEL M (25453 VA) PANEL N (26330 VA)	150000
8.	PANEL "EA"	28821
9.	25% LARGEST MOTOR (43160 x .25 = 10790)	10790
TOTAL LOAD		687,497

687,497 VA AT 277/480 V, 3-PHASE, 4-WIRE = 840.3 AMP.

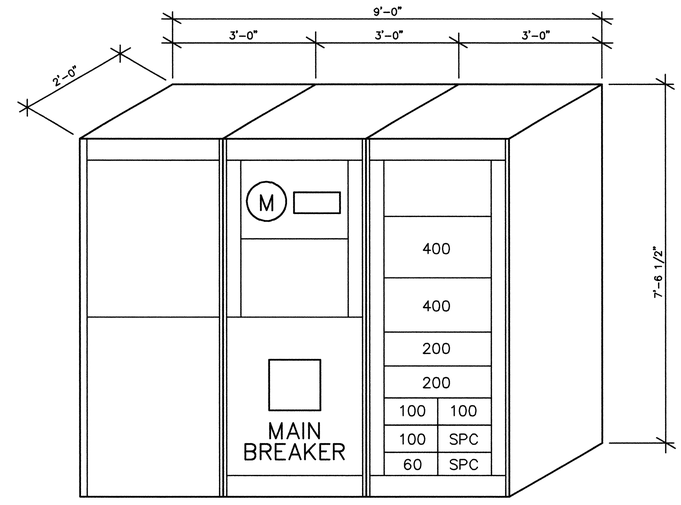


MCCA ELEVATION 2 E30.1
NONE

AS-BUILT
Contract No BUS-443B
Date NOV. 2000



EMCC ELEVATION 3 E30.1
NONE



MSB ELEVATION 4 E30.1
NONE

REGISTERED PROFESSIONAL ENGINEER KWOK WAI WAN No. 9304 Exp. 6-30-01 ELECTRICAL STATE OF CALIFORNIA

KANRAD PROJECT NUMBER: 16007

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

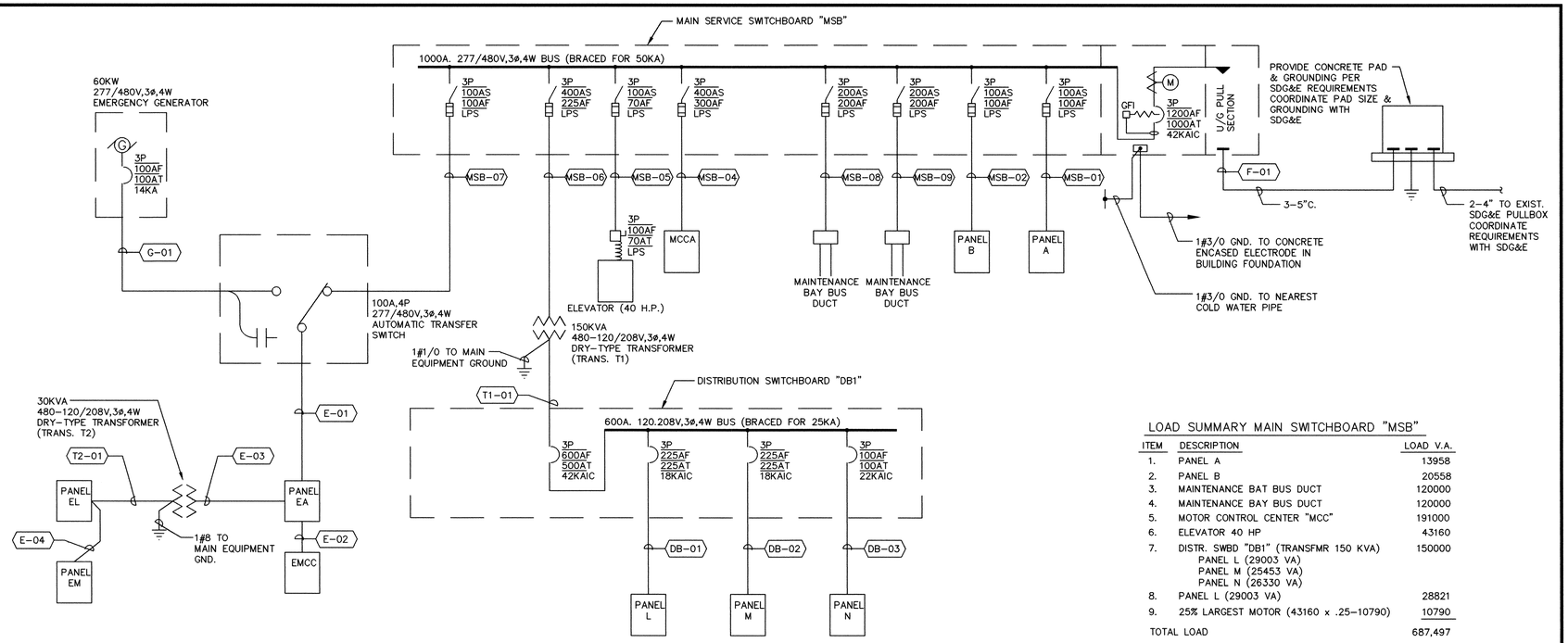
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SINGLE LINE DIAGRAM

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E30.1
SHEET NO. 93

FEEDER SCHEDULE

NO.	CONDUIT QUANTITY	CONDUIT SIZE	CONDUCTORS (EACH CONDUIT)	FROM	TO
F-01	3	5"	BY POWER CO.	PAD MOUNT TRANS.	MAIN SWITCHBOARD "MSB"
MSB-01	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL A
MSB-02	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL B
MSB-04	1	2 1/2"	4#350MCM, 1#4	MAIN SWITCHBOARD "MSB"	MOTOR CONTROL CENTER MCCA
MSB-05	1	1"	3#4, 1#8 GND.	MAIN SWITCHBOARD "MSB"	ELEVATOR
MSB-06	1	2"	3#4/0, 1#4 GND.	MAIN SWITCHBOARD "MSB"	TRANS. T1
MSB-07	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	AUTOMATIC TRANSFER SWITCH
MSB-08	1	2"	4#3/0, 1#4 GND.	MAIN SWITCHBOARD "MSB"	BUS DUCT
MSB-09	1	2"	4#3/0, 1#4 GND.	MAIN SWITCHBOARD "MSB"	BUS DUCT
DB-01	1	2 1/2"	4#4/0, 1#4 GND.	DIST. SWITCHBOARD "DB1"	PANEL L
DB-02	1	2 1/2"	4#4/0, 1#4 GND.	DIST. SWITCHBOARD "DB1"	PANEL M
DB-03	1	1 1/4"	4#2, 1#8 GND.	DIST. SWITCHBOARD "DB1"	PANEL N
G-01	1	1 1/4"	4#2, 1#8 GND.	EMERGENCY GENERATOR SWITCH	AUTOMATIC TRANSFER SWITCH
E-01	1	1 1/4"	4#2, 1#8 GND.	AUTOMATIC TRANSFER SWITCH	PANEL EA
E-02	1	1 1/4"	3#2, 1#8 GND.	PANEL EA	PANEL EMCC
E-03	1	3/4"	3#6, 1#10 GND.	PANEL EA	TRANS. T2
E-04	1	1"	4#4, 1#8 GND.	PANEL EL	PANEL EM
T1-01	2	2 1/2"	4-250MCM, 1#2 GND.	TRANS. T1	DIST. SWITCHBOARD "DB1"
T2-01	1	1 1/4"	4#2, 1#8 GND.	TRANS. T2	PANEL EL

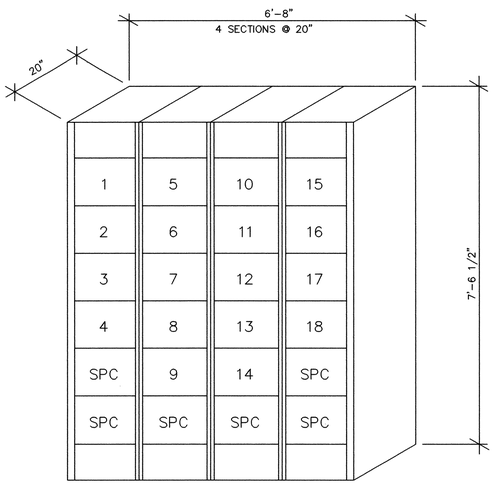


SINGLE LINE DIAGRAM (1 / E30.1)
NONE

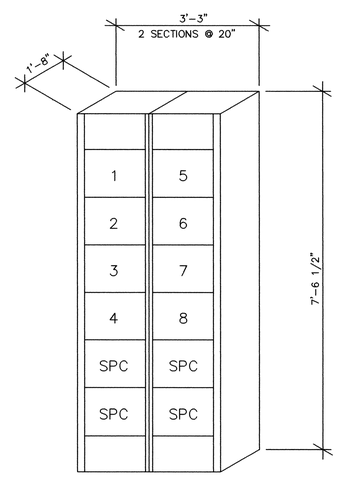
LOAD SUMMARY MAIN SWITCHBOARD "MSB"

ITEM	DESCRIPTION	LOAD V.A.
1.	PANEL A	13958
2.	PANEL B	20558
3.	MAINTENANCE BAT BUS DUCT	120000
4.	MAINTENANCE BAY BUS DUCT	120000
5.	MOTOR CONTROL CENTER "MCC"	191000
6.	ELEVATOR 40 HP	43160
7.	DISTR. SWBD "DB1" (TRANSFMR 150 KVA) PANEL L (29003 VA) PANEL M (25453 VA) PANEL N (26330 VA)	150000
8.	PANEL L (29003 VA)	28821
9.	25% LARGEST MOTOR (43160 x .25-10790)	10790
TOTAL LOAD		687,497

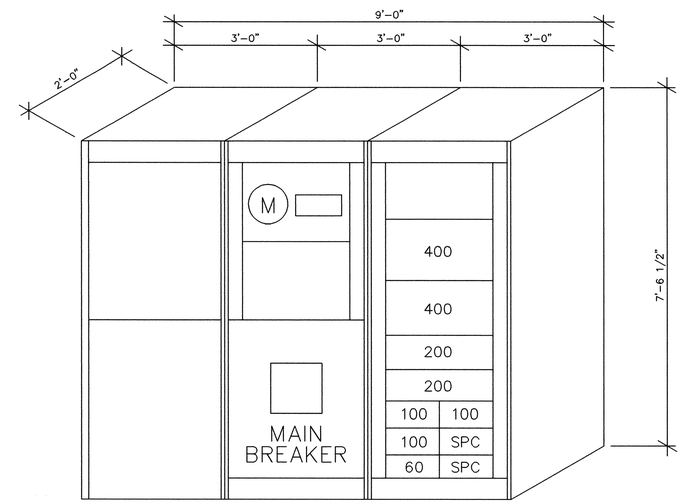
687,497 VA AT 277/480 V, 3-PHASE, 4-WIRE = 840.3 AMP.



MCCA ELEVATION (2 / E30.1)
NONE



EMCC ELEVATION (3 / E30.1)
NONE



MSB ELEVATION (4 / E30.1)
NONE

AS-BUILT
Contract No BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER K. WOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA 90017

		DATE
DESIGNED BY	S. CONNER	11/98
DRAWN BY	K. SPRADLING	11/98
CHECKED BY	M. NIEDERHAUS	11/98
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

SINGLE LINE DIAGRAM

SCALE: NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E30.1
SHEET NO. 93

PANEL A (NORMAL POWER)

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — LOCATION ELECTRIC ROOM
VOLTAGE 480/277 PHASE 3 WIRE 4 — 14,000 AIC SYM 100A BUS M.L.O. MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POLL	BKR	CIR	PH	CIR	BKR	POLS	MISC	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION	
SPARE	–						1	20	1	A	2	20	1			40	2480			PARTS STORAGE LIGHTING	
SPARE		–					1	20	3	B	4	20	1			31		1922		OFFICE & SHOP LIGHTING	
SPARE			–				1	20	5	C	6	20	1			21			1271	FIRST FLOOR CORRIDOR LIGHTING	
SPARE	–						1	20	7	A	8	20	1			14	868			OFFICE & SHOP LIGHTING	
SPARE		–					1	20	9	B	10	20	1			25		1457		SECOND FLOOR LOCKER ROOMS LIGHTING	
SPARE			–				1	20	11	C	12	20	1			7			372	SECOND FLOOR CORRIDOR LIGHTING	
SPARE	–						1	20	13	A	14	20	1			26	1612			SECOND FLOOR OFFICE & SHOPS LIGHTING	
SPARE		–					1	20	15	B	16	20	1			–		–		SPARE	
SPARE			–				1	20	17	C	18	20	1			6			1770	EXTERIOR MAINTENANCE BAY LIGHTING	1
SPARE	–						1	20	19	A	20	20	1			6	1770			EXTERIOR MAINTENANCE BAY LIGHTING	1
SPARE		–					1	20	21	B	22	20	1			34		3100		SECOND FLOOR OFFICE LIGHTING	
SPARE			–				1	20	23	C	24	20	1						–	SPARE	
									25	A	26										
									27	B	28										
									29	C	30										
									31	A	32										
									33	B	34										
									35	C	36										
									37	A	38										
									39	B	40										
									41	C	42										
	–	–	–						WATTS/LINE								6730	6479	3413		

TOTAL øA: 6730 WATTS
TOTAL øB: 6479 WATTS
TOTAL øC: 3413 WATTS

TOTAL WATTS → 16,622
PANEL AMPS → 20
HIGH PHASE AMPS → 24
HIGH PHASE LCL AMPS → 30

1. PROVIDE TIME SWITCH WITH ASTRONOMIC DIAL.

PANEL B (NORMAL POWER)

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — LOCATION ELECTRIC ROOM
VOLTAGE 480/277 PHASE 3 WIRE 4 — 14,000 AIC SYM 100A BUS 100A/3P MAIN 1

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POLL	BKR	CIR	PH	CIR	BKR	POLS	MISC	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION	
PIT LIGHTING	1180			4			1	20	1	A	2	20	1				–			SPARE	
MAINTENANCE BAY LIGHTING		2065		7			1	20	3	B	4	20	1					–		SPARE	
MAINTENANCE BAY LIGHTING			2360	8			1	20	5	C	6	20	1						–	SPARE	
MAINTENANCE BAY LIGHTING	2950			10			1	20	7	A	8	20	1				–			SPARE	
MAINTENANCE BAY LIGHTING		2065		7			1	20	9	B	10	20	1					–		SPARE	
MAINTENANCE BAY LIGHTING			2950	10			1	20	11	C	12	20	1						–	SPARE	
MAINTENANCE BAY LIGHTING	2360			8			1	20	13	A	14	20	1				–			SPARE	
MAINTENANCE BAY LIGHTING		2065		7			1	20	15	B	16	20	1					–		SPARE	
BODY SHOP LIGHTING			2561	15			1	20	17	C	18	20	1						–	SPARE	
SPARE	–						1	20	19	A	20	20	1				–			SPARE	
SPARE		–					1	20	21	B	22	20	1					–		SPARE	
SPARE			–				1	20	23	C	24	20	1						–	SPARE	
									25	A	26										
									27	B	28										
									29	C	30										
									31	A	32										
									33	B	34										
									35	C	36										
									37	A	38										
									39	B	40										
									41	C	42										
	6490	6195	7871						WATTS/LINE								–	–	–		

TOTAL øA: 6490 WATTS
TOTAL øB: 6195 WATTS
TOTAL øC: 7871 WATTS

TOTAL WATTS → 20,556
PANEL AMPS → 25
HIGH PHASE AMPS → 28
HIGH PHASE LCL AMPS → 36
DEMAND LOAD AMPS → 31

1. PROVIDE MAIN BREAKER WITH SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

PANEL EL (EMERGENCY POWER)

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — LOCATION ELECTRIC ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 100A BUS 100A/3P MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POLL	BKR	CIR	PH	CIR	BKR	POLS	MISC	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
SUBFEED PANEL EM	3700							70	1	A	2	20	1	1			250			FACP
SUBFEED PANEL EM		3540							3	B	4	20	1	1				250		INT
SUBFEED PANEL EM			3660				3		5	C	6	20	1	1					1000	GAS DETECTION CONTROL PANEL
TELEPHONE INFO.	720					1	1	20	7	A	8	20	1	9			450			1ST FLR. FIRE SMOKE DAMPERS
TELEPHONE INFO.		720				1	1	20	9	B	10	20	1	8				450		2ND FLR. FIRE SMOKE DAMPERS
TELEPHONE INFO.			720			1	1	20	11	C	12	20	1						500	ELEVATOR CABINET
TELEPHONE INFO.	720					1	1	20	13	A	14	20	1				–			SPARE
TELEPHONE INFO.		720				1	1	20	15	B	16	20	1					–		SPARE
TELEPHONE INFO.			720			1	1	20	17	C	18	20	1						–	SPARE
TELEPHONE INFO.	720					1	1	20	19	A	20	20	1				–			SPARE
TELEPHONE INFO.		720				1	1	20	21	B	22	20	1					–		SPARE
SPARE			–				1	20	23	C	24	20	1						–	SPARE
									25	A	26									
									27	B	28									
									29	C	30									
									31	A	32									
									33	B	34									
									35	C	36									
									37	A	38									
									39	B	40									
									41	C	42									
	5860	5700	5100						WATTS/LINE								700	700	1500	

TOTAL øA: 6560 WATTS
TOTAL øB: 6400 WATTS
TOTAL øC: 6600 WATTS

TOTAL WATTS → 19,560
PANEL AMPS → 54
HIGH PHASE AMPS → 55
HIGH PHASE LCL AMPS → 58

PANEL EM (EMERGENCY POWER)

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — LOCATION ELECTRIC ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 100A BUS 70A/3P MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POLL	BKR	CIR	PH	CIR	BKR	POLS	MISC	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
REC., COLUMNS IN MAINT.	1500				2		1	20	1	A	2	20	1			3	540			SPARE
REC., COLUMNS IN MAINT.		1500			2		1	20	3	B	4	20	1			3		540		SPARE
AUTO ROLL UP DOOR, #3 & #9			1660			2	1	20	5	C	6	20	1	2					500	SPARE
AUTO ROLL UP DOOR, #4 & #10	1660					2	1	20	7	A	8	20	1				–			FLEETWATCH FLUIID SYSTEM
AUTO ROLL UP DOOR, BODY SHOP		1500			2		1	20	9	B	10	20	1					–		FLEETWATCH FLUIID SYSTEM
LIGHTS, PAINT SHOP			1500		2		1	20	11	C	12	20	1						–	BATTERY CHARGER FOR GDCP
SPARE	–						1	20	13	A	14	20	1				–			SPARE
SPARE		–					1	20	15	B	16	20	1					–		SPARE
SPARE			–				1	20	17	C	18	20	1						–	SPARE
SPARE	–						1	20	19	A	20	20	1				–			SPARE
SPARE		–					1	20	21	B	22	20	1					–		SPARE
SPARE			–				1	20	23	C	24	20	1						–	SPARE
									25	A	26									
									27	B	28									
									29	C	30									
									31	A	32									
									33	B	34									
									35	C	36									
									37	A	38									
									39	B	40									
									41	C	42									
	3160	3000	3160						WATTS/LINE								540	540	500	

TOTAL øA: 3700 WATTS
TOTAL øB: 3540 WATTS
TOTAL øC: 3660 WATTS

TOTAL WATTS → 10,900
PANEL AMPS → 30
HIGH PHASE AMPS → 31
HIGH PHASE LCL AMPS → 31
DEMAND LOAD AMPS → 30

1. PROVIDE MAIN BREAKER WITH SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

PANEL L (NORMAL POWER)

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — LOCATION ELECTRIC ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 225A BUS M.L.O. MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POLL	BKR	CIR	PH	CIR	BKR	POLS	MISC	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
MAINTENANCE MANAGER OFFICE	720				4		1	20	1	A	2	20	1		4		720			LUNCH ROOM
MAINTENANCE MANAGER OFFICE		540			3		1	20	3	B	4	20	1		4			720		LUNCH ROOM
MAINTENANCE MANAGER OFFICE			540		3		1	20	5	C	6	20	1		1				1000	VENDING MACHINE
LOCKER ROOMS	900				5		1	20	7	A	8	20	1		1		1000			VENDING MACHINE
LOCKER ROOMS		720			4		1	20	9	B	10	20	1		1			1000		VENDING MACHINE
OFFICE & RESTROOMS			900		5		1	20	11	C	12	20	1		1				1000	VENDING MACHINE
OFFICE & RESTROOMS	900				5		1	20	13	A	14	20	1		1		1000			REFRIGERATOR
OFFICE & RESTROOMS		900			5		1	20	15	B	16	20	1		1			1500		SMALL APPLIANCE
OFFICE & SHOPS			1080		6		1	20	17	C	18	20	1		1				1500	SMALL APPLIANCE
OFFICE & SHOPS	1080				6		1	20	19	A	20	20	1		2		1000			REC., TELECOM ROOM
PARTS STORAGE		1080			6		1	20	21	B	22	20	1		3			540		REC., ELEVATOR EQUIP. ROOM
PARTS STORAGE			1080		6		1	20	23	C	24	20	1						1000	SPACE ONLY
BODY SHOP	540				3		1	20	25	A	26	20	1				1334			EXHAUST FAN EF-7 & EF-8
SPACE FOR SHUNT-TRIP		–					–	–	27	B	28	20	1					500		HVAC CONTROLLER & FAN RELAY PNI
BODY SHOP			540		3		1	20	29	C	30	20	1						506	RECIRCULATION PUMP CP-1
SPACE FOR SHUNT-TRIP	–						–	–	31	A	32	20	1				828			ELECTRIC WATER COOLER EWC-1
BODY SHOP		720				4	1	20	33	B	34	20	1					828		ELECTRIC WATER COOLER EWC-2
SPACE FOR SHUNT-TRIP			–				–	–	35	C	36	20	1			3			150	ELEVATOR LOBBY LIGHTS
EXHAUST FAN EF-7	667					1	–	–	37	A	38	–	–				–			REC., FOR CCTV RACK
SPACE FOR SHUNT-TRIP		–					–	–	39	B	40	–	–					–		WATER HEATER FAN & CONTROLS
REC. ON AUTO BODY ROOF			–				–	–	41	C	42	–	–						–	SPACE ONLY
	4807	3960	4140						WATTS/LINE								5882	5088	5156	

TOTAL øA: 10689 WATTS
TOTAL øB: 9048 WATTS
TOTAL øC: 9296 WATTS

TOTAL WATTS → 29,033
PANEL AMPS → 81
HIGH PHASE AMPS → 89
HIGH PHASE LCL AMPS → 89
DEMAND LOAD AMPS → 73

1. PROVIDE SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

PANEL M (NORMAL POWER)

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — LOCATION POWER UNIT ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 225A BUS 200A/3P MAIN 1

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POLL	BKR	CIR	PH	CIR	BKR	POLS	MISC	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
EXHAUST FAN EF-2	1334					2	1	20	1	A	2	20	1				–			SPARE
EXHAUST FAN EF-2		1334				2	1	20	3	B	4	20	1					–		RECEPTACLES, INSPECTION PIT
RECEPTACLES, N.E. MAINT. SHOP			540		3		1	20	5	C	6	20	1		3				540	RECEPTACLES, S.E. MAINT. SHOP
RECEPTACLES, N.E. MAINT. SHOP	540				3		1	20	7	A	8	20	1		3		540			RECEPTACLES, S.E. MAINT. SHOP
EXHAUST FAN EF-2		1334					1	20	9	B	10	20	1		3			540		RECEPTACLES, S.W. MAINT. SHOP
EXHAUST FAN EF-2			1334			2	1	20	11	C	12	20	1		3				540	RECEPTACLES, S.W. MAINT. SHOP
RECEPTACLES, N.W. MAINT. SHOP	540				3		1	20	13	A	14	20	1	1			830			AUTO ROLL UP DOOR #11
RECEPTACLES, N.W. MAINT. SHOP		540			3		1	20	15	B	16	20	1	1				830		AUTO ROLL UP DOOR #13
EXHAUST FAN EF-4			667			1	1	20	17	C	18	20	1	2					1660	AUTO ROLL UP DOOR #1 & #5
MAINT./REPAIR 208V. REC.	1000							20	19	A	20	20	1	1			830			AUTO ROLL UP DOOR #7
MAINT./REPAIR 208V. REC.		1000					2		21	B	22	20	1	1				830		AUTO ROLL UP DOOR #12
MAINT./REPAIR 208V. REC.			1000					20	23	C	24	20	1	1					830	AUTO ROLL UP DOOR #14
MAINT./REPAIR 208V. REC.	1000						2		25	A	26	20	1	2			1660			AUTO ROOL UP DOOR #2 & #6
MAINT./REPAIR 208V. REC.		1000						20	27	B	28	20	1	1				830		AUTO ROLL UP DOOR #8
MAINT./REPAIR 208V. REC.			1000				2		29	C	30	20	1						830	AUTO ROLL UP DOOR, LOADING AREA
MAINT./REPAIR 50A 208V REC.	–						1	20	31	A	32	20	1				–			MAINT./REPAIR 50A 208V REC.
MAINT./REPAIR 50A 208V REC.		–					1	20	33	B	34	20	1					–		MAINT./REPAIR 50A 208V REC.
PARTS STORAGE 208V REC.			–				1	20	35	C	36	20	1						–	ROOF REC.
PARTS STORAGE 208V REC.	–						–	–	37	A	38	–	–				–			SPACE ONLY
SPACE ONLY		–					–	–	39	B	40	–	–					–		SPACE ONLY
SPACE ONLY			–				–	–	41	C	42	–	–						–	SPACE ONLY
	4414	5208	4541						WATTS/LINE								3860	3030	4440	

TOTAL øA: 8274 WATTS
TOTAL øB: 8238 WATTS
TOTAL øC: 8941 WATTS

TOTAL WATTS → 25,453
PANEL AMPS → 71
HIGH PHASE AMPS → 75
HIGH PHASE LCL AMPS → 75
DEMAND LOAD AMPS → 71

1. PROVIDE MAIN BREAKER WITH SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

AS-BUILT
A. Lehmann
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER
WOK WAI KAN
No. 9304
Exp. 6-30-01
ELECTRICAL
STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

KANFAD PROJECT NUMBER: 16007

STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

DESIGNED BY M. NIEDERHAUS	DATE 6/00
DRAWN BY K. SPRADLING	6/00
CHECKED BY M. NIEDERHAUS	6/00
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

ELECTRICAL PANEL SCHEDULES

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E30.2
SHEET NO. 94

PANEL A

MOUNTING SURFACE (IN NEMA 1 ENCLOSURE) — (NORMAL POWER) — LOCATION ELECTRIC ROOM
VOLTAGE 480/277 PHASE 3 WIRE 4 — 14,000 AIC SYM 100A BUS M.L.O. MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POL	BKR	CIR	PH	CIR	BKR	POL	MISS	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
SPARE	–						1	20	1	A	2	20	1			40	2480			PARTS STORAGE LIGHTING
SPARE		–					1	20	3	B	4	20	1			31		1922		OFFICE & SHOP LIGHTING
SPARE			–				1	20	5	C	6	20	1			21			1271	FIRST FLOOR CORRIDOR LIGHTING
SPARE	–						1	20	7	A	8	20	1			14	868			OFFICE & SHOP LIGHTING
SPARE		–					1	20	9	B	10	20	1			25		1457		SECOND FLOOR LOCKER ROOMS LIGHTING
SPARE			–				1	20	11	C	12	20	1			7			372	SECOND FLOOR CORRIDOR LIGHTING
SPARE	–						1	20	13	A	14	20	1			26	1612			SECOND FLOOR OFFICE & SHOPS LIGHTING
SPARE		–					1	20	15	B	16	20	1			40		1271		SPARE
SPARE			–				1	20	17	C	18	20	1			6			1770	EXTERIOR MAINTENANCE BAY LIGHTING 1
SPARE	–						1	20	19	A	20	20	1			6	1770			EXTERIOR MAINTENANCE BAY LIGHTING 1
SPARE		–					1	20	21	B	22	20	1					–		SECOND FLOOR OFFICE LIGHTING
SPARE			–				1	20	23	C	24	20	1						–	SPARE
									25	A	26									
									27	B	28									
									29	C	30									
									31	A	32									
									~~33~~	~~B~~	~~34~~									
									35	C	36									
									37	A	38									
									39	B	40									
									41	C	42									
	–	–	–						WATTS/LINE								6730	4650	2578	

TOTAL øA: 6730 WATTS
TOTAL øB: 4650 WATTS
TOTAL øC: 2578 WATTS

TOTAL WATTS → 13,958
PANEL AMPS → 17
HIGH PHASE AMPS → 24
HIGH PHASE LCL AMPS → 30
DEMAND LOAD AMPS → 21

1. PROVIDE TIME SWITCH WITH ASTRONOMIC DIAL.

PANEL B

MOUNTING SURFACE (IN NEMA 1 ENCLOSURE) — (NORMAL POWER) — LOCATION ELECTRIC ROOM
VOLTAGE 480/277 PHASE 3 WIRE 4 — 14,000 AIC SYM 100A BUS 100A/3P MAIN 1

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POL	BKR	CIR	PH	CIR	BKR	POL	MISS	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
PIT LIGHTING	1180			4			1	20	1	A	2	20	1				–			SPARE
MAINTENANCE BAY LIGHTING		2065		7			1	20	3	B	4	20	1					–		SPARE
MAINTENANCE BAY LIGHTING			2360	8			1	20	5	C	6	20	1						–	SPARE
MAINTENANCE BAY LIGHTING	2950			10			1	20	7	A	8	20	1				–			SPARE
MAINTENANCE BAY LIGHTING		2065		7			1	20	9	B	10	20	1					–		SPARE
MAINTENANCE BAY LIGHTING			2950	10			1	20	11	C	12	20	1						–	SPARE
MAINTENANCE BAY LIGHTING	2360			8			1	20	13	A	14	20	1				–			SPARE
MAINTENANCE BAY LIGHTING		2065		7			1	20	15	B	16	20	1					–		SPARE
BODY SHOP LIGHTING			2561	15			1	20	17	C	18	20	1						–	SPARE
SPARE	–						1	20	19	A	20	20	1				–			BRAKE SHOP EQUIPMENT
SPARE		–					1	20	21	B	22	20	1					–		BRAKE SHOP EQUIPMENT
SPARE			–				1	20	23	C	24	20	1						–	BRAKE SHOP EQUIPMENT
									25	A	26									
									27	B	28									
									29	C	30									
									31	A	32									
									~~33~~	~~B~~	~~34~~									
									35	C	36									
									37	A	38									
									39	B	40									
									41	C	42									
	6490	6195	7871						WATTS/LINE								–	–	–	

TOTAL øA: 6490 WATTS
TOTAL øB: 6195 WATTS
TOTAL øC: 7871 WATTS

TOTAL WATTS → 20,556
PANEL AMPS → 25
HIGH PHASE AMPS → 28
HIGH PHASE LCL AMPS → 36
DEMAND LOAD AMPS → 31

1. PROVIDE MAIN BREAKER WITH SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

PANEL EL

MOUNTING SURFACE (IN NEMA 1 ENCLOSURE) — (EMERGENCY POWER) — LOCATION ELECTRIC ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 100A BUS 50A/3P MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POL	BKR	CIR	PH	CIR	BKR	POL	MISS	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
SUBFEED PANEL EM	3700							70	1	A	2	20	1	1			250			SHUNT TRIP CIRCUIT FOR GDCP
SUBFEED PANEL EM		3540							3	B	4	20	1	1				250		SHUNT TRIP CIRCUIT FOR GDCP
SUBFEED PANEL EM			3160				3		5	C	6	20	1	1					1000	GAS DETECTION CONTROL PANEL
TELEPHONE INFO.	–						1	20	7	A	8	20	1	9			450			1ST FLOOR FIRE SMOKE DAMPER
TELEPHONE INFO.		–					1	20	9	B	10	20	1	8				450		2ND FLOOR FIRE SMOKE DAMPER
TELEPHONE INFO.			–				1	20	11	C	12	20	1						–	DUCT SMOKE DETECTOR
TELEPHONE INFO.	–						1	20	13	A	14	20	1				–			ELEVATOR CONTROL PANEL
TELEPHONE INFO.		–					1	20	15	B	16	20	1					–		SHUNT TRIP CIRCUIT FOR ELEVATOR
TELEPHONE INFO.			–				1	20	17	C	18	20	1						–	TELEPHONE EQUIPMENT RACK
TELEPHONE INFO.	–						1	20	19	A	20	20	1				–			FIRE ALARM PANEL
TELEPHONE INFO.		–					1	20	21	B	22	20	1					–		VIDEO EQUIPMENT RACK
SOUND MASKING SYSTEM			–				1	20	23	C	24	20	1						–	GENERATOR 120 VOLT POWER CKT.
MAIN CIRCUIT BREAKER									25	A	26									SPARE
MAIN CIRCUIT BREAKER									27	B	28									SPARE
MAIN CIRCUIT BREAKER									29	C	30									SPARE
									31	A	32									
									33	B	34									
									35	C	36									
									37	A	38									
									39	B	40									
									41	C	42									
	3700	3540	4160						WATTS/LINE								700	700	1000	

TOTAL øA: 4400 WATTS
TOTAL øB: 4240 WATTS
TOTAL øC: 4160 WATTS

TOTAL WATTS → 12,800
PANEL AMPS → 36
HIGH PHASE AMPS → 37
HIGH PHASE LCL AMPS → 37
DEMAND LOAD AMPS → 36

PANEL EM

MOUNTING SURFACE (IN NEMA 1 ENCLOSURE) — (EMERGENCY POWER) — LOCATION ELECTRIC ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 100A BUS 70A/3P MAIN 1

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POL	BKR	CIR	PH	CIR	BKR	POL	MISS	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
RECEPTACLES, COLUMNS IN MAINT.	1500				2		1	20	1	A	2	20	1			3	540			SPARE
RECEPTACLES, COLUMNS IN MAINT.		1500			2		1	20	3	B	4	20	1			3		540		SPARE
AUTO ROLLUP DOOR, #3 & #9			1660			2	1	20	5	C	6	20	1	2					500	SPARE
AUTO ROLLUP DOOR, #4 & #10	1660					2	1	20	7	A	8	20	1				–			FLEETWATCH FLUID SYSTEM
AUTO ROLLUP, BODY SHOP		1500			2		1	20	9	B	10	20	1					–		FLEETWATCH FLUID SYSTEM
LIGHTS, PAINT BOOTH			1500		2		1	20	11	C	12	20	1						–	BATTERY CHARGER FOR GDCP
SPARE	–						1	20	13	A	14	20	1				–			SPARE
SPARE		–					1	20	15	B	16	20	1					–		SPARE
SPARE			–				1	20	17	C	18	20	1						–	SPARE
SPARE	–						1	20	19	A	20	20	1				–			SPARE
SPARE		–					1	20	21	B	22	20	1					–		SPARE
SPARE			–				1	20	23	C	24	20	1						–	SPARE
									25	A	26									
									27	B	28									
									29	C	30									
									31	A	32									
									~~33~~	~~B~~	~~34~~									
									35	C	36									
									37	A	38									
									39	B	40									
									41	C	42									
	3160	3000	3160						WATTS/LINE								540	540	500	

TOTAL øA: 3700 WATTS
TOTAL øB: 3540 WATTS
TOTAL øC: 3660 WATTS

TOTAL WATTS → 10,900
PANEL AMPS → 30
HIGH PHASE AMPS → 31
HIGH PHASE LCL AMPS → 31
DEMAND LOAD AMPS → 30

1. PROVIDE MAIN BREAKER WITH SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

PANEL L

MOUNTING SURFACE (IN NEMA 1 ENCLOSURE) — (NORMAL POWER) — LOCATION ELECTRIC ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 225A BUS M.L.O. MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POL	BKR	CIR	PH	CIR	BKR	POL	MISS	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
MAINTENANCE MANAGER OFFICE	720				4		1	20	1	A	2	20	1		4		720			LUNCH ROOM
MAINTENANCE MANAGER OFFICE		540			3		1	20	3	B	4	20	1		4			720		LUNCH ROOM
MAINTENANCE MANAGER OFFICE			540		3		1	20	5	C	6	20	1		1				1000	VENDING MACHINE
LOCKER ROOMS	900				5		1	20	7	A	8	20	1		1		1000			VENDING MACHINE
LOCKER ROOMS		720			4		1	20	9	B	10	20	1		1			1000		VENDING MACHINE
OFFICE & RESTROOMS			900		5		1	20	11	C	12	20	1		1				1000	VENDING MACHINE
OFFICE & RESTROOMS	900				5		1	20	13	A	14	20	1		1		1000			REFRIGERATOR
OFFICE & RESTROOMS		900			5		1	20	15	B	16	20	1		1			1500		SMALL APPLIANCE
OFFICE & SHOPS			1080		6		1	20	17	C	18	20	1		1				1500	SMALL APPLIANCE
OFFICE & SHOPS	1080				6		1	20	19	A	20	20	1		2		1000			RECEPTACLES, TELECOM ROOM
PARTS STORAGE		1080			6		1	20	21	B	22	20	1		3			540		RECEPTACLES, ELEVATOR EQUIP. RM.
PARTS STORAGE			1080		6		1	20	23	C	24	20	1						1000	SPARE
BODY SHOP	540				3		1	20	25	A	26	20	1				1334			EXHAUST FAN EF-7 & EF-8
SPACE FOR SHUNT-TRIP		–					–	–	27	B	28	20	1					500		HVAC CONTROLLER & FAN RELAY PNI
BODY SHOP			540		3		1	20	29	C	30	20	1						506	RECIRCULATION PUMP CP-1
SPACE FOR SHUNT-TRIP	–						–	–	31	A	32	20	1				828			ELECTRIC WATER COOLER EWC-1
BODY SHOP		720			4	1	20	33	B	34	20	1						828		ELECTRIC WATER COOLER EWC-2
SPACE FOR SHUNT-TRIP			–				–	–	35	C	36	20	1			3			150	ELEVATOR LOBBY LIGHTS
EXHAUST FAN EF-7	667					1	–	–	37	A	38	–	–				–			RECECALES FOR CCTV RACK
SPACE FOR SHUNT-TRIP		–					–	–	39	B	40	–	–					–		WATER HEATER FAN & CONTROLS
RECEPTACLE ON AUTO BODY ROOF			–				–	–	41	C	42	–	–						–	SPACE ONLY
	4807	3960	4140						WATTS/LINE								5882	5088	5156	

TOTAL øA: 10689 WATTS
TOTAL øB: 9048 WATTS
TOTAL øC: 9296 WATTS

TOTAL WATTS → 29,033
PANEL AMPS → 81
HIGH PHASE AMPS → 89
HIGH PHASE LCL AMPS → 89
DEMAND LOAD AMPS → 73

1. PROVIDE SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

PANEL M

MOUNTING SURFACE (IN NEMA 1 ENCLOSURE) — (NORMAL POWER) — LOCATION POWER UNIT ROOM
VOLTAGE 208/120 PHASE 3 WIRE 4 — 10,000 AIC SYM 225A BUS 200A/3P MAIN 1

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	RECS	MISS	POL	BKR	CIR	PH	CIR	BKR	POL	MISS	RECS	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
EXHAUST FAN EF-2	1334				2	1	20	1	A	2	20	1					–			SPARE
EXHAUST FAN EF-2		1334			2	1	20	3	B	4	20	1						–		RECEPTACLES, INSPECTION PIT
RECEPTACLES, N.E. MAINT. SHOP			540	3		1	20	5	C	6	20	1		3					540	RECEPTACLES, S.E. MAINT. SHOP
RECEPTACLES, N.E. MAINT. SHOP	540			3		1	20	7	A	8	20	1		3			540			RECEPTACLES, S.E. MAINT. SHOP
EXHAUST FAN EF-2		1334				1	20	9	B	10	20	1		3				540		RECEPTACLES, S.W. MAINT. SHOP
EXHAUST FAN EF-2			1334		2	1	20	11	C	12	20	1		3					540	RECEPTACLES, S.W. MAINT. SHOP
RECEPTACLES, N.W. MAINT. SHOP	540			3		1	20	13	A	14	20	1	1				830			AUTO ROLLUP DOOR #11
RECEPTACLES, N.W. MAINT. SHOP		540		3		1	20	15	B	16	20	1	1					830		AUTO ROLLUP DOOR #13
EXHAUST FAN EF-4			667		1	1	20	17	C	18	20	1	2						1660	AUTO ROLLUP DOOR #1 & #5
MAINT./REPAIR 208V. REC.	1000						20	19	A	20	20	1	1				830			AUTO ROLLUP DOOR #7
MAINT./REPAIR 208V. REC.		1000				2		21	B	22	20	1	1					830		AUTO ROLLUP DOOR #12
MAINT./REPAIR 208V. REC.			1000				20	23	C	24	20	1	1						830	AUTO ROLLUP DOOR #14
MAINT./REPAIR 208V. REC.	1000					2		25	A	26	20	1	2				1660			AUTO ROLLUP DOOR #2 & #6
MAINT./REPAIR 208V. REC.		1000					20	27	B	28	20	1	1					830		AUTO ROLLUP DOOR #8
MAINT./REPAIR 208V. REC.			1000			2		29	C	30	20	1							830	AUTO ROLLUP DOOR, LOADING AREA
MAINT./REPAIR 50A 208V. RECEPT.	–					1	20	31	A	32	20	1					–			MAINT./REPAIR 50A 208V RECEPT.
" " " "		–				1	20	33	B	34	20	1						–		" " " " "
PARTS STORAGE 208V. RECEPTACLES			–			1	20	35	C	36	20	1							–	ROOF RECEPTACLES
" " " "	–					–	–	37	A	38	–	–					–			SPACE ONLY
SPACE ONLY		–				–	–	39	B	40	–	–						–		SPACE ONLY
SPACE ONLY			–			–	–	41	C	42	–	–							–	SPACE ONLY
	4414	5208	4541						WATTS/LINE								3860	3030	4440	

TOTAL øA: 8274 WATTS
TOTAL øB: 8238 WATTS
TOTAL øC: 8941 WATTS

TOTAL WATTS → 25,453
PANEL AMPS → 71
HIGH PHASE AMPS → 75
HIGH PHASE LCL AMPS → 75
DEMAND LOAD AMPS → 71

1. PROVIDE MAIN BREAKER WITH SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

AS-BUILT
A. deBrand
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER — KWOK WAI KAN — No. 9304 — Exp. 9-30-01 — ELECTRICAL — STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA 90017

DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

ELECTRICAL PANEL SCHEDULES

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E30.2
SHEET NO. 94

MOTOR CONTROL CENTER: **EMCC**

VOLTAGE 480V,3ø,3W

BUS 100A BRACED FOR 14,000A. SYM

	PROTECTION					LOAD			DISCRIPTION	CONDUIT & WIRE	STARTER	CONTROLS			REMARKS
	POLE	MPC	BKR	FUSE	SW	HP	KW	AMPS				NO	NC	HOA	
1	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	START FOR GAS DETECTION SYSTEM
2	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
3	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
4	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
5	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
6	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
7	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
8	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
9							0.0								
10							0.0								
11							0.0								
12							0.0								
13							0.0								
14							0.0								
15							0.0								
16							0.0								
17							0.0								
18							0.0								
19							0.0								
20							0.0								

9KW 1.0 A TOTAL CONNECTED LOAD
.4 A 25% OF LARTGEST MOTOR
12.0 A TOTAL LCL LOAD

MOTOR CONTROL CENTER: **MCCA**

VOLTAGE 480V,3ø,3W — 300A/3P MAIN BREAKER

BUS 400A BRACED FOR 14,000A SYM

	PROTECTION					LOAD			DISCRIPTION	CONDUIT & WIRE	STARTER	CONTROLS			REMARKS
	POLE	MPC	BKR	FUSE	SW	HP	KW	AMPS				NO	NC	HOA	
1	3		25	20	30	10	11.6	14	POWER UNIT PU-1A	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
2	3		25	20	30	10	11.6	14	POWER UNIT PU-1B	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
3	3		25	20	30	10	11.6	14	POWER UNIT PU-2A	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
4	3		25	20	30	10	11.6	14	POWER UNIT PU-2B	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
5	3		25	20	30		12.3	14.8	AC UNIT AC-3	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
6	3		40	30	30		19.4	23.4	AC UNIT AC-5	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
7	3		40	30	30		19.4	23.4	AC UNIT AC-4	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
8	3		25	20	30		12.3	14.8	AC UNIT AC-6	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
9	3		25	20	30	10	11.6	14	MAKE-UP AIR UNIT HV-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
10	3		25	20	30		12.3	14.8	AC UNIT AC-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
11	3		25	20	30		12.0	14.8	AC UNIT AC-2	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
12	3		20	17.5	30	7.5	9.1	11	MAKE-UP AIR UNIT HV-2	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
13	3	3M				0.75	1.2	1.4	EXHAUST FAN EF-5	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
14	3		20	12	30	5	6.3	7.6	DUST COLLECTOR	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
15	3		15	8	30	3	4.0	4.8	PAINT SPRAY BOOTH EXHAUST FAN EF-9	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
16	3		20	12	30	5	6.3	7.6	MAKE-UP AIR UNIT HV-3	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
17	3		20	17.5	30	7.5	9.1	11	EXHAUST FAN EF-3	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
18	3		25	20	30	10	11.6	14	POWER UNIT PU-3	3/4"C-3#12 & 1#12 GND.	–		–		SHUNT-TRIP ON BREAKER
19	3		15	8	30	3	4.0	4.8	EXHAUST FAN EF-6	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
20							0.0								

191KW 230 A TOTAL CONNECTED LOAD
6 A 25% OF LARGEST MOTOR
236 A TOTAL LCL LOAD

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — **PANEL EA** (EMERGENCY POWER) — LOCATION ELECTRIC ROOM

VOLTAGE 480/277 PHASE 3 WIRE 4 — 14,000 AIC SYM 100A BUS M.L.O. MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	REC	MISS	POL	BKR	CIR	PH	CIR	BKR	POL	MISS	REC	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
UNDEVELOPED SPACE LIGHTING	249			8			1	20	1	A	2	100	1				3102			SUBFEED EMCC
PARTS STORAGE LIGHTING		2143		30			1	20	3	B	4							3102		SUBFEED EMCC
GROUND FLOOR CORR. LIGHTING			1178	19			1	20	5	C	6		3						3102	SUBFEED EMCC
1 MAINTENANCE BAY LIGHTING	3544			16			1	20	7	A	8	50					6560			SUBFEED EL
SPACE FOR SHUNT-TRIP		–		7			–	–	9	B	10							6400		SUBFEED EL
SPARE			–	10			1	20	11	C	12		3						6600	SUBFEED EL
SPARE	–			8			1	20	13	A	14	20	1				–			SPARE
SPARE		–		7			1	20	15	B	16	20	1					–		SPARE
SPARE			–	15			1	20	17	C	18	20	1						–	SPARE
SPARE	–						1	20	19	A	20	20	1				–			SPARE
SPARE		–					1	20	21	B	22	20	1					–		SPARE
SPARE			–				1	20	23	C	24	20	1			35			2635	SECOND FLR. TELEPHONE INFO. LTG.
									25	A	26									
									27	B	28									
									29	C	30									
									31	A	32									
									33	B	34									
									35	C	36									
									37	A	38									
									39	B	40									
									41	C	42									
	3793	2143	1178						WATTS/LINE								9662	9502	12337	

TOTAL øA: 13455 WATTS
TOTAL øB: 11645 WATTS
TOTAL øC: 13515 WATTS

TOTAL WATTS ——→ 38,615
PANEL AMPS ——→ 46
HIGH PHASE AMPS ——→ 49
HIGH PHASE LCL AMPS ——→ 54

1. PROVIDE SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) — **PANEL N** — LOCATION ELECTRIC ROOM

VOLTAGE 120/208 PHASE 3 WIRE 4 — 10,000 AIC SYM 100A BUS M.L.O. MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	REC	MISS	POL	BKR	PH	CIR	BKR	POL	MISS	REC	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
ADMIN. MNT. MGR.	1080				6		1	20	1	A	2	20	1			–			SPARE
ADMIN. MNT. MGR.		1080			6		1	20	3	B	4	20	1				–		SPARE
ADMIN. MNT. MGR.			900		5		1	20	5	C	6	20	1					–	SPARE
ADMIN. MNT. MGR.	1080				6		1	20	7	A	8	20	1			–			SPARE
ADMIN. MNT. MGR.		900			5		1	20	9	B	10	20	1				–		SPARE
ADMIN. MNT. MGR.			1080		6		1	20	11	C	12	20	1					–	SPARE
ADMIN. MNT. MGR.	900				5		1	20	13	A	14	20	1			–			SPARE
ADMIN. MNT. MGR.		900			3		1	20	15	B	16	20	1				–		SPARE
SPARE				–			1	20	17	C	18	20	1		3			720	COMPUTER CLASS
ADMIN. MNT. MGR.	900				5		1	20	19	A	20	20	1	1		700			TOILET EXHAUST FAN
INSTRUCTOR'S OFFICE		1080			6		1	20	21	B	22	20	1		3		480		COMPUTER CLASS
INSTRUCTOR'S OFFICE			1080		6		1	20	23	C	24	20	1		2			720	COMPUTER CLASS
INSTRUCTOR'S OFFICE	1080				6		1	20	25	A	26	20	1		3	1200			OVERHEAD PROJECTORS
INSTRUCTOR'S OFFICE		1080			6		1	20	27	B	28	20	1		11		990		TASK LIGHTS
TRAINING			1080		6		1	20	29	C	30	20	1		3			540	ROOF TOP RECEPTACLES
SPACE ONLY	–						–	–	31	A	32	20	1			–			SPARE
SPACE ONLY		–					–	–	33	B	34	20	1				–		SPARE
SPACE ONLY			–				–	–	35	C	36	20	1					–	SPARE
SPACE ONLY	–						–	–	37	A	38	–	–			–			SPACE ONLY
SPACE ONLY		–					–	–	39	B	40	–	–				–		SPACE ONLY
SPACE ONLY			–				–	–	41	C	42	–	–					–	SPACE ONLY
	5040	5040	4140						WATTS/LINE							1900	1470	1980	

TOTAL øA: 6940 WATTS
TOTAL øB: 6510 WATTS
TOTAL øC: 6120 WATTS

TOTAL WATTS ——→ 19,570
PANEL AMPS ——→ 54
HIGH PHASE AMPS ——→ 58
HIGH PHASE LCL AMPS ——→ 58

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER — KHOK WAI KAN — No. 9304 — Exp. 9-30-01 — ELECTRICAL — STATE OF CALIFORNIA

KANRAD PROJECT NUMBER 16007

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

DESIGNED BY M. NIEDERHAUS	DATE 6/00
DRAWN BY K. SPRADLING	6/00
CHECKED BY M. NIEDERHAUS	6/00
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

ELECTRICAL SCHEDULES

SCALE NONE

MTDB CONTRACT NO. BUS-443B

DRAWING NO. E30.3 — SHEET NO. 95

MOTOR CONTROL CENTER: EMCC
VOLTAGE 480V,3φ,3W
BUS 100A BRACED FOR 14,000A. SYM

	PROTECTION					LOAD						CONTROLS			
	POLE	MPC	BKR	FUSE	SW	HP	KW	AMPS	DISCRIPTION	CONDUIT & WIRE	STARTER	NO	NC	HOA	REMARKS
1	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	START FOR GAS DETECTION SYSTEM
2	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
3	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
4	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
5	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
6	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
7	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
8	3	3M		2	30	0.75	1.2	1.4	GAS SYSTEM EXH. FAN EF-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
9							0.0								
10							0.0								
11							0.0								
12							0.0								
13							0.0								
14							0.0								
15							0.0								
16							0.0								
17							0.0								
18							0.0								
19							0.0								
20							0.0								

9KW 1.0 A TOTAL CONNECTED LOAD
.4 A 25% OF LARTGEST MOTOR
12.0 A TOTAL LCL LOAD

MOTOR CONTROL CENTER: MCCA
VOLTAGE 480V,3φ,3W
BUS 400A BRACED FOR 14,000A SYM
300A/3P MAIN BREAKER

	PROTECTION					LOAD						CONTROLS			
	POLE	MPC	BKR	FUSE	SW	HP	KW	AMPS	DISCRIPTION	CONDUIT & WIRE	STARTER	NO	NC	HOA	REMARKS
1	3		25	20	30	10	11.6	14	POWER UNIT PU-1A	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
2	3		25	20	30	10	11.6	14	POWER UNIT PU-1B	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
3	3		25	20	30	10	11.6	14	POWER UNIT PU-2A	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
4	3		25	20	30	10	11.6	14	POWER UNIT PU-2B	3/4"C-3#12 & 1#12 GND.					SHUNT-TRIP ON BREAKER
5	3		25	20	30		12.3	14.8	AC UNIT AC-3	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
6	3		40	30	30		19.4	23.4	AC UNIT AC-5	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
7	3		40	30	30		19.4	23.4	AC UNIT AC-4	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
8	3		25	20	30		12.3	14.8	AC UNIT AC-6	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
9	3		25	20	30	10	11.6	14	MAKE-UP AIR UNIT HV-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
10	3		25	20	30		12.3	14.8	AC UNIT AC-1	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
11	3		25	20	30		12.0	14.8	AC UNIT AC-2	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
12	3		20	17.5	30	7.5	9.1	11	MAKE-UP AIR UNIT HV-2	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
13	3	3M				0.75	1.2	1.4	EXHAUST FAN EF-5	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
14	3		20	12	30	5	6.3	7.6	DUST COLLECTOR	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
15	3		15	8	30	3	4.0	4.8	PAINT SPRAY BOOTH EXHAUST FAN EF-9	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
16	3		20	12	30	5	6.3	7.6	MAKE-UP AIR UNIT HV-3	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	
17	3		20	17.5	30	7.5	9.1	11	EXHAUST FAN EF-3	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
18	3		25	20	30	10	11.6	14	POWER UNIT PU-3	3/4"C-3#12 & 1#12 GND.	–		–		SHUNT-TRIP ON BREAKER
19	3		15	8	30	3	4.0	4.8	EXHAUST FAN EF-6	3/4"C-3#12 & 1#12 GND.	MAGNETIC			YES	CONTACT IN GAS DETECTION SYSTEM TO STOP UNIT
20							0.0								

191KW 230 A TOTAL CONNECTED LOAD
6 A 25% OF LARGEST MOTOR
236 A TOTAL LCL LOAD

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) **PANEL EA** LOCATION ELECTRIC ROOM
VOLTAGE 480/277 PHASE 3 WIRE 4 (EMERGENCY POWER) 14,000 AIC SYM 100A BUS M.L.O. MAIN

	LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	REC	MIS	POL	BKR	CIR	PH	CIR	BKR	POL	MIS	REC	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
	UNDEVELOPED SPACE LIGHTING	249			8			1	20	1	A	2	100	1				3102			SUBFEED EMCC
	PARTS STORAGE LIGHTING		2143		30			1	20	3	B	4							3102		SUBFEED EMCC
	GROUND FLOOR CORR. LIGHTING			1178	19			1	20	5	C	6		3						3102	SUBFEED EMCC
1	MAINTENANCE BAY LIGHTING	3544			16			1	20	7	A	8	30					6560			SUBFEED EL
	SPACE FOR SHUNT-TRIP		–		7			–	–	9	B	10							6400		SUBFEED EL
	SPARE			–	10			1	20	11	C	12		3						6600	SUBFEED EL
	SPARE	–			8			1	20	13	A	14	20	1				–			SPARE
	SPARE		–		7			1	20	15	B	16	20	1					–		SPARE
	SPARE			–	15			1	20	17	C	18	20	1						–	SPARE
	SPARE	–						1	20	19	A	20	20	1				–			SPARE
	SPARE		–					1	20	21	B	22	20	1					–		SPARE
	SPARE			–				1	20	23	C	24	20	1			35			–	SPARE
										25	A	26									
										27	B	28									
										29	C	30									
										31	A	32									
										33	B	34									
										35	C	36									
										37	A	38									
										39	B	40									
										41	C	42									
		3793	2143	1178						WATTS/LINE								9662	9502	12337	

TOTAL øA: 13455 WATTS
TOTAL øB: 11645 WATTS
TOTAL øC: 13515 WATTS

TOTAL WATTS ——> 38,615
PANEL AMPS ——> 46
HIGH PHASE AMPS ——> 49
HIGH PHASE LCL AMPS ——> 54

1. PROVIDE SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

MOUNTING SURFACE(IN NEMA 1 ENCLOSURE) **PANEL N** LOCATION ELECTRIC ROOM
VOLTAGE 120/1208 PHASE 3 WIRE 4 10,000 AIC SYM 100A BUS M.L.O. MAIN

LOCATION	WATTAGE øA	WATTAGE øB	WATTAGE øC	LTG	REC	MIS	POL	BKR	CIR	PH	CIR	BKR	POL	MIS	REC	LTG	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOCATION
SPARE	1080			6			1	20	1	A	2	20	1		3		–			VAV CONTROLLER
SPARE		1080		6			1	20	3	B	4	20	1		3			–		SPARE
SPARE			900	5			1	20	5	C	6	20	1	1					–	SPARE
RECEPTACLES	1080			6			1	20	7	A	8	20	1	1			–			SPARE
RECEPTACLES		900		5			1	20	9	B	10	20	1		3			–		SPARE
RECEPTACLES			1080	6			1	20	11	C	12	20	1		3				–	SPARE
RECEPTACLES	900			5			1	20	13	A	14	20	1	1			–			SPARE
ADMIN. MNT. MGR.		900		3			1	20	15	B	16	20	1	1				–		SPARE
COPY MACHINE			1000	1			1	20	17	C	18	20	1		3				720	COMPUTER CLASS
ADMIN. MNT. MGR.	900			5			1	20	19	A	20	20	1	1			700			TOILET EXHAUST FAN
INSTRUCTOR'S OFFICE		1080		6			1	20	21	B	22	20	1		3			480		COMPUTER CLASS
INSTRUCTOR'S OFFICE			1080	6			1	20	23	C	24	20	1		2				720	COMPUTER CLASS
INSTRUCTOR'S OFFICE	1080			6			1	20	25	A	26	20	1				1200			OVERHEAD PROJECTORS
INSTRUCTOR'S OFFICE		1080		6			1	20	27	B	28	20	1					990		TASK LIGHTS
TRAINING			1080	6			1	20	29	C	30	20	1						540	TASK LIGHTS
SPACE ONLY	–						–	–	31	A	32	–	–				–			SPARE
SPACE ONLY		–					–	–	33	B	34	–	–					–		SPARE
SPACE ONLY			–				–	–	35	C	36	–	–						–	SPARE
SPACE ONLY	–						–	–	37	A	38	–	–				–			SPACE ONLY
SPACE ONLY		–					–	–	39	B	40	–	–					–		SPACE ONLY
SPACE ONLY			–				–	–	41	C	42	–	–						–	SPACE ONLY
	5040	5040	5140						WATTS/LINE								1900	1470	1980	

TOTAL øA: 6940 WATTS
TOTAL øB: 6510 WATTS
TOTAL øC: 6120 WATTS

TOTAL WATTS ——> 19,570
PANEL AMPS ——> 54
HIGH PHASE AMPS ——> 58
HIGH PHASE LCL AMPS ——> 58

AS-BUILT
A. DuBrand
Contract No BUS-443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

ELECTRICAL SCHEDULES

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E30.3
SHEET NO. 95

CERTIFICATE OF COMPLIANCE - Lighting Part 1 of 2 LTG-1

PROJECT NAME		DATE
PROJECT ADDRESS		Building Permit #
PRINCIPAL DESIGNER – LIGHTING TONY KAN	TELEPHONE (619)547–1100	
DOCUMENTATION AUTHOR STANLEY CONNER	TELEPHONE (619)547–1100	Checked by/Date Enforcement Agency Use

GENERAL INFORMATION

DATE OF PLANS	BUILDING CONDITIONED FLOOR AREA 44816		
BUILDING TYPE	[X] NONRESIDENTIAL	[ ] HIGH RISE RESIDENTIAL	[ ] HOTEL/MOTEL GUEST ROOM
PHASE OF CONSTRUCTION	[X] NEW CONSTRUCTION	[ ] ADDITION	[ ] ALTERATION
METHOD OF LIGHTING COMPLIANCE	[X] COMPLETE BUILDING	[ ] AREA CATEGORY	[ ] TAILORED [ ] PERFORMANCE

STATEMENT OF COMPLIANCE

This Certificate of Compliance lists the building features and performance specifications needed to comply wit Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to building lighting requirements.

The Principal Lighting Designer hereby certifies that the proposed building design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building has been designed to meet the lighting requirements contained in sections 110, 119, 130 through 132, and 146 or 149.

Please check one:

[ ] I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am a civil engineer, electrical engineer or architect.

[ ] I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code by Section 5537.2 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am a licensed contractor preparing documents for work that I have contracted to perform.

[X] I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code by Section _____ of the _____ Code to sign this document as the person responsible for its preparation; and for the following reason: _____

PRINCIPAL LIGHTING DESIGNER–NAME	SIGNATURE	LIC. NO.	DATE
TONY KAN			

LIGHTING MANDATORY MEASURES

Indicate location on plans of Note Block for Mandatory Measures: E30.4

INSTRUCTIONS TO APPLICANT

For detailed instructions on the use of this and Energy Efficiency Standards compliance forms, please refer to the Nonresidential Manual published by the California Energy Commission.

LTG–1: Required on plans for all submittals. Part 2 may be incorporated in schedules on plans.
LTG–2: Required for all submittals.
LTG–3: Optional. Use only if lighting control credits are taken.
LTG–4: Optional. Use only if Tailored Method is used. Parts 2 and 3 used only if applicable.

Nonresidential Compliance Form December 1991

CERTIFICATE OF COMPLIANCE - Lighting Part 2 of 2 LTG-1

PROJECT NAME	DATE

INSTALLED LIGHTING SCHEDULE

LUMINAIRE NAME (eg. Type–1, Type–2, etc.)	LAMPS TYPE I	F	H	NO. OF LAMPS	WATTS/LAMP	BALLASTS TYPE S	E*	O*	NO./LUMINAIRE	NOTE TO FIELD
A,A1			X	1	250	X			1	
B,C,D,F,H		X		2	32	X			1	
G,P		X		1	32	X			1	
J		X		1	26	X			1	
K		X		2	26	X			1	
L			X	1	250	X			1	
N		X		2	32	X			1	

*Provide Supporting Documentation

MANDATORY AUTOMATIC CONTROLS

CONTROL LOCATION (Room #)	CONTROL IDENTIFICATION	CONTROL TYPE (Auto Time Switch, Exterior, etc.)	SPACE CONTROLLED	NOTE TO FIELD
OFFICE AREAS	$ W	SWITCH & OCCUP SNSRS	ENTIRE AREA	
STORAGE/UTILITY	$ W	SWITCH & OCCUP SNSRS	ENTIRE AREA	
FUTURE SPACE	$	SWITCH	ENTIRE AREA	
BODY/PARTS SHOP	$	SWITCH	ENTIRE AREA	
MAINT. AREA	$	SWITCH	ENTIRE AREA	

CONTROLS FOR CREDIT

CONTROL LOCATION (Room # or Dwg. #)	CONTROL IDENTIFICATION	CONTROL TYPE (Occupant, Daylight, Dimming, etc.)	LUMINAIRES CONTROLLED TYPE	# OF LUMIN.	NOTE TO FIELD

NOTES TO FIELD – For Building Department Use Only

Nonresidential Compliance Form December 1991

LIGHTING COMPLIANCE SUMMARY LTG-2

PROJECT NAME	DATE

ACTUAL LIGHTING POWER

LUMINAIRE NAME	DESCRIPTION	NUMBER OF LUMINAIRES	WATTS PER LUMINAIRE (Including Ballast)	CEC DEFAULT Y	N*	TOTAL WATTS
A,A1	HIGH BAY FIXTURE	78	295	X		23,101
B,C	INDUSTRIAL FIXTURES	79	62	X		4,898
D,F	4' FLUOR. FIXTURE, 2–LAMP	75	62	X		4,650
H,N	4' FLUOR. FIXTURE, 2–LAMP	56	62	X		3,472
G,P	4' FLUOR. FIXTURE, 1–LAMP	73	31	X		2,263
J	DOWNLIGHT, 1–LAMP	3	31	X		93
K	DOWNLIGHT, 2–LAMP	2	62	X		124
L	PIT LIGHTS	4	295	X		1,060

SUBTOTAL FROM THIS PAGE	39,570
PLUS SUBTOTAL FROM CONTINUATION PAGE	
LESS CONTROL CREDIT WATTS (FROM LTG–3)	
ADJUSTED ACTUAL WATTS	

*If not using the CEC Default value, please provide supporting documentation.

ALLOWED LIGHTING POWER (Choose One Method)

COMPLETE BUILDING METHOD

BUILDING CATEGORY (From Table 2–53M)	WATTS PER SF	COMPLETE BLDG. AREA	ALLOWED WATTS
GENERAL COMMERCIAL & INDUSTRIAL WORK BLDG.	44,816	1.2	53,779

AREA CATEGORY METHOD

AREA CATEGORY (From Table 2–53N)	WATTS PER SF	COMPLETE BLDG. AREA	ALLOWED WATTS
	TOTALS	AREA	WATTS

TAILORED OR PERFORMANCE METHOD

[ ] TAILORED [ ] PERFORMANCE TOTAL ALLOWED WATTS (From LTG–4 or from computer run.)

Nonresidential Compliance Form December 1991

NOTE: BUILDING IS 24 HOUR OPERATION.

MANDATORY MEASURES

☒ BUILDING LIGHTING SHUT–OFF
NOT APPLICABLE

☒ OVERRIDE FOR BUILDING LIGHTING SHUT–OFF
NOT APPLICABLE

☒ AUTOMATIC CONTROL DEVICES CERTIFIED
ALL AUTOMATIC DEVICES SHALL BE U.L. LISTED, CERTIFIED AND AND INSTALLED PER THE MANUFACTURER'S REQUIREMENTS.

☒ FLUORESCENT BALLASTS AND LUMINAIRES CERTIFIED
ALL FLUORESCENT FIXTURES SHALL BE U.L. LISTED, CERTIFIED AND INSTALLED PER THE MANUFACTURER'S REQUIREMENTS.

☒ TANDEM WIRING FOR 2–LAMP BALLASTS
ALL ONE AND THREE LAMP FLUORESCENT FIXTURES SHALL BE TANDEM WIRED WITH TWO–LAMP BALLASTS BY STANDARDS 132.

☒ INDIVIDUAL ROOM/AREA CONTROLS
EACH ROOM AND AREA IS EQUIPPED WITH A SEPARATE SWITCH OR OCCUPANCY SENSOR DEVICE FOR EACH AREA WITH FLOOR–TO CEILING WALLS.

☒ UNIFORM REDUCTION FOR INDIVIDUAL ROOMS
ALL ROOMS AND AREAS GREATER THAN 100 SQUARE FEET AND MORE THAN 1.2 WATTS PER SQUARE FOOT OF LIGHTING LOAD SHALL BE CONTROLLED WITH BI–LEVEL SWITCHING FOR UNIFORM REDUCTION OG LIGHTING WITHIN THE ROOM.

☒ DAYLIT AREA CONTROL
ALL ROOMS WITH WINDOWS AND SKYLIGHTS, THAT ARE GREATER THAN 250 SQUARE FEET, AND THAT ALLOW FOR EFFECTIVE USE OF DAYLIGHT IN THE AREA SHALL HAVE 50% OF THE LAMPS IN EACH DAYLIT AREA CONTROLLED BY A SEPARATE SWITCH.

☒ CONTROL OF EXTERIOR LIGHTS
EXTERIOR BUILDING LIGHT SHALL BE CONTROLLED BY TIME SWITCHES.

AS–BUILT
Contract No. BUS–443B
Date NOV. 2000

REGISTERED PROFESSIONAL ENGINEER KWOK WAI KAN No. 9304 Exp. 9-30-01 ELECTRICAL STATE OF CALIFORNIA

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

STV Incorporated
ENGINEERS & PLANNERS.
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

	DATE
DESIGNED BY S. CONNER	11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101–7490 (619)231–1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

TITLE 24 SCHEDULES

SCALE NONE
MTDB CONTRACT NO. BUS–443B
DRAWING NO. E30.4
SHEET NO. 96

TRAFFIC CONTROL NOTES

1. VALIDATION. THIS TRAFFIC CONTROL PLAN IS NOT VALID UNTIL WORK DATES ARE APPROVED. CONTRACTOR SHALL SUBMIT TWO (2) REDUCED COPIES OF TRAFFIC CONTROL PLANS (11"X17") TO THE TRAFFIC CONTROL PLAN COUNTER, LAND DEVELOPMENT REVIEW DIVISION, 5TH FLOOR DEVELOPMENT SERVICES CENTER, CITY OPERATIONS BUILDING, 1222 FIRST AVENUE, SAN DIEGO. A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO STARTING WORK.

2. STANDARD. THIS TRAFFIC CONTROL PLAN SHALL CONFORM TO THE MOST RECENT ADOPTED EDITION OF EACH OF THE FOLLOWING MANUALS:

   CITY OF SAN DIEGO STANDARD DRAWINGS, APPENDIX "A", CALTRANS MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES; AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION INCLUDING REGIONAL AND CITY OF SAN DIEGO SUPPLEMENT AMENDMENTS.

3. NOTIFICATION. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED AGENCIES AT LEAST FIVE (5) WORKING DAYS IN ADVANCE OF ANY STREET OR ALERT CLOSURE OR IMPLEMENTING ANY CONSTRUCTION DETOUR.

A. FIRE DEPARTMENT DISPATCH	(ST. OR ALLEY CLOSURE)	573-1300
B. POLICE DEPARTMENT DISPATCH	(ST. OR ALLEY CLOSURE)	531-2000
C. SAN DIEGO TRANSIT AUTHORITY	(BUS STOPS)	238-0100 EXT. 424
D. TRASH PICKUP		432-5060
E. TRASH SIGNALS	(TRAFFIC SIGNALS)	525-8651
F. COMMUNICATION AND ELECTRICAL	(REFUSE COLLECTION)	525-8650
G. WASTE MANAGEMENT	(ANY EXCAVATION)	492-5060
H. UNDERGROUND SERVICE ALERT		1-800-422-4133

   THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS AND TENANTS A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO CLOSURE OF DRIVEWAYS. THE CONTRACTOR SHALL POST SIGNS NOTIFYING THE PUBLIC A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO CLOSURE OF STREETS.

   THE CONTRACTOR SHALL NOTIFY FIELD DIVISION AND ARRANGE FOR INSPECTION A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK INVOLVING NIGHTTIME OR WEEKEND HOURS.

4. POSTING PARKING RESTRICTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSTING TOW-AWAY/NO PARKING SIGNS TWENTY-FOUR (24) HOURS IN ADVANCE OF PARKING REMOVAL. SIGNS SHALL INDICATE SPECIFIC DAYS, DATES AND TIMES OF RESTRICTIONS. PARKING METERS SHALL BE BAGGED WHERE APPLICABLE.

5. EXCAVATIONS. EXCEPT WHEN OTHERWISE SHOWN THE PLANS, ALL TRENCHES SHALL BE BACKFILLED OR TRENCH-PLATED AT THE END OF EACH DAY. AN ASPHALT RAMP SHALL BE PLACED AROUND EACH TRENCH PLATE TO PREVENT THE PLATE FROM BEING DISLODGED. UPON COMPLETION OF EXCAVATION BACKFILL, THE CONTRACTOR SHALL PROVIDE A SATISFACTORY SURFACE FOR TRAFFIC. WHEN CONSTRUCTION OPERATIONS ARE NOT ACTIVELY IN PROGRESS, THE CONTRACTOR SHALL MAINTAIN ALL TRAVELED LANES ON THE ROADWAY, EXCEPT WHEN OTHERWISE SHOWN ON THE PLANS.

6. RESTORATION OF ROADWAY. THE CONTRACTOR SHALL REPAIR OR REPLACE ALL EXISTING IMPROVEMENTS WITHIN THE RIGHT-OF-WAY WHICH ARE NOT DESIGNATED FOR PERMANENT REMOVAL (TRAFFIC SIGNS, STRIPING, PAVEMENT MARKERS, PAVEMENT MARKINGS, LEGENDS, CURB MARKINGS, LOOP DETECTORS, TRAFFIC SIGNAL EQUIPMENT, ETC.) WHICH ARE DAMAGED OR REMOVED AS A RESULT OF OPERATIONS. REPAIRS AND REPLACEMENTS SHALL BE A MINIMUM OF EQUAL TO EXISTING IMPROVEMENTS.

7. CHANGES IN WORK. THE CITY TRAFFIC ENGINEER RESERVES THE RIGHT TO OBSERVE THESE TRAFFIC CONTROL PLANS IN OPERATION AND TO MAKE ANY CHANGES AS FIELD CONDITIONS WARRANT. ANY CHANGES SHALL SUPERCEDE THESE PLANS.

8. WORKING HOURS SHALL BE AS SHOWN ON THE PLANS, AND CONTRACTOR SHALL MAINTAIN THE FULL WIDTH OF ALL TRAVELED LANES ON EXISTING ROADWAYS DURING THE NON-WORKING HOURS AND AT ALL TIMES ON SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS. WHEN CONSTRUCTION OPERATORS ARE NOT ACTIVELY IN PROGRESS, THE CONTRACTOR SHALL MAINTAIN ALL TRAVELED LANES OF THE ROADWAY. ANY DEVIATION FROM THESE REQUIREMENTS SHALL BE APPROVED BY THE CITY TRAFFIC ENGINEER.

9. UNAUTHORIZED CHANGES AND USES. CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS.

10. ALL WORK SHALL BE PERFORMED DURING HOURS AS INDICATED ON THE PLANS. ALL TRENCHES SHALL BE BACKFILLED OR TRENCH PLATED AT THE END OF EACH WORK DAY. UPON COMPLETION OF TRENCH BACKFILL, THE SURFACE OF THE ROADWAY SHALL BE BROUGHT TO A SMOOTH, EVEN CONDITION, FREE OF HUMPS AND DEPRESSIONS. AFTER BACKFILL HAS BEEN COMPLETED, THE CONTRACTOR SHALL AT HIS OWN EXPENSE REPAIR ANY DAMAGE TO THE ROADWAY, INCLUDING ANY DAMAGE CAUSED BY HIS/HER OPERATIONS OF CONSTRUCTION TRAFFIC. ALL EXISTING STRIPING, PAVEMENT MARKINGS, SIGNING AND LOOP DETECTION ALTERED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION BY CONTRACTOR BY COMPLETION OF WORK.

11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING WORK ON A CITY STREET TO SUPPLY, INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS SHOWN HEREIN. AS WELL AS ANY SUCH ADDITIONAL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED. TO ENSURE THE SAFE MOVEMENT OF TRAFFIC, PEDESTRIANS AND BICYCLIST THROUGH OR AROUND THE WORK AREA AND PROVIDE MAXIMUM DETECTION AND SAFETY TO CONSTRUCTION WORKERS.

12. ALL SIGNS, DELINEATORS, BARRICADES, ETC., SHALL CONFORM TO THE LATEST CALTRANS MANUAL FOR TRAFFIC CONTROL THROUGH CONSTRUCTION ZONES.

13. EQUIPMENT, MATERIAL OR DEBRIS SHALL NOT BE STORED IN THE PUBLIC RIGHT-OF-WAY WITHOUT PRIOR APPROVAL BY THE CITY TRAFFIC ENGINEER.

14. IF CONSTRUCTION IS TO BE PERFORMED IN STAGES, ALL WORK SHALL BE COMPLETED IN EACH STAGE PRIOR TO BEGINNING WORK ON THE NEXT STAGE.

15. ALL TRAVEL LANES WILL BE MINIMUM OF 12' WIDE UNLESS APPROVED BY THE CITY TRAFFIC ENGINEER.

16. PEDESTRIAN OR BICYCLIST FLOW WILL NOT BE DISTURBED OR INTERRUPTED UNLESS APPROVED BY THE CITY TRAFFIC ENGINEER.

17. CONSTRUCTION TO TAKE PLACE WITHIN ONLY ONE INTERSECTION AT A TIME.

18. THE CONTRACTOR IS RESPONSIBLE TO INFORM ALL AFFECTED BUSINESSES AND RESIDENTS OF THE WORK. THE CONTRACTOR SHALL DISTRIBUTE PRINTED NOTICES, WHICH INCLUDE DATES AND HOURS OF WORK, TO ALL AFFECTED RESIDENTS AT LEAST ONE WEEK BEFORE STARTING WORK.

19. SIGN PANELS SHALL BE REFLECTORIZED HIGH INTENSITY SURFACES.

20. ALL ADVANCE WARNING SIGN INSTALLATIONS SHALL BE EQUIPPED WITH FLAGS FOR DAYTIME CLOSURES.

22. ALL DIRT, DUST AND DEBRIS SHALL BE REMOVED FROM STREET AT END OF EACH DAY AND AT END OF EACH JOB.

TRAFFIC STRIPING, PAVEMENT MARKINGS AND PAVEMENT MARKERS

1. ALL STRIPING AND INSTALLATION OF ALL PAVEMENT MARKERS AND SIGNS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PAVEMENT MARKERS AND STRIPING SHALL CONFORM TO SECTION 84 AND SECTION 85 OF THE LATEST CALTRANS STANDARD SPECIFICATIONS, AND CALTRANS TRAFFIC CONTROL MANUAL.

2. CONTROL OF ALIGNMENT AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND IS SUBJECT TO APPROVAL BY THE TRAFFIC ENGINEER.

3. SECTION 84-3.02, "MATERIALS," OF THE CALTRANS STANDARD SPECIFICATIONS, IS AMENDED TO READ:

   PAINT FOR TRAFFIC STRIPES SHALL CONFORM TO THE FOLLOWING STATE SPECIFICATIONS:

ITEM	SPECIFICATION
RAPID DRY WATER-BORNE PAINT WHITE AND YELLOW	8010-42L-30 OR 8101-610-10
GLASS BEADS	8010-51J-22 (TYPE II)

4. COPIES OF STATE SPECIFICATIONS FOR TRAFFIC PAINT AND GLASS BEADS MAY BE OBTAINED FROM THE TRANSPORTATION LABORATORY, P.O. BOX 19128, SACRAMENTO, CA 95819, (916) 739-2400.

5. THINNING OF PAINT WILL NOT BE ALLOWED.

6. THE CONTRACTOR SHALL INSTALL REFLECTORIZED PAVEMENT MARKERS ON ALL LANE LINES AND CENTERLINE STRIPING.

7. CONTRACTOR IS RESPONSIBLE FOR ALL SAND BLASTING OF CONFLICTING STRIPING AND REPLACING ALL STRIPING AND PAVEMENT MARKING REMOVED DUE TO CONSTRUCTION.

8. THE INSTALLATION OF ALL SIGNS WILL BE DONE BY THE CONTRACTOR. ALL SIGNS MUST CONFORM TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION TRAFFIC MANUAL. ALL SIGN POSTS MUST BE ANCHORED TWO FEET IN CONCRETE AND 18-24 INCHES FROM FACE OF CURB. THE BOTTOM OF SIGNS MUST BE SEVEN (7) FEET FROM THE GROUND. CONTRACTOR SHALL NOTIFY CITY TRAFFIC ENGINEER AT 236-5333 UPON COMPLETION OF STRIPING AND SIGNING.

CONSTRUCTION NOTES FOR TRENCHES THROUGH SIGNALIZED INTERSECTION

1. DAMAGED SIGNAL EQUIPMENT SHALL BE REPAIRED AND/OR REPLACED PER CALTRANS STANDARD SPECIFICATIONS (JULY 1992) DOC.7696920 AND CALTRANS STANDARD PLANS (JULY 1992), DOC.769691).

DETECTOR LOOPS SHALL BE AS FOLLOWS:	TYPE O
BIKE LANE DETECTOR LOOPS LIMIT LINE DETECTOR LOOPS	TYPE D
INTERMEDIATE AND ADVANCE DETECTOR LOOPS	TYPE B
ALL OTHER DETECTOR LOOPS	TYPE A

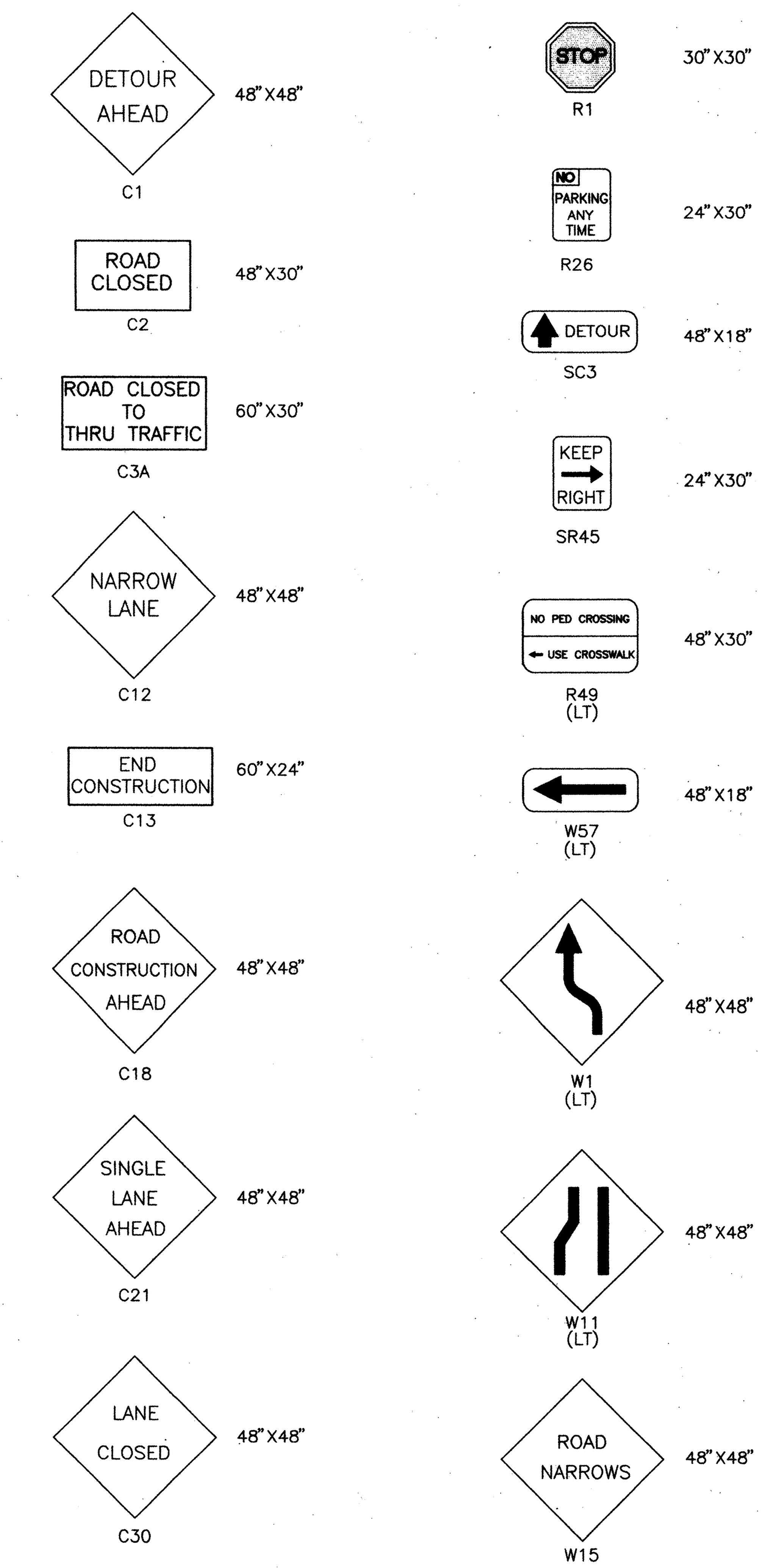
2. THE CITY TRAFFIC ENGINEER SHALL BE CONTACTED AT LEAST FIVE WORKDAYS PRIOR TO ANY DISRUPTION OF NORMAL SIGNAL OPERATIONS. CONTACT THE FOLLOWING INDIVIDUAL: CITY OF SAN DIEGO - MR. TOM ELDER - 236-7185.

3. ALL DETECTOR LOOPS, SHALL BE REPLACED AND OPERATIONAL WITHIN FIVE WORKING DAYS FROM INITIAL REMOVAL OR DISRUPTION, IMMEDIATELY AFTER WORK WITHIN THE INTERSECTION IS COMPLETED.

4. CONTRACTOR MUST RECEIVE APPROVAL FROM THE CITY PRIOR TO DETECTOR LOOP INSTALLATION.

LEGEND

- WORK ZONE
- DELINEATOR
- DIRECTION OF TRAVEL
- SIGN
- TYPE III BARRICADES
- TYPE III BARRICADES WITH SIGN PANEL
- PEDESTRIAN ACCESS



PRIVATE-CONTRACT

PLANS FOR TRAFFIC CONTROL:

NOTES AND LEGEND

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 5 OF 13 SHEETS

W.O. NO 98-267 (037000)

M. Lammak (signature) FOR CITY ENGINEER — DATE 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	EARTH TECH			SEP 29 99
AS-BLT.	C.E.	MV		

CONTRACTOR C.E. WYLIE — DATE STARTED 5-15-1999
INSPECTOR SEVERINO MENDOZA — DATE COMPLETED 9-26-2000

1837-6283
CONTROL CERTIFICATION
NAD 83
197-1723
LAMBERT COORDINATES

29557-5-D
DWG NO.

JOB NUMBER 24990 R-R14 FILE NAME: 443B_TC10.1_NOTES.DWG 3/17/99

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

REGISTERED PROFESSIONAL ENGINEER STEPHEN D. (seal) 42550 Exp. 3-31-00 STATE OF CALIFORNIA

	DATE
DESIGNED BY SDM	11/5/98
DRAWN BY LES	11/5/98
CHECKED BY KAG	11/5/98
MTDB PRJ. ENG. GPD	11/5/98

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

TRAFFIC CONTROL NOTES AND LEGEND

SCALE: NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. TC10.1
SHEET NO. 97

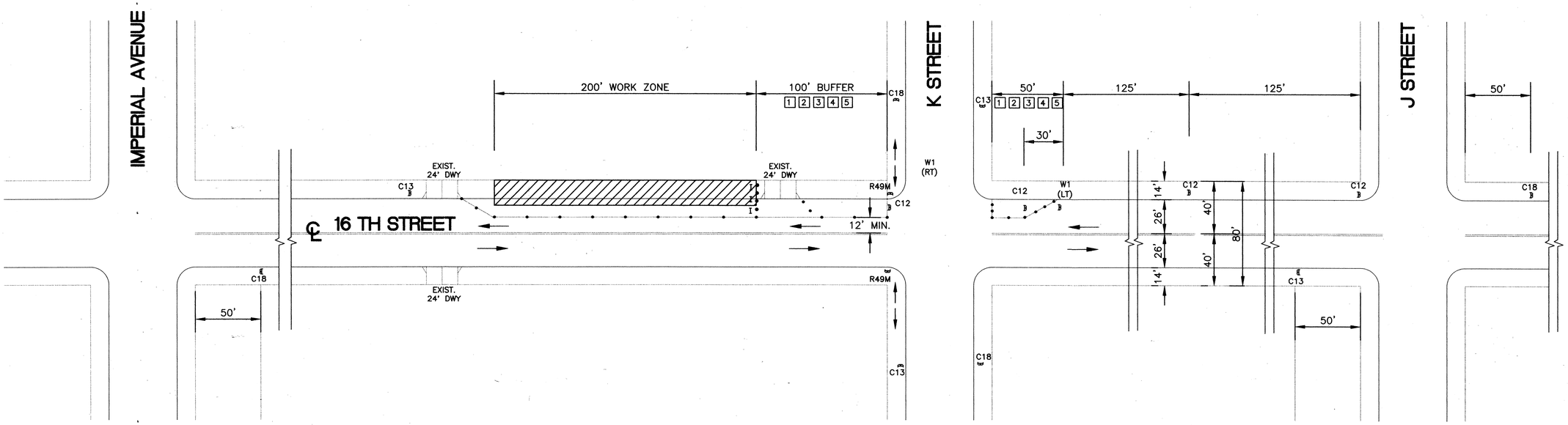
AS-BUILT

TRAFFIC CONTROL NOTES:

1. SINGLE ACCESS DRIVEWAY. CONTRACTOR TO COORDINATE CLOSURE WITH PROPERTY OCCUPANT THREE WEEKS IN ADVANCE OF CONSTRUCTION. DRIVEWAY ACCESS TO BE MAINTAINED.
2. TEMPORARY "NO PARKING" AREA. PLACE R26 (NO PARKING) SIGNS AT 25' INTERVALS MAXIMUM ON BOTH SIDES OF STREET, 24 HRS IN ADVANCE OF CONSTRUCTION. COVER CONFLICTING SIGNS AND BAG PARKING METERS.
3. CONES/DELINEATORS SPACED AT 25' INTERVALS MAX (TYP)
4. CONTRACTOR TO MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES.
5. CONTRACTOR TO POST TOW AWAY/NO PARKING SIGNS 48 HOURS IN ADVANCE OF THE APPROVED PROHIBITION.

GENERAL NOTES

1. TRAFFIC CONTROL DESIGN SPEED IS 25 MPH.
2. WHEN ADVANCE WARNING SIGNS PROGRESS INTO ADDITIONAL BLOCKS, C18 (ROAD CONSTRUCTION AHEAD) AND C13 (END OF CONSTRUCTION) SIGNS ON CROSS STREETS SHALL BE LOCATED 50' FROM THE INTERSECTION (BCR), UNLESS NOTED OTHERWISE.



16 TH STREET
SCALE:1"=40'

PRIVATE-CONTRACT

PLANS FOR TRAFFIC CONTROL:
16 TH STREET
SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION – BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 6 OF 13 SHEETS

W.O. NO 98-267 (037000)

FOR CITY ENGINEER — DATE 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	EARTH TECH			SEP 29 99

1837-6283
CONTROL CERTIFICATION
NAD 83
197-1723
LAMBERT COORDINATES

AS-BLT. C.E.

CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999
INSPECTOR SEVERINO MENDOZA DATE COMPLETED 9-26-2000

DWG NO. 29557-6-D

JOB NUMBER 24990 R-R14 FILE NAME: 4438_TC-2.DWG 3/17/99

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

REGISTERED PROFESSIONAL ENGINEER STEPHEN D. MOORE Exp. 3-31-00 42550 STATE OF CALIFORNIA

	DATE
DESIGNED BY SDM	11/5/98
DRAWN BY LES	11/5/98
CHECKED BY KAG	11/5/98
MTDB PRJ. ENG. GPD	11/5/98

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

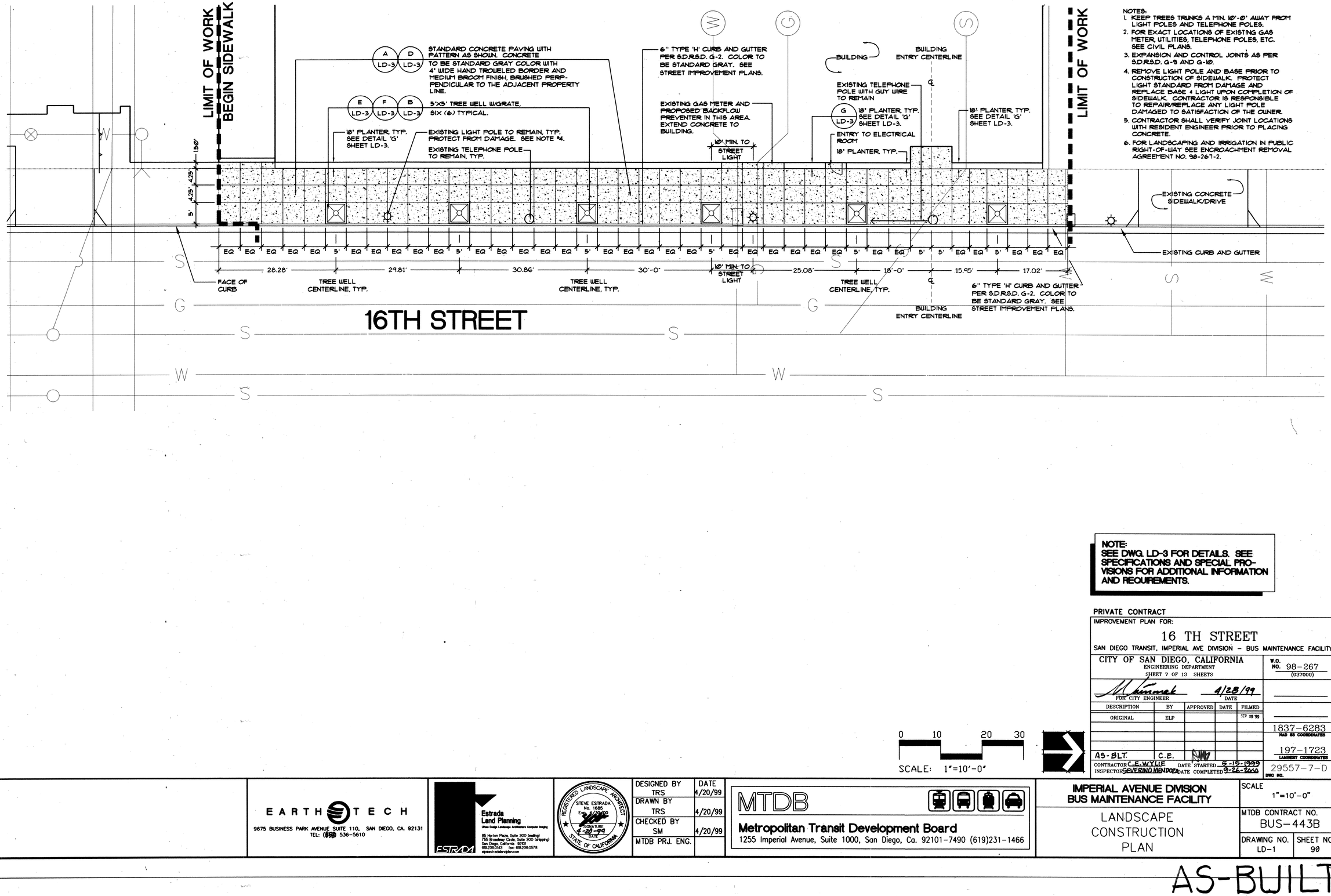
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

TRAFFIC CONTROL
16 TH STREET

SCALE 1'=40'
MTDB CONTRACT NO. BUS-443B
DRAWING NO. TC10.2
SHEET NO. 98

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

AS-BUILT



NOTES:
1. KEEP TREES TRUNKS A MIN. 10'-0" AWAY FROM LIGHT POLES AND TELEPHONE POLES.
2. FOR EXACT LOCATIONS OF EXISTING GAS METER, UTILITIES, TELEPHONE POLES, ETC. SEE CIVIL PLANS.
3. EXPANSION AND CONTROL JOINTS AS PER S.D.R.S.D. G-9 AND G-10.
4. REMOVE LIGHT POLE AND BASE PRIOR TO CONSTRUCTION OF SIDEWALK. PROTECT LIGHT STANDARD FROM DAMAGE AND REPLACE BASE & LIGHT UPON COMPLETION OF SIDEWALK. CONTRACTOR IS RESPONSIBLE TO REPAIR/REPLACE ANY LIGHT POLE DAMAGED TO SATISFACTION OF THE OWNER.
5. CONTRACTOR SHALL VERIFY JOINT LOCATIONS WITH RESIDENT ENGINEER PRIOR TO PLACING CONCRETE.
6. FOR LANDSCAPING AND IRRIGATION IN PUBLIC RIGHT-OF-WAY SEE ENCROACHMENT REMOVAL AGREEMENT NO. 98-267-2.

NOTE:
SEE DWG. LD-3 FOR DETAILS. SEE SPECIFICATIONS AND SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

0 10 20 30
SCALE: 1"=10'-0"

PRIVATE CONTRACT

IMPROVEMENT PLAN FOR:

16 TH STREET

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 7 OF 13 SHEETS

W.O. NO. 98-267 (037000)

FOR CITY ENGINEER — DATE 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP			SEP 09 99
AS-BLT.	C.E.			

1837-6283 NAD 83 COORDINATES

197-1723 LAMBERT COORDINATES

CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999
INSPECTOR SEVERINO MENDOZA DATE COMPLETED 9-26-2000

29557-7-D DWG NO.

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (858) 536-5610

Estrada Land Planning
Urban Design Landscape Architecture Computer Imaging
85 Horton Plaza, Suite 300 (mailing)
756 Broadway Circle, Suite 300 (shipping)
San Diego, California 92101
619.236.0343 fax: 619.236.0578
elp@estradalandplan.com

REGISTERED LANDSCAPE ARCHITECT
STEVE ESTRADA
No. 1685
Exp. 1/29/00
SIGNATURE
4-20-99
DATE
STATE OF CALIFORNIA

DESIGNED BY	DATE
TRS	4/20/99
DRAWN BY TRS	4/20/99
CHECKED BY SM	4/20/99
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

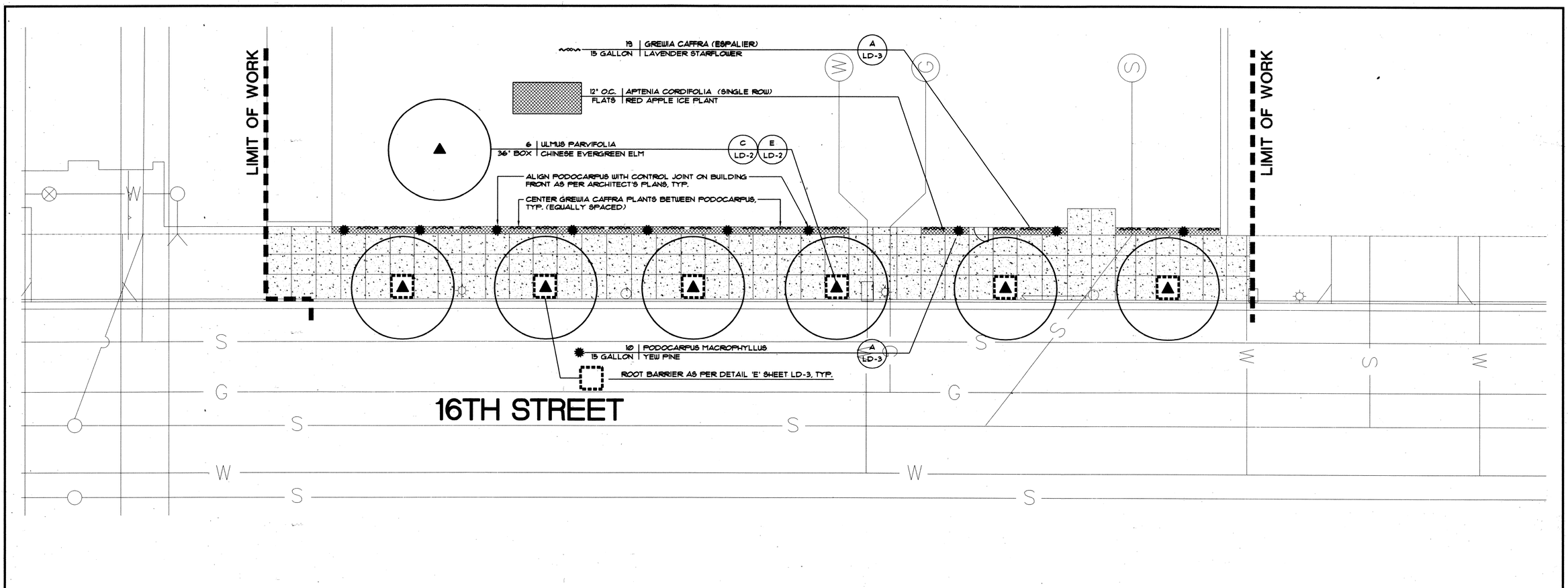
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

LANDSCAPE CONSTRUCTION PLAN

SCALE 1"=10'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. LD-1
SHEET NO. 99

JOB NUMBER 339-06 R-14 FILE NAME: MAIN/PROJECTS/33906/33906_LY.DWG 4/20/99

AS-BUILT



NOTE:
SEE SHEETS LD-3 AND LD-4 FOR PLANTING DETAILS, LEGEND AND NOTES.

0 10 20 30
SCALE: 1"=10'-0"

PRIVATE CONTRACT

PLANTING PLAN FOR:

16 TH STREET

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION – BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 8 OF 13 SHEETS

W.O. NO. 98-267 (037000)

FOR CITY ENGINEER — DATE 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP			SEP 89 99
AS-BLT.	C.E.			

1837-6283 NAD 83 COORDINATES

197-1723 LAMBERT COORDINATES

CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999
INSPECTOR SEVERINO MENDOZA DATE COMPLETED 9-26-2000

29557-8-D DWG NO.

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

Estrada Land Planning
Urban Design Landscape Architecture Computer Imaging
85 Horton Plaza, Suite 300 (mailing)
755 Broadway Circle, Suite 300 (shipping)
San Diego, California 92101
619.236.0143 fax: 619.236.0578
elpestradalandplan.com

REGISTERED LANDSCAPE ARCHITECT
STEVE ESTRADA
No. 1665
Exp. 4/30/00
SIGNATURE
DATE 4-20-99
STATE OF CALIFORNIA

DESIGNED BY	DATE
TRS	4/20/99
DRAWN BY	
TRS	4/20/99
CHECKED BY	
SM	4/20/99
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

LANDSCAPE PLANTING PLAN

SCALE 1"=10'-0"

MTDB CONTRACT NO. BUS-443B

DRAWING NO. LD-2 | SHEET NO. 100

JOB NUMBER 339-06 R-14 FILE NAME: MAIN/PROJECTS/33906/33906_PT.DWG 4/20/99

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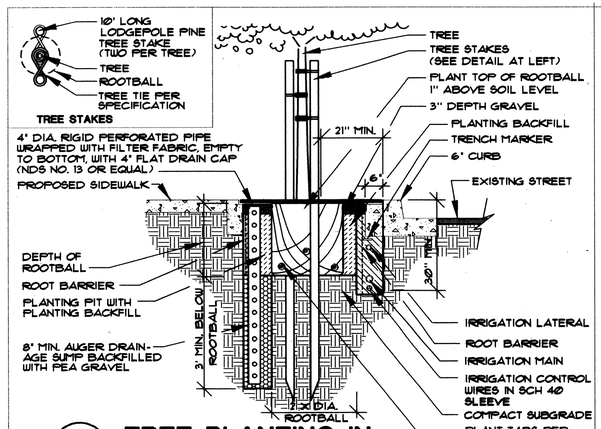
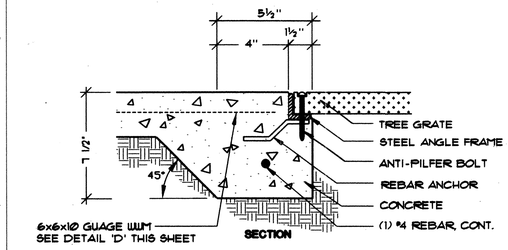


C TREE PLANTING IN TREE GRATE

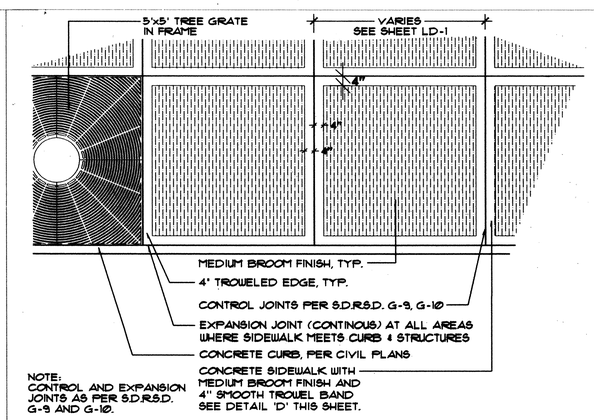
SCALE: N.T.S.



NOTE: KEEP REBAR A MIN. 2 1/2" AWAY FROM SURFACE.

B TREE GRATE ATTACHMENT

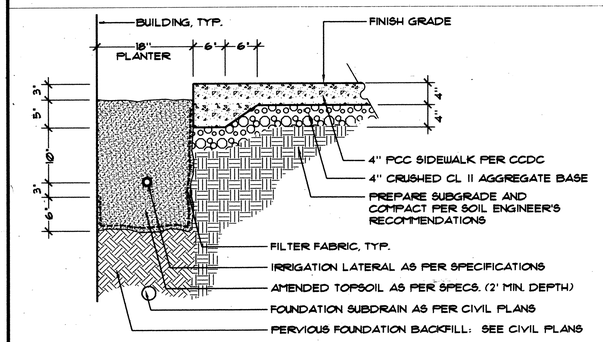
SCALE: N.T.S.



NOTE:
CONTROL AND EXPANSION JOINTS AS PER S.D.R.S.D. G-9 AND G-10.

A CONCRETE WALK DETAIL

SCALE: N.T.S.

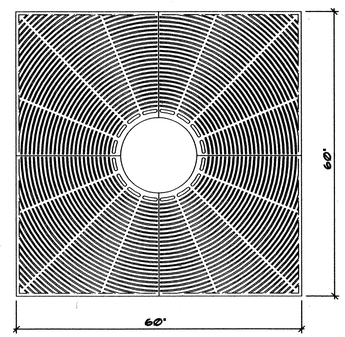


NOTE:
- LOCATE IRRIGATION PIPE AS PER SPECIFICATIONS
- SEE DETAIL 'D' THIS SHEET FOR CONCRETE PAVING
- FOR GRADING AND DRAINAGE SEE CIVIL PLANS.

G 18" PLANTER SECTION

SCALE: N.T.S.

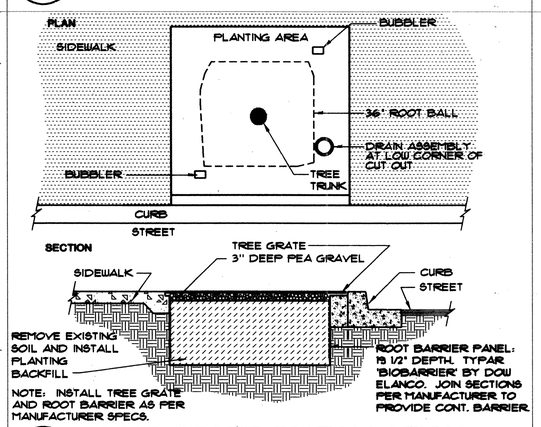
NOTES:
- SEE TREE GRATE NOTES, THIS SHEET.
- INSTALL AS PER DETAILS "B" AND "E", THIS SHEET.



F OLYMPIAN PATTERN

TREE GRATE

SCALE: N.T.S.

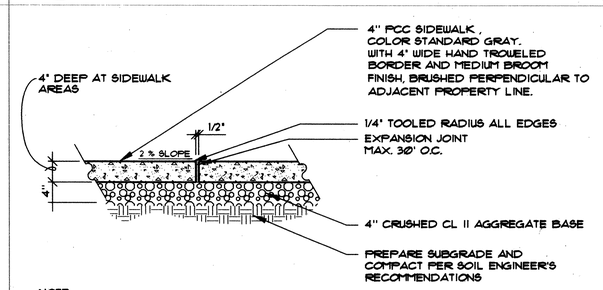


NOTE: INSTALL TREE GRATE AND ROOT BARRIER AS PER MANUFACTURER SPECS.

E TREE GRATE INSTALLATION

NOT TO SCALE

SCALE: N.T.S.



NOTE:
- LOCATE 2' DEEP x 1/4" RAD. SCORE CONTROL JOINTS AS INDICATED ON PLANS
- ALL SIDEWALK AREAS TO BE MIN. 4" DEEP CONCRETE
- SEE CCDC STREETSCAPE MANUAL (TYP.)
- SEE DETAIL 'A' THIS SHEET.
- FOR GRADING SEE CIVIL PLANS.

D CONCRETE PAVING (NON-VEHICULAR)

SCALE: N.T.S.

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

PRIVATE CONTRACT

PAVING/PLANTING/CONSTRUCTION DETAILS FOR:

16 TH STREET

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 9 OF 13 SHEETS

W.O. NO. 98-267 (037000)

FOR CITY ENGINEER — DATE 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP			SEP 29 99
AS-BLT	C.E.			

1837-6283 NAD 83 COORDINATES

197-1723 LAMBERT COORDINATES

CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999
INSPECTOR REVERINO MENDOZA DATE COMPLETED 9-26-2000

29557-9-D DWG NO.

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (858) 536-5610

Estrada Land Planning
Urban Design Landscape Architecture Computer Imaging
85 Horton Plaza, Suite 300 (mailing)
755 Broadway Circle, Suite 300 (shipping)
San Diego, California 92101
619.236.0343 fax: 619.236.0578
stevestrada@cdpdsn.com

REGISTERED LANDSCAPE ARCHITECT — STEVE ESTRADA No. 1685 Exp. 12-31-99 — SIGNATURE — DATE 4-20-99 — STATE OF CALIFORNIA

		DATE
DESIGNED BY	TRS	4/20/99
DRAWN BY	TRS	4/20/99
CHECKED BY	SM	4/20/99
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE

LANDSCAPE CONSTRUCTION DETAILS AND PLANTING LEGEND, DETAILS AND NOTES

SCALE NTS

MTDB CONTRACT NO. BUS-443B

DRAWING NO. LD-3 | SHEET NO. 101

AS-BUILT

JOB NUMBER 339-06 R-12 FILE NAME: MAIN/PROJECTS/33906/33906_PD.DWG 4/20/99

TREE LEGEND

BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS	HT. X SP.	DETAIL
ULMUS PARVIFOLIA	CHINESE EVERGREEN ELM	36" BOX	STANDARD FORM, HEALTHY, DENSE, VIGOROUS 6' MIN. BRANCHING HEIGHT	14' x 6' x 3" MINIMUM CALIPER	C / LD-3 E / LD-3

GROUNDCOVER LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS	DETAIL
	APTENIA CORDIFOLIA	RED APPLE ICE PLANT	12" O.C., SINGLE ROW	FLATS	VIGOROUS	

ESPALIER LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS	DETAIL
	PODOCARPUS MACROPHYLLUS	YEW PINE	15 GAL	COLUMNAR FORM, 6' HT. x 16" DIAMETER FULL & DENSE	A / LD-4
	GREWIA CAFFRA	LAVENDER STARFLOWER	15 GAL	ESPALIER, 5' HEIGHT x 6' SPREAD FULL & DENSE	A / LD-4

PLANTING NOTES

1. ALL LANDSCAPING SHALL BE DONE IN ACCORDANCE WITH THE GENERAL, SPECIAL, AND TECHNICAL PROVISIONS, AND THE APPLICABLE PARTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, AS WELL AS THE FOLLOWING:
2. THE PLANTING PLANS ARE DIAGRAMMATIC. MINOR ADJUSTMENTS IN PLANT LOCATIONS, ORIENTATION, AND TYPE MAY BE MADE AT THE DISCRETION OF THE ENGINEER.
3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE OTHER TRADES AND MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION.
4. DO NOT DAMAGE ROOTBALL AND/OR FOLIAGE OF PLANTS DURING TRANSPORTATION OR PLANT INSTALLATION.
5. ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER AND REPLACED UPON REQUEST BEFORE OR AFTER PLANTING.
6. THE ENGINEER SHALL APPROVE FINAL PLACEMENT AND ORIENTATION OF ALL TREES AND SHRUBS PRIOR TO PLANTING.
7. ALL PLANTS PLANTED FROM CONTAINERS SHALL HAVE THEIR ROOTBALLS SCORED WITH A SHARP TOOL TO A DEPTH OF ONE INCH (1") IN THREE LONGITUDINAL INCISIONS AT LOCATIONS EQUALLY SPACED AROUND THE ROOTBALL BEFORE PLACING PLANT IN HOLE.
8. INSTALL 3" LAYER OF PEA GRAVEL THROUGHOUT ENTIRE SURFACE OF TREE PLANTING AREAS UNDER TREE GRATE, TYPICAL.
9. ALL TREES TO BE INSTALLED WITH ROOT BARRIER AS PER DETAIL 'B' THIS SHEET.

TREE GRATE

TREE GRATE SHALL BE LOCATED AS SHOWN ON PLAN. INSTALL PER S.D.R.S.D. AND DETAIL 'B' IN THIS SHEET WITH FRAME EMBEDDED IN CONCRETE EDGE. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

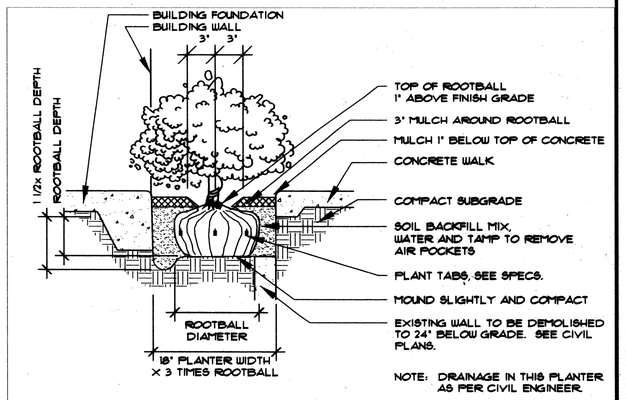
PRODUCT: IRONSMITH - OLYMPIAN M60060S, 60" X 60" SQUARE (2-PIECE) GRATE ¼" SLOTS, WITH 12" TREE OPENING, AND ONE PIECE STEEL FRAME UNIT.

FINISH: FACTORY APPLIED FINISH, CONSISTING OF ONE COAT PRIMER AND ONE TOP COAT BLACK ENAMEL.

HARDWARE: GALVANIZED, ANTI-PILFER HARDWARE. PAINT EXPOSED HARDWARE TO MATCH GRATE.

MANUFACTURER: IRONSMITH
41651 CORPORATE WAY, SUITE 3
PALM DESERT, CA 92260 OR APPROVED EQUAL
(800) 338-4766

NOTE:
- TREE GRATE METAL FRAMING TO HAVE NO ANCHORS ALONG SIDE TOUCHING CURBING. CONTRACTOR TO SPECIFY THIS INFORMATION TO MANUFACTURER PRIOR TO ORDERING. INSTALL REMAINING THREE (3) SIDES AS PER ALL MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS AND AS NOTED ABOVE.
- PER CCDC STREETSCAPE MANUAL (TYP.)
- SEE DETAILS 'B', 'E' AND 'F', SHEET LD-3.



A SHRUB PLANTING
SCALE: N.T.S.

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

PRIVATE CONTRACT
PLANTING DETAILS AND NOTES FOR:
16 TH STREET
SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 10 OF 13 SHEETS

W.O. NO. 98-267 (037000)

FOR CITY ENGINEER — DATE 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP			SEP 28 '99
AS-BLT	C.E.			

1837-6283 NAD 83 COORDINATES
197-1723 LAMBERT COORDINATES
29557-10-D DWG NO.

CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999
INSPECTOR EVERINA MENDOZA DATE COMPLETED 9-26-2000

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (858) 536-5610

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85 Horton Plaza, Suite 300 (mailing)
756 Broadway Circle, Suite 300 (shipping)
San Diego, California 92101
619.236.0543 fax: 619.236.0578
estradalp@aol.com

REGISTERED LANDSCAPE ARCHITECT
STEVE ESTRADA
No. 1685
Exp. 12/31/00
SIGNATURE
4-20-99
DATE
STATE OF CALIFORNIA

DESIGNED BY TRS	DATE 4/20/99
DRAWN BY TRS	4/20/99
CHECKED BY SM	4/20/99
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

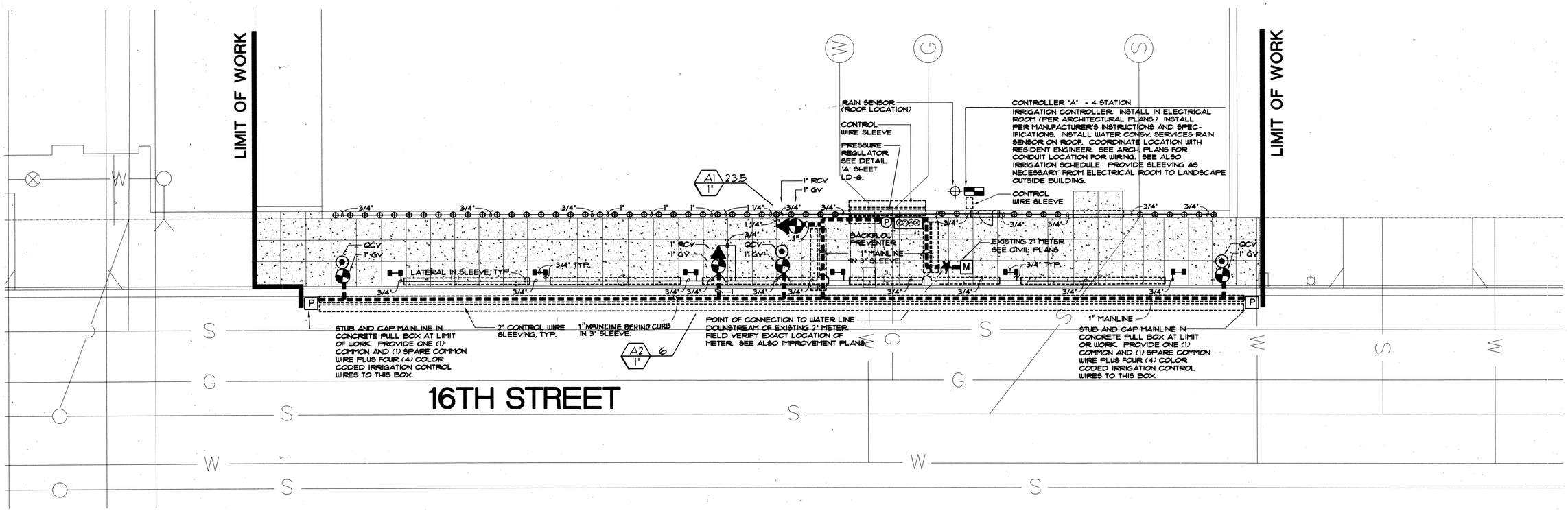
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE

LANDSCAPE PLANTING DETAILS AND NOTES

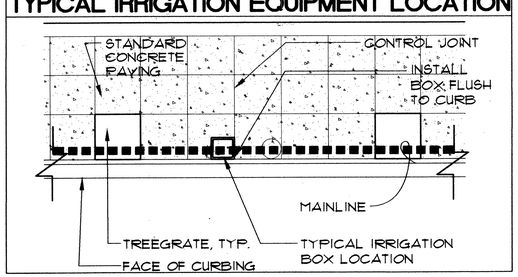
SCALE NTS
MTDB CONTRACT NO. BUS-443B
DRAWING NO. LD-4
SHEET NO. 102

JOB NUMBER 339-06 R-12 FILE NAME: MAIN/PROJECTS/33906/33906_PD.DWG 4/20/99

AS-BUILT

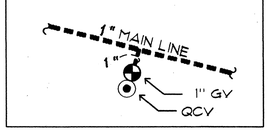


TYPICAL IRRIGATION EQUIPMENT LOCATION



POINT OF CONNECTION AT STA. 12+25, 16TH STREET	
P.O.C. DESIGNATION	"A" ★ (SEE PLANS)
ELEVATION	29.63
STATIC PRESSURE	104 PSI
WATER METER (EXISTING) 2" AT	STA. 12+25, 16th STREET
BACK FLOW	1"
PEAK FLOW	23.5 GPM
CONTROLLER TYPE	RAINBIRD ESP-4
STATIONS AVAILABLE	2
STATIONS USED	2
WATER AGENCY	CITY OF SAN DIEGO
WATER UTILITIES DEPT.	619-533-4100

TYPICAL QUICK COUPLER VALVE CONNECTION



NOTES:

1. BACKFLOW PREVENTER, VALVES, QUICK COUPLERS, ETC. TO BE INSTALLED IN SIDEWALK AREA OUT OF STREET. INSTALL VALVES AND BACKFLOW PREVENTER IN CONCRETE SIDEWALK AREA AS PER DETAILS. SEE TABLE THIS SHEET FOR FURTHER INFORMATION. PROVIDE SLEEVING AS NECESSARY.
2. FOR LANDSCAPING AND IRRIGATION IN PUBLIC RIGHT-OF-WAY SEE ENCROACHMENT REMOVAL AGREEMENT NO. 98-267-2.

NOTE:
SEE SHEETS LD-6 AND LD-7 FOR IRRIGATION DETAILS, LEGEND AND NOTES.

PRIVATE CONTRACT

IRRIGATION PLAN FOR:

16 TH STREET

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 11 OF 13 SHEETS

W.O. NO. 98-267 (037000)

FOR CITY ENGINEER — DATE 4/28/99

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ORIGINAL	ELP			SEP 09 99
AS-BLT	C.E.			

1837-6283 NAD 83 COORDINATES

197-1723 LAMBERT COORDINATES

CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999
INSPECTOR GERARDO MENDOZA DATE COMPLETED 9-26-2000

29557-11-D DWG NO.

0 10 20 30
SCALE: 1"=10'-0"

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (858) 536-5810

Estrada Land Planning
Urban Design Landscape Architecture Computer Imaging
85 Horton Plaza, Suite 300 (mailing)
755 Broadway Circle, Suite 300 (shipping)
San Diego, California 92101
619.238.0043 fax: 619.236.0578
elp@estradalandplan.com

REGISTERED LANDSCAPE ARCHITECT
STEVE ESTRADA
No. 1685
Exp. 12-31-00
SIGNATURE
4-28-99
DATE
STATE OF CALIFORNIA

		DATE
DESIGNED BY	TRS	4/20/99
DRAWN BY	TRS	4/20/99
CHECKED BY	SM	4/20/99
MTDB PRJ. ENG.		

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

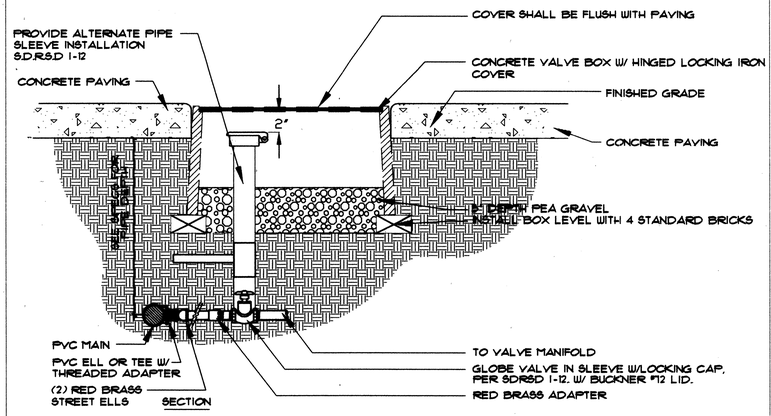
LANDSCAPE IRRIGATION PLAN

SCALE 1"=10'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. LD-5
SHEET NO. 103

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

JOB NUMBER 339-06 R-14 FILE NAME: MAN/PROJECTS/33906/33906_IR.DWG 4/20/99

AS-BUILT

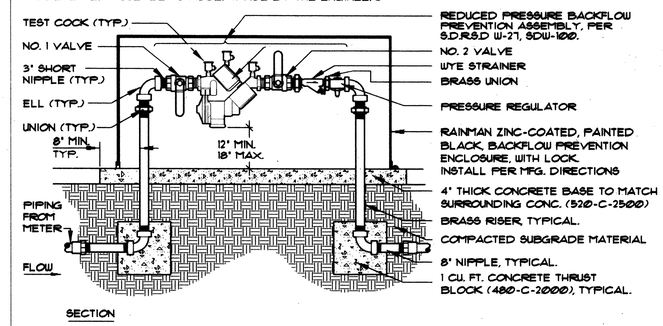


B GLOBE VALVE (LOCATED IN PAVING AREAS)

NOT TO SCALE

NOTES:

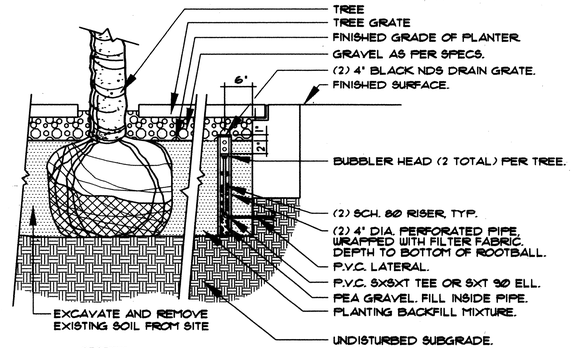
1. ALL RISERS, UNIONS, ELBOWS AND NIPPLES SHALL BE COPPER.
2. CLOSE NIPPLES SHALL NOT BE USED.
3. TEFLON TAPE 3/4" WIDE SHALL BE USED ON ALL THREADED CONNECTIONS.
4. CONCRETE PAD SHALL BE 18" WIDE, MINIMUM.
5. BACKFLOW PREVENTER ASSEMBLY SHALL BE TESTED UPON INSTALLATION BY A CERTIFIED BACKFLOW DEVICE TESTER. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN TEST RESULTS COMPLETED BY CERTIFIED BACKFLOW TESTER PRIOR TO THE BACKFLOW PREVENTER ASSEMBLY'S ACCEPTANCE BY THE ENGINEER.



A BACKFLOW PREVENTER ASSEMBLY

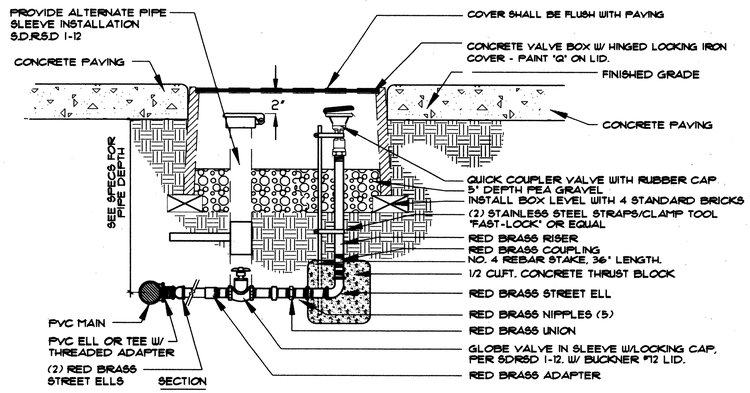
NOT TO SCALE

NOTE:
INSTALL TWO (2) BUBBLER HEAD ASSEMBLIES AT EACH TREE WELL LOCATION. LOCATE AT OPPOSITE CORNERS OF TREE WELL, TYPICAL.



D BUBBLER HEADS AT TREE WELL

NOT TO SCALE



C QUICK COUPLER VALVE WITH GLOBE VALVE (LOCATED IN PAVING AREAS)

NOT TO SCALE

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

PRIVATE CONTRACT

IRRIGATION DETAILS FOR:

16 TH STREET

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 12 OF 13 SHEETS

W.O. NO. 98-267 (037000)

FOR CITY ENGINEER — DATE 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP			SEP 29 99

1837-6283 NAD 83 COORDINATES

197-1723 LAMBERT COORDINATES

AS-BLT C.E.

CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999
INSPECTOR SEVERINO MENDOZA DATE COMPLETED 9-26-2000

29557-12-D DWG NO.

JOB NUMBER 339-06 R-14 FILE NAME: MAIN/PROJECTS/33906/33906_ID.DWG 4/20/99

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San Diego, California 92101
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elp@estradaandassocs.com

REGISTERED LANDSCAPE ARCHITECT — STEVE ESTRADA No. 1685 — Exp. 1/30/00 — SIGNATURE — DATE 4-30-99 — STATE OF CALIFORNIA

	DATE
DESIGNED BY TRS	4/20/99
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Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

LANDSCAPE IRRIGATION DETAILS

SCALE NTS

MTDB CONTRACT NO. BUS-443B

DRAWING NO. LD-6 | SHEET NO. 104

AS-BUILT

IRRIGATION LEGEND

SYMBOL	IRRIGATION COMPONENT DESCRIPTION	MFG.	MODEL/ PART NO.	REMARKS	DETAIL REF.
★	POINT OF CONNECTION TO WATER MAIN	-	-	AT METER LOCATION, VERIFY IN FIELD	S.D.R.S.D. W-1
M	2" WATER METER	(EXISTING)	-	SEE CIVIL PLANS FOR LOCATION	S.D.R.S.D. W-1, W-5, & SDW 112
	REDUCED PRESSURE BACKFLOW PREVENTER	FEBCO	825Y (1")	INSTALL PER CITY OF SAN DIEGO REQUIREMENTS	DETAIL A /LD-6
	BACKFLOW PREVENTER ENCLOSURE	RAINMAN	RMBF-30CR	PROVIDE AND INSTALL ZINC COATED BLACK-PAINTED ENCLOSURE WITH NO SHARP EDGES. VERIFY SIZE.	DETAIL A /LD-6
	IRRIGATION CONTROLLER	RAINBIRD	ESP-4	WALL MOUNT IN EQUIPMENT ROOM. DIRECT WIRE W/ DISCONNECT SWITCH	S.D.R.S.D. I-18
	'RAIN GUARD' RAIN SENSOR IN VANDAL RESISTANT ENCLOSURE	WATER CONSV. SERVICES	WCS RGVR	INSTALL RAIN SENSOR ON ROOF OF BUILDING. INSTALL PER MANUFACTURER INSTRUCTIONS AND SPECIFICATIONS. INSTALL IN AREA FREE AND CLEAR OF OVERHEAD OBSTRUCTIONS. SEE ARCHITECTS PLANS FOR LOCATION OF CONDUIT FOR WIRE CONNECTION.	---
Ⓟ	PRESSURE REGULATOR	WILKINS	MODEL 500	1" SIZE. INSTALL IN BACKFLOW ENCLOSURE AS PER DETAIL 'A', LD-6.	DETAIL A /LD-6
-	WYE STRAINER	WILKINS	500Y SBR 1"	INSTALL ON BACKFLOW PREVENTER ASSEMBLY	DETAIL A /LD-6
	GLOBE VALVE	WILKINS	215	INSTALL IN CONCRETE VALVE BOX SIZE PER PLAN.	DETAIL B /LD-6
▼	ELECTRIC REMOTE CONTROL VALVE	RAINBIRD	100-EFB	INSTALL IN CONCRETE VALVE BOX SIZE PER PLAN. INSTALL IN CONCRETE PAVING. SEE DETAIL S.D.R.S.D. I-14.	S.D.R.S.D. I-14
■	PRESSURE COMPENSATING FULL-CIRCLE BUBBLERS	RAINBIRD	1402	50 GPM. INSTALL TWO PER TREE	DETAIL D /LD-6
⊕	MPR STREAM BUBBLERS 1806-SAM-PRS-5CST-B	RAINBIRD	1806-SAM PRS-5CST-B	50 GPM. INSTALL AS PER PLAN WITH PCS-030 SCREEN.	S.D.R.S.D. I-2
⊙	QUICK COUPLING VALVE	RAINBIRD	44LRC	1" SIZE - ISOLATE FROM MAIN WITH GLOVE VALVE	DETAIL C /LD-6
-----	IRRIGATION MAINLINE PIPE (PRESSURE)	---	SCH. 40 PVC	24" DEPTH. SIZE AS NOTED ON PLANS. SLEEVE WHEN UNDER PAVING.	S.D.R.S.D. I-25
———	IRRIGATION LATERAL LINE PIPE (NON-PRESSURE)	---	SCH. 40 PVC	15" DEPTH, 24" DEPTH UNDER DRIVEWAYS. SIZE AS NOTED ON PLANS. SLEEVE WHEN UNDER PAVING PER SLEEVING NOTE BELOW.	S.D.R.S.D. I-25
=====	IRRIGATION SLEEVE	---	SCH. 40 PVC	MINIMUM 2X DIA OF PIPE BEING SLEEVED, 1 PIPE PER SLEEVE, SIZE AS NOTED.	---
P	IRRIGATION ELECTRICAL PULL BOX	---	---	ALL SPLICES SHALL OCCUR IN PULL BOX OR CONTROL VALVE BOXES	S.D.R.S.D. I-15

NOTE:
IRRIGATION CONTROL WIRE SHALL BE INSTALLED IN 1" SCH. 40 PVC SLEEVE UNDER PAVING.

IRRIGATION VALVE KEY

2 — STATION #
25.0 — GALLONS PER MINUTE (GPM)
1½" — VALVE SIZE

IRRIGATION NOTES

ALL IRRIGATION SHALL BE DONE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, GENERAL PROVISIONS, SPECIAL PROVISIONS, AND THE APPLICABLE PARTS OF SECTIONS 212 AND 308 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (GREEN BOOK) 1997 EDITION, AND SUPPLEMENTAL AMENDMENTS, AND THE CITY OF SAN DIEGO "STANDARD DRAWINGS," (DRAWINGS 1-1 THROUGH 1-34,) AS WELL AS THE FOLLOWING:

1. CONTRACTOR SHALL INSTALL IRRIGATION SYSTEMS THAT ARE COMPLETE AND FUNCTIONING IN EVERY WAY.
2. PLANS ARE DIAGRAMMATIC AND APPROXIMATE. PRECISE LOCATION OF IRRIGATION LINES, APPURTENANCES, ETC. SHALL BE FIELD ADJUSTED TO MEET MINOR VARIATIONS IN THE PLANS. ALL IRRIGATION EQUIPMENT SHALL BE LOCATED AS INDICATED.
3. ALL MATERIALS AND EQUIPMENT USED IN THE IRRIGATION WORK SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS AND OF QUALITY AND PERFORMANCE AS SPECIFIED.
4. PRIOR TO INSTALLATION OF ANY IRRIGATION WORK, THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL BY THE CCDC, FIVE (5) COPIES MINIMUM, OF A LIST OF ALL MATERIALS AND EQUIPMENT PROPOSED TO BE INSTALLED. SHOULD THE CONTRACTOR PROPOSE TO USE MATERIALS OR EQUIPMENT OTHER THAN THOSE LISTED AS APPROVED, CONTRACTOR SHALL SUBMIT IN WRITING TO THE CITY A REQUEST TO DEVIATE FROM THE APPROVED LIST. SAMPLES OF THE MATERIALS OR EQUIPMENT SHALL ACCOMPANY THE REQUEST TO ASSIST THE EVALUATION OF THE PROPOSAL.
5. CONTRACTOR SHALL CHECK AND VERIFY THE WATER PRESSURE AT THE P.O.C. PRIOR TO BEGINNING OF WORK, AND SHALL NOTIFY THE RESIDENT ENGINEER OF ANY DISCREPANCIES WITH THE DESIGN PRESSURE.
6. CONTRACTOR SHALL CHECK AND VERIFY ALL SITE CONDITIONS, UTILITIES, AND SERVICES PRIOR TO TRENCHING. VERIFY POINT OF CONNECTION LOCATION PRIOR TO BEGINNING OF WORK.
7. CONTRACTOR SHALL SUPPLY "AS-BUILT" DRAWINGS OF THE ENTIRE IRRIGATION SYSTEM, INCLUSIVE OF ALL MAINS, VALVES, SOURCES OF ELECTRICAL POWER FOR CONTROLLER CLOCK, CONTROL WIRES, SLEEVES, AND EMITTERS. LOCATE BY DIMENSIONING FROM TWO FIXED POINTS.
8. A REDUCED "AS-BUILT" IRRIGATION PLAN, COLOR CODED BY LOCATIONS AND VALVE STATIONS BEING SERVICED BY EACH CONTROLLER, SHALL BE LAMINATED IN PLASTIC AND SHALL BE MOUNTED ON THE INSIDE OF THE IRRIGATION CONTROLLER FOR INFORMATION TO CITY MAINTENANCE PERSONNEL.
9. CONTRACTOR SHALL REQUEST INSPECTIONS BY THE RESIDENT ENGINEER NO LESS THAN FORTY-EIGHT (48) HOURS IN ADVANCE.
10. FLUSH ALL PIPE CLEAN OF DEBRIS PRIOR TO INSTALLATION OF BUBBLER HEADS.
11. ALL IRRIGATION LINES UNDER PAVING SHALL BE SLEEVED WITH SCHEDULE 40 PIPE 2X DIA. OF PIPE BEING SLEEVED. (TYP)
12. WATER METER, BACKFLOW PREVENTER AND CONTROLLER LOCATIONS WITHIN THE RIGHT-OF-WAY TO BE DETERMINED BY THE RESIDENT ENGINEER. CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION.
13. VERIFY LOCATION OF RAIN SENSOR ON ROOF WITH RESIDENT ENGINEER AND COORDINATE INSTALLATION WITH APPROPRIATE TRADES.
14. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

PRIVATE CONTRACT

IRRIGATION NOTES FOR:

16 TH STREET

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 13 OF 13 SHEETS

W.O. NO. 98-267 (037000)

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197-1723 LAMBERT COORDINATES

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INSPECTOR SEVERINO MENDOZA — DATE COMPLETED 9-26-2000

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619.238.0543 fax: 619.238.0578
estradalandplan.com

REGISTERED LANDSCAPE ARCHITECT — STEVE ESTRADA No. 1685 — SIGNATURE — DATE 4-20-99 — STATE OF CALIFORNIA

DESIGNED BY TRS	DATE 4/20/99
DRAWN BY TRS	4/20/99
CHECKED BY SM	4/20/99
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

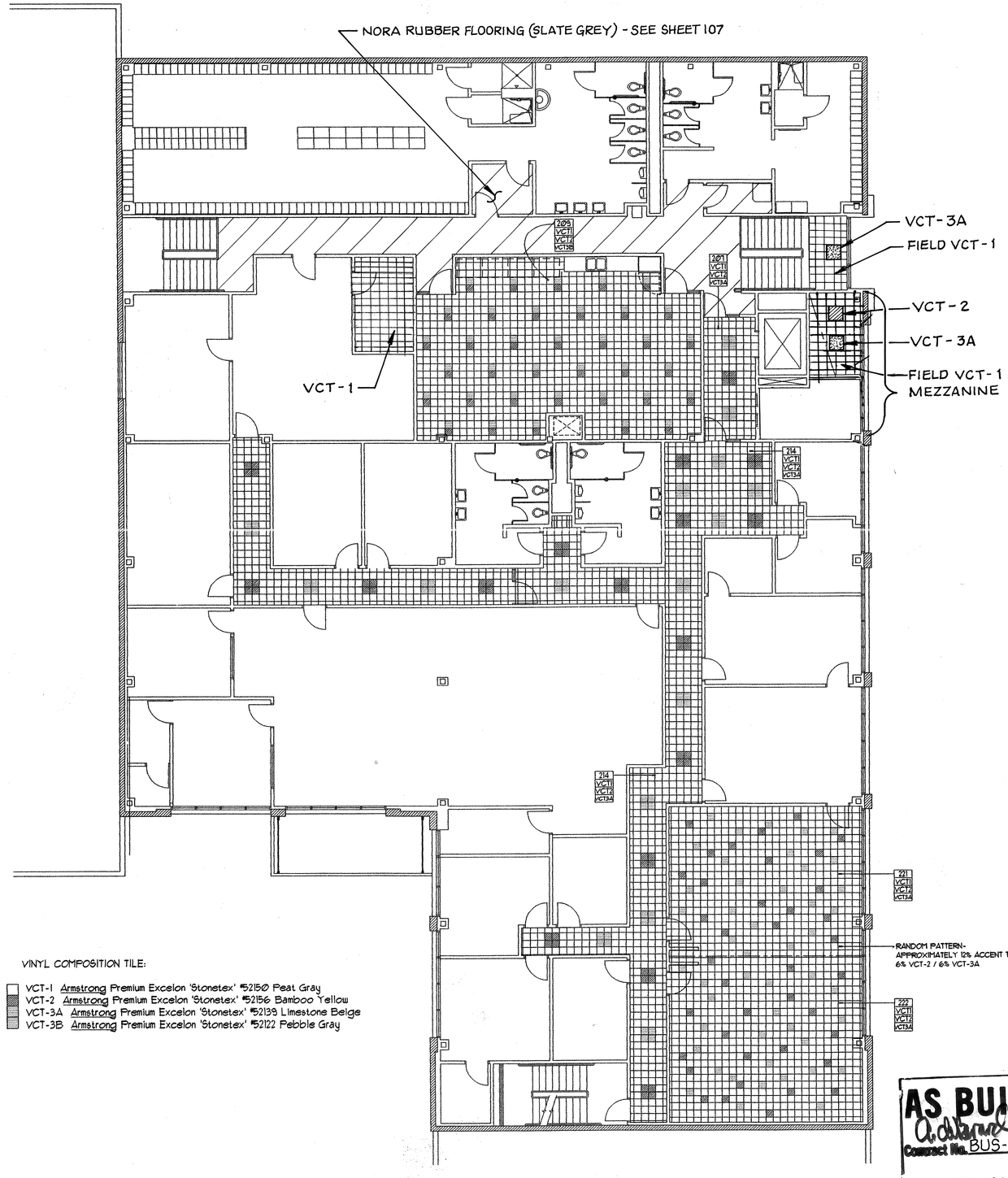
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

LANDSCAPE
IRRIGATION LEGEND
AND NOTES

SCALE NTS
MTDB CONTRACT NO. BUS-443B
DRAWING NO. LD-7
SHEET NO. 105

AS-BUILT

JOB NUMBER 339-06 R-14 FILE NAME: MAIN/PROJECTS/33906/33906_ID.DWG 4/20/99



VINYL COMPOSITION TILE:

- VCT-1 Armstrong Premium Excelon 'Stonetex' #52150 Peat Gray
- VCT-2 Armstrong Premium Excelon 'Stonetex' #52156 Bamboo Yellow
- VCT-3A Armstrong Premium Excelon 'Stonetex' #52139 Limestone Beige
- VCT-3B Armstrong Premium Excelon 'Stonetex' #52122 Pebble Gray

AS BUILT
Contract No. BUS-443B
Date NOV. 2000

Cooper Roberts Bennett
COMMERCIAL DESIGN
SPACE PLANNING
1010 UNIVERSITY AVENUE, SUITE C103
SAN DIEGO, CA 92103
(619) 291-1011 FAX (619) 291-3832

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

1255 IMPERIAL AVENUE, SUITE 1000 SAN DIEGO, CA 92101

07/14/00	235.00	
DATE	PROJECT NO.	
1/8" = 1'-0"		
SCALE		
TLN		
DRAWN BY	CHECKED BY	REVISIONS

VCT PATTERNS

SHEET 106

FINISH SPECIFICATIONS:

CARPET:

C-1 Shaw Contract 'Movement' #15500 Coral

RUBBER FLOORING:

R-1 Norament Round #325B/354/716 Slate Grey

VINYL COMPOSITION TILE:

VCT-1 Armstrong Premium Excelon 'Stonetex' #52150 Peat Gray
VCT-2 Armstrong Premium Excelon 'Stonetex' #52156 Bamboo Yellow
VCT-3A Armstrong Premium Excelon 'Stonetex' #52139 Limestone Beige
VCT-3B Armstrong Premium Excelon 'Stonetex' #52122 Pebble Gray

NOTE: VCT patterns to be determined

BASE:

B-1 Nora Accessories Cove Base #S 1028 B/U, #716 Slate Grey
B-2 Roppe 4" Rubber Base #P128 Eggplant

PAINT:

P-1 ICI #152 River Birch, Eggshell Finish
P-2 ICI #651 Papier Mache, Eggshell Finish
P-3 ICI #623 Night Forest, Eggshell Finish
P-4 ICI #2006 Frost, Eggshell Finish

SOLID SURFACING:

SS-1 Avonite #C1-1200 Flannel Gray

DOORS:

3'-0" x 7'-0" solid-core, stain-grade plain sliced Red Oak, Clear Finish w/Timely pre-finished metal frames, Stone Gray #SC 106

Metal doors and frames in Corridor #201 to be painted:
ICI #212 Ominous

RESTROOM FINISH SPECIFICATIONS:

CERAMIC TILE:

CT-1 Dal Tile Keystones #DK-326 Dapple Gray, 2" x 2" mosaic tile
CT-2 Dal Tile Accentials #0115 Fog, 3" x 3" glazed wall tile
CT-3 Dal Tile Permatones #6546 Matte Purple, 2" x 2" glazed mosaics
CT-4 Dal Tile Permatones #6536 Matte Spice, 2" x 2" glazed mosaics

Note: Permatones to be spec'd as dot mount 1" x 1" checker board sheet to be separated in field and used as 2" x 2" accent band
Refer to Elevation A

GROUT:

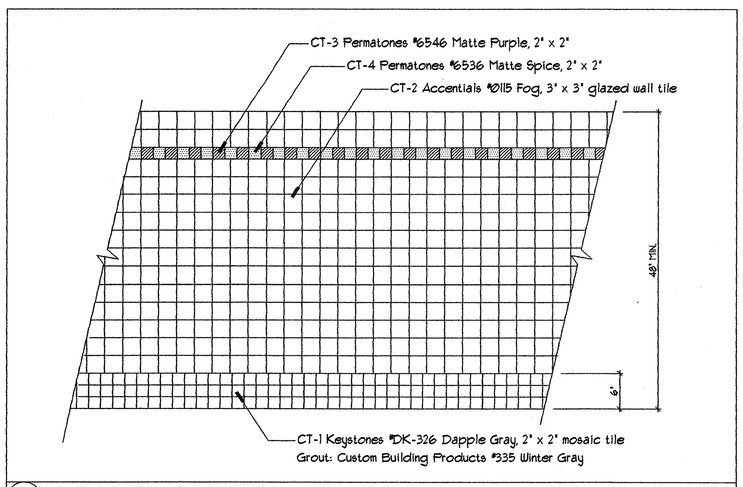
Custom Building Products #335 Winter Gray

PAINT:

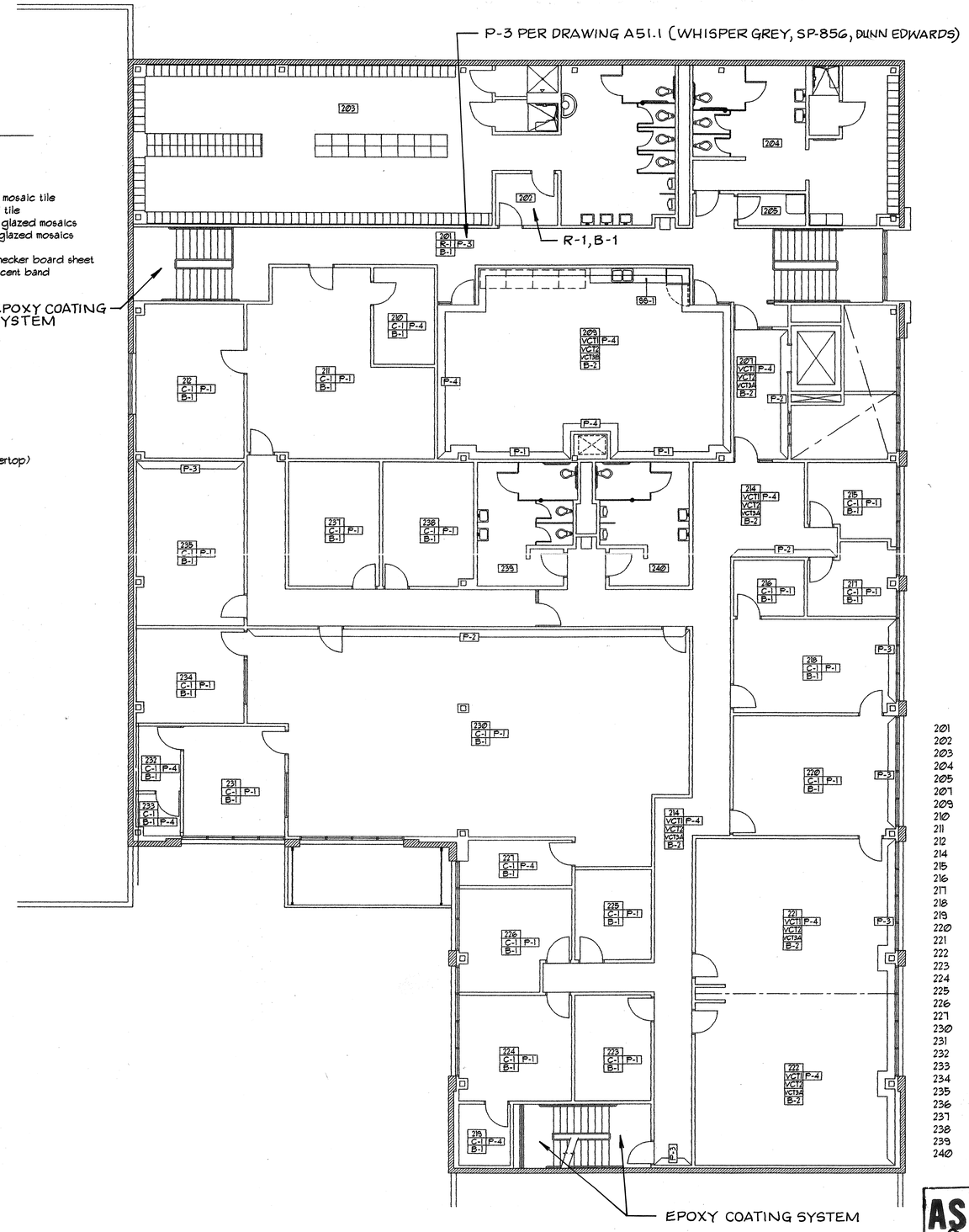
P-4 ICI #2006 Frost, Semi-gloss Finish

PLASTIC LAMINATE:

PL-1 Wilsonart #4793-60 Windswept (stall partitions)
PL-2 Wilsonart #4661-60 Iron Legacy (lavatory countertop)



A RESTROOM TILE ELEVATION



201	CORRIDOR
202	VESTIBULE
203	MEN'S LOCKER ROOM
204	WOMEN'S LOCKER ROOM
205	JANITOR
207	CORRIDOR
209	LUNCH/TRAINING ROOM
210	STORAGE
211	OFFICE
212	OFFICE
214	CORRIDOR
215	OFFICE
216	STORAGE
217	OFFICE
218	COMPUTER CLASSRM
219	STORAGE
220	OFFICE
221	TRAINING ROOM
222	DRIVER'S CLASSRM
223	OFFICE
224	OFFICE
225	OFFICE
226	OFFICE
227	STORAGE
230	OPEN OFFICE
231	OFFICE
232	STORAGE
233	STROAGE
234	OFFICE
235	CONFERENCE
236	CORRIDOR
237	OFFICE
238	OFFICE
239	WOMEN'S RR
240	MEN'S RR

AS BUILT
A. deBerard
Contract No. BUS-443B
Date NOV. 2000

Cooper Roberts Bennett
COMMERCIAL DESIGN
SPACE PLANNING
1010 UNIVERSITY AVENUE, SUITE C203
SAN DIEGO, CA 92103
(619) 291-1011 FAX (619) 291-3832

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

1255 IMPERIAL AVENUE, SUITE 1000 SAN DIEGO, CA 92101

FINISH PLAN - SECOND FLOOR

06/22/00	235.00	△	△
DATE	PROJECT NO.	△	△
1/8" = 1'-0"		△	△
SCALE		△	△
TLN			
DRAWN BY	CHECKED BY	REVISIONS	

SHEET 107

EXHIBIT B
(Cost Breakdown)

Price Proposal Detail
By Division Report
Version: 2.0
Approved 07/27/2022 01:42:46 PM PST
Proposal Value: $378,294.06
Approved Date: July 27, 2022

Job Order: Job Order: MTSJOC324-13

Job Order Name: Job Order Name: IAD RAM HVAC Replacement

Location: RAM Building 100 16th Street San Diego, CA 92101

Contractor: ABC General Inc.
Contract Number: PWG324.0-21
Contract Name: JOC Building and Facilities Construction Services

Division		Install Total	NPP Total	Demo Total	Division Total
23	Heating, Ventilating, And Air-Conditioning (HVAC)	$0.00	$356,046.74	$0.00	$356,046.74
26	Electrical	$20,848.80	$0.00	$1,398.52	$22,247.32
Line Count: 6			**Proposal Total:**		**$378,294.06**
			The Percentage of Non Pre-Priced on this Proposal:		**94.12%**

** Includes Price Changes due to Construction Task Catalog update*

Price Proposal Detail
By Division Report
Version: 2.0
Approved 07/27/2022 01:42:46 PM PST
Proposal Value: $378,294.06
Approved Date: July 27, 2022

Job Order: Job Order: MTSJOC324-13

Job Order Name: Job Order Name: IAD RAM HVAC Replacement

Location: RAM Building 100 16th Street San Diego, CA 92101

Contractor: ABC General Inc.
Contract Number: PWG324.0-21
Contract Name: JOC Building and Facilities Construction Services

23 Heating, Ventilating, And Air-Conditioning (HVAC) — **$356,046.74**

Record #	CSI Number	Description	Type	Quanity	Unit Price	UOM	Factor	Line Total
1	Non-PrePriced Item	HVAC Demo/Install		1.00	$356,046.74	EA	1.0000	$356,046.74
			Demo:	0.00	$0.00	EA	1.0000	$0.00

Includes Labor No **Includes Equipment No** **Includes Materials No**

Total: $356,046.74

26 Electrical — **$22,247.32**

Record #	CSI Number	Description	Type	Quanity	Unit Price	UOM	Factor	Line Total
2	260120910003	Lock Out/Tag Out Breaker Or Motor Starter	Installation	8.00	$19.77	EA	0.9645	$152.55
			Demo:	0.00	$0.00	EA	0.9645	$0.00

Includes Labor Yes **Includes Equipment Yes** **Includes Materials No**

Total: $152.55

3	260533132405	3/4" Flexible Liquid Tight Non-Metallic Conduit	Installation	40.00	$4.03	LF	0.9645	$155.48
			Demo:	40.00	$1.15	LF	0.9645	$44.37

Includes Labor Yes **Includes Equipment Yes** **Includes Materials Yes**

Total: $199.85

** Includes Price Changes due to Construction Task Catalog update*

Price Proposal Detail
By Division Report
Version: 2.0
Approved 07/27/2022 01:42:46 PM PST
Proposal Value: $378,294.06
Approved Date: July 27, 2022

Job Order: Job Order: MTSJOC324-13

Job Order Name: Job Order Name: IAD RAM HVAC Replacement

Location: RAM Building 100 16th Street San Diego, CA 92101

Contractor: ABC General Inc.
Contract Number: PWG324.0-21
Contract Name: JOC Building and Facilities Construction Services

4	260533132421	3/4" Liquid Tight Non-Metallic 90 Degree Angle Connector	Installation	16.00	$15.66	EA	0.9645	$241.67
			Demo:	16.00	$3.46	EA	0.9645	$53.39

Includes Labor Yes Includes Equipment Yes Includes Materials Yes

Total: $295.06

5	260923000091	60 Amperes, 3 Pole, NEMA 4 Enclosure, Electrically Held, Combination Lighting Contactor With Fused Disconnect Switch	Installation	8.00	$2,457.83	EA	0.9645	$18,964.62
			Demo:	8.00	$138.97	EA	0.9645	$1,072.29

Includes Labor Yes Includes Equipment Yes Includes Materials Yes

Total: $20,036.91

6	262813000103	60 Amp, 600 Volt AC, 200 kAmp I.R., Class J Bolted Fuse	Installation	24.00	$57.65	EA	0.9645	$1,334.48
			Demo:	24.00	$9.87	EA	0.9645	$228.47

Includes Labor Yes Includes Equipment Yes Includes Materials Yes

Total: $1,562.95

Proposal Total: $378,294.06

Div **The Percentage of Non Pre-Priced on this Proposal: 94.12%**

** Includes Price Changes due to Construction Task Catalog update*

Comfort Mechanical Inc.

Air Conditioning & Heating – Service & Maintenance
10740 Kenney Street, Suite 405, Santee, CA 92071
619-449-3886
License # 695913

July 21, 2022

ABC General

Attn: Noah Cappadocia

Re: MTS, IAD RAM

We appreciate the opportunity to provide you with our proposal for the above-referenced project. The following letter shall serve to clarify our exact scope of work.

HVAC CLARIFICATIONS

- Disconnect and prepare 6 package units and 3 HV heaters for removal.
- Provide 6 Carrier package units and 3 Weather-Rite HV heaters per SOW.
- Recover and recycle all existing refrigerant per EPA requirements.
- Dispose of removed package units and HV heaters.
- Provide and install new stainless gas flex lines.
- Connect to existing condensate drain lines.
- Provide and install economizers on new package units.
- Provide ductwork transitions and flex connectors for new HV heaters to existing ductwork.
- Provide 3 new sheet-metal caps for existing HV heater platforms.

WARRANTY:

Parts will be warranted per manufacturer's limited warranty. Comfort Mechanical will provide a 1-year labor warranty. Warranty to commence upon start up date.

EXCLUSIONS

The following items are not included in our proposal and should not be considered as part of our base scope of work:

- Modifications to the existing systems other than what is specifically identified above.

- Condition or capacity of existing mechanical and plumbing systems.
- Patching or painting or repair of walls, floors or ceilings.
- Roof penetrations and patching.
- Temporary services.
- After hours and overtime work. (Our proposal includes working during the normal business hours of 7:00am – 3:30pm / M – F).
- Warranty or repair of existing equipment, piping and plumbing systems.
- Unforeseeable conditions. (These include additional scope items that could not in any way have been identified during the time of submitting our proposal).
- Title 24 calculations and certified forms.
- Permits and fees.

NOTES

- Pricing valid for 30 days.

Terms:
All service, time and material, special construction jobs 30 days & under will be net 30 days from completion. Late fees will be charged on any invoices more than 30 days past due. Late fees will be charged at 1.5% per month. Projects delayed any unreasonable length of time beyond the normal schedule after the start of the project, but not due to any long lead items will be subject to late fees.

PRICING

IAD RAM……..…….……..$308,177.00

Provide 2 crane lifts, 1 for removal and placement of new package units and 1 for removal and placement of new HV heaters…….$14,503.00

- **Weather-Rite HV heater current lead time is 22-24 weeks from order date.**
- **Any and all control issues found during start up will have to be invoiced on a time and material basis.**

Should you have any questions or need any further clarification please feel free to call.

Sincerely,

Sean Caviness
Comfort Mechanical, Inc.

EXHIBIT C
(Subcontractor Listing)

San Diego Metropolitan Transit System
1255 Imperial Ave
San Diego, CA 92101

Subcontractor Report

Date: 8/25/2022

Job Order Contracting

Contract #: PWG324.0-21

Job Order #: MTSJOC324-13

Job Order Title: IAD RAM HVAC Replacement

Location: RAM Building

Contractor: ABC General Inc.

Subcontractors: Comfort Mechanical
the doctor of electricity

Subcontractor Name	License Number	Describe Nature of Work (Trade)	Certifications	Subcontractor Total	%
Comfort Mechanical 10740 Kenney St, #404 Santee, CA 92071	695913	HVAC		$288,177.00	76.18%
the doctor of electricity 41815 Hawthorne Street, Murrieta, CA 92562	517763	Electrician		$9,800.00	2.59%

Agenda Item No. 30

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

RANCHO BERNARDO TRANSIT STATION TRANSIT-ORIENTED DEVELOPMENT (KAREN LANDERS)

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer to:

1) Execute a Disposition and Development Agreement with Bernardo Family Housing L.P. for a Rancho Bernardo Transit Station Transit-Oriented Development Project (DDA), in substantially the same format as Attachment A; and

2) Take all actions necessary to fulfill MTS's obligations under the DDA, including, but not limited to, executing a Ground Lease and related regulatory agreements for the project.

Budget Impact

Under MTS's Transit-Oriented Development (TOD) program, the ground lease rent for an affordable housing project is generally limited because of the restricted rents built into the program and the various public subsidies used to construct the project. If the DDA and resulting Ground Lease is executed, the project would be constructed at no cost to MTS, with annual ground lease rent for the residential project after construction is complete generally being in the range of 5% of net income from the development (often under $50,000 per year). The project will also have an office component, which will pay market rate ground lease rent of 6.5% of Market Rate Estimated Gross Collections, currently estimated at approximately $34,000 per year. MTS would remain responsible for its pro-rata share of costs to maintain the transit parking spaces included in the TOD project. Staff expects that the development, in close proximity to MTS transit services, will increase ridership at the Rancho Bernardo Transit Station.

DISCUSSION:

Under Board Policy 18, the MTS Board established priorities for TOD projects, seeking projects that "create vibrant, transit-oriented communities that offer a range of housing types, job opportunities, and services Stationed around public transit facilities." The desired characteristics of such projects includes affordable housing units:

> Board Policy 18(C)(6):
>
> In recognition that residents of affordable housing units have a higher likelihood for transit utilization, residential joint development proposals shall include a minimum set aside of 20% of units for very low (<50% Average Median Income (AMI) and low (51-80% AMI) income households.

As part of MTS's TOD program, which was updated in July 2019, MTS has posted the availability of various sites for development proposals on its website[1]. Further, in compliance with AB 1486, which amended the Surplus Land Act (Government Code section 54220, et seq.) (SLA) and MTS's legal obligations related to its TOD program, on July 30, 2020 (AI 30), the MTS Board formally declared its potential TOD sites to be "surplus property." For the property under consideration today, the Rancho Bernardo Transit Station, a Notice of Availability under the SLA was sent on September 8, 2020. Within the 60-day time period of the SLA, Affirmed Housing Group, Inc. (Affirmed) sent MTS a notice of interest and a request to negotiate regarding a proposed affordable housing development at Rancho Bernardo Transit Station. An Exclusive Negotiating Agreement was executed with Affirmed on December 18, 2020.

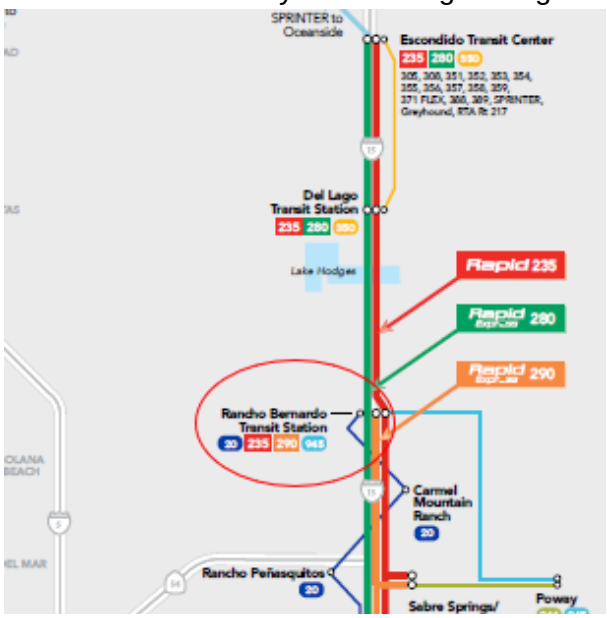
Since that time, MTS staff has been working with Affirmed to refine their development proposal and align it with MTS's transit operational needs at Rancho Bernardo Transit Station.

Development Proposal

Affirmed is an experienced affordable housing developer and is currently under construction on an affordable housing development, ShoreLINE, at the Grantville Transit Station. A DDA for a second affordable housing project, at the Beyer Boulevard Trolley Station, was approved by the Board on March 10, 2022 (AI 32). Today's proposed DDA will be with an Affirmed-affiliated limited partnership, Bernardo Family Housing L.P. (Developer).

[1] https://www.sdmts.com/business-Station-real-estate/real-estate-properties

The Rancho Bernardo Transit Station is located in the City of San Diego along Interstate 15:



Rancho Bernardo Transit Station is a bus transit center located in west Rancho Bernardo. The station has a total of 4.7 acres with 190 parking spaces. The site is split in two by George Cooke Express Drive: the north portion has 85 parking spaces and the bus transit center; the south portion contains a large slope and 105 parking spaces.

Approximate Boundaries of MTS Rancho Bernardo Transit Station Property (APN 678-252-15

Approximate Footprint of Developer Ground Lease Parcel

The station also serves as a regional park-n-ride for carpools with direct access to the I-15 HOV lanes. The zoning is CV-1-2, which allows for commercial and residential uses up to 29 units per acre. The City of San Diego is responsible for issuing permits for private developments according to the City's land use designations.

Developer is proposing a project consisting of 100 residential units and approximately 14,500 square feet of office space in a seven- (7)-story building complex that will include two floors of parking on the south parking lot area (approximately 1.2 acres). This unit count equates to a density of approximately 83 dwelling units per acre on the proposed Ground Lease parcel. State law allows increased density for affordable housing projects near transit, notwithstanding a site's zoning. All residential units in the Residential Project will be rent-restricted according to California Tax Credit Allocation Committee (TCAC) or California Housing Financing Agency (CalHFA) program requirements, except for one (1) staff unit.

The development will also include common-area open space and associated landscaping and public improvements. The development will include drought-tolerant/resistant landscaping, a children's play area, outdoor gathering space, residents' community room, and property management office space.

Of the 201 parking spaces planned, a minimum of 85 replacement parking spaces are proposed for MTS transit patrons (replacing the 105 spaces currently in the south parking lot), 78 parking spaces for residential tenants, and 38 parking spaces for the office portion of the project. This design would protect 89% of exclusive-use transit parking spaces currently in use today at the Rancho Bernardo Transit Station (replacing 81% of the south parking lot spaces). Because of the nature of this suburban transit station, MTS staff determined that ample parking is necessary to maintain and grow ridership along this I-15 corridor. There are only two local bus routes connecting to the Rancho Bernardo Transit Station: Route 20 and Route 945. Therefore, most passengers using the Rancho Bernardo Transit Station to access the Rapid 235 and Rapid 290 routes use the MTS parking lots to do so.

The DDA locks in the material terms of a Ground Lease that would be executed by the CEO once the Developer has finalized its financing, grants, and building permits. The material terms include the following:

1. Term. The term of the Ground Lease shall be 99 years.

2. Density and Mixed Use. The Project shall consist of approximately 100 residential units with an estimated occupancy of 307 ("Residential Project") on the south parking lot portion of the Rancho Bernardo Transit Station property. Any deviation of less than ten percent (10%) from the estimated unit count shall not be considered a material change requiring Board approval. The Project shall also include approximately 14,500 of commercial office space ("Office Project").

3. Affordability. All residential units shall be rent restricted according to TCAC or CalHFA program requirements, except for one (1) staff unit. In compliance with Government Code section 54222.5, at least 25% of the units shall be at affordable rent, as defined in Section 50053 of the Health and Safety Code, to lower-income households, as defined in Section 50079.5 of the Health and Safety Code. Rental units shall remain affordable to, and occupied by, lower-income households for a period of at least 55 years.

4. Replacement Parking. Developer shall construct the Transit Parking Facilities substantially in conformance with a Site Plan and Scope of Work approved by the MTS Chief Executive Officer, with a minimum of 85 parking stalls for MTS's exclusive use.

5. Rent.

(a) *Residential Project Rent*: Developer shall pay to Board as rent, in arrears on an annual basis, an amount equal to five percent (5%) of Developer's annual Net Cash Flow from the operation of the Project during the prior calendar year.

(b) *Office Project Rent*: Developer shall pay to Board as rent, in arrears on an annual basis, an amount equal to six and one half percent (6.5%) of the Effective Gross Collections from the operation of the Office Project or the equivalent Market Rate Estimated Gross Collections during the prior calendar year. The Market Rate Estimated Gross Collections calculation will be adjusted every ten years by a market survey.

6. Leasehold Mortgage Terms. The Ground Lease shall include typical rights and protections for any leasehold mortgagees.

7. Construction Timeline. Construction of the Project is scheduled to take thirty (30) months after construction commencement to achieve substantial completion, subject to extension for "Force Majeure."

8. AB 1486 Compliance. Prior to close of escrow on the Ground Lease, the Board shall record a restrictive covenant on the Site that complies with the Surplus Land Act (specifically as required by Government Code section 54222.5).

9. Prevailing Wage and Skilled Labor Requirements. Developer's Project construction activities shall comply with paragraphs C(7) and C(8) of MTS Board Policy No. 18:

> C(7): All projects approved pursuant to the program shall be considered public works for purposes of Chapter 1 (commencing with Section 1720) of Part 7 of Division 2 of the Labor Code, regardless of whether an exemption under Section 1720 of the Labor Code applies to the project.
>
> C(8): A joint development agreement between MTS and a private entity shall include a requirement that the developer's construction comply with Public Utilities Code section 120221.5.

Today's proposed action would authorize the CEO to:

1) Execute a Disposition and Development Agreement with Bernardo Family Housing L.P. for a Rancho Bernardo Transit Station Transit Oriented Development Project (DDA), in substantially the same format as Attachment A; and

2) Take all actions necessary to fulfill MTS's obligations under the DDA, including, but not limited to, executing a Ground Lease and related regulatory agreements for the project.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. Draft Disposition and Development Agreement

DISPOSITION AND DEVELOPMENT AGREEMENT

by and between

SAN DIEGO METROPOLITAN TRANSIT DEVELOPMENT BOARD

"Board"

And

BERNARDO FAMILY HOUSING, L.P.

"Developer"

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DISPOSITION AND DEVELOPMENT AGREEMENT

THIS DISPOSITION AND DEVELOPMENT AGREEMENT ("**Agreement**"), dated for reference purposes only as of September 15, 2022, is entered into by and between the **SAN DIEGO METROPOLITAN TRANSIT DEVELOPMENT BOARD**, a California public agency, also known as the San Diego Metropolitan Transit System (the "**Board**"), and BERNARDO FAMILY HOUSING, L.P., a California limited partnership ("**Developer**"), with reference to the following facts:

A. The Board is the owner of approximately 4.7 acres of land currently improved with a **North Parking Lot**, **South Parking Lot,** a **Slope,** and a **Transit Center** serving buses, located on George Cooke Express Drive west of Interstate 15 in the City of San Diego (the "**City**"), County of San Diego, State of California (the "**Rancho Bernardo Property**") which are depicted in **Exhibit A**.

B. Affirmed Housing Group, Inc., a Delaware corporation ("**Affirmed**"), an affiliate of Developer, and the Board previously entered into an Exclusive Negotiation Agreement dated December 18, 2020 for a proposed transit-oriented development on the South Parking Lot portion of the Rancho Bernardo Property (the "**ENA**").

C. This Agreement is the "DDA" that is contemplated in Section 4 of the ENA and the Board acknowledges that the Developer is a permitted assignee of Affirmed's interest under the ENA.

NOW, THEREFORE, the Board and the Developer covenant and agree as follows:

I. [§ 100] SUBJECT OF AGREEMENT.

A. [§ 101] Purpose of the Agreement.

The purpose of this Agreement is to provide for the development of the Project on the Site (as defined in **Sections 102 and 103** below) by the Developer and to provide the terms and conditions for the lease of the Site by the Board to the Developer.

The lease and development of the Site pursuant to this Agreement, and the fulfillment generally of this Agreement, are in accord with the public purposes and provisions of applicable federal, state, and local laws and requirements. The Board has taken all actions required by applicable laws to enter into this Agreement.

B. [§ 102] The Site.

The "**Site**" shall mean the portion of the South Parking Lot designated as "Approximate Footprint of Developer Ground Lease Parcel" on the map attached as **Exhibit A**. Prior to execution of and close of escrow of the Ground Lease pursuant to **Sections 204** and **205**, Developer shall have a survey and a metes and bounds legal description and plat map prepared, for review and approval of the Board Chief Executive Officer, to document the final boundaries of the Site.

C. **[§ 103]** **<u>The Project</u>.**

The "**Project**" shall consist of the design, development and construction by Developer of a transit-oriented, moderate density, mixed-use project on the Site consisting of:

1. Residential components consisting of approximately one hundred (100) multifamily rental apartment units with an estimated occupancy of up to three hundred seven (307) (the "**Residential Project**") and approximately 14,500 square feet of commercial office space (the "**Commercial Project**") constructed above a multilevel parking structure (the "**Parking Garage**"), together with related amenities, improvements and accommodations. All residential units shall be rent restricted according to TCAC or CalHFA program requirements, except for one (1) staff unit. Any deviation of less than ten percent (10%) from the estimated residential unit and occupancy counts shall not be deemed a material change requiring approval under Section 305(b).

2. Parking facilities consisting of approximately wo hundred and one (201) parking spaces in the Parking Garage (collectively, the "**Parking Facilities**"), of which:

(a) approximately seventy-eight (78) parking spaces shall be provided as parking for residents, visitors and employees of the Residential Project which parking will be separated from the Transit Parking Facilities with a gate;

(b) approximately thirty-eight (38) parking spaces shall be provided for tenants and visitors of the Commercial Area which parking shall be segregated from the Transit Parking Facilities using a design or method approved by Board; and

(c) no less than eighty-five (85) parking spaces must be shown on the Designated Plans (defined below) approved by the Board (the "**Transit Parking Facilities**") which shall be provided on site for the exclusive use of the Board and its transit park-and-ride patrons of the public Transit Center. Developer acknowledges that the Board would not enter into this Agreement but for Developer's agreement to construct the Transit Parking Facilities and to grant exclusive use and operation of the Transit Parking Facilities to the Board for public use, as further set forth in Paragraph 4 of **Exhibit G**.

3. All demolition, site preparation, and all other on-site and off-site improvements which are required for the construction and operation of the Project.

4. Extension (to the extent necessary) of off-site sanitary sewer, electrical, water, storm drain, telephone, cable and gas facilities required to serve the improvements.

The Project is more particularly depicted in the "**Site Plans**" attached as **Exhibit B** and described in the "**Scope of Development**" which is attached as **Exhibit C**, which may be supplemented as the Project entitlements are processed during the term of this Agreement. The term "**Designated Plans**" shall mean all final plans and specifications for the Project, that are approved by the Board prior to the Close of Escrow pursuant to **Section 205(6)**. Developer shall design, develop and construct the Project at its sole cost and expense in accordance with the Scope of Development and the Designated Plans.

D. **[§ 104]** **Parties to the Agreement.**

1. **[§ 105]** **The Board.**

The "**Board**" is a California public agency organized and existing under the laws of the State of California, including but not limited to Public Utilities Code sections 120000, *et seq*. The principal office of the Board is located at 1255 Imperial Avenue, Suite 1000, San Diego, California 92101-7490.

"**Board**" as used in this Agreement includes the Board and any assignee of or successor to its rights, powers and responsibilities.

2. **[§ 106]** **The Developer.**

The "**Developer**" is Bernardo Family Housing, L.P., a California limited partnership. The general partner of Developer is Affirmed or its affiliate ("**General Partner**"). The principal office of the Developer is c/o Affirmed Housing Group 13520 Evening Creek Drive North, Suite 160, San Diego, CA 92128.

Wherever the term "Developer" is used herein, such term shall include any permitted assignee or successor in interest as herein provided.

E. **[§ 107]** **Prohibition Against Change in Ownership and Control of Developer.**

1. The Developer represents and agrees that its lease of the Site, and its other undertakings pursuant to this Agreement, are and shall be used for the purpose of timely redevelopment of the Site and not for speculation in landholding. The Developer further recognizes that, in view of:

(a) The importance of the redevelopment of the Site to the general welfare of the community; and

(b) The fact that a change in ownership or control of the Developer, or of a substantial part thereof, or any other act or transaction involving or resulting in a significant change in ownership or with respect to the identity of the parties in control of the Developer or the degree thereof, is for practical purposes a transfer or disposition of the Site; and

(c) The fact that the Site is not to be leased (except in connection with the rental of the Residential Apartments) or used for speculation, but only used for development and operation by the Developer in accordance with this Agreement; and

(d) The importance to the Board and the community of the standards for the development and the use, operation and maintenance of the Site and the subsequent rental of the Residential Apartments; that the qualifications and identity of the Developer are of particular concern to the community and the Board. The

Developer further recognizes that it is because of such qualifications and identity that the Board is entering into this Agreement with the Developer. No voluntary or involuntary successor-in-interest of the Developer shall acquire any rights or powers under this Agreement except as expressly set forth herein.

2. In light of the foregoing, and except as otherwise provided in this **Section 107**, the Developer, without the prior written approval of the Board, which approval may be given or withheld in the Board's sole discretion, shall not (i) assign or delegate all or any part of its rights and obligations under this Agreement; or (ii) effect any transaction which would result in any person or entity other than General Partner or its affiliate being the general partner of Developer; provided however that Developer shall be permitted to admit a tax credit investor and nonprofit managing general partner so long as the General Partner or an affiliate of Affirmed remains as a general partner.

3. This Agreement may be terminated by the Board pursuant to **Section 510** if there is any voluntary or involuntary assignment or transfer described in Subsection 1(b) above (of this **Section 107**) prior to the Close of Escrow where the Board's approval is required but has not been obtained.

4. The Developer shall promptly notify the Board of any and all changes whatsoever in the identity or degree of direct and indirect ownership of Developer and its members, partners or shareholders, of which it or any of its members, partners or shareholders have been notified or otherwise have knowledge or information.

5. Absent an express signed written agreement between the parties to the contrary, no assignment of any of the rights or obligations of Developer under this Agreement shall result in a novation or in any other way release Developer from its obligations under this Agreement. No consent by the Board to any assignment by Developer shall constitute a consent to any other assignment or commit the Board to provide its consent to any future assignment.

6. For the avoidance of doubt, the applicable terms and conditions of the Ground Lease shall supersede the terms and conditions of this **Section 107** upon the execution of the Ground Lease. In the event of any conflict or inconsistency between the terms of the Ground Lease and the terms of this Agreement after the Close of Escrow, the terms of the Ground Lease shall control.

F. **[§ 108]** **<u>Schedule of Performance</u>.**

Developer and Board shall each use commercially reasonable efforts to satisfy the conditions to Closing and shall each perform its obligations under this Agreement in accordance with the "**Schedule of Performance**" attached hereto as **Exhibit E** and incorporated herein.

The parties desire to execute the Ground Lease upon satisfaction of the conditions to Close of Escrow in **Section 205**.

II. [§ 200] SITE DISPOSITION.

A. [§ 201] Lease of Site.

1. The Board agrees to lease to Developer the Site for development of the Project in accordance with the Ground Lease. The ground lease interest in the Site (subject to the reserved rights or easements) is referred to herein as the "**Premises**".

2. The form of "**Ground Lease**" is attached hereto as **Exhibit F**. The Commencement Date of the Ground Lease shall be the date that escrow closes and the Memorandum of Lease for the Ground Lease in the form attached to the Ground Lease ("**Memorandum of Lease**") is recorded ("**Close of Escrow**"). The anticipated date for Close of Escrow is set forth on **Exhibit E** provided that the outside date scheduled for Close of Escrow (the "**Closing Date**") shall be no later than June 30, 2025, as the same may be extended in writing by the Chief Executive Officer of the Board. The material terms of the Ground Lease are listed in **Exhibit G**. Before Close of Escrow, the Chief Executive Officer for the Board and the designated representative for Developer may agree to changes in the final Ground Lease document that do not materially alter the terms listed in **Exhibit G** or otherwise materially increase the obligations of the Board other than as may be required by Developer's lenders.

B. [§ 202] Condition of the Site.

1. Condition of Title.

(a) Title/Survey. Developer shall cause to be prepared (i) a current, effective commitment for title insurance (the "**Title Commitment**") issued by Corinthian Title Company ("**Title Company**"), accompanied by true, complete, and legible copies of all documents referred to in the Title Commitment as exceptions and (ii) a current ALTA-NSPS Land Title Survey of the Premises (the "**Survey**"). Developer shall determine whether the Board's title to the Premises is satisfactory to Developer. Developer may negotiate with the Title Company or the surveyor who prepared the Survey in order to cause them to modify the Title Commitment or the Survey, as applicable, to reflect only those exceptions to title that are acceptable to Developer (collectively, the "**Permitted Title Exceptions**"), and to commit to provide endorsements to the leasehold title policy. The Board agrees to use commercially reasonable efforts to remove all title exceptions or encumbrances shown on the Title Commitment which are objected to in writing by Developer.

(b) Future Easements. The parties shall cooperate reasonably regarding the grant of non-exclusive easements for (collectively the "**Future Easement Areas**"):

(1) Utility and access purposes as may be required by the Developer, City or public utility to permit drainage or extend utility service to the Project or the Transit Center and such other future easements which

might be necessary or desirable for the operation of the Project or the Transit Center;

(2) Easements to allow for minor encroachments of the Project on the Rancho Bernardo Property and other Board right-of-way that are routine and necessary for the Project;

(3) Right of entry onto North Parking Lot or the Transit Center in order to enable Developer to construct the Project, so long as such entry does not unreasonably interfere with Board's transit operations.

Such cooperation shall continue after execution of the Ground Lease to the extent that all easements have not been determined as of the date of the execution of the Ground Lease; provided however that such cooperation shall be at no cost to Developer and shall not impose any obligations on Developer to construct, repair, maintain or operate the Future Easement Areas.

(c) Elimination or Modification of Title Exceptions. Board agrees to reasonably cooperate and assist Developer in its investigations of the title exceptions and in the elimination of or modification to those title exceptions that interfere or may interfere with the development or use of the Project

2. Physical Condition. The Site and all improvements thereon shall be conveyed in an "as is" condition, with no warranty, express or implied by the Board as to the condition of the soil (or water), its geology, or the presence of known or unknown faults or as to the condition of the improvements. It shall be the sole responsibility of the Developer, at the Developer's expense, to investigate and determine the soil (and water) condition of the Site (including improvements) and the suitability of the Site (including improvements) for the development to be constructed by the Developer. If the soil (or water) condition of the Site (including improvements), or any part thereof, is not in all respects entirely suitable for the use or uses to which the Site and improvements will be put, then it is the sole responsibility and obligation of the Developer to take such action as may be necessary to place the Site and the soil (and water) condition thereof (including improvements) in all respects in a condition entirely suitable for the development of the Site.

C. **[§ 203] Delivery of Completed Documents.**

Prior to the Closing Date, the Board and the Developer shall complete, execute, acknowledge (if required for recordation) and deliver into escrow the following documents:

1. The Ground Lease (in the form attached hereto as **Exhibit F**);

2. The Memorandum of Lease (in the form attached to the Ground Lease);

3. All documents required for construction financing of the Project by Developer and approved by Board pursuant to Section 212 below ("Developer Construction Loan");

4. The Assignment of Construction Contract, subordinate to the rights of any construction lenders; and

5. Any other documents necessary for the disposition of the Site as contemplated in this Agreement.

D. **[§ 204]** **Closing.**

Close of Escrow (also referred to herein as "**Closing**") shall be deemed to have occurred upon recording of the Memorandum of Lease. At Closing, the leasehold interest in the Site shall be conveyed and possession of the Site shall be delivered to the Developer, and the Ground Lease shall commence.

E. **[§ 205]** **Conditions to Execution of the Ground Lease.**

Execution of the Ground Lease is subject to the following conditions:

1. Developer Certification. Developer shall certify in writing to the Board that:

(a) the Developer is ready, willing and able, in accordance with the terms and conditions of this Agreement, to perform in accordance with the Scope of Development;

(b) all conditions precedent to Closing of which the Developer is aware (including the delivery into escrow of documents to be deposited by Developer pursuant to **Section 203** hereof, the delivery to the Board of the documents and certifications to be deposited by Developer pursuant to **Section 212** hereof, and the performance of any other obligations of Developer as set forth in the Schedule of Performance which are scheduled to be performed before the Closing Date) have been fulfilled or waived by the party entitled to waive such condition;

(c) The only condition to issuance by the City of all grading and building permits required for the development of the Project is the payment of applicable fees, and Developer will pay such fees and obtain all grading, building and other permits required for the development of the Project after Close of Escrow;

(d) Developer's construction financing for the Project is in a position to fund and will fund at Close of Escrow;

(e) Developer has approved the physical condition of the Site, including, but not limited to, all matters disclosed by the Title Commitment or the Survey pursuant to **Section 202**; and

(f) that to the best of the Developer's knowledge, (i) the Developer is not in violation of any order or decree of any court of competent jurisdiction or, any governmental agency having jurisdiction, which if determined adversely to the interest of Developer or its respective owners, members or partners, could

materially adversely affect the Developer's ability to construct, develop, operate and maintain the Project as set forth in this Agreement, and (ii) there are no pending or threatened judicial or administrative proceedings, which, if determined adversely to the interests of the Developer or its respective owners, members or partners, could materially adversely affect the Developer's ability to construct, develop, operate and maintain the Project as set forth in this Agreement.

The Developer's certification shall include, if requested by the Board not later than ten (10) days after the delivery thereof; evidence reasonably satisfactory to the Board that all contracts and commitments required by this Agreement to be procured or entered into by Developer are in full force and effect as of the time of such certification, or will be in full force and effect concurrent with the Closing.

2. Condition of the Site. There shall have been no material adverse change in the physical condition of the Site following the date of execution of this Agreement.

3. Proposed New Utility Easements**.** Board shall have executed and recorded (or otherwise dedicated) all Proposed New Utility Easements or has agreed to execute such easements when requested by the applicable utility.

4. The Leasehold Title Policy. Escrow Holder can procure the Leasehold Title Policy insuring title in conformity with **Section 208** of this Agreement.

5. Proceedings. No legal or administrative proceeding, or moratorium, referendum, or other challenge has occurred and remains outstanding that would adversely impact Developer's ability to construct and occupy the Project within the times set forth in the Performance Schedule shall have been filed.

6. Designated Plans. Board has approved the "Designated Plans" for the Project pursuant to **Section 304** or any modification which requires Board approval pursuant to **Section 305**.

7. Financing and Project Commitments. Developer shall have delivered to the Board all of the documents and certifications referred to in **Section 212** hereof, and the Board shall have issued all approvals required of the Board under **Section 212**.

8. Reimbursement of Costs of Board's Consultants. Developer shall have deposited into Escrow sums sufficient (in the reasonable determination of the Board) to reimburse the Board for the fees, costs and expenses of its outside consultants, outside counsel, and reimbursable staff time as described in **Section 213**.

9. Developer Performance. Prior to the Closing Date, the Board shall determine that (a) all conditions precedent to the Closing have been satisfied and performed, including without limitation, Developer's performance of any other obligations of Developer as set forth in this Agreement, including without limitation the Schedule of Performance or the Scope of Development, which are scheduled to be performed before the Closing Date; and (b) Developer has performed all of its material obligations under this Agreement and is not in material default under this Agreement.

10. Board Performance. Prior to the Closing Date, Developer shall determine that (a) all conditions precedent to the Closing have been satisfied and performed, including without limitation, the Board's performance of any other obligations of the Board as set forth in this Agreement, including without limitation the Schedule of Performance or the Scope of Development, which are scheduled to be performed before the Closing Date; and (b) Board has performed all of its material obligations under this Agreement and is not in material default under this Agreement.

11. Waiver of Conditions Precedent. The conditions precedent described in Subsections 2, 6 and 10 of this **Section 205** are for the sole benefit of Developer, and Developer unilaterally may waive any or all of such conditions. The conditions precedent described in Subsections 1, 8 and 9 of this **Section 205** are for the sole benefit of the Board, and the Board unilaterally may waive any or all of such conditions. Except as otherwise expressly provided in this Agreement, any other conditions to execution described in this Agreement may be waived only by written notice from both Developer and the Board to Escrow Holder and each other. Subject to the terms of this Agreement, Developer and Board shall use their reasonable efforts to satisfy all conditions to execution in accordance with the Schedule of Performance.

F. **[§ 206] Escrow and Escrow Instructions.**

1. The Board agrees to open an escrow for the purposes of this Agreement with Corinthian Title Company or such other escrow company or escrow department of a title insurance company as may be acceptable to both the Board and the Developer (the **"Escrow Holder"**). This Agreement, together with escrow instructions and any supplemental escrow instructions entered into by the parties consistent herewith (the **"Escrow Instructions"**), shall constitute the joint escrow instructions of the Board and the Developer with respect to the conveyance of the leasehold interest in the Site, and a duplicate original of all such documents shall be delivered to the Escrow Holder upon the opening of escrow.

2. The Board and the Developer shall provide such additional escrow instructions as shall be necessary and consistent with this Agreement. The Escrow Holder hereby is empowered to act under this Agreement and, upon indicating its acceptance of the provisions of this Section in writing, delivered to the Board and to the Developer within five (5) days after the opening of the escrow, shall carry out its duties as Escrow Holder hereunder.

3. The Board shall not pay any fees, charges or costs in connection with the Closing; Developer shall pay all such expenses.

4. The Developer shall pay into escrow to the Escrow Holder the following fees, charges and costs promptly after the Escrow Holder has notified the Board of the amount of such fees, charges and costs prior to the Closing Date:

(a) All: (i) escrow fees, (ii) city or county transfer, conveyance or documentary taxes or fees, and (iii) recording and notary fees; and

(b) The premium for the Leasehold Policy referred to in **Section 208** below and any lender's policy required in connection with the Developer's Construction Loan.

5. The Escrow Holder is authorized to:

(a) Pay, and charge the Developer, for any fees, charges and costs payable under this Section to third parties. Before such payments are made, the Escrow Holder shall notify the Board and the Developer of such fees, charges and costs;

(b) Deliver the Ground Lease and other documents (including those referred to in **Section 203** hereof) to the parties entitled thereto when the conditions of the escrow have been fulfilled by the Board and the Developer;

(c) Record the Memorandum of Lease and any instruments delivered through this escrow if necessary or proper to vest an enforceable leasehold interest in the Developer in accordance with the terms and provisions of this Agreement; and

(d) Do all things necessary and authorized to be done to fulfill this Agreement and the escrow instructions.

6. If the escrow is not in condition to permit the delivery of the Ground Lease, recordation of the documents listed in **Section 206(5)(c**) above (if not previously recorded), recordation of the Memorandum of Lease, and recordation of any documents in connection with any Developer Construction Loan by the Closing Date, either party who is not then in default hereunder may, in writing, terminate this Agreement as provided in **Sections 509** and **510** (including any cure period) and demand the return of its money, papers, documents, or real property. Thereupon all rights, liabilities, duties and obligations of the parties under this Agreement shall be determined as provided in **Sections 509-511** hereof. No termination or demand for return shall be recognized until ten (10) days after the Escrow Holder shall have mailed copies of such demand to the other party at the address of its principal place of business. Objections, if any, shall be raised by written notice to the Escrow Holder and to the other party within the 10-day period. If any objections are raised within the 10-day period, the Escrow Holder is authorized to hold all money, papers and documents until instructed by mutual agreement of the parties or, upon failure thereof, by a court of competent jurisdiction. If no such demands are made, the escrow shall be closed as soon as the conditions contained in this Agreement concerning the conveyance of the leasehold interest in the Site have been satisfied.

7. The Escrow Holder shall not be obligated to return any such money, papers or documents except as provided in **Subsection 6** above, or upon the written instructions of both the Board and the Developer or until the party entitled thereto has been determined by a final decision of a court of competent jurisdiction.

8. Any amendment to the Escrow Instructions shall be in writing and signed by both the Board and the Developer. At the time of any amendment, the Escrow Holder shall agree to carry out its duties as Escrow Holder under such amendment.

9. All communications from the Escrow Holder to the Board or the Developer shall be directed to the addresses and in the manner established in **Section 601** of this Agreement for notices, demands and communications between the Board and the Developer.

10. The liability of the Escrow Holder under this Agreement is limited to performance of the obligations imposed upon it under this Agreement and the Escrow Instructions, and any supplemental escrow instructions delivered to and accepted by the Escrow Holder.

11. Each party hereto represents to the other that it has not authorized any broker or finder to act on its behalf in connection with this Agreement and that it has not dealt with any broker or finder purporting to act on behalf of any party. Each party hereto agrees to indemnify, defend and hold harmless the other party from and against any and all losses, liens, claims, judgments, liabilities, costs, expenses or damages (including reasonable attorneys' fees and court costs) of any kind or character arising out of or resulting from any agreement, arrangement or understanding alleged to have been made by such party or on its behalf with any broker or finder in connection with this Agreement or the transaction contemplated hereby. Notwithstanding anything to the contrary contained herein, this section shall survive the Closing or any termination of this Agreement.

G. **[§ 207]** **Deposit of Monies and Recordation of Documents.**

The parties hereto shall each deposit any monies required to close the escrow with the Escrow Holder prior to the Closing Date; provided that the Escrow Holder shall have notified the parties hereto in writing that the Ground Lease, the Memorandum of Lease and other documents referred to in **Section 203** hereof have been delivered to the Escrow Holder and that title is in the condition to be conveyed in conformity with the provisions of **Section 202** of this Agreement. The Escrow Holder shall cause the Title Company to deliver to the Developer a leasehold title insurance policy insuring title in conformity with **Section 208** of this Agreement, deliver to the parties fully executed duplicate originals of the Ground Lease, and record the Memorandum of Lease in the Official Records of the County Recorder for the County of San Diego. The Ground Lease shall not be recorded.

The parties agree to perform all acts necessary for recordation in sufficient time to close escrow in accordance with the provisions of this Agreement.

H. **[§ 208]** **Title Insurance.**

Concurrently with the recordation of the Memorandum of Lease and the delivery of the executed duplicate originals of the Ground Lease to the parties, Title Company or such other title insurance company approved by the Board and satisfactory to the Developer shall provide and deliver to the Developer a title insurance policy insuring that the leasehold title in the Site is vested in the Developer subject only to the Permitted Title Exceptions and all standard exceptions and

exclusions from coverage set forth in the form of title policy ("**Leasehold Title Policy**"). The Leasehold Title Policy shall be in such amount as the Developer and the Title Company may agree. At Developer's option and sole cost, and provided that the Closing is not thereby delayed, Developer may obtain an ALTA extended coverage leasehold owners policy of title insurance, subject only to the Approved Title Exceptions and such exceptions and other matters as are revealed by or result from the ALTA survey. The Title Company shall provide the Board with a copy of the Leasehold Policy.

I. **[§ 209]** **Taxes and Assessments.**

Ad valorem taxes and assessments, if any, levied, assessed or imposed on the Site during any period prior to the Commencement Date of the Ground Lease shall be borne by the Board. Ad valorem taxes and assessments (including possessory interest taxes), if any, levied, assessed or imposed on the Site during any period commencing after the Commencement Date of the Ground Lease shall be borne by the Developer, pursuant to the Ground Lease.

J. **[§ 210]** **Occupants of the Site.**

The Site shall be conveyed free of any possession or right of possession except that of the Developer, subject to the rights of the Board pursuant to any applicable easements or other rights on title.

K. **[§ 211]** **Required Land Use Approvals.**

Developer, at its sole cost and expense, shall use its commercially reasonable efforts to obtain all approvals, permits and authorizations from governmental and quasi-governmental agencies and other parties required for the development of the Project, including without limitation the approvals listed in **Exhibit H** attached hereto (the **"Required Land Use Approvals"**). Developer's rights and obligations to lease the Site pursuant to this Agreement shall be subject to, and conditioned, upon, the Developer's obtaining all the Required Land Use Approvals.

1. **No Commitment to Development.**

The Board's approval of this Agreement does not constitute approval by the Board of the Project or of any other activity that would have a direct or reasonably foreseeable indirect environmental impact pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000 *et seq*., and its accompanying regulations. (See 14 C.C.R. §§ 15060(c); 15378(b).) The Developer's future use or development of the Project, and any obligations of the Board under this Agreement, are expressly conditioned on compliance with CEQA. The Board shall comply with CEQA prior to taking any discretionary action with regard to any proposed development of the Project. Nothing in this Agreement shall be construed to limit the Board's discretion to consider and adopt any mitigation measure or project alternative, including the alternative of rejecting any proposed development of the Project, as may be in compliance with CEQA. Following completion of the Board's environmental

determination regarding development of the Project, the Board shall file a notice of such approval as provided in Public Resources Code section 21152.

2. **Developer Covenant to Defend this Agreement.**

The Developer acknowledges that the Board is a "public entity" and/or "public agency" as defined under applicable California law. Therefore, the Board must satisfy the requirements of certain California statutes relating to the actions of public entities and public agencies including, without limitation, CEQA. Also, as a public body, the Board's action in approving this Agreement may be subject to proceedings to invalidate this Agreement or mandamus. The Developer assumes the risk of delays and damages that may result to the Developer from any third-party legal actions related to the Board's approval of this Agreement or the pursuit of the activities contemplated by this Agreement, even in the event that an error, omission or abuse of discretion by the Board is determined to have occurred. If a third-party files a legal action regarding the Board's approval of this Agreement or the pursuit of the activities contemplated by this Agreement, the Board may terminate this Agreement on thirty (30) days written notice to the Developer of the Board's intent to terminate this Agreement, referencing this **Section 211(2)**, without any further obligation to perform the terms of this Agreement and without any liability to the Developer resulting from such termination, unless the Developer unconditionally agrees to indemnify and defend the Board, with legal counsel reasonably acceptable to the Board, against such third-party legal action, as provided in the next sentence. Within thirty (30) days of receipt of the Board's notice of intent to terminate this Agreement, as provided in the preceding sentence, the Developer may offer to defend the Board, with legal counsel reasonably acceptable to the Board, in the third-party legal action and pay all of the court costs, reasonable attorney fees, monetary awards, sanctions, attorney fee awards, expert witness and consulting fees, and the expenses of any and all financial or performance obligations resulting from the disposition of the legal action. Any such offer from the Developer must be in writing and reasonably acceptable to the Board in both form and substance. Nothing contained in this **Section 211(2)** shall be deemed or construed to be an express or implied admission that the Board is liable to the Developer or any other person or entity for damages alleged from any alleged or established failure of the Board to comply with any statute, including, without limitation, CEQA.

L. **[§ 212] <u>Submission of Evidence of Financing and Project Commitments</u>.**

The Developer shall report regularly as requested by the Board (but at least every three (3) months) on its progress in obtaining financing for the development on the Site. The reports may be oral, or shall be in writing if requested by the Board. The reports shall explain in reasonable detail the sources and methods of financing sought, the status of obtaining the financing and the issues, if any, which must be resolved, and the pre-leasing activity which is required or has been achieved. The information in the reports shall remain confidential to the extent permitted by law, recognizing without limitation that they are subject to review by responsible officials, employees and contractors of the Board.

Not later than the times specified therefor in the Schedule of Performance, the Developer shall submit to the Board for approval, which approval shall not be unreasonably withheld, the following:

1. A current certified financial statement or other financial statements or forms of financial confirmation, in such form reasonably satisfactory to the Board, evidencing the sources of capital sufficient to demonstrate that the Developer has adequate funds and is committing such funds to cover the construction costs and other costs the Developer is expected to incur in fulfilling the obligations of this Agreement ("**Project Commitments**").

2. Evidence satisfactory to the Board that the Developer has obtained the financing necessary for the ground lease and development of the Project in accordance with this Agreement. Such evidence of financing shall include the following, certified by the Developer to be true and correct copies thereof (collectively, "**Evidence of Financing**"):

(a) A copy of the term sheet describing the details of the terms and conditions of the mortgage loan or loans obtained by the Developer (both for interim construction financing and take out financing if a condition of funding the construction loan) to assist in financing the construction of the Project; and

(b) Evidence satisfactory to the Board of sources of equity capital sufficient to demonstrate that the Developer has adequate funds legally committed to cover the difference, if any, between construction cost minus financing authorized by mortgage loans, and evidence of Developer's financial ability to meet normally anticipated cost over-runs.

3. Evidence satisfactory to the Board that Developer has obtained, in form and substance acceptable to the Board, all permits, approvals and authorizations of any type required for the design, development, construction, use and operation of the Project, other than grading and building permits and those inspections, certificates of occupancy and other approvals that are only available after construction has commenced or been completed.

4. Evidence satisfactory to the Board that Developer has obtained, in form and substance acceptable to the Board, all easements, encroachment agreements, licenses and other off-site rights required for the development, construction, use and operation of the Project.

It is the purpose of this procedure to ensure to the satisfaction of the Board that the leasehold interest in the Site will not be conveyed unless and until Developer demonstrates that it has sufficient financing and development commitments to commence and complete the construction of all of the improvements to be constructed pursuant to this Agreement. Prior to the close of escrow, the Developer shall provide or cause to be provided to the Board any additional evidence reasonably required by the Board to establish that all items required under this Section are current and in full force and effect.

The Board shall approve all evidence, contracts and commitments required under this Section within the time established therefor in the Schedule of Performance except as otherwise set forth in this Section. Such approval shall not be unreasonably withheld. Any disapproval shall be given in writing with the specific reasons therefor. In the event the Board shall disapprove any

evidence, contracts or commitments required under this Section, the Developer may revise and resubmit the same within thirty (30) days of receipt of the Board's written disapproval.

M. **[§ 213]** **Reimbursements by Developer.**

Developer shall reimburse the Board for the fees, costs and expenses of its outside consultants related to the Project and this Agreement. An estimated budget for the Board's outside consultant costs is attached as **Exhibit I**. This estimate is only for budgeting purposes and shall not be considered a cap or limit on the amount of Board's reimbursable expenses. As soon as practicable after determining that expenses are anticipated to exceed the estimate in **Exhibit I**, Board shall advise Developer and provide documentation for the basis of and need for the additional expenditures. This obligation shall survive the Close of Escrow or the termination of this Agreement. Developer shall deposit with Escrow Holder on or before the Closing Date sums sufficient (in an amount reasonably documented and, to the extent not already incurred, reasonably estimated by the Board) to reimburse the Board for such fees, costs and expenses, which sums shall be paid to Board through Escrow at Close of Escrow. After Close of Escrow, if Board determines that the amount deposited was not sufficient to cover the costs described above, Developer shall reimburse the Board for such additional costs within thirty (30) days of the Board's written request together with reasonable evidence of such charges and payment. If after payment of such fees, costs and expenses, any balance of such deposits remains, such balance shall be refunded promptly to the Developer together with reasonable evidence of such charges and payment. The Board shall not have authority to impose additional costs, expenses or reimbursement obligations on Developer except as expressly set forth herein.

III. **[§ 300]** **DEVELOPMENT OF SITE.**

A. **[§ 301]** **Development of Site.**

1. **[§ 302]** **Scope of Development.**

The Developer shall develop the Site with the Project as provided in the Scope of Development.

2. **[§ 303]** **No Approved Drawings and Plans.** No final plans or drawings have been submitted or approved by the Board as of the date hereof. The Chief Executive Officer of the Board is authorized to approve all plans, drawings and other design elements for the Project as described hereinbelow on behalf of Board.

3. **[§ 304]** **Construction Plans, Drawings and Related Documents.**

(a) The Developer shall prepare and submit to the Chief Executive Officer of the Board for architectural and site planning review and written approval the construction plans, drawings and related documents defined in the Scope of Development as the "**Designated Plans**" at the times established in the Schedule of Performance, subject to extensions as are authorized herein or as mutually agreed to by the parties hereto. Developer shall also promptly provide Board upon request, for the Board's information (not approval), copies of all other plans, drawings and

related documents for the development of the Site, including any proposed changes therein.

(b) Board staff and the Developer shall hold regular progress meetings to coordinate review of the Designated Plans and related documents by the Board. The Board and Developer shall communicate and consult informally as frequently as is necessary to ensure that the Designated Plans receive prompt and speedy consideration by the Chief Executive Officer of the Board.

(c) If any revisions or corrections of plans approved by the Board shall be required by any government official, agency, department or bureau having jurisdiction, or any lending institution involved in financing, the Developer and the Board shall cooperate in efforts to obtain a waiver of such requirements or to develop a mutually acceptable and commercially reasonable alternative.

4. **[§ 305] <u>Board Approval of Plans, Drawings and Related Documents</u>.**

Board shall have the right of review (including, but not limited to, architectural review) and approval of the Designated Plans, including any proposed changes therein. Board shall not unreasonably withhold approval of the Designated Plans, provided, however, that the Board will not approve the Designated Plans unless such plans include a minimum of eighty-five (85) parking stalls in the Transit Parking Facilities.

The Developer has retained Architect Orange as the architect for the Project through construction completion, provided, however, that Developer may retain a substitute or additional architect if Board approves in writing, such approval not to be unreasonably withheld, in advance of any substitution occurring prior to Close of Escrow.

(a) <u>Approval of Designated Plans</u>. The Board shall approve, conditionally approve, or disapprove the Designated Plans within the times established in the Schedule of Performance. Any disapproval shall state in writing the reasons for disapproval and the steps which must be taken to achieve such approval. The Developer, upon receipt of a disapproval, shall revise such portions of the plans, drawings or related documents in a manner that satisfies the reasons for disapproval, and shall resubmit such revised portions to the Board as soon as possible after receipt of the notice of disapproval, but in no event more than fifteen (15) calendar days after receipt of the notice of disapproval. The Board shall approve or disapprove such revised portions in the same manner and as soon as possible after receipt of such revised portion, but in no event more than fifteen (15) calendar days after receipt thereof.

(b) <u>Approval of Changes to the Designated Plans.</u> Once the Designated Plans have been approved by the Board, the following changes shall be presented to the Chief Executive of the Board for approval (1) material reduction to the residential unit count of more than 10%; (2) material changes the exterior appearance of the Project buildings; (3) material changes to the exterior landscaping plan for the Project; (4) material changes to the Project's interior access roads or

pedestrian pathways; (5) or other material changes to the scope of the Development. The Chief Executive of the Board shall approve, conditionally approve, or disapprove any proposed changes to the Designated Plans as soon as possible after receipt of the notice of proposed change, but in no event more than fifteen (15) calendar days after receipt thereof. Any disapproval shall be handled in the same process set forth in **Section 305(b)** above.

(c) The Board neither undertakes nor assumes nor shall it have any responsibility or duty to Developer or to any third party to review, inspect, supervise, pass judgment upon or inform Developer or any third party of any matter in connection with the development or construction of the Project, whether with respect to the quality, adequacy or suitability or the plans, any labor, service, equipment or material furnished to the Project, any person furnishing the same or otherwise. Developer and all third parties shall rely upon its or their own judgment with respect to such matters, neither Developer nor any third party is entitled to rely on any review, inspection, supervision, exercise of judgment or information supplied to the Developer or to any third party by the Board in connection with this Agreement.

The parties shall prepare and attach to the Ground Lease at Closing a schedule describing the plans, drawings, and related documents which have been approved by the Board.

5. **[§ 306]** **<u>Cost of Construction</u>.**

The entire cost of constructing the Project on the Site shall be borne by the Developer. The Board and the Developer shall each pay the costs necessary to administer and carry out their respective responsibilities and obligations under this Agreement.

6. **[§ 307]** **<u>Indemnification</u>.**

To the fullest extent permitted by law, the Developer shall indemnify, protect, defend and hold harmless the Board and its officers, employees and agents, from and against all liability, loss, damage, costs, or expenses of any kind (including court costs and attorneys' fees) arising from or as a result of: (a) any and all challenges to this Agreement, the Project or the related entitlements; and (b) any accident, injury, loss or damage whatsoever caused to any person or to the property of any person which shall occur on or adjacent to the Site prior to the completion of the Project and which shall be directly or indirectly caused by any acts done thereon or any errors or omissions of the Developer, its agents, employees and contractors, or any of them, including but not limited to, claims of negligent or defective design or construction before Close of Escrow or termination of this Agreement, regardless of whether any such liability, loss, damage, costs, or expense occurs before or after Close of Escrow or termination of this Agreement. These indemnity obligations shall survive the expiration or termination of this Agreement. Developer's obligations under this Section exclude claims, losses or liability which is due to the sole negligence, willful misconduct, or violation of law by the Board or its officers, employees and agents.

7. **[§ 308]** **Local, State, and Federal Laws.**

The Developer shall comply with all applicable laws, including all applicable federal and state labor standards.

8. **[§ 309]** **City and Other Governmental Board Permits.**

Before commencement of any work or improvement upon the Site, the Developer shall secure or shall cause to be secured, any and all permits, approvals or certificates which may be required by the Board, the City or any other governmental agency with jurisdiction over the Site or over the construction, development or work contemplated under this Agreement. The Board shall cooperate with Developer and provide all proper assistance to the Developer in securing these permits and certificates and any other approvals required for the Project in order to meet the time periods set forth in the Schedule of Performance; provided that the Board shall not be required to incur any expense in connection with providing any such assistance.

9. **[§ 310]** **Taxes, Assessments, Encumbrances and Liens.**

The Developer shall not place or allow to be placed on fee title to the Site, or any portion thereof, any mortgage, trust deed, or similar encumbrance or lien and the Developer shall remove, or shall have removed, any levy or attachment made on the fee title to the Site, or any portion thereof, or shall assure the satisfaction thereof within a reasonable time; provided however that encumbrances and liens shall be permitted on Developer's leasehold title pursuant to the terms of the Ground Lease. Nothing herein contained shall be deemed to prohibit the Developer from contesting the validity or amounts of any encumbrance or lien, nor to limit the remedies available to the Developer with respect thereto, provided such contest does not subject the Site, or any portion thereof, to forfeiture or sale.

B. **[§ 311]** **Sale of Developer's Interest in the Project.**

Except as otherwise expressly provided in this Agreement, the Developer shall not under any circumstances be entitled to assign this Agreement or any of the rights herein, without the prior written consent of the Board, which may be granted or withheld in the reasonable discretion of Board.

If, contrary to the provisions of this Agreement, the Developer does assign this Agreement or any of the rights herein, or any change in the ownership or control of Developer in violation of **Section 107** occurs, in addition to all other legal and equitable remedies the Board may be entitled to, the Board shall be entitled to recover from Developer the total consideration received by Developer for such sale, transfer, conveyance or assignment. Said consideration shall belong and be paid immediately to the Board.

Notwithstanding anything to the contrary contained herein, in the event of any conflict or inconsistency between the terms of the Ground Lease and the terms of this Agreement after the Close of Escrow, the terms of the Ground Lease shall control.

IV. **[§ 400] USE OF THE SITE.**

A. **[§ 401] Inspection of the Site.**

1. Developer has fully and independently inspected and assessed the condition of the Site and any other information deemed pertinent by Developer to its ground lease, use or development of the Site (including any title, survey, permits, approvals, laws, statutes, rules, ordinances and other governmental regulations or requirements applicable to the Site), and has approved the same in its sole discretion. Before the Close of Escrow, Developer shall have the continuing right to physically inspect, and to cause one or more engineers or other representatives of Developer to physically inspect, the Site without interfering with the Board's operation of the Site. Developer shall make such inspections in good faith and with due diligence. All inspection fees, appraisal fees, engineering fees and other expenses of any kind incurred by Developer relating to the inspection of the Site will be solely at Developer's expense. The Board shall cooperate reasonably with Developer in providing access to the Site for such inspections. The Board hereby reserves the right to have a representative present when Developer conducts any inspection of the Site. Prior to and as a condition to Developer making each physical inspection of the Site, Developer shall adhere to the Board's published procedures regarding site access and inspection.

2. Developer shall indemnify, protect, defend (with counsel approved by the Board) and hold harmless the Board, its contractors and employees from and against any and all injuries, losses, liens, claims, judgments, liabilities, costs, expenses and damages (including reasonable attorneys' fees and court costs) sustained by or threatened which result from or arise out of any inspections of the Site or any other entry onto the Site by Developer, its contractors, employees, agents or representatives, however caused. Notwithstanding any provision herein to the contrary, the indemnity contained in the preceding sentence shall survive the Execution of an Amended and/or Restated Agreement or the earlier termination of this Agreement.

3. Developer shall deliver to the Board, within five (5) Business Days after a request, copies of all studies, reports and similar information, including all supplements, addenda and updates of such information, regarding the physical condition of the Site (e.g., soils, geotechnical, hydrological, and environmental reports, studies, assessments and tests) obtained by Developer.

B. **[§ 402] Hazardous Substances.**

1. Developer shall not, without the Board's prior written consent, use, store, generate, dispose or otherwise allow any "**Hazardous Substances**" (as defined below) onto the Site.

2. Developer shall comply with all rules, laws and regulations relating to Hazardous Substances which Developer uses, stores or allows on the Site.

3. Developer shall not cause the unlawful release, deposit, discharge or disposal of any Hazardous Substances on or around the Site or permit the unlawful release, deposit, discharge or disposal of any Hazardous Substances on the Site.

4. Except for bioretention tanks installed in accordance with applicable laws, no above or underground storage tanks shall be installed or maintained on the Site without Board's prior express written approval.

5. Developer shall be responsible for posting on the Site any signs required by any state, federal or local law, including, without limitation, Section 25249.6 of the California HEALTH AND SAFETY CODE and regulations promulgated pursuant thereto. Developer shall also complete and file any business response plans or inventories required by any state, federal or local law, including, without limitation, Chapter 695 of the California HEALTH AND SAFETY CODE and regulations promulgated pursuant thereto. Developer shall concurrently file a copy of any such business response plan or inventory with Board.

6. Developer shall defend, indemnify and hold harmless the Board and its officers, employees, and agents from any claims, liability, injury, damage, costs or expenses (including without limitation, attorneys' fees and the cost of any cleanup, testing, remediation, removal or disposal of Hazardous Substances) relating to or arising out of any Hazardous Substances released, deposited, discharged or disposed onto, under or around the Site by Developer, its contractors, employees or agents, or arising as a result of Developer's violation of the provisions of this Section. The obligations of this paragraph shall survive the expiration or termination of this Agreement, but shall terminate upon Developer's sale of its leasehold interest in the Site in compliance with the terms of the Ground Lease.

7. Developer hereby releases the Board and its officers and employees from any claims, liability, injury, damage, costs or expenses (including without limitation, attorneys' fees and the cost of any cleanup, testing, remediation, removal or disposal of Hazardous Substances) relating to or arising out of any Hazardous Substances released, deposited, discharged or disposed onto, under or around the Site; provided, however, that this release shall not apply to any Hazardous Substances released, deposited, discharged or disposed onto, under or around the Site solely by Board or its officers or employees after the Close of Escrow. Developer agrees as to the matters released to waive the benefits of Section 1542 of the CIVIL CODE of the State of California, which provides as follows:

> "A general release does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release and that, if known by him or her, would have materially affected his or her settlement with the debtor or released party."

_____ _____

Developer's Initials Board's Initials

The obligations of this paragraph shall survive the expiration or termination of this Agreement.

8. The term "**Hazardous Substances**", when used in this Agreement, shall mean any hazardous waste or hazardous substance as defined in any federal, state, or local statute, ordinance, rule, or regulation applicable to the property, including, without limitation, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Title 42 United States Code 9601-9662), the Resource Conservation and Recovery Act (Title 42 United States Code 6901-6992k), the Carpenter-Presley-Tanner Hazardous Substance Account Act (California Health and Safety Code 25300-25395), and the Hazardous Waste Control Law (California Health and Safety Code 25100-25250.25). "Hazardous Substances" shall also include asbestos or asbestos-containing materials, radon gas, and petroleum or petroleum fractions, whether or not defined as a hazardous waste or hazardous substance in any such statute, ordinance, rule, or regulation.

C. **[§ 403]** **Obligation to Refrain from Discrimination.**

There shall be no discrimination against or segregation of any person, or group of persons, on account of race, color, ancestry, national origin, religion, disability (mental or physical), sex, gender, sexual orientation, gender identity, gender expression, genetic information, marital status, familial status, or source of income, in connection with the construction of the Project or in the lease, sublease, transfer, use, occupancy, tenure or enjoyment of the Site, or any part thereof, nor shall the Developer itself or any person claiming under or through the Developer establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, or sublessees of the Site.

D. **[§ 404]** **Effect and Duration of Covenants.**

1. The covenants established herein shall, without regard to technical classification and designation, be binding for the benefit and in favor of the Board, its successors and assigns, and any successor in interest to the Site or any part thereof.

2. The covenants contained in this Agreement shall remain in effect as follows:

(a) All indemnity and release obligations shall survive the termination of this Agreement.

(b) The obligations of Developer under **Subsection (3) of Section 401** shall survive the termination of this Agreement.

(c) All other covenants in this Agreement shall terminate upon the Close of Escrow.

3. The duties and obligations of the Lessee under the Ground Lease are separate and independent from the duties and obligations of the Developer under this Agreement, and a breach by the Developer under this Agreement shall not be deemed a breach under the Ground Lease. No (i) Transferee (as that term is defined in the Ground

Lease) of the Lessee's interest under the Ground Lease, (ii) Permitted Mortgagee (as defined in the Ground Lease), (iii) tenant under a new lease or its subsequent assignees, or (iv) a foreclosing Permitted Mortgagee or its subsequent assignees, shall be responsible for any of the obligation of the Developer under this Agreement and no such party described in (i)-(iv) above shall be considered a "successor or assign" under this Agreement.

E. **[§ 405]** **Effect of Violation of the Terms and Provisions of this Agreement.**

The Board shall have the right in the event of any breach of the terms and provisions of this Agreement, to exercise all rights and remedies available at law, and to maintain any actions or suits at law or in equity or other proper proceedings to enforce the curing of such breaches.

V. [§ 500] DEFAULTS, REMEDIES AND TERMINATION.

A. [§ 501] Defaults – General; Notice.

A failure or delay by any party to perform any term or provision of this Agreement shall constitute a default under this Agreement. The non-defaulting party shall give written notice of default to the defaulting party, specifying the default complained of and the actions required to cure the default. Delay in giving such notice shall not constitute a waiver of any default nor shall it change the time of default. A party shall be deemed in material default of this Agreement, and the party not in default shall have the remedies described below, if either: (1) a monetary default is not cured within ten (10) days after service of the notice of default; or (2) a non-monetary default is not cured within thirty (30) days after service of the notice of default; or (3) a non-monetary default which cannot reasonably be cured within thirty (30) days is not (a) commenced to be cured within thirty (30) days after service of the notice of default, (b) pursued diligently, and (c) cured promptly within a reasonable period of time after commencement of the cure.

Any failures or delays by a party in asserting any of its rights and remedies as to any default shall not operate as a waiver of any default or of any rights or remedies, or deprive a party of its right to institute and maintain any actions or proceedings which are allowed by this Agreement.

B. [§ 502] Legal Actions.

1. [§ 503] Institution of Legal Actions.

Any legal actions must be instituted in the Superior Court of the County of San Diego, State of California, in any other appropriate court in that County, or in the Federal District Court for the Southern District of California.

2. [§ 504] Applicable Law.

The laws of the State of California shall govern the interpretation and enforcement of this Agreement.

3. **[§ 505]** **Acceptance of Service of Process.**

In the event that any legal action is commenced by the Board against the Developer, service of process on the Developer shall be made by personal service, or in such manner as may be provided by law, and shall be valid whether made within or without the State of California.

C. **[§ 506]** **Rights and Remedies are Cumulative.**

Except with respect to rights and remedies which are expressly declared to be exclusive in this Agreement, the rights and remedies of any non-defaulting party are cumulative and the exercise of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the defaulting party.

D. **[§ 507]** **Damages; Specific Performance.**

If a party defaults with regard to any of the provisions of this Agreement, after notice and opportunity to cure as provided in **Section 501** above; the defaulting party shall, except as otherwise expressly provided in this Agreement, be liable to the other party for damages caused by such default, and the non-defaulting party, at its option, may institute an action for specific performance of the terms of this Agreement, or exercise any other remedy or remedies which it may be entitled to.

E. **[§ 508]** **Remedies and Rights of Termination.**

1. **[§ 509]** **Termination by Developer.**

In addition to any other termination rights of Developer set forth in this Agreement, the Developer may terminate this Agreement, so long as the Ground Lease has not been executed, if:

(a) any of the conditions to Close of Escrow in **Section 205** for Developer's benefit are not satisfied or waived by Developer; or

(b) the Board fails to execute and deliver the Ground Lease or fails to perform any of its other obligations under this Agreement (including any Attachment to this Agreement) within the time established therefor herein or in the Schedule of Performance.

2. **[§ 510]** **Termination by Board.**

In addition to any other termination rights of the Board set forth in this Agreement, but subject to the notice and cure provisions of **Section 501**, the Board at its option may terminate this Agreement, so long as the Ground Lease has not been executed, if:

(a) the Developer assigns or attempts to assign this Agreement, or any rights herein, or makes or attempts to make any total or partial sale, transfer or

conveyance of the whole or any part of Developer's leasehold interest in the Site or the improvements thereon, except as permitted by this Agreement or the Ground Lease (after execution of the Ground Lease); or

(b) there is change in the ownership of the Developer, or with respect to the identity of the parties in control of the Developer, or the degree thereof contrary to the provisions of **Section 107** hereof except as permitted by the Ground Lease; or

(c) the Developer fails to diligently pursue or to obtain and submit to the Board the Evidence of Financing and Project Commitments described in **Section 212** of this Agreement within the time established therefor in the Schedule of Performance and such failure is not cured within thirty (30) days following receipt of written notice thereof; or

(d) the Developer fails to execute and deliver the Ground Lease within the time established therefor in the Schedule of Performance and such failure is not cured within thirty (30) days following receipt of written notice thereof; or

(e) the Developer fails to perform any of its other obligations under this Agreement (including any Attachment to this Agreement) within the time established therefor herein or in the Schedule of Performance and such failure is not cured within thirty (30) days following receipt of written notice thereof; or

(f) any of the conditions to Close of Escrow in **Section 205** for the Board's benefit are not satisfied or waived by the Board; or

(g) the Developer fails to timely pay or reimburse the Board for any costs or expenses incurred by the Board with respect to the Site which are to be borne by the Developer under this Agreement; or

(h) the Developer fails to perform all of Developer's indemnity obligations to Board under this Agreement, including, but not limited to, those set forth in **Sections 307**, **401**, and **402**.

3. **[§ 511]** **Effect of Termination.**

(a) No expiration or termination of this Agreement shall affect Developer's indemnity obligations to the Board under this Agreement, including, but not limited to, those set forth in **Sections 211(2), 307**, **401**, and **402**. The obligations of Developer under **Section 401(3)** and Developer's release under **Section 402 (7)** shall survive the termination of this Agreement. Notwithstanding the foregoing, Developer's obligations herewith shall terminate upon a sale of Developer's leasehold interest in compliance with the Ground Lease.

(b) The deposits and payments made by the Developer under the ENA, this Agreement or separate agreement to reimburse the Board for the fees, costs and expenses of the Board's outside consultants, attorneys and reimbursable staff time

shall be retained by the Board until the total amount of such fees, costs and expenses is determined and paid. Any balance of such deposits remaining (after payment of such fees, costs and expenses) shall be refunded promptly to the Developer.

VI. **[§ 600]** **GENERAL PROVISIONS.**

A. **[§ 601]** **Notices, Demands, and Communications Between the Parties.**

Unless otherwise specifically provided herein, all formal notices, demands or other communications given hereunder shall be in writing and shall be deemed to have been duly delivered upon personal delivery, or by Federal Express (or similar reputable express delivery service), or by email transmission with verification of receipt and back-up copy mailed the same day, or as of the second Business Day after mailing by United States registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

For the Board:

Chief Executive Officer
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000
San Diego, California 92101-7490
Email: sharon.cooney@sdmts.com

with a copy to:

General Counsel
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000
San Diego, California 92101-7490
Email: karen.landers@sdmts.com

For the Developer:

c/o Affirmed Housing Group
13520 Evening Creek Drive N, Suite 160
San Diego, California 92128
Attn: James Silverwood

with a copy to:

Katten Muchin Rosenman LLP
Attn: David P. Cohen, Esq.
2029 Century Park East, Suite 2600
Los Angeles, California 90067-3012
Email: david.cohen@kattenlaw.com

Addresses for notice may be changed by written notice sent in the manner provided above.

B. **[§ 602]** **Conflicts of Interest.**

No member, official or employee of the Board shall have any personal interest, direct or indirect, in this Agreement nor shall any such member, official or employee participate in any decision relating to the Agreement which affects his or her personal interests or the interests of any corporation, partnership or association in which he, or she is, directly or indirectly, interested.

C. **[§ 603]** **Warranty Against Payment of Consideration for Agreement.**

The Developer warrants that it has not paid or given, and will not pay or give, any third party any money or other consideration for obtaining this Agreement.

D. **[§ 604]** **Nonliability of Board Officials and Employees.**

No member, official, or employee of the Board shall be personally liable to the Developer or any successor in interest, in the event of any default or breach by the Board or for any amount which may become due to the Developer or to its successor, or on any obligations under the terms of this Agreement.

E. **[§ 605]** **Enforced Delay; Extension of Time of Performance.**

In addition to specific provisions of this Agreement, delays in performance (other than the payment of money) by either party hereunder shall not be deemed to be a default where and to the extent that such delays in performance are due to war; insurrection; strikes or lock-outs (except strikes or lockouts caused by a labor dispute between Developer, its agents or contractors and the labor force under strike or lockout conditions); riots; floods; earthquakes; fires; casualties; acts of God; acts of the public enemy; acts of terrorism; epidemics, quarantine restrictions; pandemics, and other public health emergencies or government ordered work shutdowns freight embargoes; lack of transportation (which could not have been avoided with reasonable diligence and planning by Developer); governmental restrictions or priority; litigation directly impacting Developer's ability to proceed with Project; unusually severe weather; inability to secure necessary labor, materials or tools (which could not have been avoided with reasonable diligence and planning by Developer); acts of the other party; or any other causes beyond the control (and without the fault) of the party claiming an extension of time to perform. An extension of time for any such cause shall be for the period of the enforced delay and shall commence to run from the time of the commencement of the cause, if the party claiming such extension sends notice to the other party within thirty (30) days of knowledge of the commencement of the cause. Times of performance under this Agreement may also be extended in writing by the Chief Executive Officer and the Developer.

F. **[§ 606]** **Inspection of Books and Records.**

The Board has the right at all reasonable times to inspect the books and records of the Developer pertaining to the Site and the Project as pertinent to the purposes of this Agreement.

G. **[§ 607]** **Approvals.**

Unless otherwise expressly provided herein, approvals required of the Board or the Developer shall not be unreasonably withheld and approval or disapproval shall be given within the time set forth in the Schedule of Performance or, if no time is given, within a reasonable time. Unless otherwise expressly provided herein, the Chief Executive Officer of the Board or his/her designee shall have the authority to issue all approvals and disapprovals on behalf of the Board required or allowed hereunder.

H. **[§ 608]** **Severability.**

If any term, covenant, condition or provision of this Agreement, or the application thereof to any person or circumstance, shall to any extent be held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the terms, covenants, conditions or provisions of this Agreement, or the application thereof to any person or circumstance, shall remain in full force and effect and shall in no way be affected, impaired or invalidated thereby.

I. **[§ 609]** **Gender, Number.**

Whenever the context requires, the use herein of (i) the neuter gender includes the masculine and the feminine, and (ii) the singular number includes the plural.

J. **[§ 610]** **Business Days.**

"**Business Day**" means a day that is not a Saturday, Sunday, MTS Administration or federal bank holiday. If the last day for performance of an act falls upon a day that is not a Business Day, such last day shall be the next following regular Business Day.

K. **[§ 611]** **Captions.**

Captions in this Agreement are inserted for convenience of reference and do not define, describe or limit the scope or intent of this Agreement or any of its terms.

L. **[§ 612]** **Entire Agreement.**

This Agreement, together with any other written document referred to herein, embodies the entire agreement and understanding between the parties regarding the subject matter hereof, and any and all prior or contemporaneous oral or written representations, agreements, understandings or statements shall be of no force and effect.

M. **[§ 613]** **Recitals; Exhibits.**

Any recitals set forth above and any attached exhibits are incorporated by reference into this Agreement.

N. **[§ 614]** **Authority of Signatories.**

Each signatory and party hereto hereby warrants and represents to the other party that it has legal authority and capacity and direction from its principal to enter into this Agreement, and

that all resolutions and/or other actions have been taken so as to enable said signatory to enter into this Agreement.

O. **[§ 615]** **Modifications.**

No modification, waiver or discharge of this Agreement shall be valid unless the same is in writing and signed by the party against which the enforcement of such modification, waiver or discharge is or may be sought. Any material amendments to this Agreement must be approved by the Board's Board of Directors.

P. **[§ 616]** **Attorneys' Fees and Legal Expenses.**

Should any party hereto institute any action or proceeding in court or any arbitration or similar proceeding to enforce any provision hereof or for damages by reason of any alleged breach of any provision of this Agreement or for any other judicial remedy, the prevailing party(ies) shall be entitled to receive from the losing party(ies) all reasonable attorneys' fees and all court costs in connection with said proceedings.

Q. **[§ 617]** **Preparation of Agreement.**

No inference, assumption or presumption shall be drawn from the fact that a party or its attorney prepared or drafted this Agreement. It shall be conclusively presumed that both parties participated equally in the preparation and/or drafting of this Agreement.

R. **[§ 618]** **Counterparts.**

This Agreement may be executed in any number of counterparts, each of which shall be original and all of which shall constitute one and the same document.

S. **[§ 619]** **Certificates.**

At any time and from time to time, each party ("**Responding Party**") agrees to sign and deliver to the other party ("**Requesting Party**") within ten (10) days after receipt of written request therefor a statement certifying that (a) this Agreement is unmodified and in full force and effect (or, if such is not the case, so stating and setting forth any modifications), (b) that, to the Responding Party's knowledge, the Requesting Party is not in breach hereunder (or, if such is not the case, so stating and setting forth any alleged breaches), and (c) any other information reasonably related to the status of this Agreement. Such certification may be conclusively relied on by the Requesting Party, any equity investor of Developer, and any title insurance company insuring title to the Site.

T. **[§ 620]** **Successors and Assigns.**

Subject to the provisions of this Agreement restricting or prohibiting assignment, this Agreement shall be binding on and inure to the benefit of the successors and assigns of the respective parties.

U. **[§ 621]** **Joint and Several Liability.**

If any party consists of more than one person or entity, the liability of each such person or entity signing this Agreement shall be joint and several.

V. **[§ 622]** **No Third Party Beneficiaries.**

This Agreement has been made and is made solely for the benefit of the Board and the Developer and their respective successors and permitted assigns. Nothing in this Agreement is intended to confer any rights or remedies under or by reason of this Agreement on any persons other than the parties to it and their respective successors and permitted assigns. Nothing in this Agreement is intended to relieve or discharge the obligation or liability of any third persons to any party to this Agreement.

VII. **[§ 700]** **Time for Acceptance of Agreement by Board.**

Execution and delivery of this Agreement by the Developer to the Board shall be considered an offer by Developer to enter into this Agreement. If this Agreement is not authorized, executed and delivered by the Board within seven (7) days after the date of signature by the Developer, the offer to enter into this Agreement may be terminated by the Developer on written notice to the Board. The effective date of this Agreement (the "**Effective Date**") shall be the date this Agreement is fully executed by both Developer and the Board.

IN WITNESS WHEREOF, Board and Developer have duly executed this Agreement as of the day and year first written above.

"**Board**"

San Diego Metropolitan Transit Development Board, a California public agency also known as the San Diego Metropolitan Transit System

By: _____
Chief Executive Officer

APPROVED AS TO FORM
By: _____
Karen Landers
General Counsel

"**Developer**"

BERNARDO FAMILY HOUSING, L.P., a California limited partnership
By: Affirmed Housing Group, Inc.
Its: General Partner

By: _____
Name:_____
Title: _____

EXHIBIT A

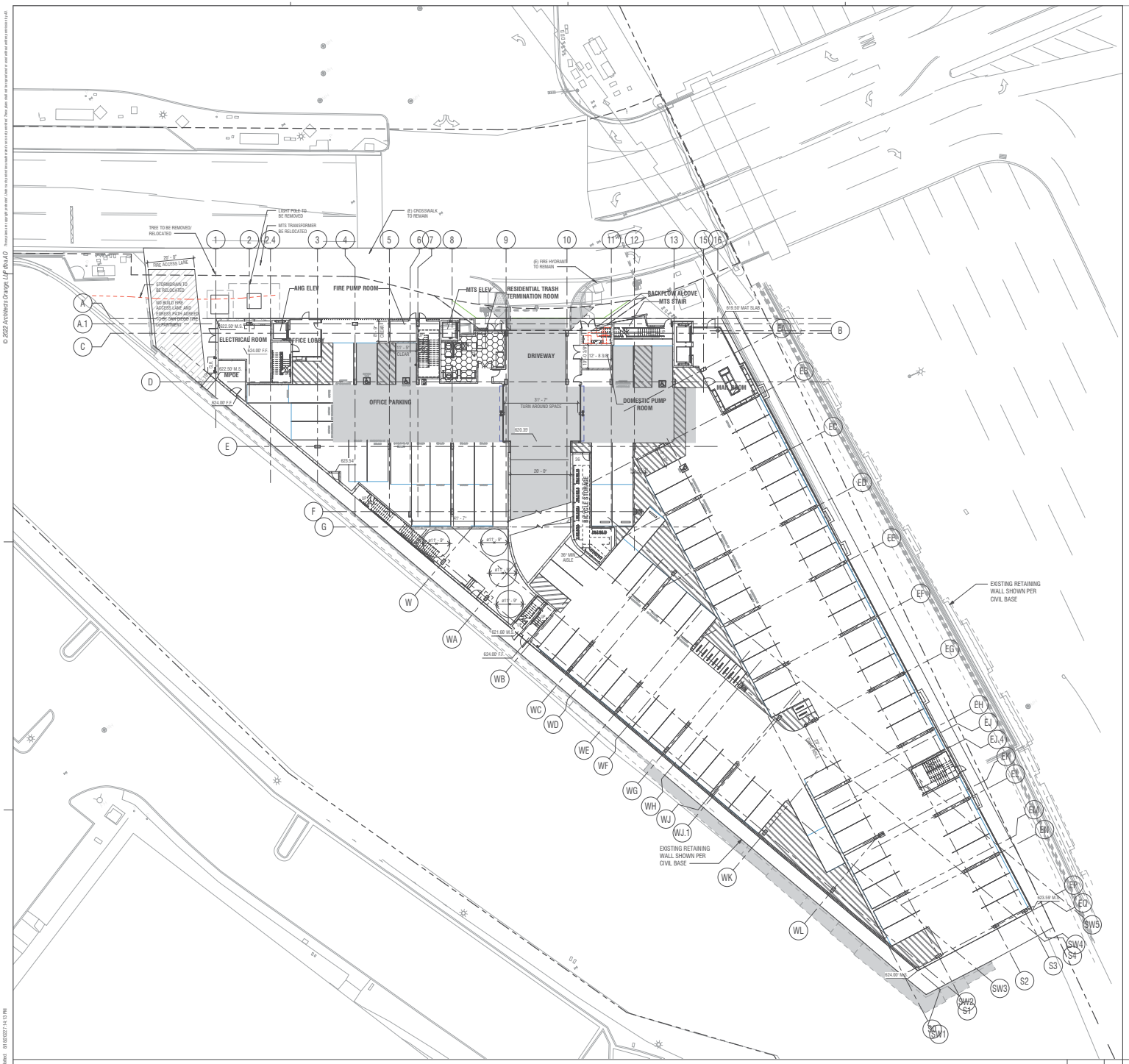
Depiction of Rancho Bernardo Transit Station Property

Approximate Boundaries of MTS Rancho Bernardo Transit Station Property (APN 678-252-15

Approximate Footprint of Developer Ground Lease Parcel

EXHIBIT B

Site Plans



PARKING LEVEL 1 | 1/16" = 1'-0" | 1

BUILDING GENERAL NOTES AND LEGEND

Architecture. Design. Relationships.

Seal

Consultant

Client

AFFIRMED HOUSING

AFFIRMED HOUSING GROUP
13520 EVENING CREEK DR. NORTH, SUITE 160
(858) 679-2828

RANCHO BERNARDO TRANSIT

16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

LEVEL 1 BUILDING PLAN

Project Number: 2020-153

Plan Check Number:

A7.1.1

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PARKING LEVEL 2 | 1/16" = 1'-0" | 1

BUILDING GENERAL NOTES AND LEGEND

0 16' 32' 64'

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Client

AFFIRMED HOUSING

AFFIRMED HOUSING GROUP
13520 EVENING CREEK DR. NORTH, SUITE 160
(858) 679-2828

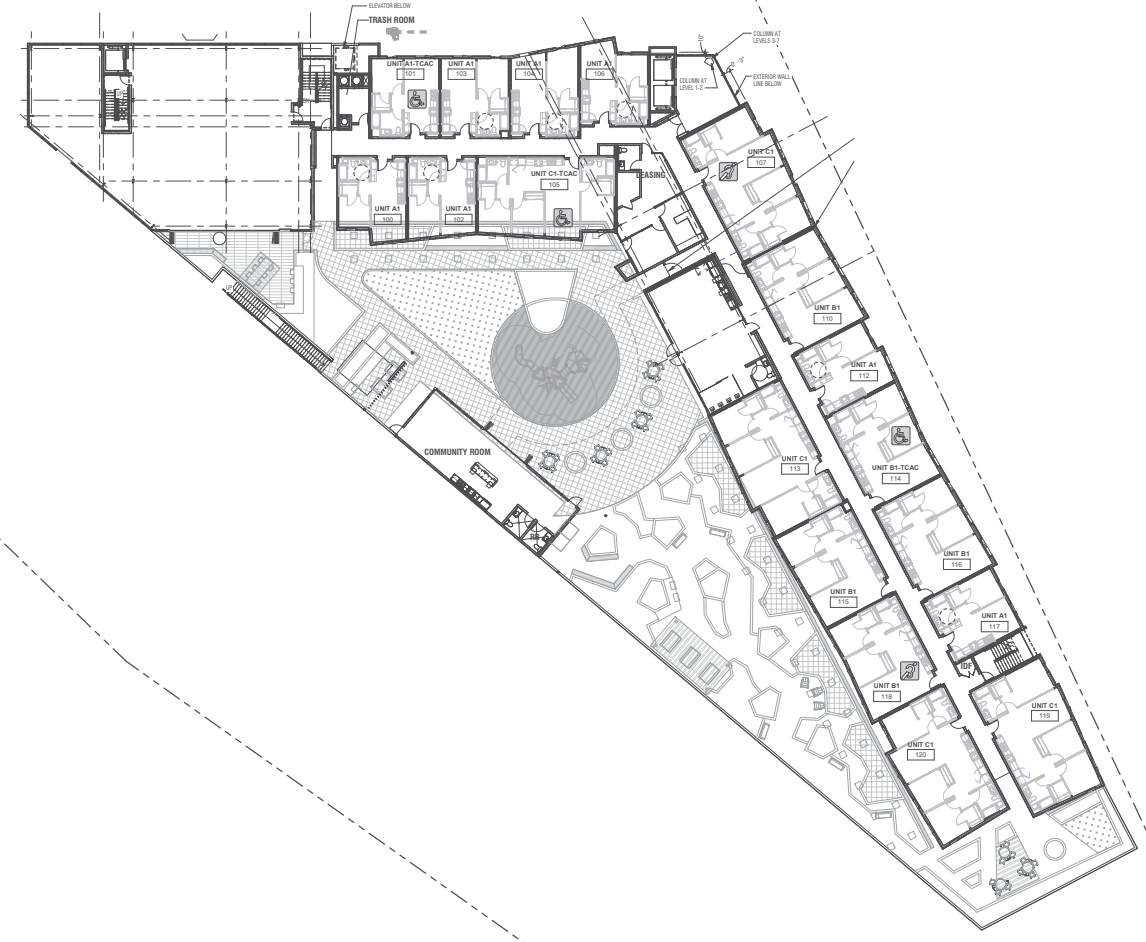
RANCHO BERNARDO TRANSIT
16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

LEVEL 2 BUILDING PLAN

Project Number: 2020-153

Plan Check Number:

A7.2.1



LEVEL 3 | 1/16" = 1'-0" | 1

BUILDING GENERAL NOTES AND LEGEND

0' 16' 32' 64'

Architecture. Design. Relationships.

Seal

Consultant

Client

AFFIRMED HOUSING

AFFIRMED HOUSING GROUP
13520 EVENING CREEK DR. NORTH, SUITE 160
(858) 679-2828

RANCHO BERNARDO TRANSIT

16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

LEVEL 3 BUILDING PLAN

Project Number: 2020-153

Plan Check Number:

A7.3.3

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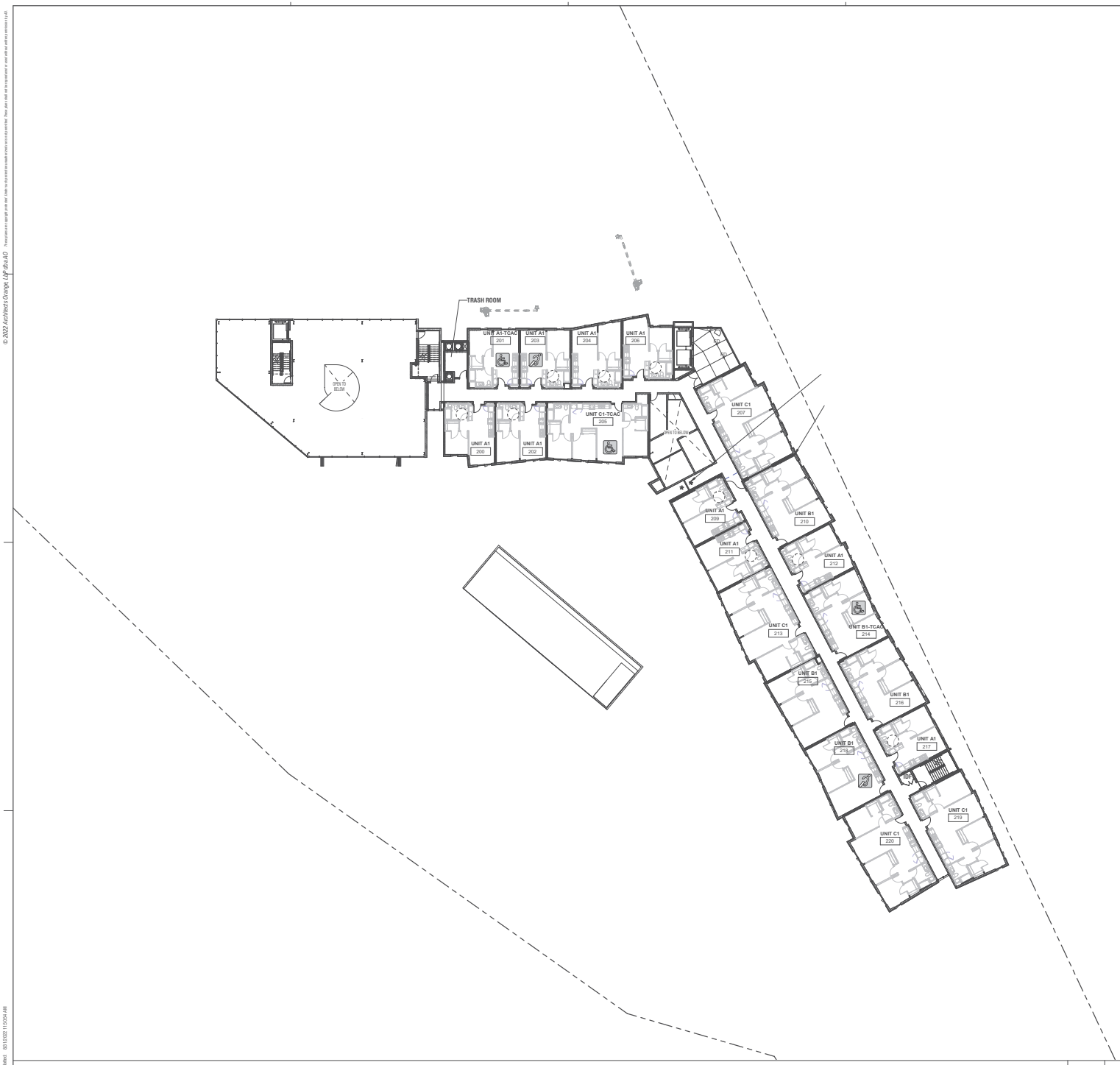

LEVELS 4 -7 | 1/16" = 1'-0" | 1

0' 16' 32' 64'

BUILDING GENERAL NOTES AND LEGEND

Architecture. Design. Relationships.

Seal

Consultant

Client

AFFIRMED HOUSING

AFFIRMED HOUSING GROUP
13520 EVENING CREEK DR. NORTH, SUITE 160
(858) 679-2828

RANCHO BERNARDO TRANSIT
16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

Project Number: 2020-153

Plan Check Number:

A7.4.1

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RESIDENTIAL ROOF | 1/16" = 1'-0" | 1

KEY PLAN

0' 16' 32' 64'

Architecture. Design. Relationships.

Seal

Consultant

Client

AFFIRMED HOUSING

AFFIRMED HOUSING GROUP
13520 EVENING CREEK DR. NORTH, SUITE 160
(858) 679-2828

RANCHO BERNARDO TRANSIT

16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

ROOF PLAN

Project Number: 2020-153

Plan Check Number:

A7.8.1

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NORTH ELEVATION

EAST ELEVATION

RANCHO BERNARDO TRANSIT STATION

16785 W BERNARDO DR. SAN DIEGO, CA 92127
AFFIRMED HOUSING

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE CA 92866
714.639.9860

BLDG ELEVATIONS

1/16"=1'-0" 0 8' 16' 32' 48'

A5.0
Job No. 2020-153
Date: 2022-03-31

SOUTH ELEVATION

WEST ELEVATION

RANCHO BERNARDO TRANSIT STATION

16785 W BERNARDO DR. SAN DIEGO, CA 92127
AFFIRMED HOUSING

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE CA 92866
714.639.9860

BLDG ELEVATIONS

1/16"=1'-0" 0 8' 16' 32' 48'

A5.1
Job No. 2020-153
Date: 2022-03-31

EXHIBIT C

Scope of Development

The Developer shall be responsible for development of the Site as a mixed-use development of approximately one hundred (100) units, as well as commercial space. The development will be 7 stories, including two floors of parking. The development will be comprised of approximately ninety-nine thousand (99,000) square feet of gross residential area and approximately fourteen thousand five hundred (14,500) of gross square feet of commercial area and including approximately two-hundred and one (201) parking spaces, common area open space, and associated landscaping and public improvements. The development will include drought tolerant/resistant landscaping, a children's play area, outdoor gathering space, residents' community room, and property management office space.

Of the 201 parking spaces planned, a minimum of 85 replacement parking spaces shall be reserved exclusively for MTS transit patrons (replacing the 105 spaces currently on the south parcel), 78 parking spaces for residential tenants and visitors, and 38 parking spaces for the office portion of the project.

EXHIBIT D

RESERVED

EXHIBIT E

Schedule of Performance

TASK/EVENT	TIME FOR PERFORMANCE
1. **Disposition and Development Agreement (DDA)**. Parties shall execute the DDA	September 2022
2. **Project Commitments**. Developer shall submit evidence of Project Commitments to the Board.	Not later than ten (10) days prior to the Closing Date.
3. **Evidence of Financing.** Developer shall submit Evidence of Financing to the Board.	Not later than ten (10) days prior to the Closing Date.
4. **Ground Lease.** Parties shall execute Ground Lease.	Not later than June 30, 2025
5. **Commencement of Construction**. The Developer shall commence construction.	Within thirty (30) days following the later of (i) Ground Lease execution and (ii) issuance of grading and building permits by the City of San Diego
6. **Completion of Construction**. The Developer shall complete construction.	No later than thirty (30) months after Commencement of Construction.

If the Developer fails to satisfy any obligation by the deadline set forth above, the Developer shall not be in default under this Agreement unless the Developer has first been given written notice of such failure and an opportunity to cure pursuant to **Sections 501** and **510**. Any cure by the Developer within the period set forth by **Sections 501** and **510** shall constitute a full and complete cure of the failure, notwithstanding the fact that the deadline established herein was not first met by the Developer.

EXHIBIT F

Draft Ground Lease

To be finalized after execution of this Agreement.

With the exception of project specific details and the material terms set forth in **Exhibit G**, the Ground Lease draft will closely follow the Ground Lease dated January 24, 2022 between Grantville Trolley Family Housing LP and Board for the Affirmed ShoreLINE project at Grantville Transit Center (MTS Doc. No. M6770.0-22)

EXHIBIT G

Material Terms of Ground Lease

1. Term. The term of the Ground Lease ("Lease") shall be 99 years.
2. Density and Mixed Use. The Project shall consist of approximately 100 residential units with an estimated occupancy of 307 ("**Residential Project**"). Any deviation of less than ten percent (10%) from the estimated unit shall not be considered a material change under Section 305(b). The Project shall also include approximately 14,500 of commercial office space ("**Office Project**").
3. Affordability. All residential units in the Residential Project shall be rent restricted according to TCAC or CalHFA program requirements, except for one (1) staff unit. In compliance with Government Code section 54222.5, at least 25% of the units shall be at affordable rent, as defined in Section 50053 of the Health and Safety Code, to lower income households, as defined in Section 50079.5 of the Health and Safety Code. Rental units shall remain affordable to, and occupied by, lower income households for a period of at least 55 years. All units shall be rent restricted according to TCAC or CalHFA program requirements, except for one (1) staff unit.
4. Replacement Parking. Developer shall construct the Transit Parking Facilities substantially in conformance with a Site Plan and Scope of Work approved by the MTS Chief Executive Officer, with at least 85 parking stalls for the Board's exclusive use. Upon completion of construction, the Transit Parking Facilities shall be dedicated to the Board's exclusive use and operation as public parking for its transit park-and-ride patrons. The Board shall be responsible for its pro-rata share of maintenance, insurance, and repair costs of the Transit Parking Facilities, either by directly maintaining the Transit Parking Facilities or by delegating maintenance to Affirmed and reimbursing Affirmed for the Board's pro-rata share of such costs. The Board's rights and obligations with regards to its exclusive use and maintenance of the Transit Parking Facilities shall be further set forth in the Ground Lease.
5. Rent.
   A. Residential Project Developer shall pay to Board as rent, in arrears, on an annual basis an amount equal to five percent (5%) of Developer's annual Net Cash Flow (as defined below) from the operation of the Residential Project during the prior calendar year (the "**Base Rent**"). Base Rent will be determined and paid, without any prior demand within one hundred twenty days (120) days after the last day of each calendar year and calculated based on the Gross Income received by Developer from operating the Project during the prior calendar year. For purposes of this Lease, "Net Cash Flow" shall mean all (A) cash receipts from the residential and non-residential components of the Project, including rental receipts from the lease of the Residential Apartments, and any other cash received by Developer derived from the Premises, but excluding (i) insurance proceeds or condemnation proceeds; (ii) security deposits or other tenant deposits; (iii) interest earned on project reserves; (iv) proceeds of loans or capital contributions; and (v) releases of funds from any operating or capital replacement reserves less (B) debt services, operating expenses and other expenses as detailed in

the Ground Lease. Base Rent shall not commence until recordation of the Certificate of Compliance (the "**Rent Commencement Date**"). No Base Rent will be due by Lessee for any calendar years before the year in which the Rent Commencement Date occurs.

B. Commercial Area/Office Project: As it relates to the Office Project, Affirmed agrees to pay to Board as Rent, in arrears, on an annual basis, an amount equal to six and a half percent (6.5%) of the **Effective Gross Collections,** from the operation of the Office Project or the equivalent **Market Rate Estimated Gross Collections** (as defined below) during the prior calendar year (the "**Office Base Rent**"). Office Base Rent will be paid to the Board directly from Affirmed no later than 120 days following the end of each calendar year and will not be included as rent payable under the Ground Lease. In lieu of a direct payment of Transit Parking Facilities maintenance costs by the Board to Affirmed if required by Paragraph 4 below, the Board may, so long as Affirmed or an affiliate of Affirmed is the Office Project tenant, agree to allow the Office Base Rent to be offset or reduced by the Board's pro-rata share of the normal maintenance costs for the Transit Parking Facilities.

I. For purposes of this Lease, "**Effective Gross Collections**" shall mean all income collected by Developer or Affirmed, as master subtenant and sublessor, (Developer and Affirmed, the "Lessee" as the context requires) on a cash (not accrual) basis from the Office Project, including rental income from the lease of the commercial office space, and any other income to Lessee derived from the operating the Office Project, but excluding (i) insurance proceeds or condemnation proceeds; (ii) security deposits or other tenant deposits; (iii) interest earned on project reserves; (iv) proceeds of loans or capital contributions; (v) releases of funds from any operating or capital replacement reserves; (vi) reimbursements from tenants for common area maintenance or similar charges, and (vi) ancillary income from sales of food and beverages from vending machines and dining facilities located at the Office Project. If using the Effective Gross Collections definition for Office Base Rent, then Lessee shall be required to charge and collect no less than fair market rent for the Office Premises. As used herein, "**Lease Year**" means that period of twelve (12) consecutive months which begins on the Effective Date or an anniversary of the Effective Date and which falls within the Term, to and including the last day of the Term.

II. In the event that Lessee does not collect fair market rent from the tenant of the Office Premises, or Lessee rents the Office Premises to an entity affiliated with Lessee and/or Affirmed, then Office Base Rent shall be determined based on Market Rate Estimated Gross Collections. **"Market Rate Estimated Gross Collections**" shall mean the estimated annual gross rental income from a mix of no less than six comparable Class A and Class B office properties in or near the Rancho Bernardo suburban market (collectively, "comparables"). Such comparables shall be under triple net leases with no tenant improvement allowances, or, if sufficient comparables are not available, the broker or appraiser shall adjust accordingly for these factors. The Market Rate Estimated Gross Collections calculation shall be prepared by a licensed commercial real

estate broker or appraiser mutually agreed upon by Lessor and Lessee. For the Office Project, provided the Rent Commencement Date is no later than January 1, 2027, the agreed upon starting Office Base Rent using the Market Rate Estimated Gross Collections calculation is approximately $34,043.10 ($3.01/sf per month x 14,500 sf = $43,645/mo x 12 months = $527,740 x 6.5% = $34,043.10.). The starting Office Base Rent using Market Rate Estimated Gross Calculation will be determined once the building permit including the square footage with the City is issued.

III. Office Base Rent shall not commence until issuance of a certificate of occupancy and recordation of the Certificate of Compliance (the "**Rent Commencement Date**").

IV. So long as the Office Base Rent is based on the Market Rate Estimated Gross Collections calculation, the annual rent shall escalate by 3% each year, beginning on the first anniversary of the Rent Commencement Date; provided, however, that on the tenth anniversary of the Rent Commencement Date, and every ten years thereafter ("**Office Rent Adjustment Date"**), Lessee shall initiate and complete a Market Rate Estimated Gross Collections re-calculation by a licensed commercial real estate broker or appraiser mutually agreed upon by Lessor and Lessee and Office Base Rent shall be adjusted to 6.5% of the Market Rate Estimated Gross Collections re-calculation. In the event that Lessee does not agree with the re-calculation, Lessee may elect to submit a second re-calculation prepared by a licensed commercial real estate broker or appraiser that is unaffiliated with the first and mutually agreed upon by Lessor and Lessee. The average between the two re-calculations shall be used to determine the new Market Rate Estimate Gross Collections calculation. The updated calculation shall be prepared at least ninety days in advance of the Office Rent Adjustment Date. If a second Market Rate Estimated Gross Collections re-calculation is elected, Lessee shall have until sixty (60) days after the Office Rent Adjustment Date, to prepare such calculation, provided, however, that the resulting rent adjustment shall be retroactive to the Office Rent Adjustment Date. As between Affirmed and Developer, Affirmed shall have the right to make the election of Lessee pursuant to this Subsection IV.

6. The Ground Lease shall include typical rights and protections for any leasehold mortgagees.

7. Construction Timeline. Construction of the Project is scheduled to take thirty (30) months after construction commencement to achieve substantial completion, subject to extension for "Force Majeure".

8. AB 1486 Compliance. Prior to close of escrow on the Ground Lease, Board shall record a restrictive covenant on the Site that complies with the Surplus Land Act (specifically as required by Government Code section 54222.5)

9. Prevailing Wage and Skilled Labor Requirements. Developer's Project construction activities shall comply with paragraphs C(7) and C(8) of MTS Board Policy No. 18:

C(7): All projects approved pursuant to the program shall be considered public works for purposes of Chapter 1 (commencing with Section 1720) of Part 7 of Division 2

of the Labor Code, regardless of whether an exemption under Section 1720 of the Labor Code applies to the project.

C(8): A joint development agreement between MTS and a private entity shall include a requirement that the developer's construction comply with Public Utilities Code section 120221.5.

EXHIBIT H

Required Land Use Approvals

1. Permits required by the City of San Diego to construct the development

EXHIBIT I

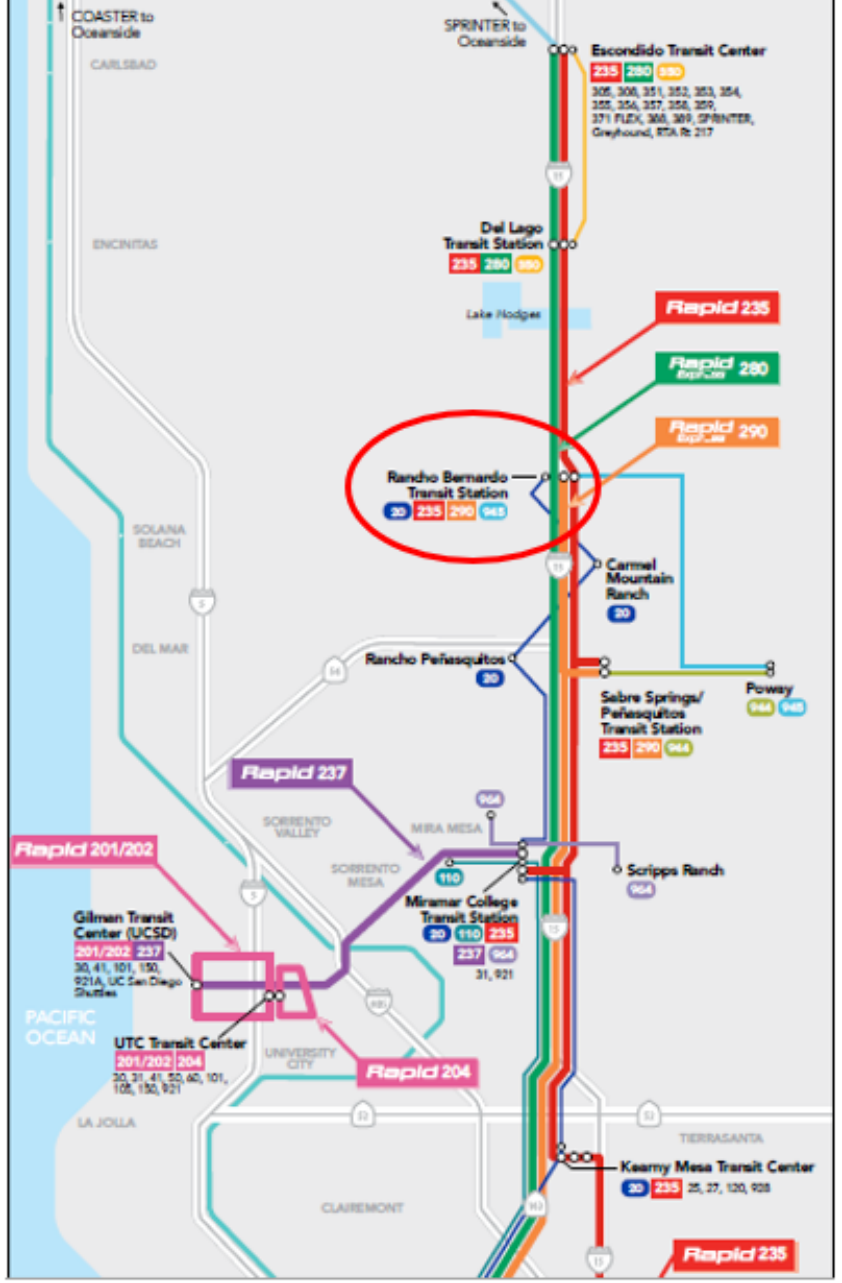
Estimated Budget for MTS Outside Consultants pursuant to Section 213

	Exclusive Negotiating Agreement (ENA) Deposit	$25,000
Pre-DDA	(Less) ENA Services Encumbered	$0
Pre-DDA	*ENA Deposit Remaining*	*$25,000*
	Estimated Post-DDA Consultant Costs	
	Starting Balance	*$25,000*
Post-DDA	(Less) tbd	$10,000
Post-DDA	(Less) Engineering Services	$15,000
	Contingency Remaining (Potential Refund)	*$0*

Rancho Bernardo Transit Station DDA – Affirmed Housing Affordable Housing and Commercial Office TOD Project

MTS Board of Directors Meeting

September 15, 2022



Rancho Bernardo Transit Station

I-15 Commuter Station

Rapid Bus Routes (235 & 290)
Local Routes (20 & 945)

Transit Parking:
North Lot – 85
South Lot – 105
Total -- 190

Rancho Bernardo TOD Negotiation Process

- Affirmed Housing Group → Bernardo Family Housing LP
  - Established affordable housing developer in San Diego
  - Grantville – SHORELINE Project (ground lease closed in January 2022)
  - Beyer Blvd – DDA approved March 2022
- First expressed interest in this site summer of 2020
  - Delayed by AB 1486 compliance issues
  - Exclusive Negotiating Agreement executed December 2020
- 2021 to September 2022 tasks:
  - Refined site plan; cleared operational and geotech conflicts
  - Established parking replacement needs
  - Affirmed sought City grants/support
  - Finalized DDA draft terms for MTS Board review/approval

AFFIRMED HOUSING

RB Transit Village

Residential Project: (87%)

- -100 Units (incl 1 manager unit) – 99,000 sf
- -One (49), Two (25), & Three (26) bedroom apartments
- -Rent Restricted – TCAC or CalHFA program rqmts (~ 30% - 60% AMI)
- -Onsite Property Management & Resident Service staff
- -Residential amenities (play area, outdoor gathering, residents' community room)
- -78 resident parking spaces

Office Project: (13%)

- -14,500 sf Commercial Office Space
- -38 office parking spaces

Transit Replacement Parking

- -85 parking spaces (North/South Lot total 170 spaces after construction)
- -89% of exclusive transit spaces compared to today

Approximate Boundaries of MTS Rancho Bernardo Transit Station Property (APN 678-252-15

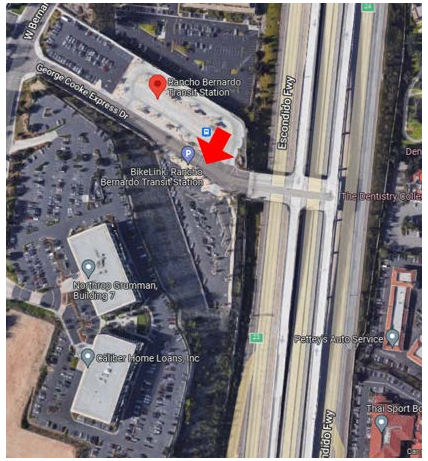
Approximate Footprint of Developer Ground Lease Parcel

All renderings and photos are preliminary and are subject to change

NORTH ELEVATION

North Elevation

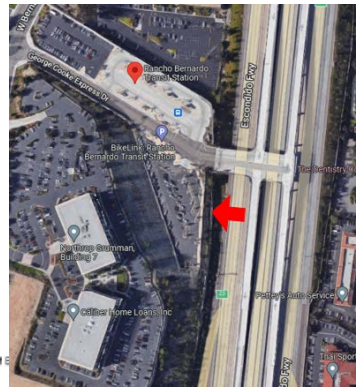
(*view from George Cooke Express and Transit Station*)



EAST ELEVATION

East Elevation

(*view from Interstate 15*)



RANCHO BERNARDO TRANSIT STATION
16785 W BERNARDO DR. SAN DIEGO, CA 92127
AFFIRMED HOUSING

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE CA 92866
714.639.9860

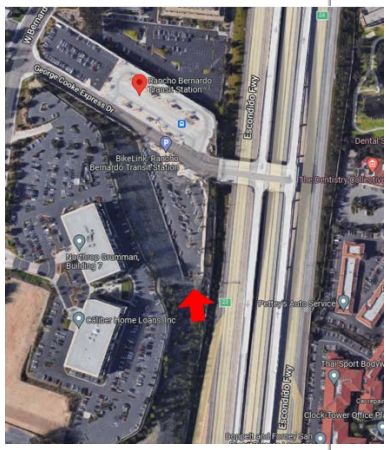
BLDG ELEVATIONS

1/16"=1'-0" 0 8' 16' 32' 48'

A5.0
Job No. 2020-153
Date: 2022-03-31

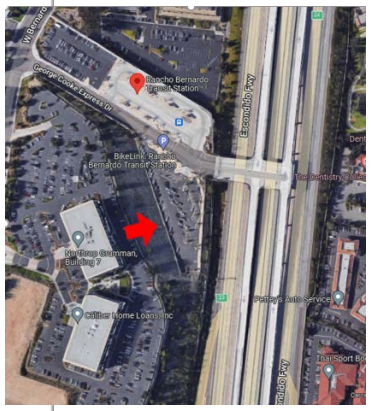
South Elevation

(*view from northbound Interstate 15*)



West Elevation

(*view from South Lot Slope*)



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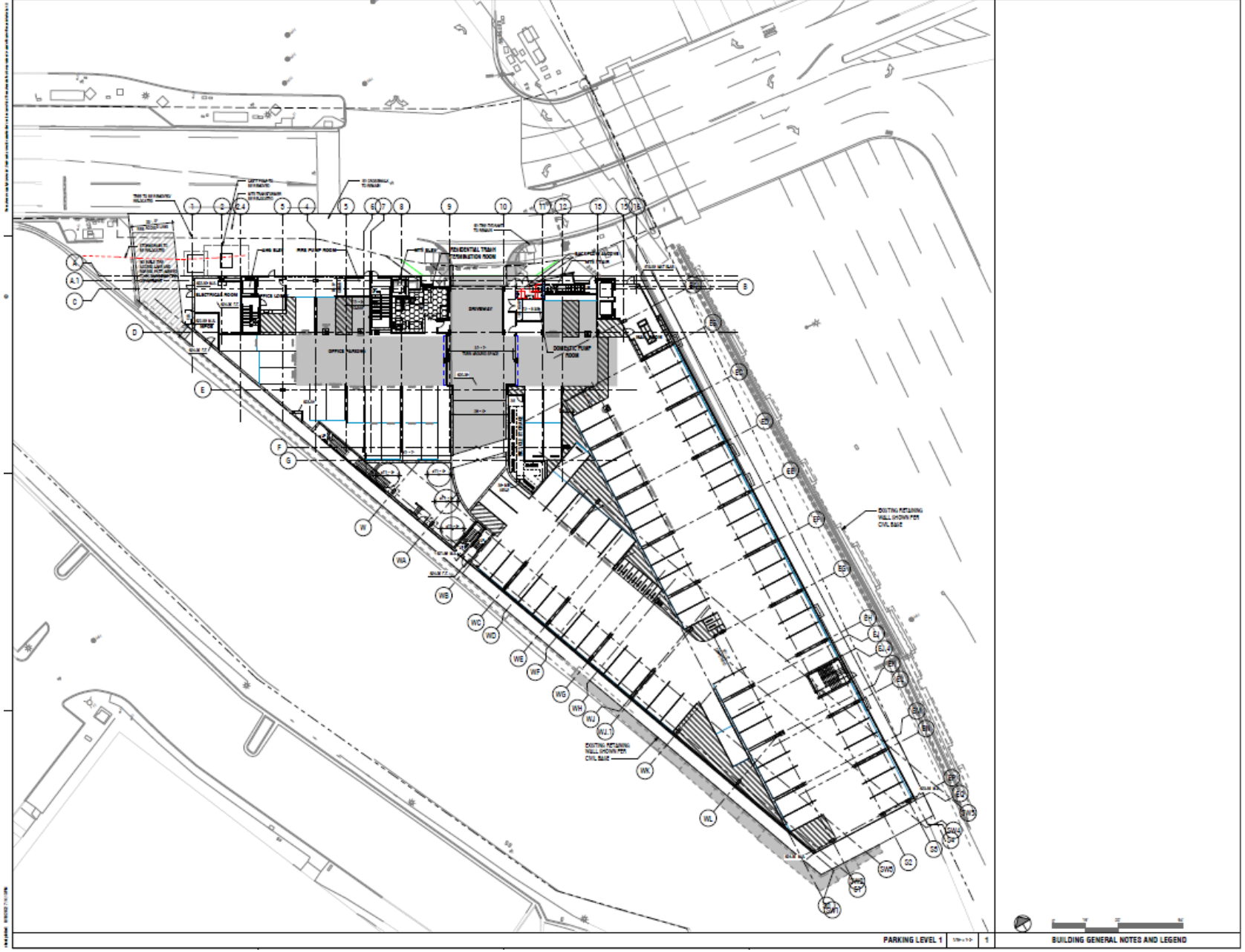
A5.1
Job No. 2020-153
Date: 2022-03-31



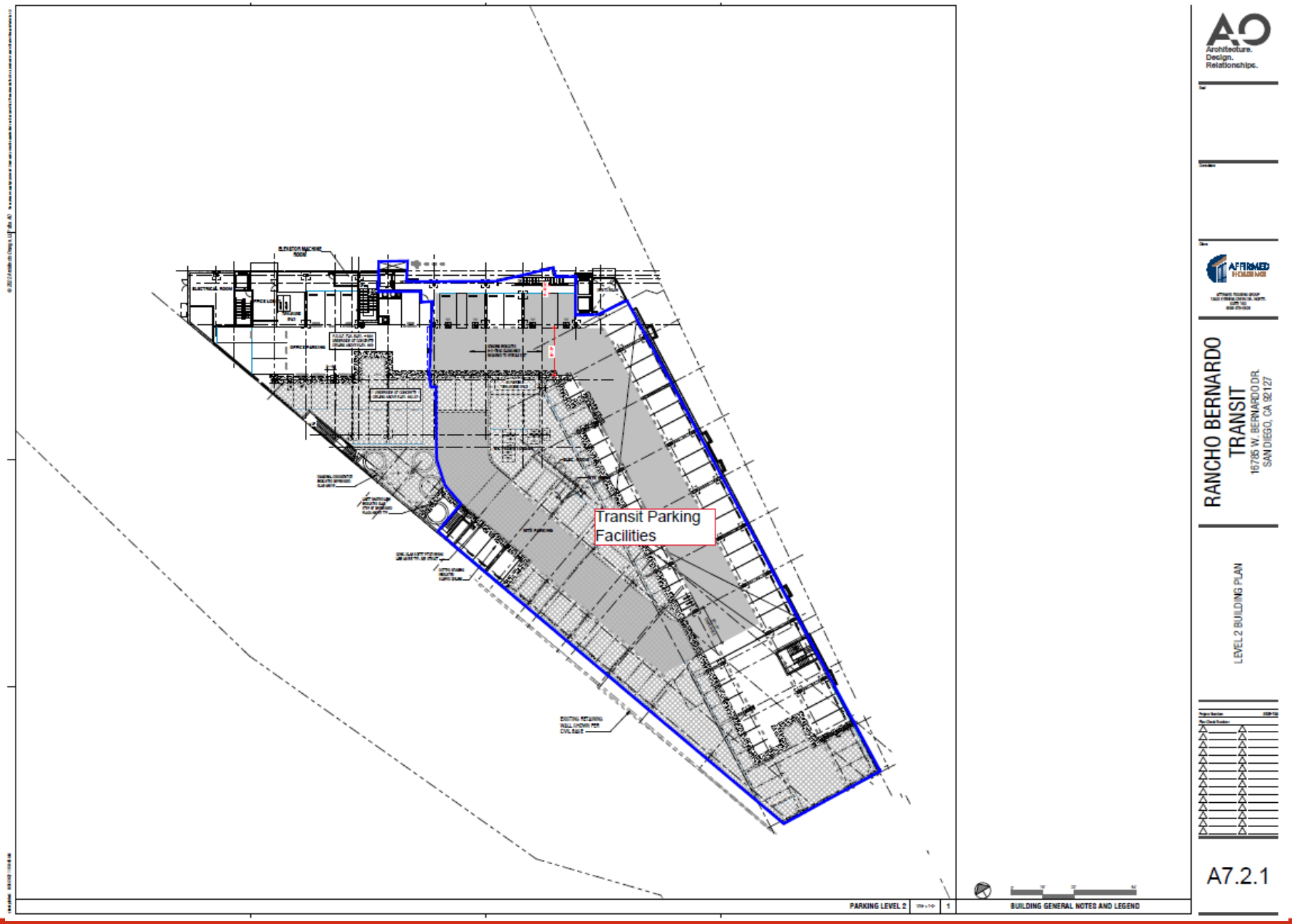
Architecture.
Design.
Relationships.

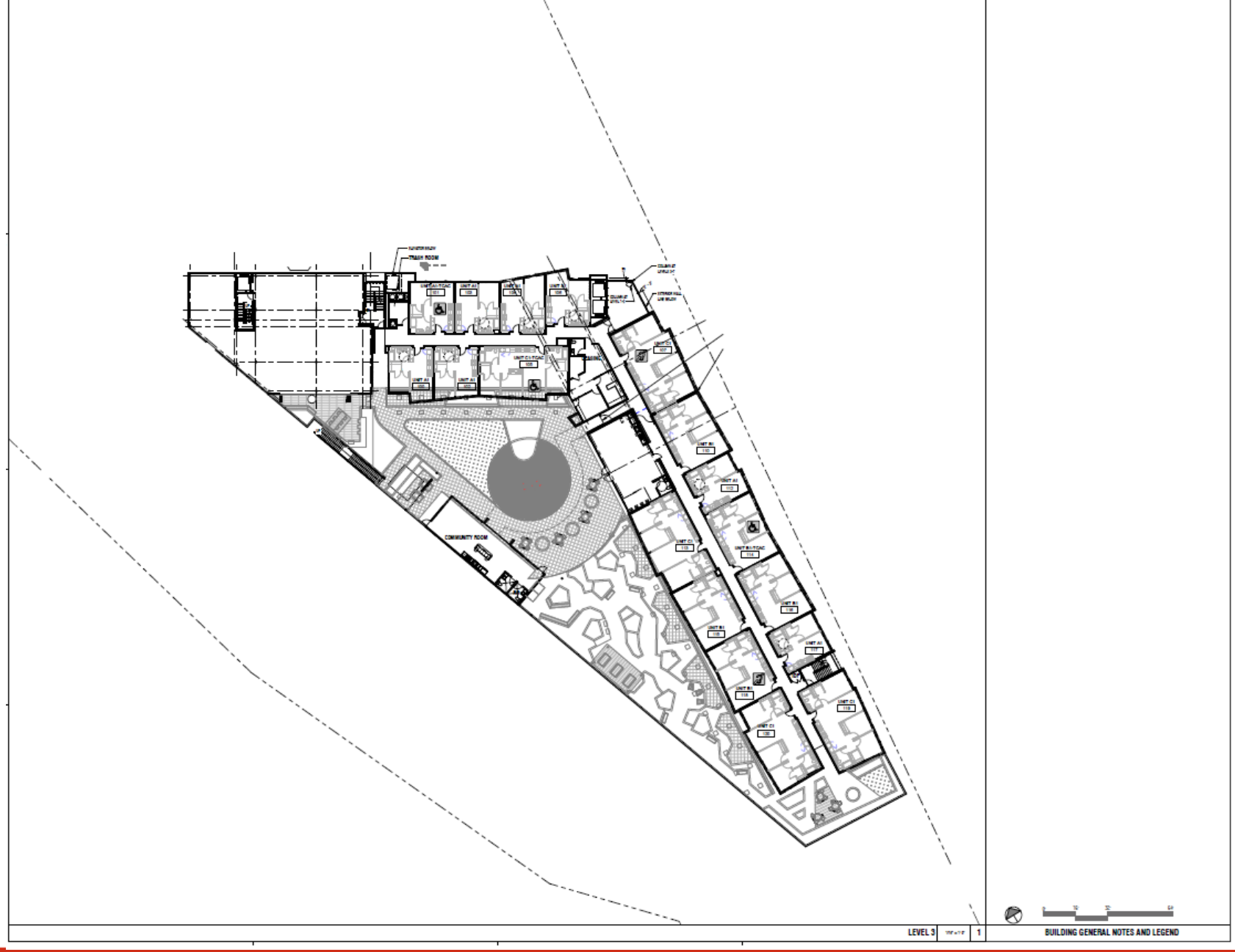
AFFIRMED HOUSING

TRANSIT
16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

LEVEL 1 BUILDING PLAN

A7.1.1


Transit Parking Facilities
PARKING LEVEL 2
BUILDING GENERAL NOTES AND LEGEND
Architecture. Design. Relationships.
AFFIRMED HOUSING
RANCHO BERNARDO TRANSIT
16736 W. BERNARDO DR. SAN DIEGO, CA 92127
LEVEL 2 BUILDING PLAN
A7.2.1



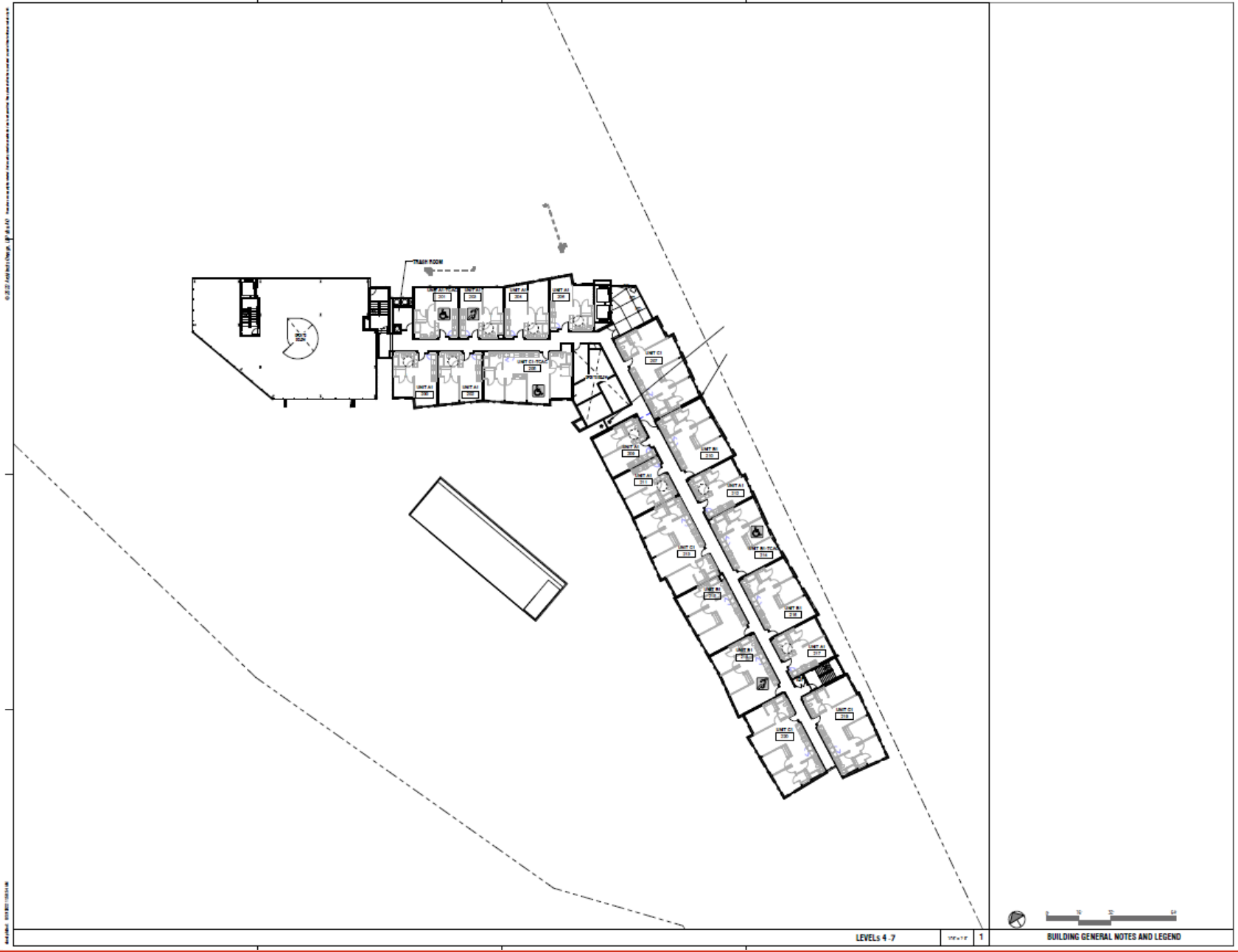
Architecture.
Design.
Relationships.

AFFIRMED HOUSING

RANCHO BERNARDO TRANSIT
16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

LEVEL 3 BUILDING PLAN

A7.3.3



Architecture.
Design.
Relationships.

AFFIRMED HOUSING

RANCHO BERNARDO TRANSIT
16785 W. BERNARDO DR.
SAN DIEGO, CA 92127

A7.4.1

DDA and Ground Lease Process

- Disposition and Development Agreement (DDA)
  - Covers Actions required by Developer to close escrow on Ground Lease
    - Final Design (with review and approval by MTS Staff)
    - Financing Obtained
    - Ground Lease Parcel Created (jointly with MTS Staff)
    - Building Permits ready to be issued
    - CEQA review complete (notice of exemption likely; review still underway to confirm eligibility)
- Ground Lease
  - Executed according to permit/construction/financing timeline
- *Changes to Material Terms require Board Approval; other modifications can be made with CEO approval*

DDA/Ground Lease Material Terms

- Term: 99 years (minimum 55 yr affordability)
- Residential (~99,000 sf) and Office (~14,500 sf) Components
- Residential Project - Minimum Density
  - 100 units with estimated occupancy of 300
  - Cannot reduce unit count by more than 10% unless estimated occupancy increases
  - Density/occupancy can increase
- Affordability: all units, except 1 staff unit, to rent at TCAC or CalHFA program requirements(30-60% AMI); will comply with AB 1486 affordability requirements
- Replacement Parking:
  - Minimum 85 exclusive transit spaces (MTS retains maintenance obligation for transit spaces)

DDA/Ground Lease Material Terms

- Residential Rent: 5% of net cash flow
  - revenue less debt service & operating expenses (MTS affordable housing rent formula) = *de minimus* revenue to MTS
    - Current estimate:

      Year 1: $7,000
      Year 10: $18,000
      Year 20: $33,000
      Year 30: $49,000

    - If project converts to market rate after 55 year covenant period; would increase to market rate formula
- Office Rent: 6.5% of Market Rate Estimated Gross Collections/ Effective Gross Collections
  - 14,500 sf = estimated $34,000/yr in ground lease rent
  - Escalates 3% per year; Market Rate adjustment (up or down) every 10 years

DDA/Ground Lease Material Terms

- Construction Timeline: 30 months
- No out of pocket costs for MTS
- Regulatory Agreements for Developer's Financing
  - MTS agrees to enter into various covenants related to affordability, other grant conditions encumbering property
  - Typical rights and protections for leasehold mortgages
- Compliance with MTS Policy 18
  - Project construction will comply with prevailing wage and skilled labor/project labor agreement requirements in effect at time of construction

Rancho Bernardo Transit Village Schedule

MTS

- ENA - 2020
- DDA – September 15, 2022
- MTS CEO to approve plans
  - *CEQA finding*
  - *(likely exempt as eligible affordable housing project)*
- Ground Lease & Financing closing
  - est. Nov 2023 (*no later than July 2025*)
- Estimated Construction Timeline
  - November 2023 – September 2025
  - est. 22 months
  - (no more than 30 months)

FINANCING SCHEDULE

- **City of San Diego ($5 Million)**
  - Applied – July 2021
  - OPA Approved by City Council –April 2022 (unanimously approved)
- **Project Based Vouchers (30 Vouchers)**
  - Applied – October 2021
  - Awarded – January 2022
- **County of San Diego ($2 Million)**
  - Applied – November 2021
  - Awarded – July 2022
- **HCD – Super NOFA (AB 434)**
  - Applied – July 2022
  - Award –December 2022
- **TCAC/CDLAC – 4%**
  - Once fully funded (Anticipated 1st 4% round in February 2023)

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer to:

1) Execute a Disposition and Development Agreement with Bernardo Family Housing L.P. for a Rancho Bernardo Station Transit Oriented Development Project (DDA), in substantially the same format as Attachment A; and

2) Take all actions necessary to fulfill MTS's obligations under the DDA, including, but not limited to, executing a Ground Lease and related regulatory agreements for each project phase.

MTS Transit-Oriented Development Program

Residential Unit Totals

MTS TOD Projects - Residential Units	Occupied	Under Construction	Under DDA	Under Negotiation	Future Sites	# of Rent Restricted Units
Morena Linda Vista Station (2007)	185					18
Grossmont Station (2010)	527					80
62nd Street Station (2018)	67					67
Grantville - Greystar (2023)		250				5
Grantville - Affirmed (2023)		126				126
Palm Avenue Station			390			390
Beyer Boulevard Station			100			100
Rancho Bernardo Station			**100**			**100**
E Street Station				265		265
El Cajon Transit Center				XXX		
Spring Street Station				XXX		
Palomar Station				XXX		
24th Street Station				XXX		
12th & Imperial Expansion Site (Downtown SD)					?	
70th Street Station (La Mesa)					?	
Amaya Station (La Mesa)					?	
Massachusetts Ave Station (Lemon Grove)					?	
H Street * (Chula Vista)					?	
TOTALS	**779**	**376**	**590**	**265**		**1151**
					TOTAL UNITS	**2010**

**Staff still determining if this site is appropriate for TOD or needed for transit services*

Agenda Item No. 45

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
Board of Directors

September 15, 2022

SUBJECT:

2022 CUSTOMER SATISFACTION SURVEY REPORT (MARK OLSON, MTS; AND JUDITH MCCOURT, REDHILL GROUP)

INFORMATIONAL ONLY

Budget Impact

None.

DISCUSSION:

Since 2011, MTS has conducted Customer Satisfaction surveys approximately every other year onboard Bus routes and Trolley lines. The purpose of the surveys is to identify customer satisfaction in every facet of operations, including overall satisfaction, transit information tools, service spans and frequencies, fare pricing, safety and more.

Surveys are conducted on routes and lines that are representative of the entire MTS service territory. The results are broken down in a variety of ways including by Trolley line, gender, age, income, and ethnicity. Results are used to identify areas of both passenger satisfaction and concern to improve services when possible. The last MTS customer satisfaction survey was completed in 2019.

The 2022 survey was conducted in April by the Redhill Group, a Southern California-based research firm with significant experience working with transportation agencies, including LA Metro, Metrolink, Orange County Transit Authority, and many others.

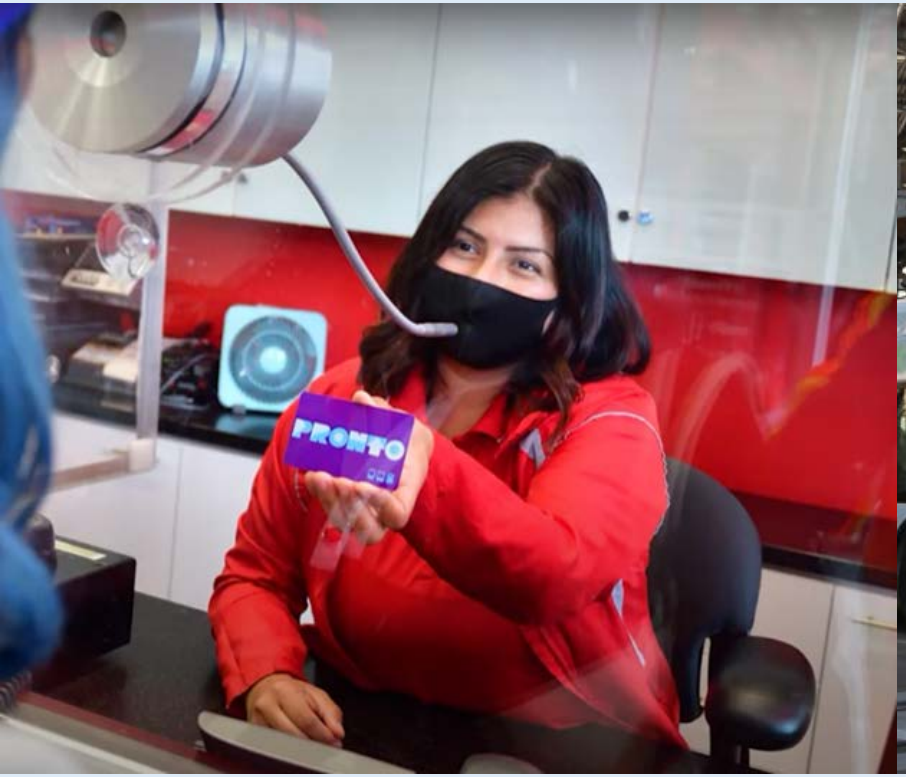
/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

FINAL 9.15.2022

MTS Customer Satisfaction Survey Results

MTS Board of Directors



Metropolitan Transit System

September 15, 2022

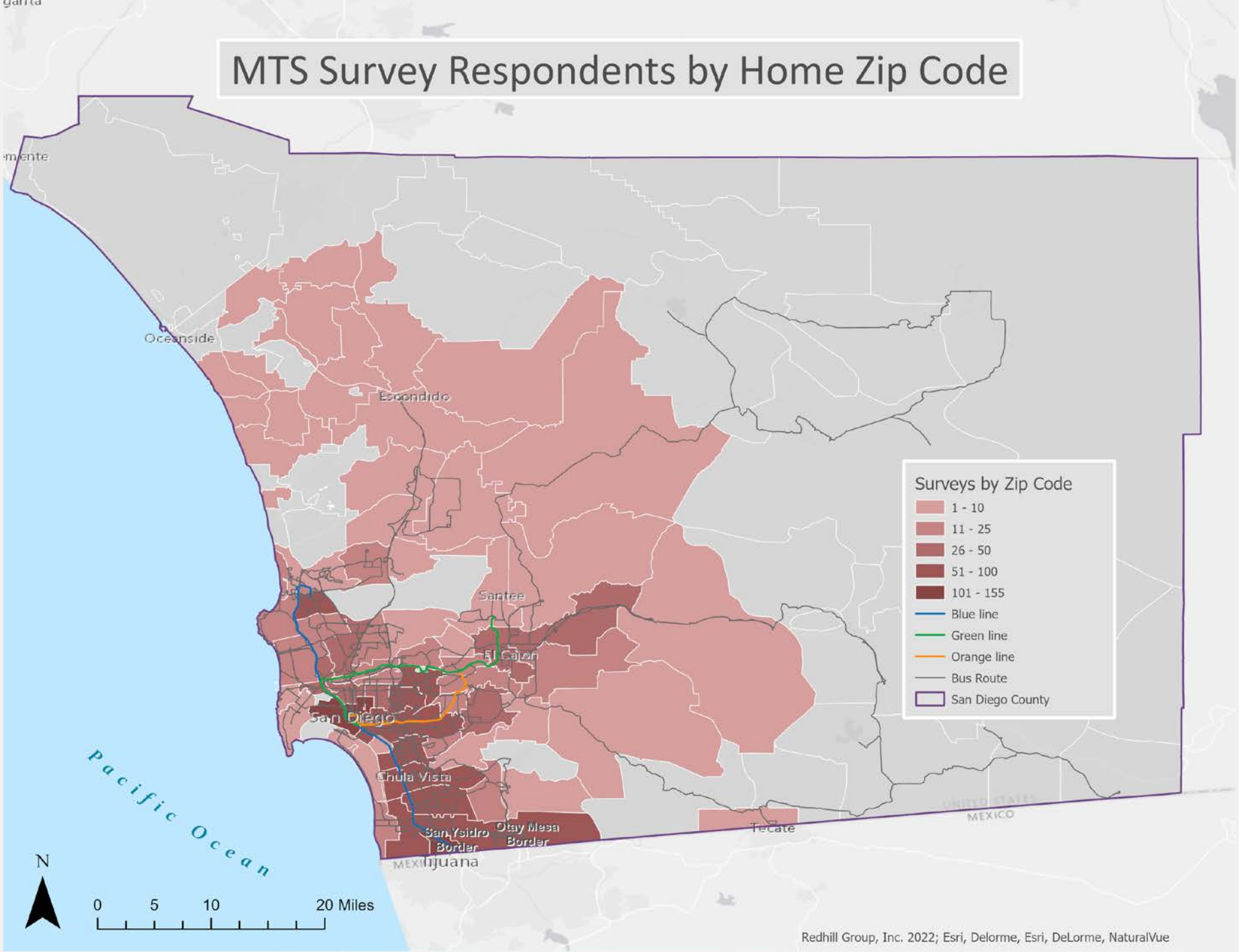
redhillgroup
THE POWER OF INSIGHT

01 Methodology

Transit Mode	Sample Size	Percent Distribution	Statistical Precision at 95% Confidence Level
System-wide	*1,842*	*100%*	*± 2.3%*
Bus	918	49.9%	± 3.2%
Trolley	924	50.1%	± 3.2%

- Sampling plan and survey jointly developed with MTS based on ridership
- Onboard tablet survey plus text-in option
- Multi-language options English, Spanish, Chinese and Tagalog
- Data collection April 2022 – prior to launch of Youth Opportunity Pass

MTS Survey Respondents by Home Zip Code



Redhill Group, Inc. 2022; Esri, Delorme, Esri, DeLorme, NaturalVue

02 Demographics

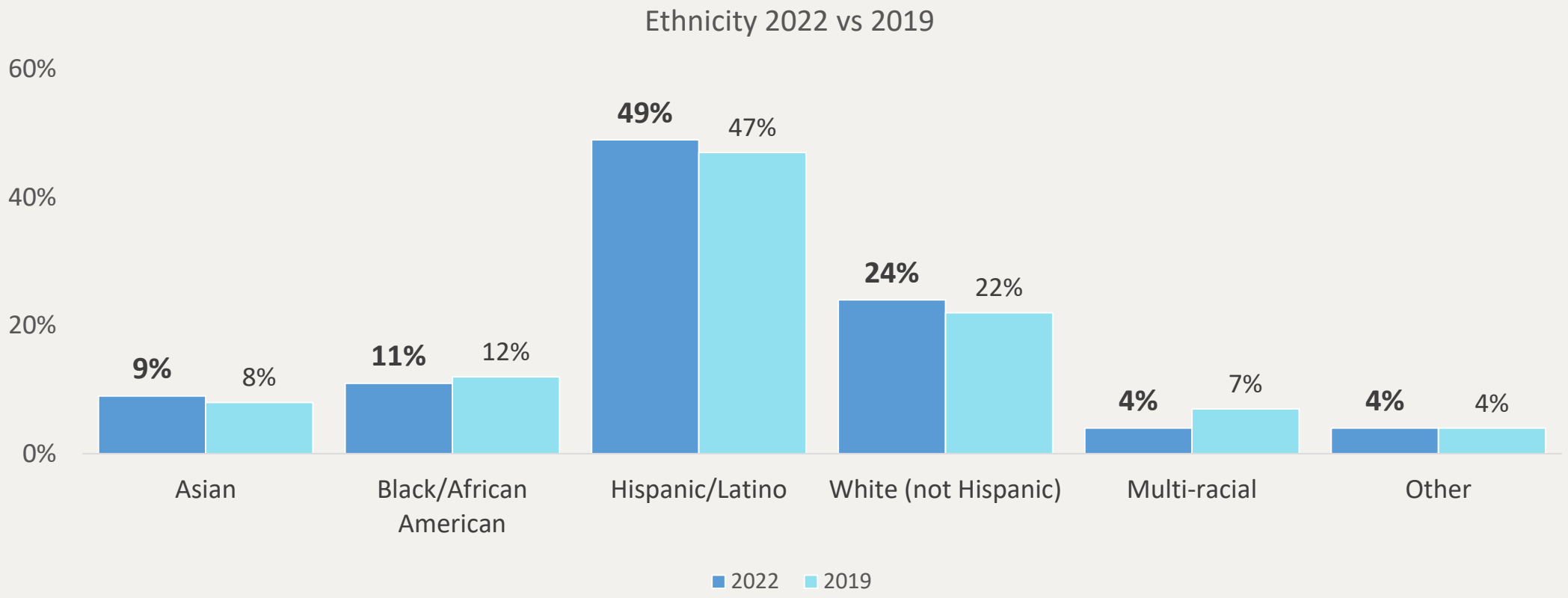
Customer Profile

- Use Bus (74%)
- Trolley (81%)
- Ride MTS at least 3 times a week (80%)
- 86% complete their trip with one or less transfers
- Half of riders complete their trip without a transfer
- Vehicle availability (30%)
- Employed (61%)
  - Full-time 38%
  - Part-time 23%
- Student (26%)
- Disability (12%)

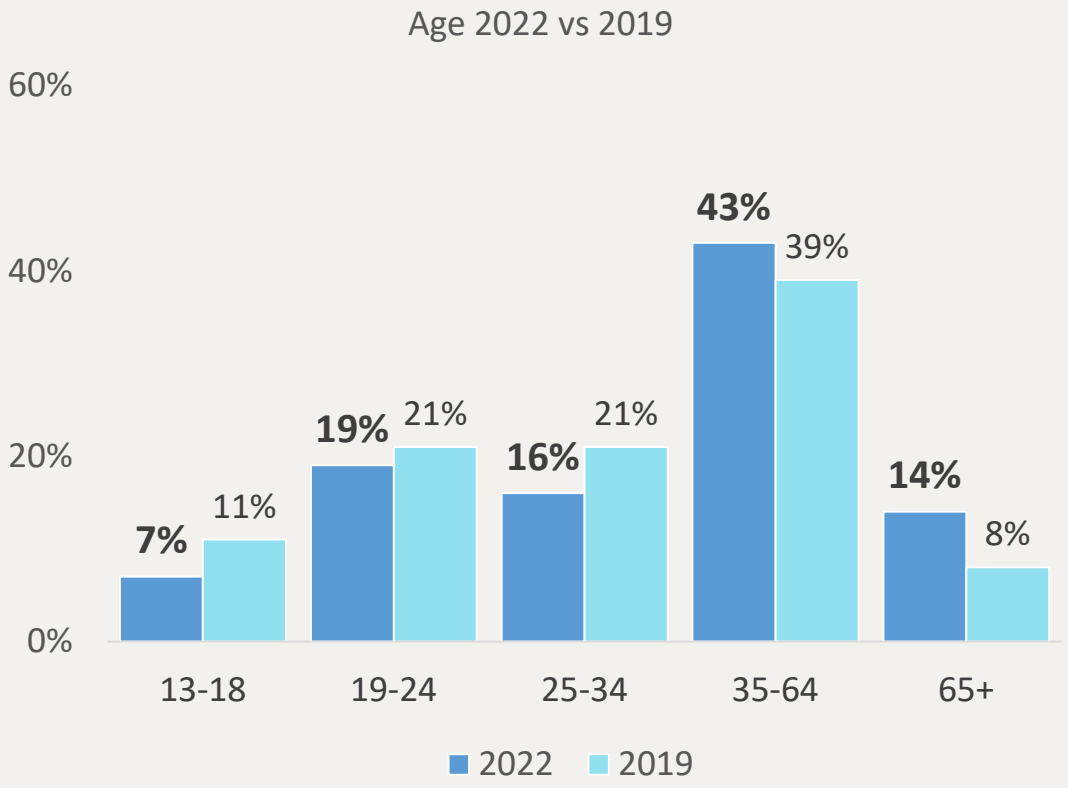
Customer Profile

- Annual income less than $50K (84%)
- Annual income less than $20K (55%)
- More likely to be Hispanic (49%)
- Speak a language other than English at home (36%)
  - and of those 61% speak English “well” or “very well”
- Smartphone availability (91%)

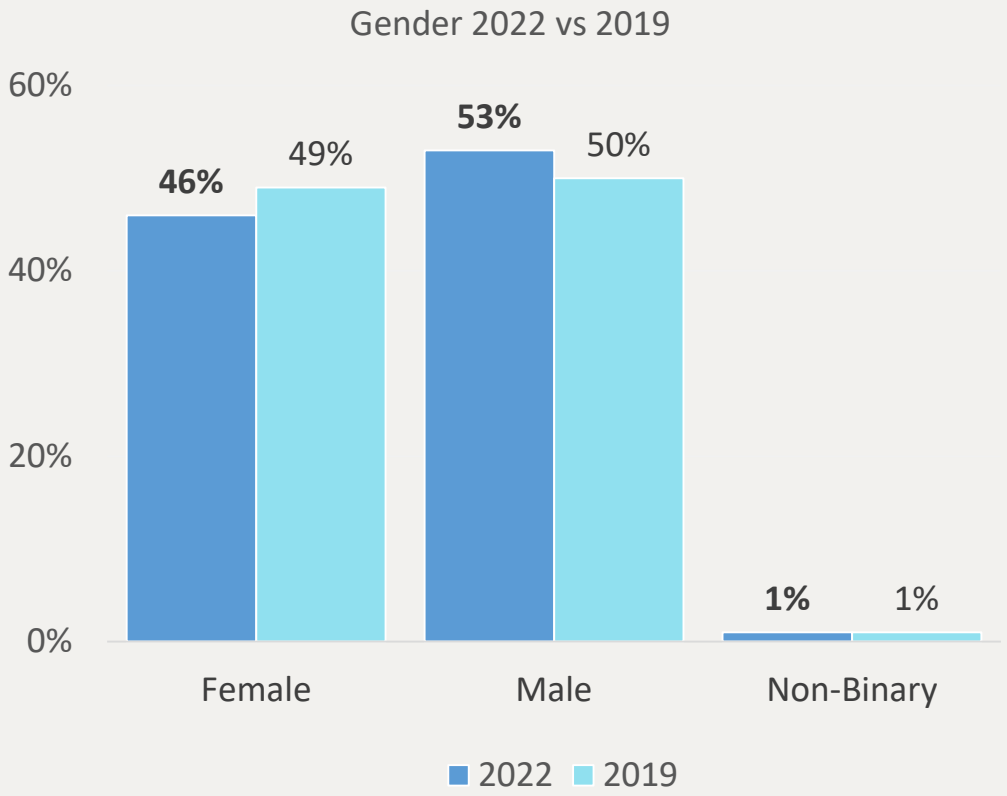
Ethnicity


Ethnicity 2022 vs 2019
60%
40%
20%
0%
9%
8%
11%
12%
49%
47%
24%
22%
4%
7%
4%
4%
Asian
Black/African American
Hispanic/Latino
White (not Hispanic)
Multi-racial
Other
2022
2019

Age


Age 2022 vs 2019
60%
40%
20%
0%
7%
11%
19%
21%
16%
21%
43%
39%
14%
8%
13-18
19-24
25-34
35-64
65+
2022
2019

Gender


Gender 2022 vs 2019
60%
40%
20%
0%
46%
49%
53%
50%
1%
1%
Female
Male
Non-Binary
2022
2019

03 System Satisfaction

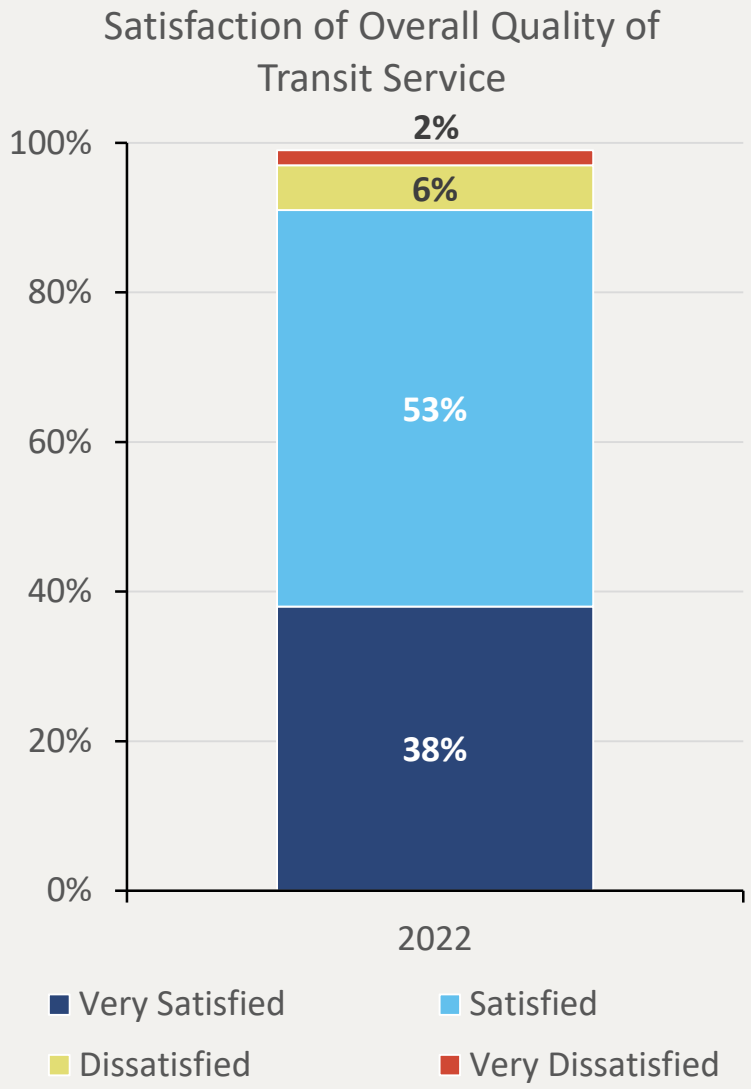
Customer Satisfaction Results

Percentages may not total 100% due to rounding or multiple response options

Systemwide Rider Satisfaction

Overall Customer Satisfaction

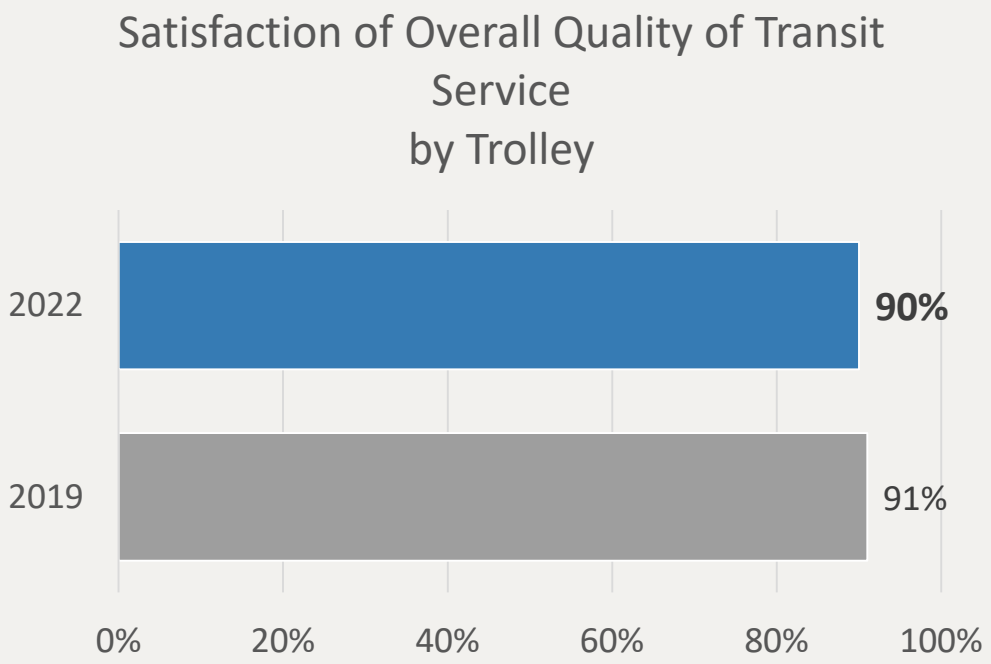
91%



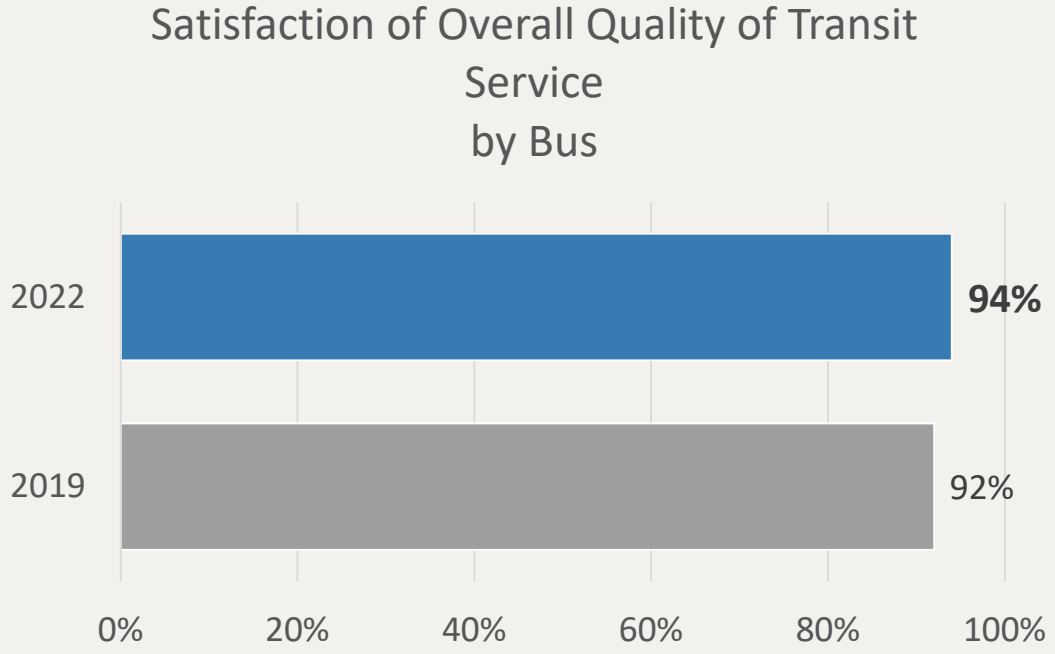
- Systemwide customer satisfaction is high
- On par with 2019 (91%)

Overall Rider Satisfaction by Mode

Trolley



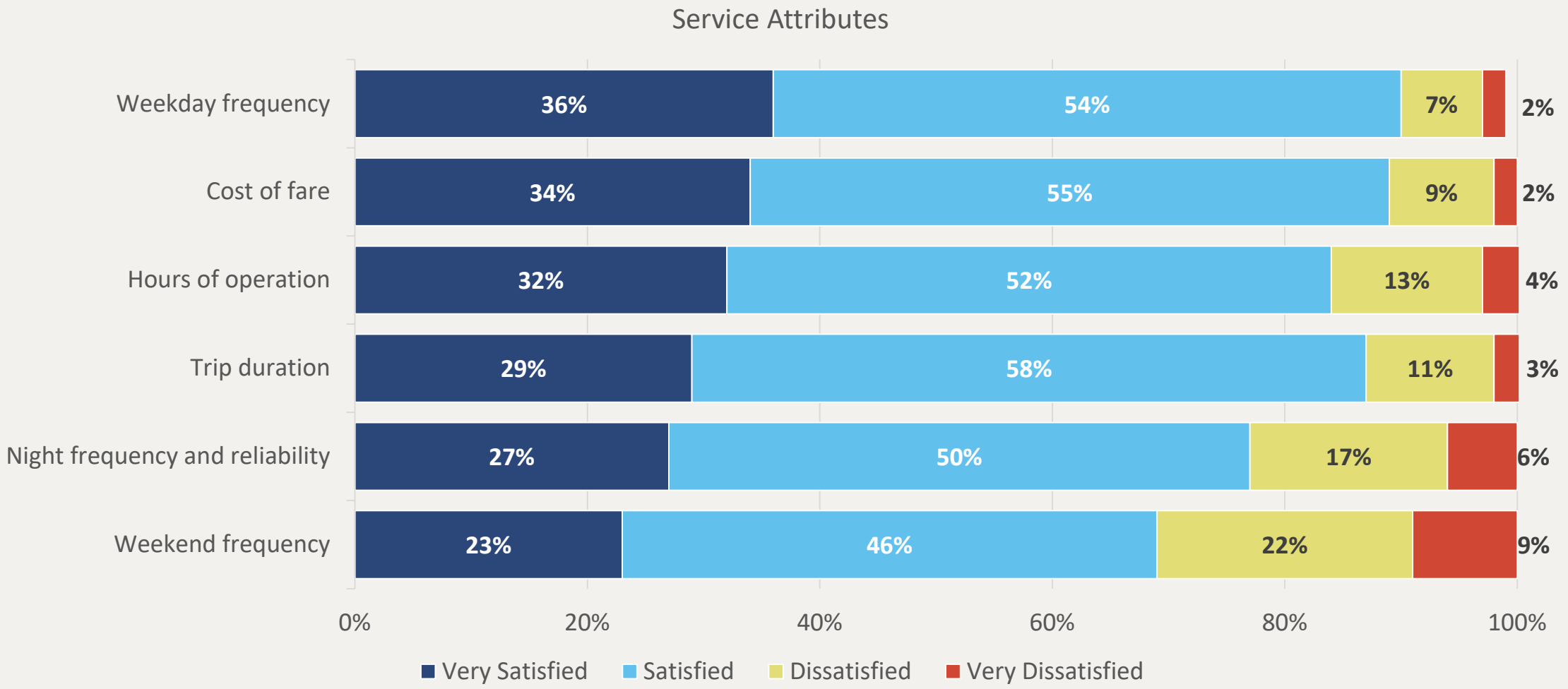
Bus



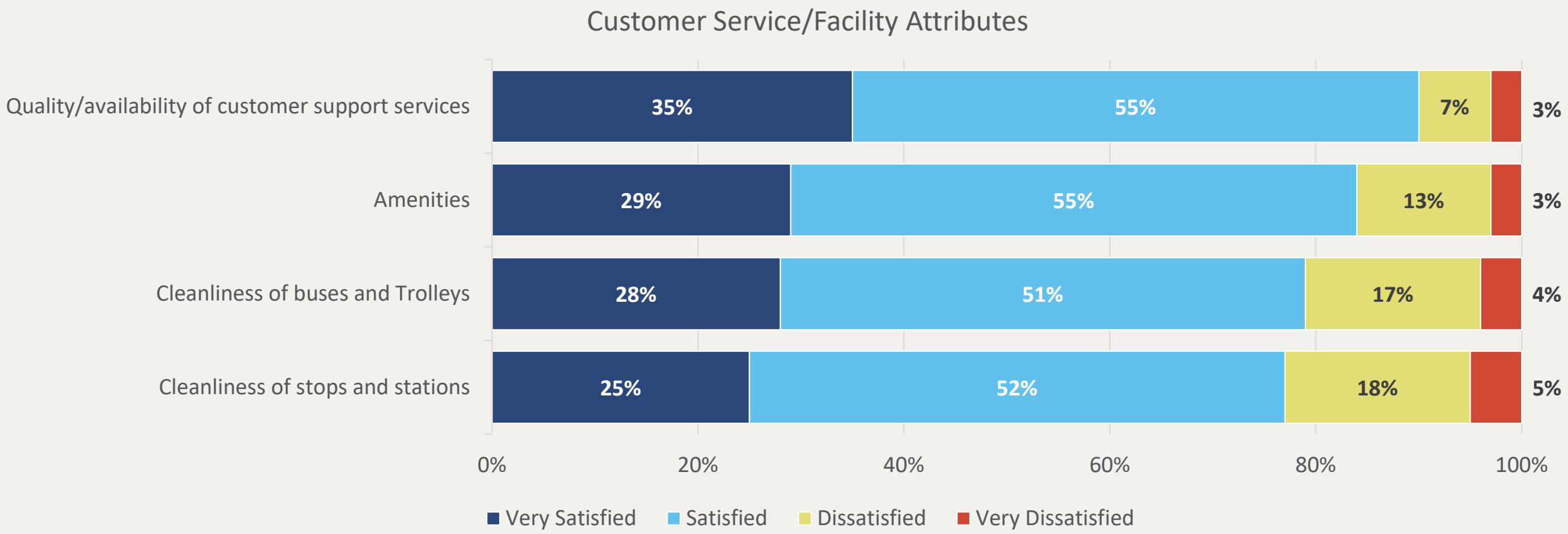
Overall satisfaction of Trolley riders is statistically unchanged

Overall satisfaction of bus riders directionally higher

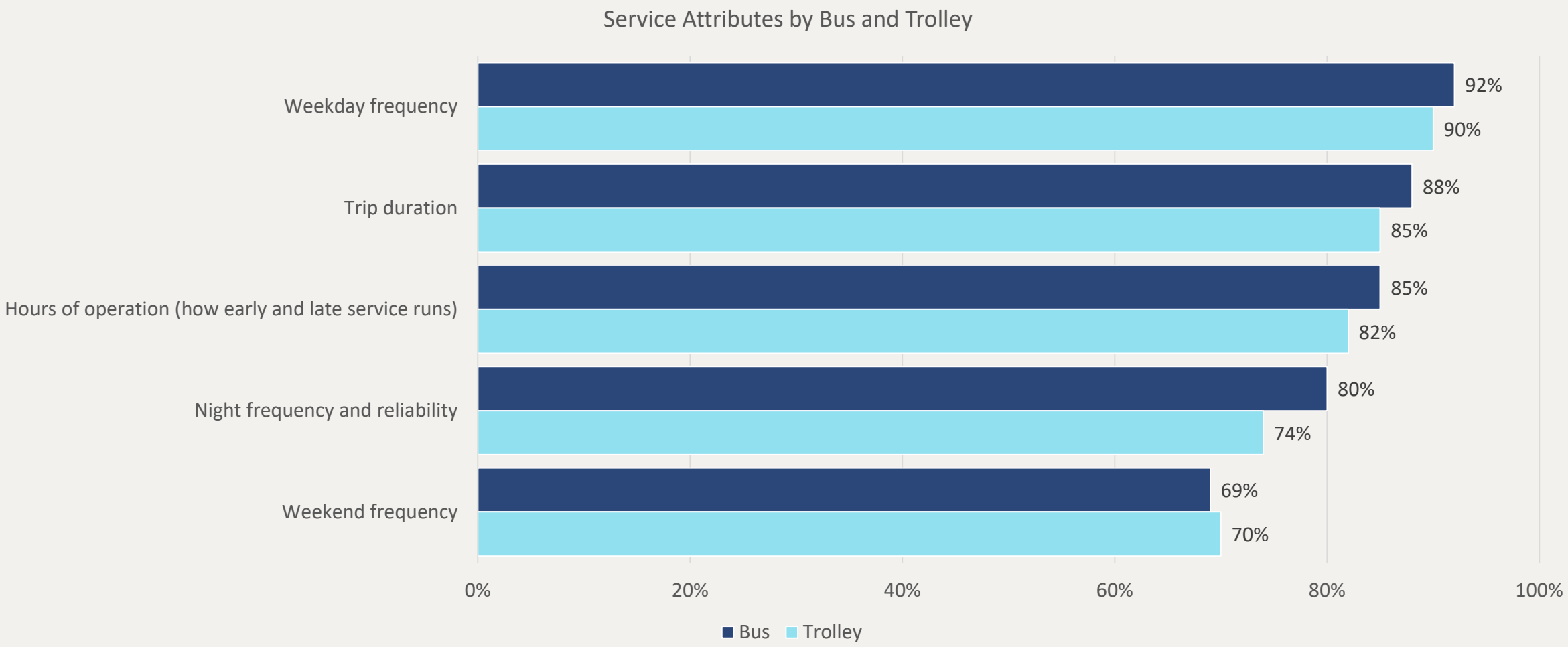
Service Attributes Satisfaction – Systemwide



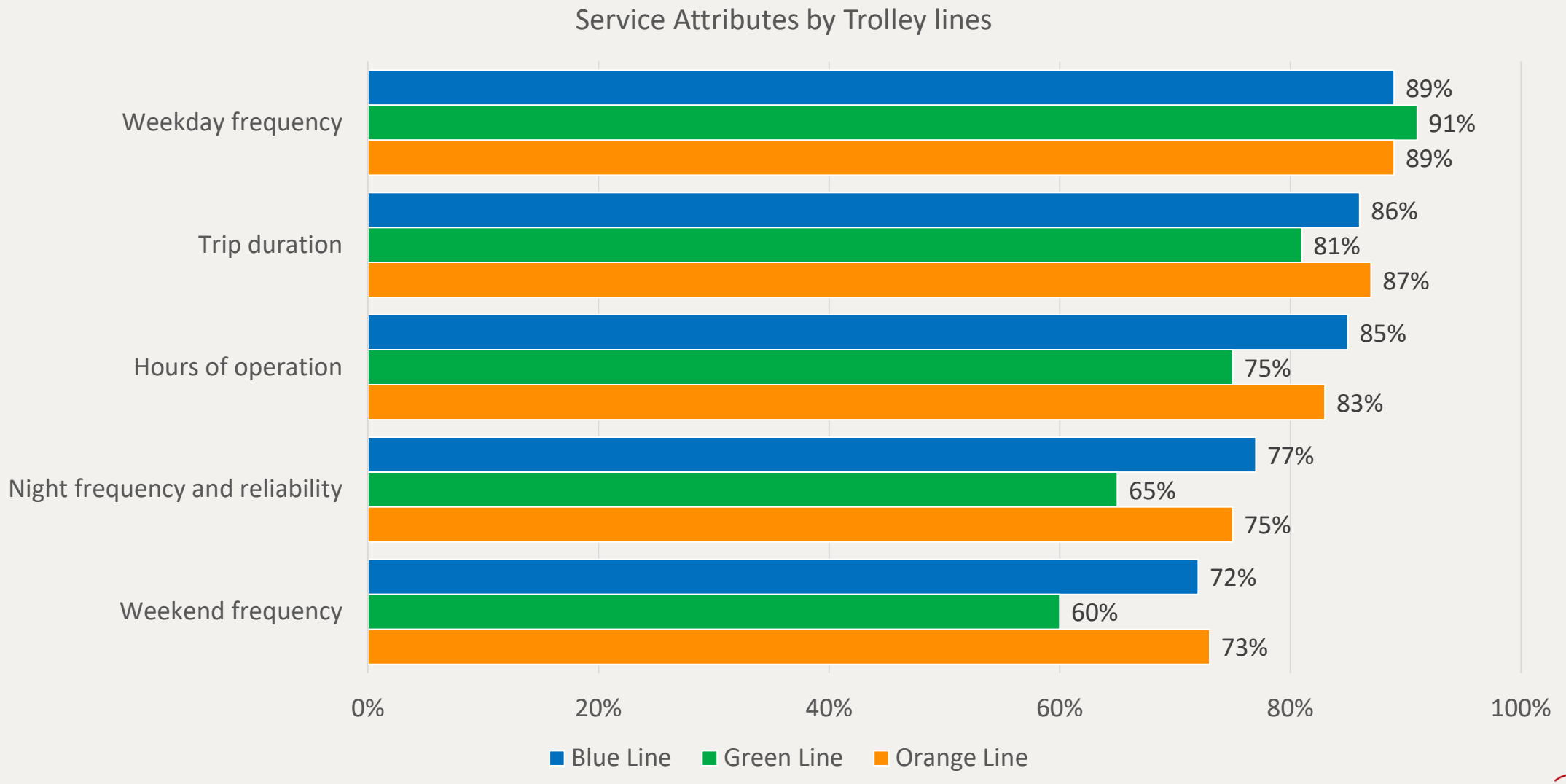
Customer Service/Facility Attributes – Systemwide



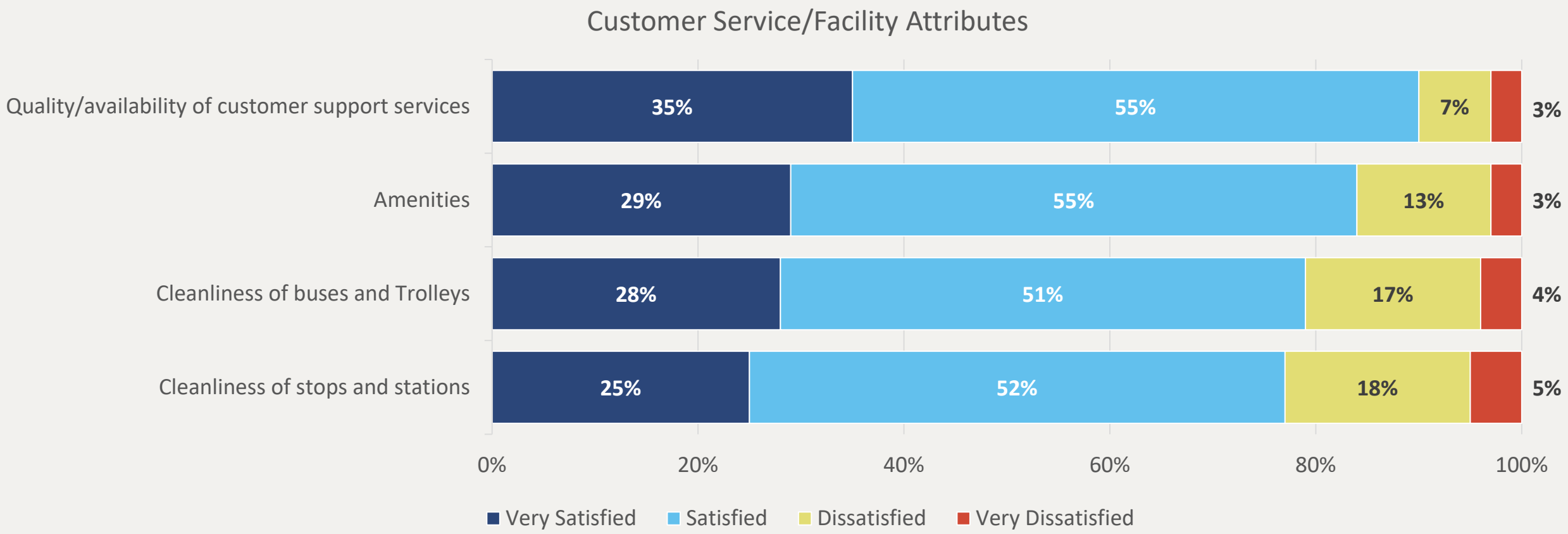
Service Attributes by Bus and Trolley



Service Attributes - Trolley Line

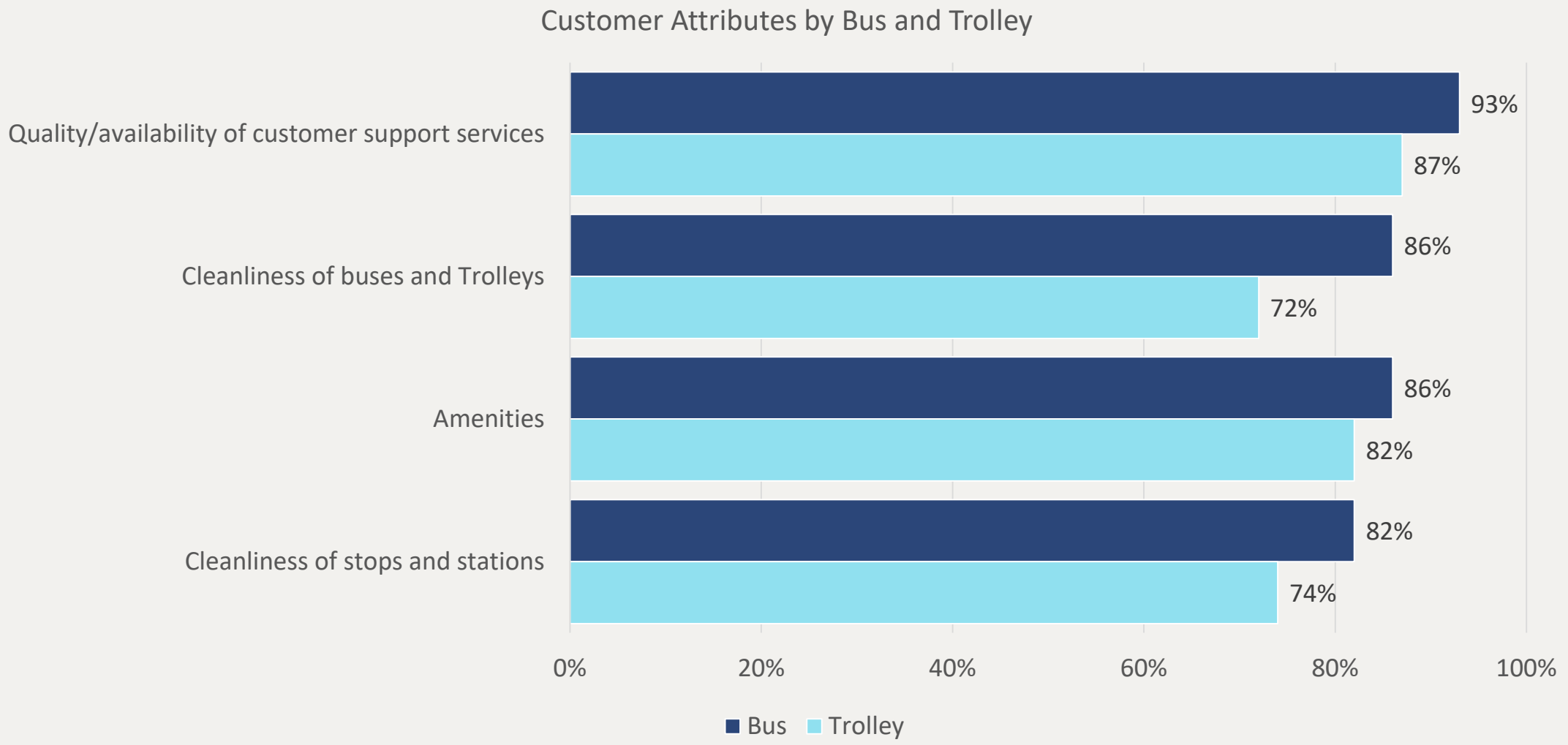


Customer Service/Facility Attributes – Systemwide

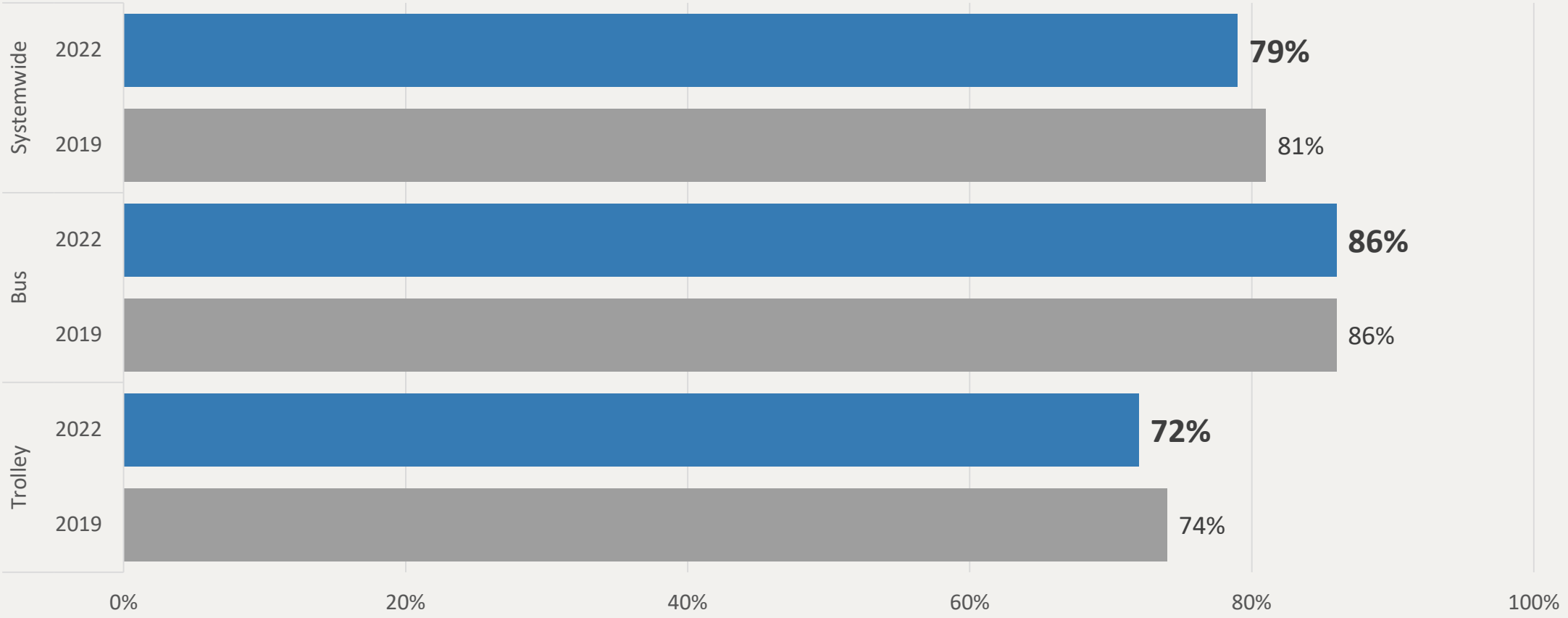


High level of customer satisfaction with quality and availability of customer support – 90%

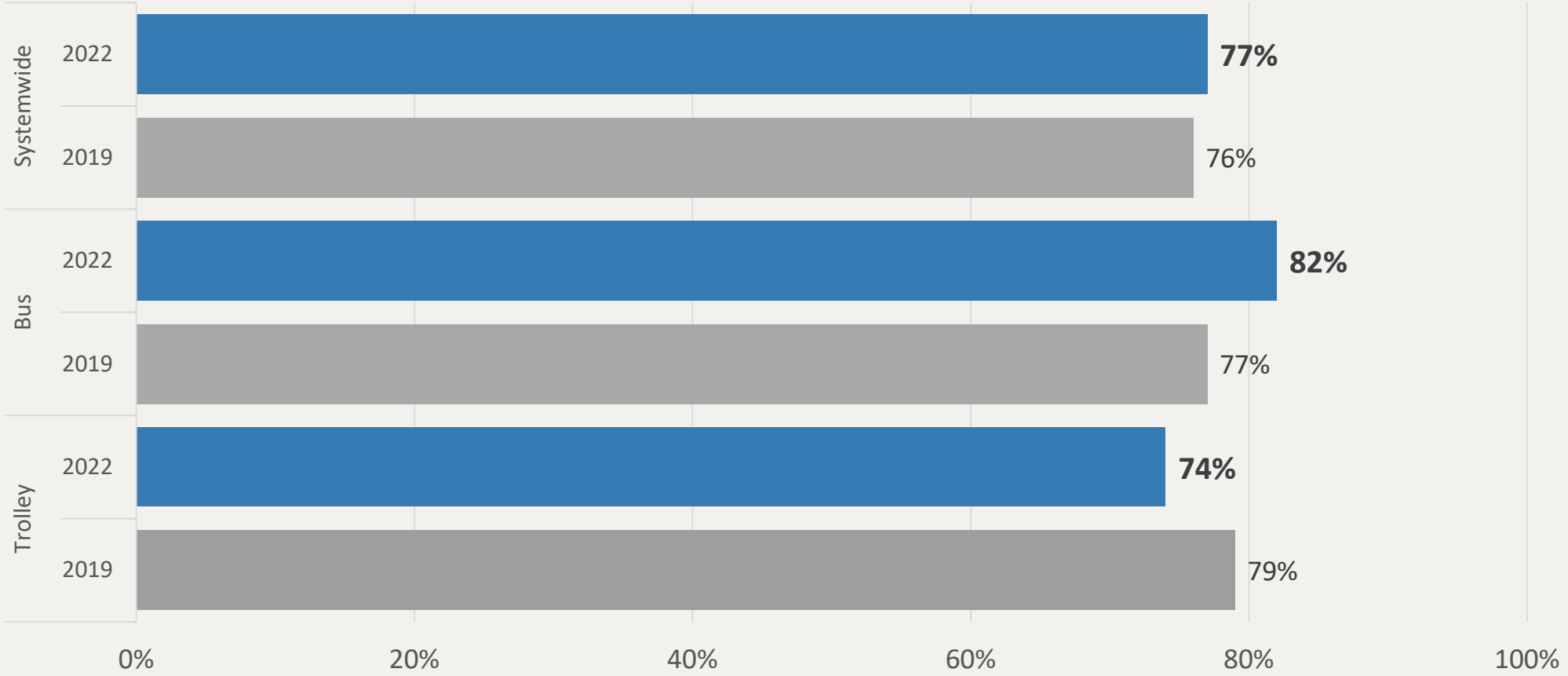
Customer Service/Facility Attributes – Bus and Trolley



Cleanliness of Buses and Trolleys



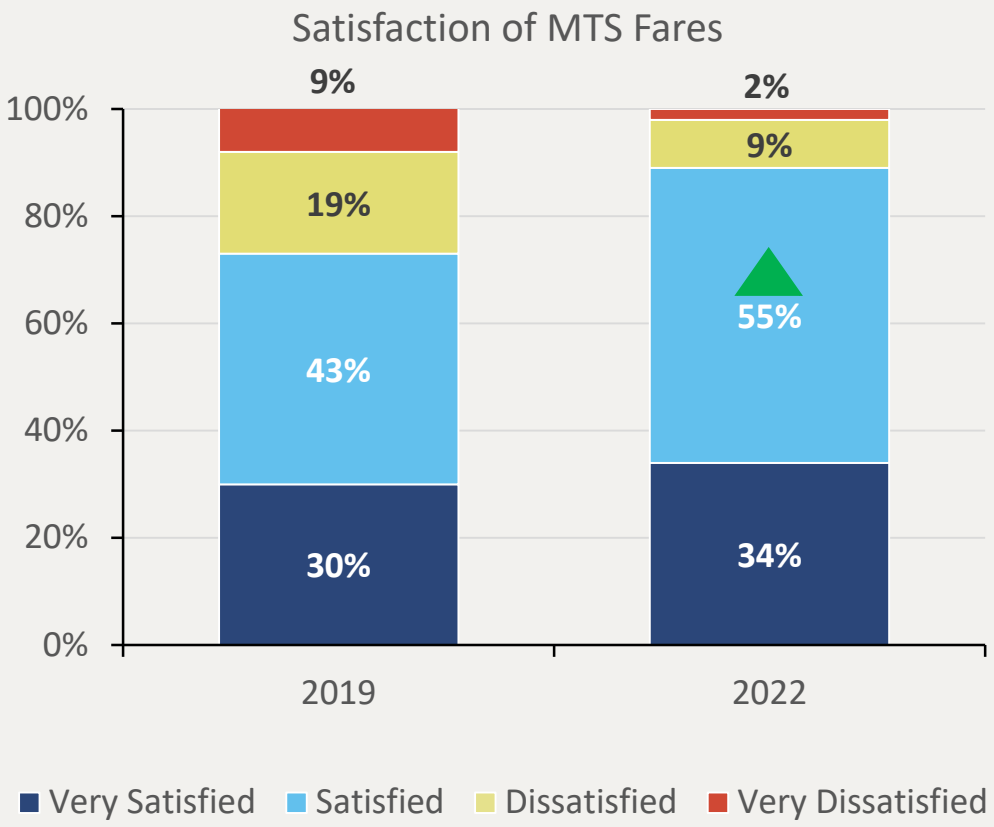
Cleanliness of Transit Stops and Stations

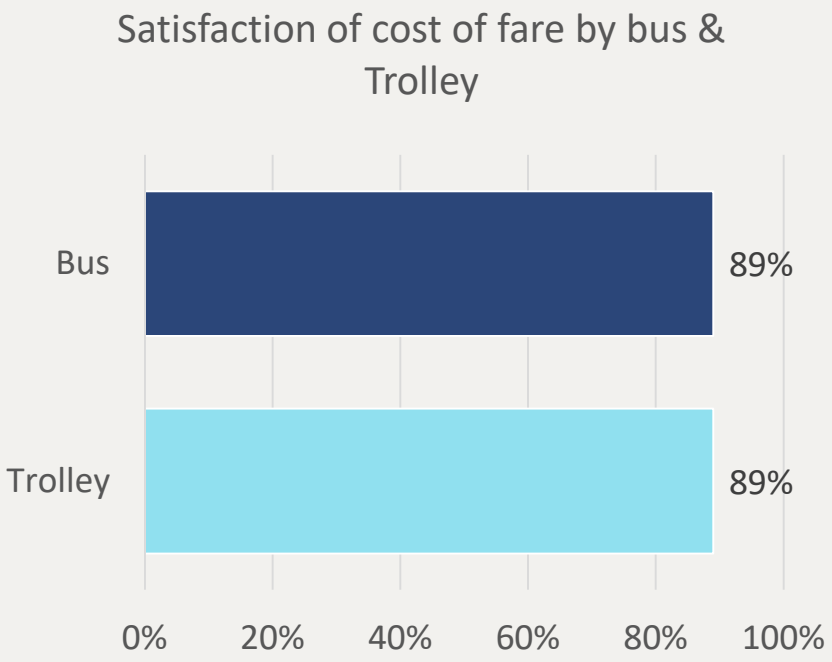


04 Fare and PRONTO Satisfaction

Percentages may not total 100% due to rounding or multiple response options

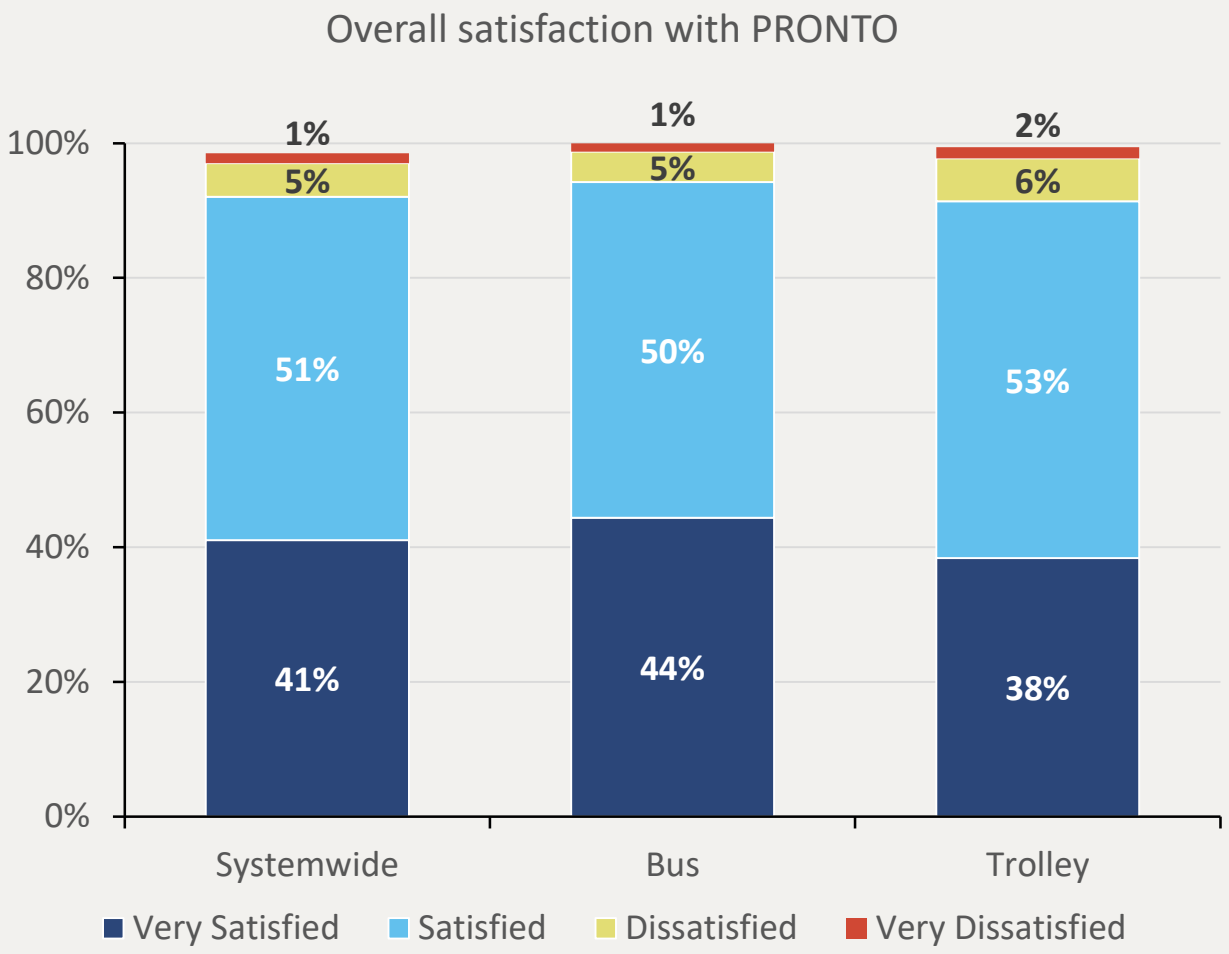
Satisfaction with Fare





Significant improvement in satisfaction with fares (89% vs. 73%)

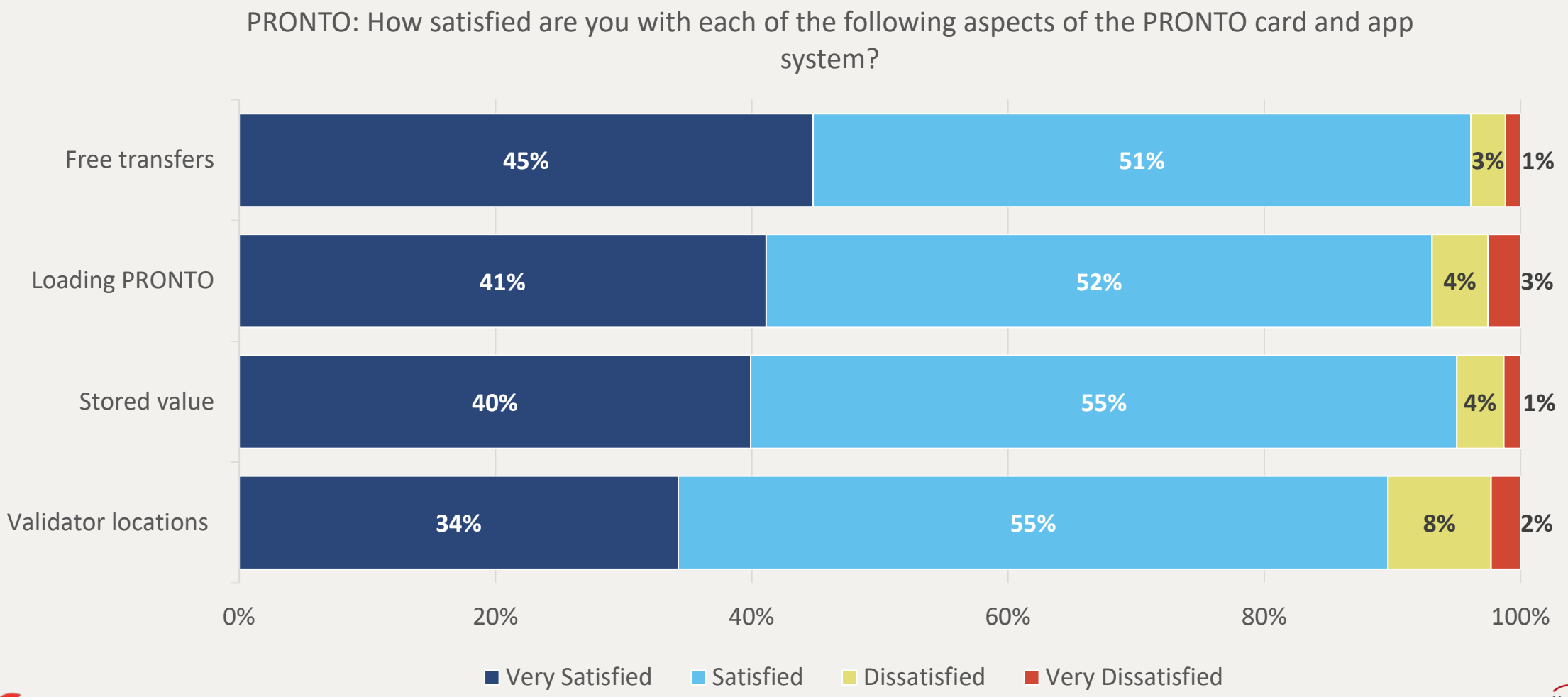
PRONTO Satisfaction



PRONTO Satisfaction

92%

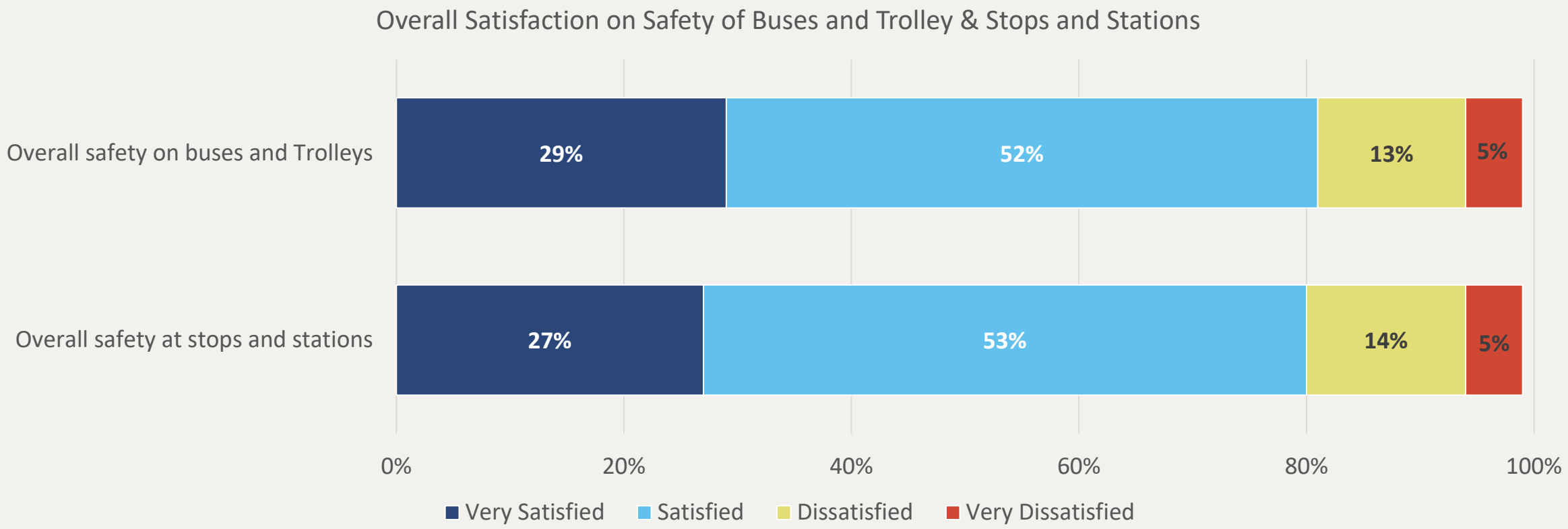
Satisfaction with PRONTO Attributes



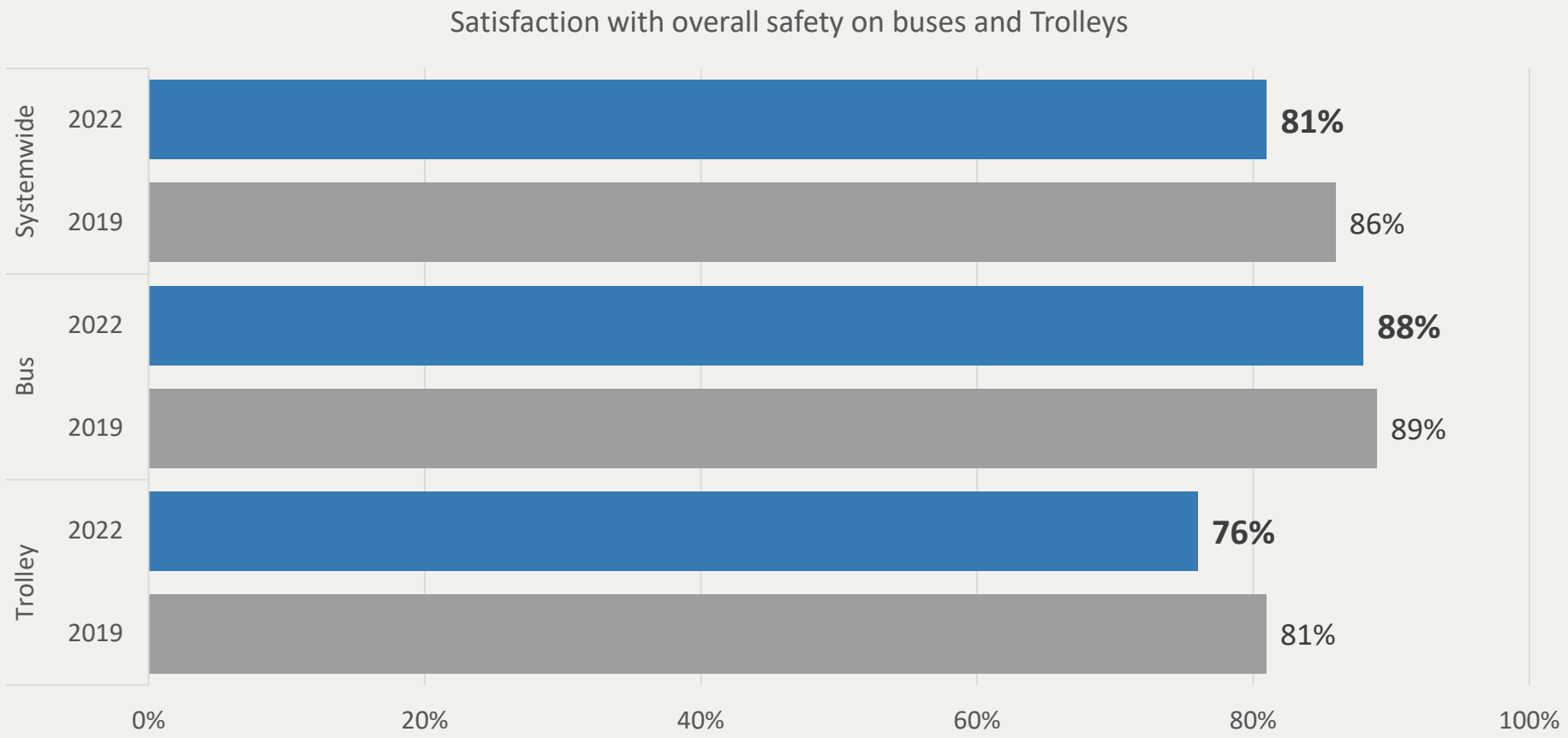
05 Safety Satisfaction

Percentages may not total 100% due to rounding or multiple response options

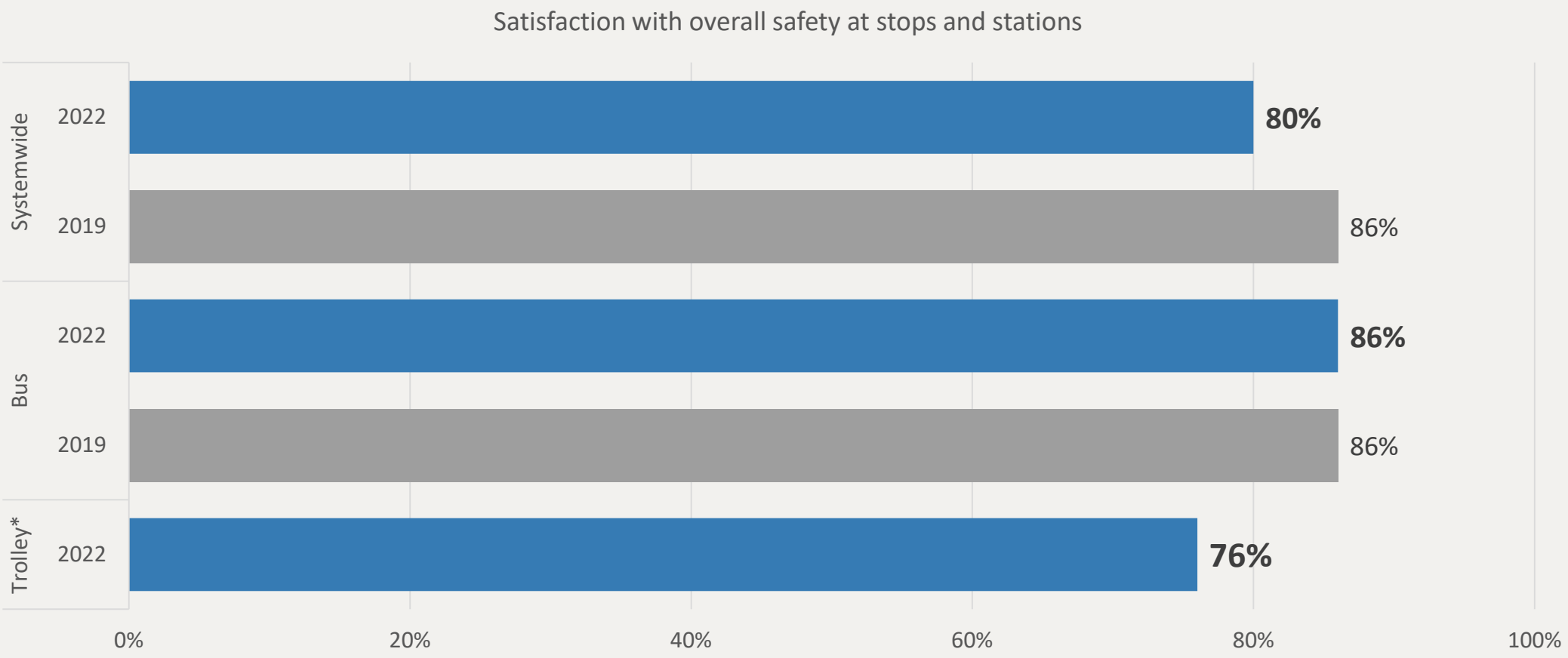
Safety Onboard and Stations



Safety while Riding Buses or Trolleys

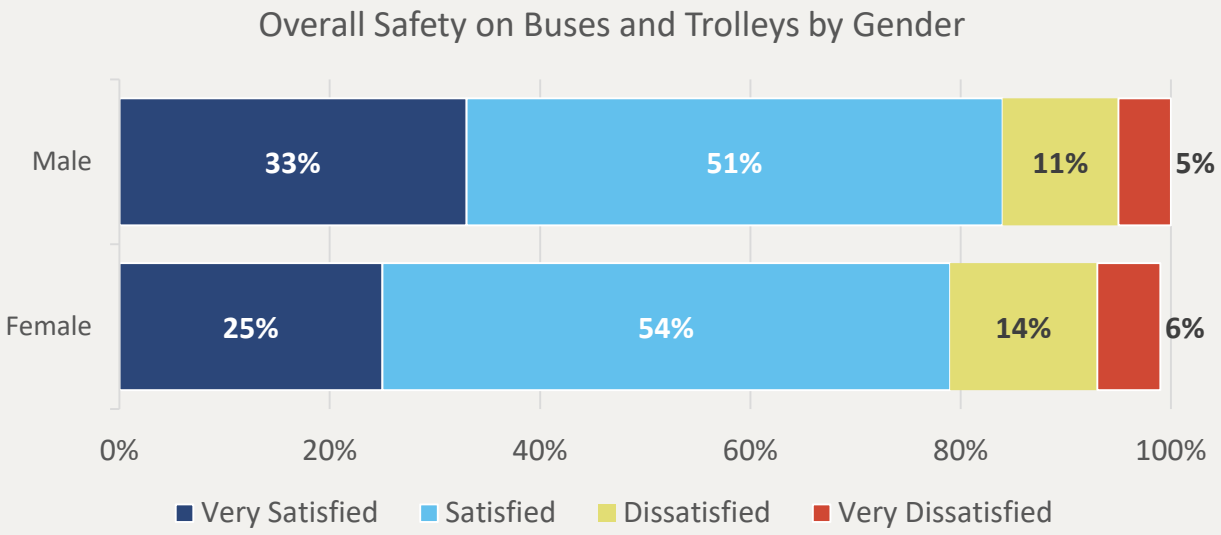


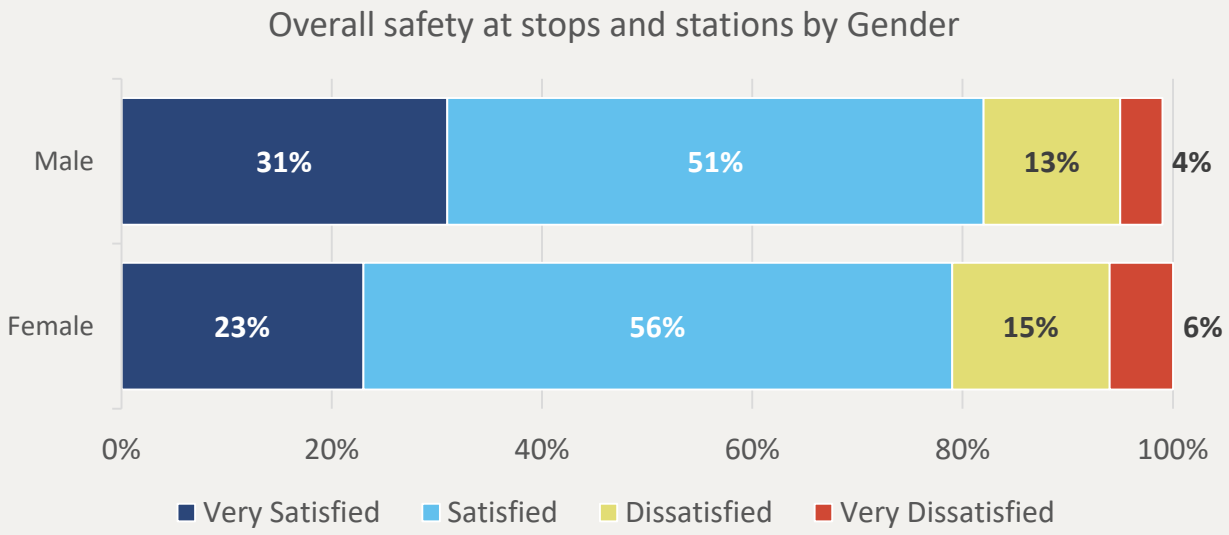
Safety at Bus Stops/Stations



*2019 Trolley safety not measured

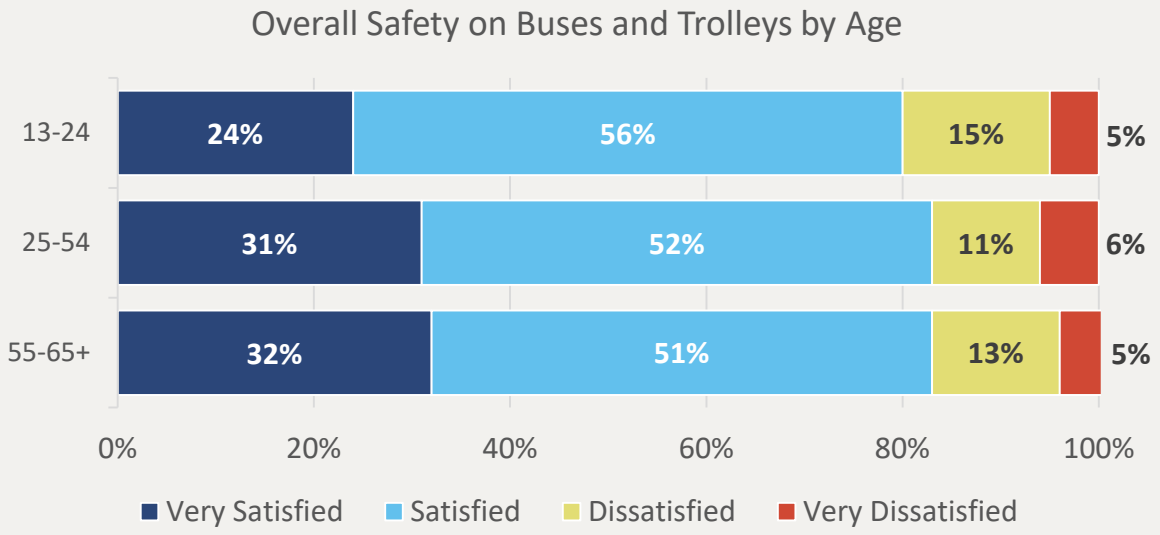
Satisfaction with Safety by Gender

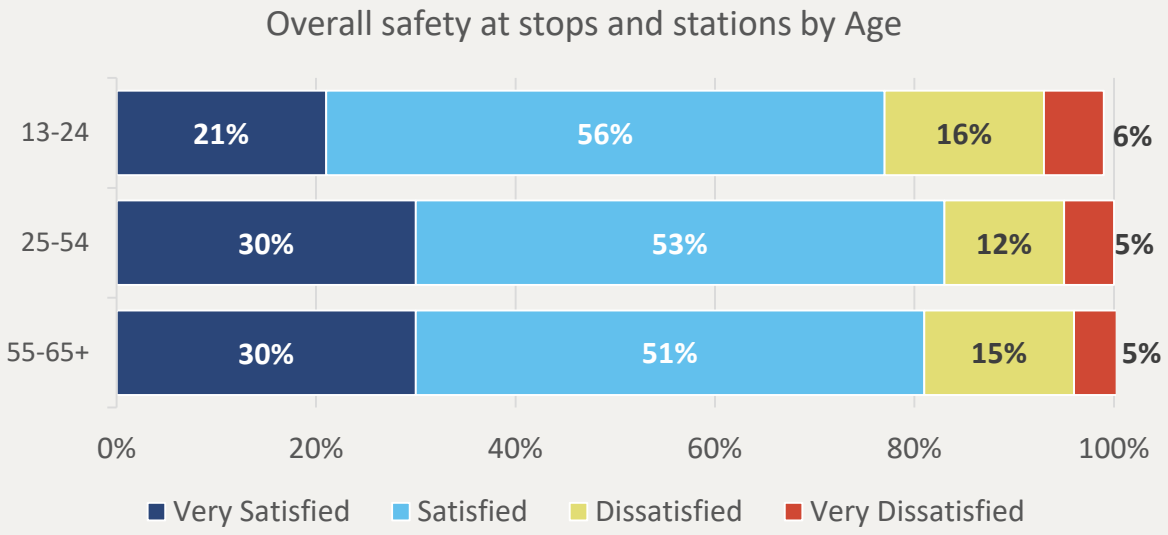




There is a statistical difference in satisfaction with perceived safety on buses and Trolleys and safety at stops and stations relative to gender and women are less satisfied than men.

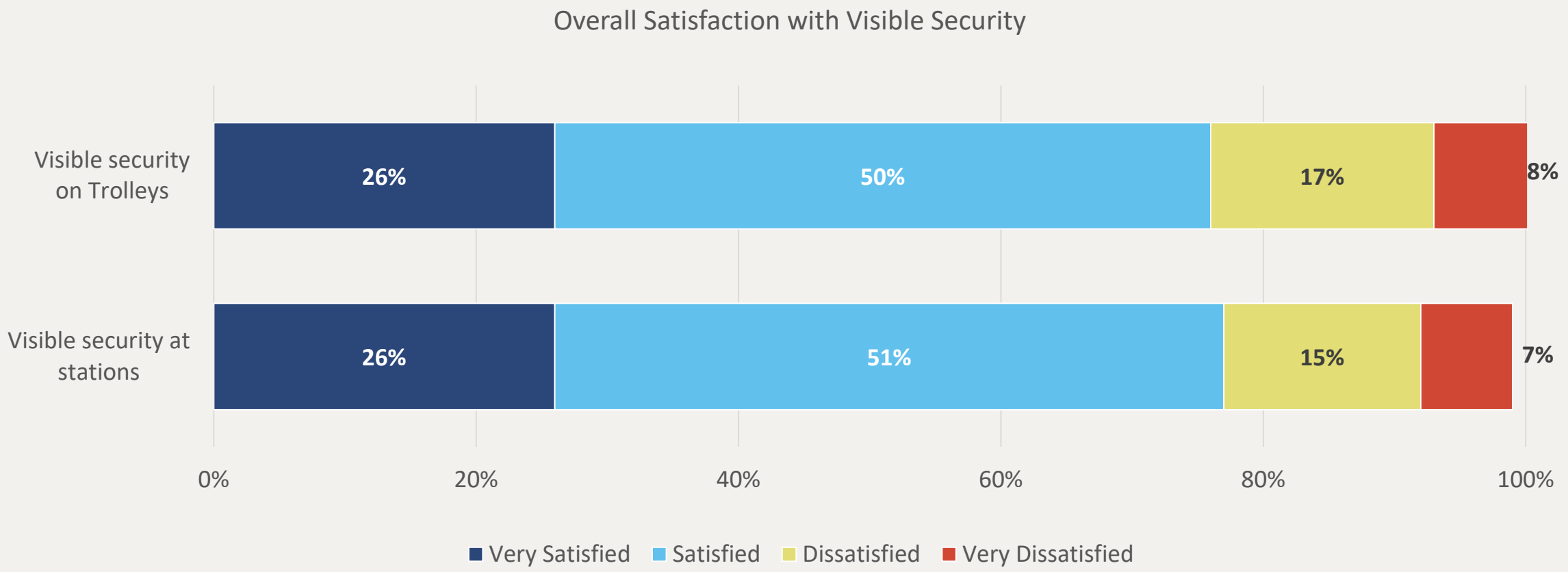
Overall Satisfaction with Safety by Age



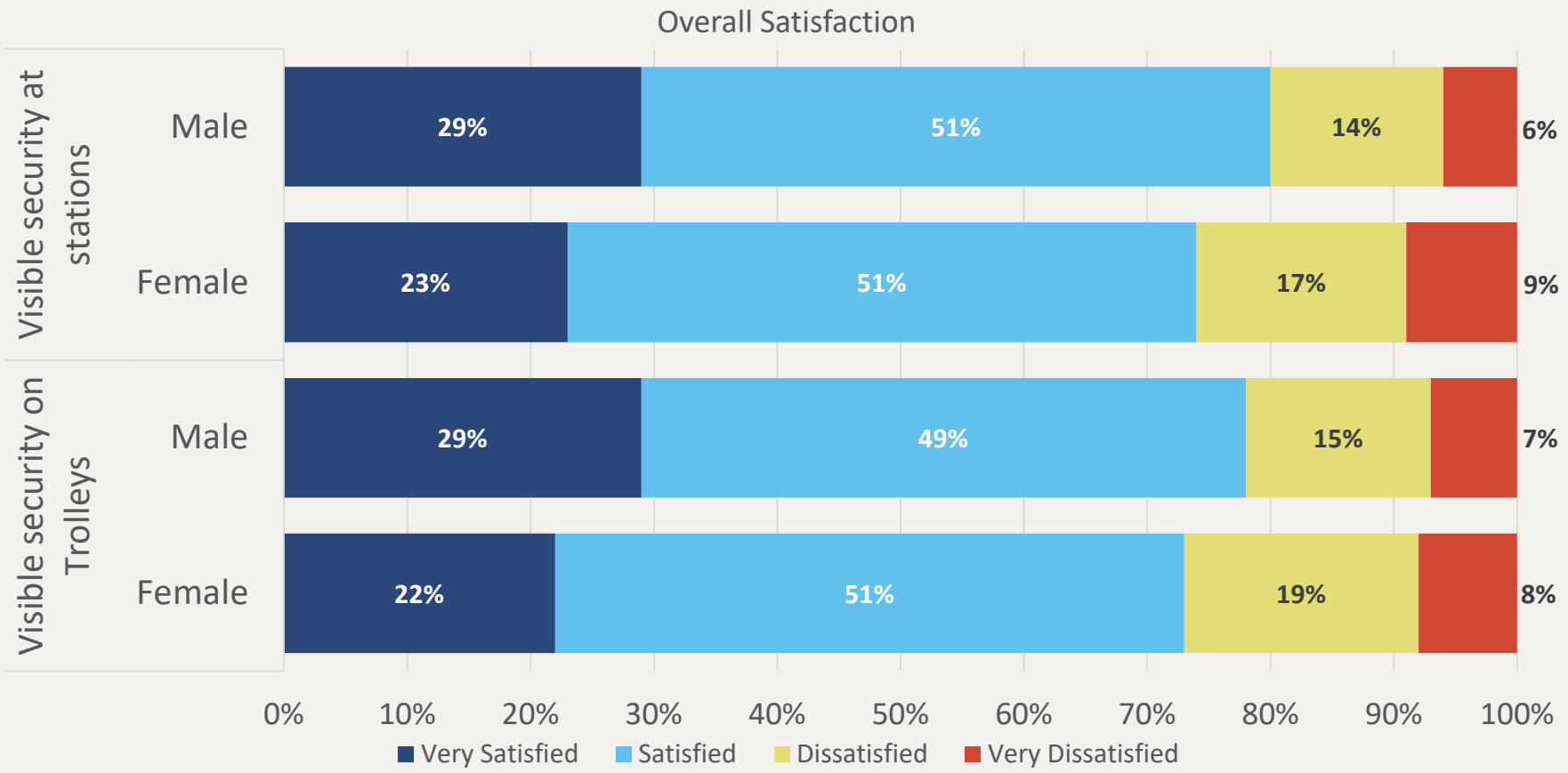


Persons who under 25 are less satisfied with perceived overall safety than other age groups. There is not a significant difference between those 25-54 and those 55+.

Visible Security

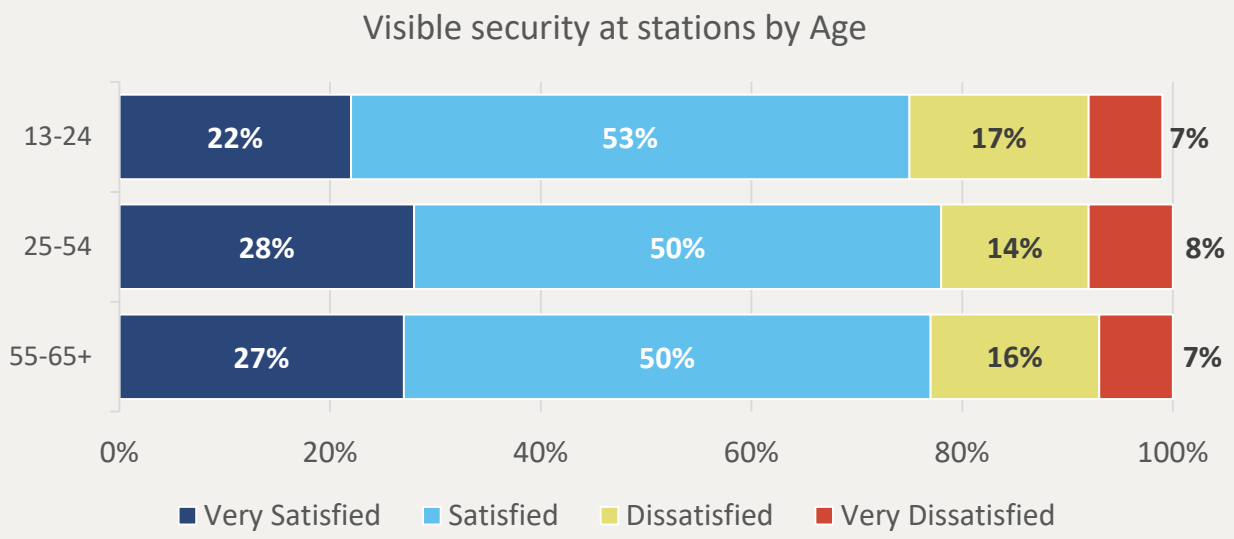


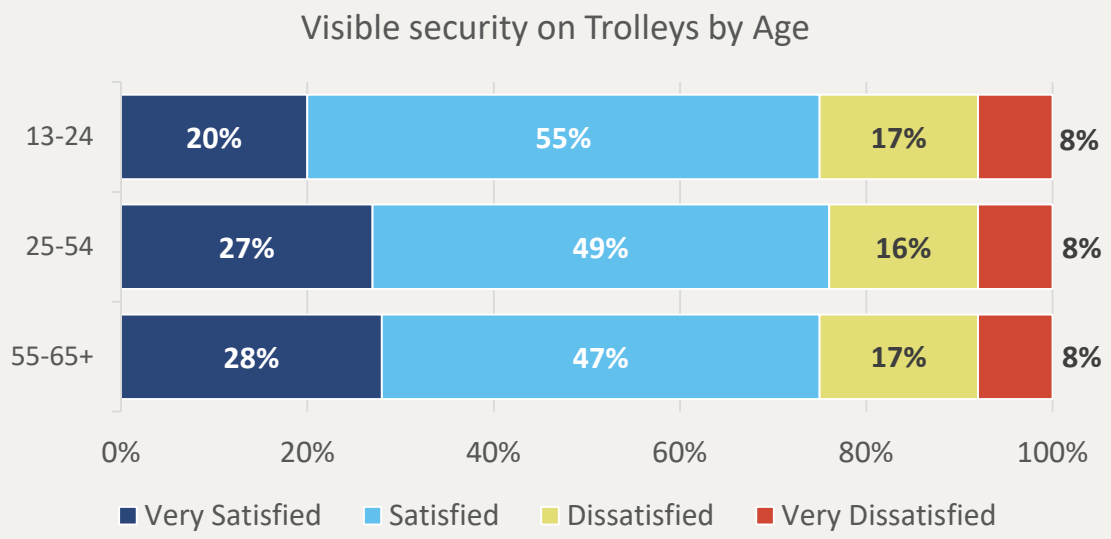
Visible Security by Gender



Persons who identify as female are less satisfied than persons who identify as male with perceived visible security at stations and on the Trolley

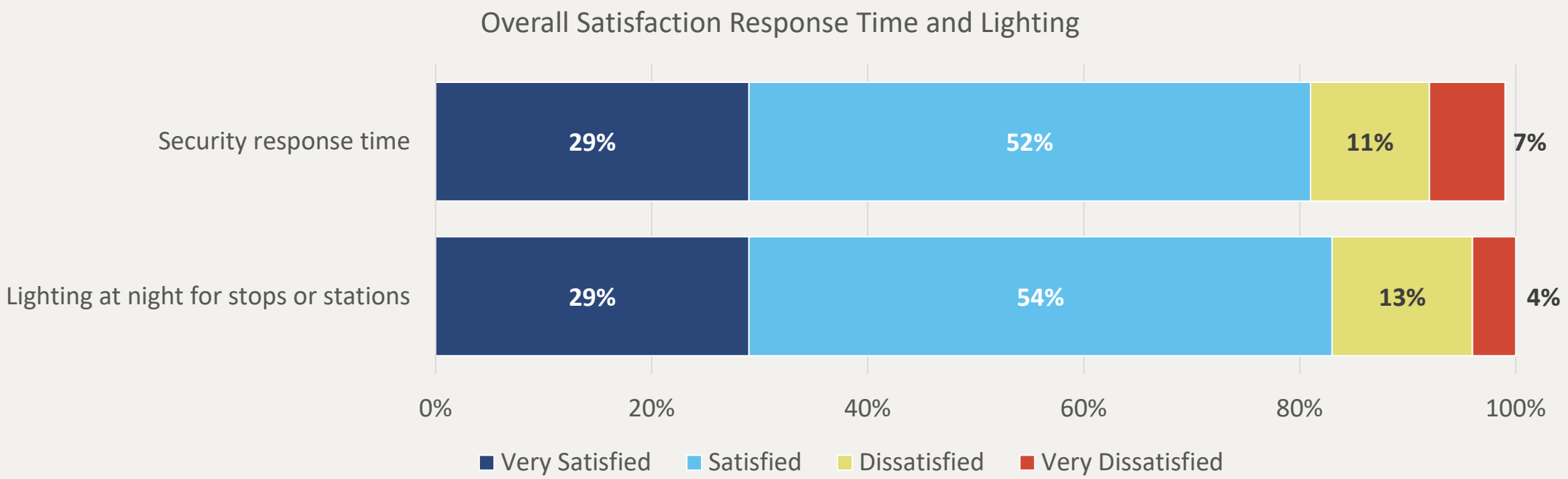
Visible Security by Age



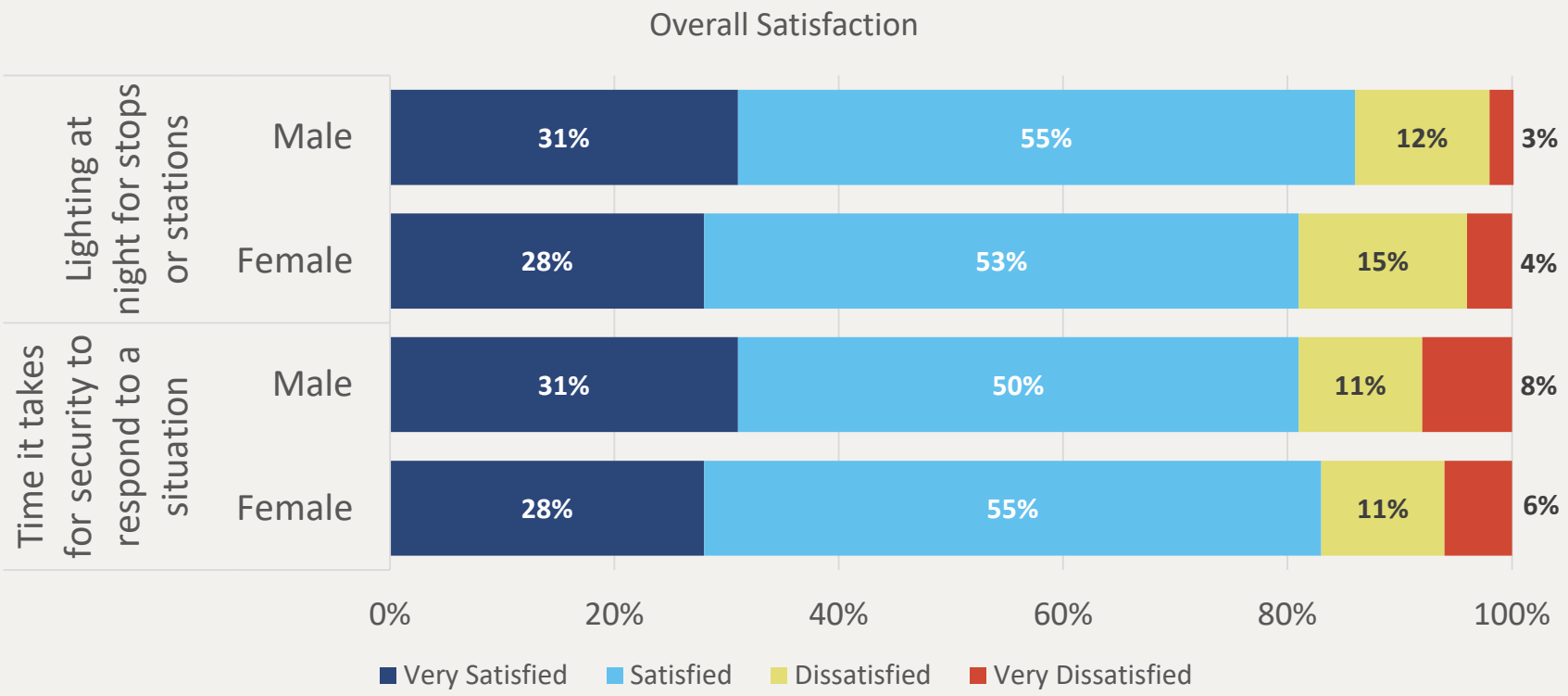


There is no statistical difference in satisfaction with visible security either at stations or on the Trolley between any of the age groups

Response Time and Lighting

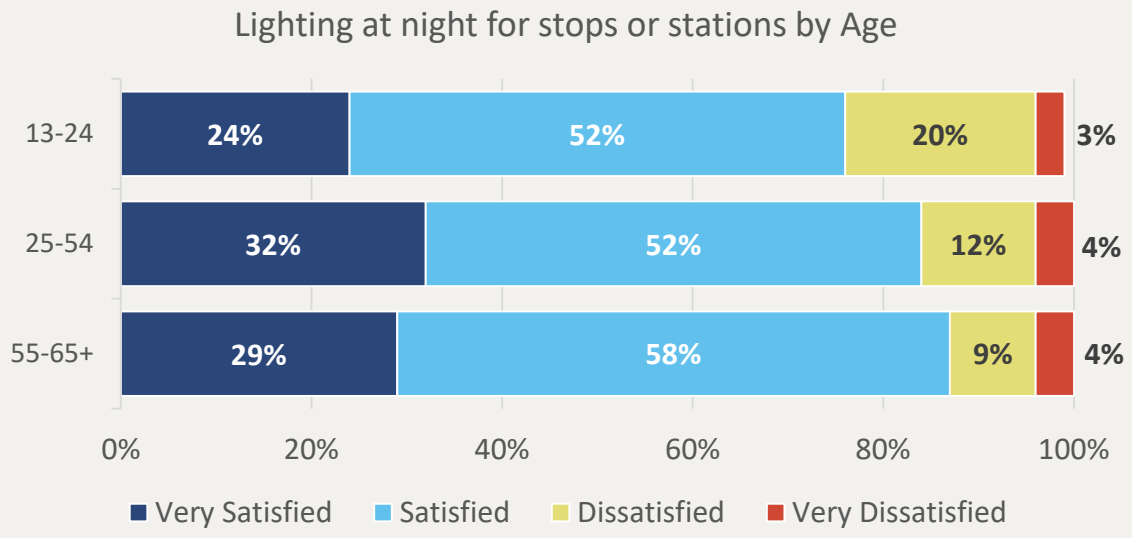


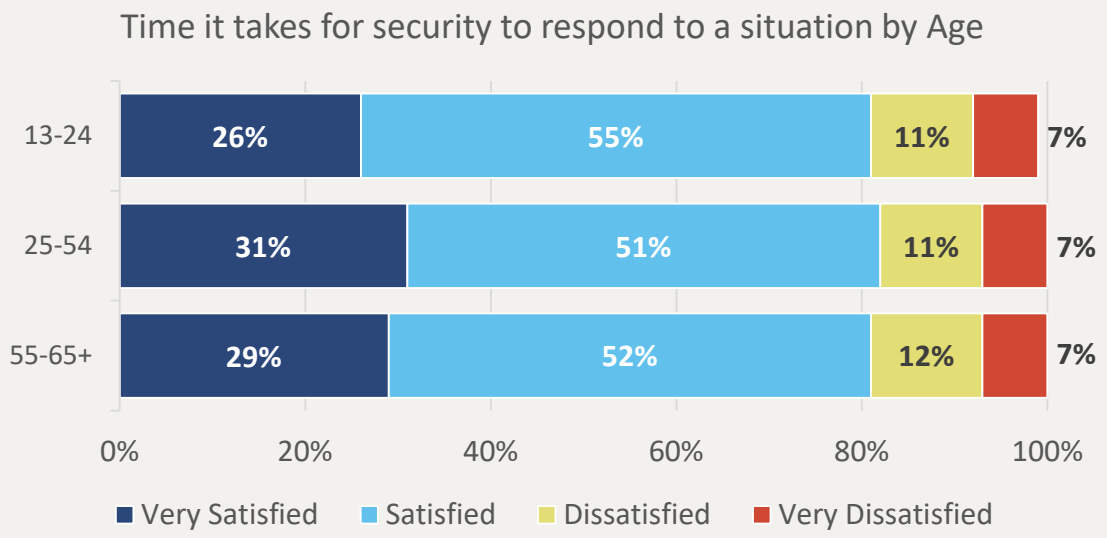
Response Time and Lighting by Gender



There is no statistical difference in satisfaction with response time relative to gender.
There is a statistical difference in satisfaction with lighting at stops and station relative to gender and women are less satisfied than men.

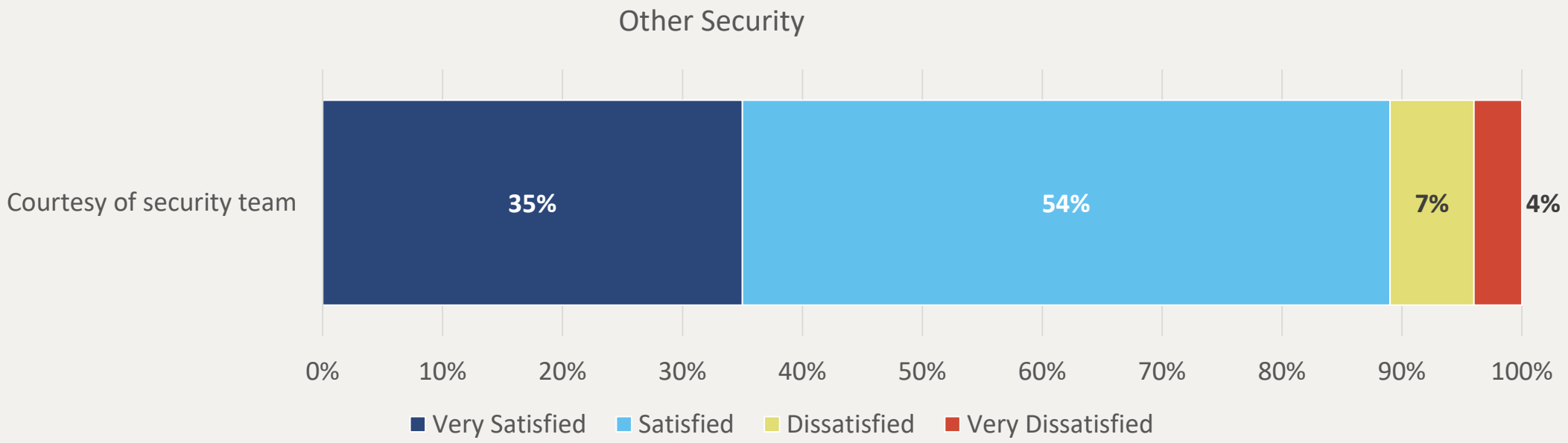
Response Time and Lighting by Age





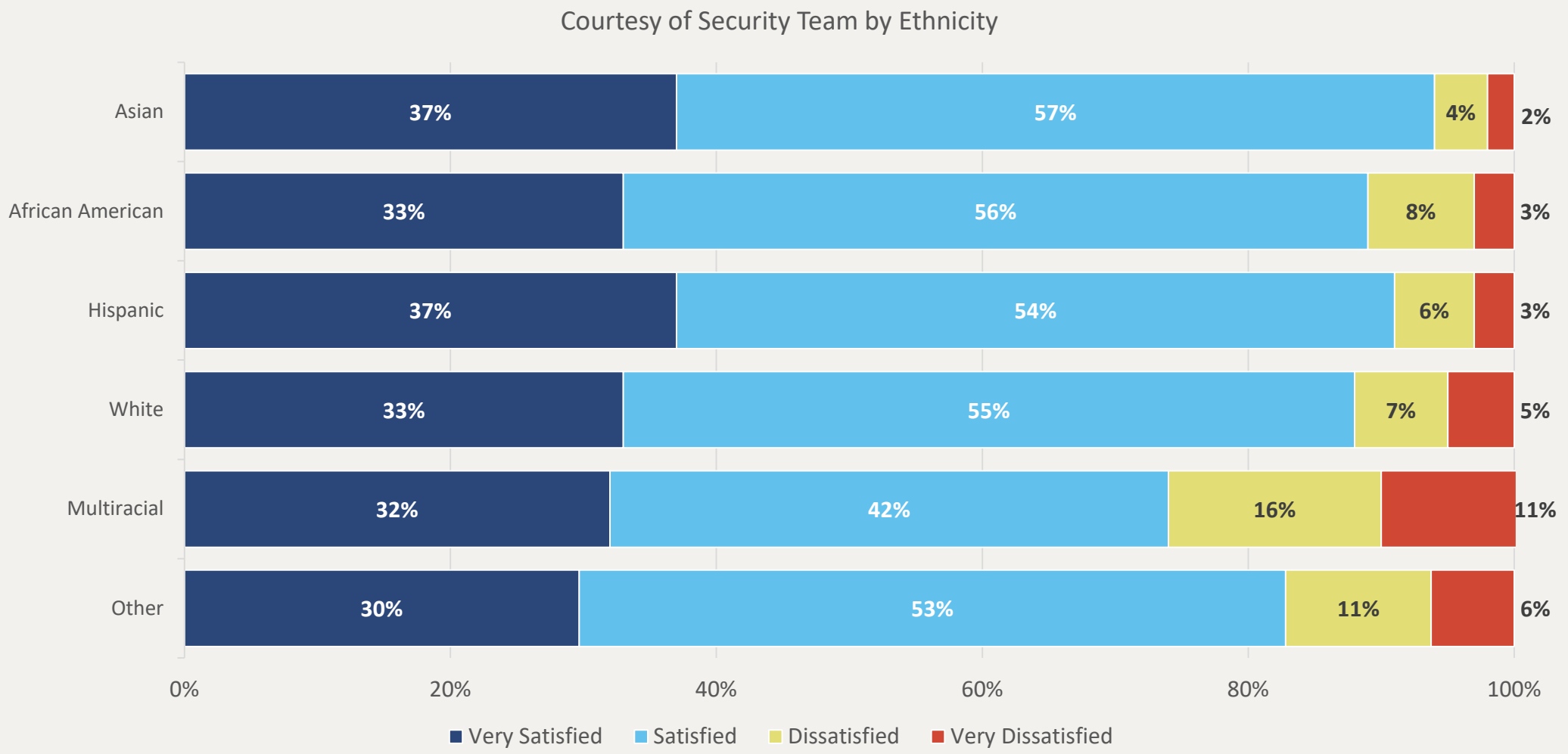
There is no statistical difference in visible security between any of the age groups

Courtesy of Security Team

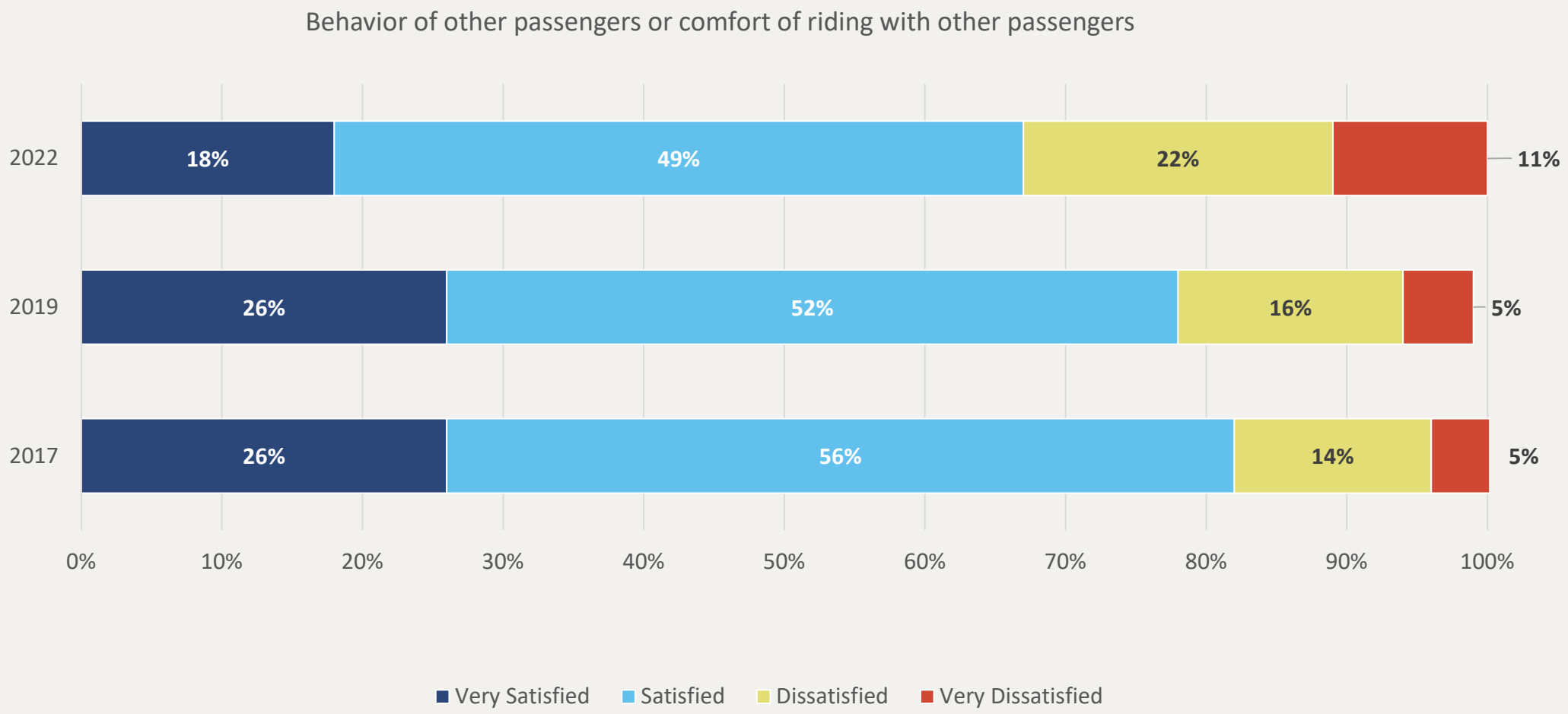


High level of customer satisfaction with courtesy of the security team – 89%

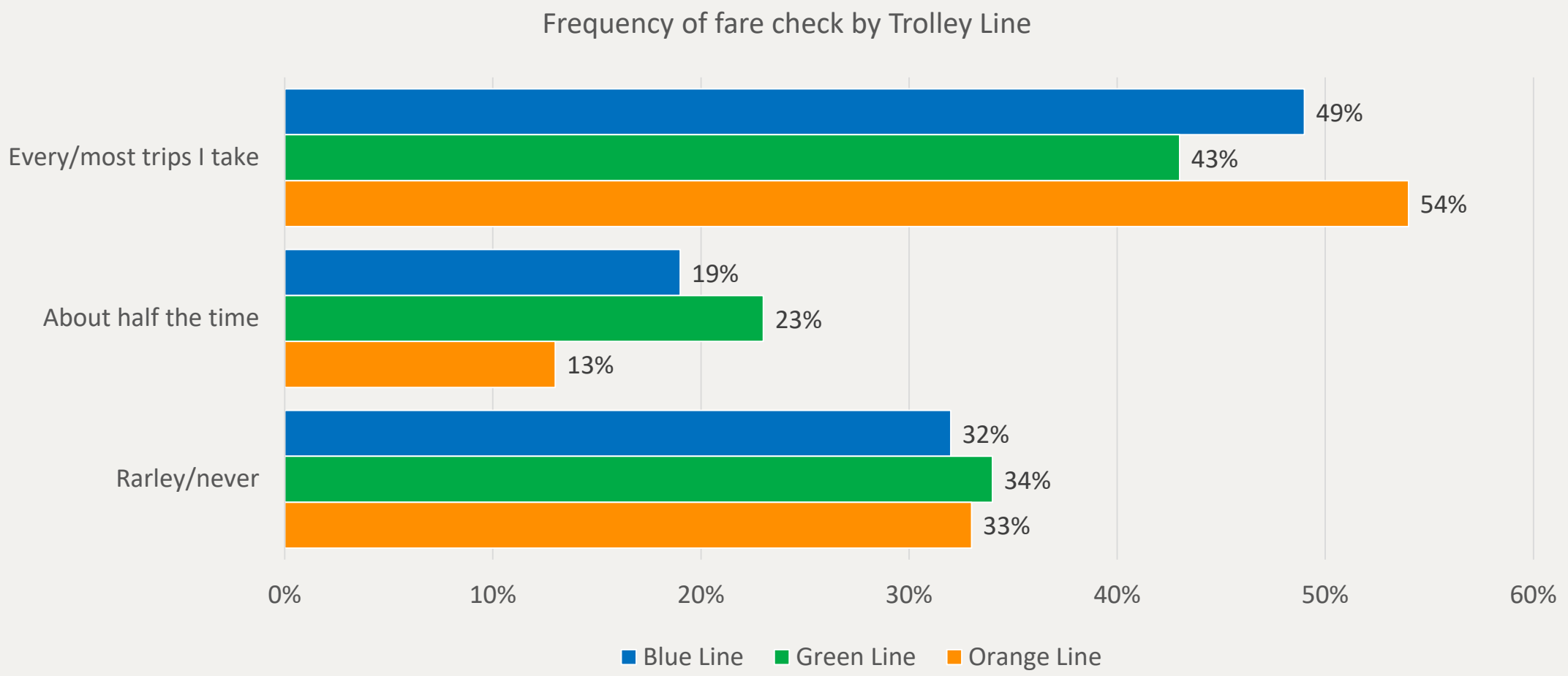
Courtesy of Security Team by Ethnicity



Behavior of Other Passengers

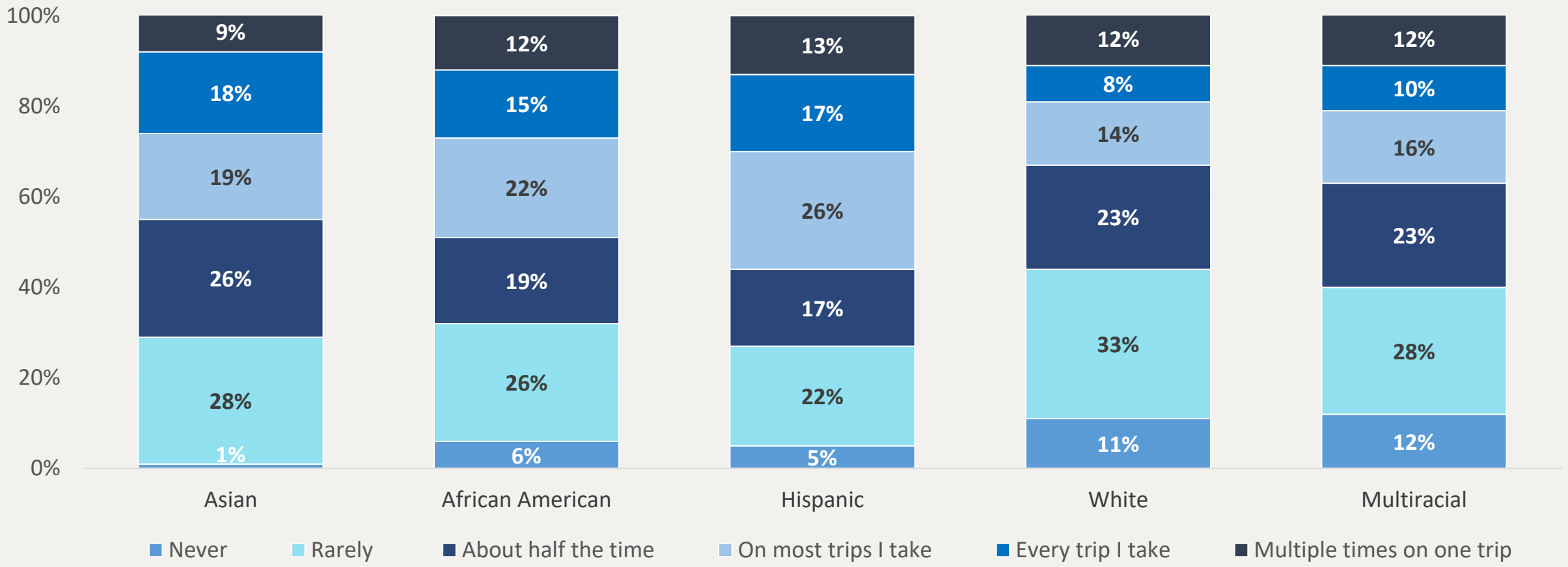


Frequency of Fare Check – Trolley Line



Trolley Fare Check by Ethnicity

When you ride the Trolley, how often is your fare checked?

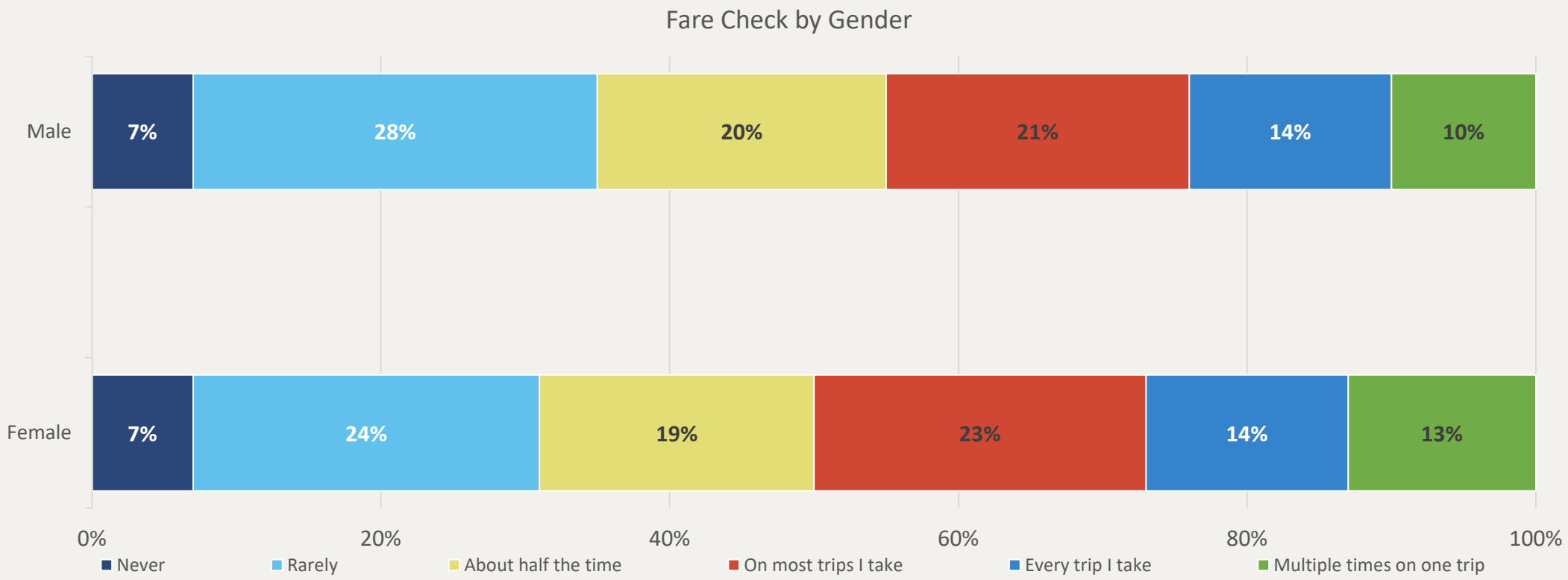


Fare Check by Ethnicity

	Overall	Blue	Green	Orange
White - Asian	No	No	**Yes**	No
White - Black/African American	**Yes**	**Yes**	**Yes**	No
White - Hispanic/Latino	**Yes**	**Yes**	**Yes**	No

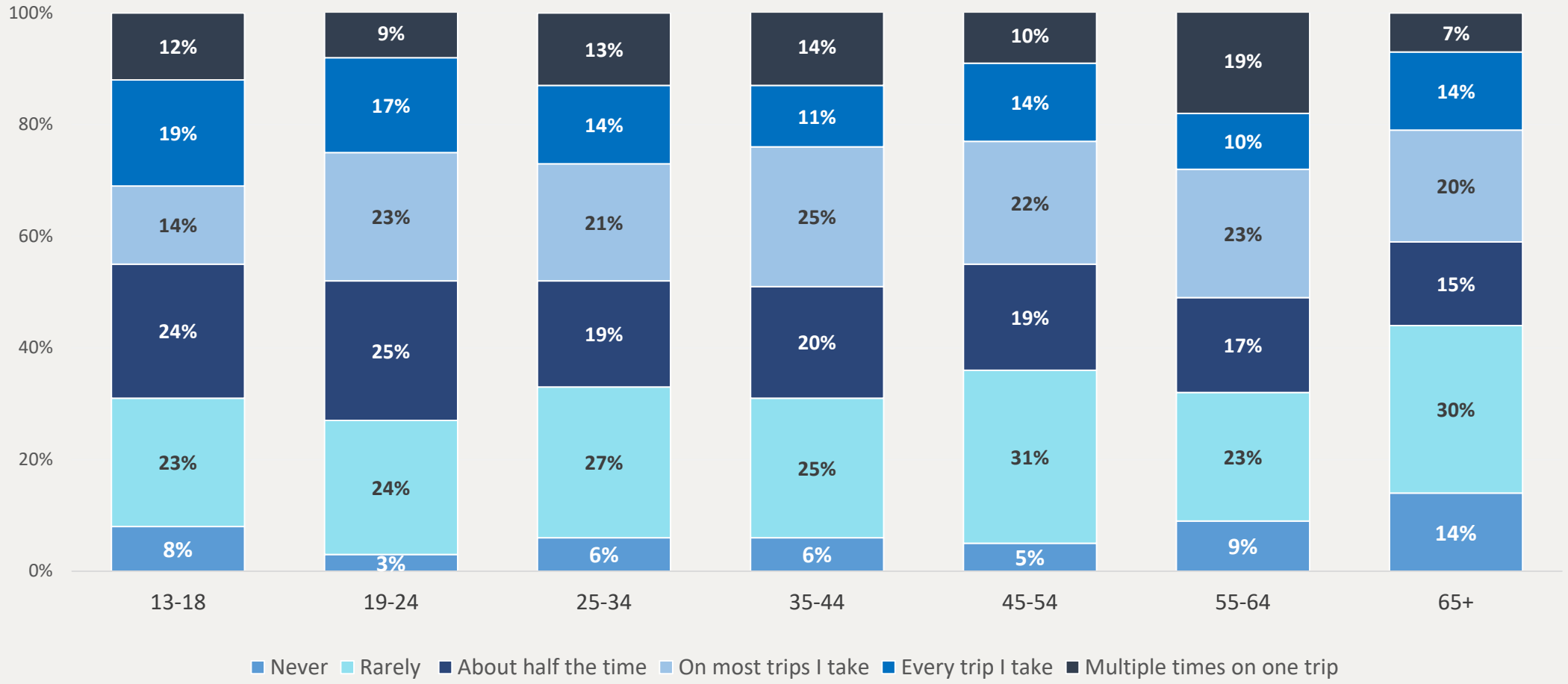
Persons who identify as African American or Latino/a are more likely to perceive that their fare is checked than persons who are White. Overall and on the Blue and Green Line.

Trolley Fare Check by Gender



Persons who identify as female are statistically more likely to perceive their fare is checked than persons who identify as male

Trolley Fare Check by Age



There is no statistical difference in the perceived likelihood of having ones' fare checked relative to reported age

06 Voice of the Customer

Briefly tell us what changes would make the biggest difference in improving your transit experience?

Next Steps

- Presented key findings to Executive Committee – Sept 1
- Presented key findings to Security & Passenger Safety Community Advisory Group – Sep
- Possible additional focus groups/customer survey specifically about security
- Improving data collection for security
  - Staff time allocated to each line
  - Fare inspection data
- Continuing unconscious bias training
- Looking at expanding auxiliary cleaning efforts on Trolleys at key transit centers
- Exploring solutions to improve reporting process for cleanliness issues
  - Direct customer to operations/field staff
- Launching ***Respect the Ride*** rider etiquette campaign this fall

Questions?

Thank you!

Agenda Item No. 46

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

September 15, 2022

SUBJECT:

FISCAL YEAR (FY) 2022 ANNUAL PERFORMANCE MONITORING REPORT (DENIS DESMOND, NEOMI WOODS)

INFORMATIONAL ONLY

Budget Impact

None.

DISCUSSION:

MTS Board Policy No. 42, "Transit Service Evaluation and Adjustment", establishes a process for evaluating existing transit services to achieve the objective of developing a customer-focused, competitive, integrated, and sustainable system. Additionally, federal Title VI guidance requires that certain performance measures be evaluated and reported to the Board periodically.

Staff from the Planning and Scheduling Department will provide a summary of fiscal year 2022 service performance, including the rebounding of ridership from the Covid-19 pandemic.

/S/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Sharon Cooney, 619.557.4513, Sharon.Cooney@sdmts.com

Attachment: A. FY 2022 Performance Monitoring Report

Date: 9/6/22 rev

San Diego Metropolitan Transit System
POLICY 42 PERFORMANCE MONITORING REPORT
FY 2022: JULY 2021 - JUNE 2022

OBJECTIVE | Develop a Customer-Focused and Competitive System

The following measures of productivity and service quality are used to ensure that services are focused on providing competitive and attractive transportation that meets our customers' needs.

Total Passengers

Route Categories	FY 2020	FY 2021	FY 2022	# Change		% Change	
				FY20 - FY21	FY21 - FY22	FY20 - FY21	FY21 - FY22
Urban Frequent	24,452,815	13,100,977	17,739,607	(11,351,838)	4,638,630	-46.4%	35.4%
Urban Standard	6,129,760	3,324,699	4,528,650	(2,805,061)	1,203,951	-45.8%	36.2%
Rapid	5,772,834	2,122,799	4,021,024	(3,650,035)	1,898,225	-63.2%	89.4%
Express	1,590,269	689,067	795,781	(901,202)	106,714	-56.7%	15.5%
Circulator	669,608	285,430	482,904	(384,178)	197,474	-57.4%	69.2%
Premium/Rapid Express	207,372	34,017	79,098	(173,355)	45,081	-83.6%	132.5%
Rural	54,435	34,329	37,522	(20,106)	3,193	-36.9%	9.3%
Fixed-Bus Subtotal	**38,877,093**	**19,591,318**	**27,684,586**	**(19,285,775)**	**8,093,268**	**-49.6%**	**41.3%**
Light Rail (Blue, Orange, Greer	31,991,303	19,516,255	29,737,403	(12,475,048)	10,221,148	-39.0%	52.4%
Light Rail (Silver)	11,724	82	2,098	(11,642)	2,016	-99.3%	2458.5%
Light Rail Subtotal	**32,003,027**	**19,516,337**	**29,739,501**	**(12,486,690)**	**10,223,164**	**-39.0%**	**52.4%**
ALL Fixed Route	**70,880,120**	**39,107,655**	**57,424,087**	**(31,772,465)**	**18,316,432**	**-44.8%**	**46.8%**
Demand-Resp. (MTS Access)	282,578	92,386	169,124	(190,192)	76,738	-67.3%	83.1%
Demand-Resp. (Access Taxi)	61,382	14,807	24,042	(46,575)	9,235	-75.9%	62.4%
Demand-Resp. Subtotal	**343,960**	**107,193**	**193,166**	**(236,767)**	**85,973**	**-68.8%**	**80.2%**
System	**71,224,080**	**39,214,848**	**57,617,253**	**(32,009,232)**	**18,402,405**	**-44.9%**	**46.9%**

NOTES : MTS ridership continues to rebound from the Covid-19 pandemic in all categories. Fall 2021 numbers were very positive, with UC San Diego returning to in-person learning and the Mid-Coast rail extension opening in November. However, the surge of the Covid-19 Omicron variant in January 2022 postponed spring school openings and set back progress on passenger levels. Spring 2022 showed a nice recovery, with ridership in the fourth quarter of FY22 being 25% higher than the first quarter.

Average Weekday Passengers

Route Categories	FY 2020	FY 2021	FY 2022	# Change		% Change	
				FY20 - FY21	FY21 - FY22	FY20 - FY21	FY21 - FY22
Urban Frequent	78,864	40,886	56,836	(37,978)	15,950	-48.2%	39.0%
Urban Standard	20,771	10,928	15,293	(9,843)	4,365	-47.4%	39.9%
Rapid	19,026	6,486	13,051	(12,540)	6,565	-65.9%	101.2%
Express	5,671	2,387	2,727	(3,284)	340	-57.9%	14.2%
Circulator	2,393	1,053	1,750	(1,340)	697	-56.0%	66.2%
Premium/Rapid Express	813	134	311	(679)	177	-83.5%	132.5%
Rural	213	135	148	(78)	13	-36.7%	9.3%
Fixed-Bus Subtotal	**127,752**	**62,009**	**90,116**	**(65,744)**	**28,107**	**-51.5%**	**45.3%**
Light Rail (Blue, Orange, Greer	98,190	59,367	90,745	(38,824)	31,378	-39.5%	52.9%
Light Rail (Silver)	79	n/a	n/a	n/a	n/a	n/a	n/a
Light Rail Subtotal	**98,269**	**59,367**	**90,745**	**(38,902)**	**31,378**	**-39.6%**	**52.9%**
ALL Fixed Route	**226,021**	**121,375**	**180,861**	**(104,646)**	**59,485**	**-46.3%**	**49.0%**
Demand-Resp. (MTS Access)	1,004	303	572	(700)	268	-69.8%	88.4%
Demand-Resp. (Access Taxi)	202	51	83	(151)	32	-74.7%	62.1%
Demand-Resp. Subtotal	**1,205**	**354**	**654**	**(851)**	**300**	**-70.6%**	**84.7%**
System	**227,226**	**121,729**	**181,515**	**(105,497)**	**59,785**	**-46.4%**	**49.1%**

NOTES : The average weekday ridership figure tracks closely with the overall passenger trends. By April 2022, two years after the onset of the pandemic, ridership had rebounded to a weekday average of over 200 thousand passengers.

Date: 9/6/22 rev

San Diego Metropolitan Transit System
POLICY 42 PERFORMANCE MONITORING REPORT
FY 2022: JULY 2021 - JUNE 2022

Passengers per Revenue Hour

The 'passengers per revenue hour' metric shows how any added or removed **revenue hours** (in-service hours plus layover hours) relate to ridership increases or decreases. Increasing riders per revenue hour would indicate that the system is more efficient, for example, carrying more passengers with the same number of buses.

Route Categories	FY 2020	FY 2021	FY 2022	% Change	
				FY20 - FY21	FY21 - FY22
Urban Frequent	22.6	11.6	15.9	-48.8%	37.1%
Urban Standard	15.4	8.2	11.2	-46.5%	35.8%
Rapid	26.3	9.4	18.0	-64.4%	92.0%
Express	20.9	8.6	11.7	-58.6%	35.8%
Circulator	11.2	5.0	7.2	-55.2%	43.5%
Premium/Rapid Express	21.1	5.8	11.1	-72.5%	90.7%
Rural	10.6	6.6	7.0	-38.4%	6.3%
Fixed-Bus Subtotal	**21.0**	**10.3**	**14.6**	**-51.2%**	**42.5%**
Light Rail (Blue, Orange, Green	180.9	105.4	139.6	-41.8%	32.5%
Light Rail (Silver)	19.5	6.9	16.5	-64.4%	138.1%
Light Rail Subtotal	**180.4**	**105.3**	**139.5**	**-41.6%**	**32.4%**
ALL Fixed Route	**35.0**	**18.7**	**27.3**	**-46.6%**	**46.0%**
Demand-Resp. (MTS Access)	1.8	1.3	1.5	-27.9%	11.6%
Demand-Resp. (Access Taxi)	3.3	3.4	3.0	100.0%	-12.1%
Demand-Resp. Subtotal	**2.0**	**1.5**	**1.6**	**-27.5%**	**9.0%**
System	**32.4**	**18.1**	**25.9**	**-44.2%**	**43.0%**

NOTES: This figure dropped during the Covid-19 pandemic because MTS maintained most regular service levels throughout FY 2022, while ridership remained below pre-pandemic levels.

Weekday Passengers per In-Service Hour

The 'passengers per in-service hour' measure is related to the above 'passengers per revenue hour,' but shows how many passengers are carried while the vehicle is in-service picking up passengers, excluding layover time. Analyzing this figure helps MTS to understand how effective it is at providing the right level of service (instead of how efficiently MTS is grouping trips and breaks together for a vehicle to operate [revenue hours]).

Route Categories	FY 2020	FY 2021	FY 2022	% Change	
				FY20 - FY21	FY21 - FY22
Urban Frequent	28.8	14.0	20.0	-51.4%	42.7%
Urban Standard	21.2	10.9	15.2	-48.5%	39.5%
Rapid	35.0	11.5	23.4	-67.3%	104.5%
Express	27.4	10.8	15.3	-60.4%	41.6%
Circulator	14.8	6.8	10.1	-54.0%	48.6%
Premium/Rapid Express	23.5	6.6	12.8	-71.7%	92.9%
Rural	10.6	9.5	9.9	-11.1%	5.2%
Fixed-Bus Subtotal	**27.3**	**12.7**	**18.8**	**-53.6%**	**48.4%**
Light Rail (Blue, Orange, Green	216.4	122.5	165.5	-43.4%	35.1%
Light Rail (Silver)	23.2	-	-	-100.0%	0.0%
Light Rail Subtotal	**216.2**	**122.5**	**165.5**	**-43.4%**	**35.1%**
ALL Fixed Route	**44.0**	**22.6**	**33.9**	**-48.7%**	**50.1%**
Demand-Resp. (MTS Access)	1.9	1.3	1.5	-29.0%	12.7%
Demand-Resp. (Access Taxi)	3.2	3.4	2.9	100.0%	-13.0%
Demand-Resp. Subtotal	2.0	1.5	1.6	-27.5%	9.7%
System	**39.6**	**21.6**	**31.6**	**-45.4%**	**45.8%**

NOTES: The Weekday Passengers per In-Service Hour metric followed the same trends as Passengers per Revenue Hour.

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San Diego Metropolitan Transit System
POLICY 42 PERFORMANCE MONITORING REPORT
FY 2022: JULY 2021 - JUNE 2022

On-Time Performance

On-time performance (OTP) is measured at each bus timepoint for every trip; buses departing timepoints within 0-5 minutes of the scheduled time are considered to be "on-time." Trolley trips arriving at their end terminal within 0-5 minutes of the scheduled time are considered to be "on-time." OTP is measured by service change period in order to show the results of scheduling changes. MTS' goal for on-time performance is 85% for Urban Frequent and Rapid bus routes, and 90% for Trolley and all other bus route categories. Each route is continually evaluated to determine if performance below the target is a result of issues that MTS controls, such as driver performance or scheduling, or situations outside MTS' direct control, such as construction, traffic congestion, and passenger issues. **Performance of fixed bus routes is heavily impacted by construction, stop signs and stop lights, and traffic when they travel through high density corridors.**

Route Categories	Service Change Period					*GOAL*
	Sept. 2020	Jan. 2021	June 2021	Sept. 2021	Jan. 2022	
Urban Frequent	91.9%	90.6%	87.9%	85.4%	85.0%	*85.0%*
Urban Standard	92.3%	91.9%	89.1%	86.6%	86.6%	*90.0%*
Rapid	94.0%	93.2%	90.2%	88.5%	88.7%	*85.0%*
Express	94.5%	94.5%	92.9%	92.3%	95.0%	*90.0%*
Circulator	93.1%	91.9%	88.2%	86.7%	87.6%	*90.0%*
Premium/Rapid Express	91.2%	97.7%	96.2%	93.4%	94.2%	*90.0%*
Rural	N/A	N/A	N/A	N/A	N/A	
Demand-Resp. (Access & Taxi)	N/A	N/A	N/A	N/A	N/A	
Light Rail (Blue, Orange, Green)	97.6%	97.4%	97.1%	95.7%	94.3%	*90.0%*
Light Rail (Silver)	N/A	N/A	N/A	N/A	N/A	*90.0%*
System	**92.9%**	**91.9%**	**89.1%**	**86.8%**	**87.0%**	

NOTES: While most categories remain above their goal, returning traffic congestion is again impacting routes in the urbanized area. Since passenger volumes on buses haven't returned to pre-pandemic levels, dwell times are having less impact on OTP in the short-term.

Preventable Accidents per 100,000 Miles

Preventable accidents are defined as those in which MTS safety staff determined that the bus or train operator did not do everything possible to avoid an accident. It does not necessarily indicate that the MTS operator was at-fault or cited.

Operator	FY 2020	FY 2021	FY 2022
MTS Directly-Operated Bus	0.91	0.92	0.93
MTS Contracted Fixed-Route Bus	1.36	0.95	1.11
Demand-Resp. (Access & Taxi)	0.51	0.33	0.24
MTS Rail	0.03	0.09	0.08

NOTES: In FY 2021, contracted services improved on their FY 2020 preventable accident rate, while directly-operated services showed slight increases.

Date: 9/6/22 rev

San Diego Metropolitan Transit System
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FY 2022: JULY 2021 - JUNE 2022

Mean Distance Between Failures (MDBF)

In this metric, a higher number is better: it means the fleet is traveling farther between breakdowns. Consistent with the National Transit Database definition, a "failure" is a mechanical failure of a vehicle that prevents the start or completion of a trip due to safety, because vehicle movement is limited, or because policy requires removal from service. The average age of each mode's fleet from year to year impacts the annual change in MDBF.

Operator	FY 2020	FY 2021	FY 2022	% Change	
				FY20 - FY21	FY21 - FY22
MTS Directly-Operated Bus	4,816	5,680	7,029	18.0%	23.8%
MTS Contracted Fixed-Route Bus	6,530	7,685	10,022	17.7%	30.4%
Demand-Resp. (Access & Taxi)	45,373	47,913	44,658	5.6%	-6.8%
MTS Rail	12,874	13,567	15,963	5.4%	17.7%

NOTES: MDBF improved for most modes from FY 2021 to FY 2022.

Complaints per 100,000 Passengers

This metric utilizes data from MTS' Customer Resource Management system, which tracks our customer service contacts.

Operator	FY 2020	FY 2021	FY 2022	% Change	
				FY20 - FY21	FY21 - FY22
MTS Directly-Operated Bus	5.5	8.0	4.9	44.8%	-38.8%
MTS Contracted Fixed-Route Bus	9.5	10.5	9.8	10.7%	-6.7%
Demand-Resp. (Access & Taxi)	145.4	119.4	169.3	-17.9%	41.8%
MTS Rail	1.4	1.3	1.1	-7.1%	-13.6%
System	**5.5**	**5.6**	**4.7**	**1.8%**	**-16.1%**

NOTES: Complaint rates spiked during the pandemic, with many complaints related to crowding, face covering requirements, and passenger behavior. In FY 2022, complaint rates improved greatly for most modes, as passenger volume returned and masking and distancing concerns diminished.

OBJECTIVE | Develop a Sustainable System

The following measures are used to ensure that transit resources are deployed efficiently and do not exceed budgetary constraints. These resources may be increased over the budgeted amounts in order to respond to heavy passenger loads, special events, or unplanned detours due to construction or route changes. They may be lower than budgeted if underperforming services are reduced, or if not all of the planned capacity is required to meet the ridership demand.

Revenue Hours

Operator	FY22 Budget (Amended)	FY22 Actual	# Diff	% Diff
MTS Directly-Operated Bus	809,089	806,483	(2,606)	-0.3%
MTS Contracted Fixed-Route Bus	1,096,419	1,085,422	(10,997)	-1.0%
Demand-Resp (Access & Taxi)	113,759	121,757	7,998	7.0%
MTS Rail	637,316	638,562	1,246	0.2%
System	**2,656,583**	**2,652,224**	**(4,359)**	**-0.2%**

NOTES: Amendments made in Spring 2022 for the final FY 2022 budget incorporated most planned changes due to shifting school calendars and MTS driver availability, though a small amount of the amended service levels weren't operated due to staffing constraints. Ridership on the demand-response MTS Access service exceeded the FY 2022 mid-year projections, resulting in more hours and miles operated than budgeted.
*MTS Rail shows **'car'** (not 'train) revenue hours and miles for budget and actual.*

Revenue Miles

Operator	FY22 Budget (Amended)	FY22 Actual	# Diff	% Diff
MTS Directly-Operated Bus	9,451,966	9,426,104	(25,862)	-0.3%
MTS Contracted Fixed-Route Bus	11,390,436	11,306,373	(84,063)	-0.7%
Demand-Resp (Access & Taxi)	2,508,995	2,368,513	(140,482)	-5.6%
MTS Rail	11,647,200	11,626,878	(20,322)	-0.2%
System	**34,998,597**	**34,727,868**	**(270,729)**	**-0.8%**

NOTES: See notes above for Revenue Hours. Variation in the MTS Access miles and hours compared to budget is a result of the trip lengths (of the excess ridership trips) being above or below the average.

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OBJECTIVE | Develop a Sustainable System

The following measures are used to ensure that transit resources are deployed efficiently and do not exceed budgetary constraints. These

Scheduled In-Service Hours (Weekly Total)

Operator	June 2021	June 2022	# Diff	% Diff
MTS Directly-Operated Bus	12,920	11,930	(990)	-7.7%
MTS Contracted Fixed-Route Bus	16,481	16,005	(476)	-2.9%
MTS Rail	3,101	3,830	729	23.5%
System	**32,502**	**31,766**	**(737)**	**-2.3%**

NOTES: Scheduled in-service hours of bus service decreased as minor reductions in services were implemented due to a shortage of drivers.

Scheduled In-Service Miles (Weekly Total)

Operator	June 2021	June 2022	# Diff	% Diff
MTS Directly-Operated Bus	188,416	175,985	(12,430)	-6.6%
MTS Contracted Fixed-Route Bus	225,764	219,567	(6,197)	-2.7%
MTS Rail	65,456	81,987	16,531	25.3%
System	**479,635**	**477,540**	**(2,096)**	**-0.4%**

NOTES: Scheduled in-service miles of bus service decreased as minor reductions in services were implemented due to a shortage of drivers.

Scheduled Weekday Peak-Vehicle Requirement

This measure shows the maximum number of vehicles that are on the road at any one time (a weekday peak period) in order to provide the levels

Operator	June 2021	June 2022	# Change FY20 - FY21
MTS Directly-Operated Bus	218	185	(33)
MTS Contracted Fixed-Route Bus	296	281	(15)
MTS Rail	96	115	19

NOTES: Peak bus counts decreased as minor reductions in services were implemented due to a shortage of drivers.

Scheduled In-Service Speed (MPH) (Weekday)

Operator	June 2021	June 2022	% Change FY20 - FY21
MTS Directly-Operated Bus	14.6	14.7	1.0%
MTS Contracted Fixed-Route Bus	13.7	13.7	0.3%
MTS Rail	21.1	21.5	1.5%

NOTES: Scheduled service speeds remained relatively flat year-over-year.

Scheduled In-Service Miles/Total Miles (Weekday)

The 'in-service miles per total miles' ratio is only calculated for MTS in-house operations, as contractors are responsible for bus and driver assignments (runcutting) for MTS Contract Services.

Operator	June 2021	June 2022	% Change FY20 - FY21
MTS Directly-Operated Bus	87.0%	88.7%	1.9%
MTS Contracted Fixed-Route Bus	N/A	N/A	N/A
MTS Rail	98.5%	98.3%	-0.2%

NOTES: Efficiency of scheduling has kept the ratio generally consistent over time.

Scheduled In-Service Hours/Total Hours (Weekday)

As with the mileage statistic, 'in-service hours' per total hours are only calculated for MTS in-house operations.

Operator	June 2021	June 2022	% Change FY20 - FY21
MTS Directly-Operated Bus	76.1%	76.0%	-0.2%
MTS Contracted Fixed-Route Bus	N/A	N/A	N/A
MTS Rail (Layover Included)	85.6%	84.9%	-0.9%

NOTES: Efficiency of scheduling has kept the ratio generally consistent over time.

Date: 9/6/22 rev

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Farebox Recovery

This metric measures the percent of total operating cost recovered through fare revenue. The Transportation Development Act (TDA) has a requirement of 31.9 percent system-wide for fixed-route services (excluding regional routes which have a 20% requirement).

Operator	FY 2020	FY 2021	FY 2022	% Change	
				FY20 - FY21	FY21 - FY22
MTS Directly-Operated Bus	19.3%	12.5%	14.1%	-35.4%	13.3%
MTS Contracted Fixed-Route Bus	28.4%	17.7%	17.1%	-37.9%	-3.3%
MTS Rail	41.1%	20.7%	24.7%	-2.7%	19.4%
ALL Fixed Route	**29.1%**	**16.6%**	**18.7%**	**-43.2%**	**13.2%**
Demand-Resp (Access & Taxi)	14.9%	4.4%	6.5%	-7.9%	47.7%
System	**28.3%**	**16.1%**	**18.2%**	**-43.1%**	**13.0%**

NOTES: While MTS has always been far ahead of the TDA requirement on farebox recovery rate, the Covid-19 pandemic has reduced this below the requirement in FY 2020-FY 2022. However, the state provided relief from this requirement due to the pandemic, so MTS' TDA funds are still secure. State lawmakers are considering reforms to the TDA legislation that would remove or replace these requirements, in recognition of the changing role of public transportation since the requirement was added in 1978 (such as improving social equity and reducing greenhouse gas emissions).

Subsidy Per Passenger

This metric is the amount of public subsidy required to provide service for each unlinked passengers boarding (measured as total operating cost minus fare revenue, divided by total passengers). MTS' goal is to improve route-category average year-over-year.

Route Categories	FY 2020	FY 2021	FY 2022	% Change	
				FY20 - FY21	FY21 - FY22
Urban Frequent	$ 3.18	$ 7.29	$ 5.30	129.0%	-27.3%
Urban Standard	$ 3.60	$ 7.88	$ 6.32	118.8%	-19.8%
Rapid	$ 3.86	$ 13.25	$ 6.26	243.4%	-52.8%
Express	$ 5.13	$ 14.63	$ 10.06	185.3%	-31.2%
Circulator	$ 3.89	$ 11.53	$ 8.45	196.6%	-26.7%
Premium/Rapid Express	$ 7.21	$ 31.16	$ 18.45	332.0%	-40.8%
Rural	$ 14.55	$ 23.47	$ 24.76	61.3%	5.5%
Fixed-Bus Subtotal	**$ 3.48**	**$ 8.43**	**$ 5.86**	**142.2%**	**-30.4%**
Light Rail (Blue, Orange, Green	$ 1.63	$ 3.79	$ 2.62	133.1%	-31.0%
Light Rail (Silver)	$ 24.54	$ 78.19	$ 28.84	218.6%	-63.1%
Light Rail Subtotal	**$ 1.64**	**$ 3.79**	**$ 2.62**	**131.9%**	**-31.0%**
ALL Fixed Route	**$ 2.65**	**$ 6.11**	**$ 4.18**	**131.0%**	**-31.6%**
Demand-Resp. (MTS Access)	$ 43.32	$ 102.80	$ 67.73	137.3%	-34.1%
Demand-Resp. (Access Taxi)	$ 21.86	$ 36.57	$ 31.25	100.0%	-14.5%
Demand Response Subtotal	**$ 39.49**	**$ 93.65**	**$ 63.19**	**137.2%**	**-32.5%**
System	**$ 2.82**	**$ 6.35**	**$ 4.38**	**124.9%**	**-31.0%**

NOTES: After a major spike in FY 2021, MTS' subsidy per passenger dropped in FY 2022 due to returning ridership. However, high inflation on the cost side continues to put a strain on this metric.

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FY 2022 ANNUAL ROUTE STATISTICS

BASE STATISTICS														TITLE VI MONITORING (FY 2021 Annual Statistics) ~									
Route	Cat	Jurisdiction (#=SD Dist.)	Annual Passengers	FY21-22 % Change	Avg. Wkdy. Psgrs.	Psgrs./ Rev. Hr.	Cost/ Psgr.	Average Fare	Subsidy/ Psgr.	Farebox Recovery	Budgeted Rev.Svc. Hours	Budgeted Rev.Svc. Miles	Route	Minority Route	On-Time Perf. Goal	On-Time Perf. Actual	Weekday Headway Goal	Weekday Headway Peak	Weekday Headway Base	Vehicle Load Factor ~~ Goal	Vehicle Load Factor ~~ % trips over VLF	Vehicle Load Factor ~~ > 20%?
Blue	**LRT**	3,8,**NC,CV**	17,366,905	65.9%	53,901	170.8	$ 2.84	$ 0.86	$ 1.98	30.3%	36,195	771,034	**Blue**	✓	90%	90%	15 min.	7.5	15	3.00	0%	No
Orange	**LRT**	3,4,8,9,**LG,LM,EC**	5,571,123	37.7%	16,981	112.8	$ 4.30	$ 0.86	$ 3.44	20.0%	21,990	441,536	**Orange**	✓	90%	95%	15 min.	15	15	3.00	0%	No
Green	**LRT**	2,3,7,9,**LM,EC,ST**	6,799,373	36.0%	19,862	109.7	$ 4.42	$ 0.86	$ 3.56	19.4%	27,727	590,260	**Green**		90%	92%	15 min.	15	15	3.00	0%	No
Silver	**LRT**	3	2,098	2458.5%	-	16.5	$ 29.34	$ 0.51	$ 28.84	1.7%	-	-	**Silver**		90%	99%	15 min.	30	30	3.00	0%	No
1	**Frq**	3,7,9,**LM**	736,983	24.4%	2,397	15.0	$ 4.71	$ 0.99	$ 3.72	21.1%	24,968	223,385	**1**		85%	82%	15 min.	15	15	1.50	0%	No
2	**Frq**	3	445,826	41.9%	1,426	13.4	$ 9.69	$ 1.11	$ 8.58	11.5%	17,464	135,260	**2**		85%	93%	15 min.	12	15	1.50	0%	No
3	**Frq**	3,4,8,9	875,726	19.2%	2,859	17.2	$ 3.56	$ 0.99	$ 2.57	27.7%	27,386	212,457	**3**	✓	85%	80%	15 min.	12	12	1.50	0%	No
4	Std	3,4,8,9	414,293	33.2%	1,326	16.8	$ 7.72	$ 1.09	$ 6.64	14.1%	12,751	132,116	**4**	✓	85%	87%	30 min.	30	30	1.50	0%	No
5	**Frq**	3,4,8,9	405,303	32.0%	1,372	17.0	$ 3.62	$ 0.97	$ 2.64	26.9%	12,612	99,550	**5**	✓	85%	88%	15 min.	12	12	1.50	0%	No
6	**Frq**	3,7	195,673	12.0%	602	11.5	$ 11.33	$ 1.11	$ 10.22	9.8%	9,249	80,718	**6**		85%	91%	15 min.	15	15	1.50	0%	No
7	**Frq**	3,4,9	1,412,121	34.1%	4,185	20.2	$ 6.44	$ 1.07	$ 5.37	16.6%	37,356	288,644	**7**	✓	85%	87%	15 min.	10	10	1.50	0%	No
8	**Frq**	2,3	397,690	88.5%	1,088	14.5	$ 8.98	$ 1.11	$ 7.87	12.3%	11,757	121,716	**8**		85%	82%	15 min.	20	20	1.50	0%	No
9	**Frq**	2,3	197,315	38.2%	560	11.6	$ 11.18	$ 1.09	$ 10.08	9.8%	8,751	88,336	**9**		85%	92%	15 min.	20	20	1.50	0%	No
10	**Frq**	2,3,4,9	720,299	26.5%	2,335	18.2	$ 7.16	$ 1.14	$ 6.02	15.9%	20,246	182,754	**10**		85%	83%	15 min.	12	15	1.50	0%	No
11	**Frq**	3,9	435,626	42.3%	1,412	12.5	$ 10.39	$ 1.12	$ 9.27	10.8%	18,723	184,608	**11**		85%	88%	15 min.	15	15	1.50	0%	No
12	**Frq**	3,4,8,9	692,037	40.0%	2,240	16.4	$ 7.93	$ 1.08	$ 6.85	13.6%	21,935	211,860	**12**	✓	85%	87%	15 min.	7.5/15	15	1.50	0%	No
13	**Frq**	4,7,9,**NC**	1,198,355	39.2%	3,887	21.5	$ 6.04	$ 1.08	$ 4.97	17.8%	29,937	299,129	**13**	✓	85%	89%	15 min.	12	12	1.50	0%	No
14	Circ	7,9,**LM**	32,774	63.6%	129	5.1	$ 13.94	$ 0.99	$ 12.95	7.1%	3,227	31,741	**14**		90%	90%	60 min.	60	60	1.00	0%	No
18	Circ	3,7	11,165	18.0%	44	4.2	$ 16.76	$ 1.02	$ 15.74	6.1%	1,317	19,884	**18**		90%	92%	60 min.	30	30	1.00	0%	No
20	Exp	3,5,6,7	300,962	38.8%	989	8.7	$ 14.93	$ 1.13	$ 13.81	7.5%	17,401	327,505	**20**		90%	94%	30 min.	15/30	30	1.50	0%	No
25	Circ	6,7	33,840	74.4%	133	5.4	$ 13.09	$ 1.02	$ 12.07	7.8%	3,133	39,644	**25**		90%	91%	60 min.	60	60	1.00	0%	No
27	Std	2,6	177,275	106.8%	579	9.7	$ 7.31	$ 1.01	$ 6.30	13.8%	8,136	74,668	**27**		85%	86%	30 min.	30	30	1.50	0%	No
28	Std	2,3	197,622	49.5%	638	15.8	$ 3.44	$ 0.97	$ 2.47	28.1%	6,395	43,622	**28**		85%	88%	30 min.	15/30	30	1.50	0%	No
30	**Frq**	1,2,3	827,513	45.8%	2,484	13.3	$ 9.75	$ 1.14	$ 8.61	11.7%	33,741	421,132	**30**		85%	85%	15 min.	15	15	1.50	0%	No
31	Std	1,6	56,201	12.1%	221	11.5	$ 11.26	$ 1.13	$ 10.13	10.0%	2,450	29,550	**31**	✓	85%	91%	30 min.	30	-	1.50	0%	No
35	**Frq**	2,3	313,977	23.8%	967	14.1	$ 3.47	$ 1.00	$ 2.47	28.9%	11,360	70,374	**35**		85%	86%	15 min.	15	15	1.50	0%	No
41	**Frq**	1,6,7	621,988	93.3%	2,101	17.1	$ 7.62	$ 1.15	$ 6.47	15.1%	18,046	229,999	**41**		85%	93%	15 min.	7.5/15	15	1.50	0%	No
43~	**Frq**	2,6	181,426	100.0%	943	11.2	$ 11.60	$ 1.19	$ 10.42	10.2%	2,923	29,014	**43**		85%		15 min.	15	15			
44	**Frq**	2,3,6,7	525,665	28.9%	1,679	15.4	$ 8.44	$ 1.08	$ 7.36	12.8%	17,723	196,088	**44**	✓	85%	93%	15 min.	7.5/15	15	1.50	0%	No
50~~	Exp	1,2,3,6	25,843	(36.6%)	258	8.6	$ 15.05	$ 1.00	$ 14.05	6.7%	2,994	45,456	**50**		90%	0%	30 min.	30	-	1.50	0%	No
60	Exp	1,3,4,6,9	39,126	10.5%	154	11.8	$ 11.05	$ 1.11	$ 9.94	10.0%	1,643	29,594	**60**		90%	90%	30 min.	20/30	-	1.50	0%	No
83	Circ	3	14,378	69.9%	57	4.5	$ 15.92	$ 1.01	$ 14.91	6.4%	1,613	12,974	**83**		90%	91%	60 min.	60	60	1.00	0%	No
84	Circ	2	12,635	34.4%	50	4.2	$ 16.91	$ 1.03	$ 15.87	6.1%	1,505	17,788	**84**		90%	87%	60 min.	60	60	1.00	0%	No
88	Circ	3,7	65,464	23.0%	212	8.9	$ 6.16	$ 1.04	$ 5.11	16.9%	3,692	25,848	**88**		90%	92%	60 min.	30	30	1.00	0%	No
105	Std	1,2,3,6	181,396	51.8%	637	12.4	$ 10.49	$ 1.11	$ 9.37	10.6%	7,114	88,740	**105**		85%	94%	30 min.	30	30	1.50	0%	No
110	Exp	3,6	15,706	(29.8%)	62	8.5	$ 15.21	$ 1.13	$ 14.08	7.4%	933	20,094	**110**		90%	97%	30 min.	20/30	-	1.50	0%	No
115	Std	7,9,**LM,EC**	124,567	93.6%	432	7.4	$ 11.71	$ 1.05	$ 10.66	8.9%	8,451	92,459	**115**		85%	88%	30 min.	30	30	1.50	0%	No
120	**Frq**	3,6,7	386,645	31.0%	1,241	11.3	$ 11.47	$ 1.13	$ 10.34	9.8%	17,134	180,926	**120**		85%	90%	15 min.	15/30	15/30	1.50	0%	No
140~	Exp	1,2	30,508	100.0%	147	4.0	$ 32.45	$ 1.20	$ 31.25	3.7%	1,387	16,408	**140**		90%		30 min.	15	30			
150~~	Exp	1,2,3	172,077	(23.3%)	1,560	17.6	$ 7.38	$ 1.05	$ 6.33	14.2%	9,762	155,282	**150**		90%	0%	30 min.	7.5/15/30	30	1.50	0%	No
201/202^	**Rpd**	1	1,556,486	311.0%	5,295	35.7	$ 3.64	$ 1.31	$ 2.33	35.9%	22,028	192,214	**201/202^**		85%	93%	15.min.	5	10	1.50	0%	No
204^	**Rpd**	1	43,689	360.8%	172	10.5	$ 12.37	$ 1.26	$ 11.10	10.2%	2,079	15,504	**204^**		85%	91%	15.min.	30	30	1.50	0%	No
215^	**Rpd**	3,9	1,018,402	35.9%	3,029	18.0	$ 7.21	$ 1.11	$ 6.10	15.4%	29,880	297,485	**215^**		85%	84%	15.min.	10	15	1.50	0%	No
225^	**Rpd**	3,8,**CV**	397,358	54.3%	1,256	9.7	$ 15.84	$ 1.19	$ 14.65	7.5%	21,724	440,476	**225^**	✓	85%	86%	15.min.	15	30	1.50	0%	No

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FY 2022 ANNUAL ROUTE STATISTICS

BASE STATISTICS													TITLE VI MONITORING (FY 2021 Annual Statistics) ~									
Route	Cat	Jurisdiction (#=SD Dist.)	Annual Passengers	FY21-22 % Change	Avg. Wkdy. Psgrs.	Psgrs./ Rev. Hr.	Cost/ Psgr.	Average Fare	Subsidy/ Psgr.	Farebox Recovery	Budgeted Rev.Svc. Hours	Budgeted Rev.Svc. Miles	Route	Minority Route	On-Time Perf. Goal	On-Time Perf. Actual	Weekday Headway Goal	Weekday Headway Peak	Weekday Headway Base	Vehicle Load Factor ~~ Goal	Vehicle Load Factor ~~ % trips over VLF	Vehicle Load Factor ~~ > 20%?
235^	**Rpd**	3,5,6,9,**Esc**	884,235	30.5%	2,823	13.4	$ 9.73	$ 1.11	$ 8.62	11.5%	33,249	782,975	**235^**		85%	90%	15.min.	15	15	1.50	0%	No
237^	**Rpd**	1,6	120,854	141.0%	476	10.2	$ 12.72	$ 1.22	$ 11.50	9.6%	5,922	72,739	**237^**	✓	85%	95%	15.min.	15	-	1.50	0%	No
280	RpEx	3,5,**Esc**	37,603	97.6%	148	10.2	$ 25.47	$ 2.80	$ 22.66	11.0%	1,786	56,380	**280**		90%	94%	30 min.	15	-	1.00	0%	No
290	RpEx	3,5	41,495	176.8%	163	12.0	$ 17.22	$ 2.59	$ 14.63	15.0%	1,672	42,053	**290**		90%	95%	30 min.	10	-	1.00	0%	No
701	**Frq**	**CV**	285,188	42.0%	1,028	12.3	$ 6.52	$ 0.96	$ 5.56	14.8%	12,945	129,624	**701**	✓	85%	82%	15 min.	15	15	1.50	0%	No
704	Std	**CV**	263,085	38.5%	919	12.5	$ 6.77	$ 1.01	$ 5.76	14.9%	10,612	113,674	**704**	✓	85%	83%	30 min.	30	30	1.50	0%	No
705	Std	**CV,NC,Cty**	126,907	61.0%	468	10.9	$ 6.27	$ 1.01	$ 5.26	16.1%	5,861	50,886	**705**	✓	85%	89%	30 min.	30/60	30/60	1.50	0%	No
707	Std	**CV**	70,802	80.8%	279	7.1	$ 9.91	$ 1.01	$ 8.91	10.2%	4,991	44,734	**707**	✓	85%	89%	30 min.	30	30	1.50	0%	No
709	**Frq**	**CV**	420,359	55.9%	1,458	14.4	$ 6.03	$ 1.00	$ 5.03	16.6%	15,584	171,260	**709**	✓	85%	86%	15 min.	7.5/15	15	1.50	0%	No
712	**Frq**	**CV**	361,936	56.5%	1,246	15.2	$ 5.30	$ 0.98	$ 4.32	18.6%	12,093	123,362	**712**	✓	85%	86%	15 min.	15	15	1.50	0%	No
815	**Frq**	**EC**	246,757	16.1%	808	15.6	$ 3.73	$ 1.06	$ 2.66	28.6%	8,582	63,651	**815**		85%	87%	15 min.	15	15	1.50	0%	No
816	Std	**EC,Cty**	68,343	14.6%	269	8.0	$ 10.87	$ 1.06	$ 9.81	9.7%	4,328	47,562	**816**		85%	88%	30 min.	30	30	1.50	0%	No
832	Std	**ST**	22,540	105.9%	84	8.4	$ 9.30	$ 1.09	$ 8.21	11.7%	1,343	14,082	**832**		85%	84%	30 min.	60	60	1.50	0%	No
833	Std	**EC,ST**	54,873	19.6%	173	7.4	$ 9.57	$ 1.01	$ 8.56	10.6%	3,707	36,737	**833**		85%	83%	30 min.	35-45	35-45	1.50	0%	No
834	Std	**ST**	19,719	69.0%	78	8.2	$ 9.89	$ 1.08	$ 8.82	10.9%	1,209	12,400	**834**		85%	84%	30 min.	60	60	1.50	0%	No
838	Std	**Cty**	114,805	4.0%	319	8.7	$ 8.18	$ 1.04	$ 7.14	12.7%	5,209	78,287	**838**		85%	83%	30 min.	60	60	1.50	0%	No
848	Std	**EC,Cty**	173,262	25.2%	558	10.9	$ 6.96	$ 1.05	$ 5.91	15.1%	8,058	77,200	**848**		85%	87%	30 min.	30	30	1.50	0%	No
851	Circ	**LM,Cty**	36,536	49.1%	144	10.5	$ 6.80	$ 0.98	$ 5.82	14.4%	1,756	20,418	**851**	✓	90%	89%	60 min.	60	60	1.00	0%	No
852	Std	4,9,**LM**	170,784	29.1%	536	9.2	$ 7.74	$ 1.06	$ 6.69	13.6%	9,362	84,757	**852**		85%	87%	30 min.	30	30	1.50	0%	No
854	Std	7,**LM**	27,127	49.0%	107	7.7	$ 10.93	$ 1.08	$ 9.85	9.9%	1,769	18,828	**854**		85%	93%	30 min.	30/60	30/60	1.50	0%	No
855	Std	**LM,Cty**	118,849	35.9%	403	13.1	$ 5.67	$ 1.03	$ 4.64	18.1%	4,585	43,237	**855**		85%	92%	30 min.	30	30	1.50	0%	No
856	Std	4,9,**LG,Cty**	294,733	27.4%	1,038	12.5	$ 6.77	$ 1.05	$ 5.72	15.5%	11,962	128,136	**856**	✓	85%	80%	30 min.	30	30	1.50	0%	No
864	Std	**EC,Cty**	240,835	20.8%	741	15.6	$ 4.33	$ 1.07	$ 3.26	24.7%	7,790	66,672	**864**		85%	86%	30 min.	30	30	1.50	0%	No
872	Std	**EC**	23,849	34.3%	94	7.2	$ 7.52	$ 1.06	$ 6.46	14.1%	1,668	11,422	**872**		85%	93%	30 min.	30	30	1.50	0%	No
874/875	Std	**EC**	203,454	20.5%	675	11.8	$ 6.41	$ 1.07	$ 5.34	16.7%	8,660	83,346	**874/875**		85%	87%	30 min.	30	30	1.50	0%	No
888	Rural	**EC,Cty**	1,004	(10.7%)	10	1.7	$ 134.24	$ 5.03	$ 129.20	3.7%	281	8,917	**888**									
891	Rural	**EC,Cty**	337	(24.3%)	6	1.2	$ 202.21	$ 5.23	$ 196.98	2.6%	165	4,584	**891**									
892	Rural	**EC,Cty**	299	(2.3%)	6	1.0	$ 232.15	$ 5.56	$ 226.59	2.4%	171	4,561	**892**									
894	Rural	**EC,Cty**	35,882	10.6%	141	8.6	$ 22.63	$ 4.10	$ 18.54	18.1%	2,765	51,077	**894**									
901	**Frq**	3,8,**IB,Cor**	482,592	40.0%	1,495	11.7	$ 9.14	$ 1.01	$ 8.13	11.1%	21,090	283,466	**901**		85%	80%	15 min.	15	30	1.50	0%	No
904*	Circ	**Cor**	70,940	238.5%	192	9.4	$ 4.21	$ 0.12	$ 4.10	2.8%	4,415	22,166	**904***		90%	82%	60 min.	60	60	1.50	0%	No
905	Std	8	376,134	53.7%	1,371	24.5	$ 4.51	$ 0.99	$ 3.52	22.0%	7,802	110,156	**905**	✓	85%	86%	30 min.	15/30	30	1.50	0%	No
906/907	**Frq**	8	849,392	11.4%	2,707	19.9	$ 2.82	$ 1.00	$ 1.82	35.4%	22,012	155,176	**906/907**	✓	85%	83%	15 min.	15	15	1.50	0%	No
909	Circ	8	48,968	77.0%	193	13.4	$ 7.40	$ 1.05	$ 6.35	14.2%	1,846	22,692	**909**	✓	90%	85%	60 min.	60+	60+	1.5	0%	No
916/917	Std	4,**LG**	88,775	20.3%	308	7.8	$ 11.46	$ 0.98	$ 10.48	8.5%	5,867	67,488	**916/917**	✓	85%	83%	30 min.	30/60	30/60	1.50	0%	No
921	Std	1,6	157,319	66.3%	480	9.9	$ 7.39	$ 1.09	$ 6.30	14.8%	7,976	77,824	**921**	✓	85%	86%	30 min.	30	30	1.50	0%	No
923	Std	2,3	108,488	43.5%	427	8.1	$ 8.93	$ 1.00	$ 7.94	11.2%	6,760	61,722	**923**		85%	86%	30 min.	30	30	1.50	0%	No
928	Std	6,7	120,785	(1.3%)	423	8.2	$ 10.90	$ 1.09	$ 9.81	10.0%	7,404	84,242	**928**		85%	86%	30 min.	30	30	1.50	0%	No
929	**Frq**	3,8,**CV,NC**	1,123,047	16.2%	3,610	18.2	$ 4.32	$ 0.99	$ 3.33	23.0%	32,270	320,240	**929**	✓	85%	77%	15 min.	12	15	1.00	0%	No
932	**Frq**	8,**CV,NC**	638,894	28.4%	2,159	16.0	$ 4.84	$ 1.00	$ 3.84	20.6%	20,346	198,944	**932**	✓	85%	83%	15 min.	15	15	1.50	0%	No
933/934	**Frq**	8,**IB**	983,688	42.2%	3,265	17.8	$ 5.19	$ 0.97	$ 4.22	18.7%	28,932	342,088	**933/934**	✓	85%	77%	15 min.	12	15	1.50	0%	No
936	Std	4,9,**LG,Cty**	252,404	15.7%	719	12.1	$ 5.65	$ 1.06	$ 4.59	18.7%	10,563	92,322	**936**	✓	85%	84%	30 min.	30	30	1.50	0%	No
944	Std	5,**PW**	37,634	39.5%	137	4.8	$ 14.72	$ 1.04	$ 13.68	7.0%	3,915	42,142	**944**		85%	94%	30 min.	30	30	1.00	0%	No
945	Std	5,**PW**	79,513	46.8%	286	6.6	$ 10.83	$ 1.01	$ 9.82	9.3%	6,107	85,015	**945**		85%	86%	30 min.	30	30	1.50	0%	No
945A	Std	**PW**	7,746	1051.0%	30	7.2	$ -	$ -	$ -	9.3%	535	7,060	**945A**		85%	84%	30 min.	30	30	1.50	0%	No
950	Exp	8	211,559	41.7%	717	27.4	$ 4.97	$ 1.01	$ 3.96	20.4%	3,915	67,542	**950**	✓	90%	97%	30 min.	12/20	20	1.50	0%	No
955	**Frq**	4,8,9,**NC**	794,480	29.0%	2,604	17.2	$ 4.24	$ 0.97	$ 3.26	23.0%	24,723	228,378	**955**	✓	85%	85%	15 min.	12	12	1.50	0%	No

Date: 8/29/22 rev

San Diego Metropolitan Transit System
POLICY 42 PERFORMANCE MONITORING REPORT
FY 2022: JULY 2021 - JUNE 2022

FY 2022 ANNUAL ROUTE STATISTICS

BASE STATISTICS

Route	Cat	Jurisdiction (#=SD Dist.)	Annual Passengers	FY21-22 % Change	Avg. Wkdy. Psgrs.	Psgrs./ Rev. Hr.	Cost/ Psgr.	Average Fare	Subsidy/ Psgr.	Farebox Recovery	Budgeted Rev.Svc. Hours	Budgeted Rev.Svc. Miles
961	**Frq**	4,**NC**	361,775	54.3%	1,165	15.4	$ 5.23	$ 0.99	$ 4.25	18.9%	11,838	121,308
962	**Frq**	4,**NC,Cty**	368,274	22.2%	1,175	14.3	$ 5.57	$ 1.00	$ 4.57	18.0%	13,037	131,676
963	Std	4,**NC**	93,823	28.3%	298	10.1	$ 6.47	$ 1.01	$ 5.46	15.6%	4,761	39,068
964	Circ	5,6	82,319	51.4%	324	8.0	$ 8.86	$ 1.02	$ 7.84	11.5%	5,152	49,196
965	Circ	9	35,333	26.2%	121	7.4	$ 9.55	$ 1.00	$ 8.55	10.5%	2,391	24,331
967	Std	4,**NC**	25,790	46.4%	102	7.2	$ 9.93	$ 1.02	$ 8.91	10.3%	1,803	16,053
968	Std	**NC**	34,918	76.2%	137	8.3	$ 9.49	$ 0.99	$ 8.50	10.5%	2,083	21,047
972**	Circ	1,6	4,747	84.5%	19	3.6	$ 20.18	$ 0.78	$ 19.40	3.8%	655	7,605
973**	Circ	1,6	6,326	166.5%	25	4.7	$ 15.35	$ 0.78	$ 14.58	5.1%	664	9,333
974 ***	Circ	1	5,976	403.0%	24	4.9	$ 14.86	$ 0.78	$ 14.09	5.2%	610	6,153
978**	Circ	1	5,766	237.8%	23	4.4	$ 16.39	$ 0.78	$ 15.61	4.7%	648	7,401
979**	Circ	1	4,009	89.2%	16	3.2	$ 22.83	$ 0.78	$ 22.06	3.4%	626	5,720
985~	Circ	1	11,728	100.0%	76	6.6	$ 10.78	$ 1.14	$ 9.64	10.6%	312	3,554
992	Frq	2,3	253,057	52.5%	709	11.1	$ 5.65	$ 0.99	$ 4.65	17.6%	11,644	92,103
Access	D.R.	ALL	169,124	83.1%	572	1.5	$ 72.08	$ 4.35	$ 67.73	6.0%		
Taxi	D.R.	ALL	24,042	62.4%	83	3.0	$ 35.88	$ 4.63	$ 31.25	12.9%		
TOTAL			**57,617,251**	**46.9%**	**181,515**	**25.9**	**$ 5.36**	**$ 0.97**	**$ 4.38**	**18.2%**	**1,057,621**	**12,454,603**

TITLE VI MONITORING (FY 2021 Annual Statistics) ~

Route	Minority Route	On-Time Perf. Goal	On-Time Perf. Actual	Weekday Headway Goal	Weekday Headway Peak	Weekday Headway Base	Vehicle Load Factor ~~ Goal	Vehicle Load Factor ~~ % trips over VLF	Vehicle Load Factor ~~ > 20%?
961	✓	*85%*	90%	*15 min.*	15/30	15/30	*1.50*	0%	No
962	✓	*85%*	85%	*15 min.*	15	15	*1.50*	0%	No
963	✓	*85%*	89%	*30 min.*	30	30	*1.50*	0%	No
964	✓	*90%*	88%	*60 min.*	30	30	*1.00*	0%	No
965	✓	*90%*	86%	*60 min.*	35-45	35-45	*1.00*	0%	No
967	✓	*85%*	89%	*30 min.*	60	60	*1.50*	0%	No
968	✓	*85%*	84%	*30 min.*	60+	60+	*1.50*	0%	No
972**							*1.00*	0%	No
973**	✓						*1.00*	0%	No
974 ***							*1.00*	0%	No
978**							*1.00*	0%	No
979**							*1.00*	0%	No
985		*90%*		*15 min.*	15	15			
992		*85%*	75%	*15 min.*	15	15	*1.50*	0%	No

*FTA defines **Minority** persons to include the following: (1) American Indian and Alaska Native, (2) Asian, (3) Black or African American, (4) Hispanic or Latino, (5) Native Hawaiian or Other Pacific Islander.*

*FTA defines **Minority Route** as one with at least 1/3 of its total mileage in a census block(s) with a percentage of minority population that exceeds the percentage of minority population in the entire MTS service area.*

Source: https://www.transit.dot.gov/sites/fta.dot.gov/files/dovs/FTA_Title_VI_FINAL.pdf

Route Category	Q1-Q2 Passengers	FY19-20 % Change	Avg. Wkday. Psgrs.	Psgrs./ Rev. Hr.	Cost/ Psgr.	Average Fare	Subsidy/ Psgr.	Farebox Recovery
Urban Frequent	17,739,607	35.4%	56,836	15.9	$ 6.35	$ 1.04	$ 5.30	16.5%
Urban Standard	4,528,650	36.2%	15,293	11.2	$ 7.36	$ 1.04	$ 6.32	14.1%
Rapid ^	4,021,024	89.4%	13,051	18.0	$ 7.46	$ 1.20	$ 6.26	16.1%
Express	795,781	15.5%	2,727	11.7	$ 11.14	$ 1.08	$ 10.06	9.7%
Circulator	482,904	69.2%	1,750	7.2	$ 9.32	$ 0.88	$ 8.45	9.4%
Premium/Rapid Express	79,098	132.5%	311	11.1	$ 21.14	$ 2.69	$ 18.45	12.7%
Rural ^^	37,522	9.3%	148	7.0	$ 28.90	$ 4.14	$ 24.76	14.3%
Fixed Bus Subtotal	**27,684,586**	**41.3%**	**90,116**	**14.6**	**$ 6.94**	**$ 1.07**	**$ 5.86**	**15.5%**
Light Rail (B,O,G)	29,737,401	52.4%	90,745	139.6	$ 3.48	$ 0.86	$ 2.62	24.7%
Light Rail (Silver)	2,098	2458.5%	-	16.5	$ 29.34	$ 0.51	$ 28.84	1.7%
Light Rail Subtotal	**29,739,499**	**52.4%**	**90,745**	**139.5**	**$ 3.48**	**$ 0.86**	**$ 2.62**	**24.7%**
ALL Fixed-Route	**57,424,085**	**46.8%**	**180,861**	**27.3**	**$ 5.15**	**$ 0.96**	**$ 4.18**	**18.7%**
MTS Access	169,124	83.1%	572	1.5	$ 72.08	$ 4.35	$ 67.73	6.0%
Access Taxi	24,042	62.4%	83	3.0	$ 35.88	$ 4.63	$ 31.25	12.9%
Demand-Resp Subtotal	**193,166**	**80.2%**	**654**	**1.6**	**$ 67.57**	**$ 4.39**	**$ 63.19**	**6.5%**
System Total	**57,617,251**	**46.9%**	**181,515**	**25.9**	**$ 5.36**	**$ 0.97**	**$ 4.38**	**18.2%**

SERVICE AVAILABILITY

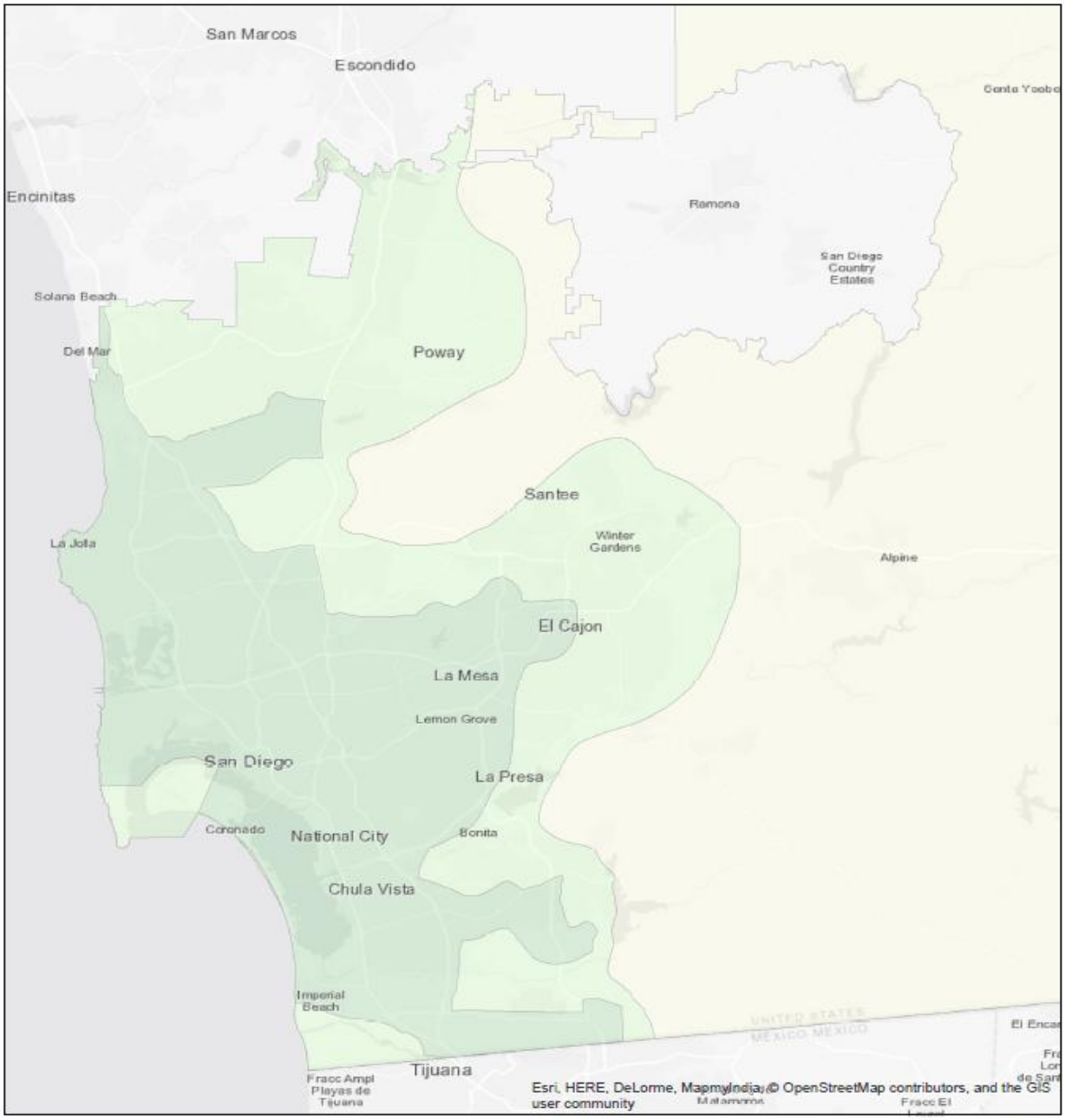
Goal	Actual	
80% of residents or jobs within ½ mile of a bus stop or rail station in urban area	*% of **residents** within 1/2 mile of a bus stop or rail station in urban areas:* **99.0%**	*% of **jobs** within 1/2 mile of a bus stop or rail station in urban areas:* **99.2%**
100% of suburban residences within 5 miles of a bus stop or rail station.	% of suburban residents within 5 miles of a bus stop or rail station: **100.0%**	
One return trip at least 2 days/week to destinations from rural villages (defined as Lakeside and Alpine).	*Available Service:* **Route 848 serves Lakeside seven days a week and Route 838 serves Alpine seven days a week.**	

See attached map entitled 'Metropolitan Transit System Area of Jurisdiction.'

* City of Coronado subsidized fares for summer service on Route 904.
** SVCC Fares and one-half of the subsidy are paid for by NCTD.
*** Route 974 SVCC connection to UCSD service starts January 2020
^ SANDAG reimburses MTS for net operating costs for Routes 201-237 (TransNet funds).
^^ Routes 888, 891, 892, and 894 receive federal rural operating subsidy.
~ Routes 43, 140, 985 are new routes starting Nov 21, 2021 with opening of Mid-Coast.
~~ Routes 50 and 150 discontinued starting Nov 21, 2021 with opening of Mid-Coast.
& Rural and Demand Response services have no specific Policy 42 goals for on-time performance, headway, or vehicle load.

NC=National City, CV=Chula Vista
IB=Imperial Beach, LG=Lemon Grove, LM=La Mesa
EC=El Cajon, ST=Santee, PW=Poway
Cor=Coronado, Cty=County Uninc., Esc=Escondido
SD Dist.=City of San Diego Council District

~ Title VI Monitoring statistics are updated on an annual basis
~~ No trips averaged above the vehicle load factor target (1.5 for most bus routes, 3.0 for Trolley).



MTS Urban Service Area
MTS Suburban Service Area
MTS Rural Service Area

0 2 4 8 Miles

MTS Area of Jurisdiction

October 2021

FY 2022 Performance Monitoring Report

MTS Board of Directors

September 15, 2022

Policy 42 Evaluation Criteria

CUSTOMER FOCUSED/COMPETITIVE		INTEGRATED	SUSTAINABLE	
PRODUCTIVITY	QUALITY	CONNECTIVITY	RESOURCES	EFFICIENCY
• **Total Passengers** • Average Weekday Passengers • **Passengers/ Revenue Hour** • Passengers/ In-Service Hour	• Passenger Load Factor • **On-Time Performance** • **Accidents/ 100,000 Miles** • **Comments/ 100,000 Passengers** • **Mean Distance Between Failures**	• Route Headway • Span-of- Service Consistency • Service Availability	• In-Service Miles • In-Service Hours • Peak Vehicle Requirement	• In-Service Speed • In-Service/Total Miles • In-Service/Total Hours • **Farebox Recovery Ratio** • Subsidy/Passenger

Total Passengers

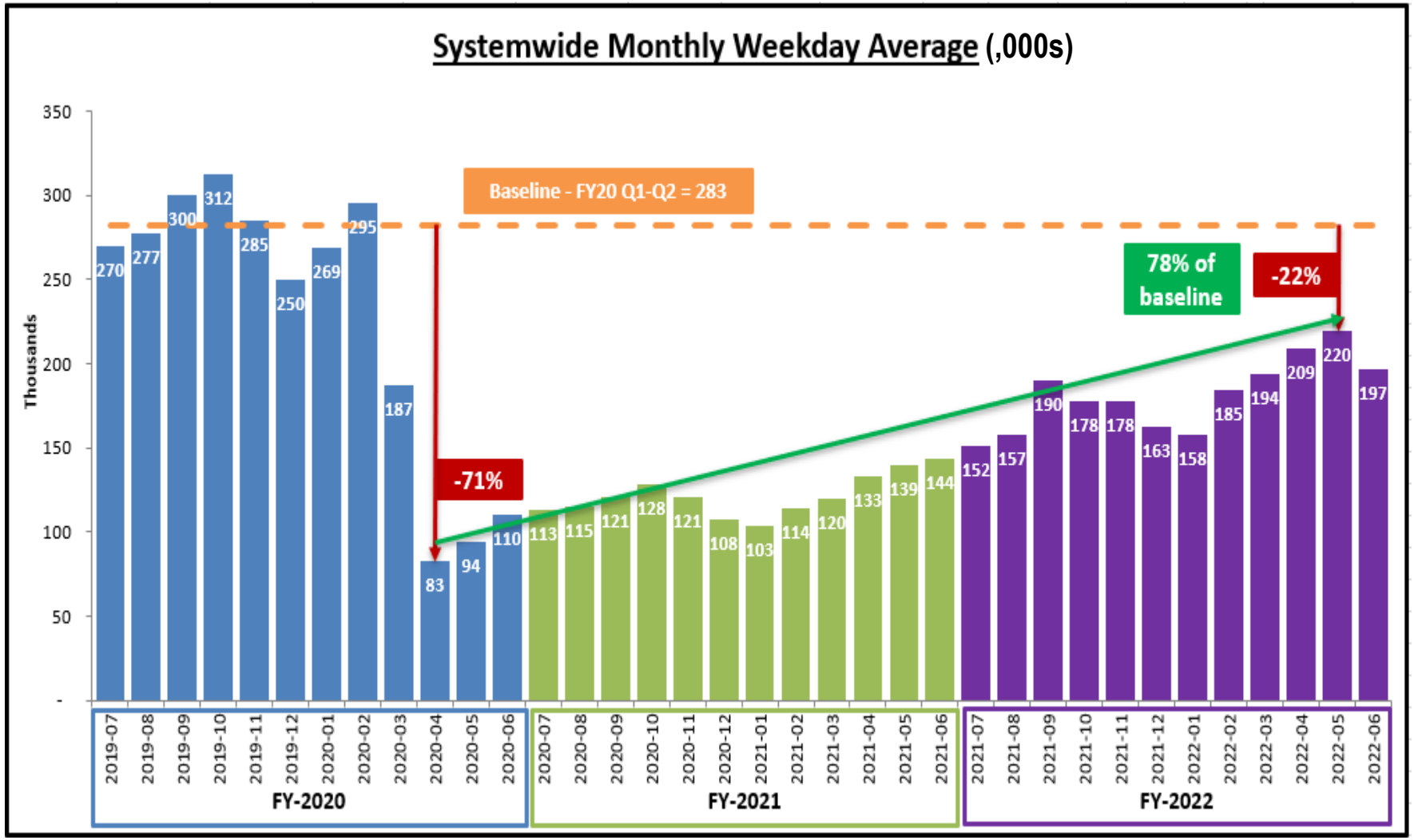
- **Policy 42 GOAL** is a year-over-year improvement by Route, Category, and System
- **FY 2022 ridership increased nearly 50% over FY 2021.**
- Forecast of 57 million riders in FY 2022 was on target. Average weekday ridership of 182k was 49% higher compared to FY 2021.

Route Categories	FY 2020	FY 2021	FY 2022	% Change FY21-FY22
Urban Frequent	24,452,815	13,100,977	17,739,607	35.4%
Urban Standard	6,129,760	3,324,699	4,528,650	36.2%
Rapid	5,772,834	2,122,799	4,021,024	89.4%
Express	1,590,269	689,067	795,781	15.5%
Circulator	669,608	285,430	482,904	69.2%
Rapid Express	207,372	34,017	79,098	132.5%
Rural	54,435	34,329	37,522	9.3%
Fixed-Route Bus	**38,877,093**	**19,591,318**	**27,684,586**	**41.3%**
Light Rail	**32,003,027**	**19,516,337**	**29,739,501**	**52.4%**
All Fixed-Route	**70,880,120**	**39,107,655**	**57,424,087**	**46.8%**
MTS Access	343,960	107,193	193,166	80.2%
System	**71,224,080**	**39,214,848**	**57,617,253**	**46.9%**

Average Weekday	*227,226*	*121,729*	*181,515*	*49.1%*

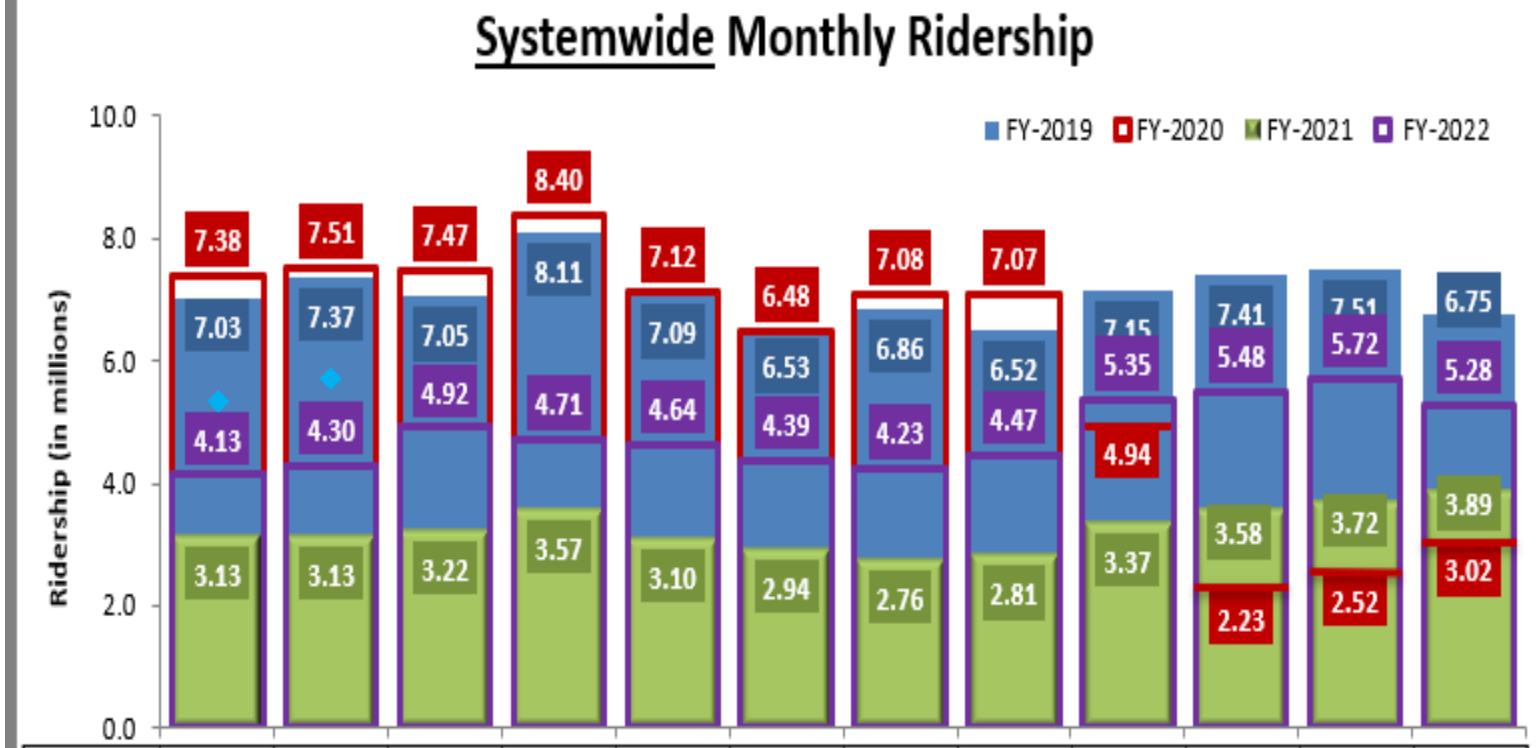
Weekday Average

- Continued improvement from low point in April 2020 to May 2022: from 29% of baseline to 78%.
- May 2022 = highest weekday average of 220k
  - Most schools & colleges back
  - Start of summer season
  - Start of YOP Pilot
  - Good Padres ridership
- Summer 2022 so far – many days of 220+



Monthly Passengers

- Ridership for last quarter of FY 2022 increased 47% compared to last quarter of FY 2021
- Overall FY 2022 ridership increased 47% compared to FY 2021
- July 2022 = 5.6 million
- August 2022 = 5.8 million



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY21-FY22	32%	37%	53%	32%	49%	49%	53%	59%	59%	53%	54%	36%
FY20-FY21	-58%	-58%	-57%	-58%	-56%	-55%	-61%	-60%	-32%	60%	47%	29%
FY19-FY20	5%	2%	6%	4%	0%	-1%	3%	9%	-31%	-70%	-66%	-55%

Passengers Per Revenue Hour

- **Policy 42 GOAL** is to improve the route category average
- Trend follows ridership because capacity (scheduled service) maintained at normal levels.

Route Categories	FY 2020	FY 2021	FY 2022	% Change FY21-FY22
Urban Frequent	22.6	11.6	15.9	37.1%
Urban Standard	15.4	8.2	11.2	35.8%
Rapid	26.3	9.4	18.0	92.0%
Express	20.9	8.6	11.7	35.8%
Circulator	11.2	5.0	7.2	43.5%
Premium/Rapid Express	21.1	5.8	11.1	90.7%
Rural	10.6	6.6	7.0	6.3%
Fixed-Route Bus	**21.0**	**10.3**	**14.6**	**42.5%**
Light Rail	**180.9**	**105.3**	**139.5**	**32.4%**
All Fixed-Route	**35.0**	**18.7**	**27.3**	**46.0%**
MTS Access	2.0	1.5	1.6	9.0%
System	**32.4**	**18.1**	**25.9**	**43.0%**

On-Time Performance

- **Policy 42 GOAL** is 85% for Urban Frequent & Rapid, 90% for all other categories
- Most categories exceeded their targets, but figures will normalize as pandemic recedes
  - Traffic and ridership both returning

Route Categories	Service Change Period					*GOAL*
	Sept. 2020	**Jan. 2021**	**June 2021**	**Sept. 2021**	**Jan. 2022**	
Urban Frequent	91.9%	90.6%	87.9%	85.4%	85.0%	*85.0%*
Urban Standard	92.3%	91.9%	89.1%	86.6%	86.6%	*90.0%*
Rapid	94.0%	93.2%	90.2%	88.5%	88.7%	*85.0%*
Express	94.5%	94.5%	92.9%	92.3%	95.0%	*90.0%*
Circulator	93.1%	91.9%	88.2%	86.7%	87.6%	*90.0%*
Premium/Rapid Express	91.2%	97.7%	96.2%	93.4%	94.2%	*90.0%*
Light Rail (Blue, Orange, Green)	97.6%	97.4%	97.1%	95.7%	94.3%	*90.0%*
Light Rail (Silver)	N/A	N/A	N/A	N/A	N/A	*90.0%*
System	**92.9%**	**91.9%**	**89.1%**	**86.8%**	**87.0%**	

Other Metrics

- **Policy 42 GOAL** is to improve operator averages

Mode	Miles Between Failures* (MDBF)			Complaints/ 100,000 Passengers			Preventable Accidents**/ 100,000 Miles	
	FY21	FY22	Change	FY21	FY22	Change	FY21	FY22
Bus (Directly-Oper.)	5,680	7,029	**23.8%**	8.0	4.9	**-38.8%**	0.92	0.93
Bus (Contract Svcs.)	7,685	10,022	**30.4%**	10.5	9.8	**-6.7%**	0.95	1.11
MTS Access	47,913	44,658	**-6.8%**	119.4	169.3	**41.8%**	0.33	0.24
Trolley	13,567	15,963	**17.7%**	1.3	1.1	**-13.6%**	0.09	0.08
General System				5.6	4.7	**-16.1%**		

** A mechanical failure of a vehicle that prevents the start or completion of a trip due to safety, vehicle movement is limited, or policy requires removal from service.*

***An accident in which the operator failed to do everything reasonable to avoid the accident.* **This includes some accidents in which MTS isn't at fault and/or the MTS employee wasn't cited.**

Farebox Recovery

- **Policy 42 GOAL** is to meet TDA requirement* of 31.9% systemwide for fixed route
- Improved for most modes as ridership returned
- Inflation and labor costs are notable pressures on the cost side going forward

Mode	FY 2020	FY 2021	FY 2022	% Change FY21-FY22
Fixed-Route Bus *(excl. Rapid Express)*	23.0%	14.5%	15.5%	6.9%
Rapid Express	31.9%	17.9%	12.7%	-29.1%
MTS Access	14.9%	4.4%	6.5%	47.7%
Light Rail	41.1%	20.7%	24.7%	19.4%
System	**28.3%**	**16.1%**	**18.2%**	**13.0%**

*TDA requirement suspended by State due to pandemic

Youth Opportunity Pass

- Pilot program launched May 1, 2022
- Youth 18 & Under ride free with their Pronto account
- SANDAG funding pilot with CMAQ money
- Ridership so far…

RIDERSHIP	Pre-YOP		With YOP			
	March 2022	April 2022	May 2022	June 2022	July 2022	August 2022 (preliminary)
Total Riders	5,349,742	5,482,732	5,721,053	5,283,655	5,601,684	5,795,921
Youth Riders	381,278	437,735	605,677	517,370	459,887	404,511
Youth % of Total	7.1%	8.0%	10.6%	9.8%	8.7%	7.0%

- Youth ridership dips in summer and returns in fall
- Trolley ridership estimated by survey (vs. Pronto) due to low Pronto tap rate

Agenda Item No. 61

Chief Executive Officer's Report

September 15, 2022

In accordance with Board Policy No. 52, "Procurement of Goods and Services", attached are listings of contracts, purchase orders, and work orders that have been approved within the CEO's authority (up to and including $100,000) for the period July 13, 2022 – September 6, 2022

CEO Travel Report (since last Board meeting)

July 22 CTA Executive Committee, Burbank, CA

Board Member Travel Report (since last Board meeting)

N/A

EXPENSE CONTRACTS				
Doc #	**Organization**	**Subject**	**Amount**	**Day**
G2217.5-19	MARK H. BARBER	AMD 5	$75,000.00	8/3/2022
PWB351.0-22	RMS	KMD ROLLUP DOOR GAS DETECTION	$34,211.00	8/3/2022
G2645.1-22	SEGAL ADV	AMD 1	$37,500.00	8/4/2022
G1949.0-17WOAAE76.01	JACOBS	ADD EXHIBITS A&C	$87,261.40	8/5/2022
G2205.4-19	LIEDLE & LARSON	AMD 4	$75,000.00	8/10/2022
PWL354.0-22	MOTT MACDONALD	ON CALL A&E	$0.00	8/11/2022
PWL325.6-21CCO8	VETERANS	CROSSTIE GRADE CROSS	$20,000.00	8/17/2022
G2583.1-22	ENDEMBLE SOLUTIONS GROUP	PAYMENT ASSIGNMENT	$0.00	8/23/2022
G2584.1-22	KNCH LLP	AMD 1	$50,000.00	8/23/2022
B0722.34-21	NEW FLYER	AMD 4 EXTEND TERM	$0.00	8/31/2022
G2378.1-20	CRAYON SOFTWARE EX	AMD 1 ADD FUNDS	$40,000.00	8/31/2022
L1607.0-22WOA5	WABTEC	WOA 5 CTC MAINTENANCE AGREEMENT	$0.00	9/1/2022
G2359.3-20	INTERCON SECURITY	AMD 3 UPDATE ATT 4	$0.00	9/6/2022
PWB317.3-20	WESTERN PUMP	KMD HOISTS CCO 3	$97,524.80	9/6/2022
PWL315.4-20	HERZOG	BEECH ST INDEMNITY AGREEMENT	$0.00	9/6/2022
PWL346.1-2	BBM RAILWAY EQ	LRV LIFTS AMD 1	$0.00	9/6/2022

REVENUE CONTRACTS AND MOUs				
Doc #	**Organization**	**Subject**	**Amount**	**Day**
G2648.0-23	CITY OF SAN DIEGO	SPECIAL USE PERMIT GASLAMP	$603.00	8/4/2022
L6816.0-22	WESTFIELD UTC	EASEMENT PARKING AGREEMENT	$0.00	8/4/2022
L6817.0-22	WESTFIELD UTC	FIRST AMD TO GRANT OF EASEMENT	$0.00	8/4/2022
G2638.0-22	EVANS HOTEL	PRONTO PARTNERS PLUS	$31,104.00	8/5/2022
S200-21-758.1	SW PIPELINE & TRENCHLESS CORP	ROE SEWERREHAB 54TH	$750.00	8/9/2022
G2614.0-22	NOVA SERVICES	ROE BEYER BLVD LOT GEOTECH	$0.00	8/10/2022
L1504.2-19	MEDIA	ROE 3 WYEERD MAIN ST CV	$0.00	8/10/2022
G2654.0-23	TAVA FUSE EVENTS	IN KIND PARTNERSHIP	$0.00	8/15/2022
S200-22-788	SD COUNTY	BICYCLE COALITION BIKE THE BAY 2022 ROE	$750.00	8/16/2022
L5848.0-22	SDCRAA	ROE SASSAFRAS WIDENING PROJECT	$3,198.18	8/22/2022
G0868.17-03	NCTD	FUNDS TRANSFER AGREEMENT	$0.00	8/23/2022
G2626.0-22	GROSSMONT UNION HSD SPEC ED	PRONTO PARTENRSHIP PROGRAM	$0.00	8/23/2022
L5281.0-22	HP COMM	PROSPECT & CUYAMACA FIBER ROE	$899.16	8/23/2022
L5285.0-23	ATLAS ENVIRO	TREE TRIMMING SANTEE TOWN CENTER ROE	$0.00	8/23/2022
L1624.0-23	ROCKLAND BUILDERS	ROE COURTHOUSE PED WALKWAY	$0.00	8/24/2022
M6779.0-23	SD ZOO WILDLIFE ALLIANCE	TROLLEY FILMING ROE	$0.00	8/24/2022
G2643.0-22	SCRIPPS RESEARCH INS.	PRONTO PARTNERS PROGRAM	$0.00	8/29/2022
S200-23-790	EAGLE PAVING CO INC.	ROE SLURRY SEAL BROADWAY LG	$0.00	8/30/2022
G2602.0-22	KLEINFELDER	ROE AMAYA DR BORING	$1,491.30	9/6/2022
G2670.0-23	SOUTHWESTERN COMM COLL DISTRICT	PRONTO AGREEMENT	$0.00	9/6/2022

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4400001979	8/3/22	Mcmaster-Carr Supply Co		G140-SHOP SUPPLIES	$1,288.36	-	-
4400001980	8/5/22	W.W. Grainger Inc		G200-OFFICE SUPPLIES	$177.55	-	-
4400001981	8/8/22	Mcmaster-Carr Supply Co		M110-SUB STATION	$41.58	-	-
4400001982	8/8/22	Office Depot		G200-OFFICE SUPPLIES	$60.81	-	-
4400001983	8/10/22	W.W. Grainger Inc		M110-SUB STATION	$686.97	-	-
4400001984	8/10/22	Office Depot		G200-OFFICE SUPPLIES	$53.21	-	-
4400001985	8/10/22	Office Depot		I110-INFORMATION TECH	$1,501.29	-	-
4400001986	8/10/22	Office Depot		G200-OFFICE SUPPLIES	$108.60	-	-
4400001987	8/10/22	Office Depot		G200-OFFICE SUPPLIES	$357.46	-	-
4400001988	8/11/22	W.W. Grainger Inc		M110-SUB STATION	$280.02	-	-
4400001989	8/12/22	Office Depot		G200-OFFICE SUPPLIES	$177.91	-	-
4400001990	8/12/22	Office Depot		G200-OFFICE SUPPLIES	$238.19	-	-
4400001991	8/17/22	Office Depot		G200-OFFICE SUPPLIES	$146.81	-	-
4400001992	8/17/22	Office Depot		G200-OFFICE SUPPLIES	$440.29	-	-
4400001993	8/18/22	Office Depot		I110-INFORMATION TECH	$1,569.29	-	-
4400001994	8/18/22	Office Depot		G200-OFFICE SUPPLIES	$228.32	-	-
4400001995	8/18/22	W.W. Grainger Inc		G130-SHOP TOOLS	$321.72	-	-
4400001996	8/18/22	W.W. Grainger Inc		G200-OFFICE SUPPLIES	$879.87	-	-
4400001997	8/19/22	Office Depot		G200-OFFICE SUPPLIES	$163.73	-	-
4400001998	8/19/22	Office Depot		G200-OFFICE SUPPLIES	$209.40	-	-
4400001999	8/19/22	Office Depot		G200-OFFICE SUPPLIES	$343.19	-	-
4400002000	8/19/22	Office Depot		G200-OFFICE SUPPLIES	$488.01	-	-
4400002001	8/19/22	Office Depot		G200-OFFICE SUPPLIES	$203.64	-	-
4400002002	8/19/22	Office Depot		G200-OFFICE SUPPLIES	$87.30	-	-
4400002003	8/19/22	Office Depot		I110-INFORMATION TECH	$331.86	-	-
4400002004	8/19/22	Office Depot		G230-PRINTED MATERIALS	$98.75	-	-
4400002005	8/19/22	Office Depot		G200-OFFICE SUPPLIES	$65.26	-	-
4400002006	8/23/22	Office Depot		G200-OFFICE SUPPLIES	$86.34	-	-
4400002007	8/23/22	Office Depot		G200-OFFICE SUPPLIES	$381.96	-	-
4400002008	8/23/22	Office Depot		G200-OFFICE SUPPLIES	$331.78	-	-
4400002009	8/23/22	Office Depot		G200-OFFICE SUPPLIES	$81.62	-	-
4400002010	8/24/22	W.W. Grainger Inc		G200-OFFICE SUPPLIES	$553.61	-	-
4400002011	8/24/22	Office Depot		G200-OFFICE SUPPLIES	$90.10	-	-
4400002012	8/24/22	Office Depot		G200-OFFICE SUPPLIES	$89.88	-	-
4400002013	8/24/22	Office Depot		G200-OFFICE SUPPLIES	$87.34	-	-
4400002014	8/24/22	Office Depot		G200-OFFICE SUPPLIES	$724.60	-	-
4400002015	8/25/22	W.W. Grainger Inc		M180-STATION ELECTRICAL	$2,973.90	-	-
4400002016	8/25/22	W.W. Grainger Inc		G130-SHOP TOOLS	$455.04	-	-
4400002017	8/26/22	Office Depot		G200-OFFICE SUPPLIES	$58.10	-	-
4400002018	8/26/22	Office Depot		G200-OFFICE SUPPLIES	$79.62	-	-
4400002019	8/26/22	Office Depot		G200-OFFICE SUPPLIES	$196.74	-	-
4400002020	8/26/22	Office Depot		G200-OFFICE SUPPLIES	$135.33	-	-
4400002021	8/26/22	Office Depot		G200-OFFICE SUPPLIES	$72.41	-	-
4400002022	8/29/22	W.W. Grainger Inc		G130-SHOP TOOLS	$1,490.62	-	-
4400002023	8/29/22	W.W. Grainger Inc		M180-STATION ELECTRICAL	$2,973.90	-	-
4400002024	8/29/22	Office Depot		G200-OFFICE SUPPLIES	$67.15	-	-
4400002025	8/29/22	Office Depot		G200-OFFICE SUPPLIES	$69.55	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4400002026	8/30/22	Office Depot		G200-OFFICE SUPPLIES	$66.72	-	-
4400002027	8/30/22	Office Depot		G200-OFFICE SUPPLIES	$588.51	-	-
4400002028	8/30/22	W.W. Grainger Inc		G190-SAFETY/MED SUPPLIES	$621.83	-	-
4400002029	8/30/22	Office Depot		M140-WAYSIDE SIGNALS	$188.50	-	-
4400002030	8/31/22	Office Depot		G200-OFFICE SUPPLIES	$256.92	-	-
4400002031	8/31/22	Office Depot		G200-OFFICE SUPPLIES	$59.54	-	-
4400002032	9/1/22	Office Depot		G200-OFFICE SUPPLIES	$42.22	-	-
4400002033	9/2/22	W.W. Grainger Inc		M110-SUB STATION	$452.94	-	-
4400002034	9/6/22	W.W. Grainger Inc		G190-SAFETY/MED SUPPLIES	$180.99	-	-
4400002035	9/6/22	Office Depot		G200-OFFICE SUPPLIES	$142.42	-	-
4500048638	8/3/22	VCA Animal Hospitals, Inc.		G120-SECURITY	$191.52	-	-
4500048640	8/3/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$3,301.92	-	-
4500048641	8/3/22	Cummins Pacific LLC		B250-BUS REPAIR PARTS	$1,559.14	-	-
4500048642	8/3/22	W.W. Grainger Inc		G140-SHOP SUPPLIES	$215.73	-	-
4500048643	8/3/22	Ace Uniforms & Accessories	Small Business	G120-SECURITY	$103.42	-	-
4500048644	8/3/22	Gillig LLC		G140-SHOP SUPPLIES	$119.89	-	-
4500048645	8/3/22	Ricon Corporation		B250-BUS REPAIR PARTS	$175.38	-	-
4500048646	8/3/22	Airgas Inc		G140-SHOP SUPPLIES	$46.15	-	-
4500048647	8/3/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$274.09	-	-
4500048648	8/3/22	Prochem Specialty Products Inc	Small Business	G180-JANITORIAL SUPPLIES	$859.31	-	-
4500048649	8/3/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$33.62	-	-
4500048650	8/3/22	American Battery Corporation	Small Business	P280-GENERAL SVC AGRMNTS	$1,954.05	-	-
4500048651	8/3/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$142.66	-	-
4500048652	8/3/22	JKL Cleaning Systems	Small Business	F110-SHOP/BLDG MACHINERY	$284.31	-	-
4500048653	8/3/22	Mcmaster-Carr Supply Co		F110-SHOP/BLDG MACHINERY	$294.37	-	-
4500048654	8/3/22	G&A Auto Airconditioning		P210-NON-REV VEH REPAIRS	$59.52	-	-
4500048655	8/3/22	Phil Macomber		G130-SHOP TOOLS	$263.99	-	-
4500048656	8/3/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$768.16	-	-
4500048657	8/3/22	National Electrical Testing		M110-SUB STATION	$2,300.00	-	-
4500048658	8/3/22	MS Electrical Distribution Inc		M180-STATION ELECTRICAL	$566.93	-	-
4500048659	8/3/22	AED Brands LLC		G200-OFFICE SUPPLIES	$212.31	-	-
4500048660	8/3/22	Professional Contractors Supplies		G140-SHOP SUPPLIES	$408.21	-	-
4500048661	8/3/22	Brady Industries of California, LLC		G180-JANITORIAL SUPPLIES	$157.69	-	-
4500048662	8/3/22	Digi-Key Corporation		R240-RAIL/LRV REPR PARTS	$36.42	-	-
4500048663	8/3/22	Robcar Corporation	Woman Owned Business	G160-PAINTS & CHEMICALS	$781.19	-	-
4500048664	8/3/22	Sid Tool Co		G130-SHOP TOOLS	$2,695.62	-	-
4500048665	8/3/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$229.51	-	-
4500048666	8/3/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$2.50	-	-
4500048667	8/3/22	Muncie Transit Supply		B140-BUS CHASSIS	$7.59	-	-
4500048668	8/3/22	Muncie Transit Supply		B200-BUS PWR TRAIN EQUIP	$74.24	-	-
4500048669	8/3/22	Transit Holdings Inc		B130-BUS BODY	$752.61	-	-
4500048670	8/4/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$276.92	-	-
4500048671	8/4/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$563.31	-	-
4500048672	8/4/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$346.96	-	-
4500048673	8/4/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$13,571.50	-	-
4500048674	8/4/22	Siemens Mobility, Inc.		R160-RAIL/LRV ELECTRICAL	$1,299.89	-	-
4500048675	8/4/22	TAKKT America Holding Inc		G210-OFFICE FURNITURE	$1,754.03	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500048676	8/4/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$170.47	-	-
4500048677	8/4/22	Gillig LLC		B250-BUS REPAIR PARTS	$1,804.37	-	-
4500048678	8/4/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$26.90	-	-
4500048679	8/4/22	TK Services Inc		B160-BUS ELECTRICAL	$120.70	-	-
4500048680	8/4/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$128.58	-	-
4500048681	8/4/22	W.W. Grainger Inc		B250-BUS REPAIR PARTS	$149.80	-	-
4500048682	8/4/22	Sid Tool Co		G140-SHOP SUPPLIES	$978.28	-	-
4500048684	8/4/22	Wesco Distribution Inc		M140-WAYSIDE SIGNALS	$1,508.50	-	-
4500048685	8/4/22	Ace Uniforms & Accessories	Small Business	G120-SECURITY	$150.84	-	-
4500048686	8/4/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$2,024.32	-	-
4500048687	8/4/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$23.53	-	-
4500048688	8/4/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$546.90	-	-
4500048689	8/4/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$31.68	-	-
4500048690	8/4/22	Vehicle Maintenance Program, Inc.	Woman Owned Business	B140-BUS CHASSIS	$873.63	-	-
4500048691	8/5/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$2,570.92	-	-
4500048692	8/5/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$10.56	-	-
4500048693	8/5/22	Transit Holdings Inc		B130-BUS BODY	$1.60	-	-
4500048694	8/5/22	ACCO Brands Corporation		P280-GENERAL SVC AGRMNTS	$1,254.24	-	-
4500048695	8/5/22	MCAS Miramar Vet		G120-SECURITY	$335.70	-	-
4500048696	8/5/22	Raphael's Party Rentals Inc		P310-ADVERTISING SERVICES	$441.62	-	-
4500048697	8/5/22	Init Innovations in Transportation		G290-FARE REVENUE EQUIP	$11,717.82	-	-
4500048698	8/5/22	Segal Advisors, Inc.		P410-CONSULTING	$37,500.00	-	-
4500048699	8/5/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$2,817.67	-	-
4500048700	8/5/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$184.67	-	-
4500048701	8/5/22	Siemens Mobility, Inc.		R160-RAIL/LRV ELECTRICAL	$26.94	-	-
4500048702	8/5/22	Brown & Bigelow Inc		P310-ADVERTISING SERVICES	$308.15	-	-
4500048703	8/5/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$51.16	-	-
4500048705	8/5/22	San Diego Community		P540-MAINTENANCE TRAINING	$53.88	-	-
4500048706	8/5/22	Shilpark Paint Corp.		G160-PAINTS & CHEMICALS	$307.16	-	-
4500048707	8/5/22	Madden Construction Inc		P280-GENERAL SVC AGRMNTS	$300.00	-	-
4500048708	8/5/22	R.S. Hughes Co Inc		G140-SHOP SUPPLIES	$314.24	-	-
4500048709	8/5/22	Transit Holdings Inc		B130-BUS BODY	$2,974.91	-	-
4500048710	8/5/22	Init Innovations in Transportation		G290-FARE REVENUE EQUIP	$5,710.76	-	-
4500048711	8/5/22	Init Innovations in Transportation		G290-FARE REVENUE EQUIP	$2,548.29	-	-
4500048712	8/5/22	Jeyco Products Inc		G130-SHOP TOOLS	$131.88	-	-
4500048713	8/5/22	Kaman Industrial Technologies		B120-BUS MECHANICAL PARTS	$1,599.12	-	-
4500048714	8/5/22	W.W. Grainger Inc		G190-SAFETY/MED SUPPLIES	$105.10	-	-
4500048715	8/5/22	Blue Bayou Brass, Inc.		G250-NOVELTIES & AWARDS	$1,288.00	-	-
4500048716	8/5/22	Gillig LLC		B160-BUS ELECTRICAL	$121.16	-	-
4500048717	8/5/22	Sid Tool Co		G140-SHOP SUPPLIES	$978.28	-	-
4500048718	8/5/22	Cummins Pacific LLC		B120-BUS MECHANICAL PARTS	$313.50	-	-
4500048719	8/5/22	Brady Industries of California, LLC		G180-JANITORIAL SUPPLIES	$289.69	-	-
4500048720	8/5/22	Barry Sandler Enterprises		G180-JANITORIAL SUPPLIES	$1,685.75	-	-
4500048721	8/5/22	Kurt Morgan		G200-OFFICE SUPPLIES	$317.25	-	-
4500048722	8/5/22	Battery Systems Inc		B160-BUS ELECTRICAL	$1,981.05	-	-
4500048723	8/5/22	San Diego Friction Products, Inc.		G140-SHOP SUPPLIES	$75.63	-	-
4500048724	8/8/22	Reid and Clark Screen Arts Co		G120-SECURITY	$316.31	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500048725	8/8/22	SC Commercial, LLC		A120-AUTO/TRUCK GASOLINE	$3,378.42	-	-
4500048726	8/8/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$718.53	-	-
4500048727	8/8/22	RegACar Inc		B250-BUS REPAIR PARTS	$146.00	-	-
4500048728	8/8/22	SC Commercial, LLC		A120-AUTO/TRUCK GASOLINE	$3,390.75	-	-
4500048729	8/8/22	Supreme Oil Company		A120-AUTO/TRUCK GASOLINE	$14,046.97	-	-
4500048730	8/8/22	Steven Timme		G230-PRINTED MATERIALS	$616.78	-	-
4500048731	8/8/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$267.07	-	-
4500048732	8/8/22	NS Corporation		F110-SHOP/BLDG MACHINERY	$1,041.60	-	-
4500048733	8/8/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$12.93	-	-
4500048735	8/8/22	Fastenal Company		R230-RAIL/LRV MECHANICAL	$2,908.82	-	-
4500048736	8/8/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$242.44	-	-
4500048737	8/8/22	Muncie Transit Supply		B200-BUS PWR TRAIN EQUIP	$7.24	-	-
4500048738	8/8/22	Transit Holdings Inc		B110-BUS HVAC SYSTEMS	$3,890.53	-	-
4500048739	8/8/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$40.93	-	-
4500048741	8/8/22	Transit Holdings Inc		B130-BUS BODY	$17.50	-	-
4500048742	8/8/22	Tennant Sales & Serv Co		F110-SHOP/BLDG MACHINERY	$435.05	-	-
4500048743	8/8/22	Shilpark Paint Corp.		G160-PAINTS & CHEMICALS	$456.50	-	-
4500048744	8/8/22	Shilpark Paint Corp.		G160-PAINTS & CHEMICALS	$1,982.88	-	-
4500048745	8/8/22	Shilpark Paint Corp.		F180-BUILDING MATERIALS	$2,080.29	-	-
4500048746	8/8/22	Tennant Sales & Serv Co		F110-SHOP/BLDG MACHINERY	$590.88	-	-
4500048747	8/8/22	Eran Hason		F180-BUILDING MATERIALS	$165.47	-	-
4500048748	8/8/22	W.W. Grainger Inc		G130-SHOP TOOLS	$271.69	-	-
4500048749	8/8/22	Jeyco Products Inc		G140-SHOP SUPPLIES	$119.71	-	-
4500048750	8/8/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$16.17	-	-
4500048751	8/8/22	Fastenal Company		G180-JANITORIAL SUPPLIES	$1,651.73	-	-
4500048752	8/8/22	Gillig LLC		B160-BUS ELECTRICAL	$94.07	-	-
4500048753	8/8/22	Office Depot		P400-FINANCIAL & AUDIT	$161.61	-	-
4500048754	8/8/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$479.49	-	-
4500048755	8/8/22	Cummins Pacific LLC		B250-BUS REPAIR PARTS	$204.73	-	-
4500048756	8/8/22	Transit Holdings Inc		B110-BUS HVAC SYSTEMS	$4,435.68	-	-
4500048757	8/8/22	Gillig LLC		G140-SHOP SUPPLIES	$56.75	-	-
4500048758	8/8/22	Kaman Industrial Technologies		B250-BUS REPAIR PARTS	$268.80	-	-
4500048759	8/8/22	W.W. Grainger Inc		G140-SHOP SUPPLIES	$318.08	-	-
4500048760	8/8/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$152.68	-	-
4500048761	8/8/22	Jeyco Products Inc		G140-SHOP SUPPLIES	$119.71	-	-
4500048762	8/8/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$4,786.23	-	-
4500048763	8/8/22	Canada Ticket Inc.		G280-FARE MATERIALS	$11,976.78	-	-
4500048764	8/9/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$723.47	-	-
4500048765	8/9/22	MTM Recognition Corp.		G250-NOVELTIES & AWARDS	$24,450.00	-	-
4500048766	8/9/22	FinishMaster Inc		F120-BUS/LRV PAINT BOOTHS	$3,945.35	-	-
4500048767	8/9/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$1,521.43	-	-
4500048768	8/9/22	Transit Holdings Inc		B140-BUS CHASSIS	$1,433.81	-	-
4500048769	8/9/22	Gillig LLC		B110-BUS HVAC SYSTEMS	$3,056.65	-	-
4500048770	8/9/22	TK Services Inc		B250-BUS REPAIR PARTS	$61.64	-	-
4500048771	8/9/22	Gillig LLC		B160-BUS ELECTRICAL	$1,096.89	-	-
4500048772	8/9/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$106.68	-	-
4500048773	8/9/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$34.52	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500048774	8/9/22	Muncie Transit Supply		B160-BUS ELECTRICAL	$215.55	-	-
4500048775	8/9/22	Kurt Morgan		G200-OFFICE SUPPLIES	$374.36	-	-
4500048776	8/9/22	San Diego Community		P540-MAINTENANCE TRAINING	$1,393.86	-	-
4500048777	8/9/22	Vern Rose Inc		G140-SHOP SUPPLIES	$209.20	-	-
4500048778	8/9/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$56.63	-	-
4500048779	8/9/22	Jeyco Products Inc		G130-SHOP TOOLS	$52.23	-	-
4500048780	8/9/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$46.05	-	-
4500048781	8/9/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$118.12	-	-
4500048782	8/9/22	PKS Equipment & Engineering Inc		F110-SHOP/BLDG MACHINERY	$298.26	-	-
4500048783	8/9/22	Sunbelt Rentals, Inc		P160-EQUIPMENT RENTALS	$3,134.08	-	-
4500048785	8/9/22	Westair Gases & Equipment Inc	Small Business	G190-SAFETY/MED SUPPLIES	$348.92	-	-
4500048786	8/9/22	Fastenal Company		G190-SAFETY/MED SUPPLIES	$2,222.15	-	-
4500048787	8/9/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$4,402.01	-	-
4500048788	8/9/22	Winzer Franchise Company		G140-SHOP SUPPLIES	$267.76	-	-
4500048789	8/9/22	Airgas Inc		G140-SHOP SUPPLIES	$135.25	-	-
4500048790	8/10/22	San Diego Convention & Tourist		P310-ADVERTISING SERVICES	$1,100.00	-	-
4500048791	8/10/22	Graybar Electric Co Inc		P130-EQUIP MAINT REPR SVC	$1,652.20	-	-
4500048792	8/10/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$2,848.86	-	-
4500048793	8/10/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$304.59	-	-
4500048794	8/10/22	Knorr Brake Holding Corporation		R120-RAIL/LRV CAR BODY	$5,610.85	-	-
4500048795	8/10/22	Flyers Energy LLC		G170-LUBRICANTS	$8,793.85	-	-
4500048796	8/10/22	American Seating Company	Small Business	R200-RAIL/LRV SEATING	$96.98	-	-
4500048797	8/10/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$2,061.72	-	-
4500048798	8/10/22	Muncie Transit Supply		B250-BUS REPAIR PARTS	$827.14	-	-
4500048799	8/10/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$3,339.00	-	-
4500048800	8/10/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$80.21	-	-
4500048801	8/10/22	Jacobs Project Management Co.		C140-CONSTRUCTION MGT SRV	$66,560.27	-	-
4500048802	8/10/22	Jacobs Project Management Co.		C140-CONSTRUCTION MGT SRV	$74,643.82	-	-
4500048803	8/10/22	Gillig LLC		B120-BUS MECHANICAL PARTS	$719.88	-	-
4500048804	8/10/22	Gillig LLC		B250-BUS REPAIR PARTS	$189.85	-	-
4500048805	8/10/22	Jeyco Products Inc		G130-SHOP TOOLS	$520.20	-	-
4500048806	8/10/22	W.W. Grainger Inc		G130-SHOP TOOLS	$855.15	-	-
4500048807	8/10/22	Passport to San Diego, Inc		P310-ADVERTISING SERVICES	$7,980.00	-	-
4500048808	8/10/22	TK Services Inc		INSURANCE-Insurance Stock	$16,569.43	-	-
4500048809	8/10/22	Professional Contractors Supplies		G140-SHOP SUPPLIES	$900.55	-	-
4500048810	8/10/22	Winzer Franchise Company		R160-RAIL/LRV ELECTRICAL	$252.33	-	-
4500048811	8/10/22	Neopart Transit LLC		G190-SAFETY/MED SUPPLIES	$90.51	-	-
4500048812	8/10/22	Motorola Solutions Inc		B150-BUS COMM EQUIP.	$25,011.67	-	-
4500048813	8/11/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$10.78	-	-
4500048814	8/11/22	Transit Holdings Inc		B140-BUS CHASSIS	$2,104.93	-	-
4500048815	8/11/22	Synco Chemical Corporation		G170-LUBRICANTS	$28,166.71	-	-
4500048816	8/11/22	Gillig LLC		B250-BUS REPAIR PARTS	$717.32	-	-
4500048817	8/11/22	Transit Holdings Inc		B130-BUS BODY	$158.62	-	-
4500048818	8/11/22	Kaman Industrial Technologies		G140-SHOP SUPPLIES	$234.22	-	-
4500048819	8/11/22	Waco Filters Corporation		F120-BUS/LRV PAINT BOOTHS	$293.08	-	-
4500048820	8/11/22	R.S. Hughes Co Inc		G160-PAINTS & CHEMICALS	$209.19	-	-
4500048821	8/11/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$796.26	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500048822	8/11/22	Jeyco Products Inc		G150-FASTENERS	$646.50	-	-
4500048823	8/11/22	David Glen Bond		G120-SECURITY	$360.00	-	-
4500048824	8/11/22	Kaman Industrial Technologies		G140-SHOP SUPPLIES	$2,686.26	-	-
4500048825	8/11/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$155.70	-	-
4500048826	8/11/22	San Diego Community		G120-SECURITY	$69.00	-	-
4500048827	8/11/22	Romaine Electric Corporation	Small Business	B160-BUS ELECTRICAL	$3,608.55	-	-
4500048828	8/11/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$3,068.85	-	-
4500048829	8/11/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$6.93	-	-
4500048830	8/11/22	Siemens Mobility, Inc.		R160-RAIL/LRV ELECTRICAL	$15,305.08	-	-
4500048831	8/11/22	Gillig LLC		B160-BUS ELECTRICAL	$33.94	-	-
4500048832	8/11/22	Prochem Specialty Products Inc	Small Business	G180-JANITORIAL SUPPLIES	$859.31	-	-
4500048833	8/11/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$5,275.92	-	-
4500048834	8/11/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$8.27	-	-
4500048835	8/11/22	Cummins Pacific LLC		B160-BUS ELECTRICAL	$156.29	-	-
4500048836	8/11/22	Gillig LLC		B120-BUS MECHANICAL PARTS	$3,366.75	-	-
4500048837	8/11/22	Madden Construction Inc		P280-GENERAL SVC AGRMNTS	$382.00	-	-
4500048839	8/12/22	Tony Jamison	DBE	G170-LUBRICANTS	$1,336.70	-	-
4500048840	8/12/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$1,029.31	-	-
4500048841	8/12/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$498.26	-	-
4500048842	8/12/22	University of San Diego		P310-ADVERTISING SERVICES	$100.00	-	-
4500048843	8/12/22	Samba Holdings Inc		P450-PERSONNEL SVCS	$2,025.43	-	-
4500048844	8/12/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$220.89	-	-
4500048845	8/12/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$987.53	-	-
4500048846	8/15/22	Transit Holdings Inc		B130-BUS BODY	$288.02	-	-
4500048847	8/15/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$28.66	-	-
4500048848	8/15/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$4,863.36	-	-
4500048849	8/15/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$832.34	-	-
4500048850	8/15/22	Parts Authority, LLC		B160-BUS ELECTRICAL	$3,777.50	-	-
4500048851	8/15/22	Business Office Outfitters		G210-OFFICE FURNITURE	$12,891.51	-	-
4500048852	8/15/22	Fastenal Company		G140-SHOP SUPPLIES	$662.40	-	-
4500048853	8/15/22	Staples Contract & Commercial Inc		B150-BUS COMM EQUIP.	$367.43	-	-
4500048854	8/15/22	Winzer Franchise Company		G150-FASTENERS	$595.83	-	-
4500048855	8/15/22	W.W. Grainger Inc		M110-SUB STATION	$1,720.02	-	-
4500048856	8/15/22	Comfort Mechanical Inc	Small Business	P280-GENERAL SVC AGRMNTS	$792.00	-	-
4500048857	8/15/22	Siemens Mobility, Inc.		R120-RAIL/LRV CAR BODY	$30,372.57	-	-
4500048858	8/15/22	Comfort Mechanical Inc	Small Business	P280-GENERAL SVC AGRMNTS	$354.82	-	-
4500048859	8/15/22	Mohawk Mfg & Supply Co		B200-BUS PWR TRAIN EQUIP	$7.52	-	-
4500048860	8/15/22	Willy's Electronic Supply Co	Small Business	G270-ELECTRICAL/LIGHTING	$164.21	-	-
4500048861	8/15/22	Home Depot USA Inc		G140-SHOP SUPPLIES	$805.01	-	-
4500048862	8/15/22	Reid and Clark Screen Arts Co		G230-PRINTED MATERIALS	$1,249.90	-	-
4500048863	8/15/22	Fastenal Company		G140-SHOP SUPPLIES	$662.40	-	-
4500048864	8/15/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$1,540.83	-	-
4500048865	8/15/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$1,666.42	-	-
4500048866	8/15/22	SC Commercial, LLC		A120-AUTO/TRUCK GASOLINE	$3,329.10	-	-
4500048867	8/15/22	Don Oleson Inc	Small Business	B120-BUS MECHANICAL PARTS	$2,901.32	-	-
4500048868	8/15/22	Supreme Oil Company		A120-AUTO/TRUCK GASOLINE	$14,875.14	-	-
4500048869	8/15/22	Gillig LLC		B250-BUS REPAIR PARTS	$2,444.69	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500048870	8/15/22	Gillig LLC		B250-BUS REPAIR PARTS	$2,331.70	-	-
4500048871	8/15/22	Home Depot USA Inc		F110-SHOP/BLDG MACHINERY	$79.31	-	-
4500048872	8/15/22	Mcmaster-Carr Supply Co		F110-SHOP/BLDG MACHINERY	$132.81	-	-
4500048873	8/15/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$80.48	-	-
4500048874	8/15/22	Fastenal Company		G180-JANITORIAL SUPPLIES	$1,443.62	-	-
4500048875	8/15/22	Gillig LLC		B250-BUS REPAIR PARTS	$1,831.08	-	-
4500048876	8/15/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$144.12	-	-
4500048877	8/15/22	Transit Holdings Inc		B140-BUS CHASSIS	$500.04	-	-
4500048878	8/15/22	W.W. Grainger Inc		G180-JANITORIAL SUPPLIES	$1,264.37	-	-
4500048879	8/15/22	Jeyco Products Inc		G150-FASTENERS	$93.42	-	-
4500048880	8/15/22	Kaman Industrial Technologies		G140-SHOP SUPPLIES	$826.01	-	-
4500048881	8/15/22	Kiel NA LLC		B250-BUS REPAIR PARTS	$418.82	-	-
4500048882	8/15/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$116.71	-	-
4500048883	8/15/22	Muncie Transit Supply		B130-BUS BODY	$148.35	-	-
4500048884	8/15/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$406.78	-	-
4500048885	8/15/22	R.S. Hughes Co Inc		G190-SAFETY/MED SUPPLIES	$303.04	-	-
4500048886	8/15/22	Trolley Support LLC		B130-BUS BODY	$4,051.40	-	-
4500048887	8/15/22	Siemens Mobility, Inc.		R220-RAIL/LRV TRUCKS	$2,677.59	-	-
4500048888	8/15/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$486.09	-	-
4500048889	8/15/22	San Diego Friction Products, Inc.		G140-SHOP SUPPLIES	$75.63	-	-
4500048890	8/15/22	Romaine Electric Corporation	Small Business	B160-BUS ELECTRICAL	$1,804.28	-	-
4500048891	8/15/22	Charter Industrial Supply Inc	Small Business	G150-FASTENERS	$60.34	-	-
4500048892	8/15/22	Home Depot USA Inc		F180-BUILDING MATERIALS	$479.78	-	-
4500048893	8/15/22	Gillig LLC		B250-BUS REPAIR PARTS	$3,224.75	-	-
4500048894	8/15/22	Transit Holdings Inc		B130-BUS BODY	$77.84	-	-
4500048895	8/15/22	JKL Cleaning Systems	Small Business	F180-BUILDING MATERIALS	$922.26	-	-
4500048896	8/15/22	D's Kustom Sales & Services, LLC		M150-PWR SWITCHES/LOCKS	$769.59	-	-
4500048897	8/15/22	Harbor Diesel & Equipment		B200-BUS PWR TRAIN EQUIP	$14,465.93	-	-
4500048898	8/15/22	Radwell International Inc		M110-SUB STATION	$6,652.49	-	-
4500048899	8/15/22	Gillig LLC		B250-BUS REPAIR PARTS	$4,288.09	-	-
4500048900	8/15/22	Radwell International Inc		M110-SUB STATION	$55,226.10	-	-
4500048901	8/15/22	Shilpark Paint Corp.		G160-PAINTS & CHEMICALS	$35.39	-	-
4500048902	8/15/22	Fastenal Company		M110-SUB STATION	$3,303.96	-	-
4500048903	8/15/22	HD Supply Construction Supply, LTD.		G130-SHOP TOOLS	$1,422.55	-	-
4500048904	8/15/22	Graybar Electric Co Inc		M190-SDSU ELECTRICAL	$2,873.70	-	-
4500048905	8/15/22	Allied Electronics Inc		G140-SHOP SUPPLIES	$3,284.30	-	-
4500048906	8/15/22	Airgas Inc		R160-RAIL/LRV ELECTRICAL	$2,156.89	-	-
4500048907	8/15/22	Professional Contractors Supplies		G140-SHOP SUPPLIES	$399.25	-	-
4500048908	8/15/22	Reid and Clark Screen Arts Co		G140-SHOP SUPPLIES	$1,070.50	-	-
4500048909	8/16/22	Cummins Pacific LLC		B140-BUS CHASSIS	$1,633.49	-	-
4500048910	8/16/22	Muncie Transit Supply		B200-BUS PWR TRAIN EQUIP	$16.70	-	-
4500048911	8/16/22	Transit Holdings Inc		B130-BUS BODY	$817.77	-	-
4500048912	8/16/22	Siemens Mobility, Inc.		R140-RAIL/LRV DOORS/RAMP	$8,318.30	-	-
4500048913	8/16/22	SANDAG		C120-SPECIALTY CONTRACTOR	$17,796.00	-	-
4500048914	8/16/22	DIRECTV		P280-GENERAL SVC AGRMNTS	$686.30	-	-
4500048915	8/16/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$118.53	-	-
4500048916	8/16/22	Transit Holdings Inc		B140-BUS CHASSIS	$2,169.94	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500048917	8/16/22	Reid and Clark Screen Arts Co		R120-RAIL/LRV CAR BODY	$417.00	-	-
4500048918	8/16/22	Genuine Parts Co		R180-RAIL/LRV LIGHTING	$5,271.99	-	-
4500048919	8/16/22	California Air Compressor Company		F110-SHOP/BLDG MACHINERY	$413.00	-	-
4500048920	8/16/22	Shilpark Paint Corp.		F180-BUILDING MATERIALS	$2,593.35	-	-
4500048921	8/16/22	W.W. Grainger Inc		A140-AUTO/TRUCK REPAIR	$41.02	-	-
4500048922	8/16/22	Industrial Maintenance Supply LLC	DBE	B200-BUS PWR TRAIN EQUIP	$313.97	-	-
4500048923	8/16/22	Western-Cullen-Hayes Inc		M130-CROSSING MECHANISM	$8,434.28	-	-
4500048924	8/16/22	Home Depot USA Inc		G140-SHOP SUPPLIES	$1,160.73	-	-
4500048925	8/16/22	Shilpark Paint Corp.		G160-PAINTS & CHEMICALS	$775.51	-	-
4500048926	8/16/22	Reid and Clark Screen Arts Co		P210-NON-REV VEH REPAIRS	$70.86	-	-
4500048927	8/17/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$271.53	-	-
4500048928	8/17/22	Transit Holdings Inc		B110-BUS HVAC SYSTEMS	$550.48	-	-
4500048929	8/17/22	Ipromoteu.com, Inc.		G250-NOVELTIES & AWARDS	$30,000.00	-	-
4500048930	8/17/22	Carmine Bausone DVM Inc.		G120-SECURITY	$99.00	-	-
4500048931	8/17/22	MCAS Miramar Vet		G120-SECURITY	$13.00	-	-
4500048932	8/17/22	Schunk Carbon Technology LLC		R190-RAIL/LRV PANTOGRAPH	$78,118.75	-	-
4500048933	8/17/22	Walk San Diego		P310-ADVERTISING SERVICES	$2,500.00	-	-
4500048934	8/17/22	Harbor Diesel & Equipment		G170-LUBRICANTS	$9,908.69	-	-
4500048935	8/17/22	Thompson Building Materials		R230-RAIL/LRV MECHANICAL	$3,384.30	-	-
4500048936	8/17/22	NetXperts Inc.	Small Business	I110-INFORMATION TECH	$74,954.77	-	-
4500048937	8/17/22	SPX Corporation		B190-BUS FARE EQUIP	$369.49	-	-
4500048938	8/17/22	Gillig LLC		B250-BUS REPAIR PARTS	$338.12	-	-
4500048939	8/17/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$347.92	-	-
4500048940	8/17/22	Sherwin Williams Company		F120-BUS/LRV PAINT BOOTHS	$560.14	-	-
4500048941	8/17/22	Gillig LLC		B250-BUS REPAIR PARTS	$978.00	-	-
4500048942	8/17/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$78.97	-	-
4500048943	8/17/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$1,811.23	-	-
4500048944	8/17/22	Muncie Transit Supply		B200-BUS PWR TRAIN EQUIP	$70.77	-	-
4500048945	8/17/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$1,359.04	-	-
4500048946	8/17/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$261.14	-	-
4500048947	8/17/22	R.S. Hughes Co Inc		G140-SHOP SUPPLIES	$418.02	-	-
4500048948	8/17/22	Gillig LLC		B170-BUS CNG	$1,021.26	-	-
4500048949	8/17/22	Mitchell Test & Safety Inc.		G130-SHOP TOOLS	$5,117.39	-	-
4500048950	8/17/22	Kaman Industrial Technologies		B120-BUS MECHANICAL PARTS	$1,535.77	-	-
4500048951	8/17/22	W.W. Grainger Inc		G140-SHOP SUPPLIES	$318.08	-	-
4500048952	8/17/22	Prochem Specialty Products Inc	Small Business	G180-JANITORIAL SUPPLIES	$1,718.62	-	-
4500048953	8/17/22	Waxie's Enterprises Inc.		G130-SHOP TOOLS	$39.43	-	-
4500048954	8/17/22	Vern Rose Inc		G160-PAINTS & CHEMICALS	$89.44	-	-
4500048955	8/17/22	Fastenal Company		G180-JANITORIAL SUPPLIES	$1,173.83	-	-
4500048956	8/17/22	Home Depot USA Inc		G140-SHOP SUPPLIES	$1,286.90	-	-
4500048957	8/17/22	Home Depot USA Inc		F180-BUILDING MATERIALS	$450.41	-	-
4500048958	8/17/22	858 Graphics Inc		G230-PRINTED MATERIALS	$592.63	-	-
4500048959	8/17/22	Harbor Diesel & Equipment		G170-LUBRICANTS	$2,477.18	-	-
4500048960	8/17/22	W.W. Grainger Inc		R170-RAIL/LRV HVAC	$1,693.13	-	-
4500048961	8/18/22	Siemens Mobility, Inc.		R160-RAIL/LRV ELECTRICAL	$974.92	-	-
4500048962	8/18/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$1,034.40	-	-
4500048963	8/18/22	The Habit Restaurants LLC		P440-CATERING SERVICES	$8,984.79	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500048964	8/18/22	Shilpark Paint Corp.		G160-PAINTS & CHEMICALS	$89.60	-	-
4500048965	8/18/22	Neopart Transit LLC		G190-SAFETY/MED SUPPLIES	$76.18	-	-
4500048966	8/18/22	Professional Contractors Supplies		G130-SHOP TOOLS	$86.03	-	-
4500048967	8/18/22	Western-Cullen-Hayes Inc		M130-CROSSING MECHANISM	$2,727.46	-	-
4500048968	8/18/22	Carlos Guzman Inc		P110-BLDG MAINTENANCE	$1,032.96	-	-
4500048969	8/18/22	OneSource Distributors, LLC		M130-CROSSING MECHANISM	$718.64	-	-
4500048970	8/18/22	Knorr Brake Holding Corporation		R120-RAIL/LRV CAR BODY	$6,038.31	-	-
4500048971	8/18/22	Synco Chemical Corporation		G170-LUBRICANTS	$441.48	-	-
4500048972	8/18/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$262.81	-	-
4500048973	8/18/22	Brady Industries of California, LLC		G140-SHOP SUPPLIES	$1,740.85	-	-
4500048974	8/18/22	Culligan of San Diego		M140-WAYSIDE SIGNALS	$21.55	-	-
4500048975	8/18/22	Reid and Clark Screen Arts Co		R120-RAIL/LRV CAR BODY	$283.39	-	-
4500048976	8/18/22	Westair Gases & Equipment Inc	Small Business	G190-SAFETY/MED SUPPLIES	$332.30	-	-
4500048977	8/18/22	Transit Holdings Inc		B140-BUS CHASSIS	$1,603.24	-	-
4500048978	8/18/22	Zen Industrial Services LLC	DBE	B160-BUS ELECTRICAL	$41.70	-	-
4500048979	8/18/22	Ricon Corporation		R120-RAIL/LRV CAR BODY	$30.04	-	-
4500048980	8/18/22	Zones IT Solutions Inc.	Minority Owned Business	I110-INFORMATION TECH	$20,392.75	-	-
4500048981	8/18/22	San Diego Hydraulics, Inc.		M150-PWR SWITCHES/LOCKS	$995.41	-	-
4500048983	8/18/22	Open Transit Software		I120-INFO TECH, SVCS	$2,000.00	-	-
4500048984	8/18/22	La Mesa Glass, Inc.	Small Business	C120-SPECIALTY CONTRACTOR	$991.00	-	-
4500048985	8/19/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$1,392.13	-	-
4500048986	8/19/22	Transit Holdings Inc		B130-BUS BODY	$1,917.14	-	-
4500048987	8/19/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$832.34	-	-
4500048988	8/19/22	Brown & Bigelow Inc		G250-NOVELTIES & AWARDS	$882.49	-	-
4500048989	8/19/22	Gillig LLC		B250-BUS REPAIR PARTS	$8,532.01	-	-
4500048990	8/19/22	Transit Holdings Inc		B130-BUS BODY	$184.15	-	-
4500048991	8/19/22	Cummins Pacific LLC		B160-BUS ELECTRICAL	$939.65	-	-
4500048992	8/19/22	W.W. Grainger Inc		B110-BUS HVAC SYSTEMS	$1,507.05	-	-
4500048993	8/19/22	Winzer Franchise Company		G150-FASTENERS	$99.73	-	-
4500048994	8/19/22	Quality Logo Products, Inc.		G250-NOVELTIES & AWARDS	$2,145.55	-	-
4500048995	8/19/22	Gillig LLC		B170-BUS CNG	$1,176.74	-	-
4500048996	8/19/22	Jeyco Products Inc		G140-SHOP SUPPLIES	$22.82	-	-
4500048997	8/19/22	R.S. Hughes Co Inc		G190-SAFETY/MED SUPPLIES	$183.33	-	-
4500048998	8/19/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$3,360.77	-	-
4500048999	8/19/22	NS Corporation		P130-EQUIP MAINT REPR SVC	$8,138.63	-	-
4500049000	8/19/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$8,754.52	-	-
4500049001	8/19/22	W.W. Grainger Inc		M110-SUB STATION	$536.66	-	-
4500049002	8/19/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$16.34	-	-
4500049003	8/19/22	Trolley Support LLC		B130-BUS BODY	$6,077.10	-	-
4500049004	8/19/22	Kaman Industrial Technologies		G140-SHOP SUPPLIES	$162.28	-	-
4500049005	8/19/22	Gillig LLC		B250-BUS REPAIR PARTS	$789.88	-	-
4500049006	8/19/22	Inland Kenworth (US) Inc		B250-BUS REPAIR PARTS	$170.41	-	-
4500049007	8/19/22	Inland Kenworth (US) Inc		B250-BUS REPAIR PARTS	$22.63	-	-
4500049008	8/19/22	Charter Industrial Supply Inc	Small Business	B120-BUS MECHANICAL PARTS	$107.98	-	-
4500049010	8/19/22	Applied Industrial Technologies-CA		G160-PAINTS & CHEMICALS	$812.52	-	-
4500049011	8/19/22	Fastenal Company		G140-SHOP SUPPLIES	$2,084.06	-	-
4500049012	8/22/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$161.63	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049013	8/22/22	Transit Holdings Inc		B140-BUS CHASSIS	$4,612.31	-	-
4500049014	8/22/22	Zen Industrial Services LLC	DBE	B160-BUS ELECTRICAL	$34.75	-	-
4500049015	8/22/22	Tony Jamison	DBE	G170-LUBRICANTS	$69.82	-	-
4500049016	8/22/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$79.60	-	-
4500049017	8/22/22	Wesco Distribution Inc		G270-ELECTRICAL/LIGHTING	$255.91	-	-
4500049018	8/22/22	Baker Capital Limited		R160-RAIL/LRV ELECTRICAL	$10,434.51	-	-
4500049019	8/22/22	Global Equipment Company	Small Business	G210-OFFICE FURNITURE	$132.47	-	-
4500049020	8/22/22	American Safety Council, Inc.		P540-MAINTENANCE TRAINING	$349.00	-	-
4500049021	8/22/22	Gillig LLC		B120-BUS MECHANICAL PARTS	$1,405.17	-	-
4500049022	8/22/22	Gillig LLC		B120-BUS MECHANICAL PARTS	$3,366.75	-	-
4500049023	8/22/22	W.W. Grainger Inc		G130-SHOP TOOLS	$598.77	-	-
4500049024	8/22/22	Willy's Electronic Supply Co	Small Business	G270-ELECTRICAL/LIGHTING	$136.85	-	-
4500049025	8/22/22	Kaman Industrial Technologies		B200-BUS PWR TRAIN EQUIP	$51.83	-	-
4500049026	8/22/22	SC Commercial, LLC		A120-AUTO/TRUCK GASOLINE	$3,267.45	-	-
4500049027	8/22/22	Supreme Oil Company		A120-AUTO/TRUCK GASOLINE	$14,811.43	-	-
4500049028	8/22/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$61.96	-	-
4500049029	8/22/22	Laird Plastics, Inc		G290-FARE REVENUE EQUIP	$2,133.45	-	-
4500049030	8/22/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$202.59	-	-
4500049031	8/22/22	Mohawk Mfg & Supply Co		B200-BUS PWR TRAIN EQUIP	$64.26	-	-
4500049032	8/22/22	Waxie's Enterprises Inc.		G140-SHOP SUPPLIES	$92.40	-	-
4500049033	8/22/22	Airgas Inc		G140-SHOP SUPPLIES	$107.08	-	-
4500049034	8/22/22	VCA Animal Hospitals, Inc.		G120-SECURITY	$138.81	-	-
4500049035	8/22/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$4,106.36	-	-
4500049036	8/22/22	Mohawk Mfg & Supply Co		B130-BUS BODY	$134.75	-	-
4500049037	8/22/22	Muncie Transit Supply		B130-BUS BODY	$3.55	-	-
4500049038	8/22/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$10,963.46	-	-
4500049039	8/22/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$681.68	-	-
4500049040	8/22/22	Madden Construction Inc		C130-CONSTRUCTION SVCS	$970.00	-	-
4500049041	8/22/22	California Air Compressor Company		F110-SHOP/BLDG MACHINERY	$1,350.03	-	-
4500049042	8/22/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$235.19	-	-
4500049043	8/22/22	Grah Safe & Lock Inc	Small Business	G140-SHOP SUPPLIES	$183.18	-	-
4500049044	8/23/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$284.46	-	-
4500049045	8/23/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$925.66	-	-
4500049046	8/23/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$248.25	-	-
4500049047	8/23/22	Siemens Mobility, Inc.		R120-RAIL/LRV CAR BODY	$32.33	-	-
4500049049	8/23/22	Warren Communications Inc		G230-PRINTED MATERIALS	$1,150.90	-	-
4500049050	8/23/22	Discovery Health Services LLC		P480-EE MAINTENANCE	$9,185.00	-	-
4500049051	8/23/22	SurveyMonkey Inc.		G260-MEDIA	$372.00	-	-
4500049052	8/23/22	Clear Sign & Design Inc	Small Business	G230-PRINTED MATERIALS	$328.99	-	-
4500049053	8/23/22	Steven Timme		G230-PRINTED MATERIALS	$900.00	-	-
4500049054	8/23/22	W.W. Grainger Inc		P280-GENERAL SVC AGRMNTS	$119.57	-	-
4500049055	8/23/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$393.79	-	-
4500049056	8/23/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$339.85	-	-
4500049057	8/23/22	Gillig LLC		B130-BUS BODY	$2,564.16	-	-
4500049058	8/23/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$85.09	-	-
4500049059	8/23/22	National Safety Council		G250-NOVELTIES & AWARDS	$1,084.87	-	-
4500049060	8/23/22	Gillig LLC		B250-BUS REPAIR PARTS	$103.23	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049061	8/23/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$204.77	-	-
4500049062	8/23/22	Trentman Corporation	Small Business	P280-GENERAL SVC AGRMNTS	$155.70	-	-
4500049063	8/23/22	Kaman Industrial Technologies		G130-SHOP TOOLS	$36.41	-	-
4500049064	8/23/22	R.S. Hughes Co Inc		G190-SAFETY/MED SUPPLIES	$171.66	-	-
4500049065	8/23/22	Mohawk Mfg & Supply Co		B120-BUS MECHANICAL PARTS	$22.39	-	-
4500049066	8/23/22	Muncie Transit Supply		B160-BUS ELECTRICAL	$32.43	-	-
4500049067	8/23/22	Pressnet Express Inc		G230-PRINTED MATERIALS	$398.68	-	-
4500049068	8/23/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$9,096.26	-	-
4500049069	8/23/22	W.W. Grainger Inc		B130-BUS BODY	$384.68	-	-
4500049070	8/23/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$221.77	-	-
4500049071	8/23/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$248.51	-	-
4500049072	8/23/22	Sherwin Williams Company		G150-FASTENERS	$277.76	-	-
4500049073	8/23/22	SC Commercial, LLC		A120-AUTO/TRUCK GASOLINE	$3,255.12	-	-
4500049074	8/23/22	Gillig LLC		G140-SHOP SUPPLIES	$599.18	-	-
4500049076	8/23/22	Ace Uniforms & Accessories	Small Business	G240-UNIFORM PROCUREMENT	$518.14	-	-
4500049077	8/23/22	W.W. Grainger Inc		G140-SHOP SUPPLIES	$88.81	-	-
4500049078	8/23/22	Airgas Inc		G190-SAFETY/MED SUPPLIES	$71.06	-	-
4500049079	8/23/22	W.W. Grainger Inc		R220-RAIL/LRV TRUCKS	$183.54	-	-
4500049080	8/24/22	Transit Holdings Inc		B130-BUS BODY	$953.54	-	-
4500049081	8/24/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$247.83	-	-
4500049082	8/24/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$1,620.35	-	-
4500049083	8/24/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$1,672.39	-	-
4500049084	8/24/22	Dimensional Silk Screen Inc		G230-PRINTED MATERIALS	$517.21	-	-
4500049085	8/24/22	Don Oleson Inc	Small Business	B120-BUS MECHANICAL PARTS	$2,901.32	-	-
4500049086	8/24/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$21.55	-	-
4500049087	8/24/22	Uline		G140-SHOP SUPPLIES	$1,094.62	-	-
4500049088	8/24/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$5,302.52	-	-
4500049089	8/24/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$18.10	-	-
4500049090	8/24/22	Transit Holdings Inc		B140-BUS CHASSIS	$1,945.84	-	-
4500049091	8/24/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$4,212.93	-	-
4500049092	8/24/22	Gillig LLC		B120-BUS MECHANICAL PARTS	$2,228.83	-	-
4500049093	8/24/22	Jeyco Products Inc		G140-SHOP SUPPLIES	$18.04	-	-
4500049094	8/24/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$110.88	-	-
4500049095	8/24/22	Siemens Mobility, Inc.		R160-RAIL/LRV ELECTRICAL	$36,815.50	-	-
4500049096	8/24/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$458.00	-	-
4500049097	8/24/22	Kaman Industrial Technologies		B200-BUS PWR TRAIN EQUIP	$889.49	-	-
4500049098	8/24/22	Shilpark Paint Corp.		F180-BUILDING MATERIALS	$62.06	-	-
4500049099	8/24/22	Shilpark Paint Corp.		F180-BUILDING MATERIALS	$42.89	-	-
4500049100	8/24/22	Shilpark Paint Corp.		F180-BUILDING MATERIALS	$2,341.97	-	-
4500049101	8/24/22	Citywide Auto Glass Inc		P210-NON-REV VEH REPAIRS	$342.14	-	-
4500049102	8/24/22	Home Depot USA Inc		G130-SHOP TOOLS	$310.06	-	-
4500049103	8/24/22	Myers & Sons Hi-Way Safety Inc		M140-WAYSIDE SIGNALS	$89.54	-	-
4500049104	8/24/22	Fastenal Company		R160-RAIL/LRV ELECTRICAL	$441.69	-	-
4500049105	8/24/22	Westair Gases & Equipment Inc	Small Business	G190-SAFETY/MED SUPPLIES	$498.46	-	-
4500049106	8/25/22	Transit Holdings Inc		B140-BUS CHASSIS	$203.21	-	-
4500049107	8/25/22	Siemens Mobility, Inc.		M110-SUB STATION	$13,464.44	-	-
4500049108	8/25/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$544.96	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049109	8/25/22	Trolley Support LLC		B250-BUS REPAIR PARTS	$3,006.23	-	-
4500049110	8/25/22	Tony Jamison	DBE	G170-LUBRICANTS	$1,424.37	-	-
4500049111	8/25/22	Cummins Pacific LLC		B250-BUS REPAIR PARTS	$225.95	-	-
4500049112	8/25/22	Alliant Insurance Services,Inc.		P370-RISK MANAGEMENT	$103.25	-	-
4500049113	8/25/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$268.30	-	-
4500049114	8/25/22	Transit Holdings Inc		B140-BUS CHASSIS	$1,170.77	-	-
4500049115	8/25/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$1,853.30	-	-
4500049116	8/25/22	Mcmaster-Carr Supply Co		B250-BUS REPAIR PARTS	$65.27	-	-
4500049117	8/25/22	W.W. Grainger Inc		M110-SUB STATION	$1,088.60	-	-
4500049118	8/25/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$372.09	-	-
4500049119	8/25/22	Winzer Franchise Company		G150-FASTENERS	$44.50	-	-
4500049120	8/25/22	Western-Cullen-Hayes Inc		M140-WAYSIDE SIGNALS	$2,105.52	-	-
4500049121	8/25/22	Rambuilt Glass LLC		G110-BUS/TROLLEY SIGNAGE	$1,697.07	-	-
4500049122	8/25/22	San Diego Seal Inc	Small Business	B250-BUS REPAIR PARTS	$73.41	-	-
4500049123	8/25/22	Allied Refrigeration Inc		F110-SHOP/BLDG MACHINERY	$397.70	-	-
4500049124	8/25/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$574.86	-	-
4500049125	8/25/22	NS Corporation		F110-SHOP/BLDG MACHINERY	$981.38	-	-
4500049126	8/25/22	Supreme Oil Company		A120-AUTO/TRUCK GASOLINE	$35,220.65	-	-
4500049127	8/26/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$21.55	-	-
4500049128	8/26/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$3.45	-	-
4500049129	8/26/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$2,476.02	-	-
4500049130	8/26/22	Muncie Transit Supply		B140-BUS CHASSIS	$5.11	-	-
4500049131	8/26/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$1,903.73	-	-
4500049132	8/26/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$245.67	-	-
4500049133	8/26/22	Tony Jamison	DBE	G170-LUBRICANTS	$1,336.70	-	-
4500049134	8/26/22	Carmine Bausone DVM Inc.		G120-SECURITY	$132.00	-	-
4500049135	8/26/22	A to Z Enterprises, Inc.		G120-SECURITY	$90.00	-	-
4500049136	8/26/22	Muncie Transit Supply		B160-BUS ELECTRICAL	$4.95	-	-
4500049137	8/26/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$400.78	-	-
4500049138	8/26/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$368.56	-	-
4500049139	8/26/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$4,128.99	-	-
4500049140	8/26/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$132.76	-	-
4500049141	8/26/22	Muncie Transit Supply		B200-BUS PWR TRAIN EQUIP	$71.28	-	-
4500049142	8/26/22	Transit Holdings Inc		B140-BUS CHASSIS	$1,707.32	-	-
4500049143	8/26/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$416.17	-	-
4500049144	8/26/22	Init Innovations in Transportation		G290-FARE REVENUE EQUIP	$97,422.79	-	-
4500049145	8/26/22	Laird Plastics, Inc		M180-STATION ELECTRICAL	$1,255.07	-	-
4500049146	8/29/22	Transit Holdings Inc		B140-BUS CHASSIS	$1,362.09	-	-
4500049147	8/29/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$2,655.08	-	-
4500049148	8/29/22	Knorr Brake Holding Corporation		R220-RAIL/LRV TRUCKS	$20,002.71	-	-
4500049149	8/29/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$423.88	-	-
4500049150	8/29/22	Home Depot USA Inc		G140-SHOP SUPPLIES	$620.22	-	-
4500049151	8/29/22	Professional Contractors Supplies		G140-SHOP SUPPLIES	$224.18	-	-
4500049152	8/29/22	Gillig LLC		B130-BUS BODY	$244.87	-	-
4500049153	8/29/22	Graybar Electric Co Inc		I110-INFORMATION TECH	$3,465.07	-	-
4500049154	8/29/22	Gillig LLC		B250-BUS REPAIR PARTS	$196.11	-	-
4500049155	8/29/22	Gillig LLC		B250-BUS REPAIR PARTS	$133.97	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049156	8/29/22	SC Commercial, LLC		A120-AUTO/TRUCK GASOLINE	$3,267.45	-	-
4500049157	8/29/22	Supreme Oil Company		A120-AUTO/TRUCK GASOLINE	$14,429.20	-	-
4500049158	8/29/22	Winzer Franchise Company		G150-FASTENERS	$39.87	-	-
4500049159	8/29/22	Raphael's Party Rentals Inc		G250-NOVELTIES & AWARDS	$5,328.63	-	-
4500049160	8/29/22	The Carpenter Group Inc		M120-OVRHEAD CATENARY SYS	$1,389.98	-	-
4500049161	8/29/22	Airgas Inc		G140-SHOP SUPPLIES	$272.83	-	-
4500049162	8/29/22	Taymark		G250-NOVELTIES & AWARDS	$2,053.16	-	-
4500049163	8/29/22	Gillig LLC		B120-BUS MECHANICAL PARTS	$1,970.42	-	-
4500049164	8/29/22	TK Services Inc		B110-BUS HVAC SYSTEMS	$240.52	-	-
4500049165	8/29/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$53.24	-	-
4500049166	8/29/22	Charter Industrial Supply Inc	Small Business	G150-FASTENERS	$336.82	-	-
4500049167	8/29/22	Barry Sandler Enterprises		G180-JANITORIAL SUPPLIES	$1,011.45	-	-
4500049168	8/29/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$3,242.94	-	-
4500049169	8/29/22	Gillig LLC		B250-BUS REPAIR PARTS	$46.98	-	-
4500049170	8/29/22	Prochem Specialty Products Inc	Small Business	G170-LUBRICANTS	$1,184.69	-	-
4500049171	8/29/22	R.S. Hughes Co Inc		G140-SHOP SUPPLIES	$43.06	-	-
4500049172	8/29/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$105.49	-	-
4500049173	8/29/22	Mcmaster-Carr Supply Co		B250-BUS REPAIR PARTS	$1,049.04	-	-
4500049174	8/29/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$186.95	-	-
4500049175	8/29/22	Sherwin Williams Company		G160-PAINTS & CHEMICALS	$116.98	-	-
4500049176	8/29/22	Trentman Corporation	Small Business	P280-GENERAL SVC AGRMNTS	$1,190.87	-	-
4500049177	8/29/22	Uline		G130-SHOP TOOLS	$221.94	-	-
4500049178	8/29/22	Airgas Inc		G140-SHOP SUPPLIES	$34.37	-	-
4500049179	8/29/22	Cummins Pacific LLC		B250-BUS REPAIR PARTS	$274.44	-	-
4500049180	8/29/22	Kaman Industrial Technologies		G140-SHOP SUPPLIES	$100.43	-	-
4500049181	8/29/22	Jeyco Products Inc		G150-FASTENERS	$10.67	-	-
4500049182	8/29/22	W.W. Grainger Inc		G140-SHOP SUPPLIES	$51.70	-	-
4500049183	8/29/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$6,166.31	-	-
4500049184	8/29/22	Schunk Carbon Technology LLC		R190-RAIL/LRV PANTOGRAPH	$2,480.30	-	-
4500049185	8/29/22	Valvoline Inc.		B120-BUS MECHANICAL PARTS	$15,179.82	-	-
4500049186	8/29/22	Harbor Diesel & Equipment		B200-BUS PWR TRAIN EQUIP	$11,707.45	-	-
4500049187	8/29/22	Annex Warehouse Company, Inc		F120-BUS/LRV PAINT BOOTHS	$2,919.77	-	-
4500049188	8/29/22	Eran Hason		P280-GENERAL SVC AGRMNTS	$570.00	-	-
4500049189	8/30/22	Cummins Pacific LLC		G150-FASTENERS	$86.20	-	-
4500049190	8/30/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$228.28	-	-
4500049191	8/30/22	Home Depot USA Inc		F110-SHOP/BLDG MACHINERY	$74.35	-	-
4500049192	8/30/22	Madden Construction Inc		G110-BUS/TROLLEY SIGNAGE	$934.00	-	-
4500049193	8/30/22	HD Supply Construction Supply, LTD.		G130-SHOP TOOLS	$238.22	-	-
4500049195	8/30/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$2,109.53	-	-
4500049196	8/30/22	Home Depot USA Inc		F140-SHELVING AND RACK	$47.91	-	-
4500049197	8/30/22	Sather Enterprises Inc		T110-TRACK, RAIL	$1,764.90	-	-
4500049198	8/30/22	Charter Industrial Supply Inc	Small Business	G130-SHOP TOOLS	$84.39	-	-
4500049199	8/30/22	Parts Authority, LLC		B160-BUS ELECTRICAL	$6,295.84	-	-
4500049200	8/30/22	Home Depot USA Inc		F180-BUILDING MATERIALS	$56.76	-	-
4500049201	8/30/22	Cummins Pacific LLC		G150-FASTENERS	$86.20	-	-
4500049202	8/30/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$1,134.24	-	-
4500049203	8/30/22	Transit Holdings Inc		B130-BUS BODY	$1,026.07	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049204	8/30/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$11.63	-	-
4500049205	8/30/22	Fastenal Company		G120-SECURITY	$1,742.84	-	-
4500049206	8/30/22	G&A Auto Airconditioning		P210-NON-REV VEH REPAIRS	$2,371.75	-	-
4500049207	8/30/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$8.72	-	-
4500049208	8/30/22	TK Services Inc		B160-BUS ELECTRICAL	$120.70	-	-
4500049209	8/30/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$732.46	-	-
4500049210	8/30/22	W.W. Grainger Inc		G270-ELECTRICAL/LIGHTING	$214.80	-	-
4500049211	8/30/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$64.39	-	-
4500049212	8/30/22	Jeyco Products Inc		G140-SHOP SUPPLIES	$345.31	-	-
4500049213	8/30/22	Gillig LLC		B140-BUS CHASSIS	$128.76	-	-
4500049214	8/30/22	SC Commercial, LLC		G170-LUBRICANTS	$4,516.88	-	-
4500049215	8/30/22	San Diego Compressed Air Power LLC		F110-SHOP/BLDG MACHINERY	$665.00	-	-
4500049216	8/30/22	Inland Kenworth (US) Inc		G130-SHOP TOOLS	$1,978.56	-	-
4500049217	8/30/22	Mcmaster-Carr Supply Co		F110-SHOP/BLDG MACHINERY	$419.38	-	-
4500049218	8/30/22	Tony Jamison	DBE	G170-LUBRICANTS	$406.87	-	-
4500049219	8/30/22	Asbury Environmental Services		B200-BUS PWR TRAIN EQUIP	$2,960.33	-	-
4500049220	8/30/22	Waxie's Enterprises Inc.		G140-SHOP SUPPLIES	$425.29	-	-
4500049221	8/30/22	Freeby Signs		B130-BUS BODY	$5.39	-	-
4500049222	8/30/22	R.S. Hughes Co Inc		G140-SHOP SUPPLIES	$569.33	-	-
4500049223	8/30/22	Genuine Parts Co		A140-AUTO/TRUCK REPAIR	$75.37	-	-
4500049224	8/30/22	Kaman Industrial Technologies		B120-BUS MECHANICAL PARTS	$2,668.27	-	-
4500049225	8/30/22	Vern Rose Inc		G140-SHOP SUPPLIES	$217.87	-	-
4500049226	8/30/22	Airgas Inc		G140-SHOP SUPPLIES	$45.46	-	-
4500049227	8/30/22	Allied Refrigeration Inc		B250-BUS REPAIR PARTS	$71.01	-	-
4500049228	8/30/22	Charter Industrial Supply Inc	Small Business	B120-BUS MECHANICAL PARTS	$107.98	-	-
4500049229	8/30/22	Muncie Transit Supply		B160-BUS ELECTRICAL	$41.34	-	-
4500049230	8/30/22	Sportworks Global LLC		B130-BUS BODY	$86.20	-	-
4500049231	8/30/22	Northwest Pump & Equipment Co		G130-SHOP TOOLS	$387.37	-	-
4500049232	8/30/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$55.60	-	-
4500049233	8/30/22	Crayon Software Experts LLC		I110-INFORMATION TECH	$606.40	-	-
4500049234	8/31/22	Gillig LLC		B160-BUS ELECTRICAL	$4,737.32	-	-
4500049235	8/31/22	Rambuilt Glass LLC		G110-BUS/TROLLEY SIGNAGE	$1,560.00	-	-
4500049236	8/31/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$4,382.54	-	-
4500049237	8/31/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$3,729.01	-	-
4500049238	8/31/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$3,189.80	-	-
4500049239	8/31/22	Transit Holdings Inc		B130-BUS BODY	$886.89	-	-
4500049240	8/31/22	Vehicle Maintenance Program, Inc.	Woman Owned Business	B140-BUS CHASSIS	$1,048.36	-	-
4500049241	8/31/22	Annex Warehouse Company, Inc		F120-BUS/LRV PAINT BOOTHS	$2,597.31	-	-
4500049242	8/31/22	Fastenal Company		G140-SHOP SUPPLIES	$2,051.73	-	-
4500049243	8/31/22	Steven Timme		G230-PRINTED MATERIALS	$100.82	-	-
4500049244	8/31/22	Otay Mesa Chamber of Commerce		P310-ADVERTISING SERVICES	$650.00	-	-
4500049245	8/31/22	Home Depot USA Inc		G200-OFFICE SUPPLIES	$164.57	-	-
4500049246	8/31/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$952.78	-	-
4500049247	8/31/22	W. Gessman GMBH		R160-RAIL/LRV ELECTRICAL	$3,243.14	-	-
4500049248	8/31/22	B&H Photo & Electronics Corp		I110-INFORMATION TECH	$138.22	-	-
4500049249	8/31/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$205.78	-	-
4500049250	8/31/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$3,995.88	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049251	8/31/22	Home Depot USA Inc		G140-SHOP SUPPLIES	$154.19	-	-
4500049252	8/31/22	OneSource Distributors, LLC		G180-JANITORIAL SUPPLIES	$863.46	-	-
4500049253	8/31/22	Kaman Industrial Technologies		G140-SHOP SUPPLIES	$41.24	-	-
4500049254	8/31/22	Winzer Franchise Company		M130-CROSSING MECHANISM	$91.59	-	-
4500049255	9/1/22	Gillig LLC		B250-BUS REPAIR PARTS	$97.63	-	-
4500049256	9/1/22	Trinity Sling Authority, Inc.		F110-SHOP/BLDG MACHINERY	$296.42	-	-
4500049257	9/1/22	Allied Refrigeration Inc		B250-BUS REPAIR PARTS	$107.75	-	-
4500049258	9/1/22	ColorID LLC	Small Business	G250-NOVELTIES & AWARDS	$703.07	-	-
4500049259	9/1/22	San Diego Union Tribune LLC		G230-PRINTED MATERIALS	$1,469.67	-	-
4500049260	9/1/22	Sprout Social, Inc.		P310-ADVERTISING SERVICES	$2,988.00	-	-
4500049261	9/1/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$339.42	-	-
4500049262	9/1/22	Transit Holdings Inc		B130-BUS BODY	$577.66	-	-
4500049263	9/1/22	Davey Auto Body Inc		G120-SECURITY	$2,417.41	-	-
4500049264	9/1/22	Dimensional Silk Screen Inc		G230-PRINTED MATERIALS	$156.24	-	-
4500049265	9/1/22	VCA Animal Hospitals, Inc.		G120-SECURITY	$63.84	-	-
4500049266	9/1/22	Siemens Mobility, Inc.		R160-RAIL/LRV ELECTRICAL	$55,223.25	-	-
4500049267	9/1/22	W.W. Grainger Inc		G140-SHOP SUPPLIES	$221.80	-	-
4500049268	9/1/22	Dimensional Silk Screen Inc		G230-PRINTED MATERIALS	$4,417.76	-	-
4500049269	9/1/22	Annex Warehouse Company, Inc		R240-RAIL/LRV REPR PARTS	$1,228.90	-	-
4500049270	9/1/22	Siemens Mobility, Inc.		R190-RAIL/LRV PANTOGRAPH	$495.65	-	-
4500049271	9/1/22	Siemens Mobility, Inc.		R120-RAIL/LRV CAR BODY	$8,010.56	-	-
4500049272	9/1/22	Transit Holdings Inc		B130-BUS BODY	$7,069.49	-	-
4500049273	9/1/22	Gillig LLC		B110-BUS HVAC SYSTEMS	$1,175.75	-	-
4500049274	9/1/22	Siemens Mobility, Inc.		R160-RAIL/LRV ELECTRICAL	$8,748.00	-	-
4500049275	9/1/22	General Signals Inc		M130-CROSSING MECHANISM	$26,097.05	-	-
4500049276	9/1/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$1,960.03	-	-
4500049277	9/1/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$388.28	-	-
4500049278	9/1/22	SC Commercial, LLC		G170-LUBRICANTS	$3,534.20	-	-
4500049279	9/1/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$110.69	-	-
4500049280	9/1/22	SPX Corporation		B190-BUS FARE EQUIP	$270.68	-	-
4500049281	9/1/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$3,180.79	-	-
4500049282	9/1/22	Transit Holdings Inc		B130-BUS BODY	$562.08	-	-
4500049283	9/1/22	Transit Holdings Inc		B130-BUS BODY	$382.82	-	-
4500049284	9/1/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$197.20	-	-
4500049285	9/1/22	Harbor Diesel & Equipment		B120-BUS MECHANICAL PARTS	$316.39	-	-
4500049286	9/1/22	Gillig LLC		B250-BUS REPAIR PARTS	$1,008.27	-	-
4500049287	9/1/22	Genuine Parts Co		B120-BUS MECHANICAL PARTS	$44.15	-	-
4500049288	9/1/22	Home Depot USA Inc		G140-SHOP SUPPLIES	$193.27	-	-
4500049289	9/1/22	Romaine Electric Corporation	Small Business	B160-BUS ELECTRICAL	$5,412.83	-	-
4500049290	9/1/22	Harbor Diesel & Equipment		B120-BUS MECHANICAL PARTS	$316.39	-	-
4500049291	9/1/22	Transit Holdings Inc		B250-BUS REPAIR PARTS	$570.57	-	-
4500049292	9/1/22	Jeyco Products Inc		G140-SHOP SUPPLIES	$31.99	-	-
4500049293	9/1/22	Waxie's Enterprises Inc.		G140-SHOP SUPPLIES	$2,802.16	-	-
4500049294	9/1/22	R.S. Hughes Co Inc		G160-PAINTS & CHEMICALS	$161.07	-	-
4500049295	9/1/22	TK Services Inc		B110-BUS HVAC SYSTEMS	$94.89	-	-
4500049296	9/1/22	Mohawk Mfg & Supply Co		B160-BUS ELECTRICAL	$40.11	-	-
4500049297	9/1/22	Charter Industrial Supply Inc	Small Business	B120-BUS MECHANICAL PARTS	$58.89	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049298	9/1/22	Aztec Fire & Safety		G140-SHOP SUPPLIES	$1,696.11	-	-
4500049299	9/1/22	Don Oleson Inc	Small Business	B120-BUS MECHANICAL PARTS	$2,901.32	-	-
4500049300	9/1/22	Gillig LLC		B130-BUS BODY	$390.54	-	-
4500049301	9/1/22	Specialty Manufacturing Inc		B130-BUS BODY	$1,009.03	-	-
4500049302	9/1/22	Freeby Signs		B130-BUS BODY	$44.13	-	-
4500049303	9/1/22	Siemens Mobility, Inc.		M130-CROSSING MECHANISM	$624.95	-	-
4500049304	9/1/22	Transit Products and Services		B130-BUS BODY	$9,051.00	-	-
4500049305	9/1/22	Draycor, Inc.		I110-INFORMATION TECH	$410.91	-	-
4500049306	9/2/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$2,009.55	-	-
4500049307	9/2/22	Transit Holdings Inc		B160-BUS ELECTRICAL	$722.89	-	-
4500049308	9/2/22	Siemens Mobility, Inc.		R120-RAIL/LRV CAR BODY	$64,866.19	-	-
4500049309	9/2/22	Mohammad Karimi		G120-SECURITY	$278.49	-	-
4500049310	9/2/22	Transit Finance Learning Exchange		P400-FINANCIAL & AUDIT	$1,200.00	-	-
4500049311	9/2/22	JKL Cleaning Systems	Small Business	P210-NON-REV VEH REPAIRS	$208.04	-	-
4500049312	9/2/22	Shilpark Paint Corp.		G160-PAINTS & CHEMICALS	$456.50	-	-
4500049313	9/2/22	Ace Uniforms & Accessories	Small Business	G240-UNIFORM PROCUREMENT	$355.41	-	-
4500049314	9/2/22	Professional Contractors Supplies		G180-JANITORIAL SUPPLIES	$364.66	-	-
4500049315	9/2/22	TransTech of South Carolina, Inc.		M120-OVRHEAD CATENARY SYS	$3,435.07	-	-
4500049316	9/2/22	Home Depot USA Inc		F190-LANDSCAPING MAT'LS	$643.92	-	-
4500049317	9/2/22	JKL Cleaning Systems	Small Business	G140-SHOP SUPPLIES	$315.15	-	-
4500049318	9/2/22	SiteOne Landscape Supply Holding		F190-LANDSCAPING MAT'LS	$106.01	-	-
4500049319	9/2/22	Kenneth Place		F190-LANDSCAPING MAT'LS	$56.03	-	-
4500049320	9/2/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$339.42	-	-
4500049321	9/2/22	Transit Holdings Inc		B140-BUS CHASSIS	$1,375.57	-	-
4500049322	9/2/22	Transit Holdings Inc		B200-BUS PWR TRAIN EQUIP	$124.13	-	-
4500049323	9/2/22	Parts Authority, LLC		B160-BUS ELECTRICAL	$12,276.87	-	-
4500049324	9/2/22	B&H Photo & Electronics Corp		R160-RAIL/LRV ELECTRICAL	$1,282.23	-	-
4500049325	9/2/22	SiteOne Landscape Supply Holding		F190-LANDSCAPING MAT'LS	$53.40	-	-
4500049326	9/2/22	R.S. Hughes Co Inc		G140-SHOP SUPPLIES	$1,587.29	-	-
4500049327	9/2/22	Fastenal Company		G140-SHOP SUPPLIES	$786.87	-	-
4500049328	9/2/22	Professional Contractors Supplies		G130-SHOP TOOLS	$791.71	-	-
4500049329	9/2/22	Reid and Clark Screen Arts Co		R120-RAIL/LRV CAR BODY	$463.33	-	-
4500049330	9/2/22	West-Lite Supply Co Inc	Small Business	M140-WAYSIDE SIGNALS	$3,351.35	-	-
4500049331	9/2/22	Dell Marketing L.P.		I110-INFORMATION TECH	$23,724.86	-	-
4500049332	9/2/22	Airgas Inc		G190-SAFETY/MED SUPPLIES	$1,489.61	-	-
4500049333	9/2/22	Waxie's Enterprises Inc.		G180-JANITORIAL SUPPLIES	$2,010.13	-	-
4500049334	9/2/22	Westair Gases & Equipment Inc	Small Business	G140-SHOP SUPPLIES	$2,146.07	-	-
4500049336	9/2/22	W.W. Grainger Inc		G190-SAFETY/MED SUPPLIES	$8.57	-	-
4500049337	9/2/22	The Gordian Group, Inc.		C130-CONSTRUCTION SVCS	$3,499.80	-	-
4500049338	9/2/22	Mcmaster-Carr Supply Co		G140-SHOP SUPPLIES	$90.15	-	-
4500049339	9/2/22	R.S. Hughes Co Inc		G140-SHOP SUPPLIES	$793.64	-	-
4500049340	9/2/22	Home Depot USA Inc		G180-JANITORIAL SUPPLIES	$734.68	-	-
4500049341	9/2/22	SC Commercial, LLC		A120-AUTO/TRUCK GASOLINE	$3,390.75	-	-
4500049342	9/2/22	Supreme Oil Company		A120-AUTO/TRUCK GASOLINE	$14,747.73	-	-
4500049343	9/2/22	Siemens Mobility, Inc.		M120-OVRHEAD CATENARY SYS	$2,305.85	-	-
4500049344	9/2/22	Siemens Mobility, Inc.		M120-OVRHEAD CATENARY SYS	$1,861.92	-	-
4500049345	9/2/22	Golden State Supply LLC		G140-SHOP SUPPLIES	$43.05	-	-

Purchase Orders							
PO Number	PO Date	Name	Prime Business Certification	Material Group	PO Value	DBE Subcontracted Amount	Non DBE Subcontracted Amount
4500049346	9/2/22	Allied Electronics Inc		G170-LUBRICANTS	$742.66	-	-
4500049347	9/6/22	Siemens Mobility, Inc.		R120-RAIL/LRV CAR BODY	$1,223.18	-	-
4500049348	9/6/22	Mobile Home Acceptance Corp		P160-EQUIPMENT RENTALS	$6,868.80	-	-
4500049349	9/6/22	Dimensional Silk Screen Inc		G230-PRINTED MATERIALS	$1,331.79	-	-
4500049350	9/6/22	Cummins Pacific LLC		B200-BUS PWR TRAIN EQUIP	$6,558.94	-	-
4500049351	9/6/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$18.10	-	-
4500049352	9/6/22	Muncie Transit Supply		B200-BUS PWR TRAIN EQUIP	$15.07	-	-
4500049353	9/6/22	Transit Holdings Inc		B140-BUS CHASSIS	$5,691.93	-	-
4500049354	9/6/22	Transit Holdings Inc		B120-BUS MECHANICAL PARTS	$710.29	-	-
4500049355	9/6/22	Parts Authority, LLC		B160-BUS ELECTRICAL	$3,777.50	-	-
4500049356	9/6/22	Waxie's Enterprises Inc.		G140-SHOP SUPPLIES	$3,835.90	-	-
4500049357	9/6/22	DoAll Company		R230-RAIL/LRV MECHANICAL	$3,151.26	-	-
4500049358	9/6/22	Knorr Brake Holding Corporation		R120-RAIL/LRV CAR BODY	$6,038.31	-	-
4500049359	9/6/22	CDW LLC		G200-OFFICE SUPPLIES	$839.51	-	-
4500049360	9/6/22	Grah Safe & Lock Inc	Small Business	F110-SHOP/BLDG MACHINERY	$166.98	-	-
4500049361	9/6/22	W.W. Grainger Inc		F110-SHOP/BLDG MACHINERY	$164.44	-	-
4500049362	9/6/22	W.W. Grainger Inc		G140-SHOP SUPPLIES	$113.53	-	-
4500049363	9/6/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$57.80	-	-
4500049364	9/6/22	Kaman Industrial Technologies		B200-BUS PWR TRAIN EQUIP	$83.35	-	-
4500049365	9/6/22	SDSU Foundation		P310-ADVERTISING SERVICES	$1,000.00	-	-
4500049366	9/6/22	The Webstaurant Store, Inc.		G200-OFFICE SUPPLIES	$751.86	-	-
4500049367	9/6/22	Canada Ticket Inc.		G280-FARE MATERIALS	$9,707.49	-	-
4500049368	9/6/22	Industrial Maintenance Supply LLC	DBE	G150-FASTENERS	$51.80	-	-
4500049369	9/6/22	Transit Holdings Inc		B130-BUS BODY	$580.85	-	-
4500049370	9/6/22	Gillig LLC		B130-BUS BODY	$1,450.67	-	-
4500049371	9/6/22	Kaman Industrial Technologies		B120-BUS MECHANICAL PARTS	$409.86	-	-
4500049372	9/6/22	R.S. Hughes Co Inc		G190-SAFETY/MED SUPPLIES	$130.92	-	-
4500049373	9/6/22	USSC Acquisition Corp		B250-BUS REPAIR PARTS	$543.93	-	-
4500049374	9/6/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$648.66	-	-
4500049375	9/6/22	Muncie Transit Supply		B160-BUS ELECTRICAL	$65.19	-	-
4500049376	9/6/22	Prochem Specialty Products Inc	Small Business	G180-JANITORIAL SUPPLIES	$859.31	-	-
4500049377	9/6/22	Brady Industries of California, LLC		G180-JANITORIAL SUPPLIES	$69.79	-	-
4500049378	9/6/22	Mohawk Mfg & Supply Co		B140-BUS CHASSIS	$167.95	-	-
4500049379	9/6/22	Staples Contract & Commercial Inc		G200-OFFICE SUPPLIES	$326.24	-	-
4500049380	9/6/22	Airgas Inc		G140-SHOP SUPPLIES	$77.58	-	-
4500049381	9/6/22	San Diego Friction Products, Inc.		B120-BUS MECHANICAL PARTS	$7,450.68	-	-
4500049382	9/6/22	Applied Industrial Technologies-CA		R140-RAIL/LRV DOORS/RAMP	$872.97	-	-
4500049383	9/6/22	Cummins Pacific LLC		B250-BUS REPAIR PARTS	$90.68	-	-
4500049384	9/6/22	Gillig LLC		B250-BUS REPAIR PARTS	$2,603.71	-	-
4500049385	9/6/22	Harbor Diesel & Equipment		B200-BUS PWR TRAIN EQUIP	$11,729.00	-	-
4500049386	9/6/22	Jeyco Products Inc		G130-SHOP TOOLS	$19.52	-	-