



**Metropolitan
Transit
System**

Agenda

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM EXECUTIVE COMMITTEE

September 1, 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

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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/94562188418>

		<u>ACTION RECOMMENDED</u>
1.	ROLL CALL	
2.	APPROVAL OF MINUTES - JULY 14, 2022	Approve
3.	PUBLIC COMMENTS	
COMMITTEE DISCUSSION ITEMS		
4.	Clean Transit Advancement Campus (CTAC) Update (Denis Desmond)	Informational
5.	2022 Customer Satisfaction Survey Report (Mark Olson, MTS; and Judith Mccourt, Redhill Group)	Informational
6.	Fiscal Year (FY) 2022 Federal Transit Administration (FTA) Triennial Review (Samantha Leslie)	Informational

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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.



7. 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)

OTHER ITEMS

8. REVIEW OF DRAFT SEPTEMBER 15, 2022 MTS BOARD AGENDA
9. OTHER STAFF COMMUNICATIONS AND BUSINESS
10. COMMITTEE MEMBER COMMUNICATIONS AND OTHER BUSINESS
11. NEXT MEETING DATE: OCTOBER 6, 2022
12. ADJOURNMENT

MINUTES

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM EXECUTIVE COMMITTEE

July 14, 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 Executive Committee meeting to order at 9:36 a.m. A roll call sheet listing Executive Committee member attendance is attached.

2. Approval of Minutes

Chair Fletcher moved to approve the minutes of the June 9, 2022, MTS Executive Committee meeting. Board Member Elo-Rivera seconded the motion, and the vote was 7 to 0 in favor.

3. Public Comments

There were no Public Comments.

COMMITTEE DISCUSSION ITEMS

4. Bus Procurement: Low Floor Compressed Natural Gas (CNG) and Battery Electric Buses (BEB) – Contract Award

Mike Wygant, MTS Chief Operating Officer, Claudine Aquino, MTS Procurement Manager, and Larry Marinesi, MTS Chief Financial Officer, presented on bus procurement: low-floor CNG and the Battery Electric Buses (BEB) contract award. He presented on: Fleet History and Background, Fleet Replacement Schedule, Existing Contract 2017-2022, Request for Proposals, vehicle improvements, technology, procurement, total contract cost, and the staff recommendation.

Sharon Cooney, MTS Executive Officer commented that future bus purchases will be in accordance with the zero-emission transition plan that will be adopted by the Board annually. Infrastructure is moving as fast as possible. The agency submitted a grant proposal to the Federal Transit Administration (FTA) to advance the agency's clean transit advancement campus. That funding would allow the agency to build an all-electric fleet from inception. A recently granted state grant will allow MTS to accelerate electrification catenary at the Imperial Avenue Division (IAD).

PUBLIC COMMENT

Carinna Contreras – Representing Climate Action Campaign provided a verbal statement to the Board during the meeting. Contreras acknowledged the zero-emissions contract beginning in October through September 2027. Contreras was opposed the purchase of CNG buses because of the emissions they produced and asked the Board to reconsider the approval.

Gretchen Newsom – Representing IBEW 569 provided a verbal statement to the Board during the meeting. Newsome expressed concern that the purchase of CNG buses is not aimed toward a zero-emission plan. Newsom proposed that the agency purchase the optional quantity of additional zero emission buses (ZEB).

COMMITTEE COMMENT

Board Member Elo-Rivera asked for confirmation that on yearly basis the annual decisions of the Board will guide how many and what types of buses are purchased for the agency. Ms. Cooney clarified that there were options for the agency to change what is procured annually. The Capital Improvement Program and Zero Emission Plan Transition Plan are both opportunities for the Board to change the type of bus purchases.

Board Member Elo-Rivera asked staff to clarify that the action today would not approve the purchase of CNG buses. Ms. Cooney confirmed that today's action would only approve the contract for different types of buses that the agency can purchase. Through the budgeting process, the Board would assign funding for the purchases.

Board Member Elo-Rivera asked for clarity to ease community concern. He noted that the agency's mission is to move people in the most socially and environmentally conscious ways possible. He looks forward to Board discussion where the agency moves forward with as few carbon-emitting buses as possible. He has made efforts to partner and coordinate organizations to make electric vehicles more feasible.

Chair Fletcher agreed that this item allows the agency flexibility on its path forward to ZEB buses and listed range and infrastructure limitations. Nevertheless, the agency is moving quickly and aggressively towards ZEBs.

Action Taken

Board Member Elo-Rivera moved to forward a recommendation to the Board of Directors 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. Chair Fletcher seconded the motion, and the vote was 7 to 0 in favor.

OTHER ITEMS

5. REVIEW OF DRAFT JULY 21, 2022 BOARD AGENDA

Recommended 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 execute MTS Doc. No. L1620.0-22 with Miramar Bobcat, LLC, at \$159,056.41, for the purchase and delivery of a skid steer.
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, 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
15. Vector Environmental Health and Safety (EHS) Management Software – Sole Source Contract Award
16. AT&T CALNET – Add Cloud-Hosted Interactive Voice Response (IVR) Five9 – Contract Amendment
17. ARINC – WOA Centralized Train Control (CTC) System Maintenance Agreement – Work Order Agreement (WOA) #1.1 Ratification and Approval for WOA #3

Executive Committee – MINUTES

July 14, 2022

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18. Annex Paint (Inventory items) – Sole Source Award

Ms. Cooney notified the Board that the last five agenda item drafts were not included in the packet but would be provided before the Board of Director's meeting.

6. Other Staff Communications and Business

There was no Other Staff Communications and Business discussion.

7. Committee Member Communications and Other Business

There was no Committee Member Communications and Other Business discussion.

8. Next Meeting Date

The next Executive Committee meeting is scheduled for September 1, 2022, at 9:00 a.m.

9. Adjournment

Chair Fletcher adjourned the meeting at 10:11 a.m.

/S/ Nathan Fletcher

Chairperson

San Diego Metropolitan Transit System

/S/ Dalia Gonzalez

Clerk of the Board

San Diego Metropolitan Transit System

Attachment: Roll Call Sheet

SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

ROLL CALL

MEETING OF (DATE): July 14, 2022 CALL TO ORDER (TIME): 9:36 am
 RECESS: _____ RECONVENE: _____
 CLOSED SESSION: _____ RECONVENE: _____
 PUBLIC HEARING: _____ RECONVENE: _____
 ORDINANCES ADOPTED: _____ ADJOURN: 10:11 am

REPRESENTATIVE	BOARD MEMBER	(Alternate)	PRESENT (TIME ARRIVED)	ABSENT (TIME LEFT)
County	FLETCHER (Chair)	<input checked="" type="checkbox"/> (Vargas) <input type="checkbox"/>	9:36 am	10:11 am
Vice Chair	SOTELO-SOLIS	<input checked="" type="checkbox"/> (no alternate) <input type="checkbox"/>	9:36 am	10:11 am
City of San Diego	ELO-RIVERA	<input checked="" type="checkbox"/> (Montgomery Steppe) <input type="checkbox"/>	9:36 am	10:11 am
East County	HALL	<input checked="" type="checkbox"/> (Frank) <input type="checkbox"/>	9:36 am	10:11 am
SANDAG Transportation Committee	MORENO	<input checked="" type="checkbox"/> (Aguirre) <input type="checkbox"/>	9:36 am	10:11 am
Chair Pro Tem	SALAS	<input checked="" type="checkbox"/> (no alternate) <input type="checkbox"/>	9:36 am	10:11 am
South Bay	SANDKE	<input checked="" type="checkbox"/> (Aguirre) <input type="checkbox"/>	9:36 am	10:11 am

SIGNED BY THE CLERK OF THE BOARD:

/S/ Dalia Gonzalez



**Metropolitan
Transit
System**

Agenda Item No. 4

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

September 1, 2022

SUBJECT:

CLEAN TRANSIT ADVANCEMENT CAMPUS UPDATE (DENIS DESMOND)

INFORMATIONAL ONLY

Budget Impact

None.

DISCUSSION:

MTS's proposed Clean Transit Advancement Campus (CTAC) project will deliver a sixth bus operations division that is critical to the conversion of the MTS bus fleet to zero emission buses (ZEBs). It is also necessary to enable future bus system growth, as a massive expansion of routes and frequency is envisioned in both MTS's Elevate SD Program and SANDAG's 2021 Regional Plan.

The CTAC project began in mid-2021 with community engagement and the launch of the California Environmental Quality Act (CEQA) environmental process for the project. MTS is the lead agency on the overall project, and SANDAG provides significant assistance with project development, including heading the environmental study.

There are seven sites in San Diego considered for the development of the CTAC, four in the Ridgeview-Webster community and three in the Mount Hope community. After the initial evaluations for the MTS Facility Siting Title VI and Social Equity Analysis were completed, a site on Federal Boulevard just west of 47th Street (Site 7) was identified as the most promising of the seven sites. Staff then initiated technical evaluations of Site 7 as part of the initial environmental study that began in late 2021. The outcome of these environmental reports was a recommendation that a Mitigated Negative Declaration (MND) is the appropriate CEQA document for the project if situated on Site 7. Use of an MND is appropriate when mitigation measures can be incorporated into a project, thereby supporting a finding that the project will not have significant impacts on the environment.

A Draft MND was released to the public in July 2022 for review and a required 30-day comment period. Several comments were received, which are being reviewed and incorporated into the



Final MND. Staff is also finalizing the formal Title VI and Social Equity Analysis related to the selection of Site 7 for the CTAC project.

Staff will present an update on this process, including the anticipated schedule for future Board action in furtherance of this project.

/S/ Sharon Cooney

Sharon Cooney
Chief Executive Officer

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



CTAC

Clean Transit
Advancement Campus



Project Update
MTS Executive Committee

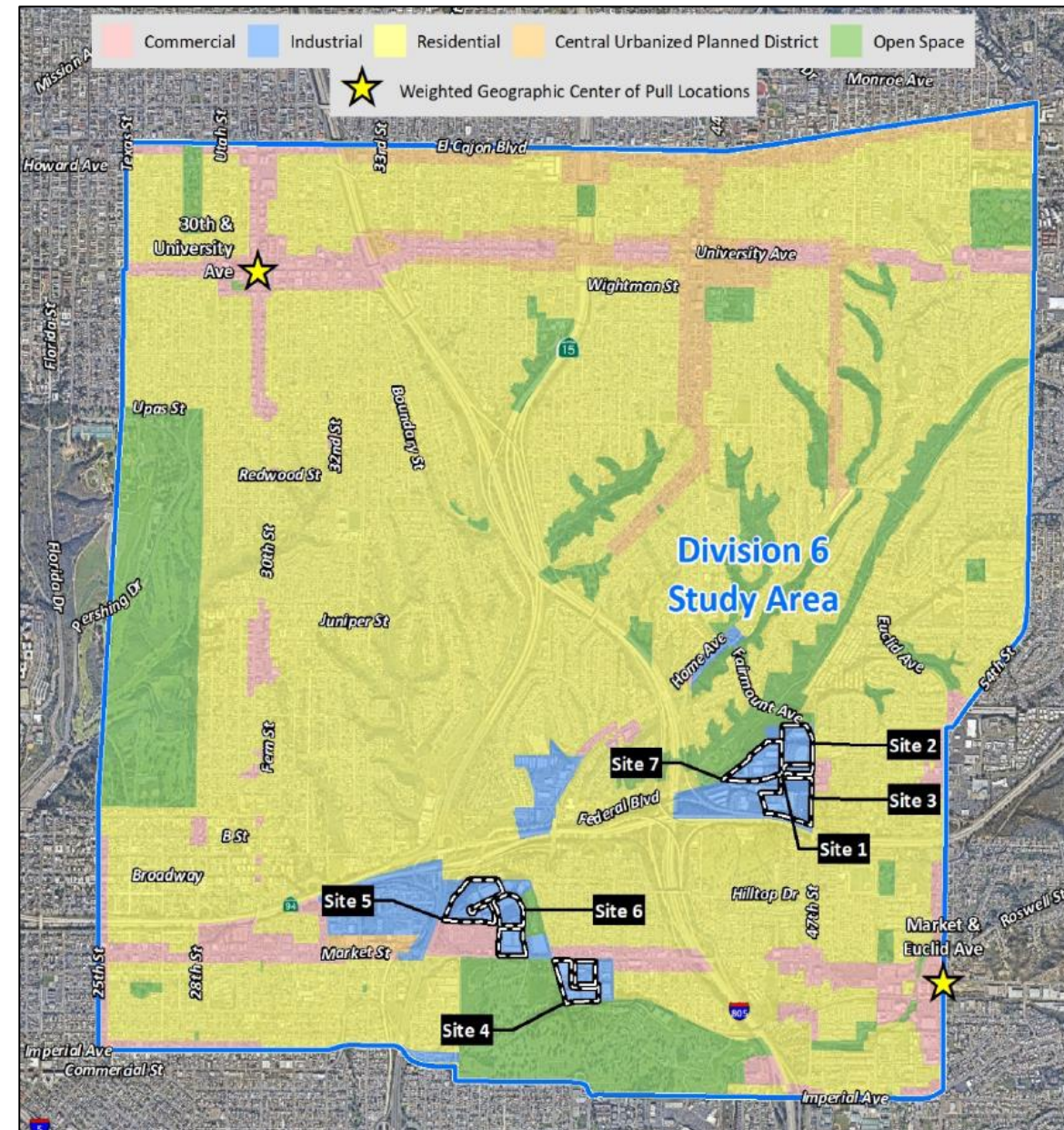
September 1, 2022

Project Need

- MTS converting entire bus fleet to electric buses, which requires more space in divisions for charging infrastructure
- Future service expansion requires more area to park, maintain, and charge buses
- Current five facilities are near capacity

Project Area

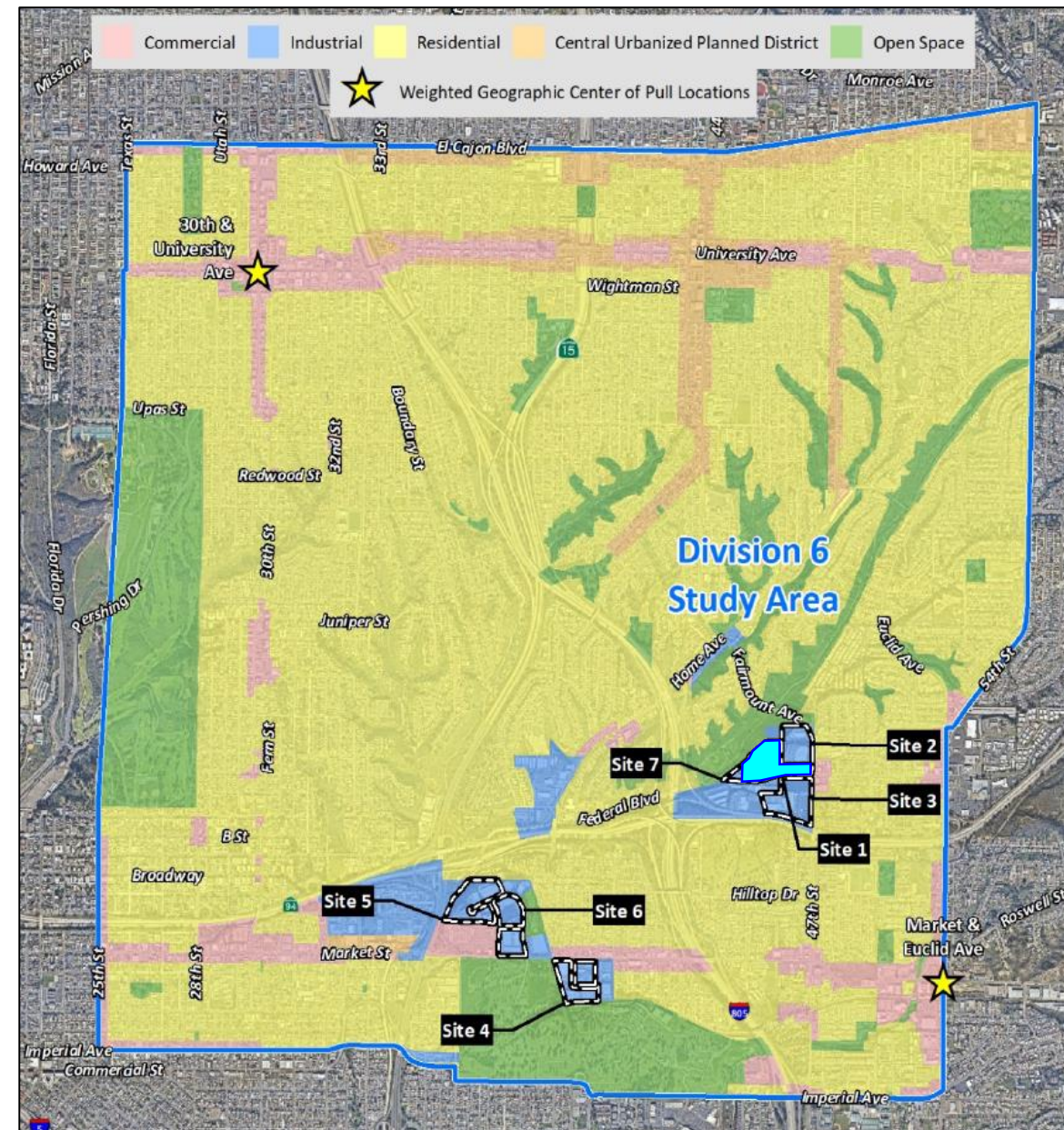
- Must be near future service growth
- I-805 corridor between University and Imperial Avenues
- Focus in areas currently used for industrial purposes
- Seven potential sites identified in project area





Site Selection

- CEQA doesn't require alternatives analysis, but FTA requires review of multiple options for Title VI analysis.
 - Staff identified Site 7 as the most feasible for implementation and operations, so detailed environmental studies conducted on Site 7.
- MTS Board of Directors will make final site selection this Fall.





Site 7 selected for
study based on...

- **Operational benefits**
- **Community impacts**
 - Feedback from on-going engagement
 - Title VI Report
 - Bus routings away from residential areas
- **Constructability**
- **Acquisition cost/complexity**
 - Ability to combine parcels
- **Relocation needs for current uses**



Site 7

Preferred for environmental studies; not final selected site.





Environmental Review Status

- Recommendation based on technical studies is that a project at Site 7 would be eligible for a Mitigated Negative Declaration
 - *“It is determined that the proposed action with the incorporation of the identified mitigation measures will not have a significant effect on the environment.”*
- Draft MND and technical studies published for public review and comment on July 14, 2022.
- Eight comments received, both in support of and in opposition to project.



Environmental Review Status

- SANDAG and MTS currently reviewing comments and preparing responses for Final MND document.
- Final MND expected to come to MTS Board for approval this Fall.
- NEPA review by FTA would follow the CEQA MND approval.
- Property acquisition and design work would begin with approval of environmental docs, with some activities allowed to start during review.



Other Project Activities

- MTS consultant (Dokken) is reviewing Site 7 for engineering feasibility and high-level cost estimates.
- Staff is drafting a Board resolution regarding hiring from the local community.
- Engagement with community will continue through design, construction, and implementation.
- Related: MTS received a grant for ZEB charging infrastructure at IAD, while construction at South Bay continues.



CTAC

**Clean Transit
Advancement Campus**

Project Update
MTS Executive Committee

September 1, 2022



**Metropolitan
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Agenda Item No. 5

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

September 1, 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 on board Bus and Trolley routes. 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 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. Staff will present a report on its findings.

/S/ Sharon Cooney

Sharon Cooney
Chief Executive Officer

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

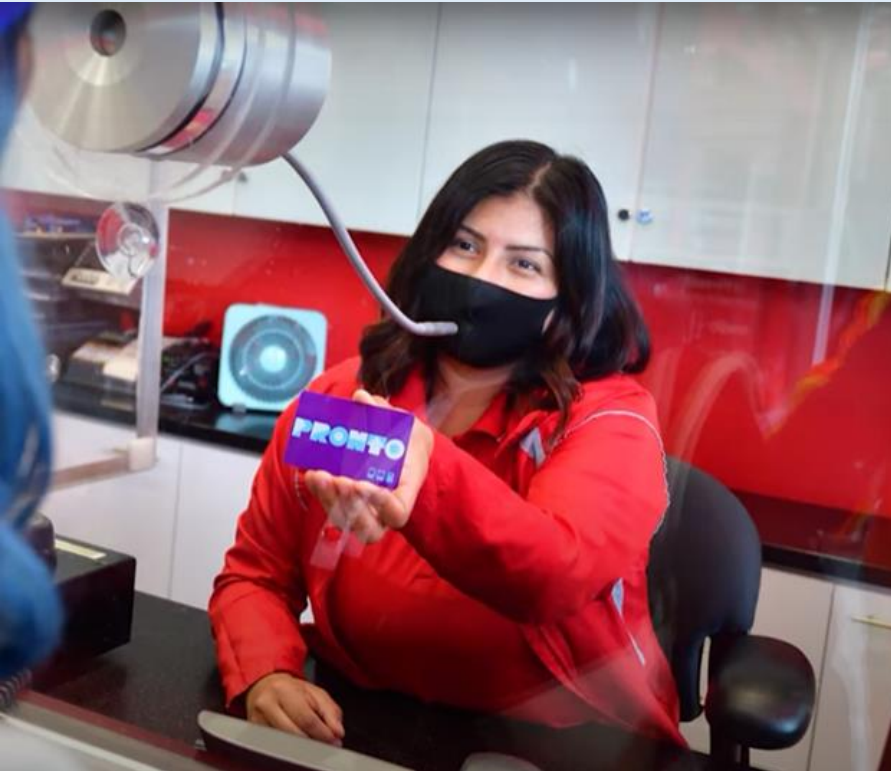
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MTS Customer Satisfaction Survey Results

Executive Committee - September 1, 2022

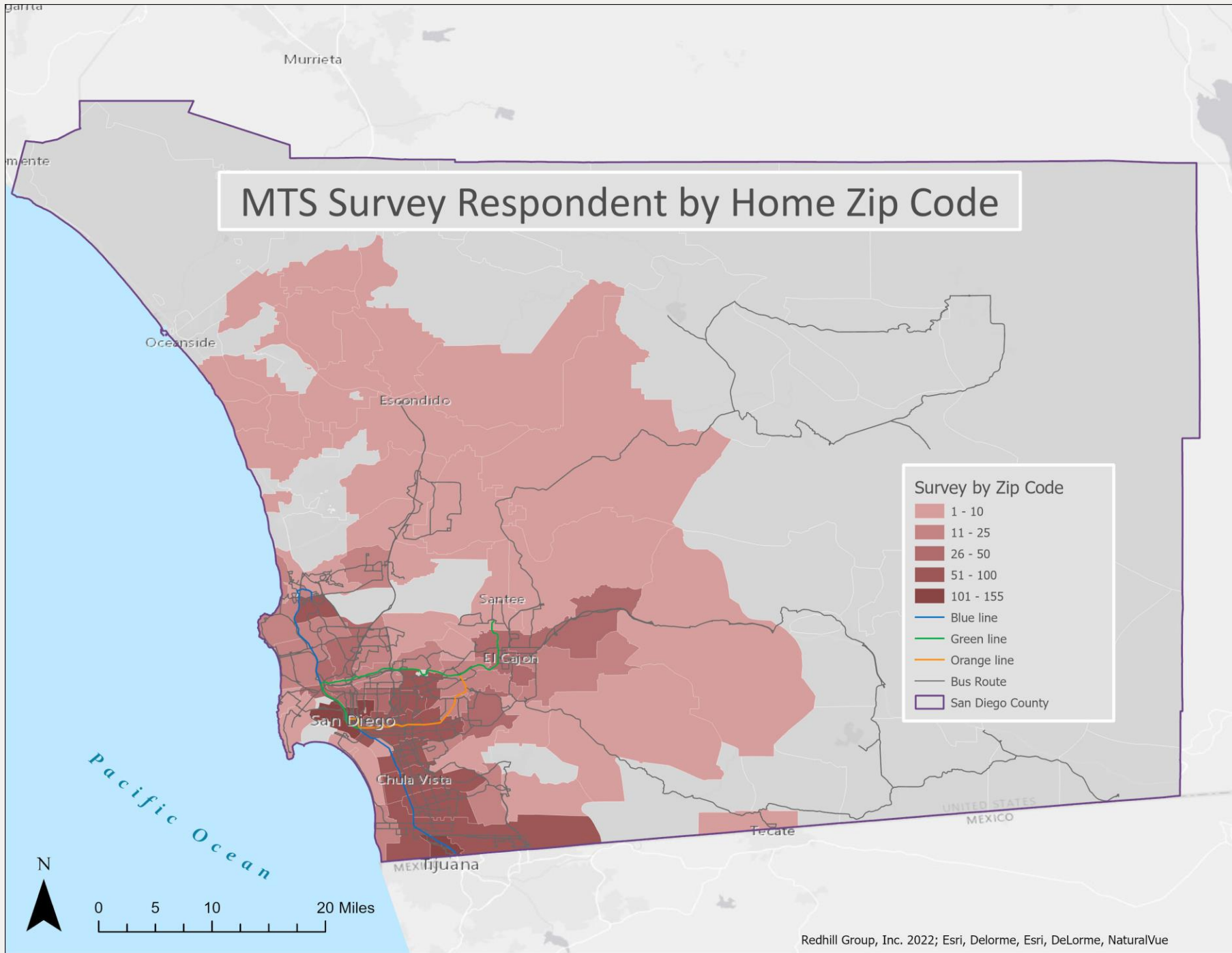


01 Methodology



Transit Mode	Sample Size	Percent Distribution	Statistical Precision at 95% Confidence Level
<i>System-wide</i>	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



02 Demographics

8.26.2022



Customer Profile

- Use Bus (74%) and Trolley (81%)
- Ride MTS at least 3 times a week (80%)
- Vehicle availability (30%)
- Employed (61%)
- Student (26%)
- Disability (12%)
- Annual income less than \$50K (84%)
- Annual income less than \$20K (55%)
- More likely to be Hispanic (49%)
- Speak a language other than English (36%)
 - and of those 61% speak English “well” or “very well”
- Smartphone availability (91%)

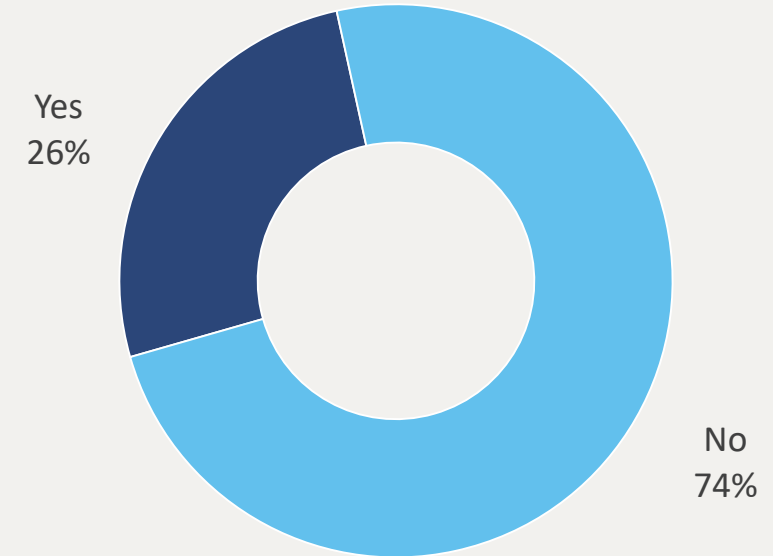
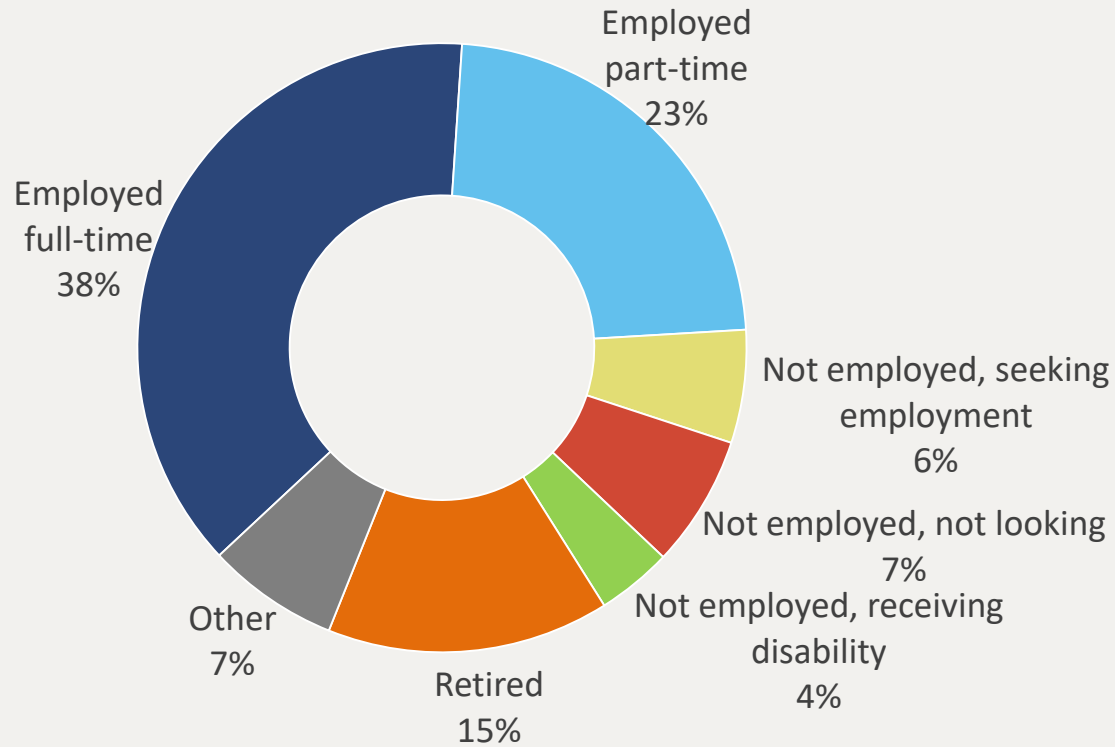


Employment Status

Student Status

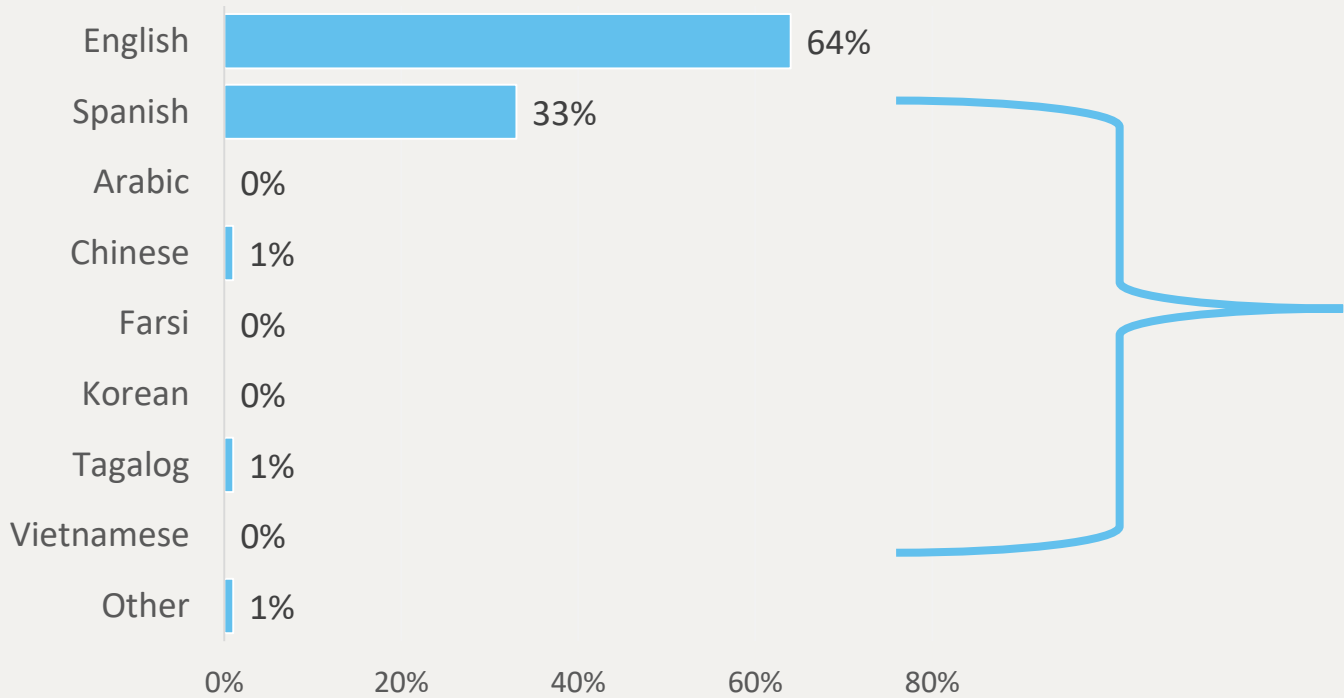
Employment Status

Student Status

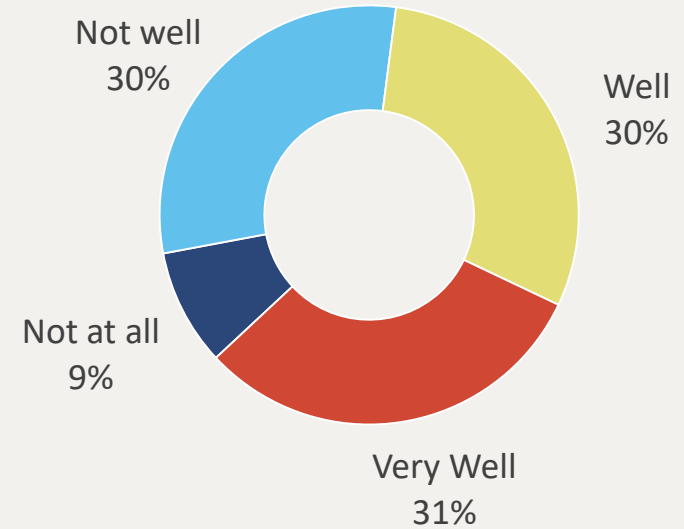


Language Spoken at Home

What primary language do you personally speak at home?



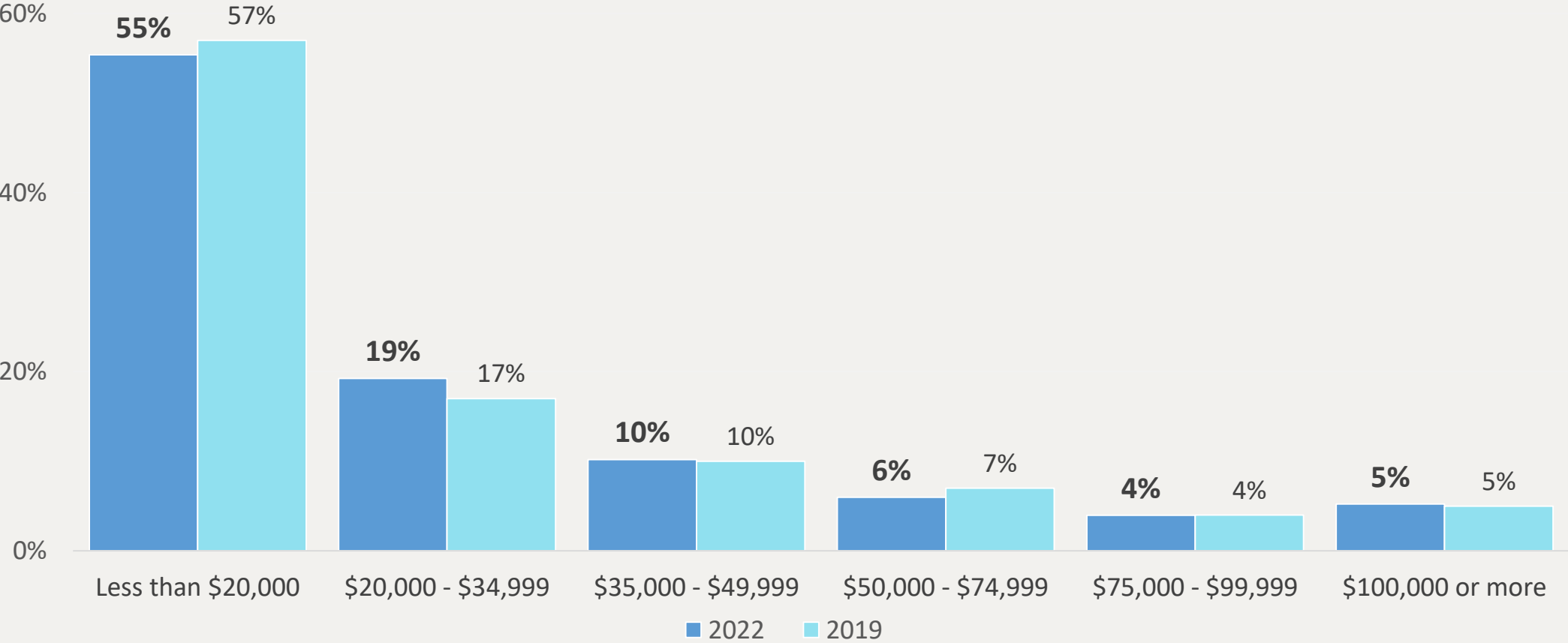
How well do you speak English?



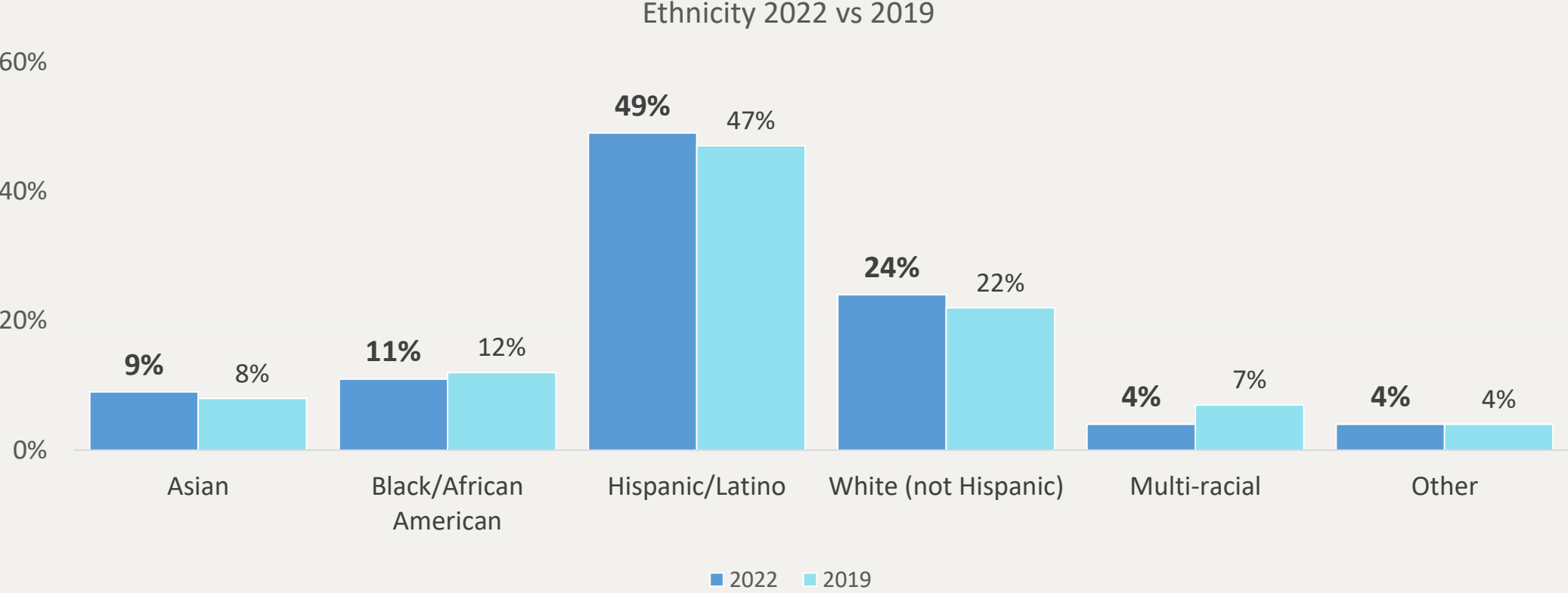
Of people who speak a language other than English, 61% speak English “well” or “very well”

Income

Income 2022 vs 2019

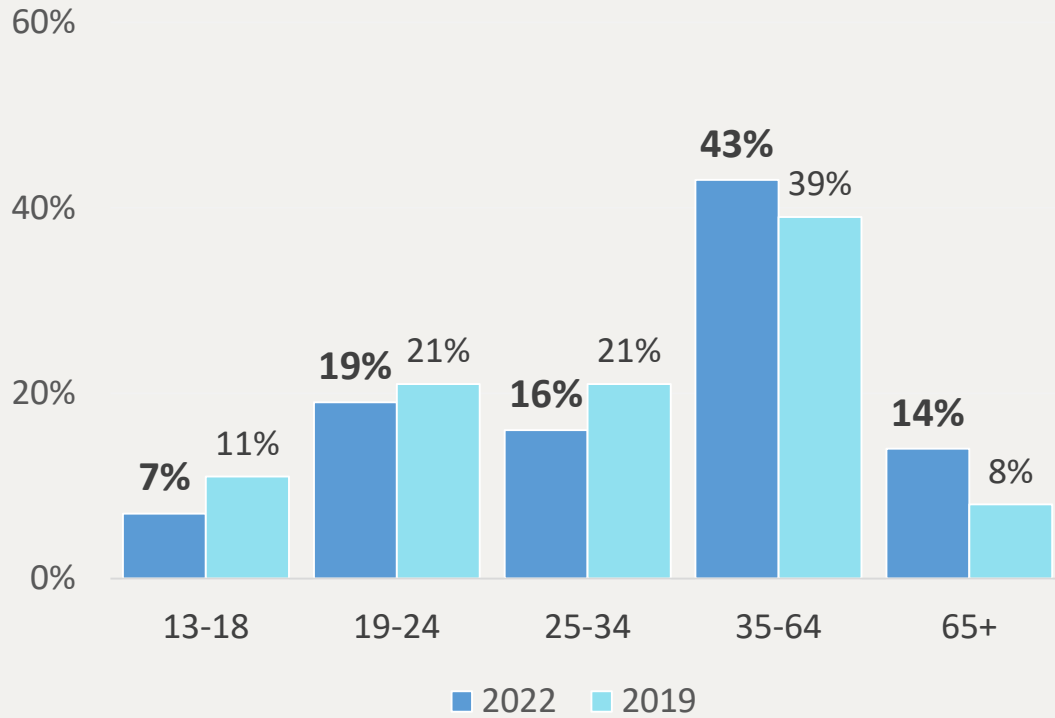


Ethnicity



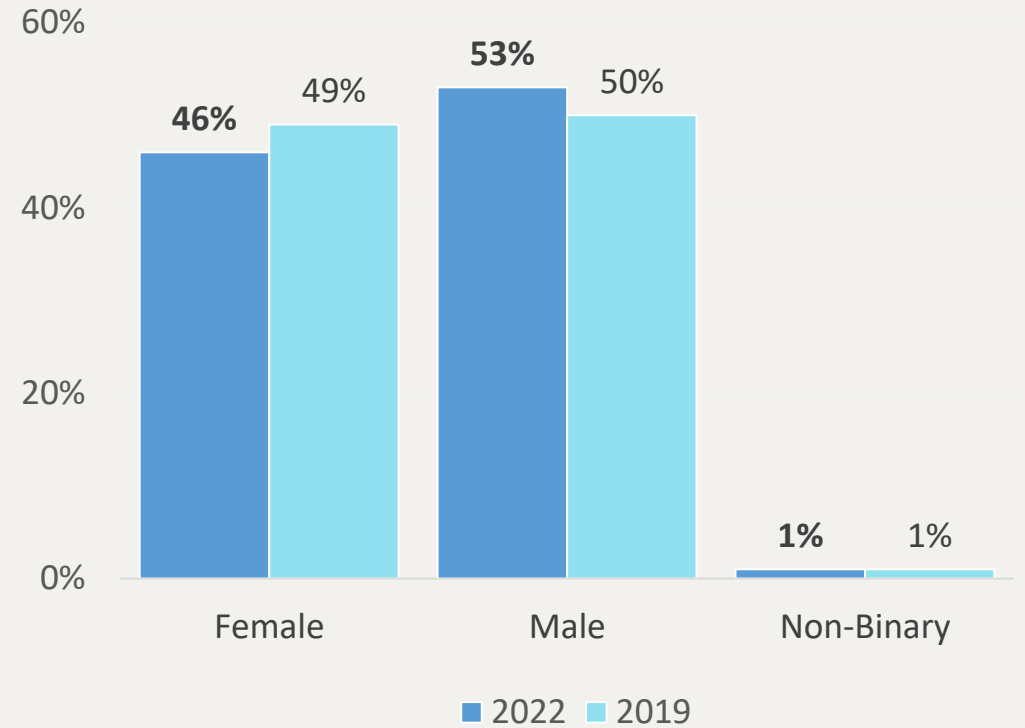
Age

Age 2022 vs 2019



Gender

Gender 2022 vs 2019

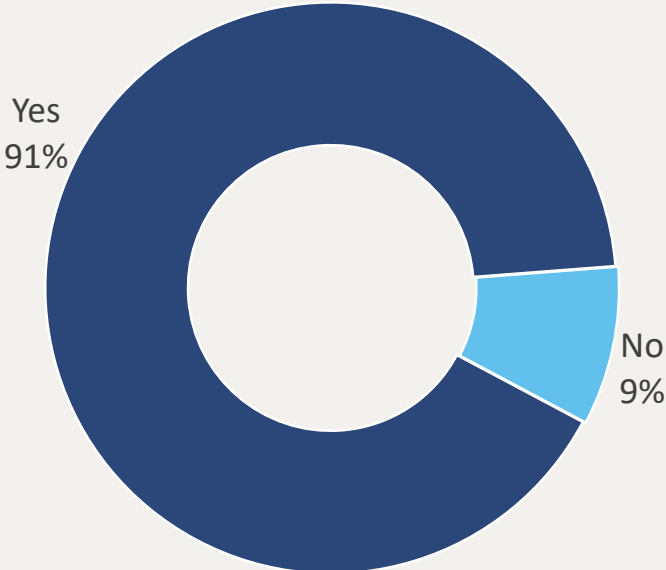


Personal Vehicle and Smartphone Availability

Do you have access to a personal vehicle to make this trip?

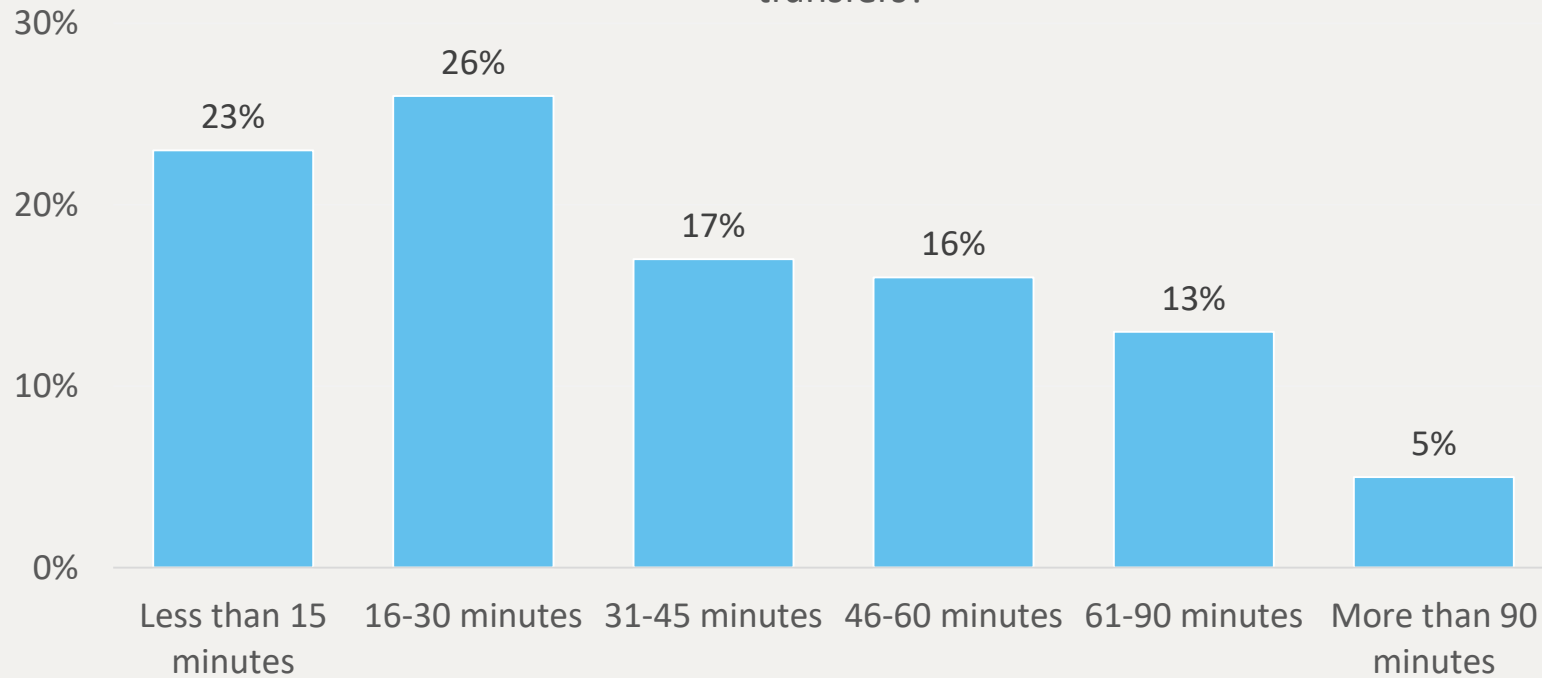


Do you have a smartphone?

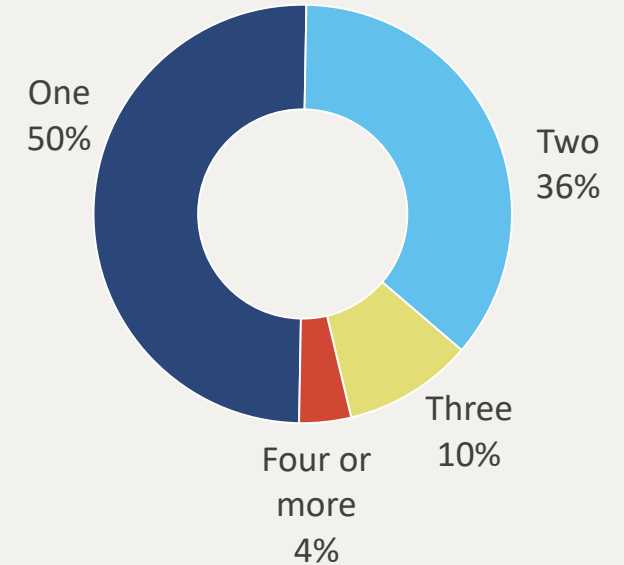


Trip Time and Transfers

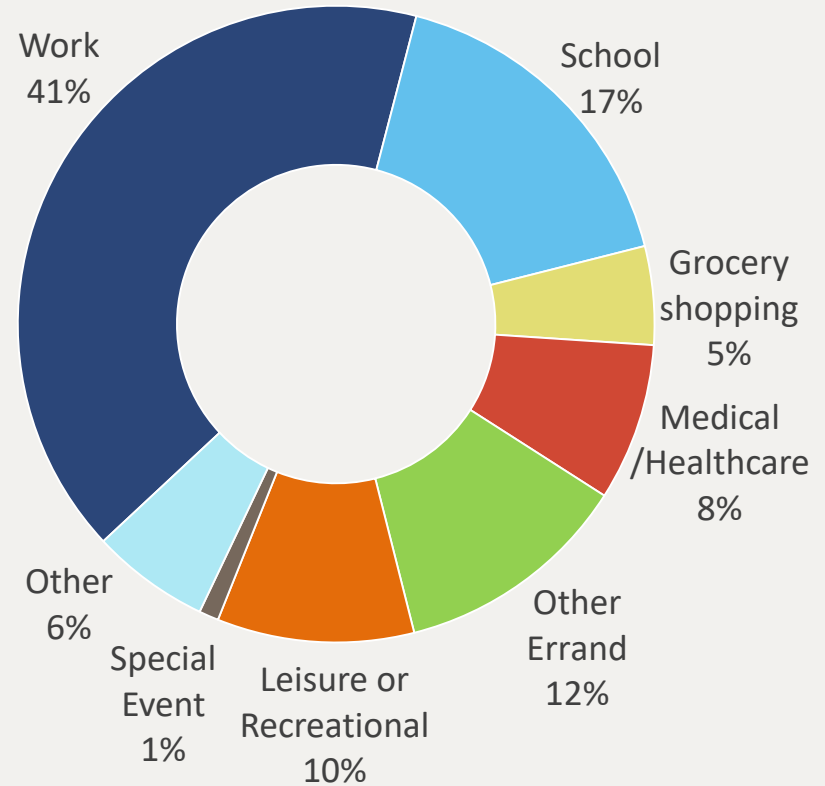
How much time will you spend making this one-way trip, including all transfers?



Number of Transfers



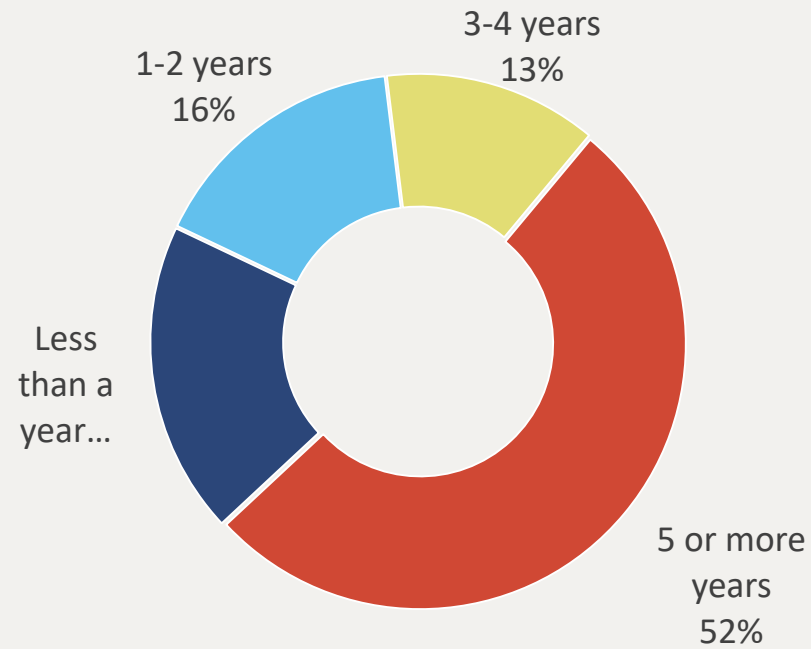
Trip Purpose



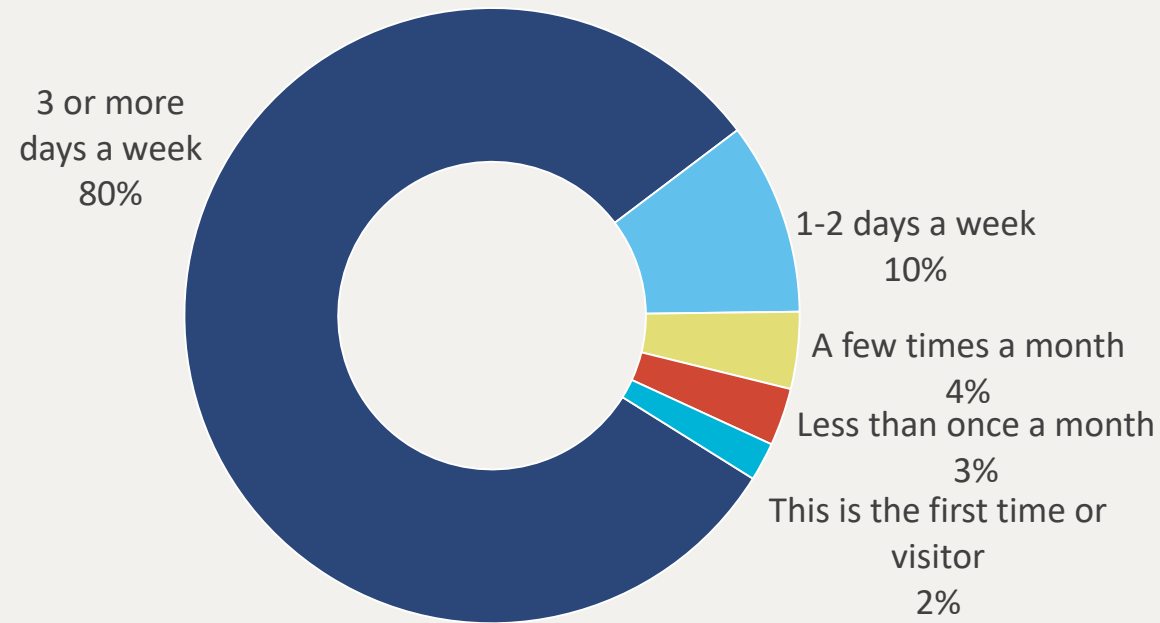
- School and work trips are most prevalent
- Trip purpose may be fluid as pandemic recovery continues

Customer Longevity and Frequency of Use

How long have you been an MTS bus and/or Trolley rider?



How often do you ride the bus or Trolley?



03 System Satisfaction



Customer Satisfaction Results

Percentages may not total 100% due to rounding or multiple response options

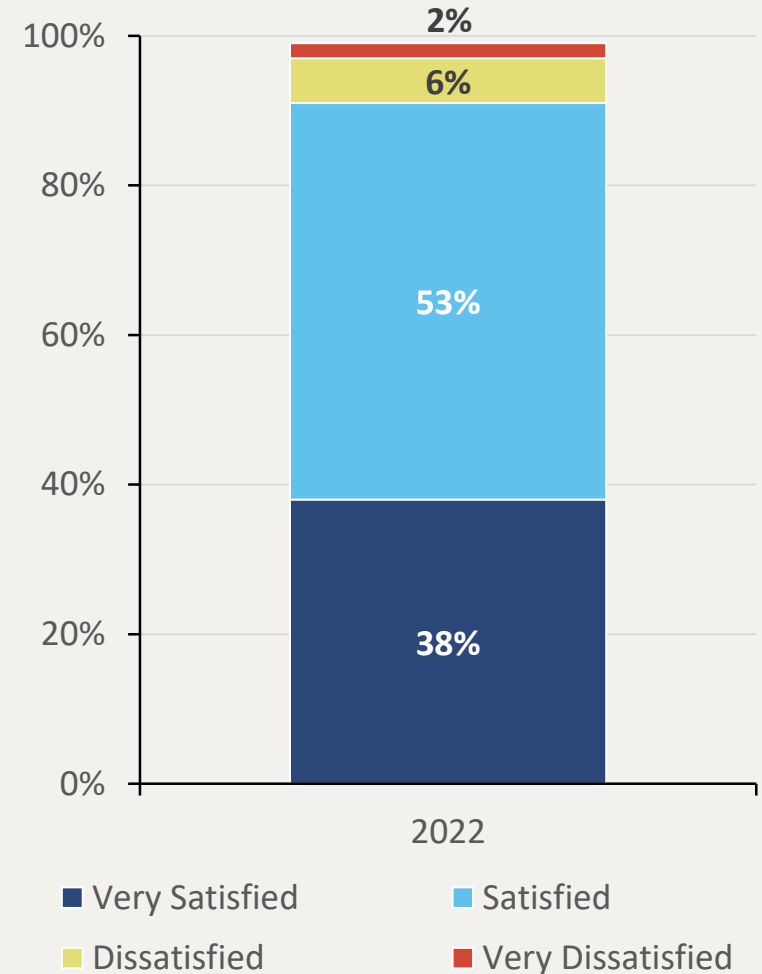
Systemwide Rider Satisfaction

Overall Customer Satisfaction
91%



- Systemwide customer satisfaction is high
- On par with 2019 (91%)

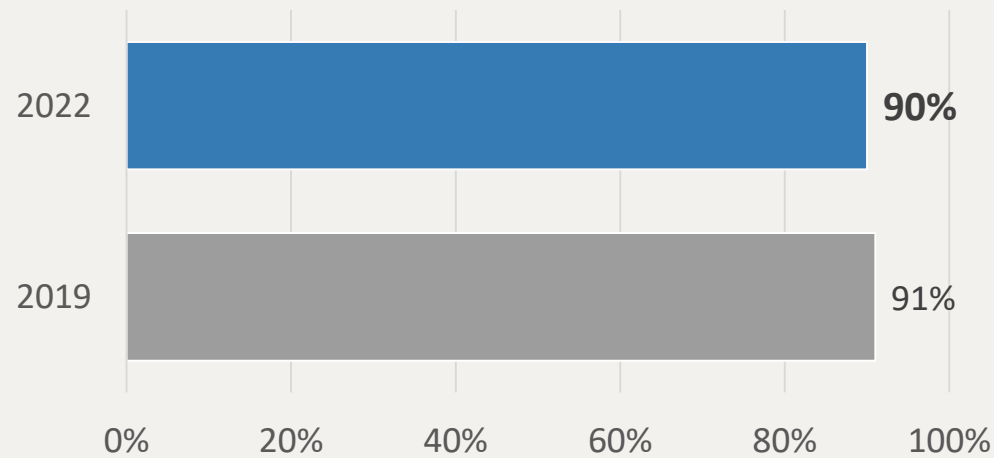
Satisfaction of Overall Quality of Transit Service



Overall Rider Satisfaction by Mode

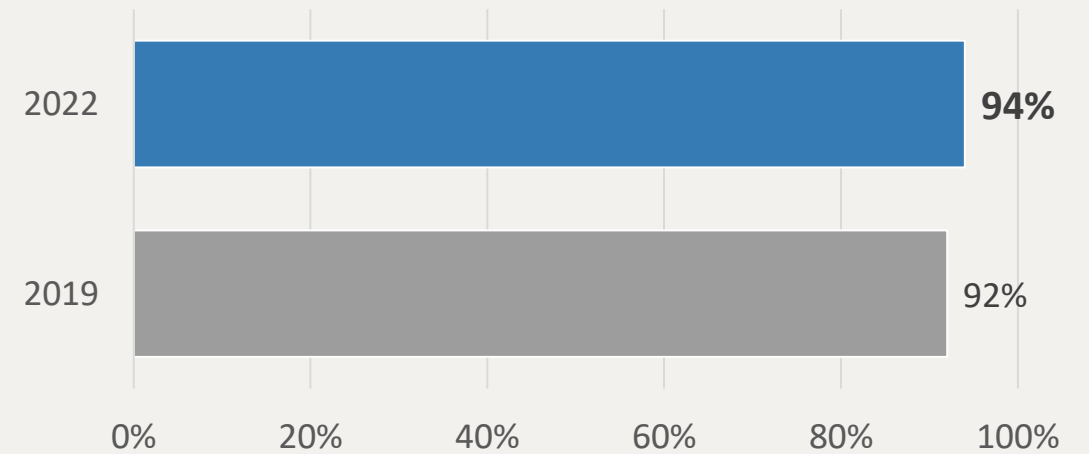
Trolley

Satisfaction of Overall Quality of Transit Service by Trolley



Bus

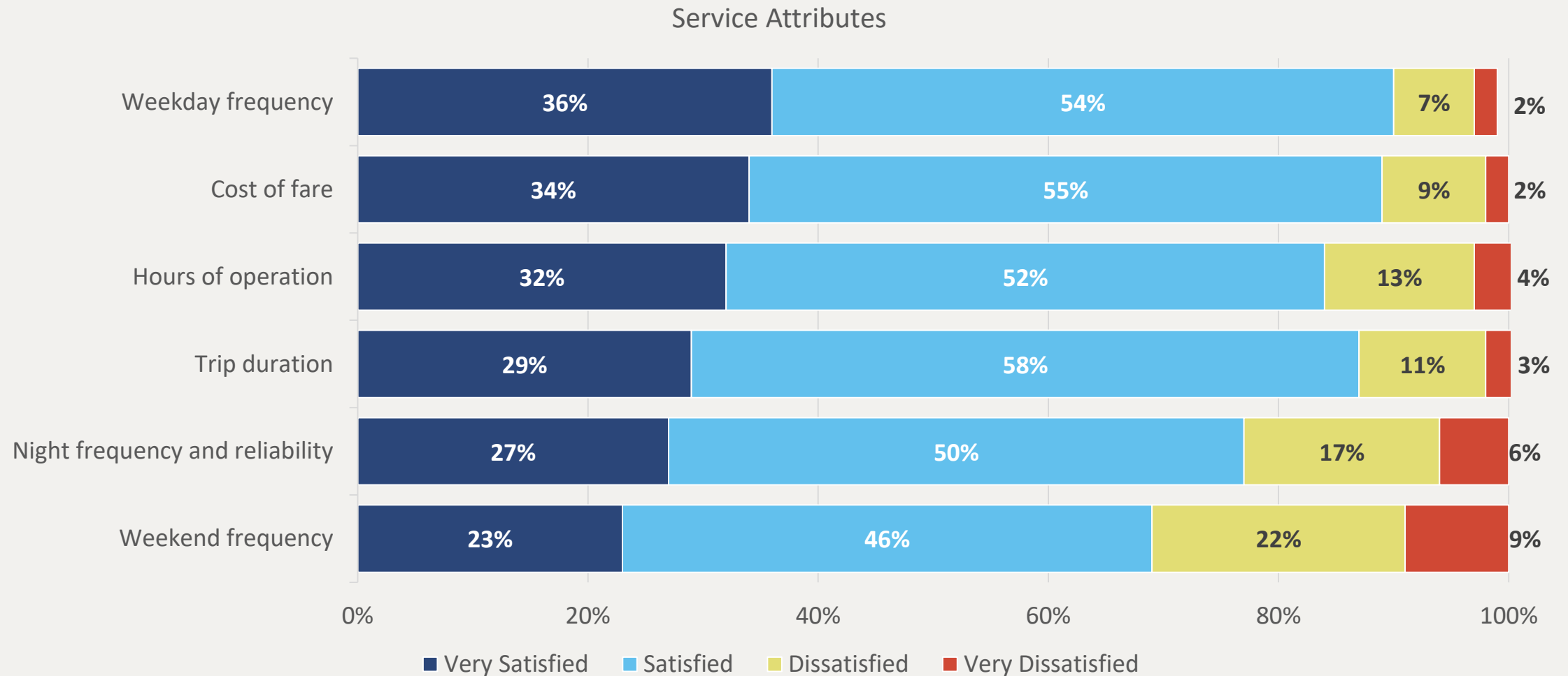
Satisfaction of Overall Quality of Transit Service by Bus



Overall satisfaction of Trolley riders is statistically unchanged

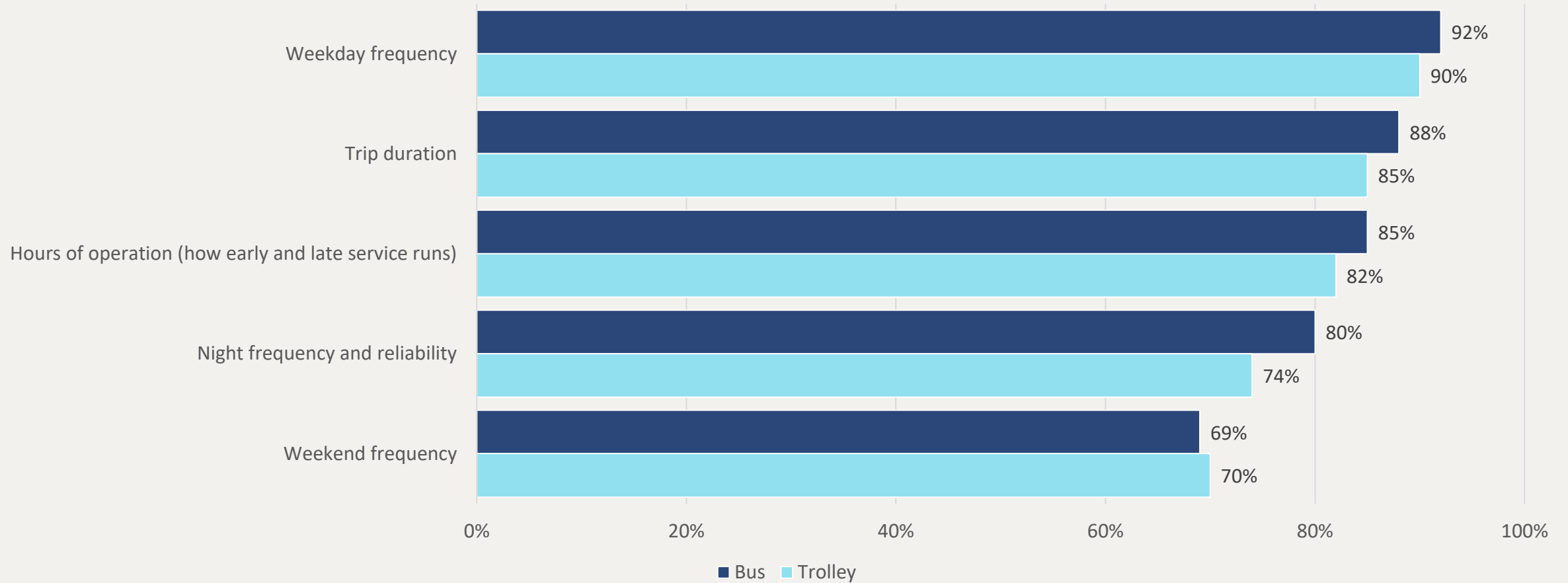
Overall satisfaction of bus riders directionally higher

Service Attributes Satisfaction – Systemwide



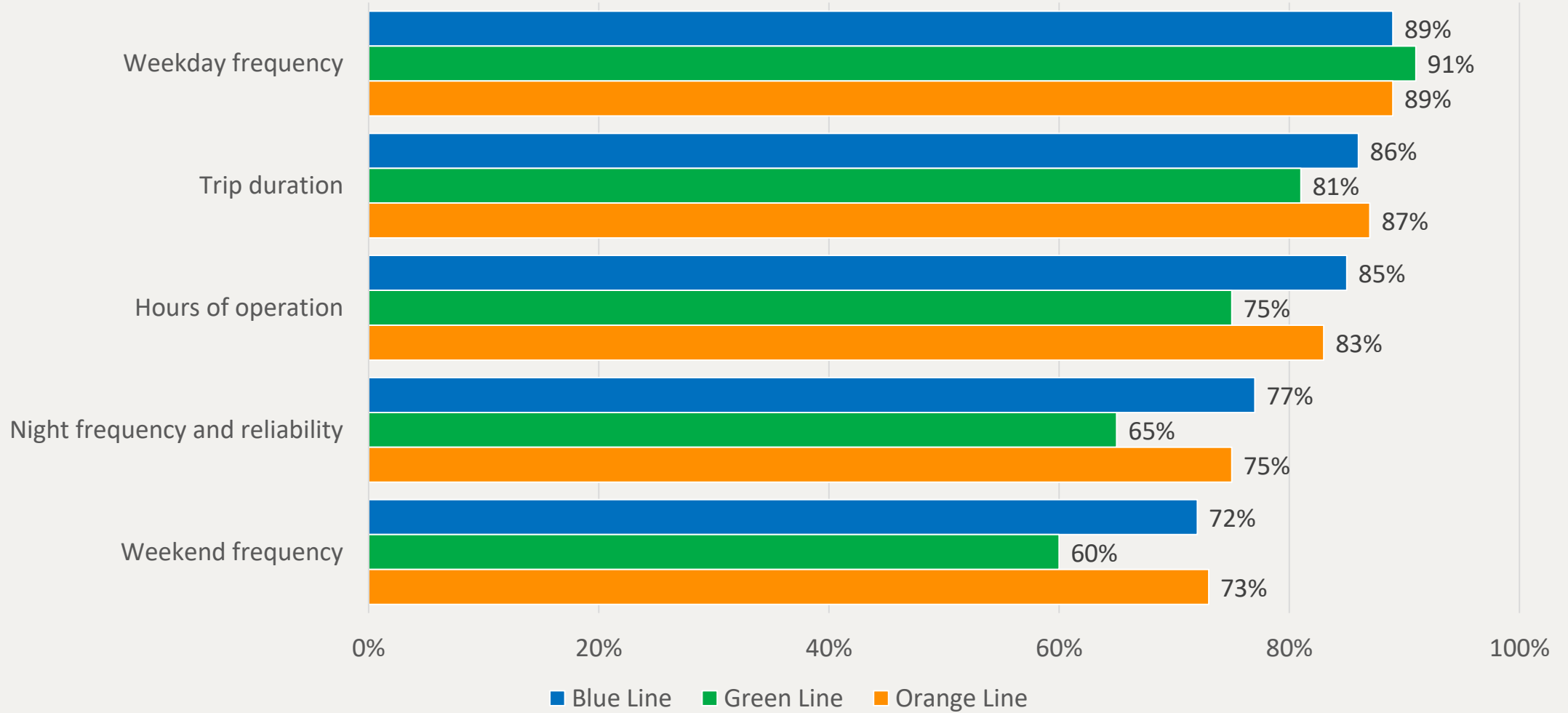
Service Attributes by Bus and Trolley

Service Attributes by Bus and Trolley

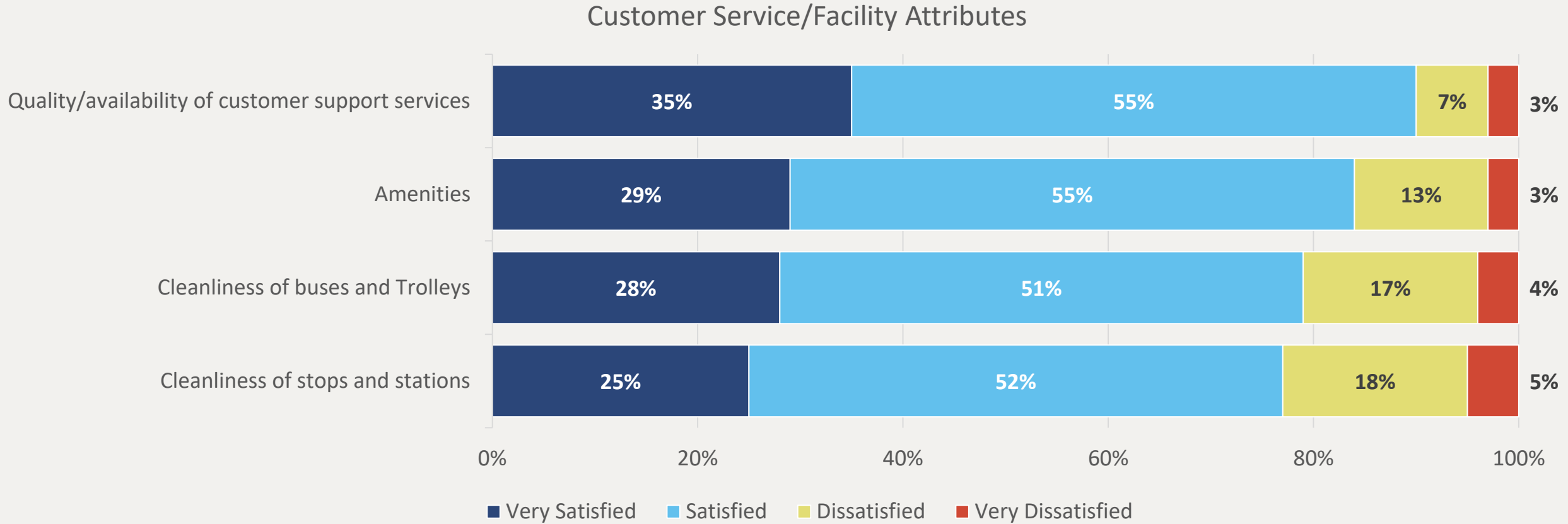


Service Attributes - Trolley Line

Service Attributes by Trolley lines

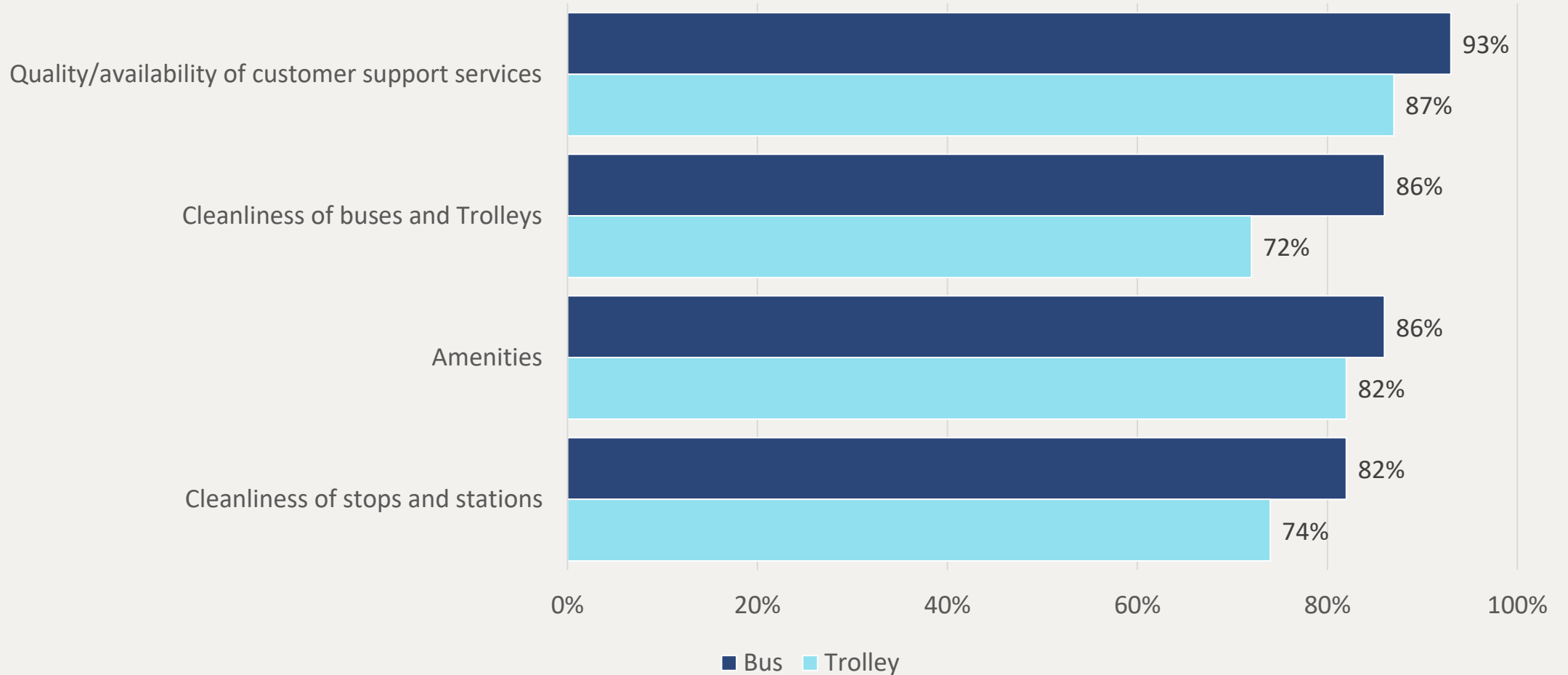


Customer Service/Facility Attributes – Systemwide



Customer Service/Facility Attributes – Bus and Trolley

Customer Attributes by Bus and Trolley



04 Safety Satisfaction

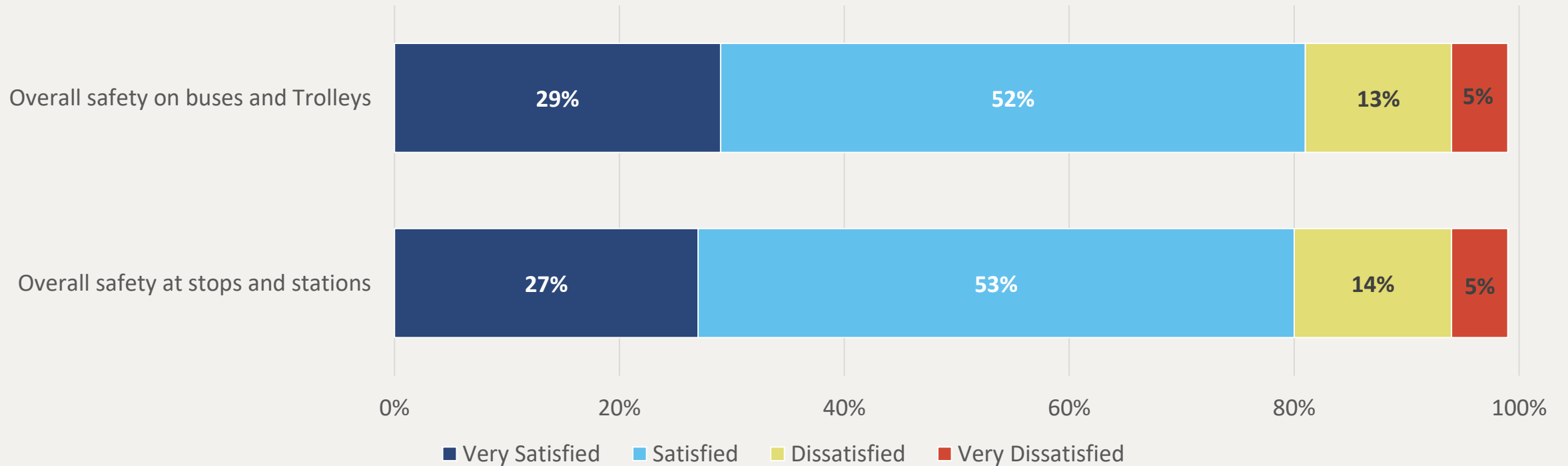
8.26.2022



Percentages may not total 100% due to rounding or multiple response options

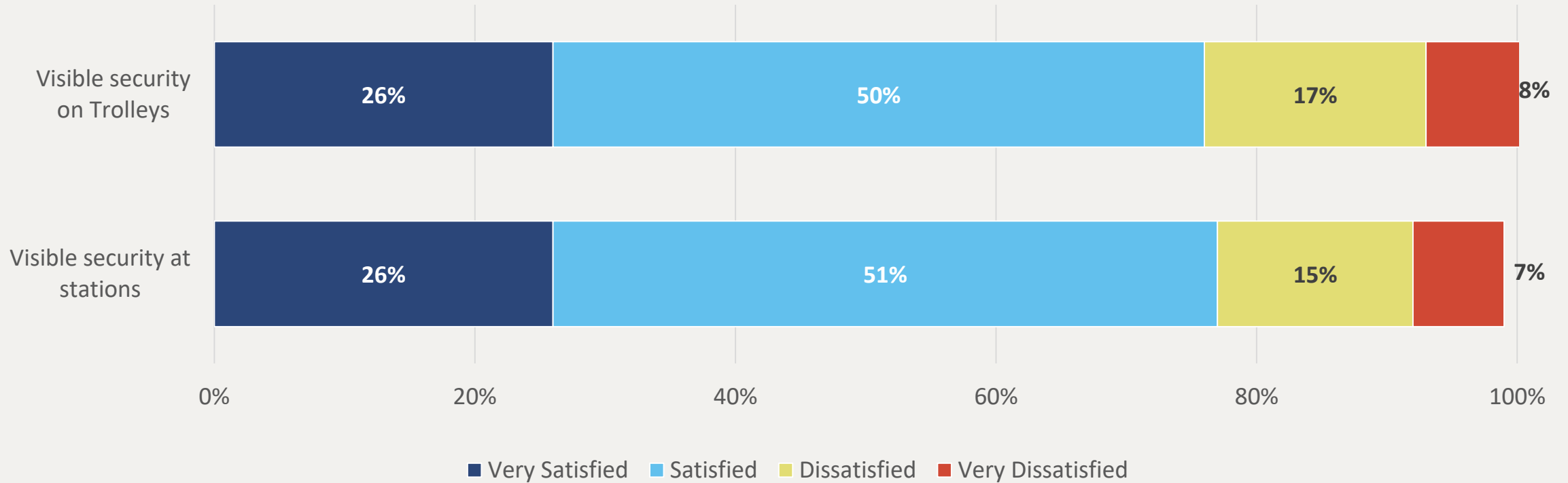
Safety Onboard and Stations

Overall Satisfaction on Safety of Buses and Trolley & Stops and Stations

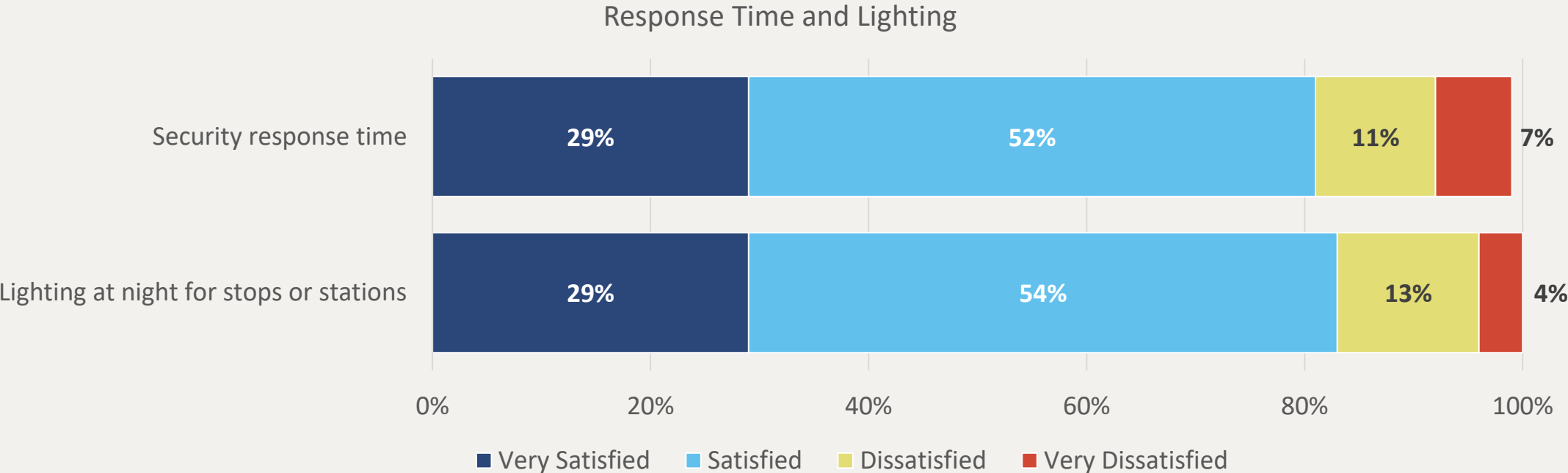


Visible Security

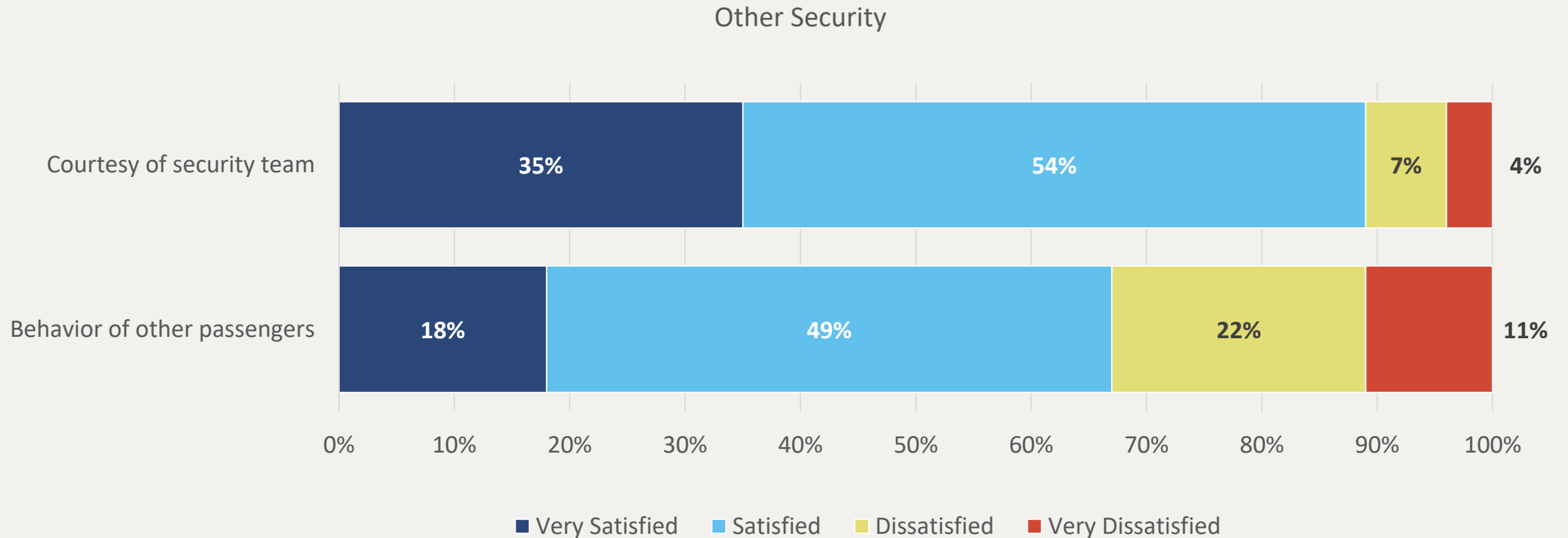
Overall Satisfaction on Visible Security



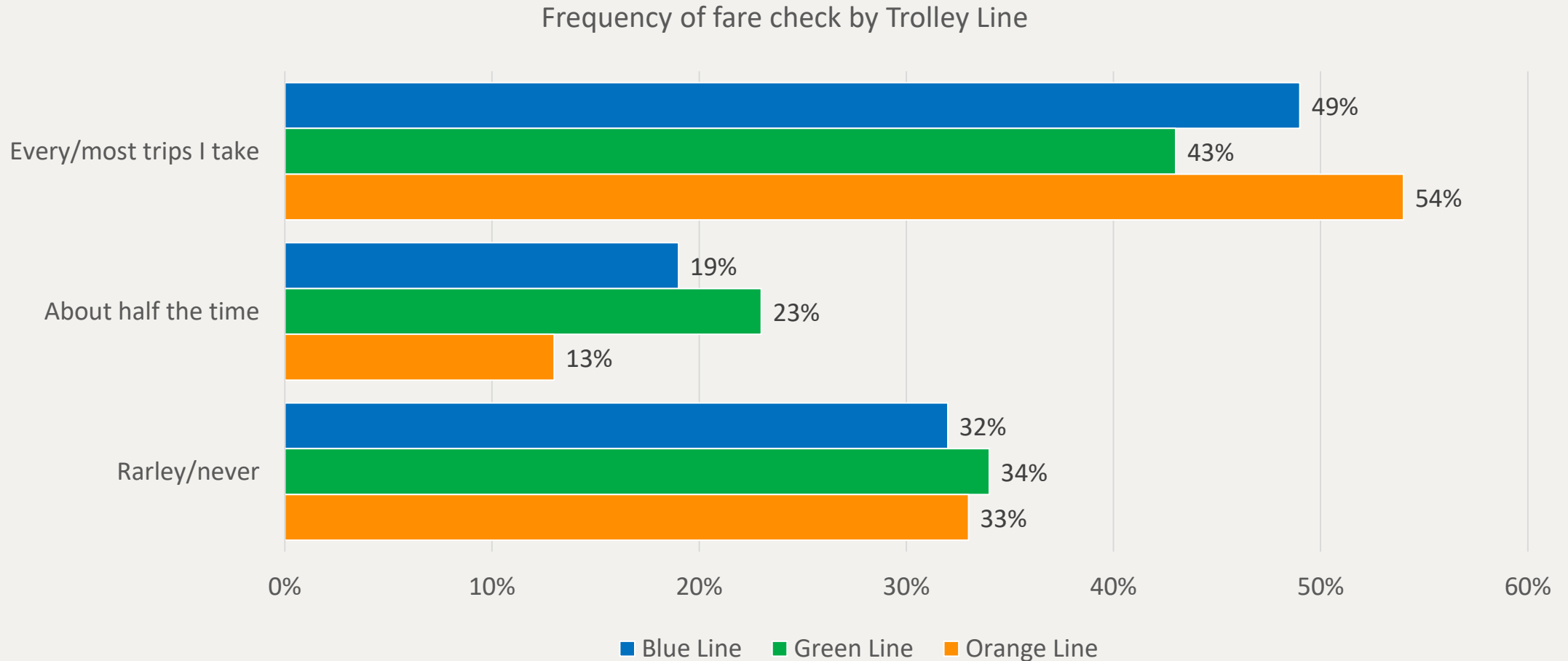
Response Time and Lighting



Other Security

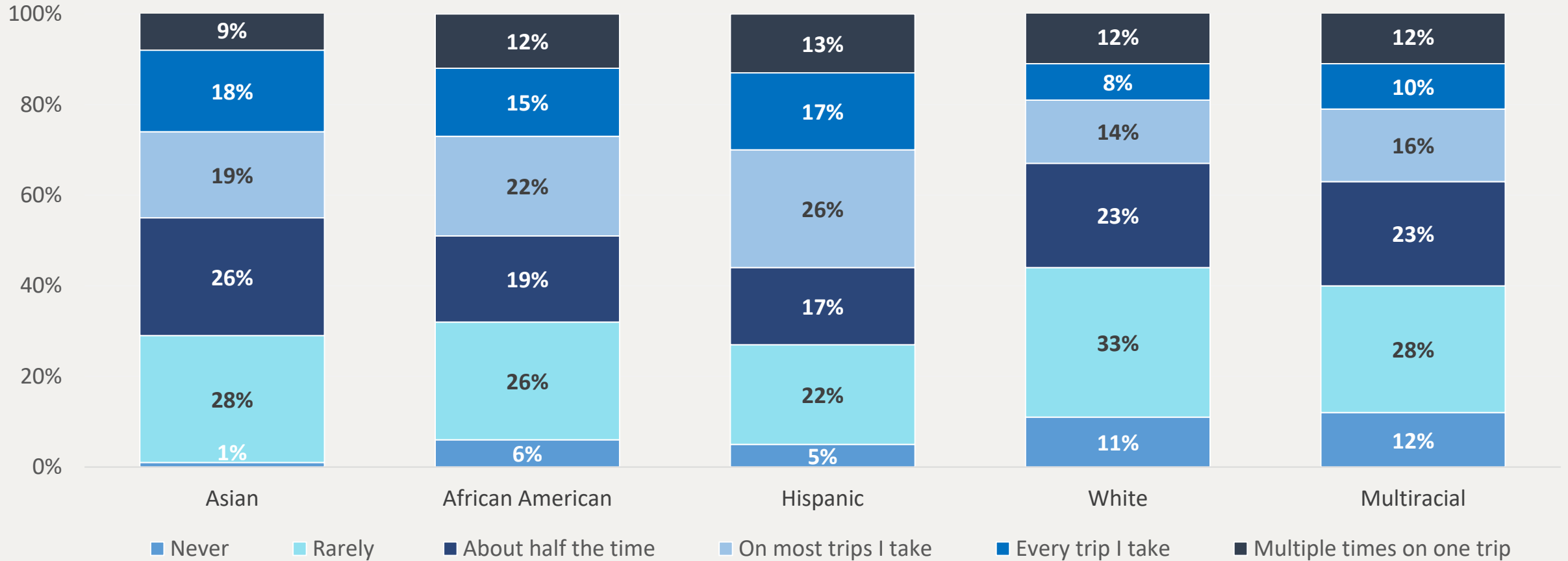


Frequency of Fare Check – Trolley Line



Fare Check by Ethnicity – Trolley Only

When you ride the Trolley, how often is your fare checked?



05 Fare and PRONTO Satisfaction

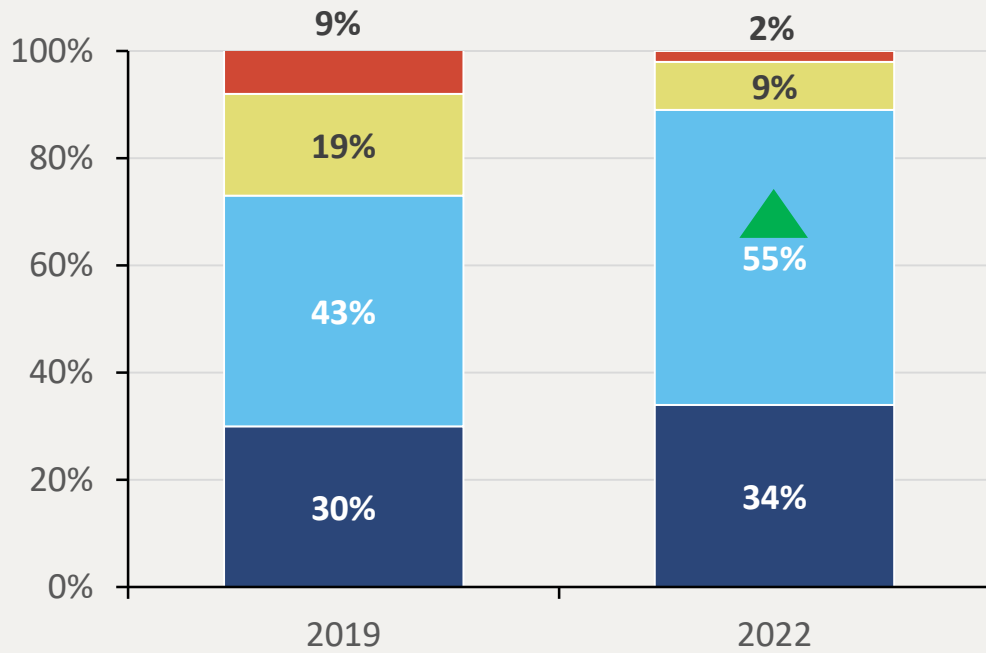
8.26.2022



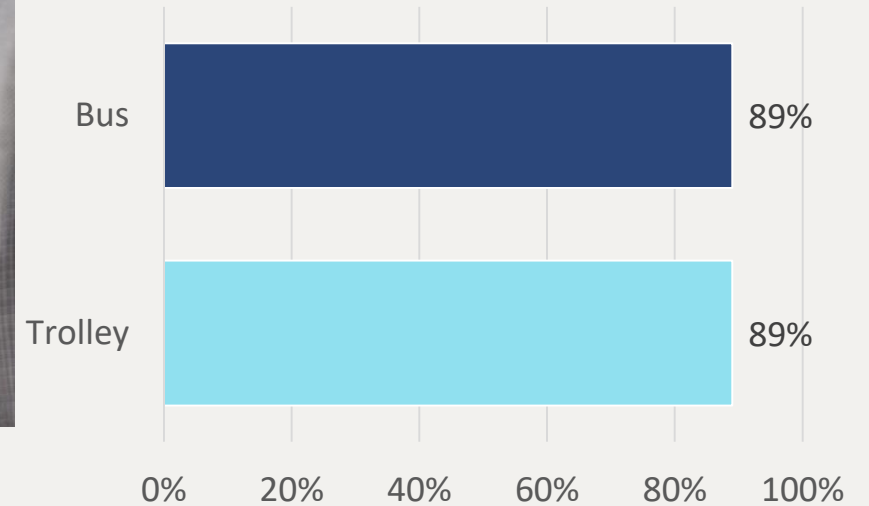
Percentages may not total 100% due to rounding or multiple response options

Satisfaction with Fare

Satisfaction of MTS Fares



Satisfaction of cost of fare by bus & Trolley

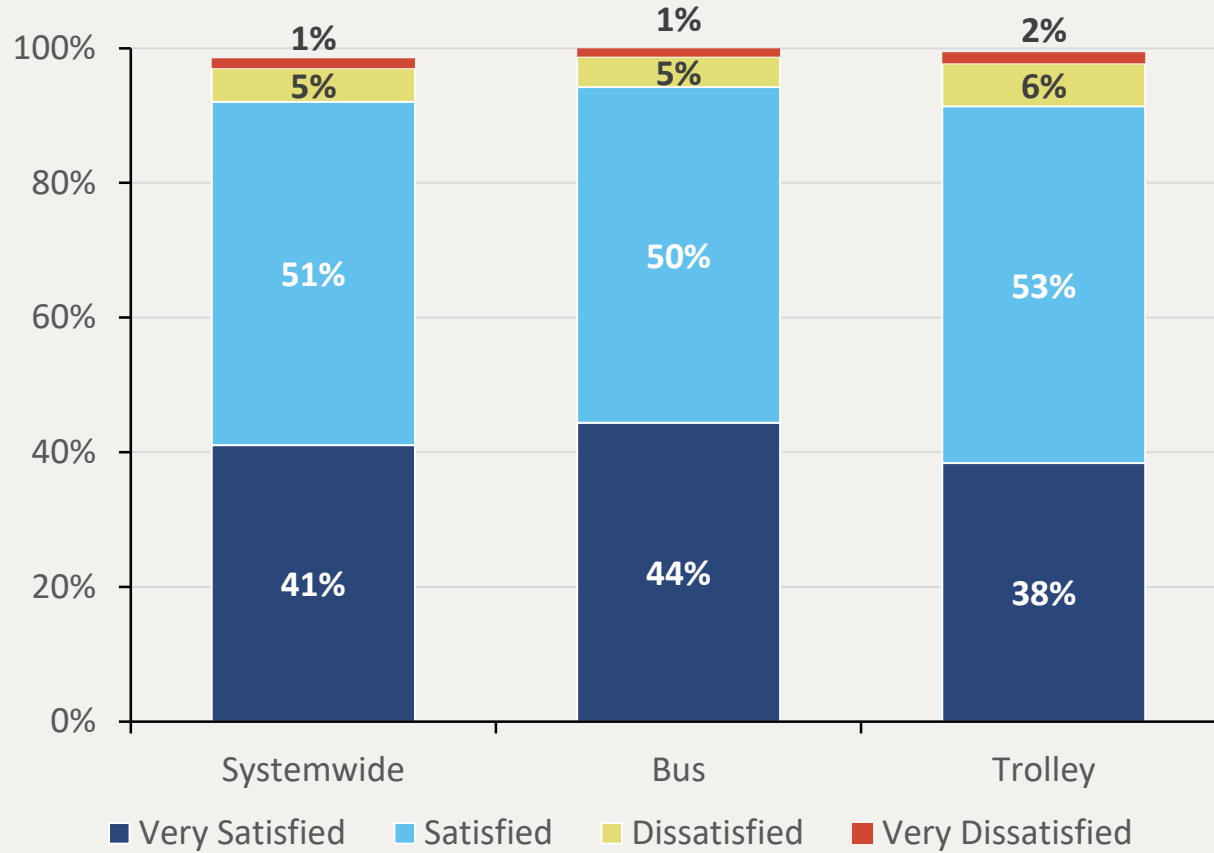


■ Very Satisfied ■ Satisfied ■ Dissatisfied ■ Very Dissatisfied

Significant improvement in satisfaction with fares (89% vs. 73%)

PRONTO Satisfaction

Overall satisfaction with PRONTO

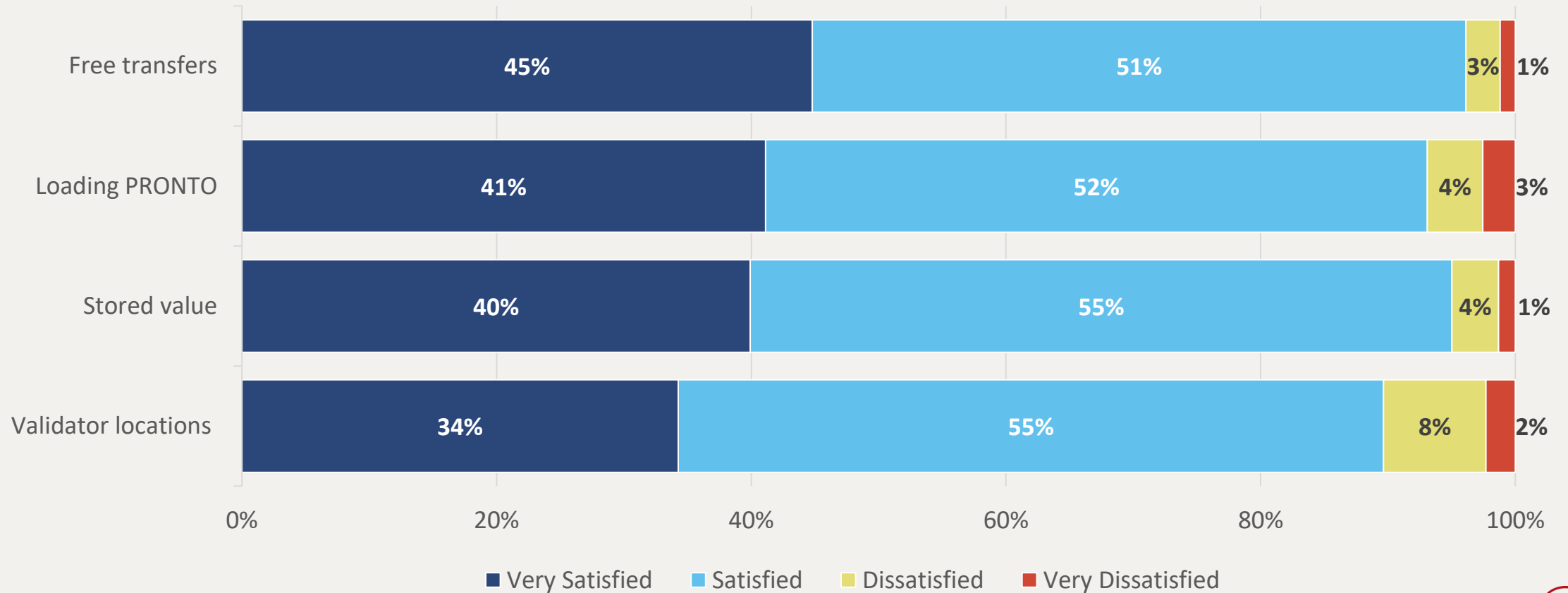


PRONTO Satisfaction
92%



Satisfaction with PRONTO Attributes

PRONTO: How satisfied are you with each of the following aspects of the PRONTO card and app system?



06 Voice of the Customer

8.26.2022



Briefly tell us what changes would make the biggest difference in improving your transit experience?



Next Steps

- Presenting key findings to MTS Security & Passenger Safety Community Advisory Group – Sept. 7
 - 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!

CALL-IN PUBLIC COMMENT

Corinna Contreras with Climate Action Campaign, provided a live public comment for agenda item #5. Contreras's statement will be reflected in the minutes.



**Metropolitan
Transit
System**

Agenda Item No. 6

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

September 1, 2022

SUBJECT:

FISCAL YEAR (FY) 2022 FEDERAL TRANSIT ADMINISTRATION (FTA) TRIENNIAL REVIEW
(SAMANTHA LESLIE)

INFORMATIONAL:

Budget Impact

None.

DISCUSSION:

Per federal law, the FTA is required to conduct Triennial Reviews of grant recipients every three (3) years. Due to the COVID-19 pandemic, MTS's Triennial Review was delayed by one (1) year. The Triennial Review is comprehensive. It examines grantee performance and adherence to various FTA requirements and policies. The review covers 23 program areas. In 21 of the 23 areas, no findings were identified. However, the FTA Triennial Review indicated findings in 2 of the 23 areas, which included the Drug and Alcohol Program and ADA Complementary Paratransit. MTS has responded to each of these findings with corrective actions of which the FTA has accepted and closed. Staff will provide a presentation on the FTA Triennial Review process and MTS's corrective actions to close each finding.

/S/ Sharon Cooney

Sharon Cooney
Chief Executive Officer

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

Attachment: A. Final Report MTS FY 22 Triennial Review

1255 Imperial Avenue, Suite 1000, San Diego, CA 92101-7490 • (619) 231-1466 • sdmts.com

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.





U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam,
American Samoa,
Northern Mariana Islands

90 7th Street
Suite 15-300
San Francisco, CA 94103-6701
415-734-9490

888 South Figueroa Street
Suite 440
Los Angeles, CA 90017-5467
213-202-3950

July 22, 2022

Nathan Fletcher
Board Chair
San Diego Metropolitan Transit System
1255 Imperial Avenue, Suite 1000
San Diego, CA 92101

RE: Federal Transit Administration FY 2022
Triennial Review – Final Report

Dear Mr. Fletcher:

I am pleased to provide you with a copy of this Federal Transit Administration (FTA) report as required by 49 U.S.C. Chapter 53 and other federal requirements. The enclosed final report documents the FTA's Fiscal Year (FY) 2022 Triennial Review of the San Diego Metropolitan Transit System (MTS) in San Diego, California. Although not an audit, the Triennial Review is the FTA's assessment of the MTS's compliance with federal requirements, determined by examining a sample of award management and program implementation practices. As such, the Triennial Review is not intended as, nor does it constitute, a comprehensive and final review of compliance with award requirements.

Due to the Coronavirus 2019 (COVID-19) Public Health Emergency, a virtual site visit was conducted for this Triennial Review. In addition, the review was expanded to address the MTS's compliance with the administrative relief and flexibilities the FTA granted and the requirements of the [COVID-19 Relief](#) funds received through the Coronavirus Aid, Relief, and Economic Security (CARES) Act; Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) of 2021; and American Rescue Plan (ARP) Act of 2021.

The Triennial Review focused on the MTS's compliance in 23 areas. Deficiencies were found in two (2) areas: (i) the Americans with Disabilities Act (ADA) – Complementary Paratransit and (ii) and the Drug and Alcohol Program. Two (2) areas were not applicable.

Subsequent to the virtual site visit, the Access Services provided corrective action responses to address the deficiencies noted in the ADA-Complementary Paratransit and Drug and the Alcohol Program areas of the report, closing these deficiencies.

Regulations and Guidance

As the MTS moves forward with its transit program, the FTA would like to provide a look-ahead for future oversight activities related to new and/or updated requirements, below.

Cybersecurity Certification for Rail Rolling Stock and Operations

The National Defense Authorization Act for Fiscal Year 2020, Pub. L. 116-92, §7613 promulgated the addition of U.S.C. Section 5323(v). This new requirement instructs a recipient that operates a rail fixed guideway public transportation system to certify to the FTA that it established a process to develop, maintain, and execute a written plan for identifying and reducing cybersecurity risks. Recipients are to use the approach described in the voluntary standards and best practices developed by the National Institute of Standards and Technology (NIST) and the Secretary of Homeland Security in consultation and coordination with various stakeholders. Recipients are to also identify hardware and software it determines should be tested and analyzed by a third party to mitigate cybersecurity risk.

For the FY 2022 review cycle, the FTA is deploying a “soft launch” in determining, if and how, recipients are developing their plan for identifying and reducing cybersecurity risks. Recipients are to certify in TrAMS by correctly completing Category 20 of the Annual Certifications and Assurances to indicate their compliance with this requirement. For the FY 2025 review cycle, this requirement will be reviewed for full compliance.

For additional information about the cybersecurity framework, visit the NIST’s website at: <https://www.nist.gov/cyberframework/framework>.

Thank you for your cooperation and assistance during this Triennial Review. If you need any technical assistance or have any questions, please do not hesitate to contact the Mr. Rusty Whisman, Transportation Program Specialist, at (213) 202-3956 or by email at rusty.whisman@dot.gov.

Sincerely,

For Ray Tellis
Regional Administrator

Enclosure

FINAL REPORT

**FISCAL YEAR 2022
TRIENNIAL REVIEW**

of

**San Diego Metropolitan Transit System
(MTS)
San Diego, CA**

ID: 2301

Performed for:

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION
REGION 9**

Prepared By:

Calyptus Consulting Group, Inc.

Scoping Meeting Date: March 2, 2022

Site Visit Date: May 16-19, 2022

Draft Report Date: June 21, 2022

Final Report Date: July 22, 2022

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I. Executive Summary

This report documents the Federal Transit Administration's (FTA) Triennial Review of the San Diego Metropolitan Transit System (MTS) of San Diego, CA. The FTA wants to ensure that awards are administered in accordance with the requirements of federal public transportation law 49 U.S.C. Chapter 53. The review was performed by Calyptus Consulting Group, Inc. (Reviewer). During the virtual site visit, administrative and statutory requirements were discussed and documents were reviewed.

Due to the Coronavirus 2019 (COVID-19) Public Health Emergency, a virtual site visit was conducted for this Triennial Review. In addition, the review was expanded to address MTS' compliance with the administrative relief and flexibilities FTA granted and the requirements of the COVID-19 Relief funds received through the Coronavirus Aid, Relief, and Economic Security (CARES) Act; Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) of 2021; and American Rescue Plan (ARP) Act of 2021. MTS was also requested to share if and/or how it suspended, deviated from, or significantly updated or altered its transit program due to the public health emergency.

The Triennial Review focused on MTS' compliance in 23 areas. Two (2) areas were not applicable. Deficiencies related to the COVID-19 Relief funds have been clearly identified as part of the deficiency description in the respective review area.

Deficiencies were found in the areas listed below.

Review Area	Deficiencies	
	Code	Description
ADA-Complementary Paratransit (ADA-CPT)	ADA-CPT2-3	Eligibility appeals process not properly implemented
	ADA-CPT3-2	Service not provided to visitors with apparent or documented disabilities
	ADA-CPT3-4	Service to visitors not provided under the same conditions as eligible riders
	ADA-CPT5-1	Unreasonable no-show suspension
	ADA-CPT5-3	Suspension based on no-shows not under rider control
	ADA-CPT5-4	Insufficient no-show suspension procedures
Drug and Alcohol Program (DA)	DA1-1	Drug and alcohol policy missing or lacking required elements

**Denotes a repeat finding*

After the virtual site visit, MTS provided corrective action responses to address the select deficiencies noted in the ADA-Complementary Paratransit area and the deficiency in the Drug and Alcohol Program area of this report.

II. Review Background and Process

1. Background

The United States Code, Chapter 53 of Title 49 (49 U.S.C. 5307(f)(2)) requires that "At least once every 3 years, the Secretary shall review and evaluate completely the performance of a recipient in carrying out the recipient's program, specifically referring to compliance with statutory and administrative requirements..." This Triennial Review was performed in accordance with the FTA procedures (published in FTA Order 9010.1B, April 5, 1993).

The Triennial Review process includes a review of the recipient's compliance in 23 areas. The basic requirements for each of these areas are summarized in Section IV.

This report presents the findings from the Triennial Review of MTS. The review concentrated on procedures and practices employed since MTS' previous Triennial Review; however, coverage was extended to earlier periods as needed to assess the policies in place and the management of award funds. The specific documents reviewed and referenced in this report are available through the FTA's Los Angeles office or the recipient's office.

2. Process

The Triennial Review includes a pre-review assessment, a desk review and scoping meeting with the FTA Los Angeles office, and a virtual site visit. Due to the COVID-19 Public Health Emergency, a virtual site visit was conducted of each recipient. In addition, the review was expanded to address the recipient's compliance with the administrative relief and flexibilities FTA granted and the requirements of the COVID-19 relief funds received through the CARES Act, CRRSAA of 2021, and ARP Act of 2021. Recipients were also requested to share if and/or how it suspended, deviated from, or significantly updated or altered its transit program due to the public health emergency.

The Fiscal Year (FY) 2022 process began with the Los Angeles office transmitting a recipient information request (RIR) to MTS on November 23, 2021, indicating a review would be conducted. While MTS prepared its response to the RIR, the Los Angeles office and review team conducted a desk review and scoping meeting on March 1, 2022. Necessary files retained by the Los Angeles office were sent to the Reviewer electronically. Following the desk review and scoping meeting, the Reviewer and the recipient corresponded and exchanged information and documentation in preparation for the virtual site visit. As a result of this review, an agenda package indicating the issues that would be discussed, records to be reviewed, and interviews to be conducted was then sent to MTS on April 28, 2022. The virtual site visit occurred May 16-19, 2022.

The virtual site visit portion of the review began with an entrance conference, at which the purpose of the Triennial Review and the review process were discussed. The Reviewer conducted additional interviews and reviewed documentation to evidence MTS' compliance with FTA requirements.

Upon completion of the review, the FTA and the Reviewer provided a summary of findings to MTS at an exit conference. Section VI of this report lists the individuals participating in the review.

3. Metrics

The metrics used to evaluate whether a recipient is meeting the requirements for each of the areas reviewed are:

- *Not Deficient*: An area is considered not deficient if, during the review, nothing came to light that would indicate the requirements within the area reviewed were not met.
- *Deficient*: An area is considered deficient if any of the requirements within the area reviewed were not met.
- *Not Applicable*: An area can be deemed not applicable if, after an initial assessment, the recipient does not conduct activities for which the requirements of the respective area would be applicable.

III. Recipient Description

1. Organization

The Metropolitan Transit Development Board (MTDB) was created in 1975 by the passage of California Senate Bill 101 and came into existence on January 1, 1976. In 1984, the Governor signed Senate Bill 1736, which expanded the MTD Board of Directors from eight to 15 members. In 2002, Senate Bill 1703 merged MTDB's long-range planning, financial programming, project development and construction functions into the regional metropolitan planning organization, the San Diego Association of Governments (SANDAG). In 2005, MTDB changed its name to the Metropolitan Transit System (MTS).

The MTS Board of Directors is comprised of 15 members who meet monthly. The members are elected representatives from San Diego County. Four of the members are appointed from the City of San Diego (the Mayor of San Diego and three San Diego City Council members); eight are appointed from the City Councils of Coronado, El Cajon, Imperial Beach, La Mesa, Lemon Grove, National City, Poway, and Santee; two are appointed from the City of Chula Vista (the Mayor of Chula Vista and one Chula Vista City Council member), and one is appointed from the San Diego County Board of Supervisors.

MTS owns the assets of San Diego Trolley, Inc. (SDTI), San Diego Transit Corp. (SDTC), and the San Diego and Arizona Eastern Railway Company, which owns 135 miles of track and right-of-way. MTS also licenses and regulates taxicabs and other private for-hire passenger services and passes state funds through to the City of Coronado for ferry service.

MTS operates all of the public fixed-route bus, light rail, and Americans with Disabilities Act (ADA) paratransit services in the southern and rural eastern part of San Diego County. Its service area is 570 square miles of the urbanized areas of San Diego County as well as the rural parts of East County serving approximately 3 million people.

MTS provides bus and rail services directly or by contract with private operators. MTS coordinates all its services and determines the routing, stops, frequencies, fares and hours of operation for the different operating modes as follows.

MTS Rail directly operates its light rail service, the San Diego Trolley. The San Diego Trolley is a 65-mile light rail network consisting of four lines serving 62 stations. Trolley service operates from 3:00 a.m. to 1:45 a.m. Monday through Friday and from 4:00 a.m. to 1:50 a.m. on weekends.

MTS Bus directly operates a portion of its fixed route bus service and contracts with Transdev and First Transit for the remainder of the service. MTS Bus consists of 27 directly operated routes and 69 contractor-operated (Transdev) routes. Transdev operates MTS' South Bay Division located in Chula Vista and MTS' East County Division located in El Cajon. Bus service is available from 3:00 a.m. to 3:00 a.m. Monday through Friday, and from 3:00 a.m. to 2:00 a.m. on Saturday and Sunday.

First Transit operates MTS's 21 fixed route minibus (32-foot) bus service from the Copley Park Division in Kearny Mesa. MTS Access, ADA complementary paratransit service is operated by First Transit, Inc. MTS Access operates during the same days and hours of service as the fixed routes.

The basic adult cash one-way fare for local/urban bus and Trolley service is \$2.50. The cash one-way fare for premium express bus service, which operates in the express lanes along the I-15 corridor is \$5.00. Through the PRONTO account based fare collection system, passengers can use stored value to pay one-way fares and get two free hours of transfers, as well as use fare capping to ensure they are never charged more than the value of a Day Pass in a day or monthly pass in a month. A reduced fare of \$1.25 for local/urban bus and Trolley service, or \$2.50 for premium express bus service is offered to Youth (18 and under), Seniors (65 and older), persons with disabilities, and Medicare cardholders during all hours. The fare for MTS Access is \$5.00.

MTS operates a 161-vehicle fleet for the San Diego Trolley, consisting of 33 Siemens SD100 high floor light rail vehicles, 11 Siemens S70, 65 Siemens SD8 and 45 Siemens SD9, 7 Siemens SD10 and two vintage President's Conference Cars (PCC) Streetcars.

MTS operates a fleet of 641 buses for fixed-route service, 360 of which are FTA-funded. Its bus fleet consists of standard and low floor 40-foot transit coaches, minibuses, commuter coaches, and 60-foot articulated vehicles. Ninety percent of the fixed-route bus fleet operates on compressed natural gas (CNG), the rest are full battery electric buses (BEB). The rest of the fleet is powered by propane or gasoline. MTS also has a fleet of 40 mini-buses (3 federally funded), 14 Dodge Grand Caravans and 108 cutaways (27-foot) for ADA complementary paratransit service. Of these 122 ADA vehicles, 119 were purchased with FTA funds.

The Trolley service operates from an FTA-funded maintenance and administration facility at 1255 Imperial Avenue in downtown San Diego. There are five bus operations and maintenance facilities: Imperial Avenue, East County, South Bay, Kearny Mesa, and Copley Park. All of these facilities are local-funded with the exception of East County and South Bay, which was funded with Federal funds. Bus service is oriented around 28 FTA-funded transit centers located throughout San Diego County.

2. Award and Project Activity

Below is a list of MTS' eight (8) open awards at the time of the review.

Federal Award Identification Number	Award Amount	Year Executed	Award Name
CA-2021-218-00	\$670,000	2021	ICAM FY 21/22 MTS Access Trapeze Module Enhancement
CA-2018-111-00	\$4,941,648	2018	5339 FY18 - 40' Bus Replacement, and ADA/Paratransit Bus Replacement
CA-2019-130-00	\$68,715,784	2019	5307 Bus PM, ADA Ops, & LRV Replacement FFY 2019\$
CA-2019-117-00	\$14,567,100	2019	5339(b) RTMS Hardware and Radio Site Refresh FFY2018
CA-2021-221-00	\$140,406,942	2021	San Diego Metropolitan Transit System 5307-9 - ARP Act Grant - Operating Assistance
CA-2020-227-00	\$34,809,749	2020	5337 Rail PM & LRV Replacement
CA-2020-266-00	\$12,000,000	2020	Federal FHWA transfer to 5307 #2 - SD100 LRV Replacement
CA-2020-124-00	\$219,987,291	2020	San Diego Metropolitan Transit System FFY20 5307 - CARES Act Grant - Operating Assistance

MTS received supplemental funds for operating assistance in awards number CA-2021-221 and CA-2020-124. This is MTS' first time receiving operating assistance from the FTA.

Projects Completed

- Bus Procurement: (FTA-funded)
 - In fiscal year 2021, MTS received and placed in service:
 - 14 - 40-foot CNG buses
 - 16 - 60-foot CNG buses
 - 22 - 45-foot Commuter CNG buses
 - In the past three years, MTS received and placed in service a total of 65, CNG buses.
 - In the past three years, MTS received and placed in service a total of 35, ADA Propane-Fueled Paratransit buses.
- LRV Procurement: (FTA-funded)
 - In fiscal year 2021, MTS received and placed in service 8, SD9 Light Rail Vehicles.
 - In the past three years, MTS received and placed in service a total of 36 Light Rail Vehicles.

- South Bay Bus Rapid Transit: (FTA-funded)
 - The final segment of the South Bay BRT project was completed in January of 2019. Final segment included the creation of "Bus Only Lane" streamlining travel and provides a rapid and reliable transportation alternative from the Otay Mesa Port of Entry to Downtown San Diego via eastern Chula Vista. It will help minimize traffic congestion along a major transportation corridor and offer service to areas not currently served by rapid transit.
- Mid-Coast: (FTA-funded)
 - The Mid-Coast Corridor Transit Project is \$2.17 billion project funded by TransNet and Federal Transit Administration (FTA) it extends MTS's UC San Diego Blue Line 11 miles north to the community of University City, providing a one-seat ride from the U.S/ Mexican Border to University Community. Nine (9) new stations created, five (5) with parking and 36 Trolley cars purchased and received. It is projected to attract 21,000 new daily transit riders.

Ongoing Projects

- Bus Procurement: (FTA-funded)
 - MTS has developed a rotating bus replacement schedule that will allow MTS to procure buses on a continual basis as the vehicles meet the end of useful life. In FY22 MTS has ordered and will receive 12, 60-foot Battery Electric Buses and 32, 40-foot CNG buses.
- LRV Procurement: (FTA-funded)
 - In FY22, MTS received 4, SD10 Light Rail Vehicles from Siemens. MTS has a \$107 million contract with Siemens Mobility, Inc. for the purchase of 25 LRVs, with an executed option to purchase another 22 LRVs for an additional \$97 million. The total contract value is \$203.8 million for 47 LRVs. Project close-out estimated completion date 2027, delivery of final LRV 2025.
- RTMS System: (FTA-funded)
 - The Regional Transit Management System (RTMS) was installed in 2003. This project is replacing the Computer Aided Dispatch and Automatic Vehicle Location systems, as well radio communications hardware on-board MTS buses and the radio hardware at the RTMS remote radio sites. It consisted of CAD/AVL hardware on all SDTC fixed route vehicles along with fixed-route vehicles at NCTD. The current hardware on-board provides GPS tracking, automatic passenger counting, messaging (free form and canned), radio communications, detour messaging, and automated stop announcements. The original equipment on SDTC buses and on about 52 East County vehicles is now 14 years old and while it is supported by Conduent (the provider of the hardware), the system has become less reliable and more prone to failure. In addition, the radios on board the vehicles will no longer be supported by Motorola and must be upgraded/replaced.
 - Another improvement is adding cellular mobile routers to all fixed-route vehicles. The mobile routers will allow MTS to communicate with buses via cellular

communications rather than radio communications, allowing for practically unlimited data transfer. Project estimated completion date March 2022.

- New Fare System "Pronto": (FTA-funded)
 - PRONTO is a new, upgraded regional and PCI compliant account-based fare system for MTS. It allows riders to load money to their PRONTO account and then pay-as-you-go, rather than requiring up-front payments for Day and Month Passes. This way, riders will always get the best fare. Riders have the option to use their PRONTO card or the PRONTO app on their smartphone to ride. The PRONTO project cost of \$27.6 million provides MTS with new ticket machines, station and bus validators, account-based fare system and the mobile ticketing application, as well as, a few more system components.
- Zero-Emission Bus Infrastructure (Funding-TBD):
 - In November 2019, MTS began a Zero-Emission Bus Pilot Program with the deployment of six battery-electric buses in the first phase, and two additional battery-electric buses within the next 12 months. MTS has installed six charging stations at the Imperial Avenue Division (IAD) located in downtown San Diego, and two chargers each at MTS's other properties, for a total of 12 chargers. State regulations require public transit agencies to gradually transition to 100 percent zero-emissions bus fleets by 2040. MTS already operates 128 zero-emissions trolleys serving our riders every day. For its bus fleet, MTS was among the first transit agencies to convert to CNG fuel, deploy near-zero emission engines and purchase 100 percent renewable biogas. To accommodate the expansion of MTS's zero-emission bus fleet, MTS is in the process of attaining a sixth division intended for 100% Zero Emissions Buses and modifying the other five (5) divisions to support charging infrastructure capabilities.

Future Projects

- New Zero-Emission Bus Maintenance Facility:
 - MTS has begun work on the new Zero-emission Bus Division (sixth bus division), that will accommodate expansion of the fleet, as well as free up space in existing divisions to add the necessary electrical charging infrastructure for the future. The new Zero-emission Bus Division will be designed from the ground-up as a primarily ZEB division, though some natural gas fueling capabilities may still be needed during the fleet transition period.
- Light Rail Extension Feasibility Study: "Trolley to Airport":
 - MTS's Trolley extension to the San Diego International Airport concept ideally would be built within the next ten years. Project could include a station at each airport terminal running parallel with Harbor Drive, including aligning with the Terminal 1 reconstruction. The proposed alignment would allow future expansion into Point Loma and beyond.

- San Ysidro Inter-Modal Transit Center:
 - In October 2012, SANDAG and the City of San Diego, in collaboration with Caltrans, the Metropolitan Transit System (MTS), and the community, initiated a study to identify a multimodal concept for an Intermodal Transportation Center (ITC) in the vicinity of the San Ysidro Port of Entry (POE). The San Ysidro Intermodal Transportation Center (SYITC) concept is intended to serve as a welcoming gateway to the world's busiest land border crossing, and to mitigate mobility impacts generated by the major expansion of the POE currently underway.

IV. Results of the Review

1. Legal

Basic Requirement: The recipient must promptly notify the FTA of legal matters and additionally notify the U.S. Department of Transportation (US DOT) Office of Inspector General (OIG) of any instances relating to false claims under the False Claims Act or fraud. Recipients must comply with restrictions on lobbying requirements.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Legal.

2. Financial Management and Capacity

Basic Requirement: The recipient must have financial policies and procedures; an organizational structure that defines, assigns and delegates fiduciary authority; and financial management systems in place to manage, match, and charge only allowable costs to the award. The recipient must conduct required Single Audits, as required by 2 CFR part 200, and provide financial oversight of subrecipients.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Financial Management and Capacity.

3. Technical Capacity – Award Management

Basic Requirement: The recipient must report progress of projects in awards to the Federal Transit Administration (FTA) and close awards timely.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Technical Capacity – Award Management.

4. Technical Capacity – Program Management & Subrecipient Oversight

Basic Requirement: States must document and follow a public involvement process for the development of the long-range statewide transportation plan and State Transportation Improvement Program (STIP). Designated recipients of Sections 5310, 5311, and 5339 funds must develop and submit a State Management/ Program Management Plan to the FTA for approval. Recipients must enter into an agreement with each subrecipient, obtain required certifications from subrecipients, report in the Federal Funding Accountability and Transparency Act Subaward Reporting System (FSRS) on subawards, and ensure subrecipients comply with the terms of the award.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Technical Capacity – Program Management & Subrecipient Oversight.

5. Technical Capacity – Project Management

Basic Requirement: The recipient must be able to implement the Federal Transit Administration (FTA)-funded projects in accordance with the award application, the FTA Master Agreement, and applicable laws and regulations using sound management practices.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Technical Capacity – Project Management.

6. Transit Asset Management

Basic Requirement: Recipients must comply with 49 CFR part 625 to ensure public transportation providers develop and implement transit asset management (TAM) plans.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Transit Asset Management.

7. Satisfactory Continuing Control

Basic Requirement: The recipient must ensure that Federal Transit Administration (FTA)-funded property will remain available to be used for its originally authorized purpose throughout its useful life until disposition.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Satisfactory and Continuing Control.

8. Maintenance

Basic Requirement: Recipients must keep federally-funded vehicles, equipment, and facilities in good operating condition. Recipients must keep Americans with Disabilities Act (ADA) accessibility features on all vehicles, equipment, and facilities in good operating order.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Maintenance.

9. Procurement

Basic Requirement: The non-Federal entity must use its own documented procurement procedures which reflect applicable State, local, and tribal laws and regulations, and conform to applicable Federal law and the standards identified in 2 CFR Part 200. State recipients can use the state's overall policies and procedures. When applied to Federal procurements, those policies and procedures must still be compliant with all Federal requirements as applied to non-state recipients. The flexibility afforded by 2 CFR Part 200 should not be misconstrued as absolving a state from Federal requirements. For example, the FTA does not require each State DOT to have policies and procedures separate from the state education department.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Procurement.

10. Disadvantaged Business Enterprise (DBE)

Basic Requirement: Recipients must comply with 49 CFR Part 26 to ensure nondiscrimination in the award and administration of US Department of Transportation (US DOT)-assisted contracts. Recipients also must create a level playing field on which DBEs can compete fairly for US DOT-assisted contracts.

Finding: During this Triennial Review of MTS, no deficiencies were found with the US DOT requirements for DBE.

11. Title VI

Basic Requirement: The recipient must ensure that no person shall, on the grounds of race, color, or national origin, be excluded from participating in, or be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance without regard to whether specific projects or services are federally funded. The recipient must ensure that all transit services and related benefits are distributed in an equitable manner.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Title VI.

12. Americans with Disabilities Act (ADA) – General

Basic Requirement: Titles II and III of the Americans with Disabilities Act of 1990 provide that no entity shall discriminate against an individual with a disability in connection with the provision of transportation service. The law sets forth specific requirements for vehicle and facility accessibility and the provision of service, including complementary paratransit service.

Finding: During this Triennial Review of MTS, no deficiencies were found with the US DOT requirements for ADA – General.

13. ADA – Complementary Paratransit

Basic Requirement: Under 49 CFR 37.121(a), each public entity operating a fixed-route system shall provide paratransit or other special service to individuals with disabilities that is comparable to the level of service provided to individuals without disabilities who use the fixed-route system. "Comparability" is determined by 49 CFR 37.123-37.133. Requirements for complementary paratransit do not apply to commuter bus, commuter rail, or intercity rail systems.

Finding: During this Triennial Review of MTS, six (6) deficiencies were found with US DOT requirements for ADA – Complementary Paratransit.

Deficiency Description #1: Eligibility appeals process not properly implemented (ADA-CPT2-3)

There was extensive discussion during the review regarding why the appeal process, as written, implies that unnecessary burdens are imposed upon applicants. Namely, the written appeals process required a written request and a functional assessment. Although the appeals process may in practice be handled differently, the written policies available to the public and riders suggested that improper impositions were in place.

At the time of the review, MTS' notice of ineligibility letter template included the following information regarding the appeals process:

To request an appeal, please contact us in writing stating the reason(s) for requesting an appeal. The appeal will require you to complete a Functional Assessment at the MTS Access Eligibility Center. After the Functional Assessment, you will have an appeal hearing where your file will be reviewed and you can present additional information supporting your reason for the appeal.

During the review, MTS provided a revised ineligibility letter template that modified the appeals process by removing the requirement for stating the reason for the appeal and adding the following:

If appealing, you have the following options (YOU MAY CHOOSE 1 of the 2 OPTIONS to APPEAL

1) OPTION 1 FUNCTIONAL ASSESSMENT: You may complete a Functional Assessment at the MTS Access Eligibility Center. After the Functional Assessment, a determination on your eligibility will be made. If you disagree with the decision of the functional assessment, you may continue on to an appeal hearing where your file will be reviewed and you can present additional information supporting your reason for the appeal.

OR

2) OPTION 2 APPEAL HEARING: You have the right to bypass the functional assessment and move directly to the appeal hearing.

FTA encourages transit agencies to double-check any determinations that deny or limit eligibility before communicating the decision to the applicant. A second reviewer might review each file to ensure that the decision appears appropriate.

Similarly, when applicants request appeals, FTA encourages transit agencies to double-check applicants' files and the initial decisions. If such internal reviews identify errors in initial determinations, agencies can quickly reverse the initial decisions and obviate the burden and cost of formal appeals. It is important to note that these double-checks are internal and not considered part of the rider's appeal, since they would be undertaken without additional information from the appellant and without an opportunity for the appellant to be heard in person, and might not meet the requirement for separation of functions.

Revised procedures were submitted during the review; additional changes and discussions were held following the Exit Conference to finalize the procedures for public distribution to ensure the written information matched MTS practice. MTS submitted finalized Appeals Policy and Appeals Procedures revisions on June 1, 2022. The revised policy and procedures removed the requirement to contact MTS in writing stating the reason for appeal as well as the requirement for a functional assessment. The policy provides applicants with the option of an assessment or appeal hearing. The procedures clarify the internal process for conducting the functional assessment as well as the composition of the appeals board. The policy specifies that written notification of the decision is provided.

Corrective Action and Schedule(s): By August 29, 2022, MTS must submit to the Regional Civil Rights Officer (RCRO) an eligibility appeals process that provides for an opportunity to be heard, separation of functions, and written notification of the decision and the reason for it.

Revised policies and procedures were submitted following the review addressing all requirements. **This finding is closed.**

Deficiency Description #2: Service not provided to visitors with apparent or documented disabilities (ADA-CPT3-2)

The visitor policy contained in MTS' Access Rider's Guide is as follows:

If you are visiting the San Diego area and use ADA Paratransit where you live, you may also enjoy the benefit of MTS Access for up to 21 days of travel in a 12-month period. Simply call toll-free 1-844-299-6326 (TTY/TDD: 7-1-1) in advance of your need to schedule a trip to be added to our passenger list. MTS will require some basic information, and any documentation of your hometown ADA certification would be helpful. If certification documents are unavailable from your local transit agency, then

you may demonstrate proof of disability which prevents you from using the fixed route buses and trolley. If approved, a verification of certification status will be mailed to you for your records. You may reserve a ride after you have been certified as ADA eligible.

Individuals with disabilities might not have documentation of ADA paratransit eligibility from another transit agency because they reside in areas without public transit or they have not applied for eligibility in their home area. Asking such individuals to provide proof of residence to verify they qualify as a visitor is appropriate. For visitors whose disability is apparent, § 37.127(d) prohibits agencies from requiring additional documentation, which was discussed during the review and Exit Conference.

For visitors whose disability is not apparent (e.g., cognitive disability or cardiac condition), requiring documentation of disability, such as a letter from a medical professional or eligibility for other services based on a determination of disability, is permitted. Once this basic documentation is provided, Appendix D to § 37.127 states that "the local provider will make service available on the basis of the individual's statement that he or she is unable to use the fixed route transit system." Further, § 37.127(e) states that "In no case shall the public entity require a visitor to apply for or receive eligibility certification from the public entity before receiving the service required by this section."

MTS developed a revised Visitors Policy and Visitors Procedures effective June 14, 2022 to match ongoing practice. This policy clarifies that "*for visitors whose disability is apparent, per 49 CFR § 37.127(d), no other documentation is required. For visitors whose disability is not apparent (e.g., cognitive disability or cardiac condition), per 49 CFR § 37.127(d), MTS Access may require documentation of disability, such as a letter from a medical professional or eligibility for other services based on a determination of disability.*"

Corrective Action and Schedule(s): By August 29, 2022, MTS must submit to the RCRO a procedure for providing service to visitors whose disability is apparent or who present documentation of disability, provided that if documentation of residency has been requested, it has also been submitted.

Revised policies and procedures were submitted following the review addressing all requirements. **This finding is closed.**

Deficiency Description #3: Service to visitors not provided under same conditions as eligible riders (ADA-CPT3-4)

MTS procedures for processing visitor's request of service included mailing a determination to the visitor in order to use the service. This does not allow for visitors to reserve service for that day or no more than one (1) day later. There was extensive discussion during the review regarding the possible implications of this practice and the need to clarify the written procedures and public information.

FTA notes that granting visitor eligibility is a fairly simple and quick process enabling individuals to contact the host agency to learn what is required and then being able to easily meet the requirements. This also means that upon receipt of any required documentation described below, transit agencies are to quickly enter necessary information into any databases or systems to permit visitors to place trip requests. FTA envisions this as a process that can often be completed the same day or no more than one day later.

MTS developed a revised Visitors Policy and Visitors Procedures effective June 14, 2022. The Policy clarifies that service is provided within one (1) day. The internal procedures specify that *"MTS Access is required to provide service to visitors from out of town on the same basis as it is provided to local residents. By "on the same basis," it means under all the same conditions, service criteria, etc., without distinction. For the period of a visit, the visitor is treated exactly like an eligible local user, without any higher priority being given to either."*

Corrective Action and Schedule(s): By August 29, 2022, MTS must submit to the RCRO a procedure for processing requests for service from visitors on the same day or not more than one day later.

Revised policies and procedures were submitted following the review addressing all requirements. **This finding is closed.**

Deficiency Description #4: Unreasonable no-show suspension (ADA-CPT5-1)

MTS's no-show policy as contained in its contract with First Transit, identified that riders were suspended without establishing that the rider had a pattern or practice of missing scheduled trips. In addition, the policy states that the driver "is only to wait three (3) minutes after the scheduled time" while other documentation regarding no-shows indicates the driver was to wait (5) minutes. Further, the policy stated the suspension would be for 14 days.

The recipient's no-show process must ensure that:

- Any suspensions are a result of a "pattern or practice" of missing scheduled trips.
- Any suspensions are "for a reasonable period of time."
- The recipient does not impose a financial penalty as part of a no-show policy, including charging the fare for the no-show trip.
- That only no-shows under the rider's control are counted against the rider.
- That before suspending service, the recipient notifies the individual in writing that it proposes to suspend service, providing the specific basis for the proposed suspension and the proposed sanction.
- That the recipient provides the individual an opportunity to be heard and to present information.
- That the suspension is stayed pending the outcome of the appeal.

As addressed in FTA Circular 4710.1, Section 37.125(h) permits transit agencies to suspend riders who "establish a pattern or practice of missing scheduled trips" after providing a rider due process. As discussed in Appendix D to § 37.125, a "pattern or practice" involves "intentional, repeated or regular actions, not isolated, accidental, or singular incidents." The purpose of a suspension process would be to deter or deal with chronic "no-shows."

During the site visit, MTS provided a document *AttB.New MTS Access No Show Policy w. Changes Eff 1.1.2022* that appeared to provide revised language for letters documenting no-shows and reduced the suspension time from 14 days to seven (7) days. This was inconsistent across internal documents. MTS clarified that this change was effective January 1, 2022. MTS acknowledges that this change was not disseminated through public-facing or internal documents.

Following the review, MTS submitted a revised no-show policy and related warning and suspension letters clarifying the seven (7) day suspension period. The no-show policy was also revised to include minimum number of trips per month ensuring reasonableness. MTS also made additional changes to the website, Rider's Guide, and internal policies and procedures to ensure consistent messaging.

Corrective Action and Schedule(s): By August 29, 2022, MTS must submit to the RCRO:

1. A procedure for suspending riders for a reasonable amount of time.
2. A procedure for suspending a rider only after establishing that the rider has a pattern or practice of missing scheduled trips.

Revised policies and procedures were submitted following the review addressing all requirements. **This finding is closed.**

Deficiency Description #5: Suspension based on no-shows not under rider control (ADA-CPT5-3)

MTS's no-show policy as contained in its contract with First Transit did not address how the determination was made that suspensions were not applied to those no-shows that were not under the rider's control such as a medical emergency, family emergency, sudden illness or change in condition, or appointment that runs unexpectedly late without sufficient notice.

During the site visit, MTS provided a document *AttB.New MTS Access No Show Policy w. Changes Eff 1.1.2022* that appeared to provide revised language for letters indicating that "Only no-shows that are under your discretion may be counted against you. No-shows caused by reasons beyond your discretion (e.g., scheduling problems, late pickups, and operational problems on the part of the entity or a family emergency or sudden turn for the worse in a variable medical condition) or operator error will not be counted against you." However, it was unclear as to how the revised policy was to be implemented and enforced.

The revised no-show policy dated June 1, 2022 indicates the circumstances under which a no-show may not be counted as well as the means of disputing the no-show or informing MTS of a circumstance beyond the rider's discretion. The revised no-show procedures dated June 1, 2022 provide details regarding how this will be implemented. . MTS also made additional changes to the website, Rider's Guide, and internal policies and procedures to ensure consistent messaging.

Corrective Action and Schedule(s): By August 29, 2022, MTS must submit to the RCRO a procedure for only counting no-shows under the rider's control toward the suspension.

Revised policies and procedures were submitted following the review addressing all requirements. **This finding is closed.**

Deficiency Description #6: Insufficient no-show suspension procedures (ADA-CPT5-4)

No information was found to describe MTS' appeals process for no-show suspensions, including whether MTS notifies the rider of the pending suspension in writing and provides the specific basis for it, offers the opportunity for the rider to appeal or does not stay the suspension pending the outcome of the appeal.

The revised no-show policy and procedures, dated June 1, 2022, clarify that riders are notified of the suspension in writing with specific data and reasons as well as a detailed appeal procedures that place suspensions on hold until the appeals process is complete. . MTS also made additional changes to the website, Rider's Guide, and internal policies and procedures to ensure consistent messaging.

Corrective Action and Schedule(s): By August 29, 2022, MTS must submit to the RCRO an appeals process that notifies the rider of the suspension in writing, specifically indicating the basis of the proposed suspension and the proposed sanction.

Revised policies and procedures were submitted following the review addressing all requirements. **This finding is closed.**

14. Equal Employment Opportunity

Basic Requirement: The recipient must ensure that no person in the United States shall on the grounds of race, color, religion, national origin, sex, age or disability be excluded from participating in, or denied the benefits of, or be subject to discrimination in employment under any project, program or activity receiving Federal financial assistance under the Federal transit laws.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Equal Employment Opportunity.

15. School Bus

Basic Requirement: Recipients are prohibited from providing school bus service in competition with private school bus operators unless the service qualifies and is approved by the Federal Transit Administration (FTA) Administrator under an allowable exemption. Federally-funded equipment or facilities cannot be used to provide exclusive school bus service.

Finding: During this Triennial Review of MTS, the FTA requirements for School Bus were found to be not applicable.

16. Charter Bus

Basic Requirement: Recipients are prohibited from using the FTA-funded equipment and facilities to provide charter service that unfairly competes with private charter operators. Recipient may operate charter only when the service meets a specified exception defined in rule.

Finding: During this Triennial Review of MTS, the FTA requirements for Charter Bus were found to be not applicable.

17. Drug Free Workplace Act

Basic Requirement: Recipients are required to maintain a drug free workplace for all award-related employees; report any convictions occurring in the workplace timely; and have an ongoing drug free awareness program.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Drug-Free Workplace Act.

18. Drug and Alcohol Program

Basic Requirement: Recipients receiving Section 5307, 5309, 5311, or 5339 funds that have safety-sensitive employees must have a drug and alcohol testing program in place for such employees.

Finding: During this Triennial Review of MTS, one (1) deficiency was found with the FTA requirements for Drug and Alcohol Program.

Deficiency Description: DA1-1: Drug and alcohol policy missing or lacking required elements

For this review, MTS provided its 2017 Drug and Alcohol Program. Upon review, MTS' policy did not reflect DOT published amendments to 49 CFR Part 40: Procedures for Transportation Workplace Drug and Alcohol Testing Programs. Part 40 required policies to describe drug category "opiates" as "opioids". In addition, Part 40 required that if the policy described the specific drugs covered by the five drug categories and/or includes the laboratory test cutoff levels, this must be updated to reflect §40.87.

MTS provided a revised Drug & Alcohol Policy dated May 12, 2022, as well as a revised Drug Free Workplan Act Policy Statement dated May 19, 2022. These were distributed to all employees along with a distribution memo as evidence that this is available to all affected employees.

Corrective Action and Schedule(s): By August 29, 2022, MTS must submit to the FTA Los Angeles office, an amended policy that includes the required elements and evidence that it has been made available to all affected employees.

MTS provided a revised policy along with evidence of distribution to all affected employees. **This finding is closed.**

19. Section 5307 Program Requirements

Basic Requirement: The recipient must participate in the transportation planning process in accordance with Federal Transit Administration (FTA) requirements and the metropolitan and statewide planning regulations.

Recipients shall develop, publish, afford an opportunity for a public hearing on, and submit for approval, a program of projects (POP).

Recipients are expected to have a written, locally developed process for soliciting and considering public comment before raising a fare or carrying out a major transportation service reduction.

For fixed-route service supported with Section 5307 assistance, fares charged seniors, persons with disabilities or an individual presenting a Medicare card during off peak hours will not be more than one half the peak hour fares.

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Section 5307 Program Requirements.

20. Section 5310 Program Requirements

Basic Requirement: Recipients must expend Section 5310 funds on eligible projects that meet the specific needs of seniors and individuals with disabilities. Projects selected for funding must be included in a locally developed, coordinated public transit-human services transportation plan. Recipients must approve all subrecipient leases of Section 5310-funded vehicles. Leases of Section 5310-funded vehicles must include required terms and conditions. Either the recipient or subrecipient must hold title to the leased vehicles.

Finding: This section only applies to recipients that receive Section 5310 funds directly from the FTA; therefore, the related requirements are not applicable to the review of MTS.

21. Section 5311 Program Requirements

Basic Requirement: States must expend Section 5311 funds on eligible projects to support rural public transportation services and intercity bus transportation.

Finding: This section only applies to recipients that receive Section 5311 funds directly from FTA; therefore, the related requirements are not applicable to the review of MTS.

22. Public Transportation Agency Safety Plan (PTASP)

Basic Requirement: Recipients must comply with the Public Transportation Agency Safety Plan (PTASP) regulation (49 CFR Part 673) to ensure public transportation providers develop and implement an Agency Safety Plan (ASP).

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Public Transportation Agency Safety Plan Requirements.

23. Cybersecurity

Basic Requirement: Recipients that operate rail fixed guideway public transportation systems must certify compliance with the requirements for establishing a cybersecurity process under 49 U.S.C. § 5323(v), a new subsection added by the National Defense Authorization Act for Fiscal Year 2020, Pub. L. 116-92, § 7613 (Dec. 20, 2019).

Finding: During this Triennial Review of MTS, no deficiencies were found with the FTA requirements for Cybersecurity Requirements.

V. Summary of Findings

Review Area	Finding	Deficiency Code(s)	Corrective Action(s)	Response Due Date(s)	Date Closed
1. Legal	ND				
2. Financial Management and Capacity	ND				
3. Technical Capacity – Award Management	ND				
4. Technical Capacity – Program Management and Subrecipient Oversight	ND				
5. Technical Capacity – Project Management	ND				
6. Transit Asset Management	ND				
7. Satisfactory Continuing Control	ND				
8. Maintenance	ND				
9. Procurement	ND				
10. Disadvantaged Business Enterprise	ND				
11. Title VI	ND				
12. Americans with Disabilities Act (ADA) – General	ND				
13. ADA – Complementary Paratransit	D	ADA-CPT2-3	<p>Submit to the Regional Civil Rights Officer (RCRO) an appeals process an eligibility appeals process that provides for an opportunity to be heard, separation of functions, and written notification of the decision and the reason for it.</p> <p>Revised policies and procedures were submitted following the review addressing all requirements. This finding is closed.</p>	August 29, 2022	June 1, 2022

Review Area	Finding	Deficiency Code(s)	Corrective Action(s)	Response Due Date(s)	Date Closed
		ADA-CPT3-2 Service not provided to visitors with apparent or documented disabilities	Submit to the RCRO a procedure for providing service to visitors whose disability is apparent or who present documentation of disability, provided that if documentation of residency has been requested, it has also been submitted. Revised policies and procedures were submitted following the review addressing all requirements. This finding is closed.	August 29, 2022	June 14, 2022
		ADA-CPT3-4 Service to visitors not provided under same conditions as eligible riders	Submit to the RCRO a procedure for processing requests for service from visitors on the same day or not more than one day later. Revised policies and procedures were submitted following the review addressing all requirements. This finding is closed.	August 29, 2022	June 14, 2022
		ADA-CPT5-1 Unreasonable no-show suspension	Submit to the RCRO: 1.A procedure for suspending riders for a reasonable amount of time. 2.A procedure for suspending a rider only after establishing that the rider has a pattern or practice of missing scheduled trips. Revised policies and procedures were submitted following the review addressing all requirements. This finding is closed.	August 29, 2022	June 14, 2022
		CPT5-3 Suspension based on no-shows not under rider control	Submit to the RCRO a procedure for only counting no-shows under the rider's control toward the suspension. Revised policies and procedures were submitted following the review addressing all requirements. This finding is closed.	August 29, 2022	June 1, 2022
		ADA-CPT5-4 Insufficient no-show suspension procedures	Submit to the RCRO an appeals process that notifies the rider of the suspension in writing, specifically indicating the basis of the proposed suspension and the proposed sanction. Revised policies and procedures were submitted following the review addressing all requirements. This finding is closed.	August 29, 2022	June 1, 2022

Review Area	Finding	Deficiency Code(s)	Corrective Action(s)	Response Due Date(s)	Date Closed
14. Equal Employment Opportunity	ND				
15. School Bus	ND				
16. Charter Bus	ND				
17. Drug-Free Workplace	ND				
18. Drug and Alcohol Program	D	DA1-1 Drug and alcohol policy missing or lacking required elements	Submit an amended policy that includes the required elements and evidence that it has been made available to all affected employees. MTS provided a revised policy along with evidence of distribution to all affected employees. This finding is closed.	August 29, 2022	May 20, 2022
19. Section 5307 Program Requirements	ND				
20. Section 5310 Program Requirements	NA				
21. Section 5311 Program Requirements	NA				
22. Public Transportation Agency Safety Plan	ND				
23. Cybersecurity	ND				

The metrics used to evaluate whether a recipient is meeting the requirements for each of the areas reviewed are: Deficient (D)/Not Deficient (ND)/Not Applicable (NA)

VI. Participants

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VII. Appendices

No appendices are included in this report.

Federal Transit Administration (FTA) Triennial Review

MTS Executive Committee Meeting

September 01, 2022

Overview of FTA Triennial Review

- FTA management tool to examine grantee performance and adherence to current FTA requirements and policies.
 - Gives opportunity for FTA to provide technical assistance
 - Triennial Review is an FTA assessment
- Required for grantees of Section 5307 funds
- Occurs every 3 years (1 year delay due to COVID-19)

FTA Triennial Review – Areas of Review

- Review examines up to 23 areas of a transit agency's operations and programs:
 - Legal
 - Financial Management and Capacity
 - Technical Capacity (Award, Program and Project Management)
 - Transit Asset Management (TAM)
 - Satisfactory Continuing Control (SCC)
 - Maintenance
 - Procurement
 - Disadvantaged Business Enterprise (DBE)

FTA Triennial Review – Areas of Review Cont.

- Title VI
- Americans with Disabilities Act (ADA) (General and Complementary Paratransit)
- Equal Employment Opportunity (EEO)
- School Bus
- Charter Bus
- Drug-Free Workplace Act
- Drug and Alcohol Program
- Section 5307, 5310, and 5311 Program Requirements
- Public Transportation Agency Safety Plans (PTASP)
- Cybersecurity

Preparation for FTA Triennial Review

- Created MTS FTA Triennial Review Team (staff from Grants Management, Finance, and Legal)
- Attended FTA Triennial Review Workshops
- Reviewed FTA Triennial Review Manuals
 - Identify the minimum compliance requirements that recipients are expected to meet and the optimal methods for assessing compliance with those requirements
 - Completed *optional* FTA Triennial Review Manual Questions of Compliance

FTA Triennial Review – Document Request and Site Visit

- Document Requests – November 23, 2021
 - Policies, programs, procedures, proof of implementation of policies, contracts etc.
- Site Visit Agenda Received – April 28, 2022
- Site Visit - May 16-19, 2022 (Virtual)
 - 3 days; Concentrated on any remaining areas of questions and allowed for further discussion between Triennial Reviewers and applicable staff.
- Exit Conference – May 19, 2022 (Virtual)
 - Overview and summary of identified findings

FTA Triennial Review - Findings

- No Findings in the following areas:
 - Legal, Financial Management and Capacity, Technical Capacity (Award, Program and Project Management), TAM, SCC, Maintenance, Procurement, DBE, Title VI, ADA (General), EEO, School Bus, Charter Bus, Drug-Free Workplace Act, Section 5307, 5310, and 5311 Program Requirements, PTASP, and Cybersecurity
- 1 Finding in the following area:
 - Drug and Alcohol Program
- 6 Findings in the following area:
 - ADA Complementary Paratransit

Overview of Drug and Alcohol Program

- Certain federal grantees must have drug and alcohol testing program for safety-sensitive employees
- Drug and Alcohol Program (See MTS Board Policy No. 35)
 - MTS staff designated to oversee Program
 - Categories of employees subject to testing
 - Testing circumstances for drugs and alcohol
 - Consequences for a covered employee who has a verified positive drug test result/alcohol concentration

Drug and Alcohol Program Finding

- Issue: Drug and Alcohol Program does not reflect:
 - Change in terminology from “opiates” as “opioids”
- MTS Policy and Practice: MTS complied with this requirement in practice, but it did not update its Drug and Alcohol Program document to reflect this change.
- Corrective Action: Amended policy to include the required elements and evidence that it has been made available to all affected employees.

Overview of ADA Complementary Paratransit

- Each public entity operating a fixed-route system shall provide paratransit service to individuals with disabilities that are unable to use the fixed-route system.
 - MTS Staff:
 - Chief Operating Officer of Bus
 - Manager of Paratransit & Minibus (& oversight of contractors)
 - Supervisor of Paratransit & Minibus
 - Third Party Contractors:
 - First Transit (operates vehicles, manages reservation of trips); and
 - MTM (certifies ADA complementary paratransit eligibility)

Paratransit Finding: Eligibility Appeals Process

- Issue #1: Eligibility determination letters stated that appeal requests need basis/reason of appeal
- MTS Policy and Practice: MTS processed all appeal requests, regardless of whether appeal reasons were included.
 - However, eligibility determination letters did not make it clear that stating the appeal reason was optional.
- Corrective Action: Revised eligibility determination letters removing statement requiring appeal reason

Paratransit Finding: Eligibility Appeals Process

- Issue #2: Eligibility appeals process should only require one in-person appearance, not two
- MTS Policy and Practice: 2-Step appeals process:
 - Step 1: Functional assessment, and if dissatisfied with determination, then move to Step 2
 - Step 2: Appeal to MTS Access Appeal Board.
 - MTS found 2-Step appeals process was beneficial to determine functional abilities and may resolve appeal with out need of hearing
- Corrective Action: Revised Eligibility Appeals Policy making Functional Assessment optional

Paratransit Findings: Visitor Policy

- Issue #1: MTS Visitor Policy silent on what proof needed if visitor's disabilities is apparent or not apparent.
- MTS Policy and Practice: MTS confirms paratransit certification with home agency. If no home agency certification, then asked for proof of disability.
 - Treated all visitor requests the same (did not distinguish between apparent and non-apparent disabilities).
- Corrective Action: MTS updated Visitor Policy with what proof may be asked depending if disability is apparent or not apparent.

Paratransit Findings: Visitor Policy

- Issue #2: MTS Visitor Policy did not reflect that eligibility determinations were processed within 1 business day.
- MTS Policy and Practice: MTS processed visitor eligibility within 1 business day and allowed riders to reserve trips accordingly.
 - However, MTS did mail eligibility determinations, which can take a few days to be received.
- Corrective Action: Updated Visitor Policy explaining visitors eligibility processed within 1 business day.

Paratransit Findings: No Show and Late Cancellation Policy

- Issue #1: Did not have a sufficient process to determine if a rider has a “pattern or practice” of missing trips;
- Issue #2: the suspension period for first violation was too long; and
- Issue #3: appeal procedure for suspensions was not fully disseminated in other public-facing materials.

Paratransit Findings: No Show and Late Cancellation Policy

- MTS Policy and Practice: (#1) determining a “no show” or “late cancellation”:
 - Missed trips that were beyond the rider’s control do not count as a “no show”
 - However, no written process regarding how to determine if a missed trip was beyond the rider’s control
 - A pattern and practice of “no show” or “late cancellation” trips if in 1 month, 3 or more no shows or late cancellations AND at least 10% of scheduled trips were no shows or late cancellations.
 - MTS threshold did not include a minimum number of trips per month. Although not expressly required in FTA guidance, example No Show policies referenced the inclusion of minimum number of trips per month.

Paratransit Findings: No Show and Late Cancellation Policy

- MTS Policy and Practice: (#2) MTS No Show policy imposed 14-day suspension for first violation. Effective 1/1/2022, MTS reduced to 7-days.
 - FTA guidance considers up to 1 week for the first offense a reasonable duration.
 - However, MTS had not updated all public-facing policy documents to reflect this change.
- MTS Policy and Practice: (#3) MTS suspension letters would describe process to appeal
 - However, the MTS Rider's Guide and other documents did not contain this information.

Paratransit Findings: No Show and Late Cancellation Policy

- Corrective Action: MTS updated the No-Show Policy and Rider's Guide documents to more clearly detail the process to determine if a rider has a "pattern or practice" of missing trips to conform to the FTA guidance examples and to clearly state the suspension periods for violations and appeal procedures.

Resolution of Findings

- MTS worked quickly on closing out all findings within the Drug and Alcohol Program and ADA Complementary Paratransit Areas
- FTA Triennial Reviewers thereafter provided MTS its draft findings on June 21, 2022 showing all findings, and recommend corrective actions, closed.
- MTS submitted its response to the draft report, providing clarifications to the draft findings
- FTA Triennial Reviewers provided its final report on July 22, 2022 (Attachment A of Agenda Item)

Next steps

- Annually, even in non-Triennial Review years, conduct self-assessment
 - MTS FTA Triennial Review Team and applicable staff will review FTA Triennial Review Manuals to ensure we are aware of any changes to regulations and update policies and procedures accordingly.
- Disseminate to staff lessons learned
 - Keep informed on changes to regulations (e.g. sign up for FTA's email subscriptions)
 - Public facing documents must match practices
 - Frequently review policies/procedures for accuracy

Questions?



**Metropolitan
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Draft 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.

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CONSENT ITEMS

6. [Authorization of Remote Teleconferenced Meetings](#) Approve
7. [Centralized Train Control \(CTC\) System Maintenance Agreement – Contract Amendment, Work Order Agreements \(WOA\) Ratification and Approvals](#) Approve
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 #1FD4E4FS9GDC03883) 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. [Blue Line Traction Power Substations \(TPSS\) Installation – Contract Change Orders](#) Approve
14. [Fare Collection \(Various Amendments\) – Contract Amendments](#) Approve
15. [Zero-Emission Bus \(ZEB\) Procurement Project: 60-Foot Low-Floor Electric Buses – Contract Amendment](#) Approve
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 (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.
21. [Siemens Computer Aided Signaling \(SICAS\) S7 Components - Sole Source Contract Award](#) Approve
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. (ABC GC) 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

24. [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

25. None.

DISCUSSION ITEMS

30. [Rancho Bernardo Disposition Development Agreement \(DDA\) \(Karen Landers\)](#) Approve

REPORT ITEMS

45. [Fiscal Year \(FY\) 2022 Federal Transit Administration \(FTA\) Triennial Review \(Samantha Leslie\)](#) Informational
46. [Customer Satisfaction Survey \(Mark Olson\)](#) Informational

OTHER ITEMS

- | | | |
|-----|---|---------------|
| 60. | <u>Chair Report</u> | Informational |
| 61. | <u>Chief Executive Officer's Report</u> | Informational |
| 62. | <u>Board Member Communications</u> | Informational |
| 63. | <u>Additional Public Comments Not on the Agenda</u>
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. | <u>Next Meeting Date:</u> October 20, 2022. | |
| 65. | <u>Adjournment</u> | |



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

Agenda Item No. 6

**MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS**

September 15, 2022

SUBJECT:

AUTHORIZATION OF REMOTE TELECONFERENCED MEETINGS

**AGENDA ITEM WILL
BE PROVIDED
BEFORE BOARD
MEETING**

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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

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**

**AGENDA ITEM WILL
BE PROVIDED
BEFORE BOARD
MEETING**

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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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 Voice/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),

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thus causing a gap in field coverage. Furthermore, the additional 52 handheld radios will allow a 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
<i>MTS Independent Cost Estimate (ICE)</i>	-	\$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.

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
 Form of Business: Corporation City State Zip
 (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: <u>Sharon Cooney, Chief Executive Officer</u>	By _____
Approved as to form:	Title: _____
By: <u>Karen Landers, General Counsel</u>	



RETURN THIS FORM WITH YOUR BID

BID FORMBIDDER 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.



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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 \$73,853,939.10. 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 \$517,914 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 Capital Improvement Program (CIP) budget), only 126 buses were in fact ordered under the contract:

CONTRACT YEAR	BUS ORDER	COST PER BUS before sales tax	Running Totals COST before sales tax	Running Total – Buses Ordered
			COST including sales tax	
Year 1 (10/1/17 to 9/30/18)	7 buses for South Bay Airport Express Service (for delivery Jan 1, 2019)	\$492,711	\$3,448,982	7
			\$3,701,402	
Year 2 (10/1/18 to 9/30/19)	6 buses for East County Division (production to begin June 2019)	\$495,704	\$6,423,206	13
			\$6,893,377	
Year 3 (10/1/19 to 9/30/20)	38 buses for IAD/KMD (production to begin September 2020)	\$514,427	\$25,971,432	51
			\$27,875,833	
	5 buses for South Bay Division (production to begin December 2020)	\$519,303	\$28,567,947	56
Year 4 (10/1/20 to 9/30/21)	38 buses for South Bay Division (production to begin July 2022)	\$568,018 (8.93% PPI applied thru September 2020)	\$46,355,973	88
			\$49,756,490	
Year 5 (10/1/21 to 9/30/22)	NONE	n/a	\$67,940,647	126
			\$72,926,002	
			n/a	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 Gillig 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 increases of 20.9% since the time the bus order was placed.

With the 4% increase, the cost for the 38 buses is increased as follows:

DESCRIPTION	TAX (Y/N)	QTY	UNIT COST	UNIT COST w/ addl 4% PPI	UNIT COST w/ sales tax	Adj Extended Price	Extended Price w/ sales tax
Unit Base Bus Price - CS bus	Y	38	\$ 503,724	\$ 523,872	\$ 564,473	\$ 19,907,154	\$ 21,449,958
Options	Y	38	\$ 34,422	\$ 35,799	\$ 38,573	\$ 1,360,357	\$ 1,465,784
ADA Equipment (non-taxable)	N	38	\$ 28,716	\$ 29,865	\$ 29,865	\$ 1,134,873	\$ 1,134,873
Delivery (non-taxable)	N	38	\$ 1,156	\$ 1,202	\$ 1,202	\$ 45,677	\$ 45,677
TOTAL			\$ 568,018	\$ 590,738	\$ 634,113	\$ 22,448,060	\$ 24,096,292

Before sales tax, the total value of the contract for all 126 buses, including this amendment, is \$68,804,033. After sales tax, the total cost is \$73,852,782. Additional spending is authorized for tools, diagnostics equipment, manuals, and training. This increase is within the initial Board approved amount which remains at \$204,613,984.66 (before sales tax).

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 LLC (“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). The parties also agree to the following true-up of the current unit and extended costs for the 38 CNG bus order:

DESCRIPTION	TAX (Y/N)	QTY	UNIT COST	UNIT COST w/ addl 4% PPI	UNIT COST w/ sales tax	Adj Extended Price	Extended Price w/ sales tax
Unit Base Bus Price - CS bus	Y	38	\$ 503,724	\$ 523,872	\$ 564,473	\$ 19,907,154	\$ 21,449,958
Options	Y	38	\$ 34,422	\$ 35,799	\$ 38,573	\$ 1,360,357	\$ 1,465,784
ADA Equipment (non-taxable)	N	38	\$ 28,716	\$ 29,865	\$ 29,865	\$ 1,134,873	\$ 1,134,873
Delivery (non-taxable)	N	38	\$ 1,156	\$ 1,202	\$ 1,202	\$ 45,677	\$ 45,677
TOTAL			\$ 568,018	\$ 590,738	\$ 634,113	\$ 22,448,060	\$ 24,096,292

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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.



The total value of the contract, including this amendment is \$73,852,782.48 (inclusive of 7.75% sales tax). This amount shall not be exceeded without prior written approval from MTS.

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

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



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,

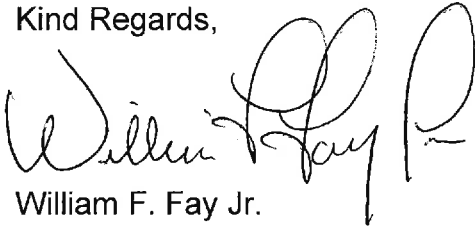
GILLIG LLC continues to face extreme, unprecedented inflationary pressures stemming from the Pandemic's broken global supply chain and the invasion of Ukraine which have begun to cause long-lasting damage to the U.S. transit supply base. This not only impacts transit bus OEMs, but it also impacts the 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,

A handwritten signature in black ink, appearing to read "William F. Fay Jr.", with a stylized flourish at the end.

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

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



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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 #1FD4E4FS9GDC03883) 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.

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	1DFE4FS9GDC03883

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



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

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.

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

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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.



**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)



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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.

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
Name

President & CEO
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: <u>Sharon Cooney, Chief Executive Officer</u>	By _____ Title: _____
Approved as to form:	
By: <u>Karen Landers, General Counsel</u>	

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 report 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 $\frac{1}{4}$ 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 $\frac{3}{4}$ 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	\$ 5,184 ⁰⁰
3	Mobilizations and Transportation Fees	3	\$ 4,600 ⁰⁰ ea	\$ 13,800 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}	\$5,808 ⁰⁰
3	Mobilizations and Transportation Fees	3	\$5,175 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.



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

Agenda Item No. 13

**MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS**

September 15, 2022

SUBJECT:

**BLUE LINE TRACTION POWER SUBSTATIONS (TPSS) INSTALLATION – CONTRACT
CHANGE ORDERS**

**AGENDA ITEM WILL
BE PROVIDED
BEFORE BOARD
MEETING**

1255 Imperial Avenue, Suite 1000, San Diego, CA 92101-7490 • (619) 231-1466 • sdmts.com

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.





**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

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

**AGENDA ITEM WILL
BE PROVIDED
BEFORE BOARD
MEETING**

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**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

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**

**AGENDA ITEM WILL
BE PROVIDED
BEFORE BOARD
MEETING**

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**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

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.

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:

Approved as to form:

Clerk of the Board
San Diego Metropolitan Transit System

Office of the General Counsel
San Diego Metropolitan Transit System

Resolution 22-07



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

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, Statutes 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.

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:

Approved as to form:

Clerk of the Board
San Diego Metropolitan Transit System

Office of the General Counsel
San Diego Metropolitan Transit System

Resolution 22-08



**Metropolitan
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DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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.

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,

Accepted:

Sharon Cooney
Chief Executive Officer

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

<u>Task</u>	<u>Begin/End Dates</u>
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
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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
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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
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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
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Work Order Estimate Summary

	Consultant/Subconsultant: JACOBS PROJECT MANAGEMENT CO.	MTS Doc. No.: G2497.0-21
Total Hours =	1,676.00	Work Order No.: WOA2497-CM04
Total Costs =	\$287,588.80	Attachment: B
	Work Order Title: CM Services for America Plaza	Change Order:

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)							Total Hours	Totals
			Michael Albanese Contract Manager	Steve Gilbert Engineer Supervising	Jean Shin Engineer II	Tom Lamere Straight Time Senior Civil Inspector (PW)	Tom Lamere Overtime Senior Civil Inspector (PW)	Scott Marquardt 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)							Total Hours	Totals
			Michael Albanese Contract Manager	Steve Gilbert Engineer Supervising	Jean Shin Engineer II	Tom Lamere Straight Time Senior Civil Inspector (PW)	Tom Lamere Overtime Senior Civil Inspector (PW)	Scott Marquardt 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.**

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	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		Task 7		Task 8		Task 9		Task 10		Totals	
		Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	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	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		Task 7		Task 8		Task 9		Task 10		Totals	
		Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	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**

MTS Doc. No.: **G2497.0-21**

Work Order Title: **CM Services for America Plaza**

Work Order No.: **WOA2497-CM04**

Attachment: **B**

Change Order:

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)							Total Hours	Totals
			Marcy Szarama	Mark Crowley	George Flowers	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	
Total (Costs) =											
			147	11	108	28					
			\$ -	\$ 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**

MTS Doc. No.: **G2497.0-21**

Work Order Title: **CM Services for America Plaza**

Work Order No.: **WOA2497-CM04**

Attachment: **B**

Change Order:

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								

Item	TASKS/WBS	TASKS/WBS Description										
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	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	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**

MTS Doc. No.: **G2497.0-21**

Work Order Title: **CM Services for America Plaza**

Work Order No.: **WOA2497-CM04**

Attachment: **B**

Change Order:

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)								Total Hours	Totals	
			Subramony Krishnamoorthy	Ikechi Okoro	Ikechi Okoro	Ikechi Okoro							
			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) =											88		
Total (Costs) =												\$ 20,768.40	
Percentage of Total (Hours) =												91%	
Percentage of Total (Costs) =												70%	

Total Hours =	80
Total Costs =	\$13,501.28

Consultant/Subconsultant: **S2 Engineering**

MTS Doc. No.: **G2497.0-21**

Work Order Title: **CM Services for America Plaza**

Work Order No.: **WOA2497-CM04**

Attachment: **B**

Change Order:

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)								Total Hours	Totals
			Subramony Krishnamoorthy	Ikechi Okoro	Ikechi Okoro	Ikechi Okoro						
			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								
		Subtotals (Hours) =		8	0	0	0	0	0	0	0	8
		Subtotals (Costs) =	\$0.00	\$ 1,684.64	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,684.64
2	Engineering	Field Survey										
2.6	0255	MATERIAL TESTING	\$ -	72	0	0						72
		Subtotals (Hours) =		0	72	0	0	0	0	0	0	72
		Subtotals (Costs) =	\$ -	\$ -	\$ 11,816.64	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,816.64
Totals (Summary) =											80	\$ 13,501.28
Total (Hours) =											80	
Total (Costs) =												\$ 13,501.28
Percentage of Total (Hours) =												90%
Percentage of Total (Costs) =												100%

Work Order Estimate Summary

Consultant/ Subconsultant: **S2 Engineering**

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 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



**Metropolitan
Transit
System**

DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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.

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 President
Name 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: <u>Sharon Cooney, Chief Executive Officer</u>	By _____
Approved as to form:	Title: _____
By: <u>Karen Landers, General Counsel</u>	



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 local, 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

Att.A, AI 19, 09/15/22



Job Order: Job Order: MTSJOC311-03

Job Order Name: SDSU UPS and Inverters Replacement

Location: 20-Green Line ROW 1255 Imperial Ave San Diego, CA 92101

Proposal Value: \$496,883.90

Approved Date:

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

Att.A, AI 19, 09/15/22



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

Proposal Value: \$496,883.90
Approved Date:

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	Quantity	Unit Price	UOM	Factor	Line Total
1	01222000010	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	01222000012	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	01222000027	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	01222000067	Specialty Engineer, for Testing and Commissioning 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
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* Includes Price Changes due to Construction Task Catalog update

Price Proposal Detail
By Division Report
Version: Working Version

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

Proposal Value: \$496,883.90
Approved Date:

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
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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	Quantity	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

Att.A, AI 19, 09/15/22



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

Proposal Value: \$496,883.90
Approved Date:

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: 417918.12

includes labor, material, & equipment. Refer to backup sheets (Moor Labor) for more details

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%



**Metropolitan
Transit
System**

DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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 NANO 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 NANO 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.

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.

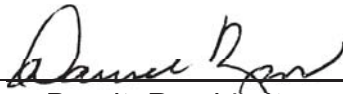
Please sign and return the copy to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Agreed:

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 -0700

Sharon Cooney, Chief Executive Officer



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 hourly rate 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 labeled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundredth) 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 floorer 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.

Group	Item	Make	Model	Qty	Annual Service Frequency	Year One		Year Two		Year Three		Year Four		Year Five		Optional Year One		Optional Year Two				
						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	Unit Price	Item Total	Unit Price
Trolley	1	Daktronics	PD 19240K7.62 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	\$ 148.04	\$ 17,468.99	
	2	Daktronics	AF-0700-40D-192.8-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	\$ 148.04	\$ 1,184.34	
	3	Daktronics	PD 19240K7.62 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	\$ 148.04	\$ 3,404.97	
	4	Daktronics	PD 19240K7.62 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	\$ 148.04	\$ 9,474.71	
	5	Daktronics	PD 19240K7.62 SMT17/AD/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	\$ 3,108.83	\$ 148.04	\$ 3,108.83	
	6	NANOV	NISDM-4601C126-SAN ¹	47	4	\$ 231.92	\$ 43,700.27	\$ 231.92	\$ 43,700.27	\$ 231.92	\$ 43,700.27	\$ 231.92	\$ 43,700.27	\$ 231.92	\$ 43,700.27	\$ 231.92	\$ 43,700.27	\$ 231.92	\$ 43,700.27	\$ 231.92	\$ 43,700.27	\$ 231.92
BRT	7	Daktronics	AF-0300-392418.S.A-DF	24	4	\$ 117.00	\$ 11,160.00	\$ 121.68	\$ 12,000.32	\$ 126.55	\$ 12,840.65	\$ 131.61	\$ 13,680.98	\$ 136.87	\$ 14,521.31	\$ 142.35	\$ 15,361.64	\$ 148.04	\$ 16,201.97	\$ 148.04	\$ 16,201.97	
	8	Samsung	UH6060D (P/In)	22	4	\$ 273.00	\$ 24,024.00	\$ 283.92	\$ 24,984.36	\$ 295.28	\$ 25,984.36	\$ 307.09	\$ 27,023.73	\$ 319.37	\$ 28,104.68	\$ 332.15	\$ 29,226.87	\$ 345.43	\$ 30,393.02	\$ 345.43	\$ 30,393.02	
	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	\$ 282.17	\$ 10,157.98	
	10	Daktronics	PD 128040DS UBA ²	35	1	\$ 161.00	\$ 5,635.00	\$ 167.44	\$ 5,859.52	\$ 174.14	\$ 6,094.82	\$ 181.10	\$ 6,336.61	\$ 188.35	\$ 6,595.15	\$ 195.88	\$ 6,865.84	\$ 203.72	\$ 7,130.07	\$ 203.72	\$ 7,130.07	
	11	NANOV	NISDM4601H-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	\$ 282.17	\$ 31,602.61	
				Table I Subtotals:	399		\$ 92,527.00	\$ 128,928.80	\$ 104,412.50	\$ 130,412.50	\$ 104,412.50	\$ 130,412.50	\$ 104,412.50	\$ 130,412.50	\$ 104,412.50	\$ 130,412.50	\$ 104,412.50	\$ 130,412.50	\$ 104,412.50	\$ 130,412.50		

Item	Description	Est. Qty/Annual No. of Hours	Year One		Year Two		Year Three		Year Four		Year Five		Optional Year One		Optional Year Two	
			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	\$ 7,959.58	\$ 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	\$ 4,678.43	\$ 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	\$ 1,799.80	\$ 187.18	\$ 1,871.77	\$ 194.66	\$ 1,946.64	\$ 202.45	\$ 2,024.51
Table II Subtotals:				\$ 28,560.00	\$ 29,702.40	\$ 30,880.50	\$ 32,116.12	\$ 33,441.16	\$ 34,747.61	\$ 36,137.51						

Item	Description	Year One		Year Two		Year Three		Year Four		Year Five		Optional Year One		Optional Year Two	
		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	% Mark Up
1	Annual Materials/Parts Allowance	\$ 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	18%
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	\$ 300,333.73
Grand Total	\$ 1,137,467.87

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

Table of Contents

1. Maintenance Cabling Checklist.....	3
2. Dust Cleaning.....	5
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	Analog to Digital Adapter power		
				OFF			
			Frame Rate Control B/D	Green - Normal			
			Flat Flexible Cable B/D	OFF	Change B/D		
		Cable check		Inverter Cable	Status check	Two-pin controller	
					Master cable		
				Low Voltage Differential System Cable	Slave 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				
			Green - input normal				
	Infrared B/D color check		Red - No input	HDMI cable check	Check with extra monitor and opposite monitor		
				PC check			
			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	Analog to Digital adapter power check - Green		
				OFF			
	Check power	Switched Mode Power Supply LED check - green	RCB power board relay check - Green	Test power with testing device			
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	
		RCB power B/D relay status check		Connection cable check	
				Switched Mode Power Supply check	
		Check FAN extension B/D wiring		Power connecting cable wiring check (RCB power - DC12V)	
	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

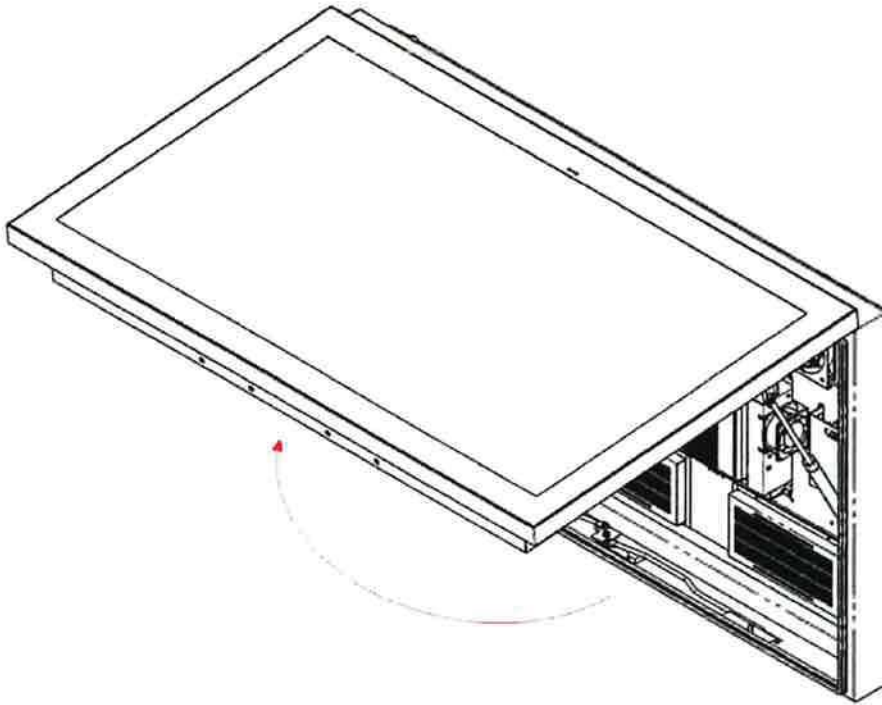
1. Filter Exchange
 - a. Prefilter
 - i. Replace every 3 to 4 months (Dependent on location)
 - b. Hepa filter
 - i. Replace the Hepa filter every 6 months
2. External cleaning
 - a. Cleaning methods and precautions
 - i. After washing the water, wipe with a dry towel.
3. Interior cleaning
 - a. Clean the inside with an air gun.

PRECAUTIONS FOR CLEANING

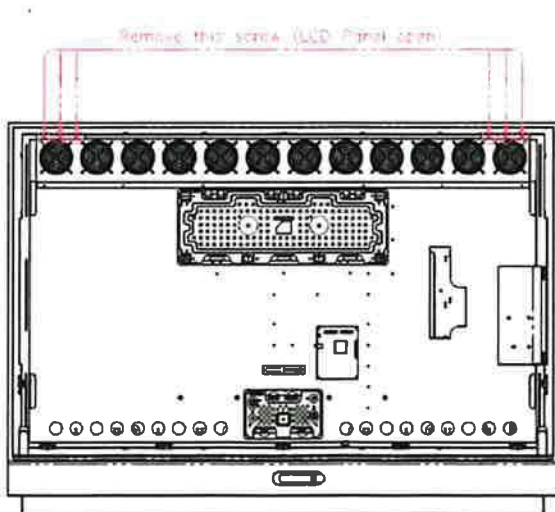
- Do NOT Use an Iron Brush
- NO high-pressure water injection

STEPS

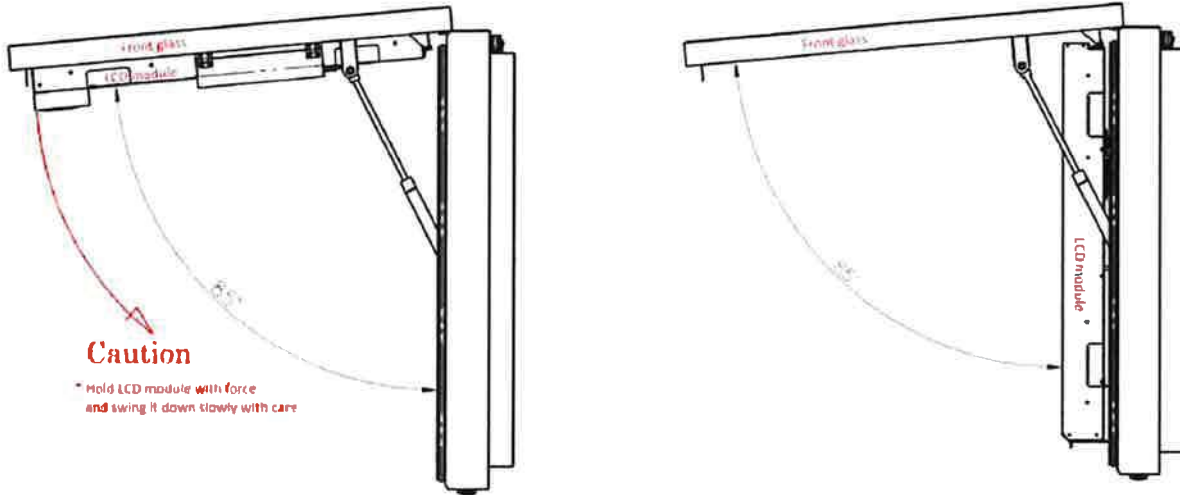
1. Open the front door.



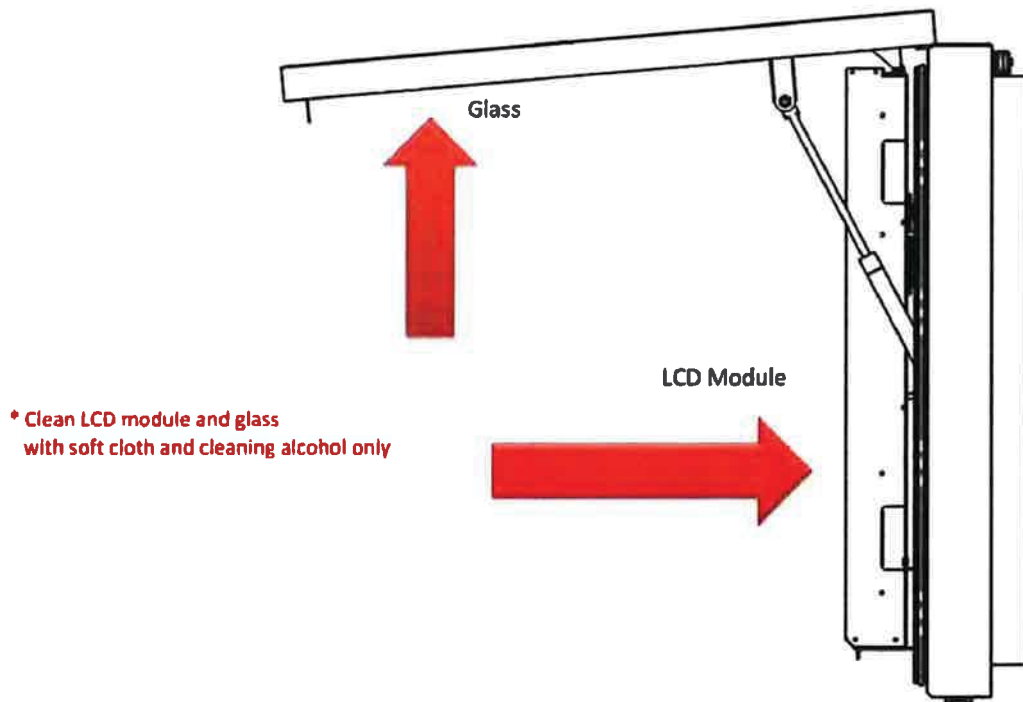
2. Remove screws.



3. Separate LCD module from the front glass.



4. Clean.



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

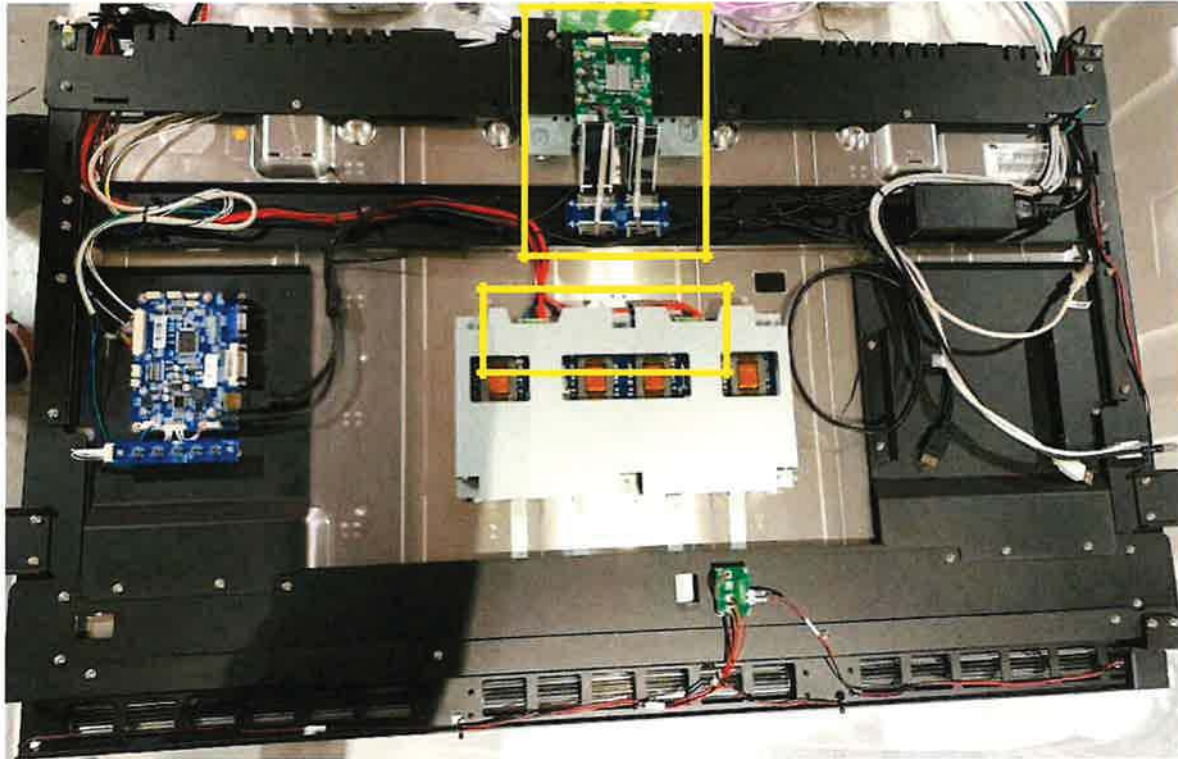


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1. Cable and Ribbon Connections
 - a. FRC Board
 - b. LCD Power
2. Checking the Power Status Indicators
 - a. AD Board Power
 - b. FRC Board Power
 - c. SMPS Power
 - d. RCB Power Board

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.



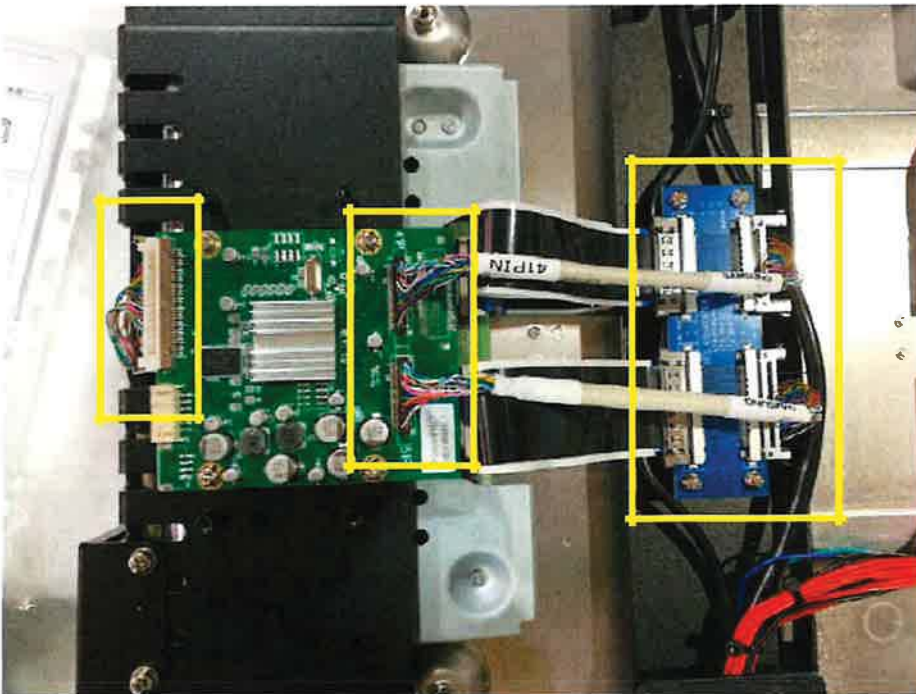
3. Verify that the ribbon is placed all the way in and properly into the slots.



4. Close the cover to secure the ribbon in place.

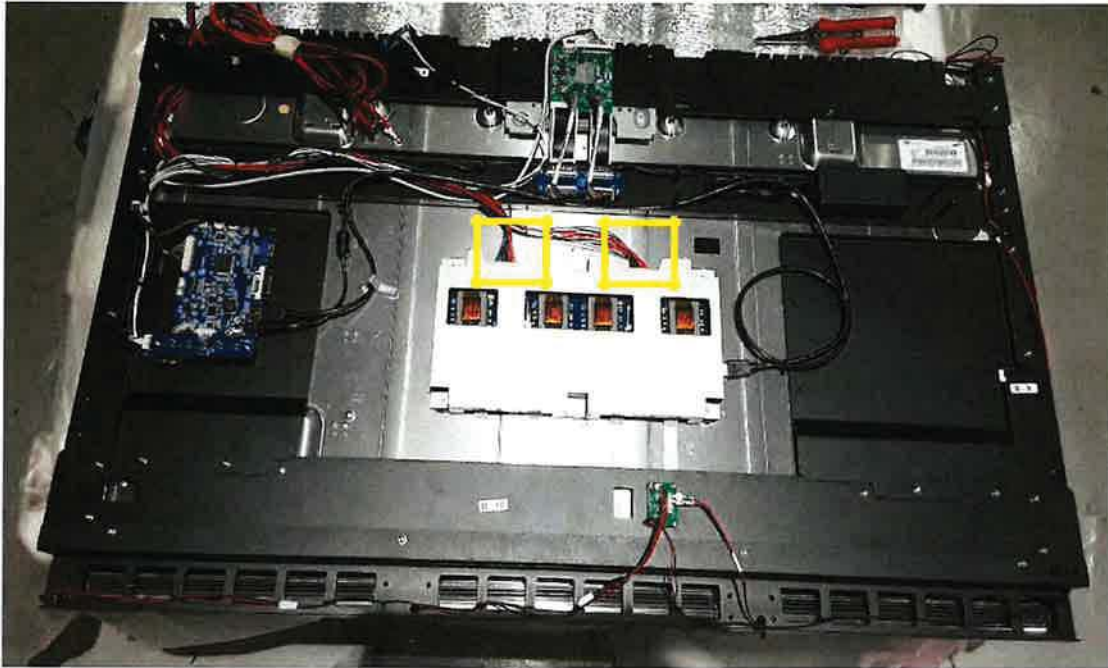


5. Be sure to verify that all other cables connected to the FRC Board are not loose.

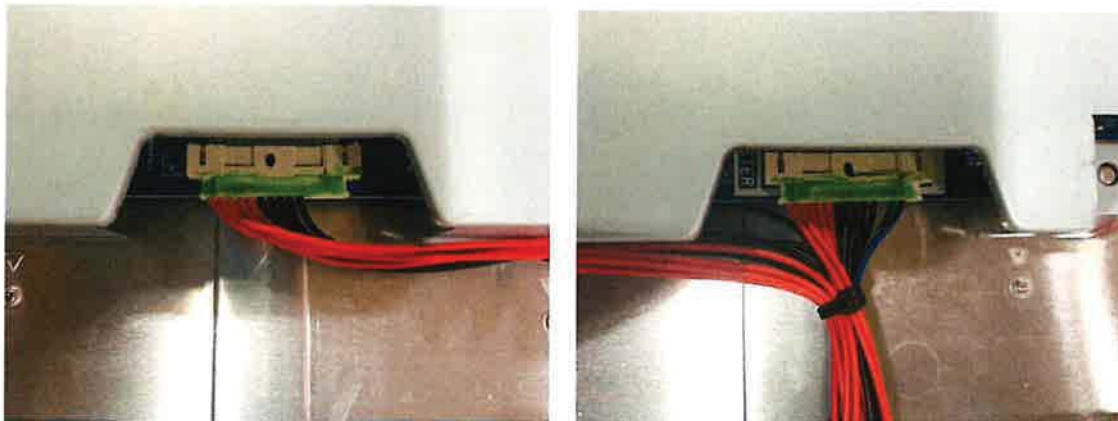


LCD POWER

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

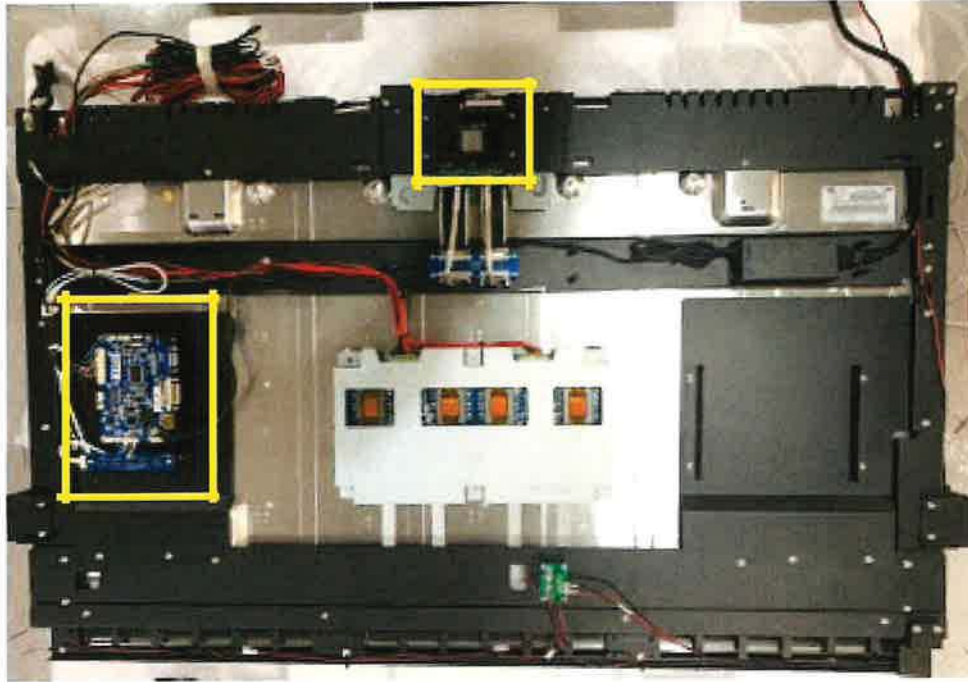


3. Make sure that both cables are secure, you may want to try disconnecting and reconnecting the cables.

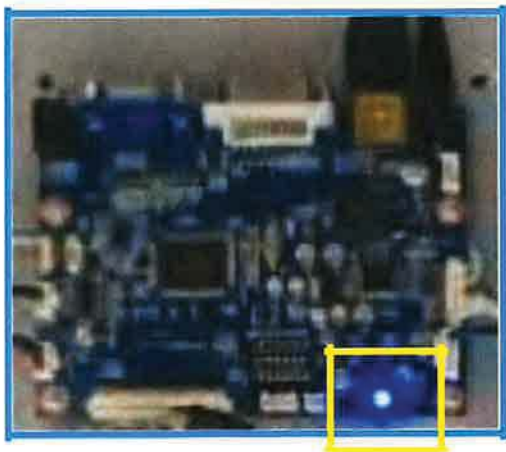


CHECKING THE POWER STATUS INDICATORS

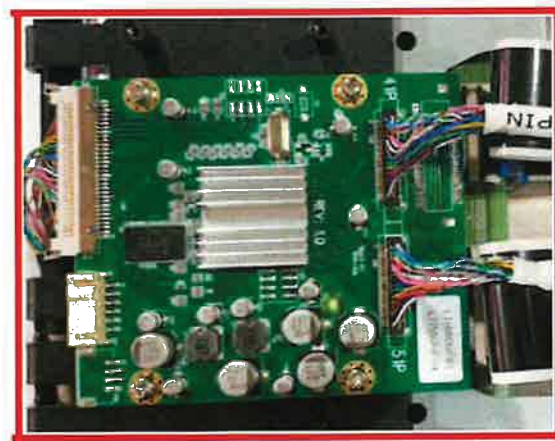
1. After checking the cables. Power on the unit and verify the following LED indicators are on.



AD BOARD POWER



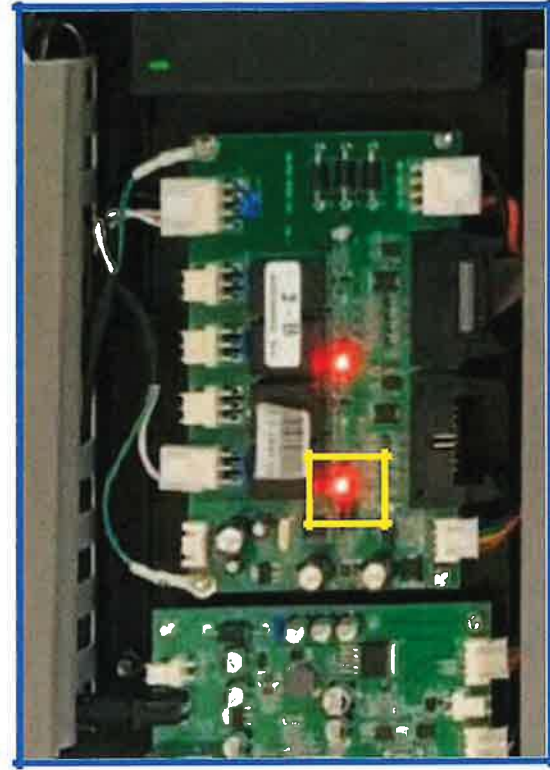
FRC BOARD POWER



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

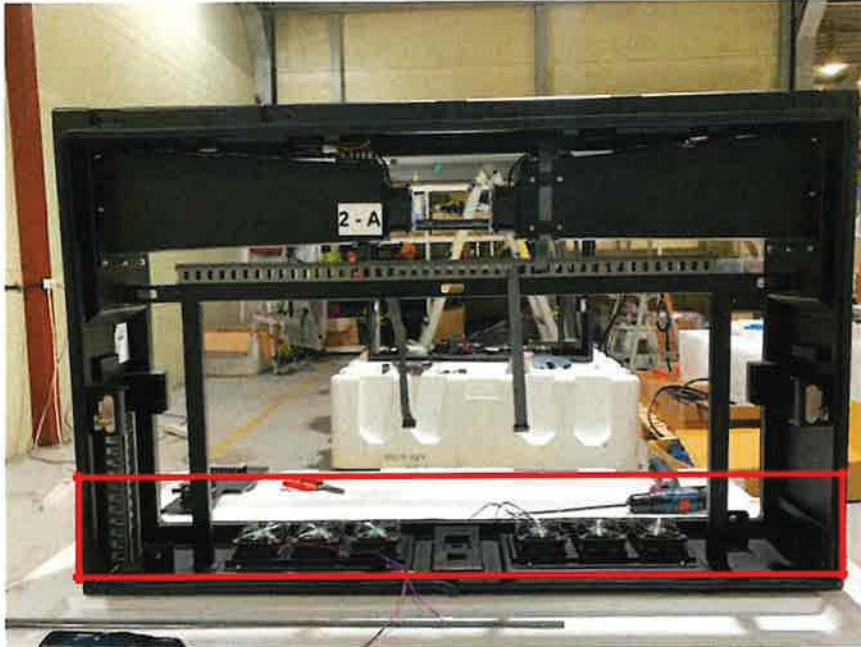


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1. Disassembly process
2. Filter removal method
3. Filter replacement method
4. Reassembly process

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.

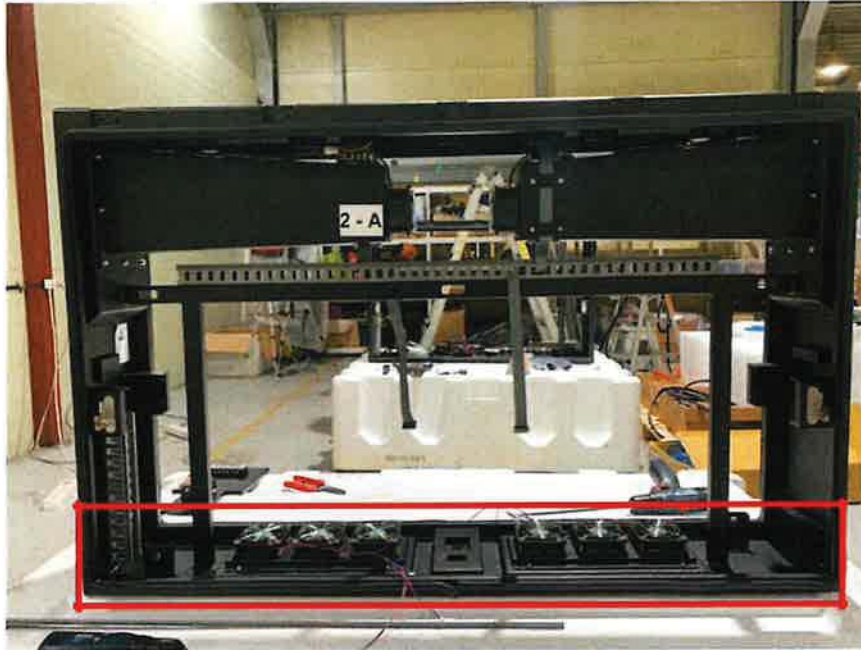


2. Install the HEPA filter.



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.

The screenshot shows the Nanov server dashboard. At the top, there is a navigation bar with 'Dashboard', 'Settings', 'Monitoring', and 'Profile'. The 'Settings' tab is highlighted with a blue box. Below the navigation bar, there are several status cards: 'Status' (7(7)), 'Power' (390(402)), 'Panel Moving sensor' (5), 'Temp' (2), 'Fan' (7), and 'Heater' (0). Below these cards is a table with columns for 'Admin', 'Name', 'Temp. Middle', 'Temp. Bottom', 'Temp. Top', 'Brightness', 'FAN Speed', 'LCD Power', 'Fan Power', 'PC Power', 'Heater Power', and 'Status'. The table contains 14 rows of server data.

Admin	Name	Temp. Middle	Temp. Bottom	Temp. Top	Brightness	FAN Speed	LCD Power	Fan Power	PC Power	Heater Power	Status
09/12/2019	19_A_0274	26.5	12.5	20.5	78	623R	0%	0%	0%	0%	OFF
09/12/2019	19_B_0278	26.8	12.8	20.8	78	654R	0%	0%	0%	0%	OFF
09/12/2019	1331_027A	27.8	13.2	19.7	118	508R	0%	0%	0%	0%	OFF
09/12/2019	498_025B	29.5	28.5	14.4	78	679R	0%	0%	0%	0%	OFF
09/12/2019	1438_048A	30.5	29.5	25.5	78	608R	0%	0%	0%	0%	OFF
09/12/2019	1198_048B	31.5	29.5	12.5	118	658R	0%	0%	0%	0%	OFF
09/12/2019	1241_0624 #1A	32.5	29.5	21.5	78	738R	0%	0%	0%	0%	OFF
09/12/2019	1245_0628 #1A	33.5	29.5	21.5	78	738R	0%	0%	0%	0%	OFF
09/12/2019	1431_048A	31.5	29.5	21.5	78	738R	0%	0%	0%	0%	OFF
09/12/2019	645_088A	32.5	29.5	21.5	78	738R	0%	0%	0%	0%	OFF
09/12/2019	1845_095A	29.5	12.5	34.5	38	652R	0%	0%	0%	0%	OFF
09/12/2019	1304_091A	15.5	12.5	19.5	38	608R	0%	0%	0%	0%	OFF
09/12/2019	1046_101A -1A	29.5	29.5	21.5	78	218R	0%	0%	0%	0%	OFF
19/12/2019	1340_101B #1A	33.5	29.5	21.5	78	218R	0%	0%	0%	0%	OFF

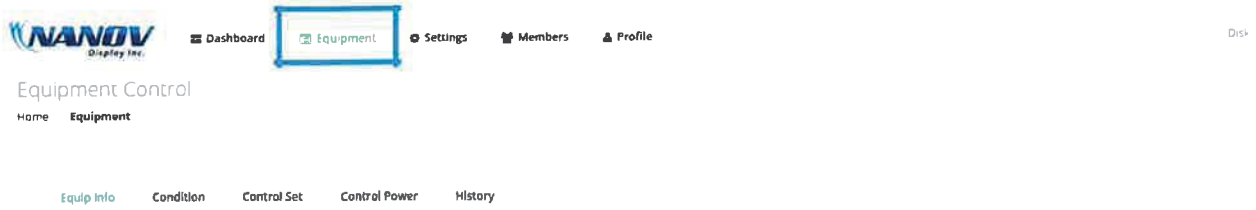
3. Activate the firmware to be installed by clicking on the button.

The screenshot shows the firmware management interface. It features a table with columns for 'Activation', 'Firmware Name', 'Firmware', and 'Upload date'. The 'Activation' column contains a grid of buttons. The first button in the first row is highlighted with a blue box and a green checkmark, indicating it is the target for activation.

Activation	Firmware Name	Firmware	Upload date
<input type="checkbox"/>	FW_3432 DMC P	93,545	2020-06-09 08:33:34
<input type="checkbox"/>	FW_3432 v. 4.0	93,546	2020-06-09 01:31:06
<input type="checkbox"/>	FW_3412 32.3 A	93,547	2020-06-09 08:33:34
<input type="checkbox"/>	FW_3412 v. 4.0	93,548	2020-06-09 08:33:34
<input type="checkbox"/>	FW_3431 v. 4.0	93,549	2020-06-09 08:33:34
<input type="checkbox"/>	FW_3431 32.3 A	93,550	2020-06-09 08:33:34
<input type="checkbox"/>	FW_3332 DMC P	93,545	2020-06-09 08:33:34



4. Go to the EQUIPMENT page from the top menu bar..



5. Select an administrator. (choose one manager at a time)

Keywords	ID	Type	Admin	IP	MAC	Status
Admin	1	ADMIN	ADMIN	10.0.2.155	70:83:05:2D:94C4	ONLINE
Unassigned	2	UNASSIGNED	UNASSIGNED	10.0.2.107	20:83:05:2D:94C5	OFFLINE
Device	3	DEVICE	DEVICE	192.168.1.184	70:83:05:2D:94C6	OFFLINE
Device	4	DEVICE	DEVICE	192.168.1.112	70:83:05:2D:94C7	OFFLINE
Device	5	DEVICE	DEVICE	10.0.2.106	70:83:05:2D:94C8	ONLINE
Device	6	DEVICE	DEVICE	10.0.2.108	70:83:05:2D:94C9	ONLINE
Device	7	DEVICE	DEVICE	192.168.22.155	70:83:05:2D:94CA	OFFLINE
Device	8	DEVICE	DEVICE	192.168.1.100	70:83:05:2D:94CB	ONLINE
Device	9	DEVICE	DEVICE	192.168.22.156	70:83:05:2D:94CC	OFFLINE
Device	10	DEVICE	DEVICE	192.168.1.100	70:83:05:2D:94CD	OFFLINE
Device	11	DEVICE	DEVICE	192.168.22.154	70:83:05:2D:94CE	OFFLINE
Device	12	DEVICE	DEVICE	192.168.1.111	70:83:05:2D:94CF	OFFLINE
Device	13	DEVICE	DEVICE	192.168.1.111	70:83:05:2D:94D0	OFFLINE

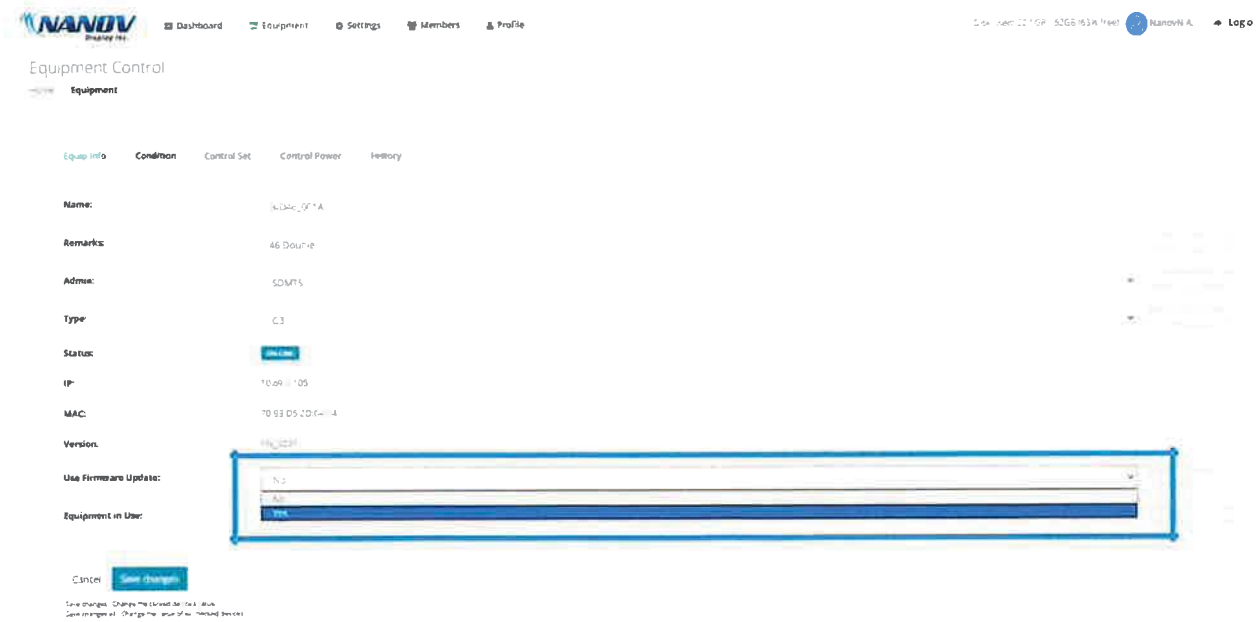
6. Select products to install. (online access required)

Keywords	ID	Type	Admin	IP	MAC	Status
Admin	1	ADMIN	ADMIN	10.0.2.155	70:83:05:2D:94C4	ONLINE
Unassigned	2	UNASSIGNED	UNASSIGNED	10.0.2.107	20:83:05:2D:94C5	OFFLINE
Device	3	DEVICE	DEVICE	192.168.1.184	70:83:05:2D:94C6	OFFLINE
Device	4	DEVICE	DEVICE	192.168.1.112	70:83:05:2D:94C7	OFFLINE
Device	5	DEVICE	DEVICE	10.0.2.106	70:83:05:2D:94C8	ONLINE
Device	6	DEVICE	DEVICE	10.0.2.108	70:83:05:2D:94C9	ONLINE
Device	7	DEVICE	DEVICE	192.168.22.155	70:83:05:2D:94CA	OFFLINE
Device	8	DEVICE	DEVICE	192.168.1.100	70:83:05:2D:94CB	ONLINE
Device	9	DEVICE	DEVICE	192.168.22.156	70:83:05:2D:94CC	OFFLINE
Device	10	DEVICE	DEVICE	192.168.1.100	70:83:05:2D:94CD	OFFLINE
Device	11	DEVICE	DEVICE	192.168.22.154	70:83:05:2D:94CE	OFFLINE
Device	12	DEVICE	DEVICE	192.168.1.111	70:83:05:2D:94CF	OFFLINE
Device	13	DEVICE	DEVICE	192.168.1.111	70:83:05:2D:94D0	OFFLINE

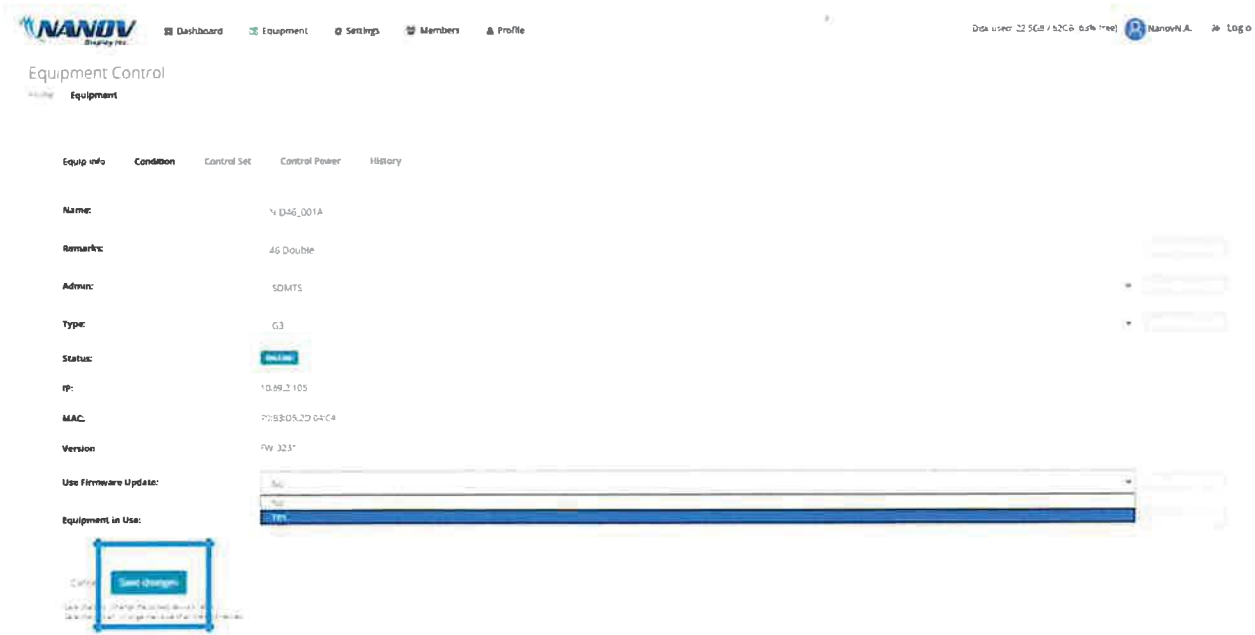
5. Click on EQUIPMENT INFORMATION



6. Activate firmware update to "YES"



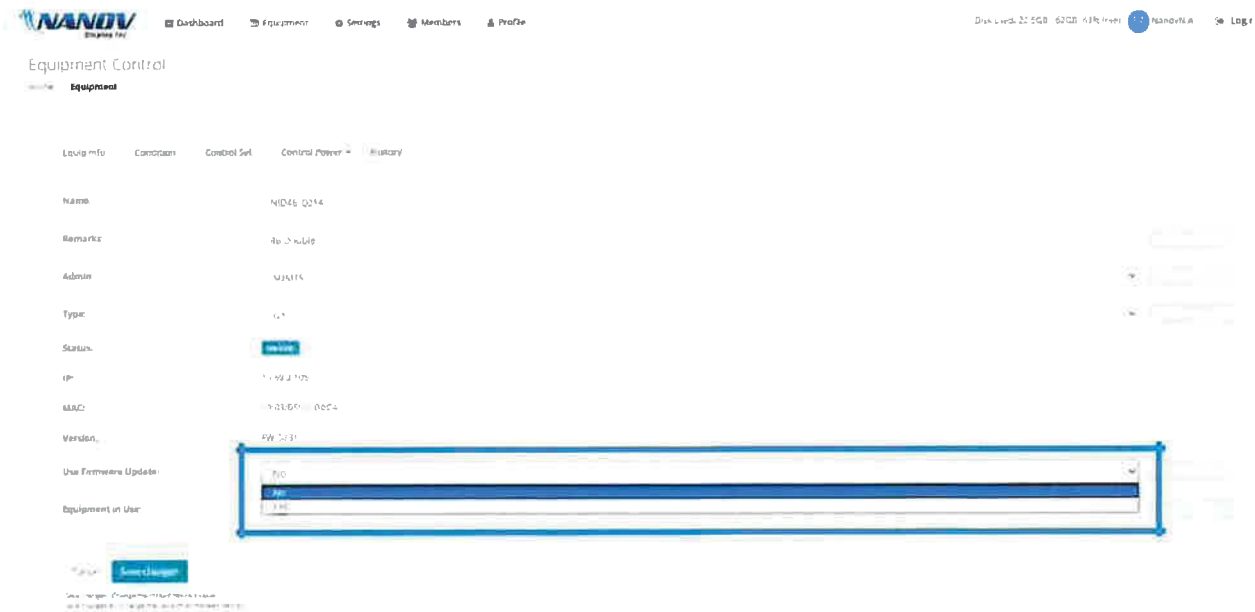
7. Save the changes by clicking SAVE CHANGES.



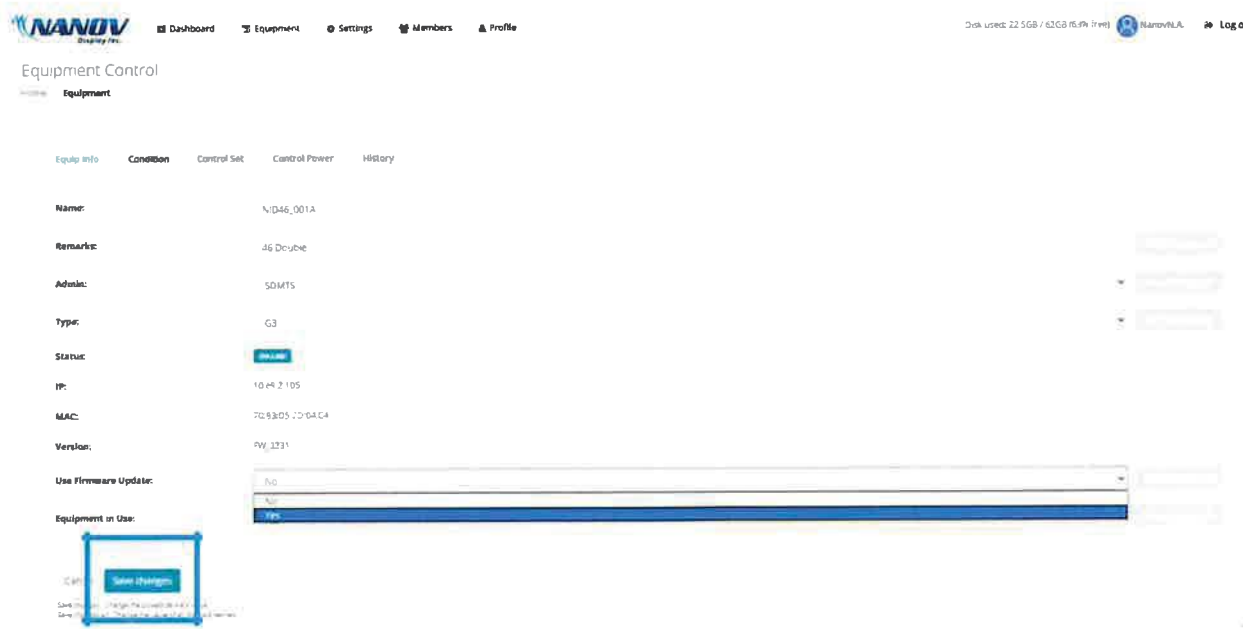
8. Firmware will be installed within 5 to 10 minutes.

9. Refresh your browser and return to the same page.

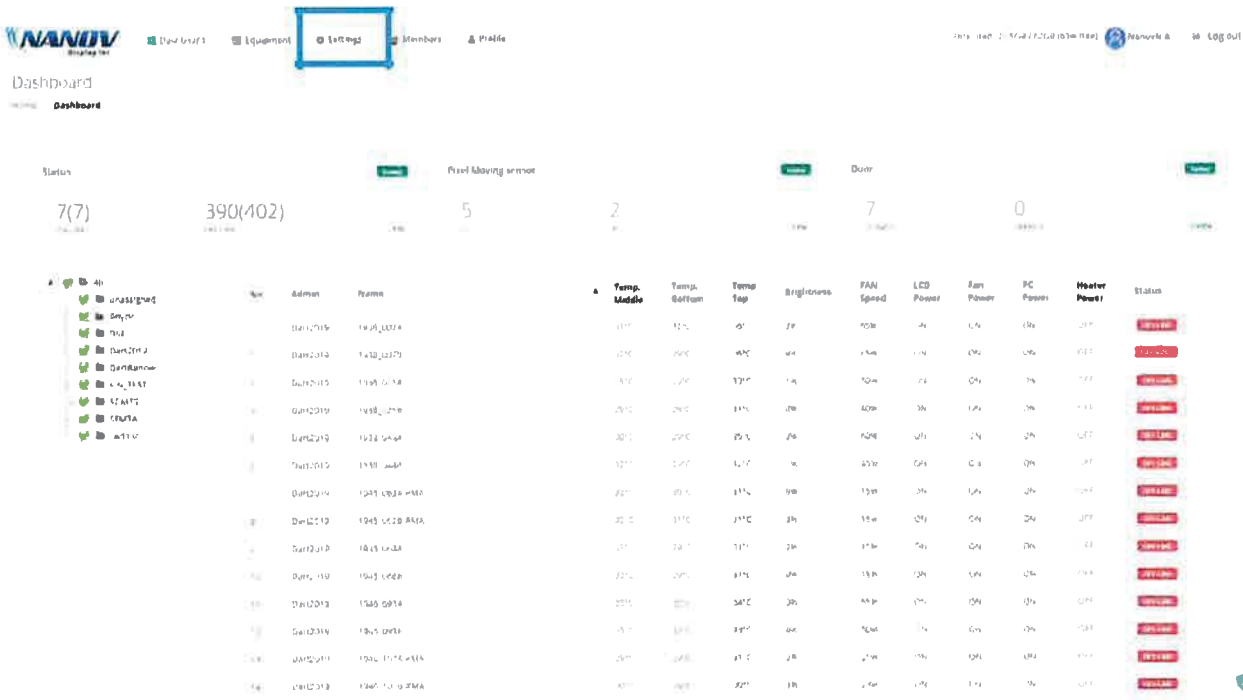
10. Check to see if the firmware has been updated. If so, disable firmware update by selecting "NO"



11. Save the changes by clicking SAVE CHANGES.



12. Click SETTINGS at the top.



5. Disable completed firmware.

Activation	No.	Firmware Name	Version	Upload Date	State
1	1	FW_321040P	01.00	2020-06-09 01:13:34	Done
2	2	FW_321024P	01.00	2020-06-09 01:13:00	Done
3	3	FW_321013P	01.00	2020-06-09 01:13:11	Done
4	4	FW_321040P	01.00	2020-06-09 02:43:07	Done
5	5	FW_321014P	01.00	2020-06-09 02:44:14	Done
6	6	FW_321013P	01.00	2020-06-09 02:43:23	Done
7	7	FW_321040P	01.00	2020-06-09 03:13:08	Done



**ATTACHMENT D
REVISED SERVICE SCHEDULE**

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 NANO 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,

Agreed:

Sharon Cooney, Chief Executive Officer

Dan Brault, President
Electro Specialty Systems

Date: _____

Attachments: A. Revised Bid Form



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 labeled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundredth) 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

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 labeled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundredth) 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

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 labeled "Unit Price." For Table III, please enter the mark up percentage (rounding to the nearest hundredth) 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.



**Metropolitan
Transit
System**

DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 9/1/2022

Agenda Item No. 21

**MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS**

September 15, 2022

SUBJECT:

**SIEMENS COMPUTER AIDED SIGNALING (SICAS) S7 COMPONENTS - SOLE
SOURCE CONTRACT AWARD**

**AGENDA ITEM WILL
BE PROVIDED
BEFORE BOARD
MEETING**

1255 Imperial Avenue, Suite 1000, San Diego, CA 92101-7490 • (619) 231-1466 • sdmts.com

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.





**Metropolitan
Transit
System**

DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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.

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).



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,

Accepted:

Sharon Cooney
Chief Executive Officer

Matt Capuzzi, PE
Executive Vice President/Principal

Date: _____

Attachments: Attachment A, Scope of Services
Attachment B, Negotiated Fee Proposal

DRAFT

**ATTACHMENT A
SCOPE OF SERVICES**

DRAFT

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

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

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

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

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.

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.

- 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

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

Prevailing wage rates apply to certain personnel for these services? Yes x No

If yes, please list classification subject to prevailing wage rates:

DRAFT

Work Order Estimate Summary

Att.B, AI 22, 09/15/22

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**



**Metropolitan
Transit
System**

DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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,

1255 Imperial Avenue, Suite 1000, San Diego, CA 92101-7490 • (619) 231-1466 • sdmts.com

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.



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 Stormceptor 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 Stormceptor 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.

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). <i>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.</i>	\$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 Stormceptor HDS Units (Attachment B). <i>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.</i>	\$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.

While driving any vehicle:

- 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

While walking or working:

- 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 enter the unit price for each service listed in the columns labeled 'Unit Price'. For Table II, please enter the mark up percentage (rounding to the nearest hundredth) 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. Columns: Item, Description, Annual Service Frequency, Year One (7/1/21-6/30/21), Year Two (7/1/22-6/30/22), Year Three (7/1/23-6/30/23), Year Four (7/1/24-6/30/24), Year Five (7/1/25-6/30/25), Optional Year One (7/1/26-6/30/26), Optional Year Two (7/1/27-6/30/27), Optional Year Three (7/1/28-6/30/28), Optional Year Four (7/1/29-6/30/29), Optional Year Five (7/1/30-6/30/31). Rows include services like Monthly Inspections, Annual Storm Water Sampling, BMP Maintenance, etc.

Table II: AS-NEEDED SERVICES. Columns: Item, Description, Unit Price, % 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, % Mark Up. Rows include services like Rain Event Monitoring, Lab Sampling, Erosion Control, etc.

Table III: AS-NEEDED REPLACEMENT PARTS. Columns: 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, % Mark Up. Rows include Annual Materials/Parts Allowance, Materials/Part Markup.

ANNUAL TOTALS BASE PERIOD TOTAL OPTION YEARS TOTAL Grand Total \$ 141,881.32 \$ 133,809.66 \$ 129,689.63 \$ 137,239.84 \$ 141,881.32 \$ 145,251.76

CLEARTEC TECHNICAL MANUAL



TECHNICAL MANUAL

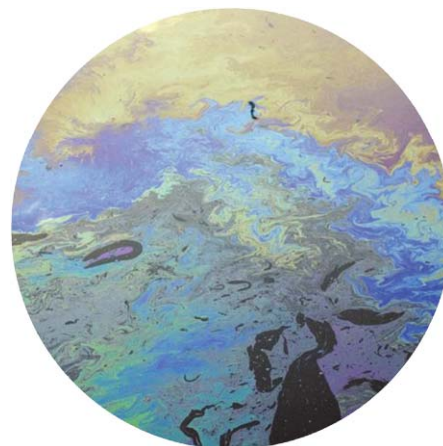
RUBBERIZER® and TECULITE® Filter Media



WATER QUALITY



STORM-WATER



SPILL REMEDIATION

(800) 542-3036
www.hmrtinc.com

Document control no: 8TC111511.24
Last Revision: April 2016

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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 an 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
- Diesel Fuels
- Lube Oils
- Jet Fuel
- Transformer Oils
- Chlorinated Solvents
- Aromatic Solvents
- Hydraulic Oils
- Light Crudes

TECULITE® Filtration

- TSS
- Zinc
- Aluminum
- Phosphorus
- Copper



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
- Storm Water Filtration
- Marinas & Shipyards
- Heavy Industry & Manufacturing
- Secondary Containment
- Power Generation
- Transportation
- Airports
- 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 Sorption 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 necessary.

RUBBERIZER® Filter Media

Overview

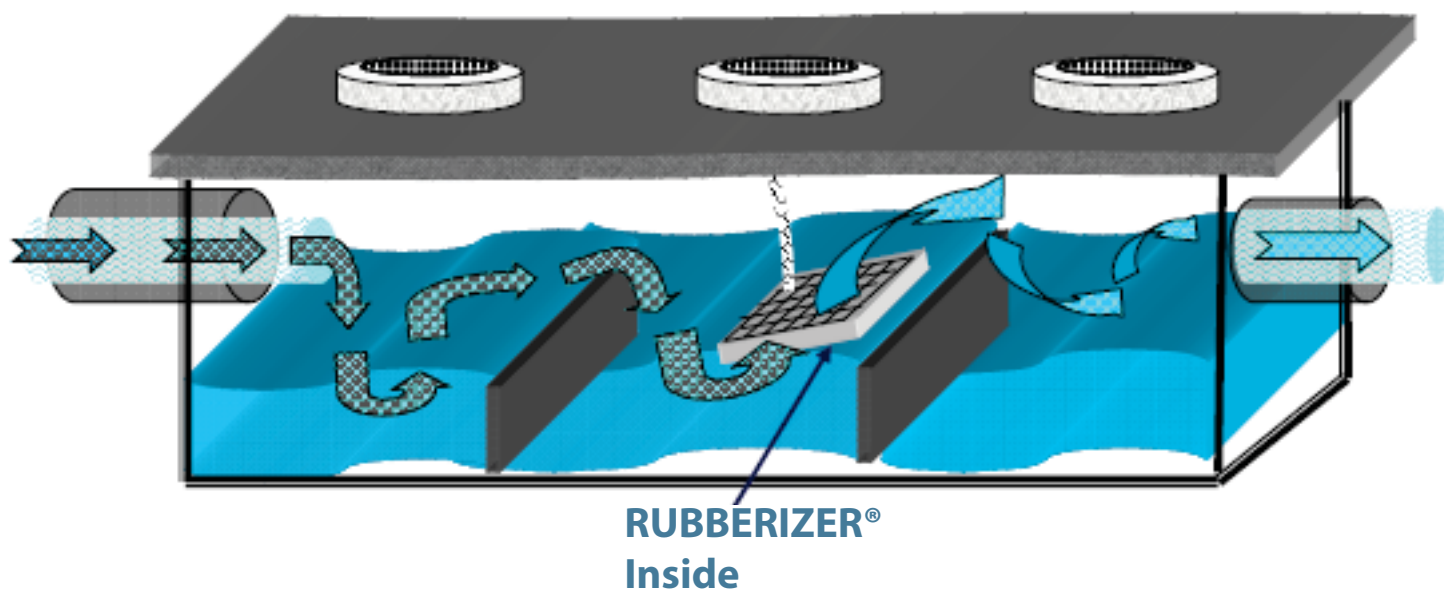
ClearTec RUBBERIZER® patented products are available in a variety of water treatment and filtration medias. They are making headway in filtration applications saving material costs, labor and disposal volume by as much as 75%. They are formulated from modern, non-toxic, non-hazardous polymers capable 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 naphthenic 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 summarizes 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 Erlenmeyer 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 then 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
Aliphatic.....	1 pound sorbent to 1/2 gallon range
Aromatic.....	1 pound sorbent to 2/3 gallon range
Naphthenic.....	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 Erlenmeyer 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 Erlenmeyer 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

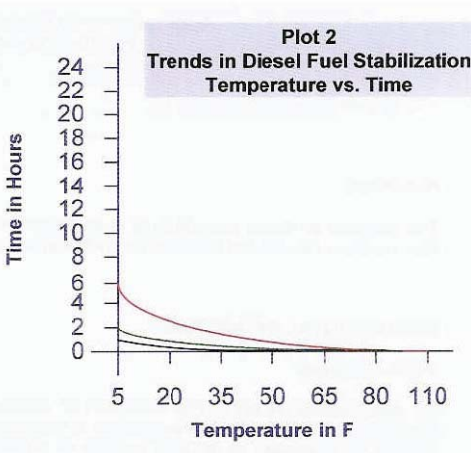
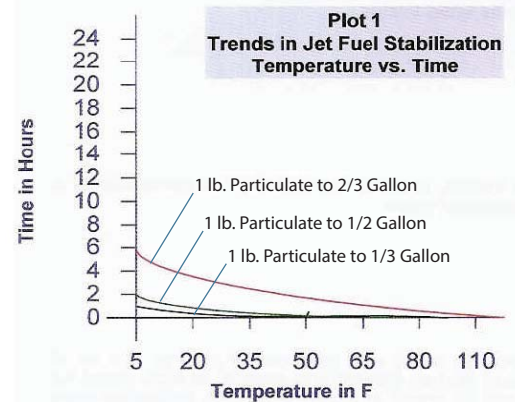
The purpose of this experiment was to evaluate the effect of temperature on the stabilization rates of ClearTec RUBBERIZER® Particulate on jet fuel (JP4 and JP5), diesel fuel, gasoline, transformer oil and hydraulic oil. Three experimental temperatures (5° F, 55° F, and 105° F) and three experimental 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 Erlenmeyer 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.



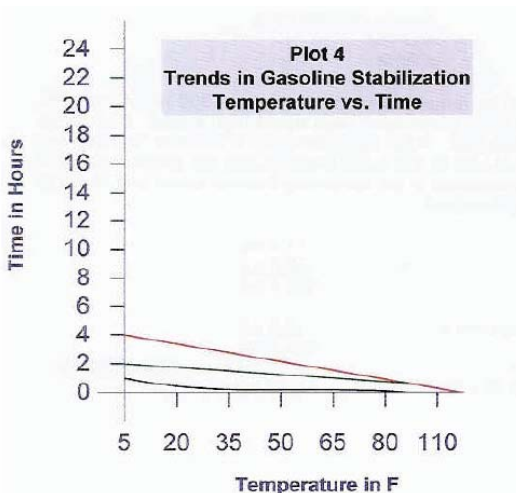
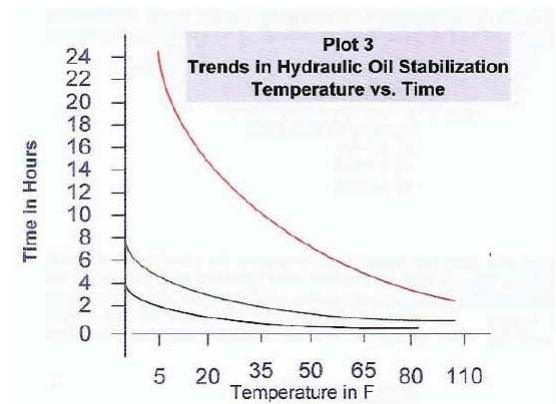
Diesel Fuel

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).

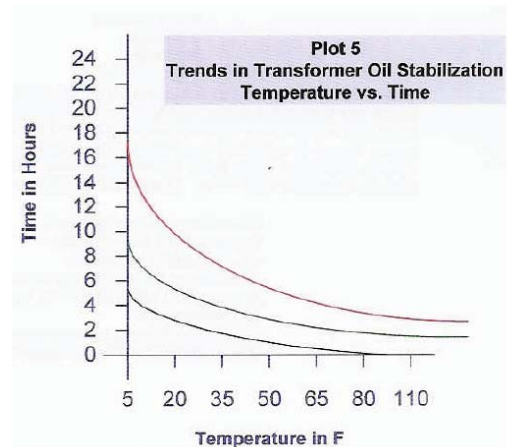


Gasoline

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:

<u>Residence Time I</u>	<u>PPM Benzene</u>
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:

<u>Residence Time I</u>	<u>PPM Hydrocarbon</u>
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 and 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.

<p style="text-align: center;">Sample 1</p> <p>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.</p>	<p style="text-align: center;">FES-A1</p> <p>No oil sheen observed on leachate sample. Leachate clear and colorless.</p> <p>Leachate oil = < 1.0 mg/L</p>
<p style="text-align: center;">Sample 2</p> <p>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.</p>	<p style="text-align: center;">FES-A2</p> <p>No oil sheen observed on leachate sample. Leachate clear and colorless.</p> <p>Leachate oil = < 1.0 mg/L</p>
<p style="text-align: center;">Sample 3</p> <p>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.</p>	<p style="text-align: center;">FES-A3</p> <p>No oil sheen observed on leachate sample. Leachate clear and colorless.</p> <p>Leachate oil = < 1.0 mg/L</p>
<p style="text-align: center;">Sample 4</p> <p>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.</p>	<p style="text-align: center;">FES-A4</p> <p>No oil sheen observed on leachate sample. Leachate clear and colorless.</p> <p>Leachate oil = < 1.2 mg/L</p>
<p style="text-align: center;">Sample 5</p> <p>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.</p>	<p style="text-align: center;">FES-A5</p> <p>No oil sheen observed on leachate sample. Leachate clear and colorless.</p> <p>Leachate oil = < 1.0 mg/L</p>

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	Note:
Blank	98.1%	<p>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).</p> <p>Nominal test concentrations are serial dilutions of the sea water extract.</p> <p>* Denotes values significantly less than control at P = 0.05%.</p> <p>Note: No test concentration significantly less than control.</p>
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%	

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.

Water passed through the filtration cartridge at an assigned flow, or loading rate of approximately 17.8 gpm/ft² 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 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

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 ft³ 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: CO ₂ , 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, keystone, 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 hydrofluoric acid.		
INCOMPATIBILITY (Materials to Avoid): Hydrofluoric Acid			
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: May react with hydrofluoric acid to form a toxic silicon tetra-fluoride gas.			
HAZARDOUS POLYMERIZATION: ____ May Occur <input checked="" type="checkbox"/> 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.





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





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). <i>The increased cost will be absorbed by the available as-needed funds in the agreement.</i>
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

Ram Mohseni, CEO
SoCal Stormwater Runoff Solution
Services, Inc.

Date: 04/08/2022

Attachment: B. Revised Bid Form

**ATTACHMENT B
REVISED BID FORM**



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



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,

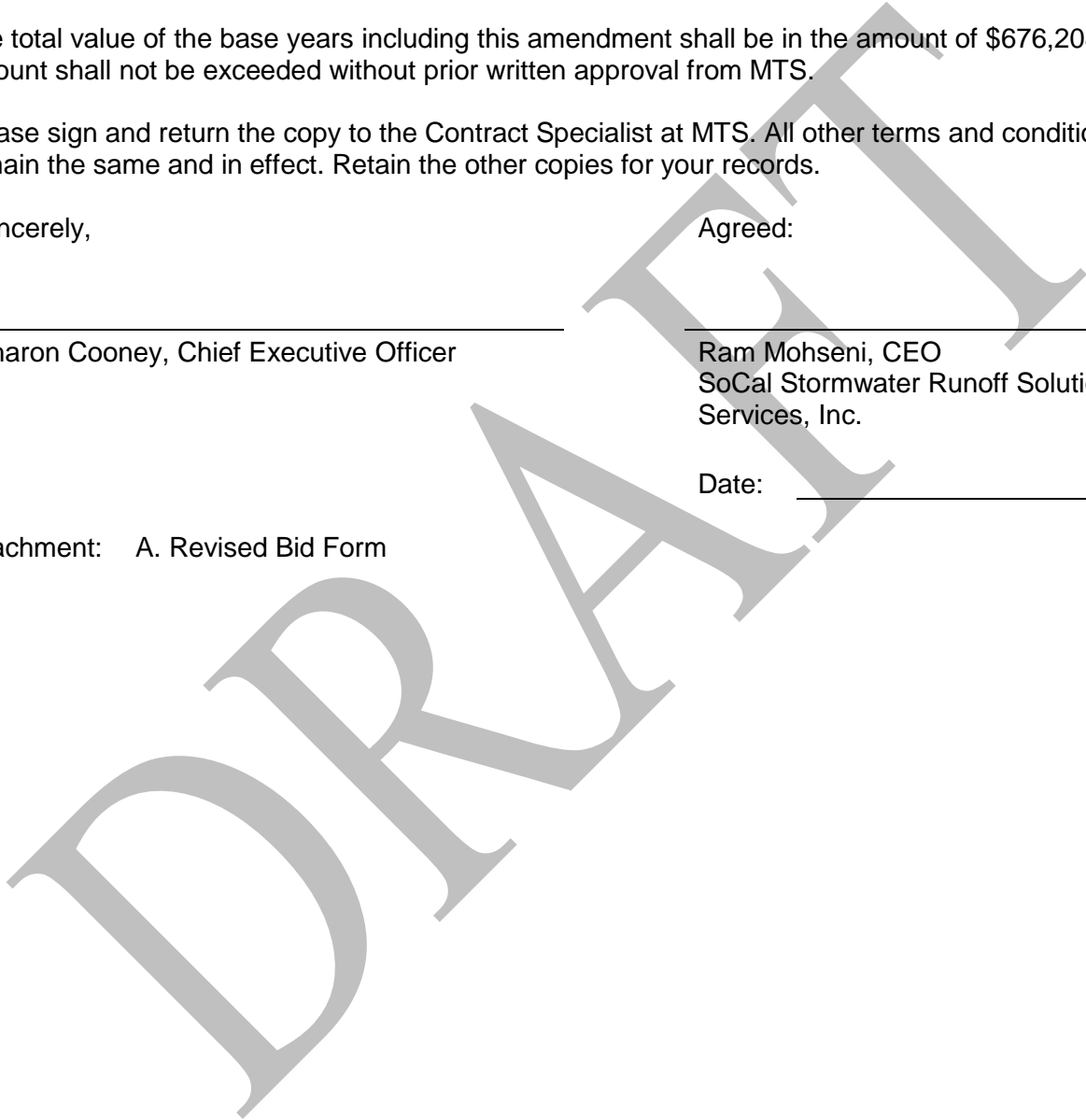
Agreed:

Sharon Cooney, Chief Executive Officer

Ram Mohseni, CEO
SoCal Stormwater Runoff Solution
Services, Inc.

Date: _____

Attachment: A. Revised Bid Form



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 labeled "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 labeled "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 labeled "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 labeled "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 - Stormceptor 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

Table II: AS-NEEDED SERVICES				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 Locations only)	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 - Stormceptor 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 labeled "Unit formulas that will automatically calculate your pricing.

Item	Description	UOM	Estimated	Year Five		Optional Year One	
				7/1/25 - 6/30/26	7/1/26 - 6/30/27	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 - Stormceptor 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

Item	Description	UOM	Estimated	Optional Year Two		Optional Year Three	
				7/1/27 - 6/30/28	7/1/28 - 6/30/29	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 - Stormceptor 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 labeled "Unit Price" 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 - Stormceptor 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	Year Two ⁶	7/1/22-6/30/23
		% 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

Item	Description	Year Three	7/1/23 - 6/30/24	Year Four	7/1/24 - 6/30/25
		% 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

Item	Description	Year Five	7/1/25 - 6/30/26	Optional Year One	7/1/26 - 6/30/27
		% 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

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 labeled "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
	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		

¹Items added for BRT program, via Amendment No. 1

²This replaces LIDMIX Media Pillow that is no longer available by the manufacturer, as part of Amendment No. 1.

³Increases the number of filters from 20 to 24 as part of Amendment No. 2.

⁴Increased the quantities from 4 to 12 as part of Amendment No. 2.

⁵Increased the quantity from 20 to 40 as part of Amendment No. 2.

⁶Increased 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 \

⁷Adds 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



**Metropolitan
Transit
System**

DRAFT FOR EXECUTIVE COMMITTEE REVIEW DATE: 09/01/22

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. (ABC GC) 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.

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

Form of Business: Corporation San Diego, CA 92113
(Corporation, partnership, sole proprietor, etc.)

Telephone: (619) 247-7113

Authorized person to sign contracts: Kenneth Czubernat President
Name 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: <u>Sharon Cooney, Chief Executive Officer</u>	Firm: _____
Approved as to form:	By: _____ Signature
By: <u>Karen Landers, General Counsel</u>	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

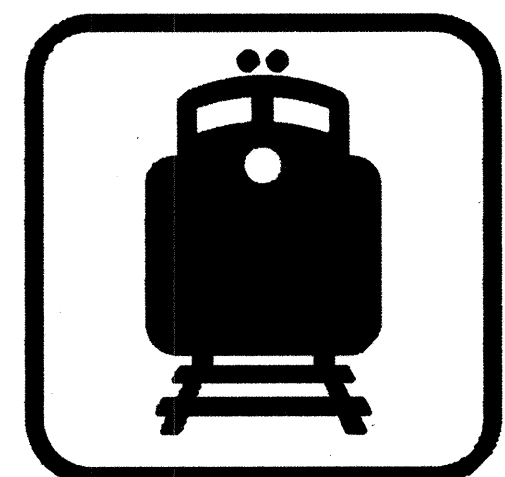
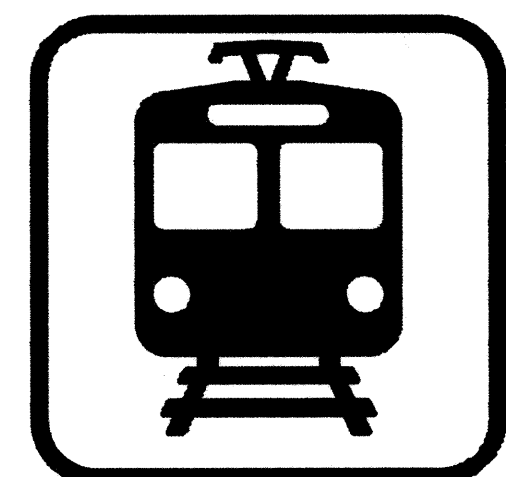
Attachment A - Bus Maintenance Facility Imperial Avenue Division As-Builts

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

Table with columns: MARK, DESCRIPTION, CFM, OSA CFM, ESP (IN. UG.), SEER, AFUE %, COOLING CAPACITY (MBH) TOTAL, SENSIBLE, EDB, LDB, HEATING CAPACITY (MBH) INPUT, OUTPUT, ELECTRICAL DATA (MCA, MCOP, VOLT, PH, HZ), AMB. TEMP. (°F), OPER. WEIGHT (LBS.), BASED ON: MANUFACTURER, MODEL, REMARKS.

LEGEND

Legend table with columns: SYMBOL, ABBR, DESCRIPTION. Includes symbols for equipment, ducts, elbows, dampers, and diffusers.

GAS FIRED MAKE-UP AIR UNIT SCHEDULE

Table with columns: MARK, DESCRIPTION, SERVICE, CFM, OSA, ESP (IN. UG.), FUEL, HEATING CAPACITY (MBH) INPUT, OUTPUT, AFUE (%), ELECTRICAL DATA (HP, VOLT, PH, HZ), OPER. WEIGHT (LBS.), BASED ON: MANUFACTURER, MODEL, REMARKS.

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.

FAN SCHEDULE

Table with columns: MARK, DESCRIPTION, QUANTITY, CFM, ESP, RPM, ELECTRICAL DATA (HP, VOLT, PH, HZ), OPER. WEIGHT (LBS.), BASED ON: MANUFACTURER, MODEL, REMARKS.

DIFFUSERS, GRILLES & REGISTERS

Table with columns: MARK, NECK SIZE, DAMPER, BASED ON: MANUFACTURER, MODEL, REMARKS.

NOTE: DIFFUSERS & GRILLES SHALL HAVE FRAMES TO MATCH THE CEILING IN WHICH THEY ARE INSTALLED. IE: T-BAR CEILING; LAY-IN FRAMES; GYPSUM BOARD CEILING; FLUSH MOUNTED FRAMES.

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 10.D.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 stamp with signature and date: Contract No. BUS-443B, Date NOV. 2000.

TMD Engineers, Inc. Mechanical and Electrical Consulting Engineers. Project Number 2000.017. Telephone (658) 271-9908, Fax (658) 271-9932, 9845 ERMA ROAD, SUITE 200, SAN DIEGO, CA 92131. tmd@cts.com

CONSTRUCTION CHANGE TABLE

Table with columns: CHANGE, DATE, SHEET NUMBERS REVISED OR ADDED THIS CHANGE. Row 1: 4/17/00, SECOND FLOOR INTERIOR IMPROVEMENTS.

STV Incorporated logo and address: ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS, 1055 WILSHIRE BOULEVARD, SUITE 1455, LOS ANGELES, CALIFORNIA 90017-2499.

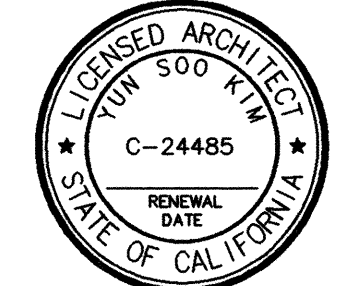


Table with columns: DESIGNED BY (BM), DRAWN BY (TW), CHECKED BY (BM), MTDB PRJ. ENG., DATE.

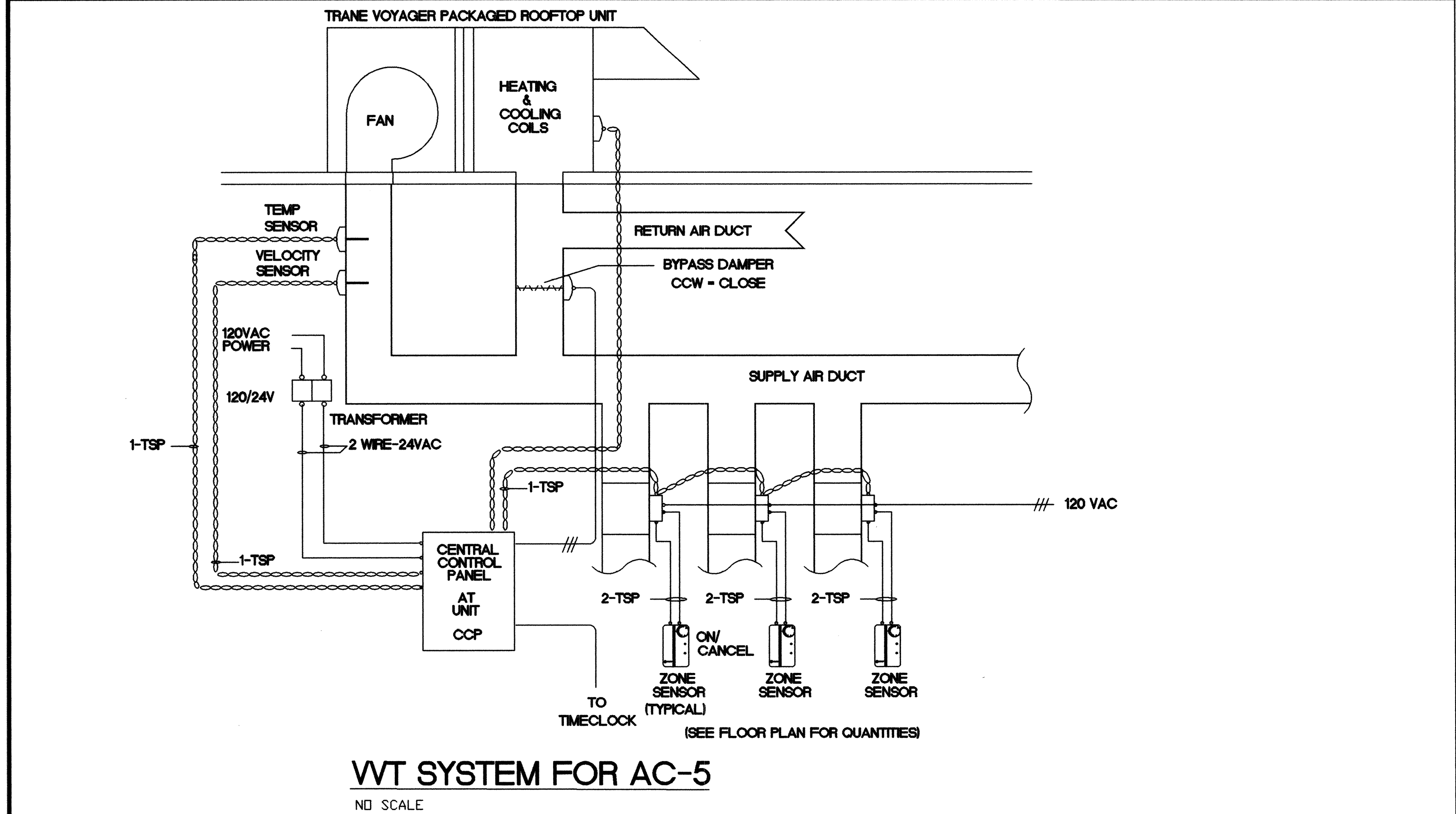
MTDB logo and address: Metropolitan Transit Development Board, 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466.

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY. MECHANICAL SCHEDULES LEGEND AND NOTES. SCALE: NONE. MTDB CONTRACT NO. BUS-443B. DRAWING NO. M-1, SHEET NO. 61.

Vertical text on the left margin: Y:\2000\2100\017\MPF\017M-1.dwg 04/20/00 1:16PM

VOLUME AND BYPASS DAMPERS

MARK	AREA SERVED	TERMINAL UNIT SIZE	TOTAL AIR PRESSURE DROP IN. WG.	MAXIMUM CFM	MINIMUM CFM	TYPE OF CONTROL	BASED ON:		REMARKS
							MANUFACTURER	MODEL	
VD 1	COMPUTER TRAINING ROOM 22	12"φ	0.035	615	300	ELECTRIC	CARRIER	DAMPBARIZINC	-
VD 2	DRIVERS CLASSROOM	12"φ	0.035	630	305	ELECTRIC	CARRIER	DAMPBARIZINC	-
VD 3	OFFICES 214 AND 226	12"φ	0.035	740	310	ELECTRIC	CARRIER	DAMPBARIZINC	-



CERTIFICATE OF COMPLIANCE PART 1 OF 2 ENV-1

PROJECT NAME: MTDB BMF IAD
 PROJECT ADDRESS: IMPERIAL AVE., SAN DIEGO, CA.
 DATE: 22 JUNE 1998

PRINCIPLE DESIGNER-ENVELOPE: STV
 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 sqft.
 CLIMATE ZONE: 10T

BUILDING TYPE: NONRESIDENTIAL HIGH RISE RESIDENTIAL HOTEL/MOTEL GUEST ROOM

PHASE OF CONSTRUCTION: NEW CONSTRUCTION ADDITION ALTERATION UNCONDITIONED (FILE AFFADAVIT)

METHOD OF MECHANICAL COMPLIANCE: PRESCRIPTIVE PERFORMANCE

PROOF OF ENVELOPE COMPLIANCE: PREVIOUS ENVELOPE PERMIT 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 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 PERFORM.

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 FOR THE FOLLOWING REASON: _____

PRINCIPAL ENVELOPE DESIGNER-NAME: KEVIN KIM
 SIGNATURE: _____
 LICENSE NO.: _____
 DATE: _____

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
 PROJECT ADDRESS: IMPERIAL AVE., SAN DIEGO, CA.
 DATE: 22 JUNE 1998

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: NONRESIDENTIAL HIGH RISE RESIDENTIAL HOTEL/MOTEL GUEST ROOM

PHASE OF CONSTRUCTION: NEW CONSTRUCTION ADDITION ALTERATION UNCONDITIONED (FILE AFFADAVIT)

METHOD OF MECHANICAL COMPLIANCE: PRESCRIPTIVE PERFORMANCE

PROOF OF ENVELOPE COMPLIANCE: PREVIOUS ENVELOPE PERMIT 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: BONG MANLULU
 SIGNATURE: _____
 DATE: 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 PERFORM.

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 FOR THE FOLLOWING REASON: _____

PRINCIPAL MECHANICAL DESIGNER-NAME: CHRIS RADTKE, PE
 SIGNATURE: _____
 LICENSE NO.: M24519
 DATE: 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.

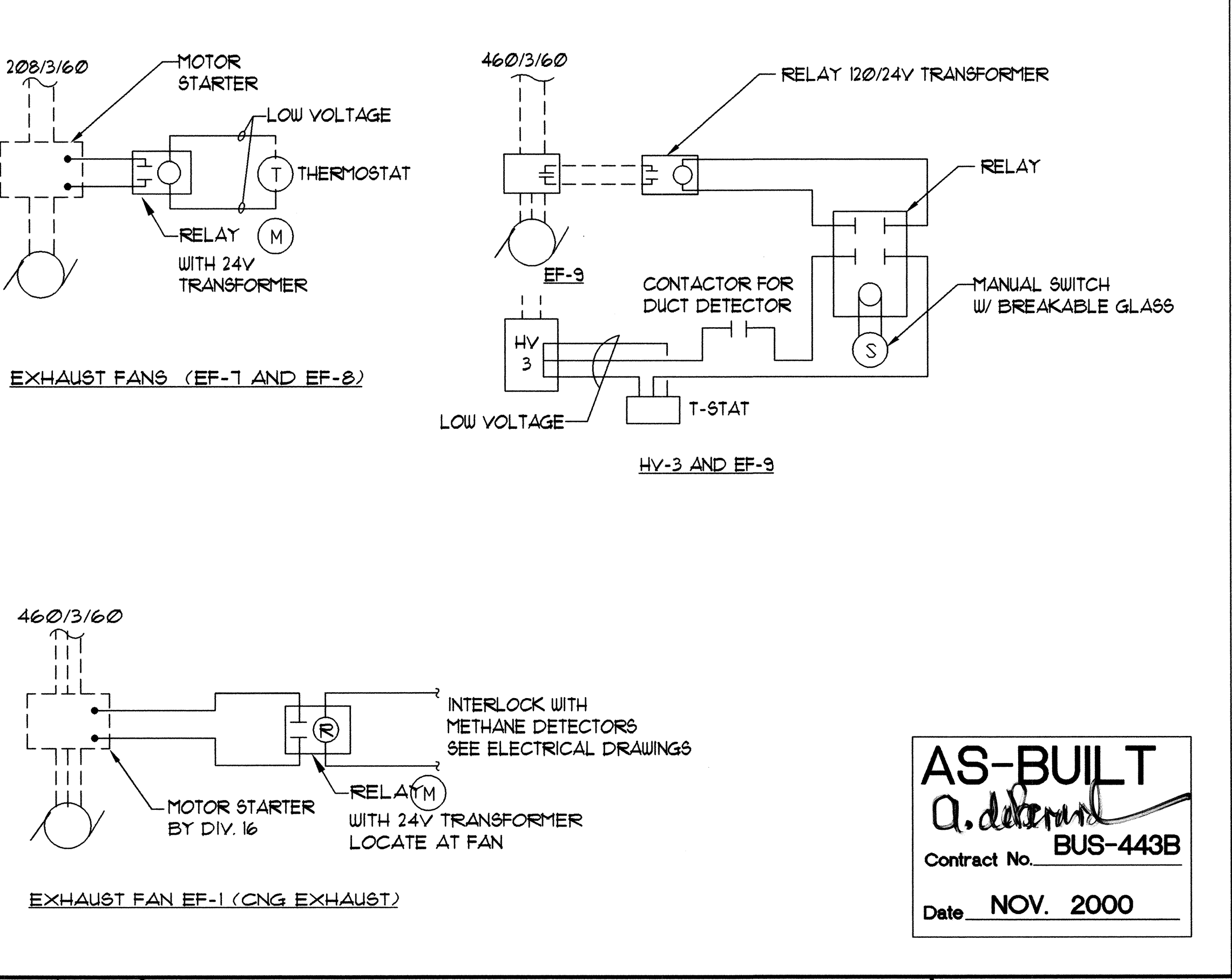
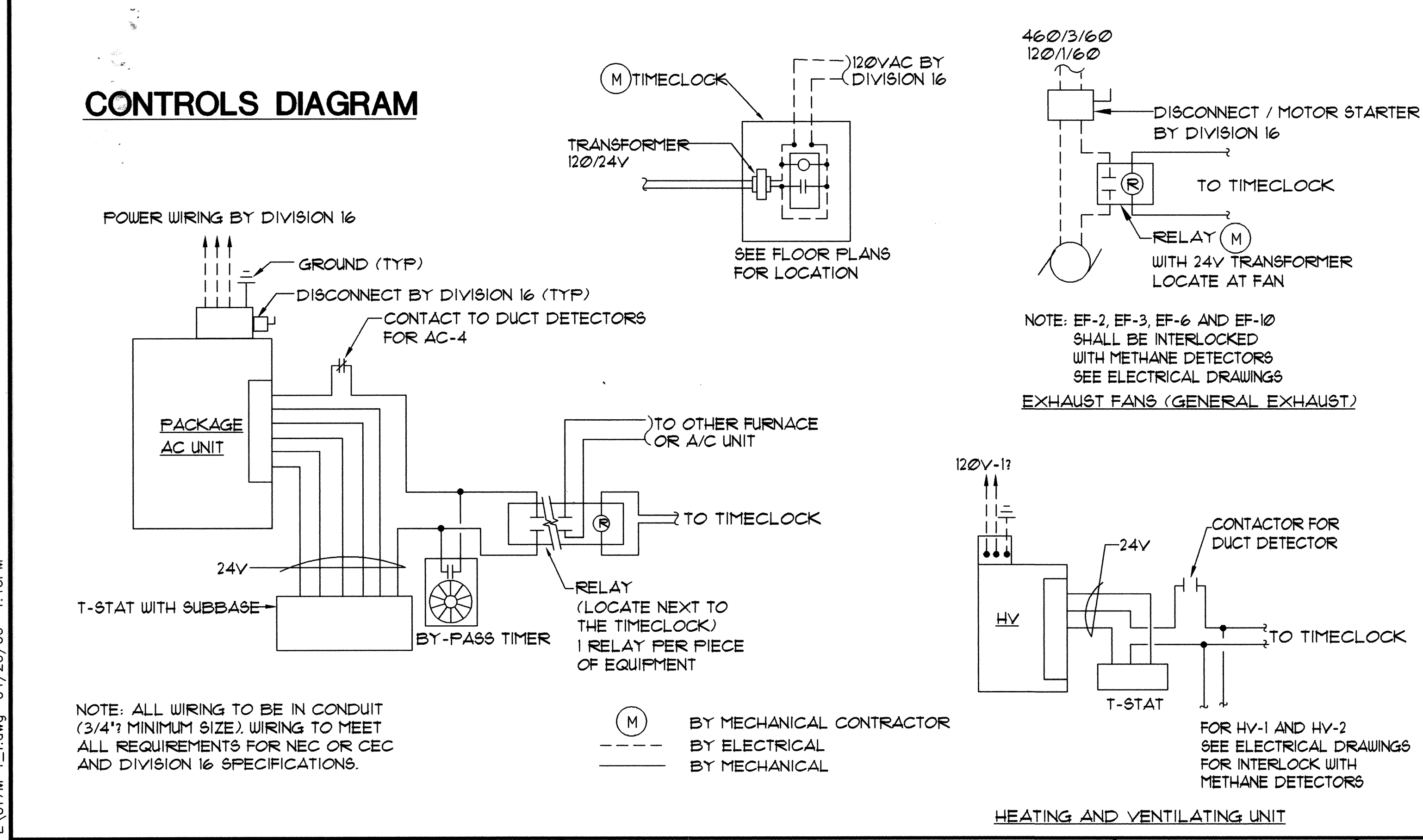
MECH-1: REQUIRED ON PLANS FOR ALL SUBMITTALS. PARTS 2 & 3 MAY BE INCORPORATED IN SCHEDULES ON PLANS.

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



SEQUENCE OF OPERATION

AC-1 to 6, EF-2, 3, 4, 5, 6 AND 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 SHALL INTERLOCK AND RUN CONTINUOUSLY. A MANUAL SHUTOFF (SEE PLAN FOR LOCATION) W/ BREAKABLE GLASS, SHALL DE-ENERGIZE AND ENERGIZE HV-3 AND EF-9.

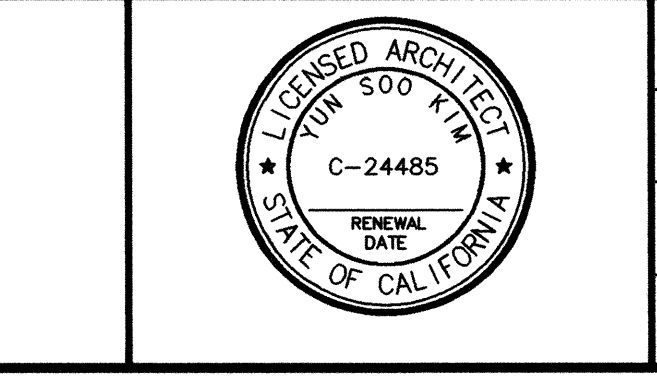
AS-BUILT
 Contract No. BUS-443B
 Date NOV. 2000

TMAD Engineers, Inc.
 Mechanical and Electrical Consulting Engineers
 Project Number 2000.017
 TELEPHONE: (619) 271-9808
 FAX: (619) 271-9832
 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



DESIGNED BY: 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

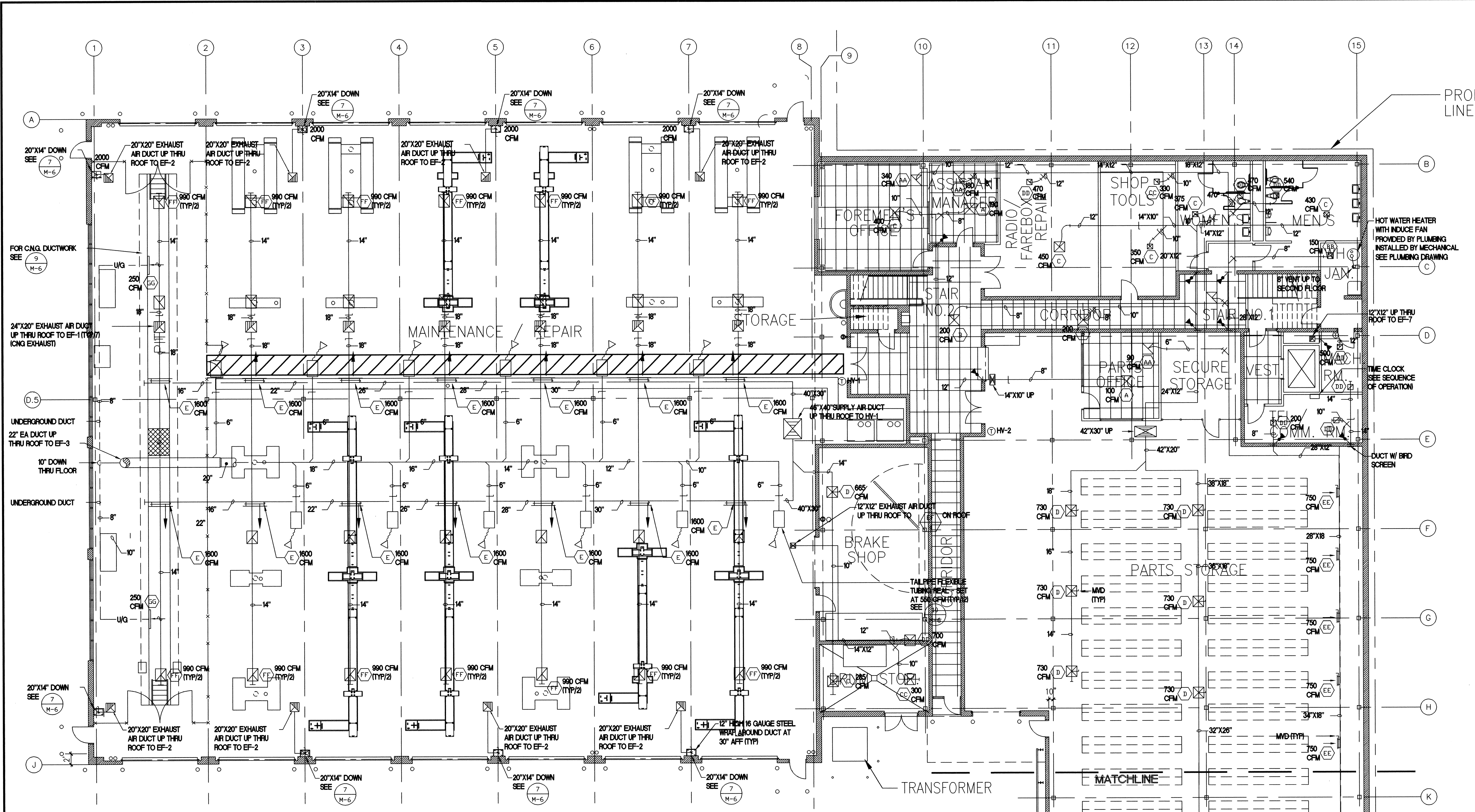
SCALE: NONE

MTDB CONTRACT NO. BUS-443B

MECHANICAL SCHEDULES
 LEGEND AND NOTES

DRAWING NO. M-1.1 SHEET NO. 62

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GROUND FLOOR PLAN 1
1/8" = 1'-0" M-2

NOTE: ALL DUCTWORK IN NO CEILING SHALL BE TIGHT TO STRUCTURE

AS-BUILT
A. diBard
Contract No. BUS-443B
Date: NOV. 2000

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T M A D Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087

TELEPHONE (619) 271-9908
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

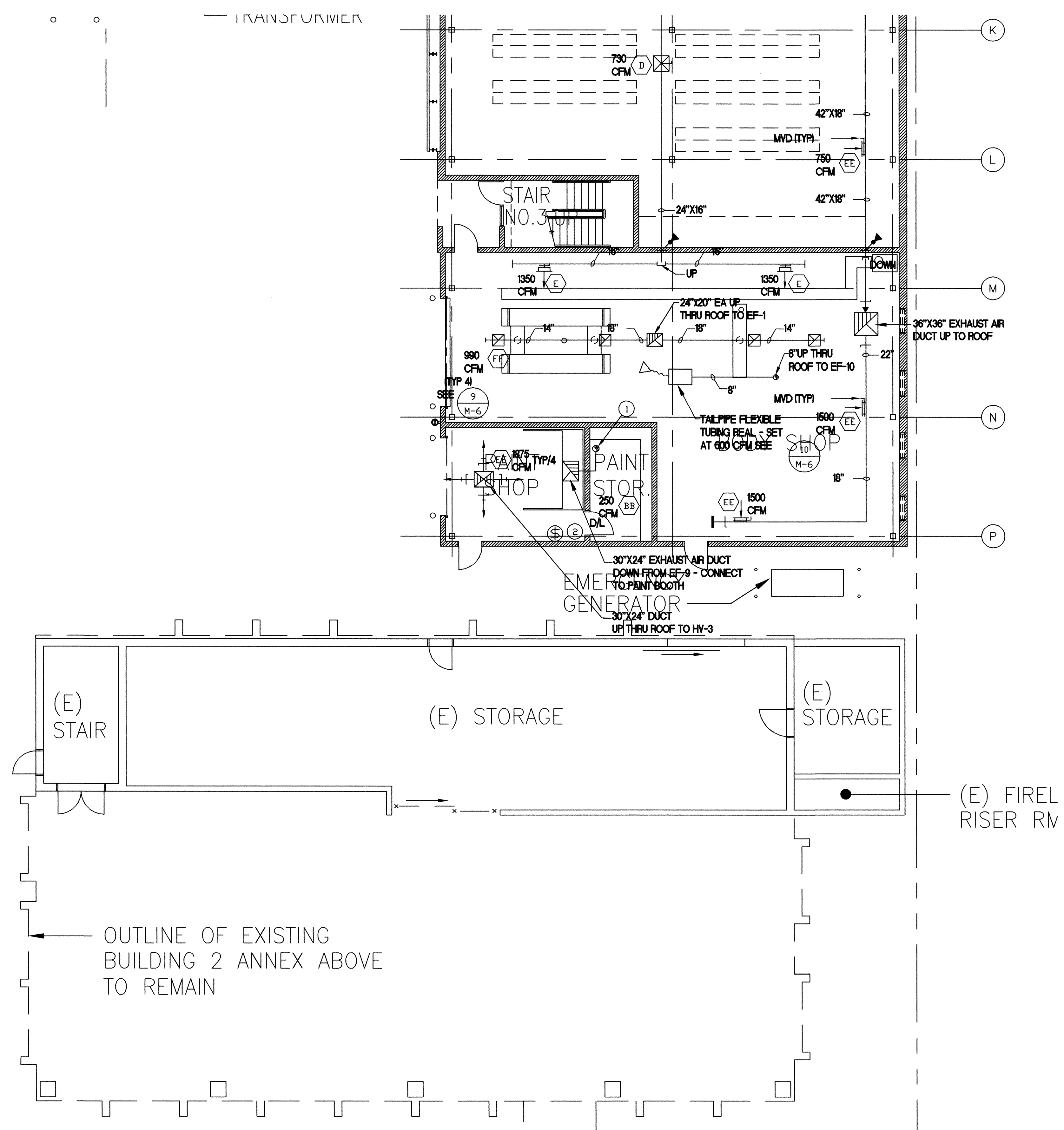
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANICAL GROUND FLOOR PLANS

SCALE 1/8" = 1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-2
SHEET NO. 63

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.



GROUND FLOOR PLAN
1/8"=1'-0" (1) M-3

AS-BUILT
A. de la Cruz
Contract No. BUS-443B
Date: NOV. 2000

X:\197087\MPE\1787MFP-2.DWG 02/03/99 1:38PM

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T M A D 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 2/18/98
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

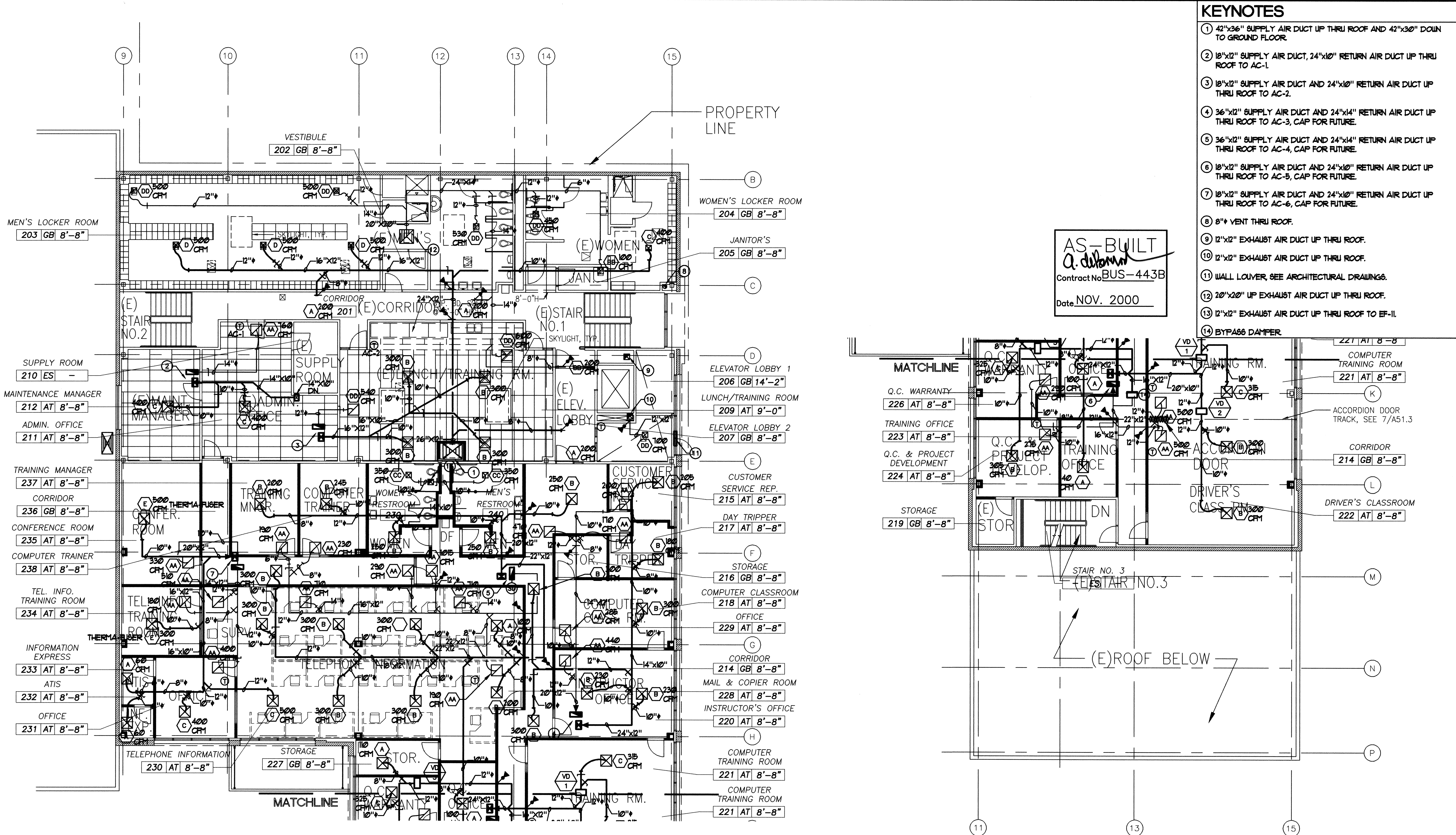
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

MECHANICAL GROUND FLOOR PLANS

SCALE 1/18"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-3 SHEET NO. 64

- ### KEYNOTES
- 42"x36" SUPPLY AIR DUCT UP THRU ROOF AND 42"x30" DOWN TO GROUND FLOOR.
 - 18"x12" SUPPLY AIR DUCT, 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-1.
 - 18"x12" SUPPLY AIR DUCT AND 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-2.
 - 36"x12" SUPPLY AIR DUCT AND 24"x14" RETURN AIR DUCT UP THRU ROOF TO AC-3, CAP FOR FUTURE.
 - 36"x12" SUPPLY AIR DUCT AND 24"x14" RETURN AIR DUCT UP THRU ROOF TO AC-4, CAP FOR FUTURE.
 - 18"x12" SUPPLY AIR DUCT AND 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-5, CAP FOR FUTURE.
 - 18"x12" SUPPLY AIR DUCT AND 24"x10" RETURN AIR DUCT UP THRU ROOF TO AC-6, CAP FOR FUTURE.
 - 8" VENT THRU ROOF.
 - 12"x12" EXHAUST AIR DUCT UP THRU ROOF.
 - 12"x12" EXHAUST AIR DUCT UP THRU ROOF.
 - WALL LOUVER, SEE ARCHITECTURAL DRAWINGS.
 - 20"x20" UP EXHAUST AIR DUCT UP THRU ROOF.
 - 12"x12" EXHAUST AIR DUCT UP THRU ROOF TO EF-1L.
 - BYPASS DAMPER.

AS-BUILT
A. delamater
 Contract No. BUS-443B
 Date NOV. 2000



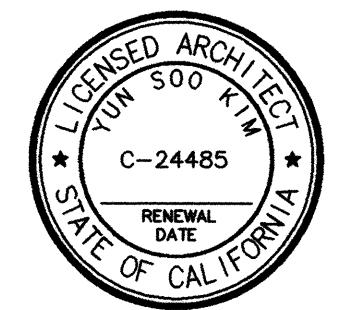
SECOND FLOOR REFLECTED CEILING PLAN
 1/8"=1'-0" A13.2

T MAD Engineers, Inc.
 Mechanical and Electrical Consulting Engineers
 Project Number 2000.017
 TELEPHONE (658) 271-8808 9845 ERMA ROAD SUITE 200
 FAX: (658) 271-9932 SAN DIEGO, CA 92131
 sandiego@madengineers.com

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
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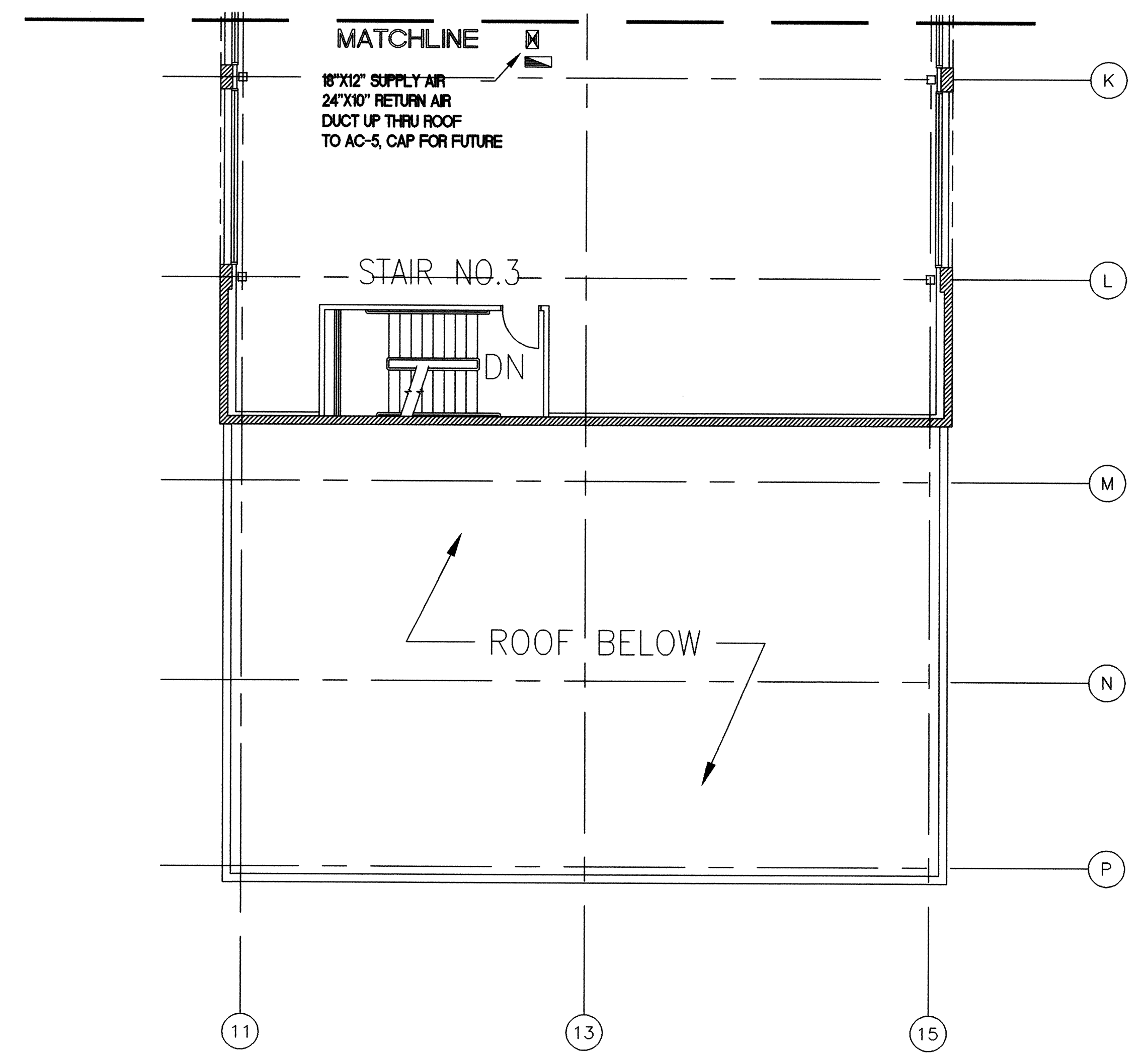
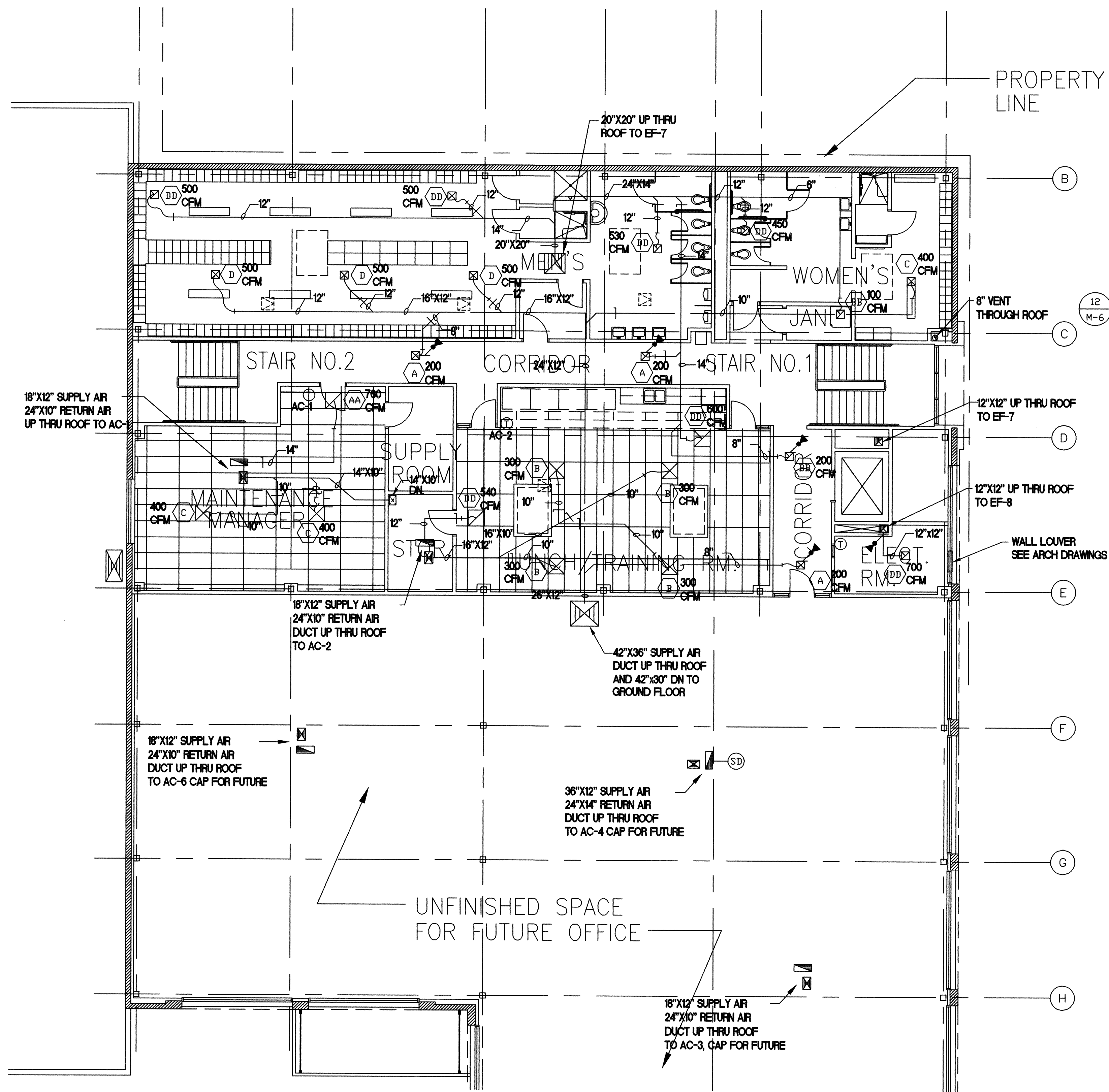
STV Incorporated
 ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
 1055 WILSHIRE BOULEVARD, SUITE 1455
 LOS ANGELES, CALIFORNIA 90017-2499



DESIGNED BY BM DATE 5/2/00
 DRAWN BY TW DATE 5/2/00
 CHECKED BY BM DATE 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**
 SCALE 1/8"=1'-0"
 SECOND FLOOR REFLECTED CEILING PLAN
 MTDB CONTRACT NO. BUS-443B
 DRAWING NO. M-4 SHEET NO. 65





SECOND FLOOR PLAN - HVAC 1
 1/8"=1'-0" M-4

AS-BUILT
A. Duberand
 Contract No. **BUS-443B**
 Date **NOV. 2000**


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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T M A D Engineers, Inc.
 Mechanical and Electrical Consulting Engineers
 Project Number 97087
 TELEPHONE (619) 271-9808 9845 ERMA ROAD SUITE 200
 FAX: (619) 271-9932 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.	

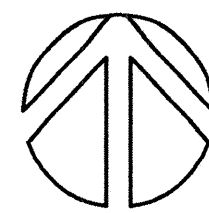
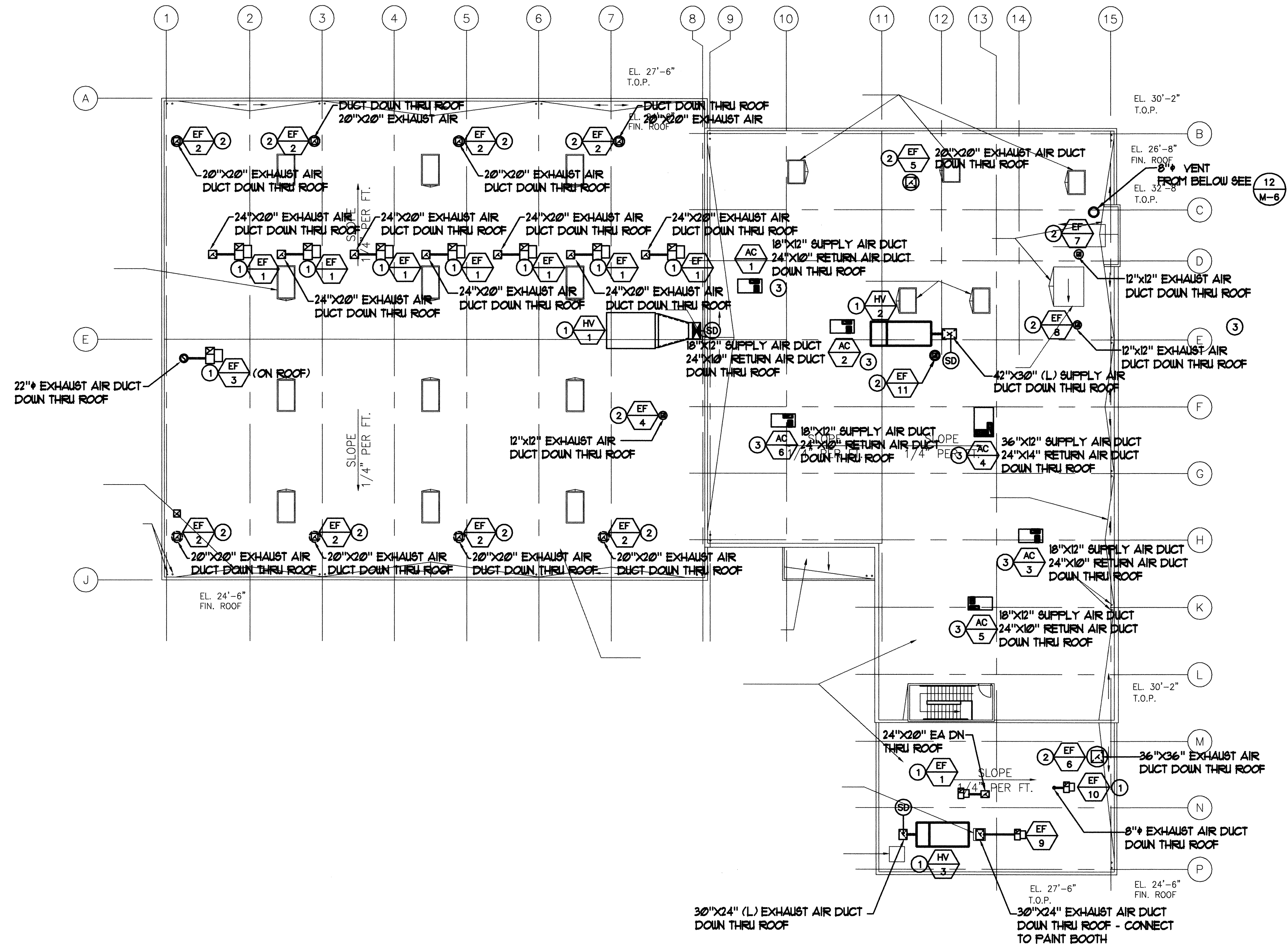
MTDB

Metropolitan Transit Development Board
 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
 BUS MAINTENANCE FACILITY
MECHANICAL SECOND FLOOR PLANS

SCALE 1/18"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-4
SHEET NO. 65

KEYNOTES

- ① MOUNT ON PLATFORM WITH VIBRATION ISOLATOR SEE DETAIL ⑥ M-5
- ② FOR MOUNTING SEE DETAIL ③ M-5
- ③ FOR MOUNTING SEE DETAIL ④ M-5



ROOF PLAN ①
1/16"=1'-0" M-5

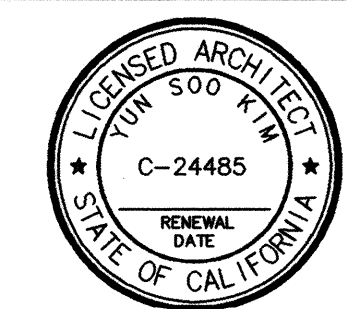
AS-BUILT
Contract No. BUS-443B
Date NOV. 2000

T M A D Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 2000.017
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131
sandiego@tmadengineers.com

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

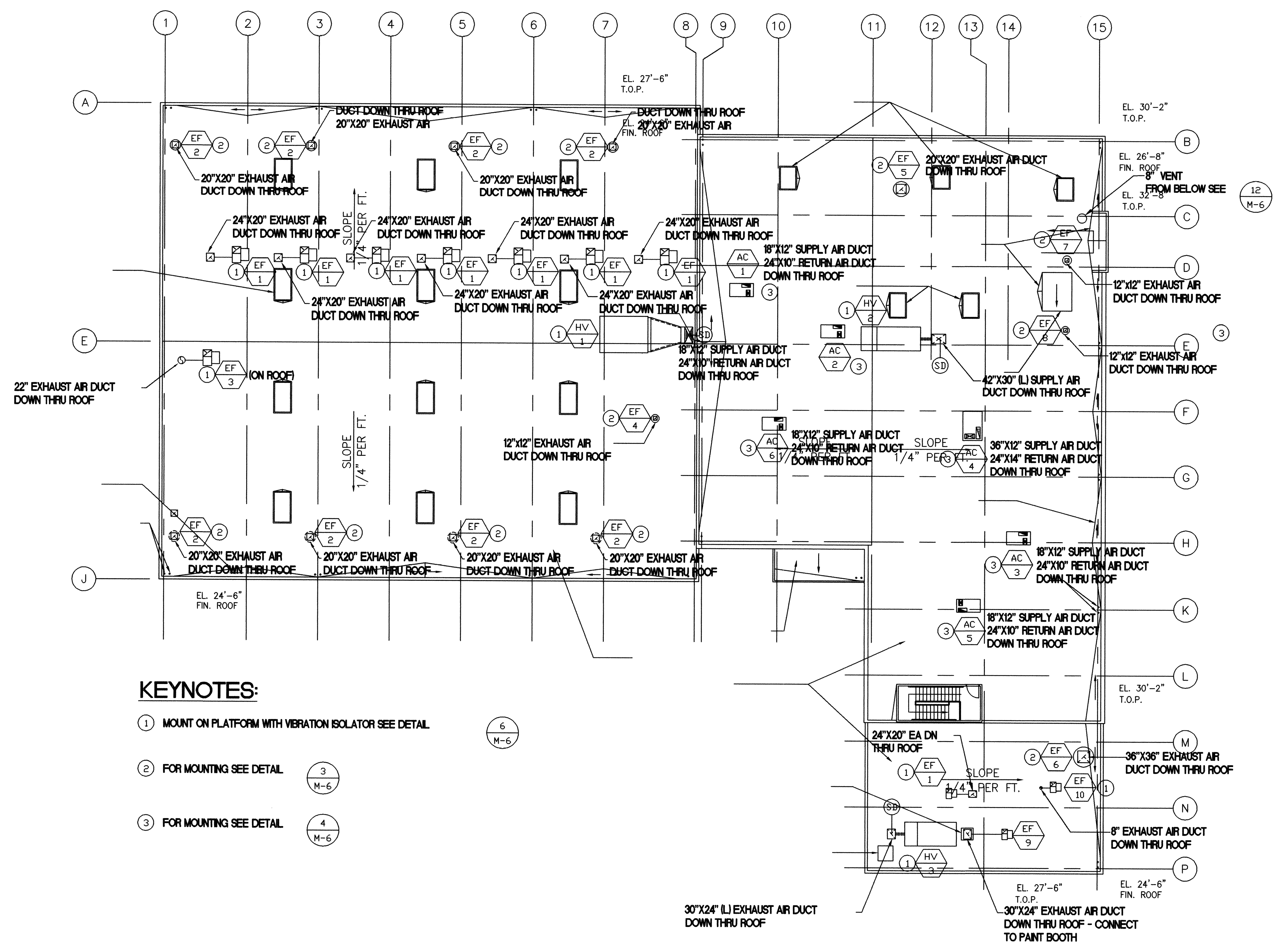
STV Incorporated
ENGINEERS/ARCHITECTS/PLANNERS/CONSTRUCTION MANAGERS
1055 WILSHIRE BOULEVARD, SUITE 1455
LOS ANGELES, CALIFORNIA 90017-2499



DESIGNED BY	BM	DATE	5/2/00
DRAWN BY	TW	DATE	5/2/00
CHECKED BY	BM	DATE	5/2/00
MTDB PRJ. ENG.			

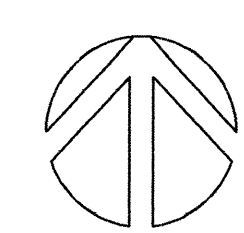
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY
SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
MECHANICAL ROOF PLAN
DRAWING NO. M-5 SHEET NO. 66



KEYNOTES:

- 1 MOUNT ON PLATFORM WITH VIBRATION ISOLATOR SEE DETAIL
- 2 FOR MOUNTING SEE DETAIL
- 3 FOR MOUNTING SEE DETAIL



ROOF PLAN
1/16"=1'-0"
1
M-5

AS-BUILT
A. di...
Contract No. BUS-443B
Date NOV. 2000

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

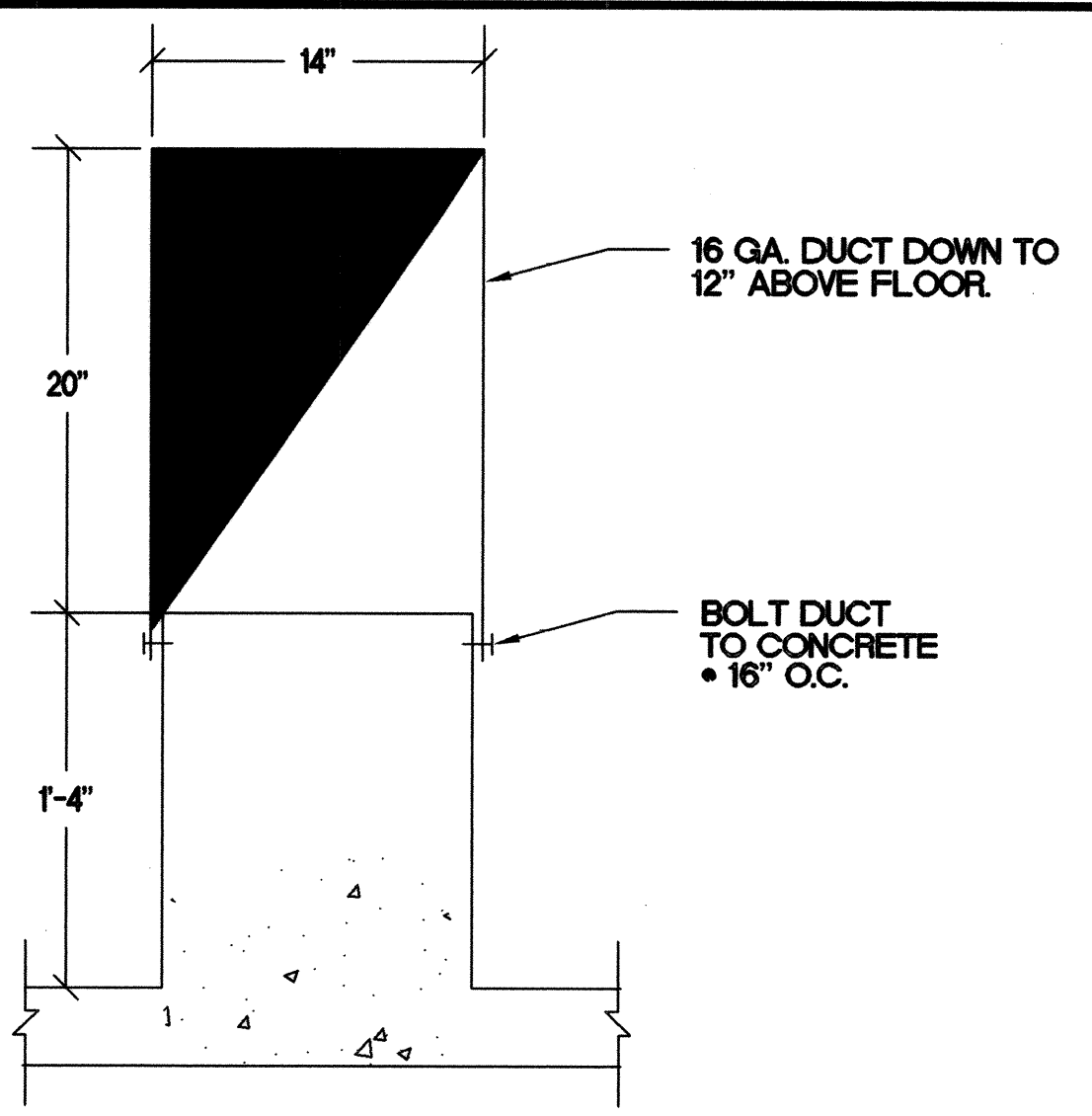
T MAD Engineers, Inc.
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Project Number 97087
TELEPHONE (619) 271-9909 FAX: (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY BM	DATE 12/18/98
DRAWN BY TW	DATE 12/18/98
CHECKED BY MK	DATE 12/18/98
MTDB PRJ. ENG.	

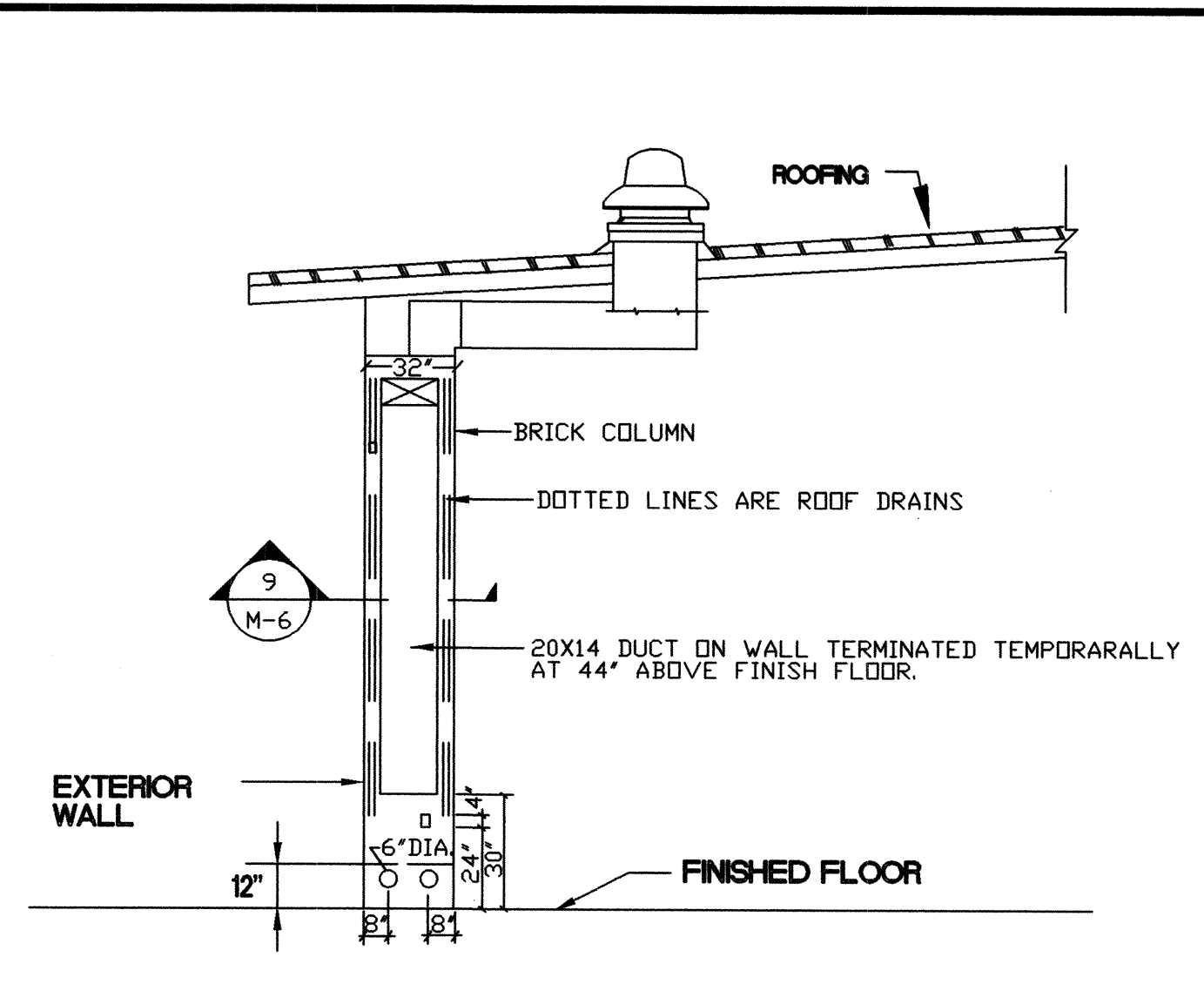
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IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY
MECHANICAL ROOF PLANS

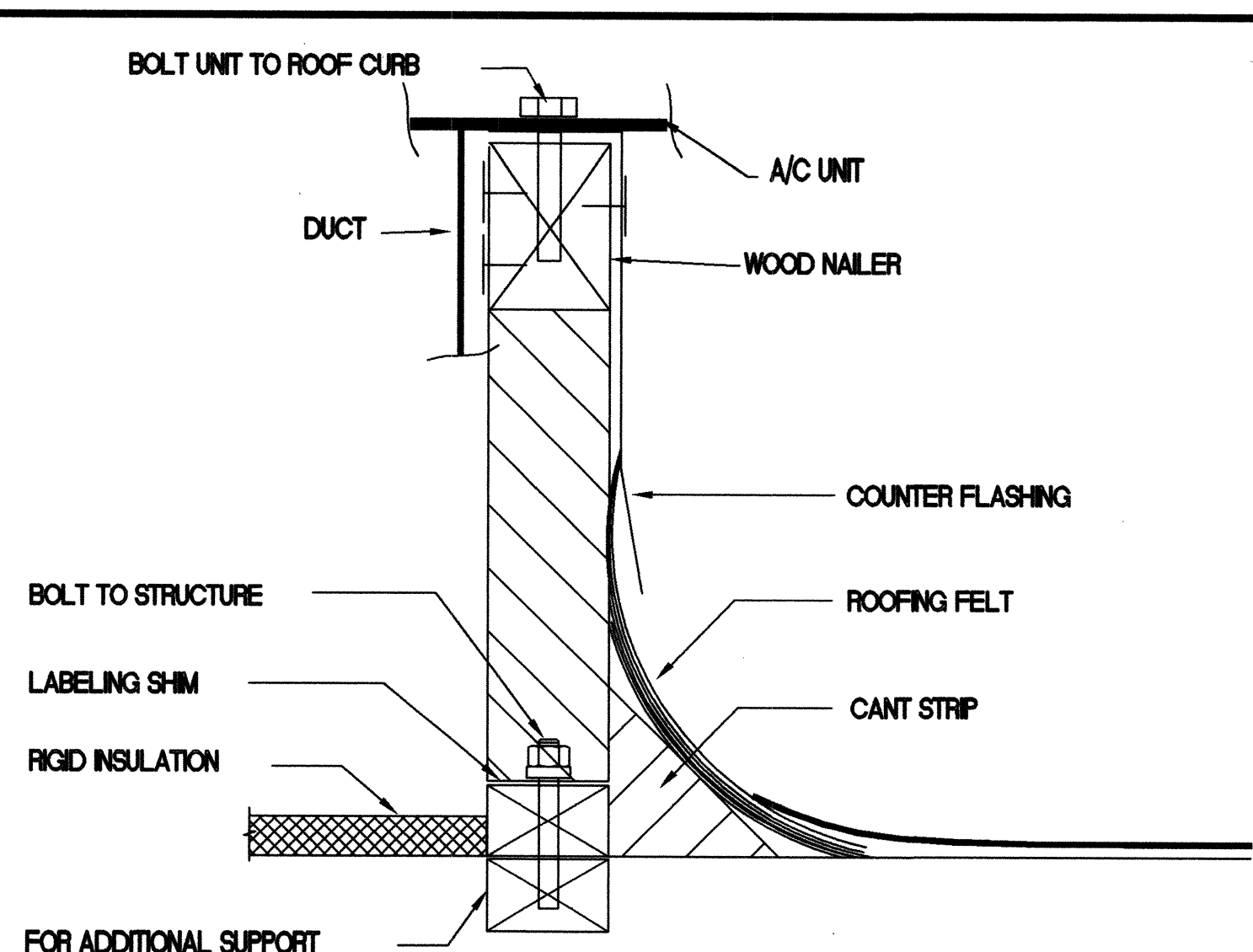
SCALE 1/16"=1'-0"	
MTDB CONTRACT NO. BUS-443B	
DRAWING NO. M-5	SHEET NO. 66



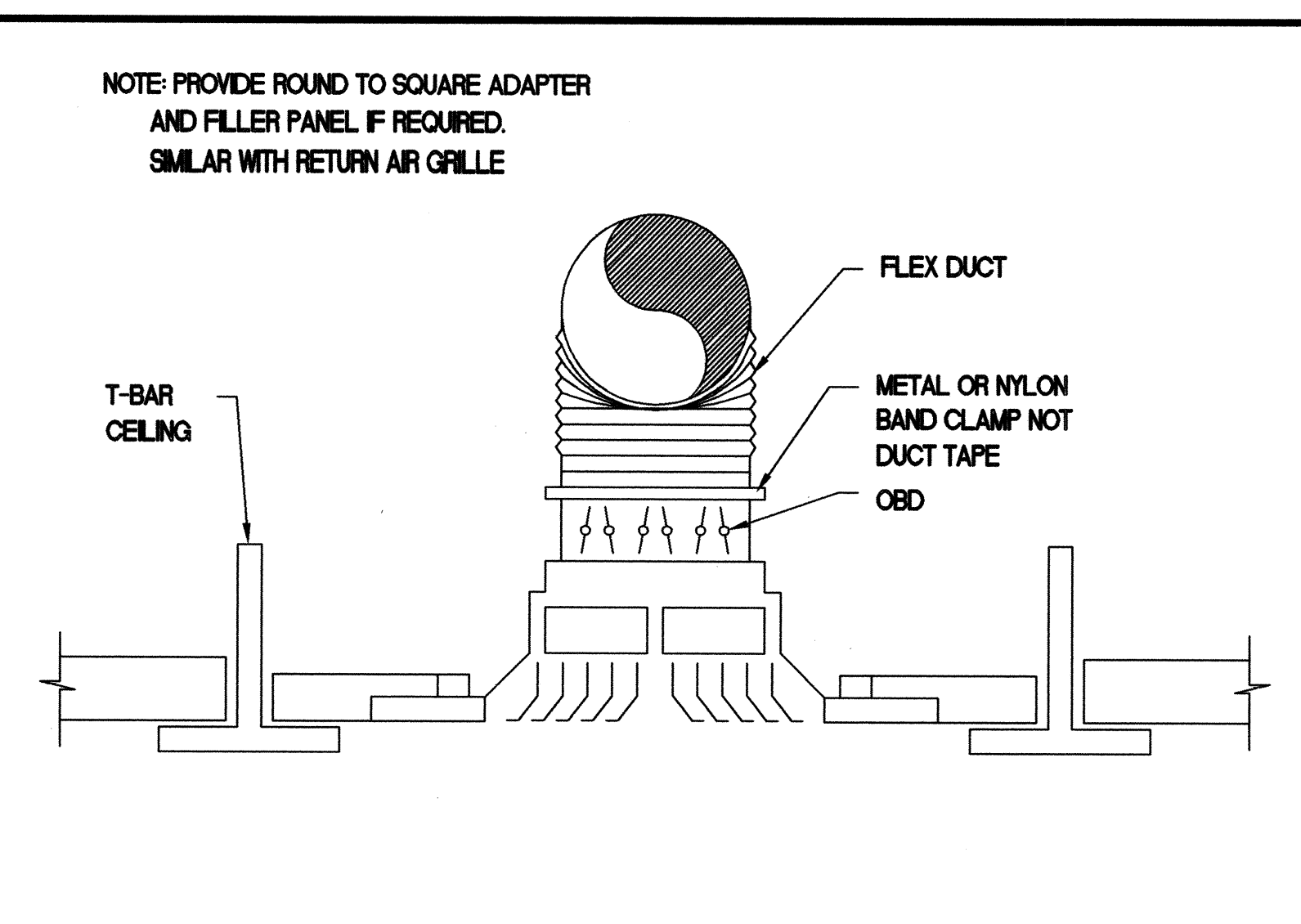
10 WALL PLAN VIEW
NO SCALE



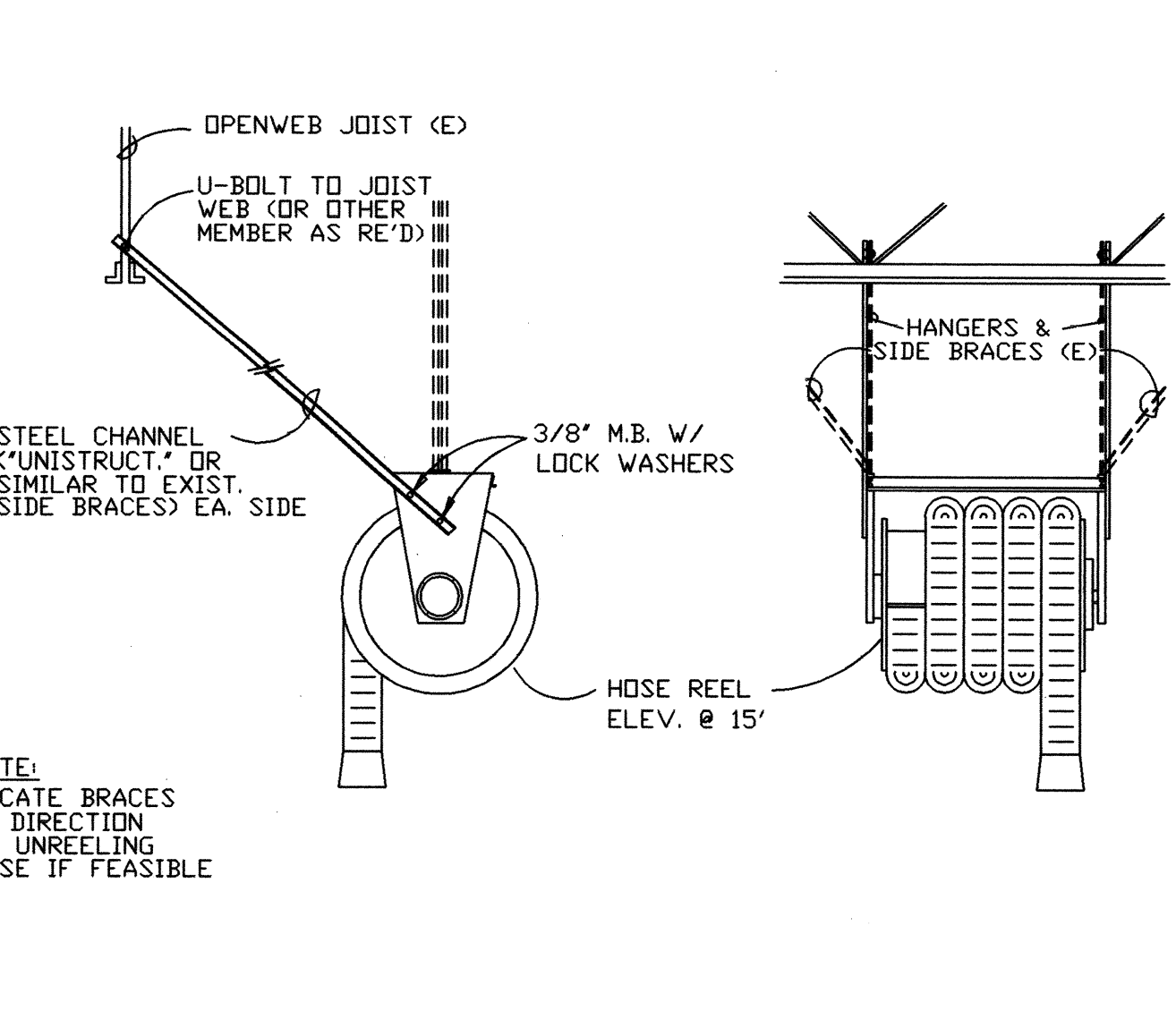
7 WALL SECTION
NO SCALE



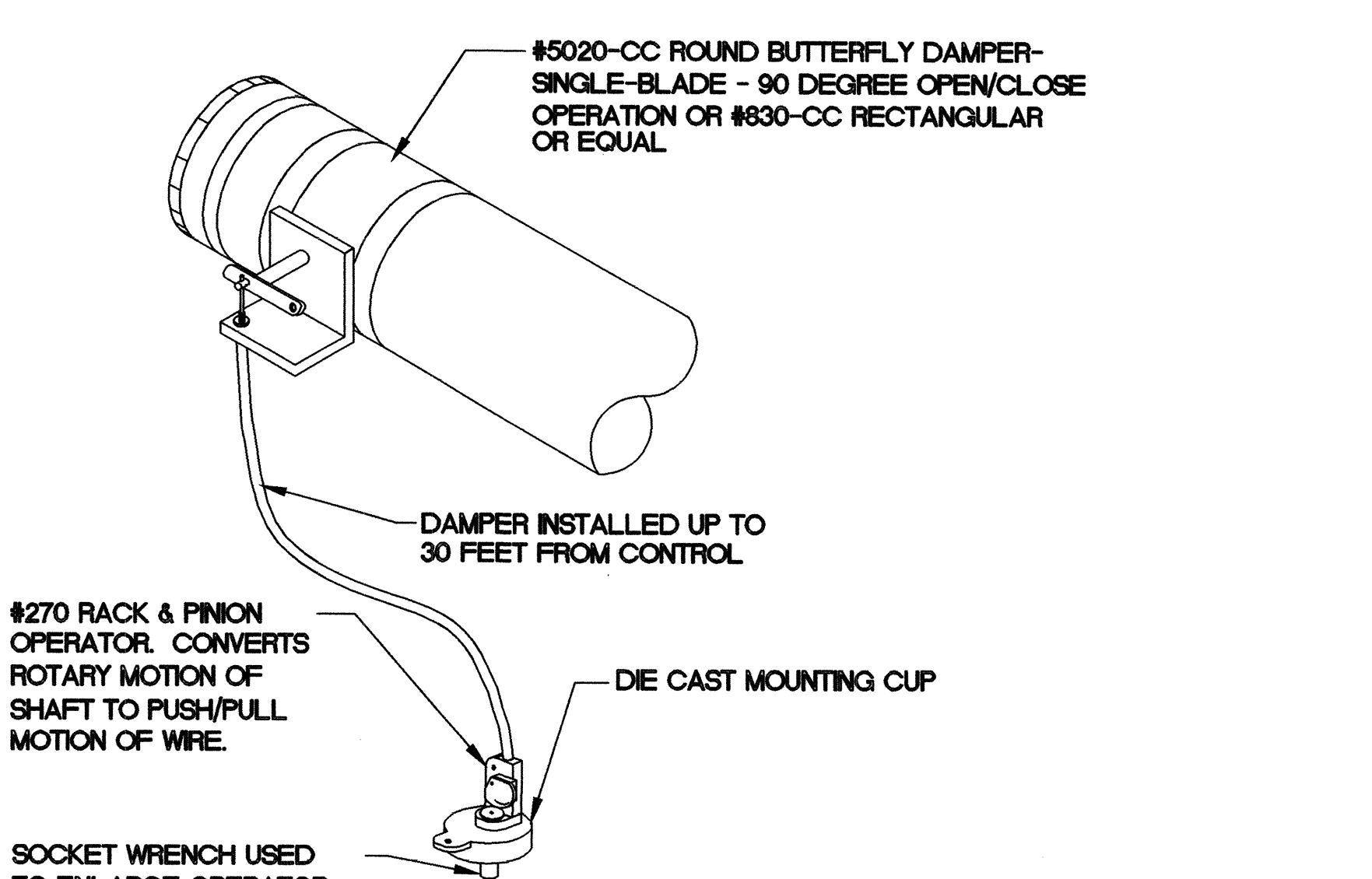
4 A/C UNIT MOUNTING
NO SCALE



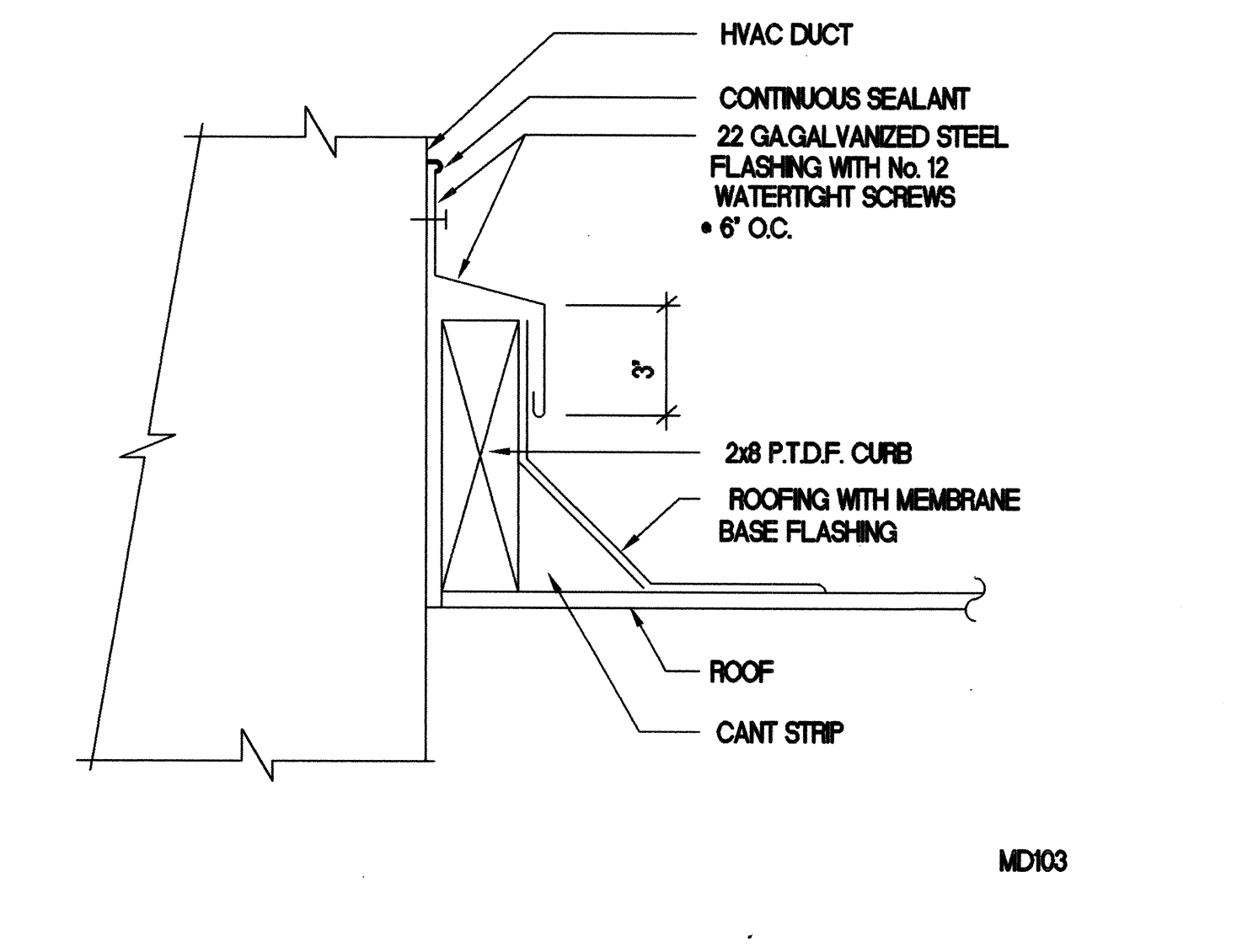
1 DIFFUSER MOUNTING
NO SCALE



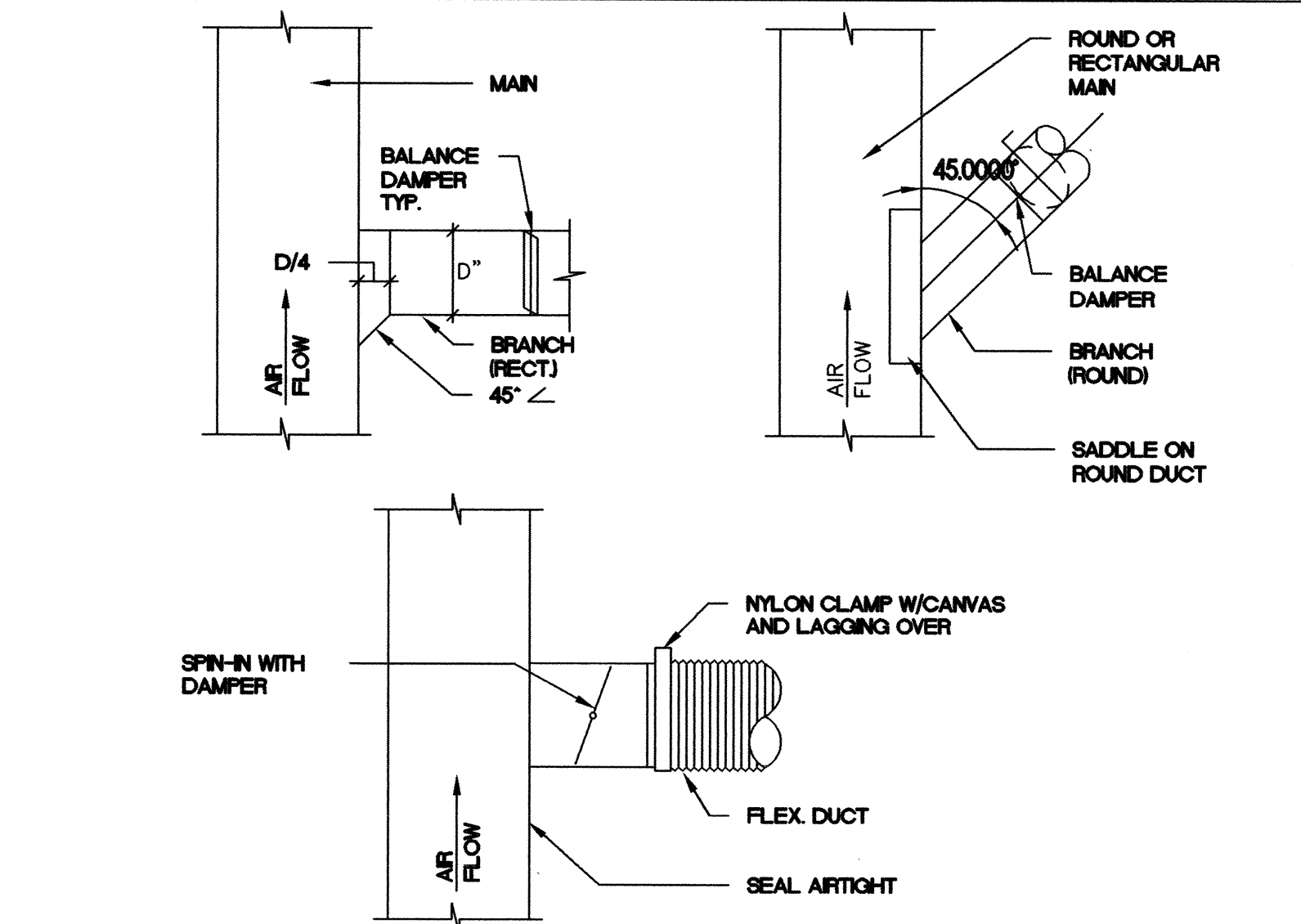
11 EXHAUST HOSE REEL BRACES
NO SCALE



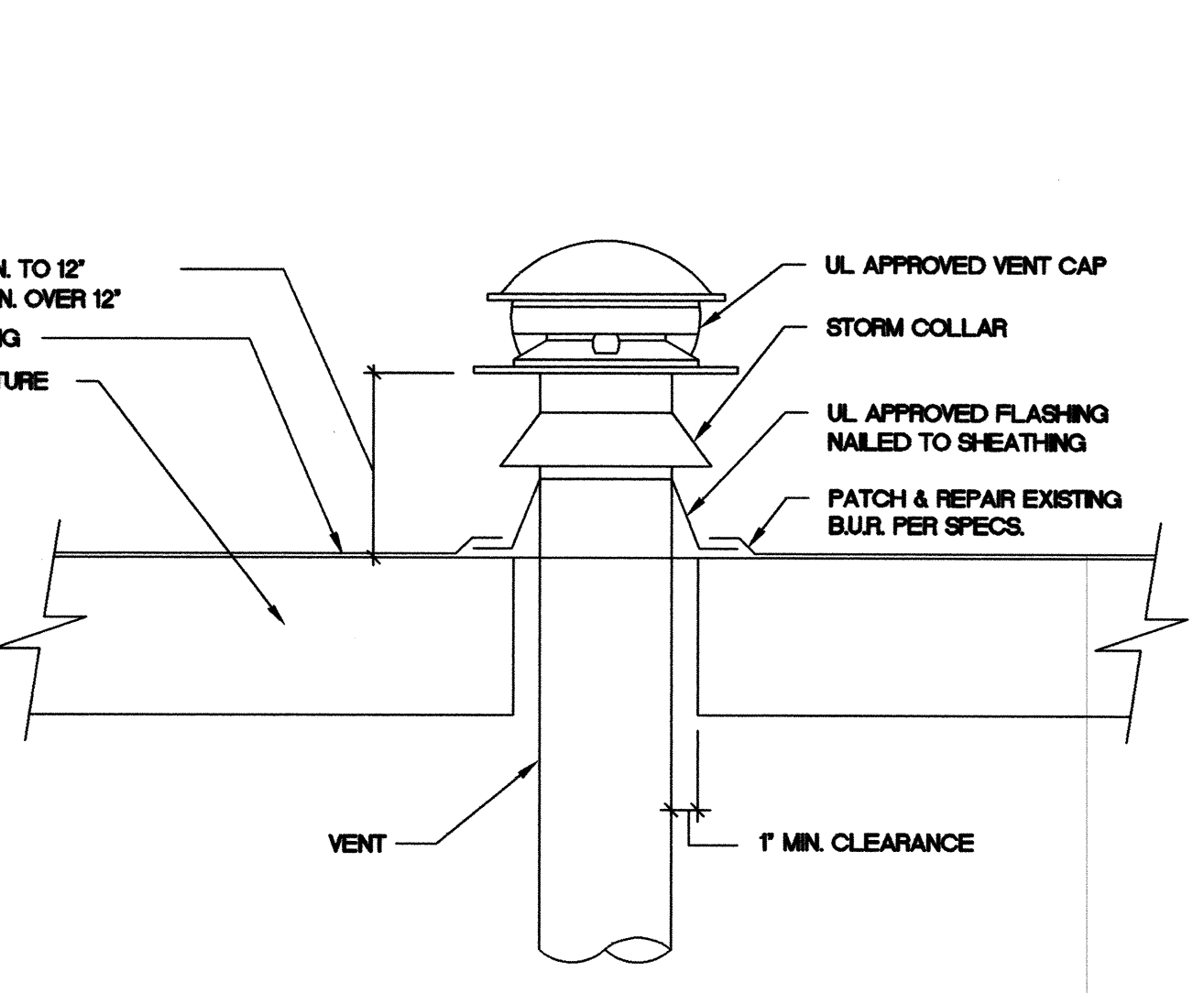
8 REMOTE VOLUME CONTROLLER
NO SCALE



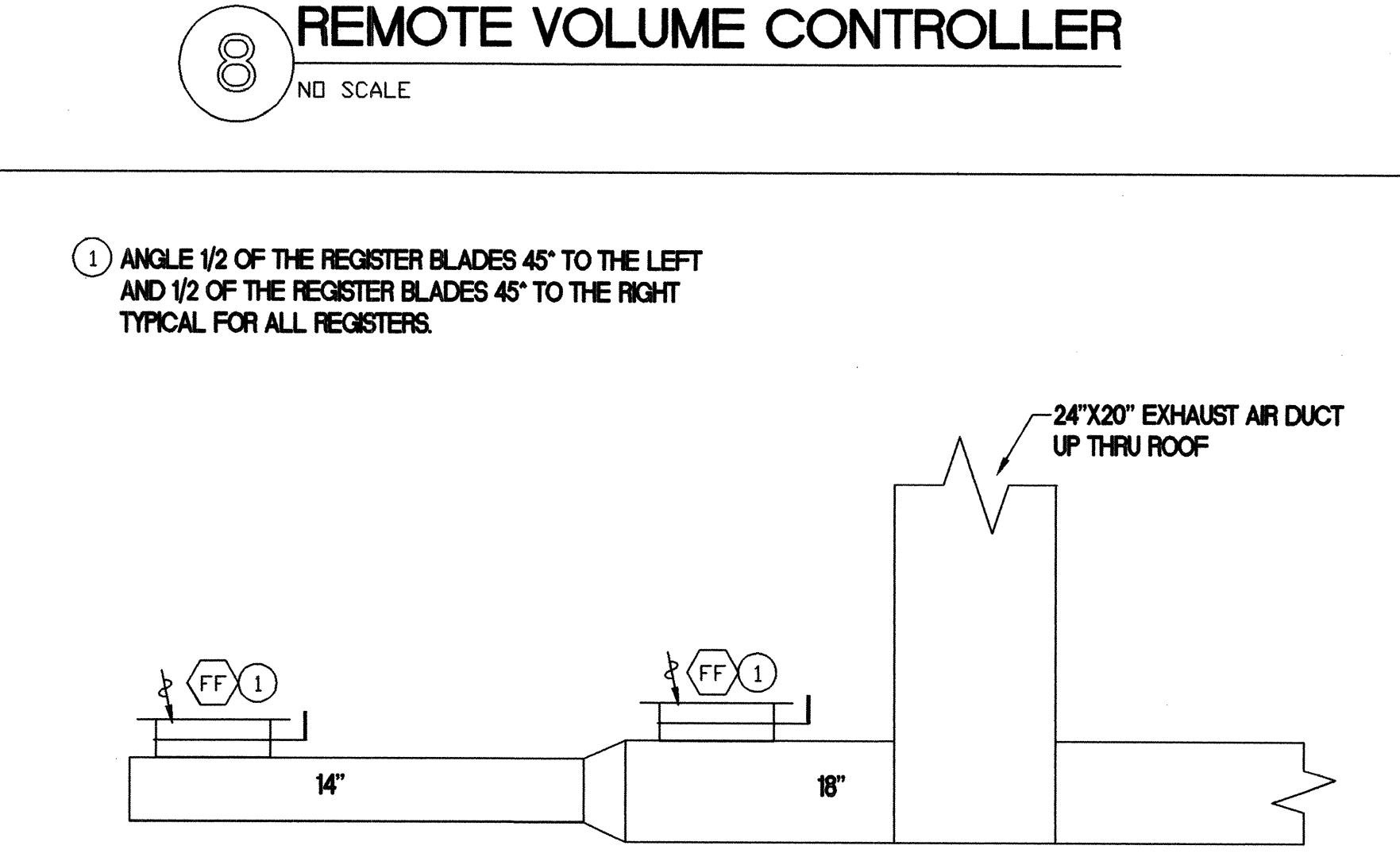
5 DUCT THRU ROOF
NO SCALE



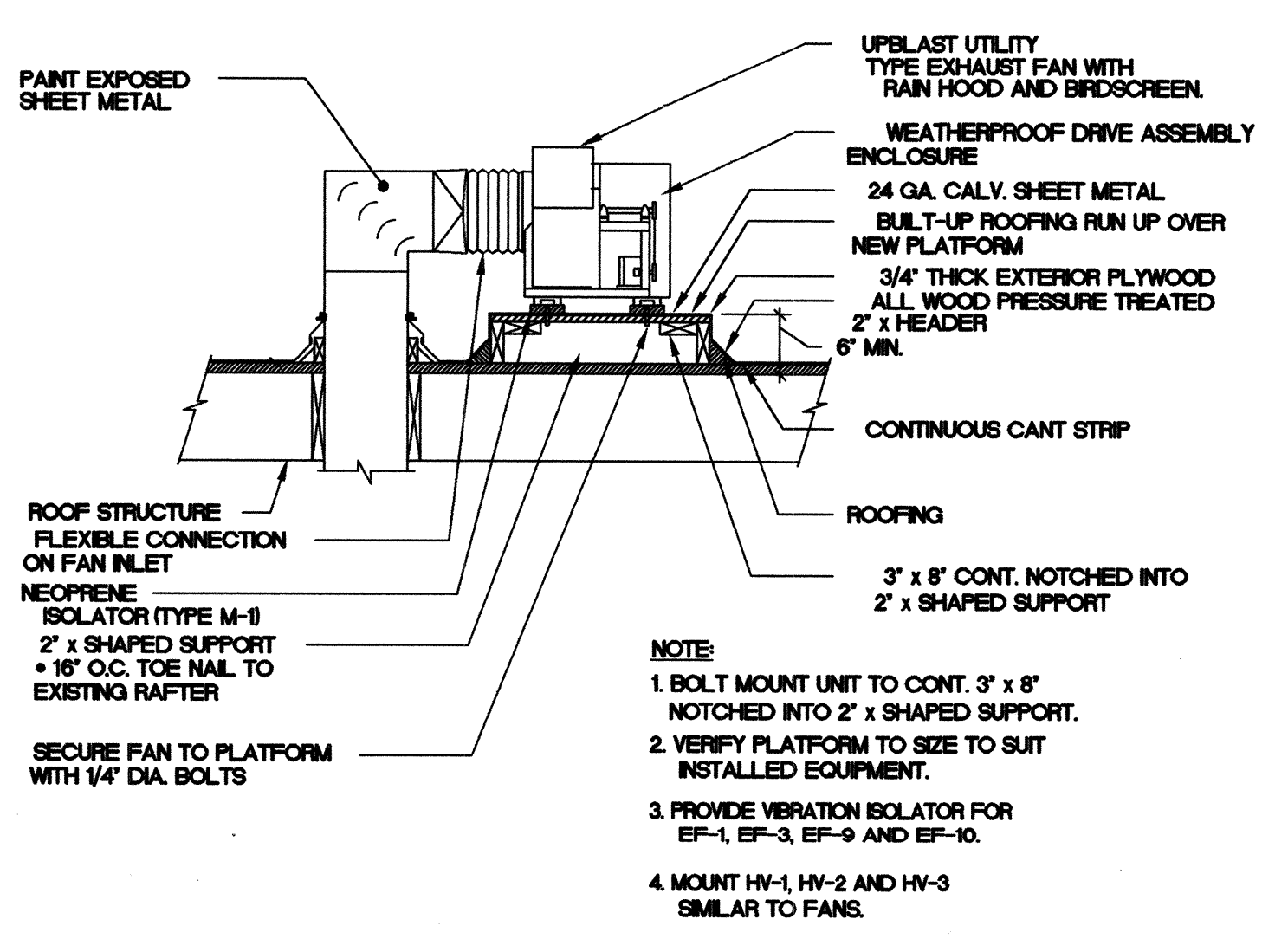
2 TYPICAL DUCT TAKEOFFS
NO SCALE



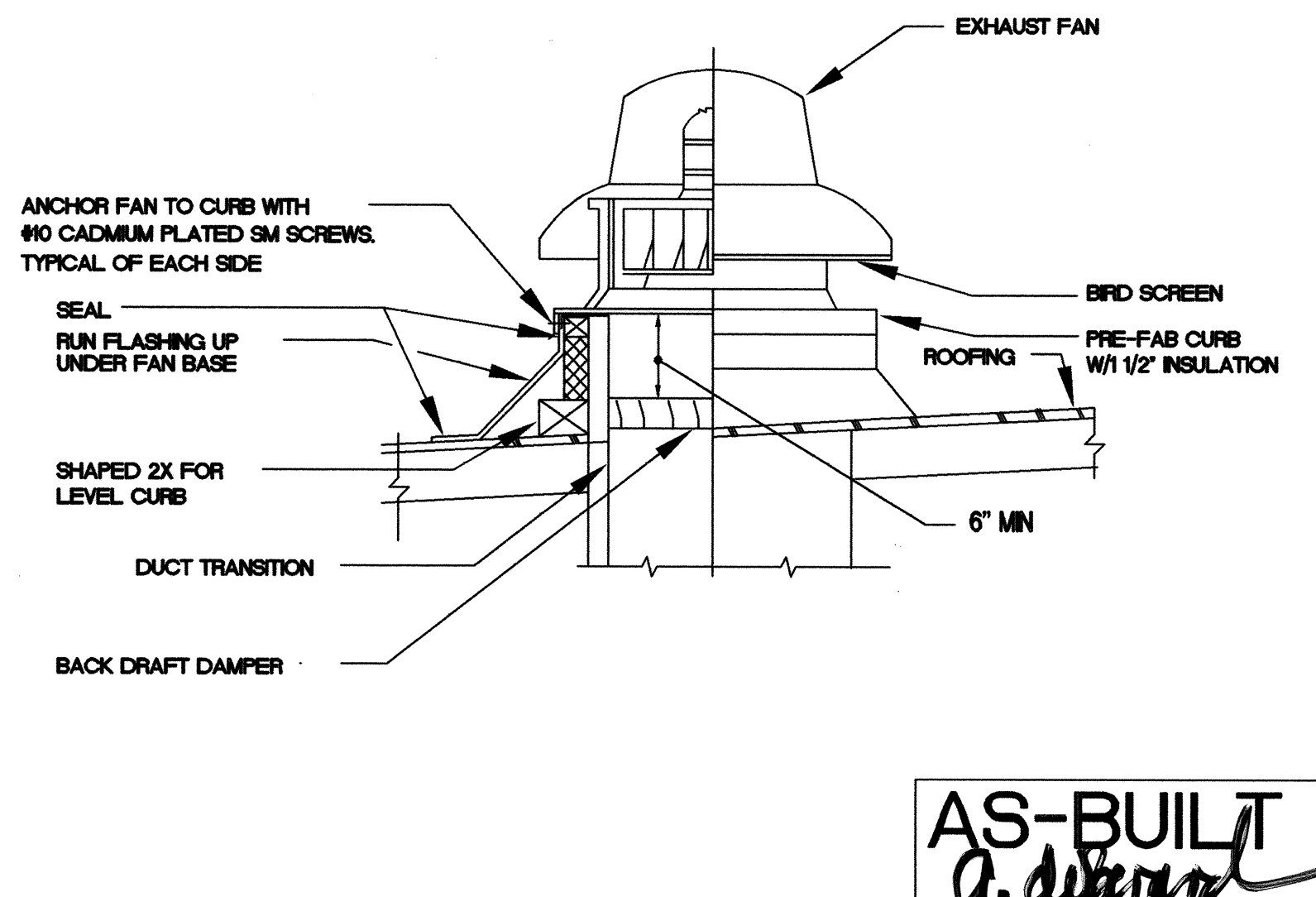
12 VENT THRU ROOF
NO SCALE



9 CNG EXHAUST SYSTEM
NO SCALE



6 UTILITY EXHAUST FAN
NO SCALE



3 EXHAUST FAN MOUNTING
NO SCALE

AS-BUILT
A. Delgado
Contract No. BUS-443B
Date NOV. 2000

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T MAD 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 2/18/98
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
MECHANICAL DETAILS

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. M-6
SHEET NO. 67

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 ANCHORED 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:

Table with columns: PIPING MAT., PENETRATION TYPE, ASSEMBLY TYPE, HR RATING SYSTEM, UL SYS#, listing materials like CAST IRON, COPPER and their ratings.

- A) FIRE STOPPING DEVICES SHALL BE COMPLETE FACTORY BUILT PRODUCTS

Table with columns: MANUFACTURER, UL FILE #, CSFM LISTING #, listing PROSET SYSTEMS.

2. THROUGH-PENETRATION FIRE STOP SYSTEMS:

Table with columns: PIPING MAT., PENETRATION TYPE, ASSEMBLY TYPE, HR RATING SYSTEM, UL SYS#, listing materials like CAST IRON, COPPER, COPPER INSUL.

- A) FIRE STOPPING SHALL BE UL LISTED CAULK FILL MATERIAL.

Table with columns: MANUFACTURER, UL FILE #, CSFM LISTING #, listing MINNESOTA.

MINING & MFG

- 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.

Table with columns: MFR, UL FILE #, CSFM #, listing CERTANTEED CORP and MANVILLE SALES.

- 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 SHALL 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

Table with columns: SIZE, GPM, FT. F.U., FV F.U., listing pipe sizes from 1/2" to 2" and their corresponding GPM and F.U. values.

PIPE 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.

WATER CALCULATION PRESSURE ANALYSIS

Table for water calculation pressure analysis with columns for fixture units, demand flow, developed length, pressure losses, and regulated pressure.

LEGEND

Legend table with columns: SYMBOL, ABBREV., DESCRIPTION, listing various plumbing symbols and their abbreviations.

CONSTRUCTION CHANGE TABLE

Table with columns: CHANGE, DATE, SHEET NUMBERS REVISED OR ADDED THIS CHANGE.

TMAD Engineers, Inc. Mechanical and Electrical Consulting Engineers. Project Number 97087. Includes contact information and a professional seal.

Table with columns: DESIGNED BY, DATE, DRAWN BY, CHECKED BY, MTDB PRJ. ENG., listing project personnel and dates.

MTDB Metropolitan Transit Development Board. 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466. Includes icons for transit modes.

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

Table with columns: MARK, DESCRIPTION, MOUNTING, MIN. ROUGH-IN/CONN., TRAP, BASED ON MANUFACTURER & MODEL NO., REMARKS. Includes items like WATER CLOSET, URINAL, LAVATORY, ELECTRIC WATER COOLER, SEMI CIRCULAR, SERVICE SINK, KITCHEN SINK, EMERGENCY EYEWASH, SHOWER.

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.
5 HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED.
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" 772308 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.
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.
10 PROVIDE "OLSONITE" #65 TOILET SEAT.
11 ELECTRICAL DATA: 115 VOLTS, SINGLE PHASE, 1/5 HORSEPOWER.

GAS FIRED WATER HEATER

Table with columns: MARK, DESCRIPTION, LOCATION, SERVICE, STORAGE CAPACITY, RECOVERY GAL/HR, GAS TYPE, BTUH INPUT, FLUE SIZE, CONNECTIONS, OPERATING WEIGHT, BASED ON MANUFACTURER & MODEL, REMARKS. Includes item: TANK TYPE POWER VENTED.

SPECIALTIES

Table with columns: MARK, DESCRIPTION, MIN.ROUGH-IN/CONN., TRAP, BASED ON MANUFACTURER & MODEL, REMARKS. Includes items like HOSE BIBB, FLOOR DRAIN, ROOF DRAIN, OVERFLOW DRAIN.

WATER HEATING SYSTEM RECIRCULATION PUMP

Table with columns: MARK, DESCRIPTION, LOCATION, SERVICE, FLUID TEMP, FLOW GPM, TOTAL HD FT, CONNECTIONS, ELECTRICAL DATA, CONTROLS, OVERALL DIMENSION, MOUNTING, BASED ON MANUFACTURER & MODEL, REMARKS. Includes item: CIRCULATING PUMP.

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. dibon
Contract No. BUS-443B
Date NOV. 2000

CONSTRUCTION CHANGE TABLE
CHANGE DATE SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T M A D Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

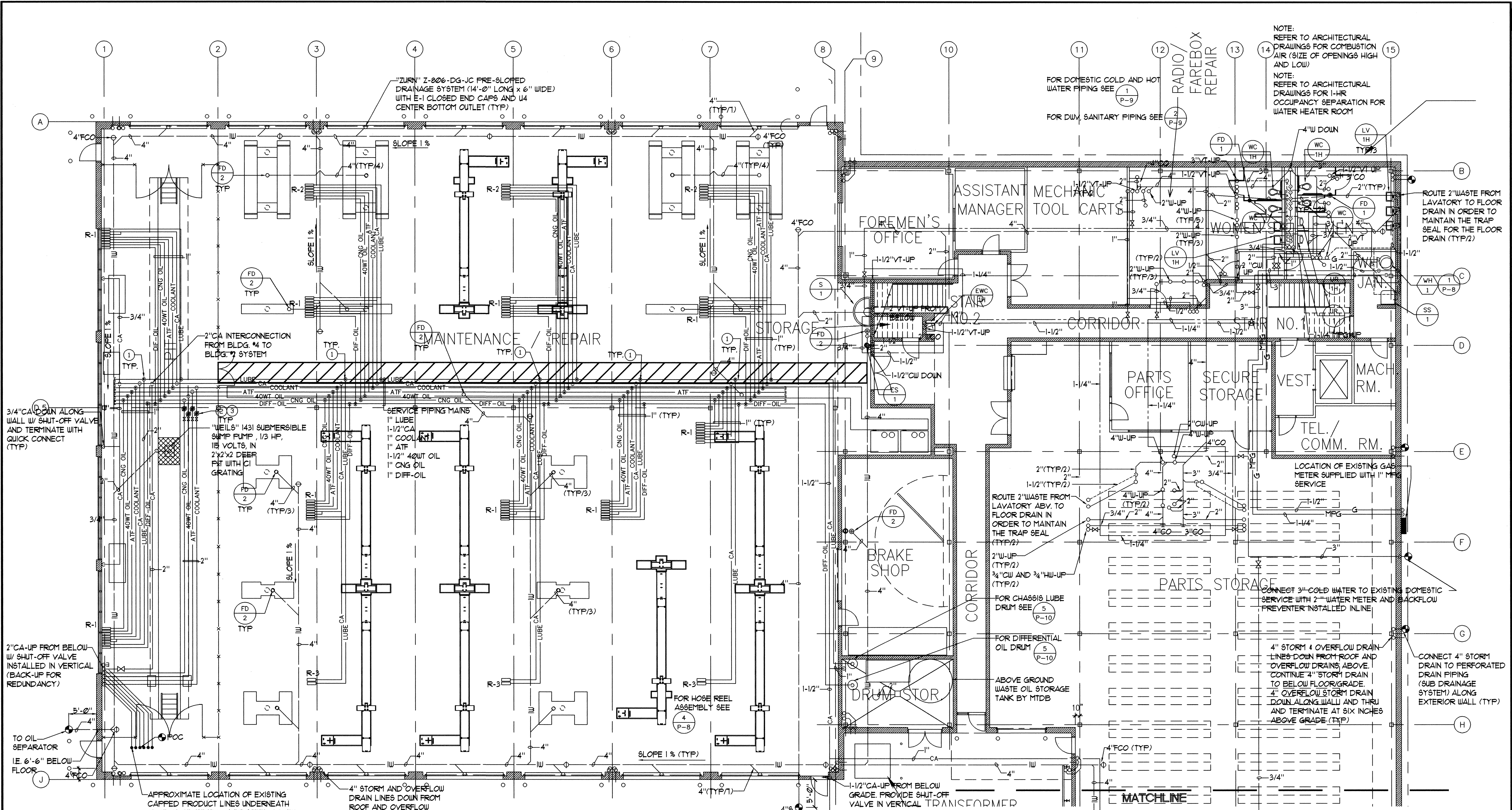
DESIGNED BY BM DATE 12/18/98
DRAWN BY TW/ DATE 12/18/98
CHECKED BY MK DATE 12/18/98
MTDB PRJ. ENG.

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

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NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR COMBUSTION AIR (SIZE OF OPENINGS HIGH AND LOW)
NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR I-HR OCCUPANCY SEPARATION FOR WATER HEATER ROOM

FOR DOMESTIC COLD AND HOT WATER PIPING SEE P-9
FOR DWV, SANITARY PIPING SEE P-9

3/4" CA DOWN ALONG WALL W/ SHUT-OFF VALVE AND TERMINATE WITH QUICK CONNECT (TYP)

"WELLS" 1431 SUBMERSIBLE SUMP PUMP, 1/3 HP, 115 VOLTS, IN 2'x2' DEEP PIT WITH CI GRATING

2" CA-UP FROM BELOW W/ SHUT-OFF VALVE INSTALLED IN VERTICAL (BACK-UP FOR REDUNDANCY)

APPROXIMATE LOCATION OF EXISTING CAPPED PRODUCT LINES UNDERNEATH 3'-0" x 3'-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.)

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. 69629 AND 84458
- 2 FURNISH AND INSTALL "SUN" PRESSURE REDUCING VALVE (CARTRIDGE VALVE WITH IN-LINE BODY) #PBH-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
A. Internal
Contract No. BUS-443B
Date: NOV. 2000

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/11/00	SECOND FLOOR INTERIOR IMPROVEMENTS

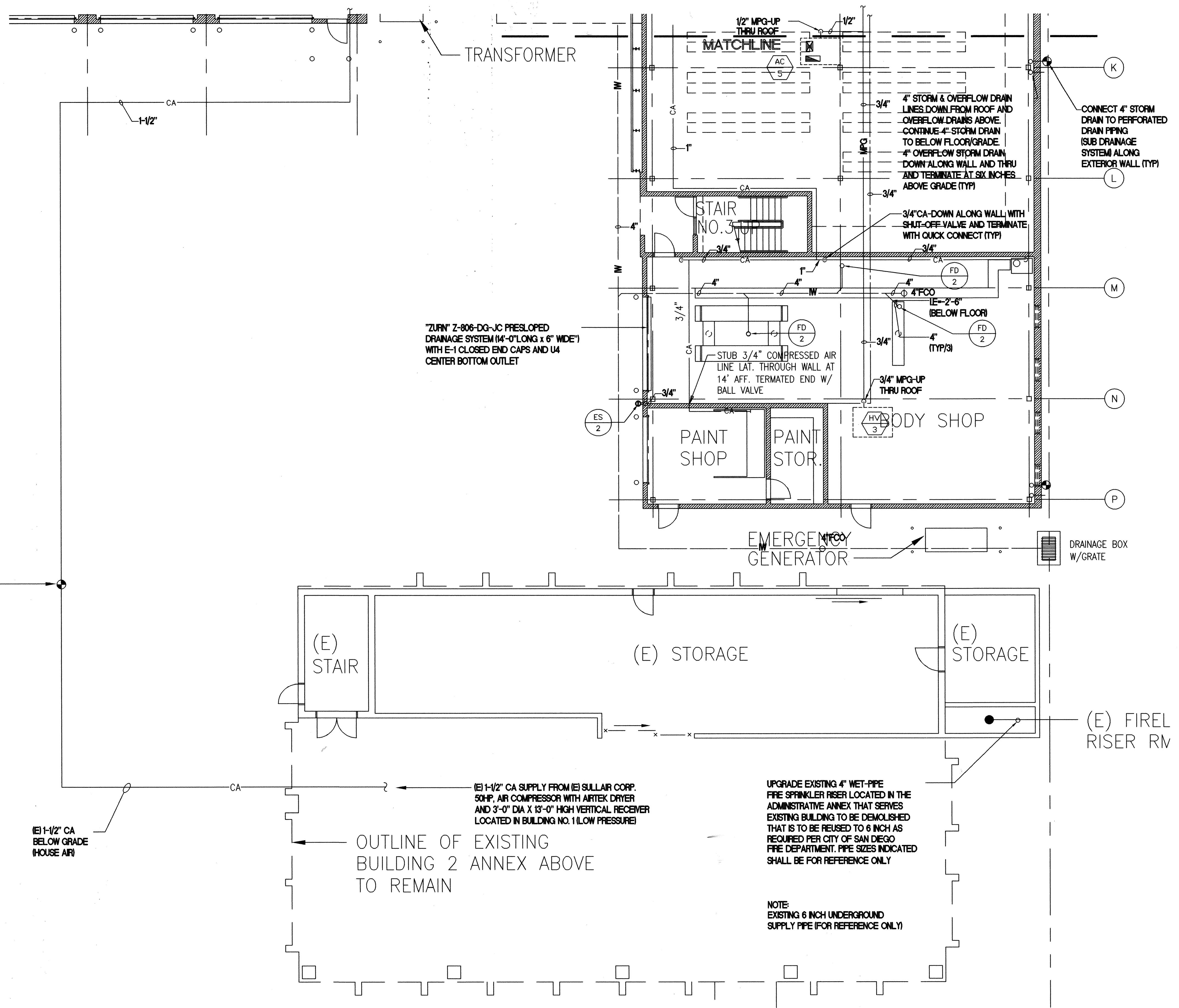
T MAD Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9806 FAX (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

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



CONNECT 1-1/2" CA TO EXISTING SERVICE CAPPED BELOW GRADE DURING DEMOLITION AND ROUTE AS INDICATED

(E) 1-1/2" CA BELOW GRADE (HOUSE AIR)

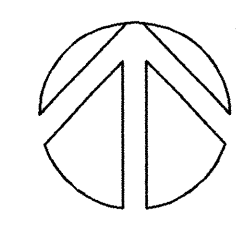
"ZURN" Z-806-DG-JC PRESLOPED DRAINAGE SYSTEM (14'-0" LONG x 6" WIDE) WITH E-1 CLOSED END CAPS AND U4 CENTER BOTTOM OUTLET

OUTLINE OF EXISTING BUILDING 2 ANNEX ABOVE TO REMAIN

(E) 1-1/2" CA SUPPLY FROM (E) SULLAIR CORP. 50HP. AIR COMPRESSOR WITH AIRTEK DRYER AND 3'-0" DIA X 13'-0" HIGH VERTICAL RECEIVER LOCATED IN BUILDING NO. 1 (LOW PRESSURE)

UPGRADE EXISTING 4" WET-PIPE FIRE SPRINKLER RISER LOCATED IN THE ADMINISTRATIVE ANNEX THAT SERVES EXISTING BUILDING TO BE DEMOLISHED THAT IS TO BE REUSED TO 6 INCH AS REQUIRED PER CITY OF SAN DIEGO FIRE DEPARTMENT. PIPE SIZES INDICATED SHALL BE FOR REFERENCE ONLY

NOTE: EXISTING 6 INCH UNDERGROUND SUPPLY PIPE (FOR REFERENCE ONLY)



GROUND FLOOR PLAN - PLUMBING
1/8" = 1'-0"

AS-BUILT
Q. delmondo
Contract No. BUS-443B
Date NOV. 2000

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CONSTRUCTION CHANGE TABLE		
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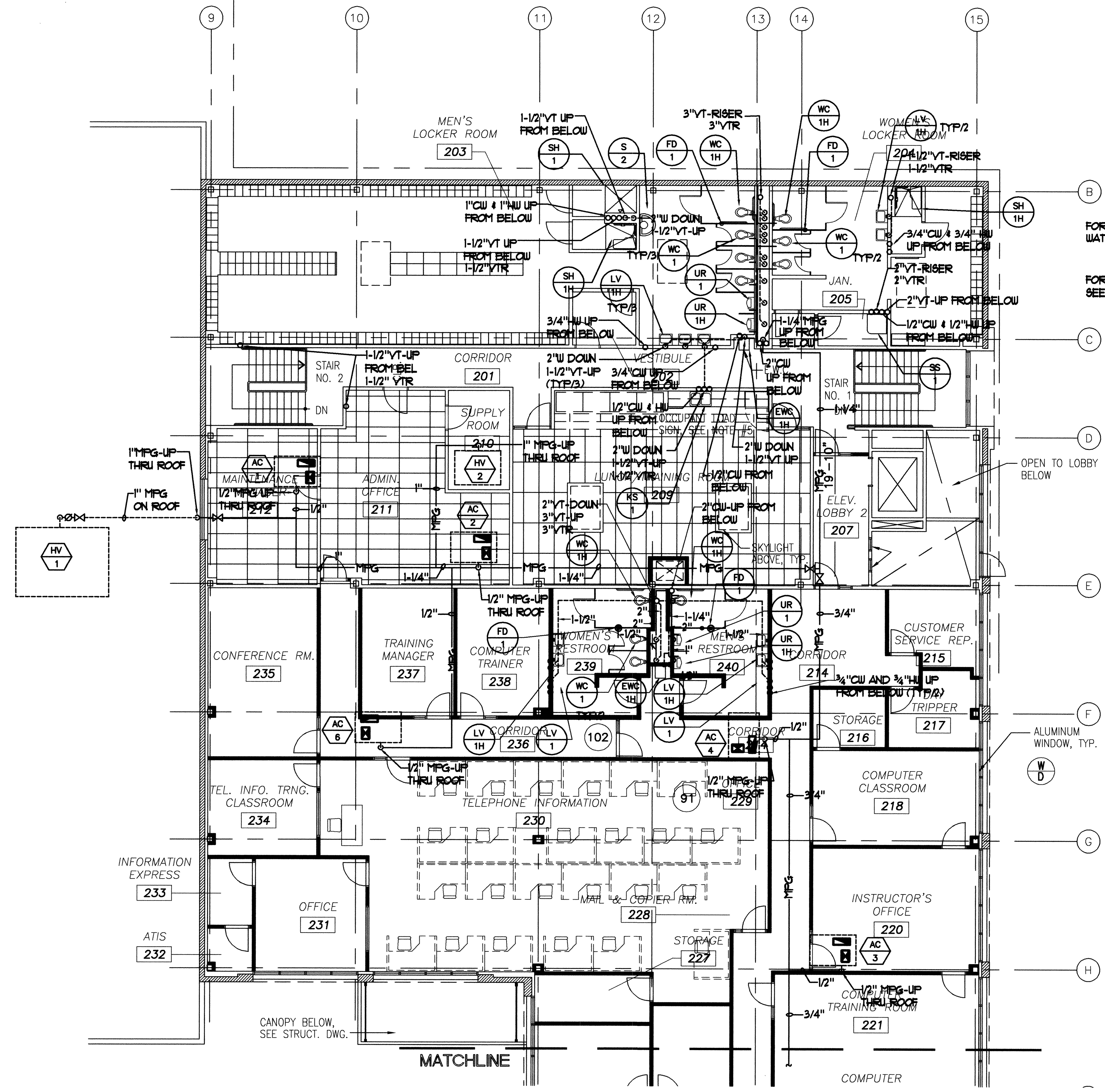
T M A D Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087
TELEPHONE (619) 271-9808 FAX (619) 271-9932
9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131

DESIGNED BY MS	DATE 12/18/98
DRAWN BY EB/TW	12/18/98
CHECKED BY MK	12/18/98
MTDB PRJ. ENG.	

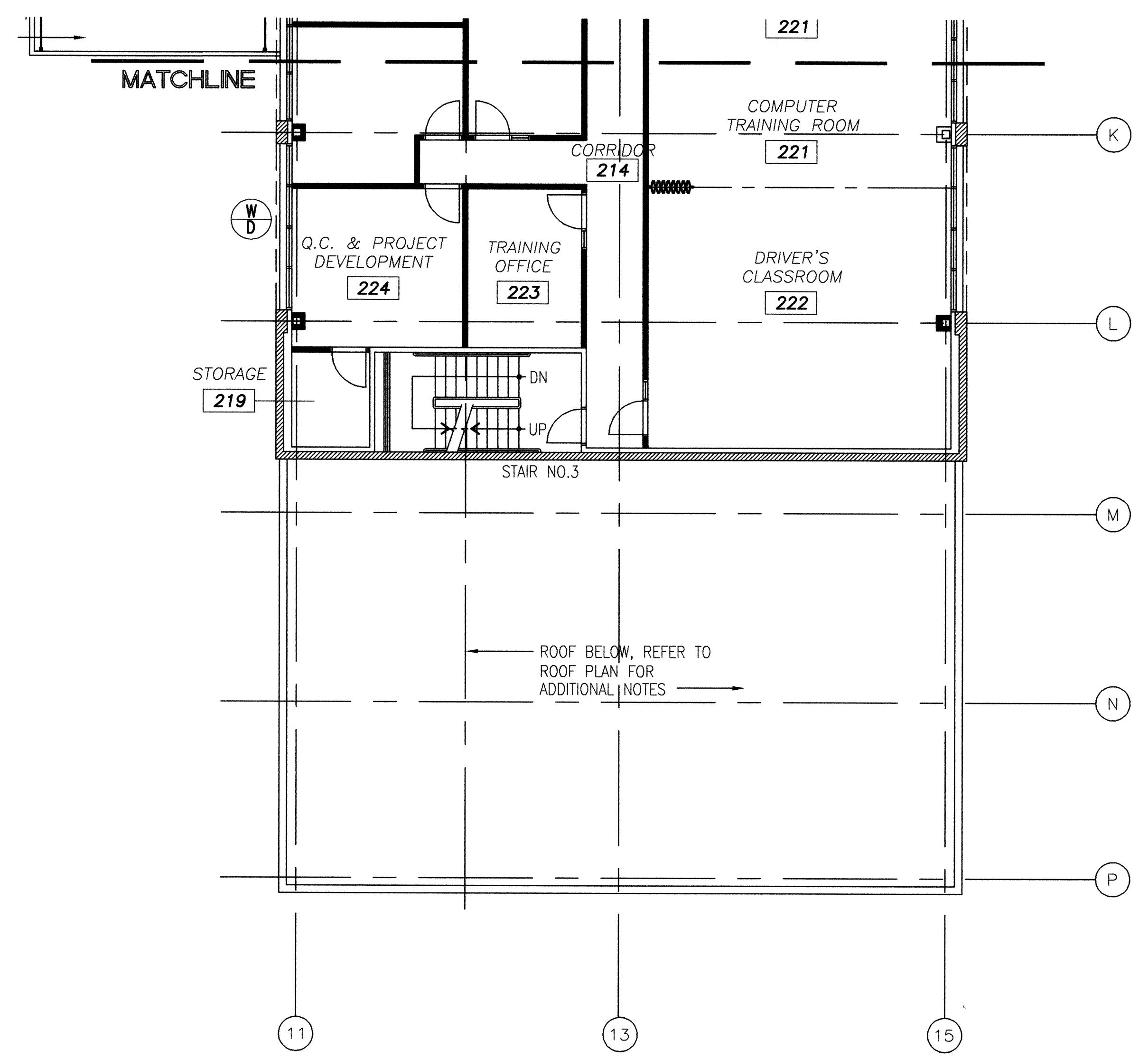
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

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



FOR DOMESTIC COLD AND HOT WATER PIPING SEE 1 (P-9)
 FOR DWV, SANITARY PIPING SEE 2 (P-9)



AS-BUILT
A. delano
 Contract No. BUS-443B
 Date NOV. 2000

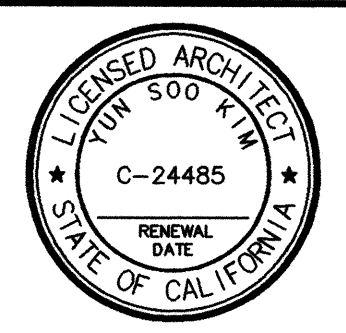
SECOND FLOOR REFLECTED CEILING PLAN
 1
 1/8"=1'-0" A13.2

T M A D Engineers, Inc.
 Mechanical and Electrical Consulting Engineers
 Project Number
 2000.017
 TELEPHONE (858) 271-9808 9845 ERMA ROAD SUITE 200
 FAX (858) 271-9932 SAN DIEGO, CA 92131
 sandiego@tmadengineers.com

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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

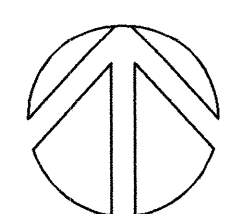
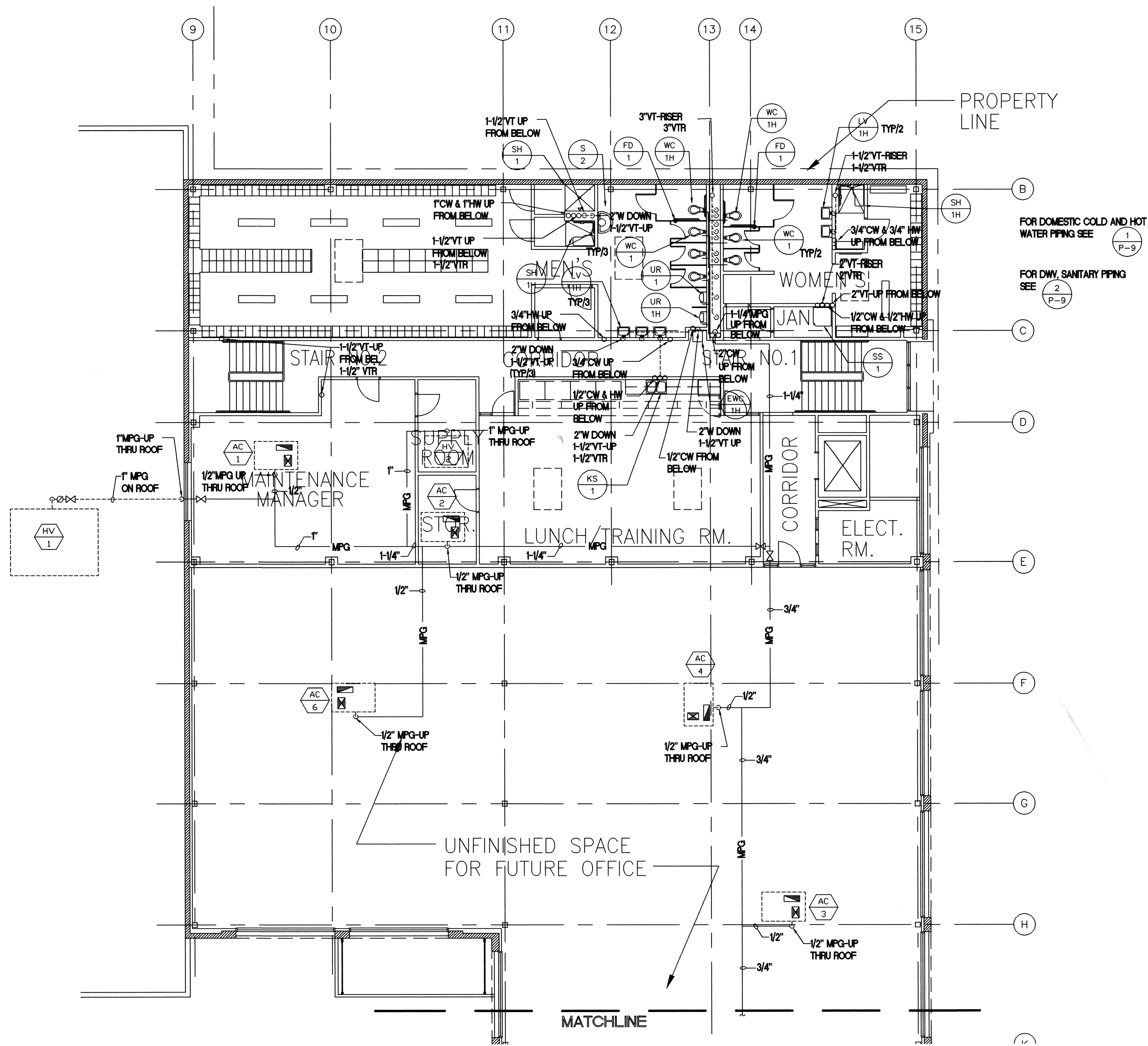


DESIGNED BY BM DATE 5/2/00
 DRAWN BY TW DATE 5/2/00
 CHECKED BY BM DATE 5/2/00
 MTDB PRJ. ENG.

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. SHEET NO.
 P-5 72



SECOND FLOOR PLAN - PLUMBING
1/8" = 1'-0"

AS-BUILT
A. deLeon
Contract No. BUS-443B
Date NOV. 2000

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T.M.A.D. 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

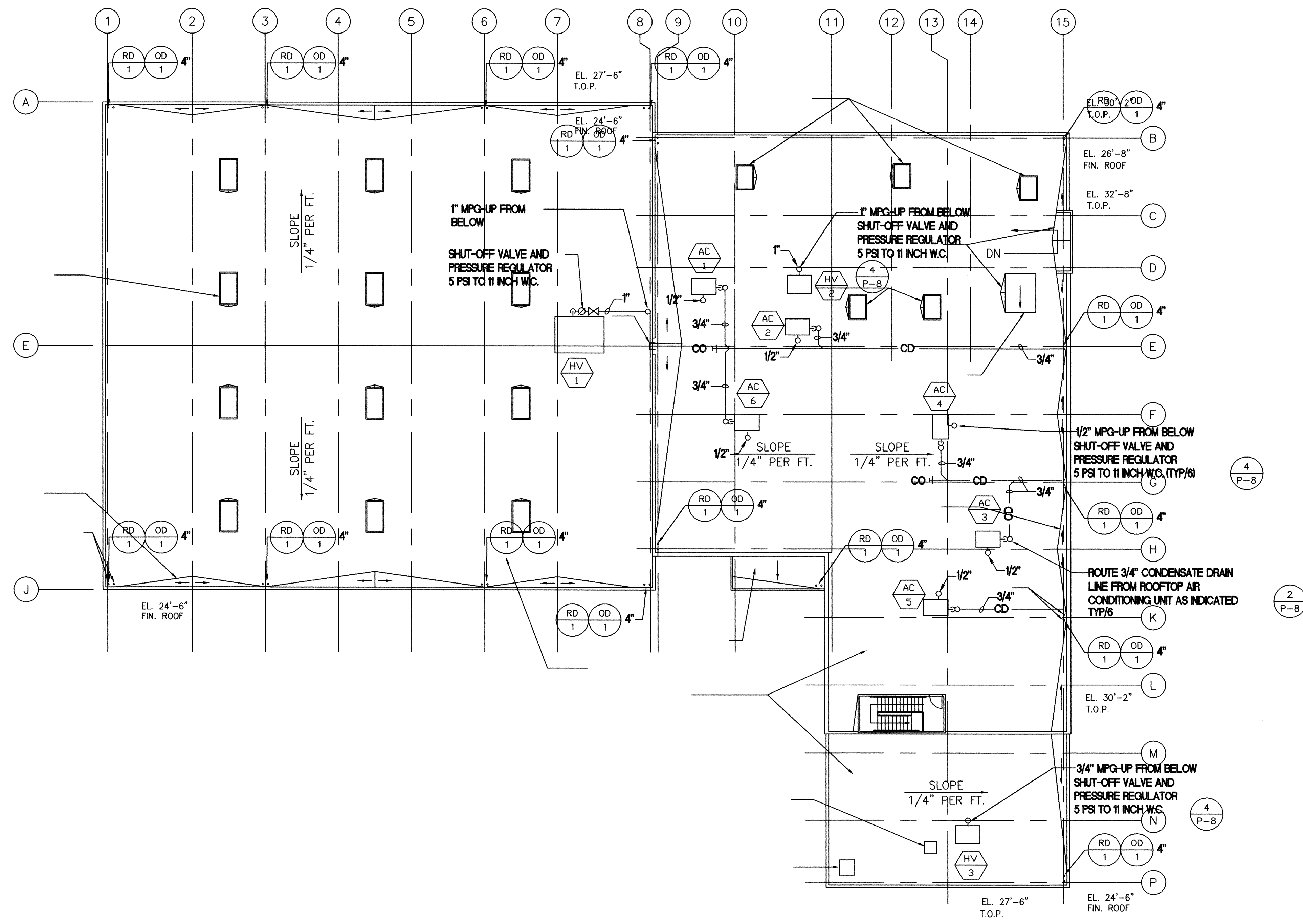
DESIGNED BY MS
DATE 12/18/98
DRAWN BY EB/TW
12/18/98
CHECKED BY MK
12/18/98
MTDB PRJ. ENG.

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



PLUMBING ROOF PLAN
1/16"=1'-0"

AS-BUILT
A. delgado
Contract No. BUS-443B
Date: NOV. 2000

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T M A D Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087

TELEPHONE (619) 271-8608
FAX: (619) 271-9932

9845 ESMA 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.

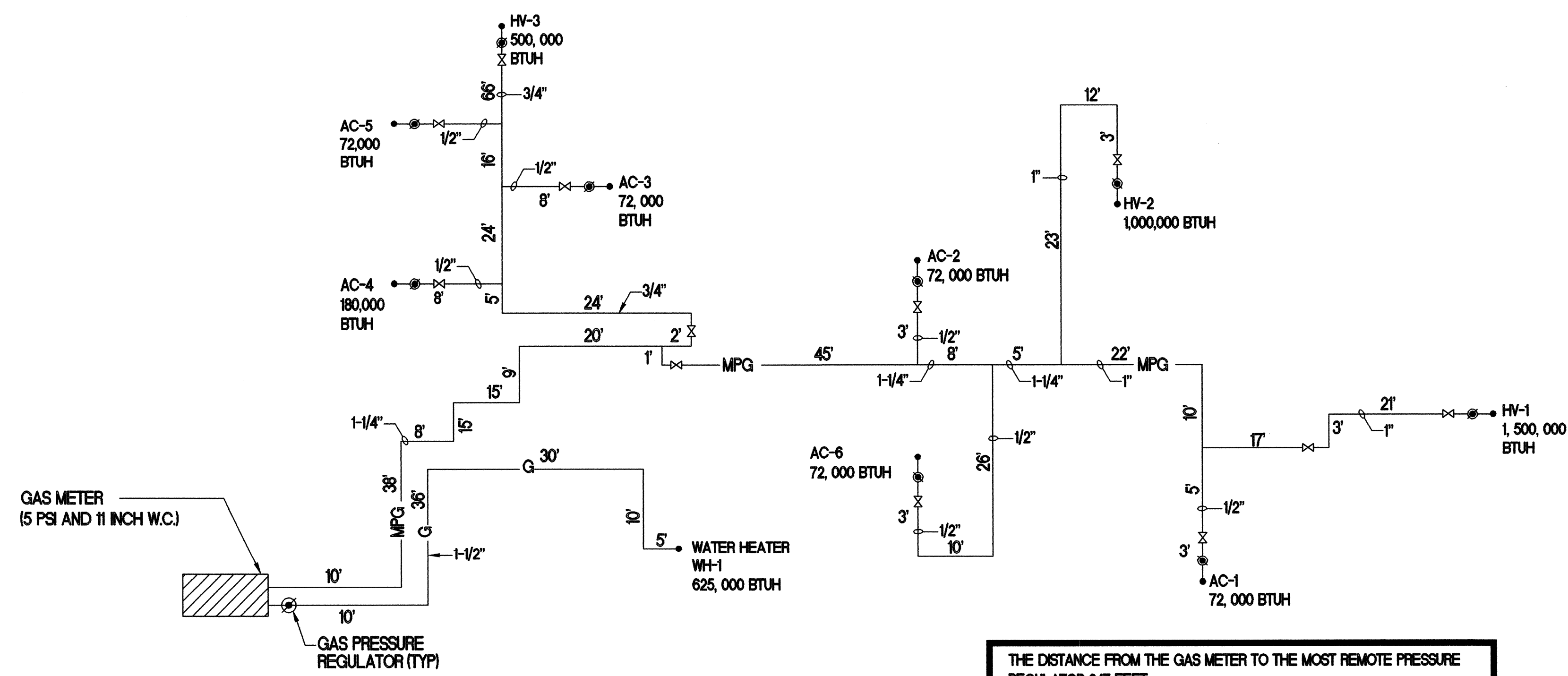
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING 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 ACCORDANCE 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. deLeon
Contract No. **BUS-443B**
Date **NOV. 2000**

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T M A D Engineers, Inc.
Mechanical and Electrical Consulting Engineers
Project Number 97087

TELEPHONE (619) 271-9908
FAX (619) 271-9932

9845 ERMA ROAD SUITE 200
SAN DIEGO, CA 92131

DESIGNED BY	MS	DATE	12/18/98
DRAWN BY	EB/TW	DATE	12/18/98
CHECKED BY	MK	DATE	12/18/98
MTDB PRJ. ENG.			

MTDB

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1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

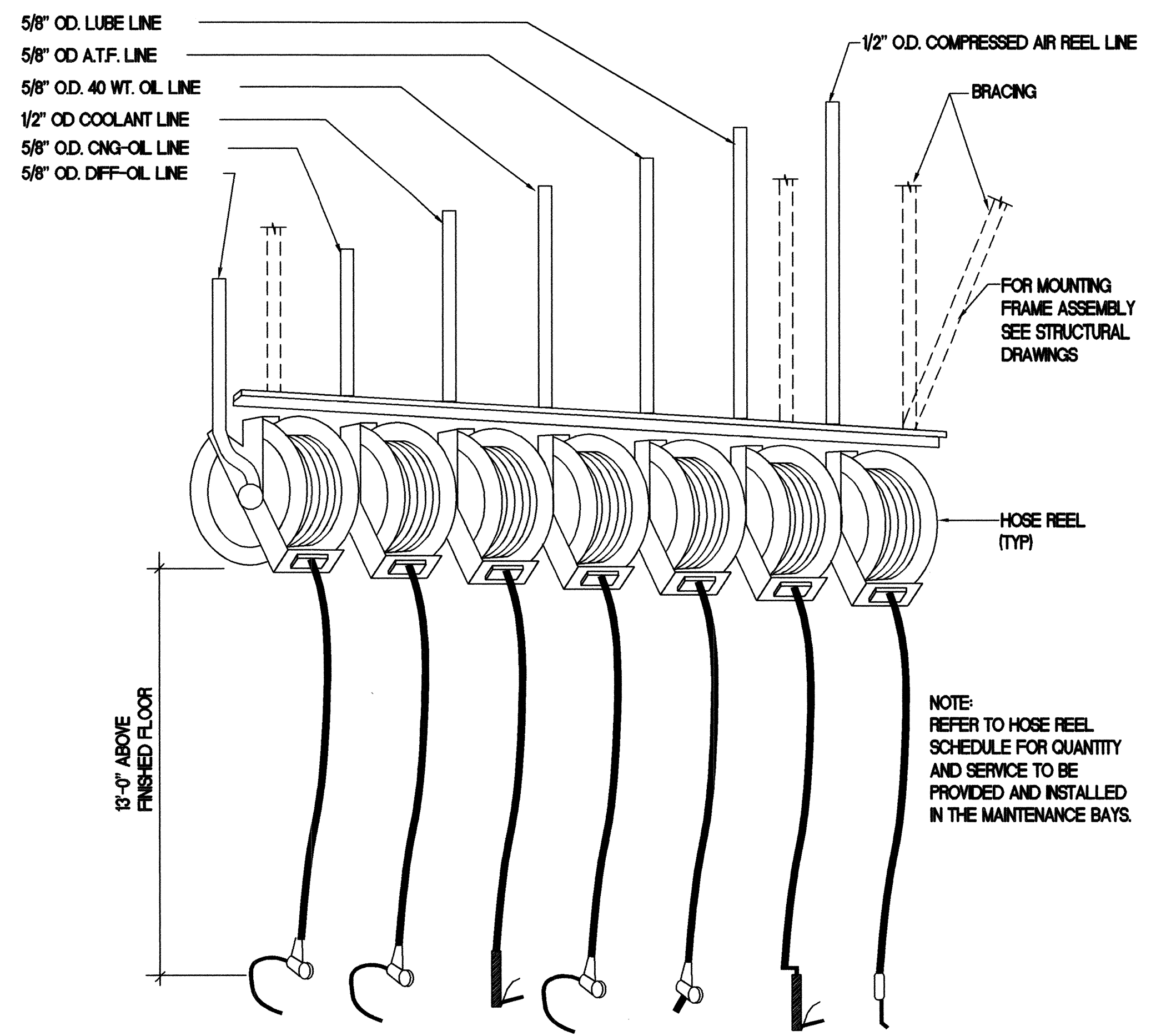
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS, DIAGRAM

SCALE	NONE
MTDB CONTRACT NO.	BUS-443B
DRAWING NO.	P-7
SHEET NO.	74

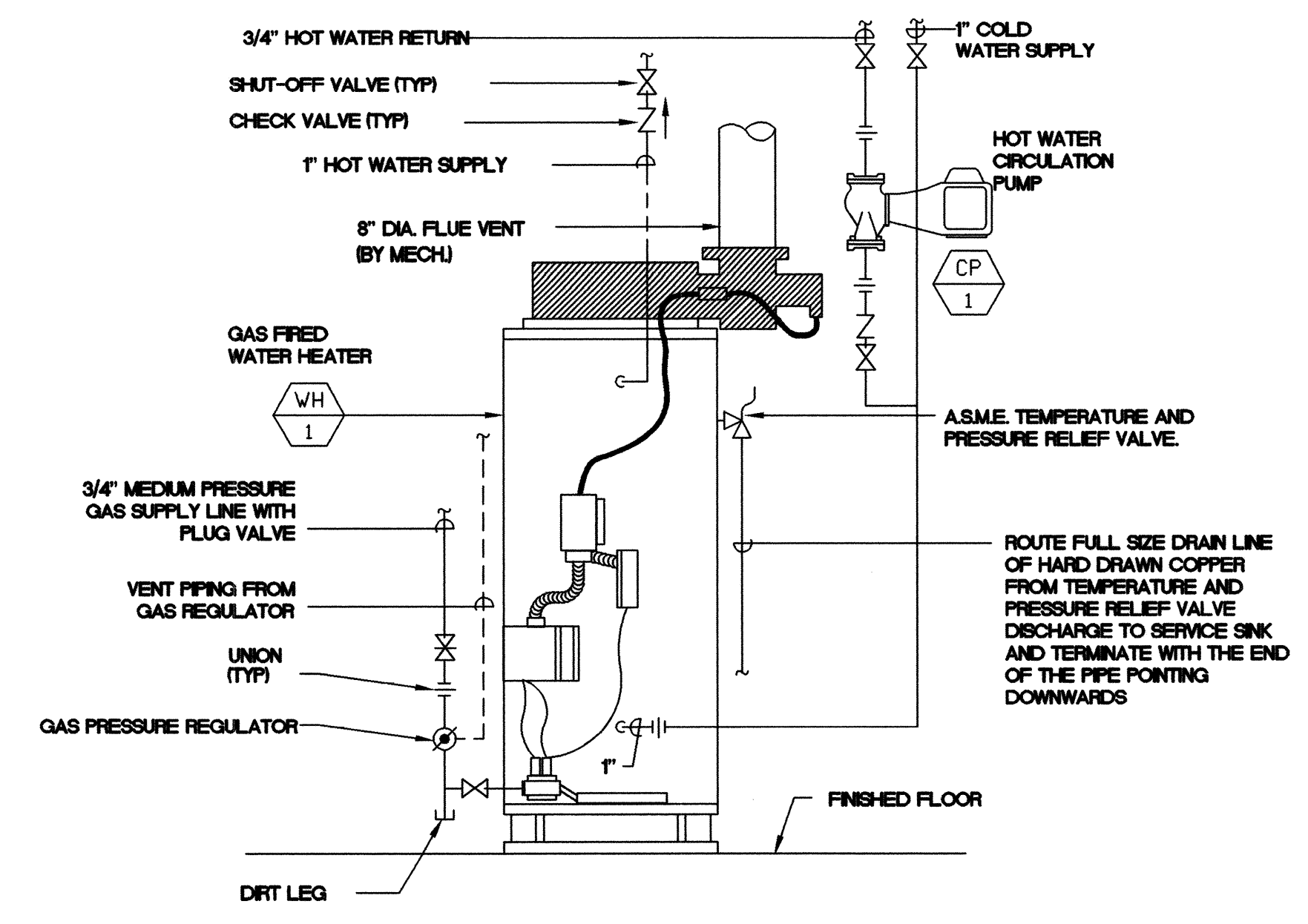
NOTES

- 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



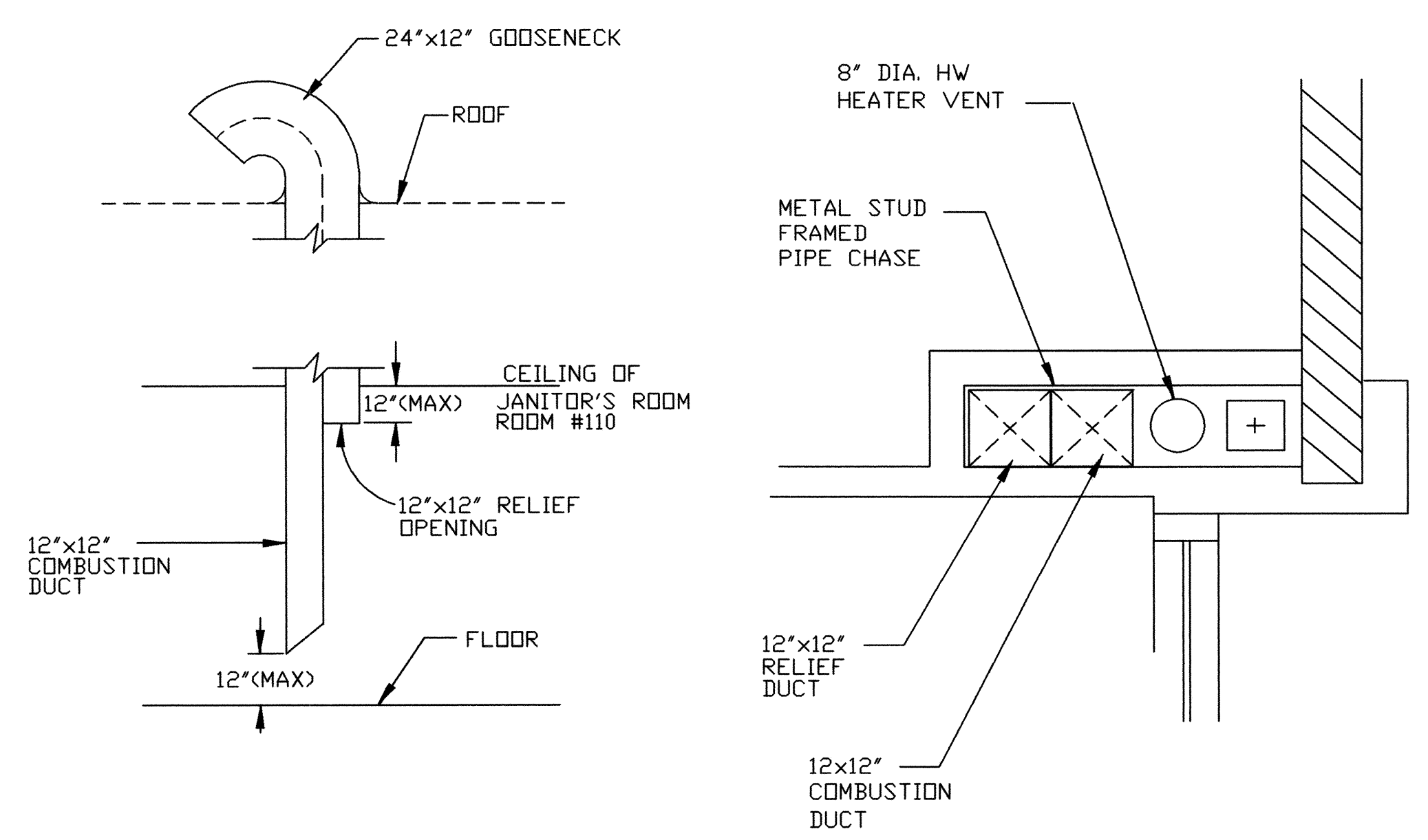
3 HOSE REEL ASSEMBLY
NO SCALE

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.

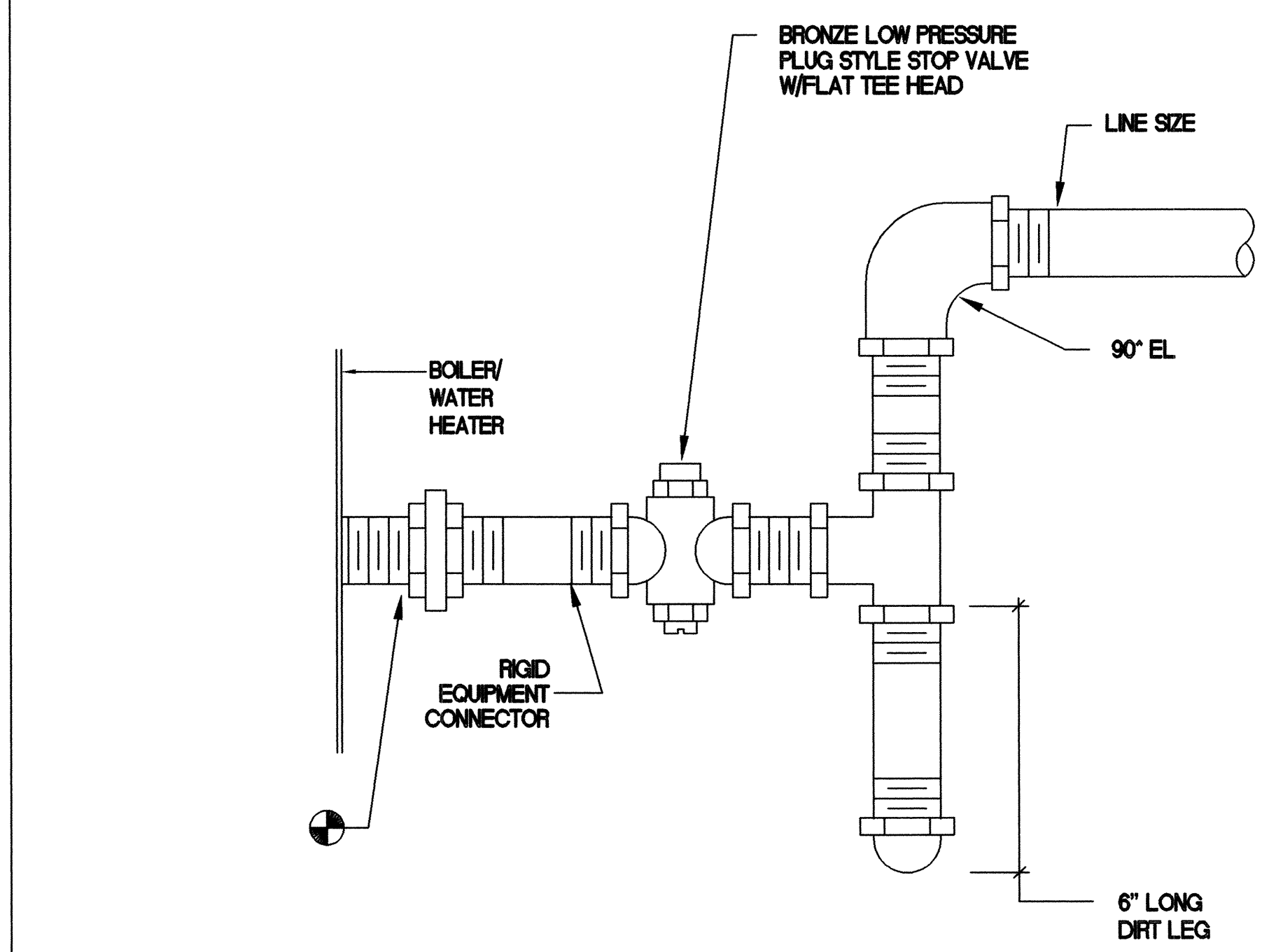


- NOTE:
- SEE MECHANICAL DRAWINGS M-2 AND M-4 FOR ROUTING OF FLUE
 - PROVIDE OPENINGS FOR COMBUSTION AIR 32"x20" HIGH AND LOW

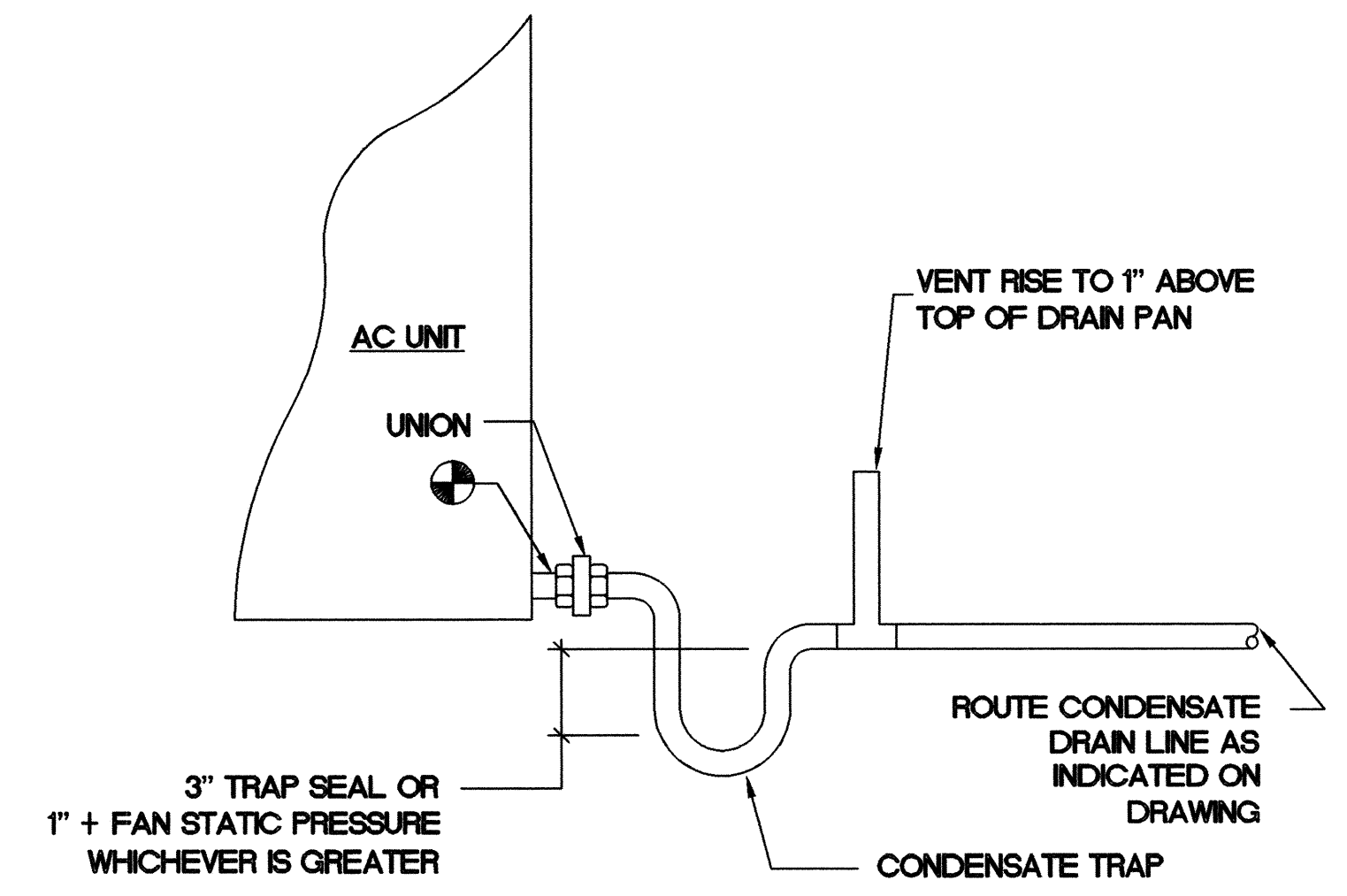
1 GAS FIRED WATER HEATER W/ RECIRCULATION PUMP
NO SCALE



COMBUSTION AIR INTAKE
NO SCALE



4 GAS PIPING CONNECTION
NO SCALE



2 CONDENSATE DRAIN DETAIL
NO SCALE

AS-BUILT
A. de la Cruz
Contract No. **BUS-443B**
Date **NOV. 2000**

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CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

T MAD 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

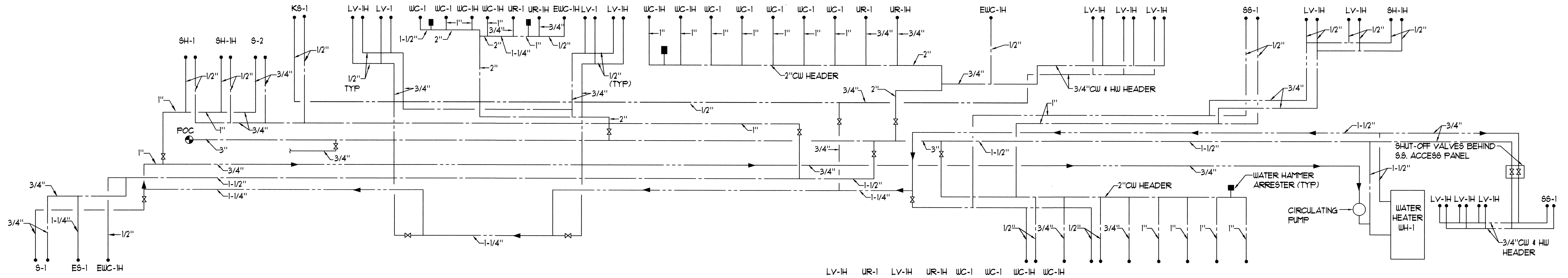
DESIGNED BY MS DATE 12/18/98
DRAWN BY EB/TW DATE 12/18/98
CHECKED BY MK DATE 12/18/98
MTDB PRJ. ENG.

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

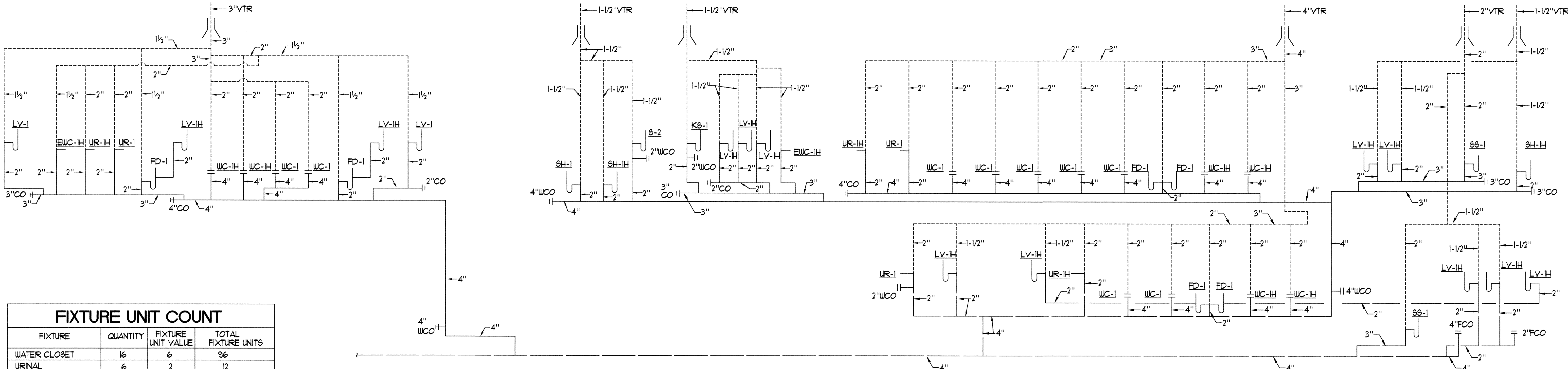
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. P-8 SHEET NO. **75**



1 DOMESTIC COLD AND HOT WATER 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 FUJ. TOTAL			

2 DWV, SANITARY PIPING DIAGRAM
NO SCALE

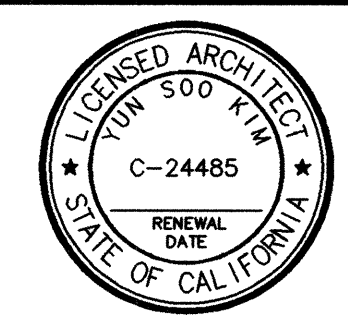
AS-BUILT
A. Delgado
Contract No. **BUS-443B**
Date **NOV. 2000**

T M A D Engineers, Inc.
Mechanical and Electrical Consulting Engineers
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2000.017
TELEPHONE (858) 271-9808 9845 ERMA ROAD SUITE 200 SAN DIEGO, CA 92131
FAX (858) 271-9932
tmad@cts.com

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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



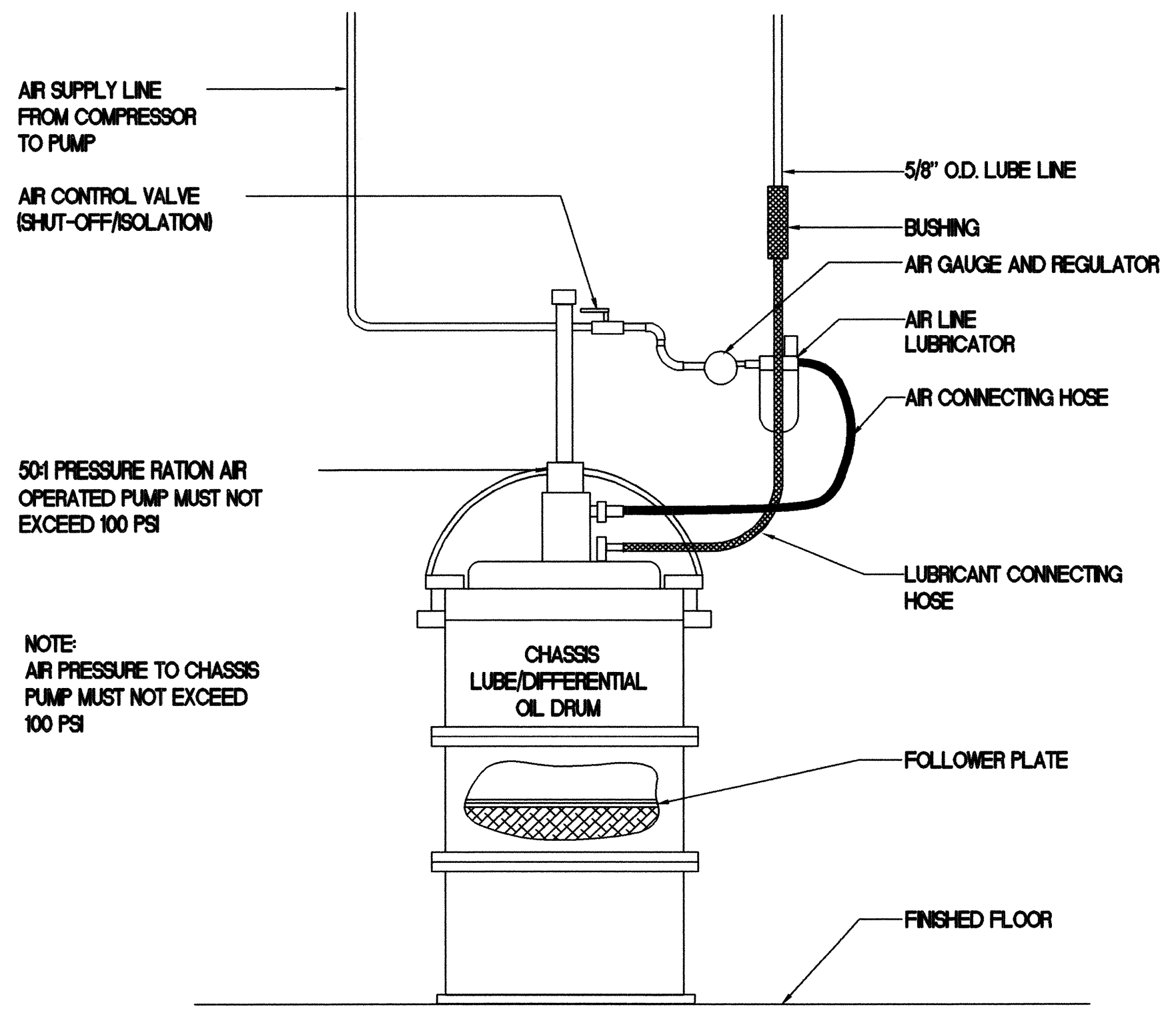
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DRAWN BY EB/TW
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MTDB PRJ. ENG.

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Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

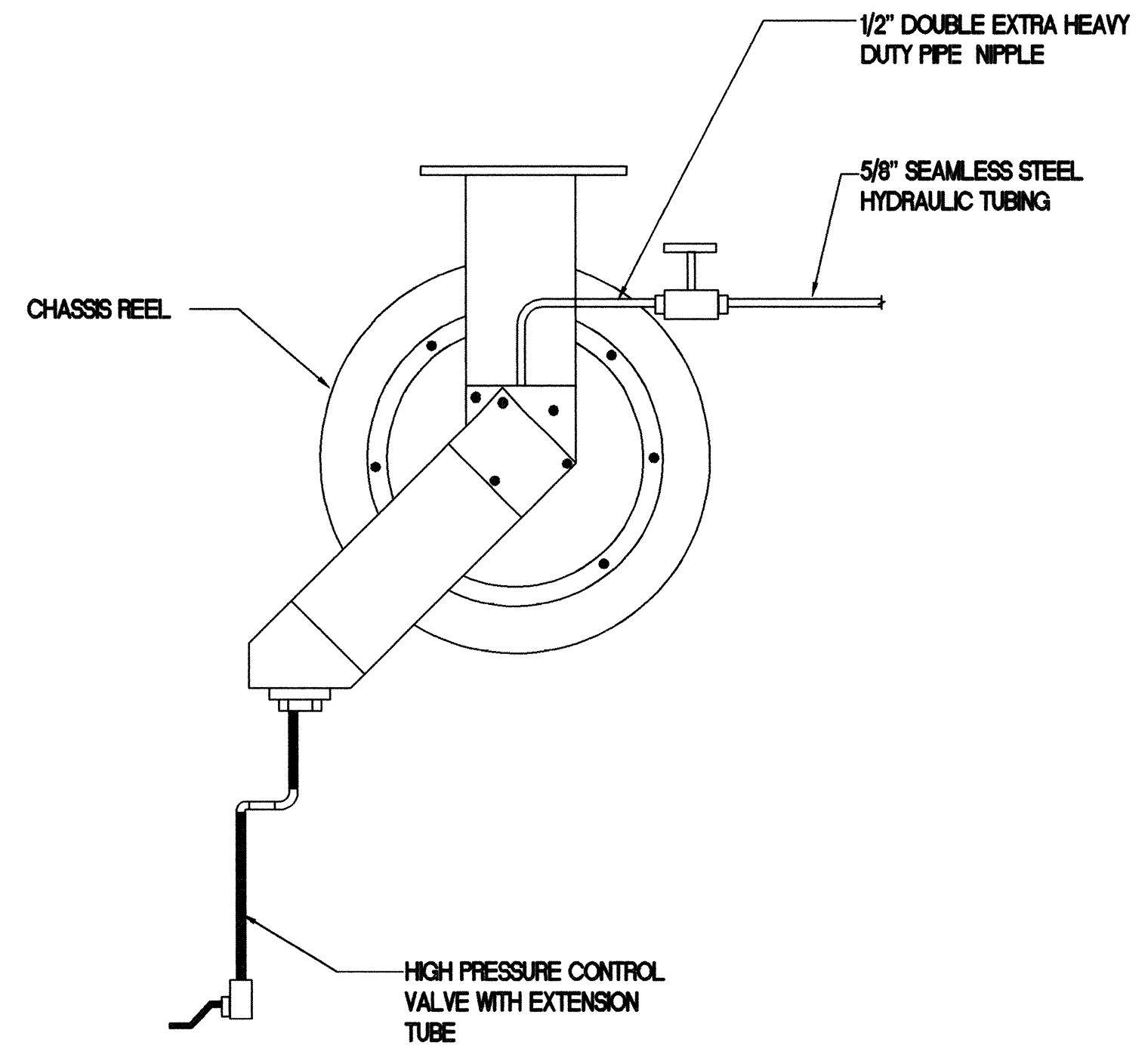
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS

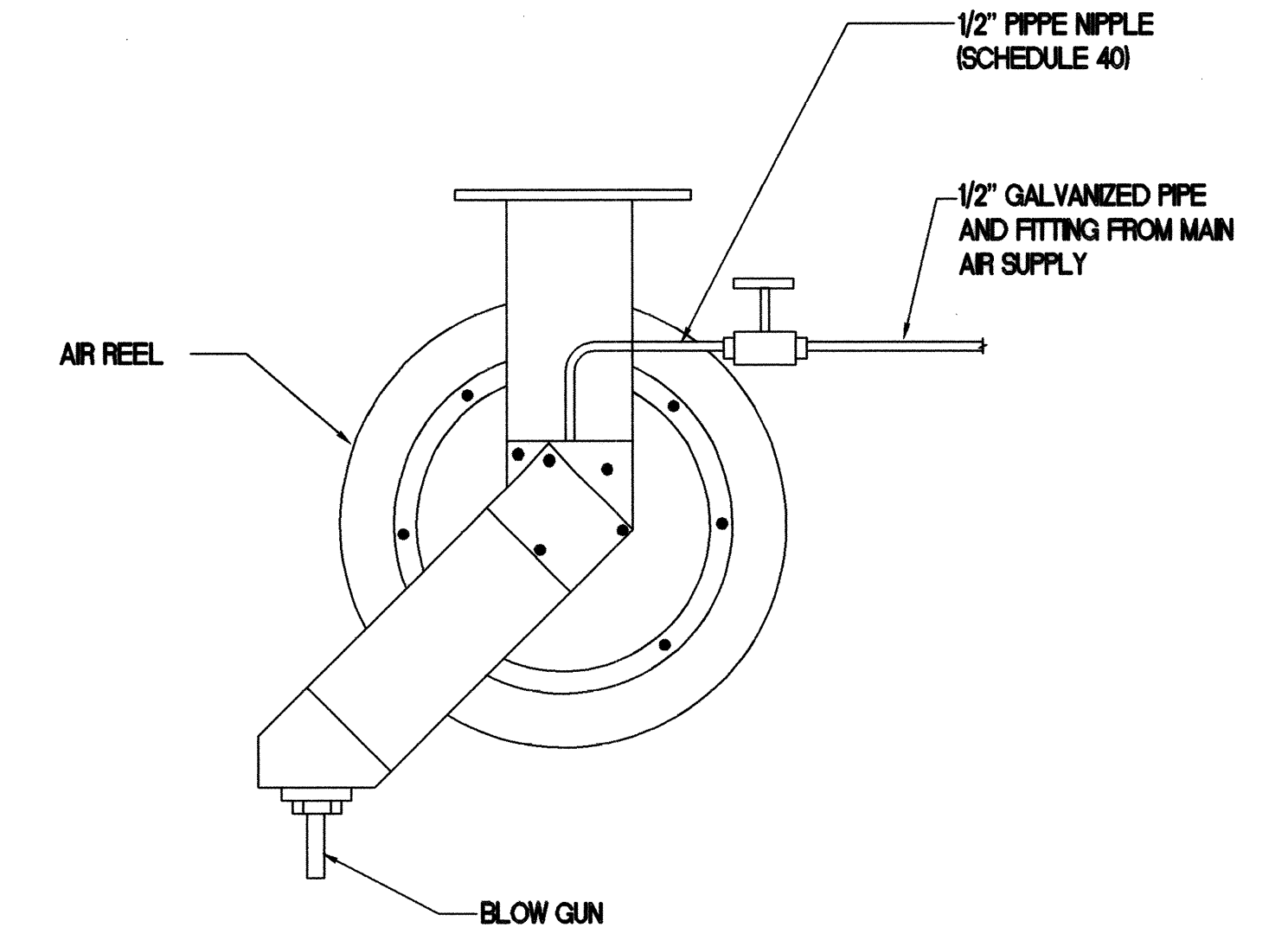
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MTDB CONTRACT NO.	BUS-443B
DRAWING NO.	P-9
SHEET NO.	76



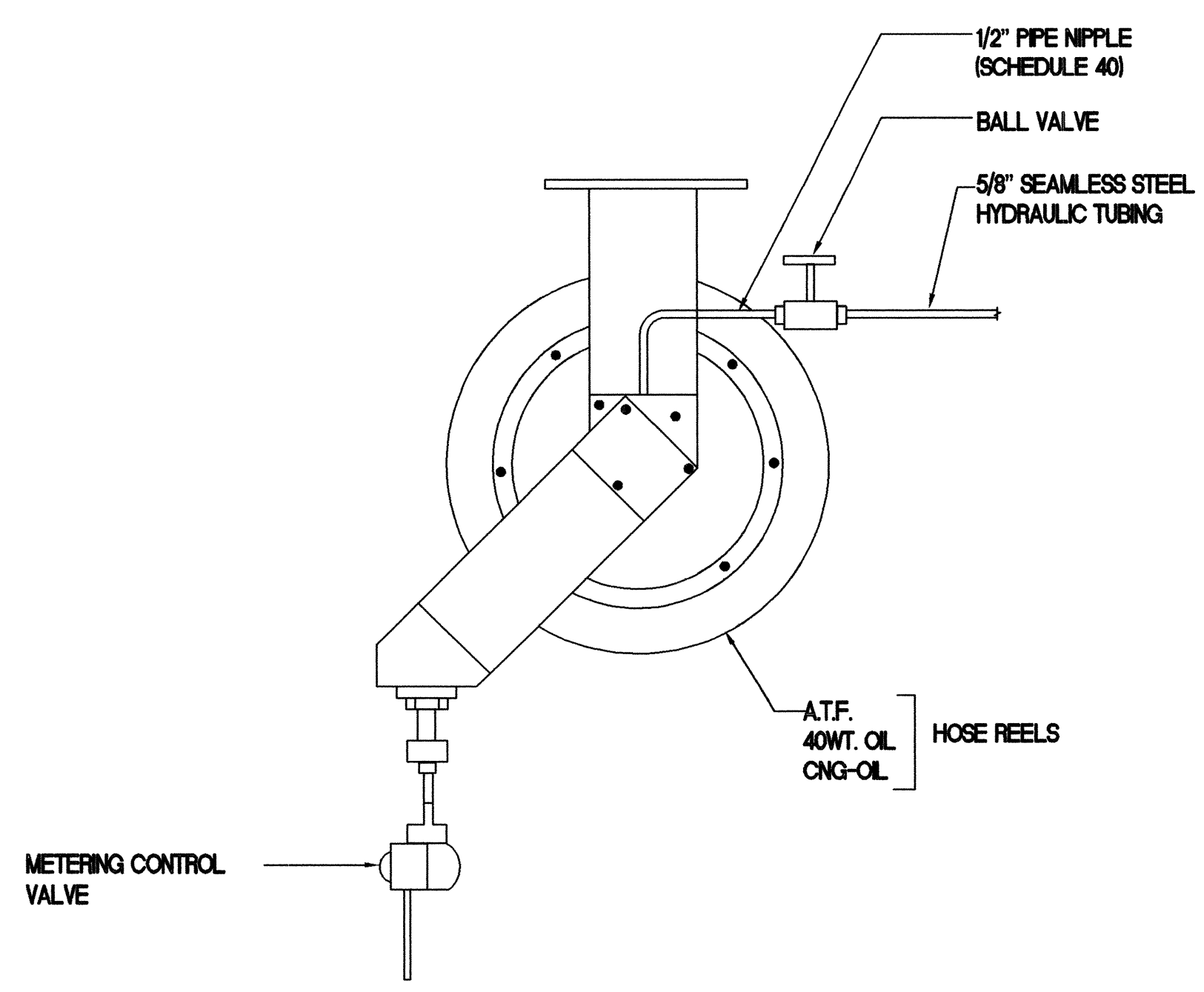
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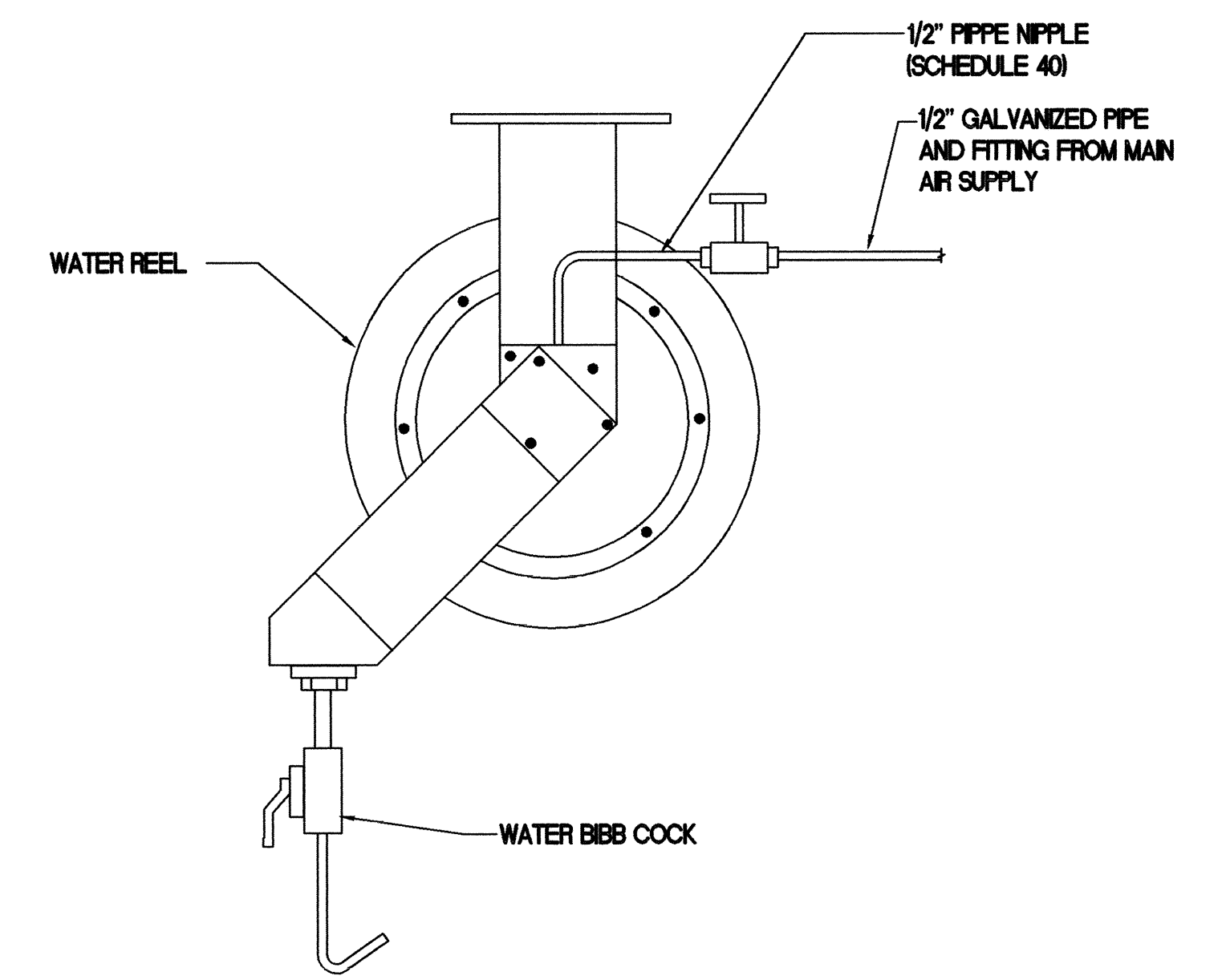
3 LUBE HOSE REEL
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1 COMPRESSED AIR HOSE REEL
NO SCALE



4 ATF, 40WT. OIL, DIFF-OIL AND CNG-OIL HOSE REEL
NO SCALE



2 COOLANT HOSE REEL
NO SCALE

AS-BUILT
A. Delgado
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

TELEPHONE (619) 271-9808
FAX: (619) 271-9932

9845 ERMA ROAD SUITE 500
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



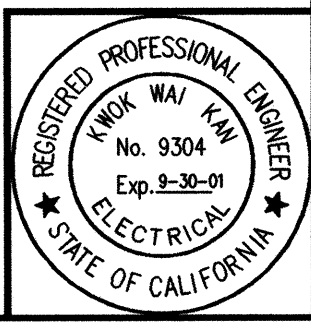
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

PLUMBING DETAILS

SCALE	NONE
MTDB CONTRACT NO.	BUS-443B
DRAWING NO.	P-10
SHEET NO.	77

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	ABBREVIATIONS	LIGHTING MANDATORY MEASURES NOTES CHECKLIST	ELECTRICAL GENERAL NOTES
	2'x4' RECESSED FLUORESCENT LIGHT FIXTURE		WALL MOUNTED FIRE ALARM MANUAL PULL STATION AT +48" U.N.O.	A AMP AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE	BUILDING LIGHTING SHUT-OFF THE BUILDING IS A 24 HOUR OPERATIONAL MAINTENANCE FACILITY WHERE AUTOMATIC LIGHTING SHUT OFF COULD BE A SAFETY HAZARD. THE BUILDING LIGHTING SHUT-OFF SYSTEM FOR NON SAFETY HAZARD AREAS SHALL CONSIST OF OCCUPANT-SENSORS.	1. HASH MARKS ON RACEWAY RUN INDICATE NUMBER OF #12 CONDUCTORS.
	SURFACE MOUNTED FLUORESCENT LIGHT FIXTURE		WALL MOUNTED FIRE ALARM HORN	BC BARE COPPER BKBD BACKBOARD	OVERRIE FOR BUILDING LIGHTING SHUT-OFF NOT APPLICABLE	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.
	SURFACE MOUNTED FLUORESCENT STRIP LIGHT		WALL MOUNTED FIRE ALARM MINI-HORN AND STROBE AT +80" U.N.O.	C CONDUIT CAT 5 CATEGORY 5 CABLE CB CIRCUIT BREAKER CCTV CLOSED CIRCUIT TV CIRCUIT CKT CIRCUIT COMB. COMBINATION C.O. CONDUIT ONLY CU COPPER	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 DIRECTORY OF AUTOMATIC LIGHTING CONTROL DEVICES AND INSTALLED AS DIRECTED BY THE MANUFACTURER.	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.
	HID, FLUORESCENT, INCANDESCENT LIGHT FIXTURE, PENDENT MOUNTED ON CEILING		FIRE ALARM CONTROL PANEL	DISC. DISCONNECT	FLUORESCENT BALLAST AND LUMINAIRES CERTIFIED ALL FLUORESCENT FIXTURES SPECIFIED FOR THE PROJECT ARE CERTIFIED BY THE STATE OF CALIFORNIA, AND LISTED IN THE DIRECTORY OF CERTIFIED LUMINAIRES AND BALLASTS. ALL INSTALLED FIXTURES SHALL BE CERTIFIED.	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.
	HID, FLUORESCENT, INCANDESCENT LIGHT FIXTURE, WALL MOUNTED ON FLUSH BOX		FIRE ALARM ANNUCIATOR PANEL	EQUIP EQUIPMENT EP EXPLOSION PROOF	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 LUMINAIRES USE ELECTRONIC HIGH FREQUENCY BALLAST ARE NOT REQUIRED TO BE TANDEM WIRED.	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.
	LIGHT FIXTURE ON EMERGENCY CIRCUIT		SMOKE DETECTOR	FA FIRE ALARM	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.	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.
	RECESSED HID, FLUORESCENT OR INCANDESCENT DOWNLIGHT		WATER FLOW SWITCH	G GROUND GND GROUND	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.	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.
	CEILING MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROWS, DARKENED AREA INDICATES FACE LIT		TAMPER/TROUBLE SWITCH	HPS HIGH PRESSURE SODIUM	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.	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.
	WALL MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROWS, DARKENED AREA INDICATES FACE LIT		CLOSED CIRCUIT TELEVISION CAMERA	IC INTERCOM IDS INTRUSION DETECTION SYSTEM IG ISOLATED GROUND	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.	9. ALL EQUIPMENT INSTALLED UNDER OR PERMITTED BY THE ELECTRICAL CODE SHALL BE LISTED, LABELED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
	CEILING MOUNTED JUNCTION BOX		DATA/COMPUTER SYSTEM OUTLET WITH 1/2\"/>	J-BOX JUNCTION BOX		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. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY FOR REQUIRED SUBMITTALS, INSPECTIONS AND FINAL CONNECTION.
	JUNCTION BOX, FLUSH MOUNTED AT +15\"/>		CCTV MONITOR	LPS LOW PRESSURE SODIUM LIGHTING LTG LIGHTING		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.
	JUNCTION BOX WITH FLEXIBLE CONNECTION		NOTE REFERENCE	PNL POLE OR PHASE PANEL SW SWITCH SWBD SWITCHBOARD		12. ALL UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED PRIOR TO TRENCHING. ANY SERVICE INTERRUPTION SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.
	SPST TOGGLE SWITCH, LETTERS INDICATE THE NUMBER OF SWITCHES THEY CONTROL. MOUNTED FLUSH IN BOX AT +42\"/>		EQUIPMENT IDENTIFICATION	TEL TELEPHONE TYP TYPICAL		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.
	MANUAL MOTOR STARTER, +42\"/>		NORTH ARROW	U/C UNDERCOUNTER UG UNDERGROUND UGPS UNDERGROUND PULL SECTION UNLESS OTHERWISE NOTED		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.
	THREE WAY SWITCH, +42\"/>		DETAIL REFERENCE	V VOLTS W WATTS OR WIRES WP WEATHERPROOF		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 MARSHAL 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. CSTM LISTING SHEET FOR EACH COMPONENT. 8. MANUFACTURERS CUT SHEET FOR EACH COMPONENT. 9. OTHER: (ARTICLE 14, 1991 UFC)
	COMBINATION MOTOR STARTER/DISCONNECT		SECTION REFERENCE	XFMR TRANSFORMER		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.
	DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED IN FLUSH BOX AT +24\"/>		SWITCH			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.
	DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED IN SURFACE BOX AT +24\"/>		FUSE			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.
	DOUBLE DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED IN SURFACE BOX AT +24\"/>		TRANSFORMER WITH GROUND			
	DUPLEX GROUNDED CONVENIENCE OUTLET WITH GROUND FAULT INTERRUPTER		FEEDER DESIGNATION			
	RECEPTACLE 20A, 125VAC, CLASS 1, DIVISION 2		UTILITY CO. METER			
	DUPLEX GROUNDED SURGE SUPPRESSION OUTLET AT 15\"/>		TRANSFER SWITCH			
	DUPLEX GROUNDED CONVENIENCE OUTLET MOUNTED ABOVE COUNTER BACKSPLASH		AMPS INTERRUPTING CAPACITY SYMMETRICAL			
	CORD REEL SUSPENDED FROM CEILING - SEE PLUMBING PLAN FOR LOCATION		CIRCUIT BREAKER			
	INTRUSION DETECTION ALARM HORN		SWITCH AND FUSE DESIGNATION			
	MAGNETIC DOOR ALARM SWITCH		DISCONNECT SWITCH 'F' INDICATES FUSED TYPE			
	DOOR ALARM KEY OVERRIDE SWITCH		PUBLIC ADDRESS AMPLIFIER CONSOLE			
	SPECIAL PURPOSE GROUNDED CONVENIENCE OUTLET MOUNTED IN FLUSH BOX AT +15\"/>		SURFACE CEILING MOUNTED P.A. SPEAKER			
	MOTOR OUTLET		RECESSED CEILING MOUNTED P.A. SPEAKER			
	BRANCH CIRCUIT CONDUIT CONCEALED IN WALL OR CEILING		WALL MOUNTED P.A. SPEAKER			
	BRANCH CIRCUIT CONDUIT CONCEALED IN FLOOR OR UNDERGROUND		INTRUSION DETECTION CONTROL PANEL			
	BRANCH CIRCUIT CONDUIT CONDUIT RUN EXPOSED		GAS DETECTOR CONTROL PANEL			
	TICKS INDICATE THE NO. OF #12 WIRE. NO TICKS INDICATES 1/2\"/>		GAS DETECTOR ALARM HORN AND STROBE			
	EMERGENCY SYSTEM CONDUIT		WALL MOUNTED MICROPHONE OUTLET			
	FIRE ALARM SYSTEM CONDUIT,		RECEPTACLE 20A, 208V, 2P, 3W AT +24\"/>			
	SECURITY SYSTEM CONDUIT		MOTION SENSOR FOR LIGHT CONTROL			
	TELEPHONE SYSTEM CONDUIT,		FIRE SMOKE DAMPER			
	PUBLIC ADDRESS SYSTEM CONDUIT,					
	COMPUTER SYSTEM CONDUIT					
	CONDUIT RUN TURNED UP					
	CONDUIT RUN TURNED DOWN					
	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' X 8' X 3/4\"/>					
	TELEPHONE OUTLET AT +15\"/>					
	TELEPHONE OUTLET AT +15\"/>					

AS-BUILT
A. de la Cruz
 Contract No. BUS-443B
 Date NOV. 2000



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

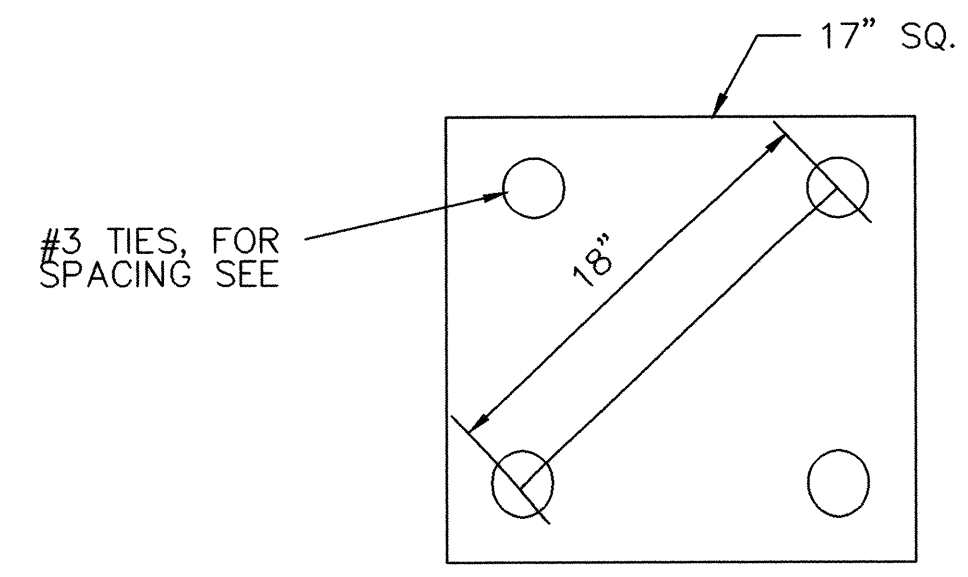
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
 Metropolitan Transit Development Board
 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

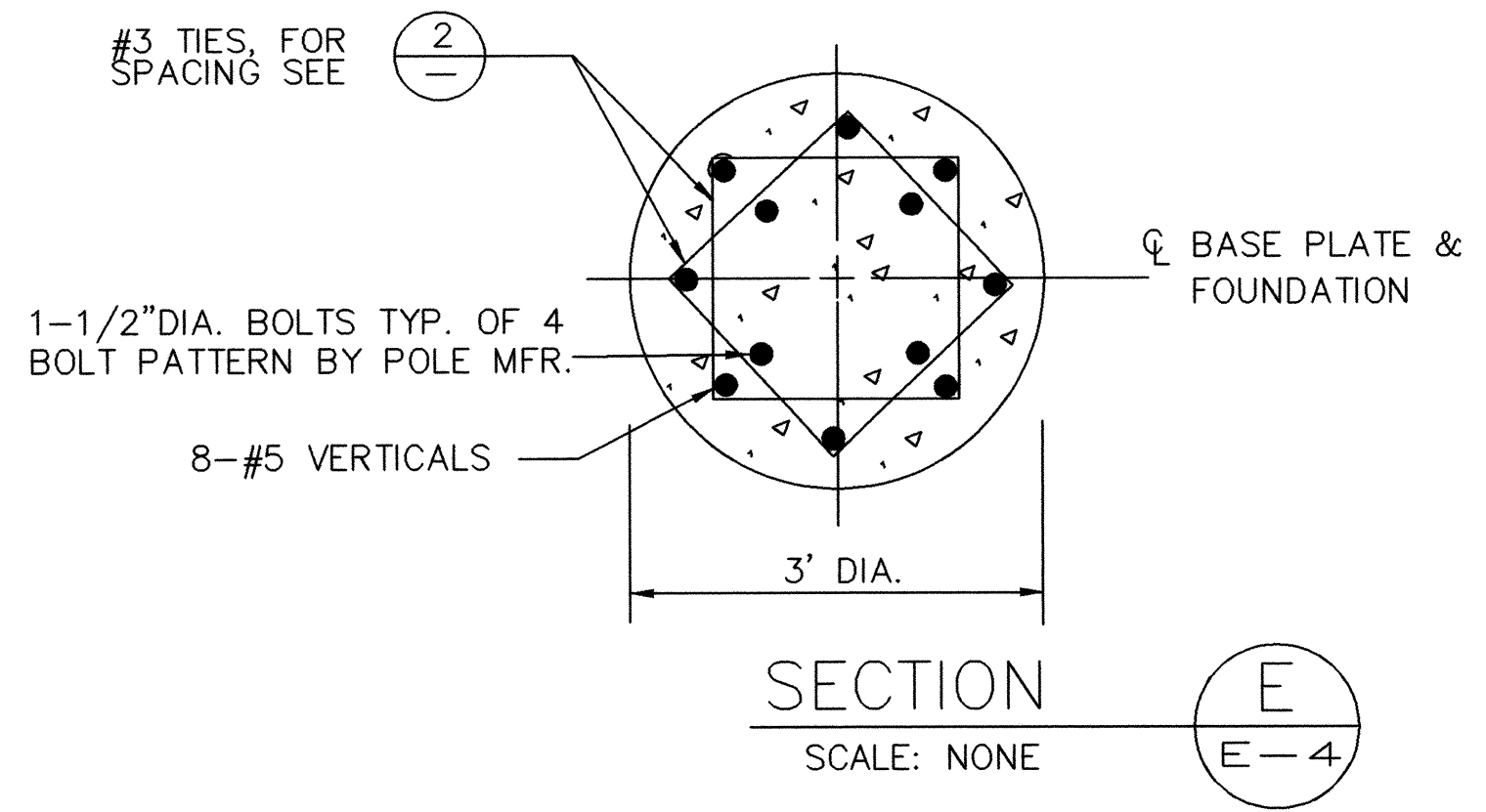
IMPERIAL AVENUE DIVISION
 BUS MAINTENANCE FACILITY

ELECTRICAL LEGEND AND
 ABBREVIATIONS

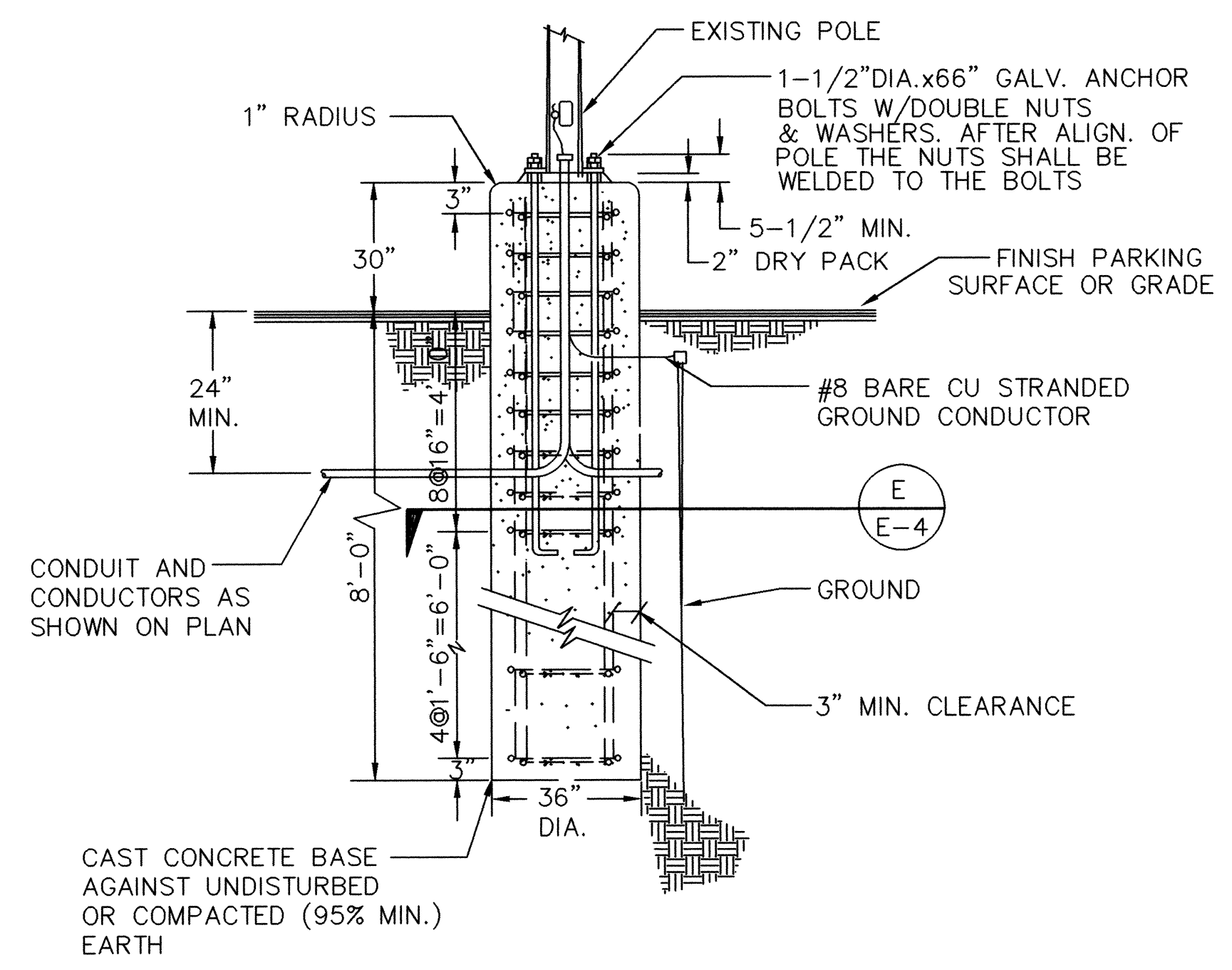
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MTDB CONTRACT NO. BUS-443B
DRAWING NO. E-10.1
SHEET NO. 78



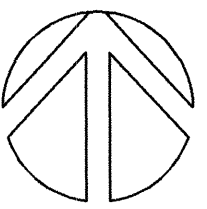
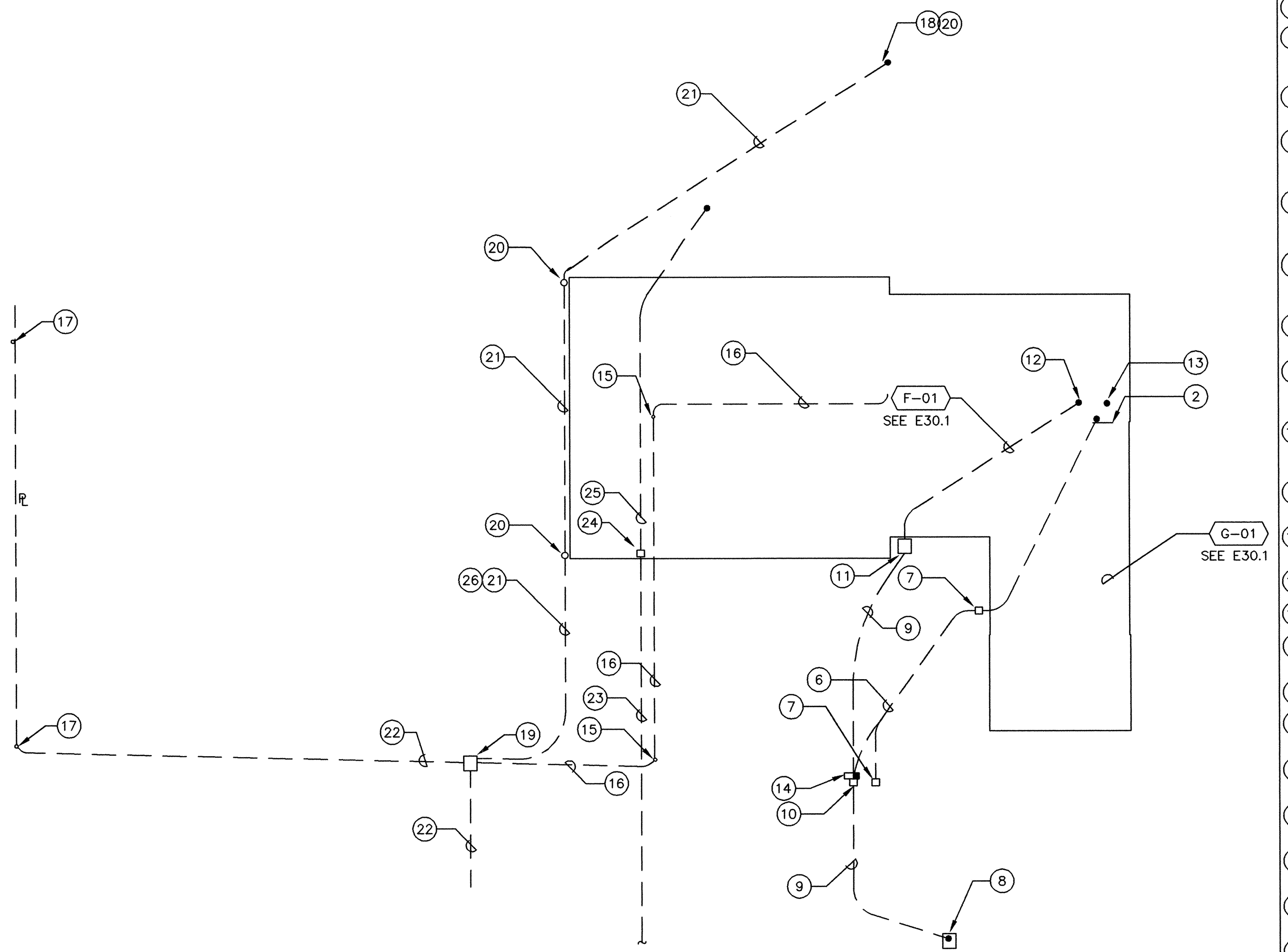
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SECTION
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E
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POLE BASE DETAIL
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E10.2

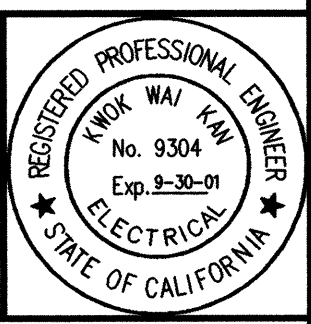


ELECTRICAL SITE PLAN
1
1"=40'-0"
E10.2

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 FIXTURES. 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. delarand
Contract No. BUS-443B
Date NOV. 2000



CONSTRUCTION CHANGE TABLE		
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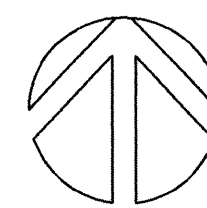
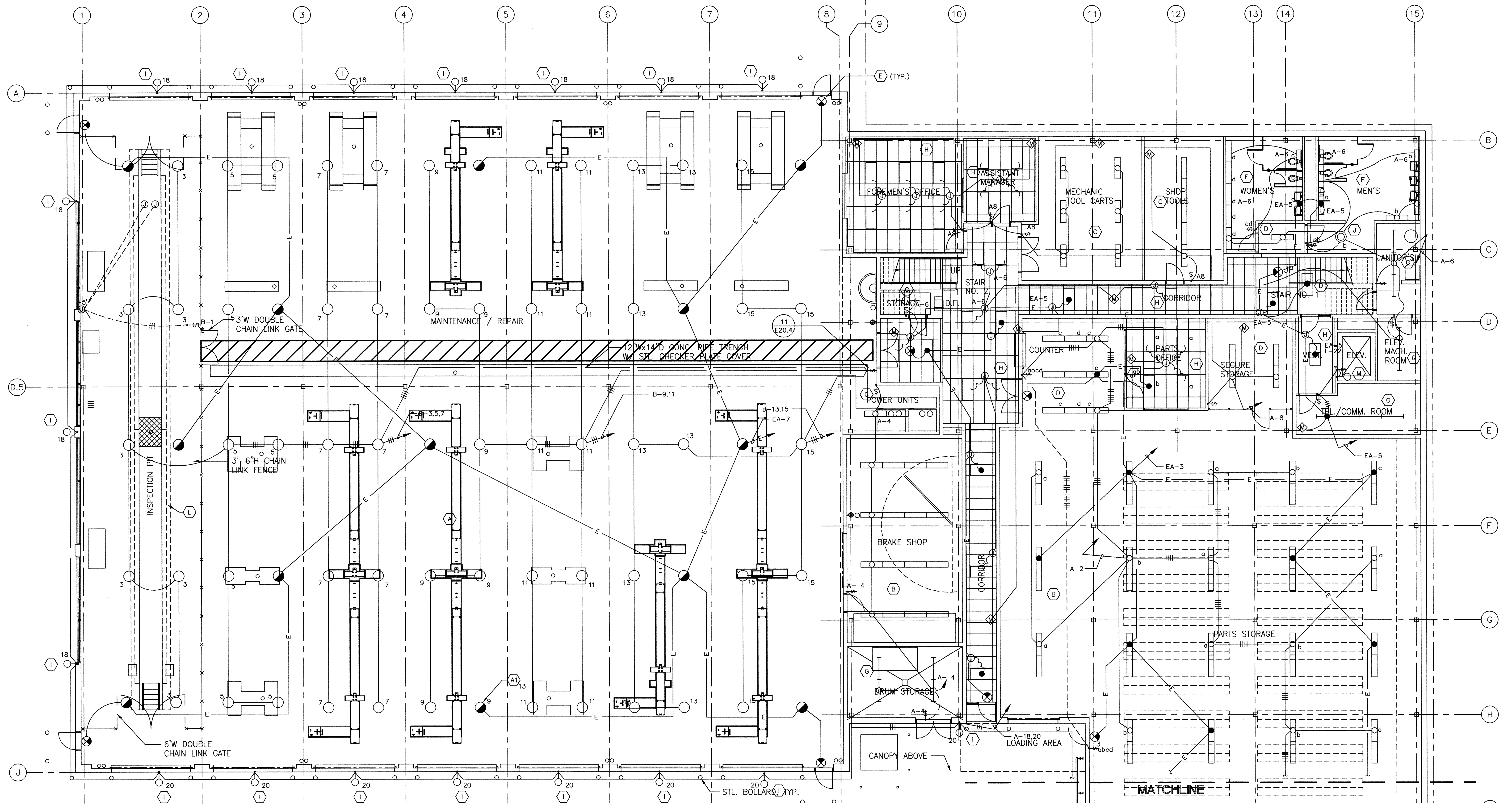
STV Incorporated
ENGINEERS & PLANNERS
1055 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

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

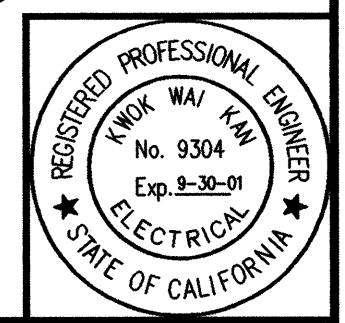


GROUND FLOOR NORTH LIGHTING PLAN

1/8"=1'-0"

1
E11.1

AS-BUILT
A. deBraul
 Contract No. BUS-443B
 Date NOV. 2000



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STV Incorporated
 ENGINEERS & PLANNERS
 1055 WILSHIRE BLVD., SUITE 1455
 LOS ANGELES, CA. 90017

DESIGNED BY
S. CONNER
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11/98
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 MTDB PRJ. ENG.

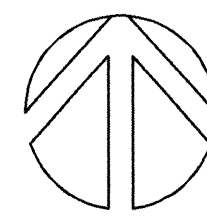
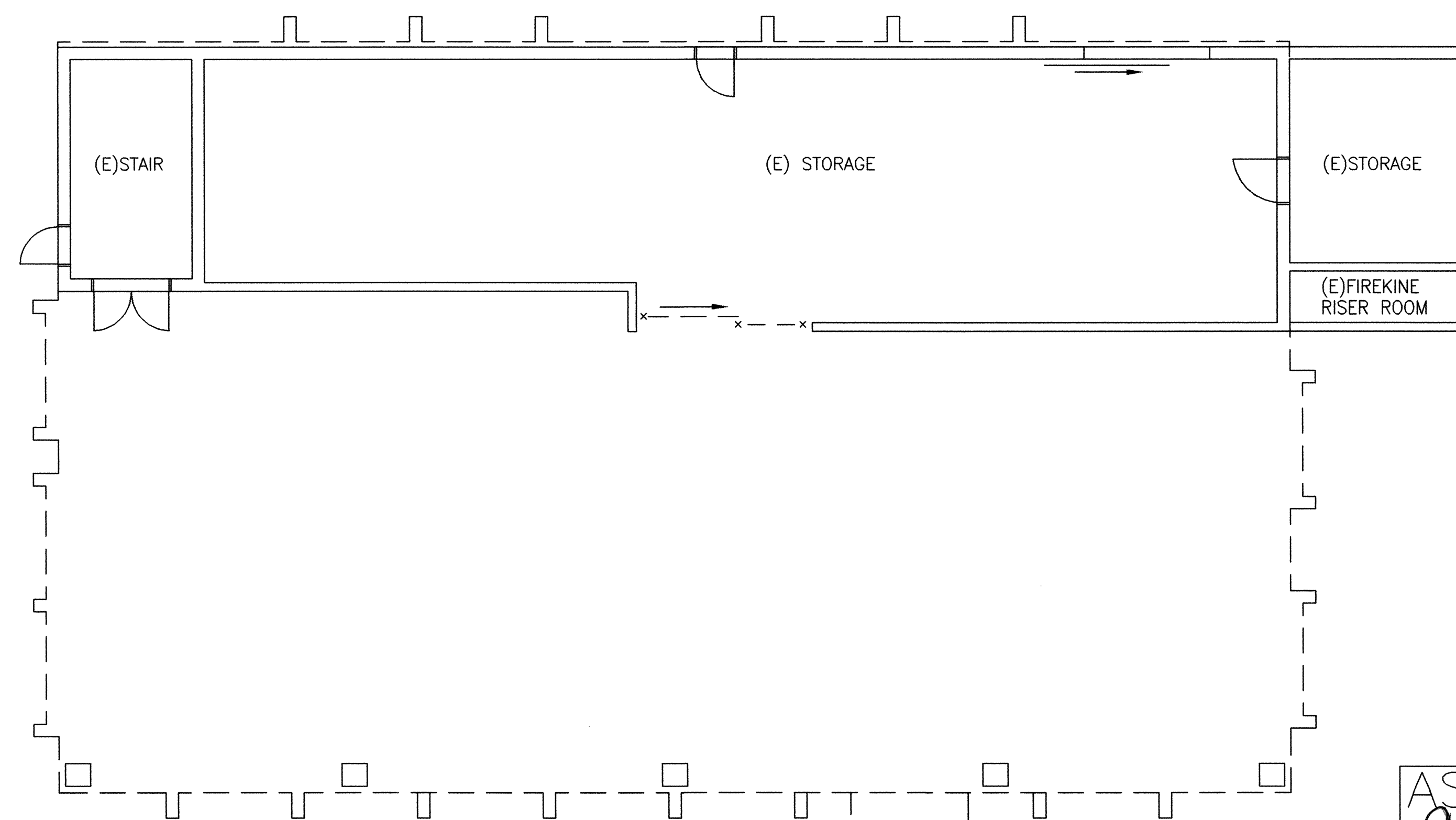
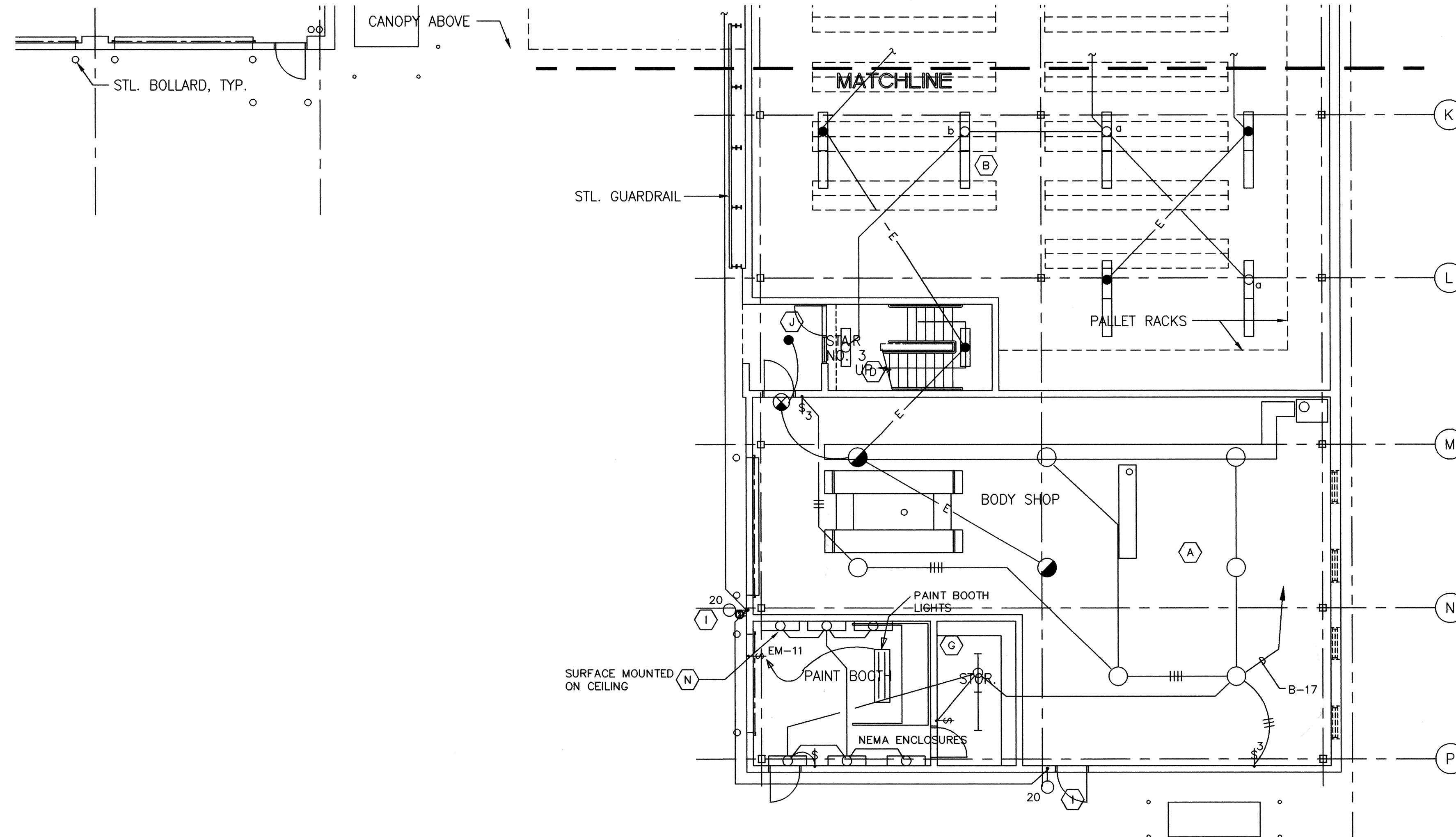
MTDB
 Metropolitan Transit Development Board
 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
 BUS MAINTENANCE FACILITY
GROUND FLOOR NORTH LIGHTING PLAN

SCALE
1/8"=1'-0"
 MTDB CONTRACT NO.
BUS-443B
 DRAWING NO. SHEET NO.
E11.1 80

NOTE:

① PROVIDE CLASS 1, DIV 1 WALL SWITCH.

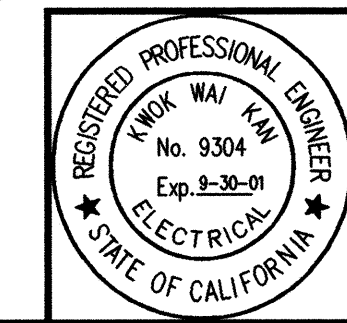


GROUND FLOOR SOUTH LIGHTING PLAN

1/8"=1'-0"

①
E11.2

AS-BUILT
A. Wilson
Contract No. BUS-443B
Date NOV. 2000



CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE



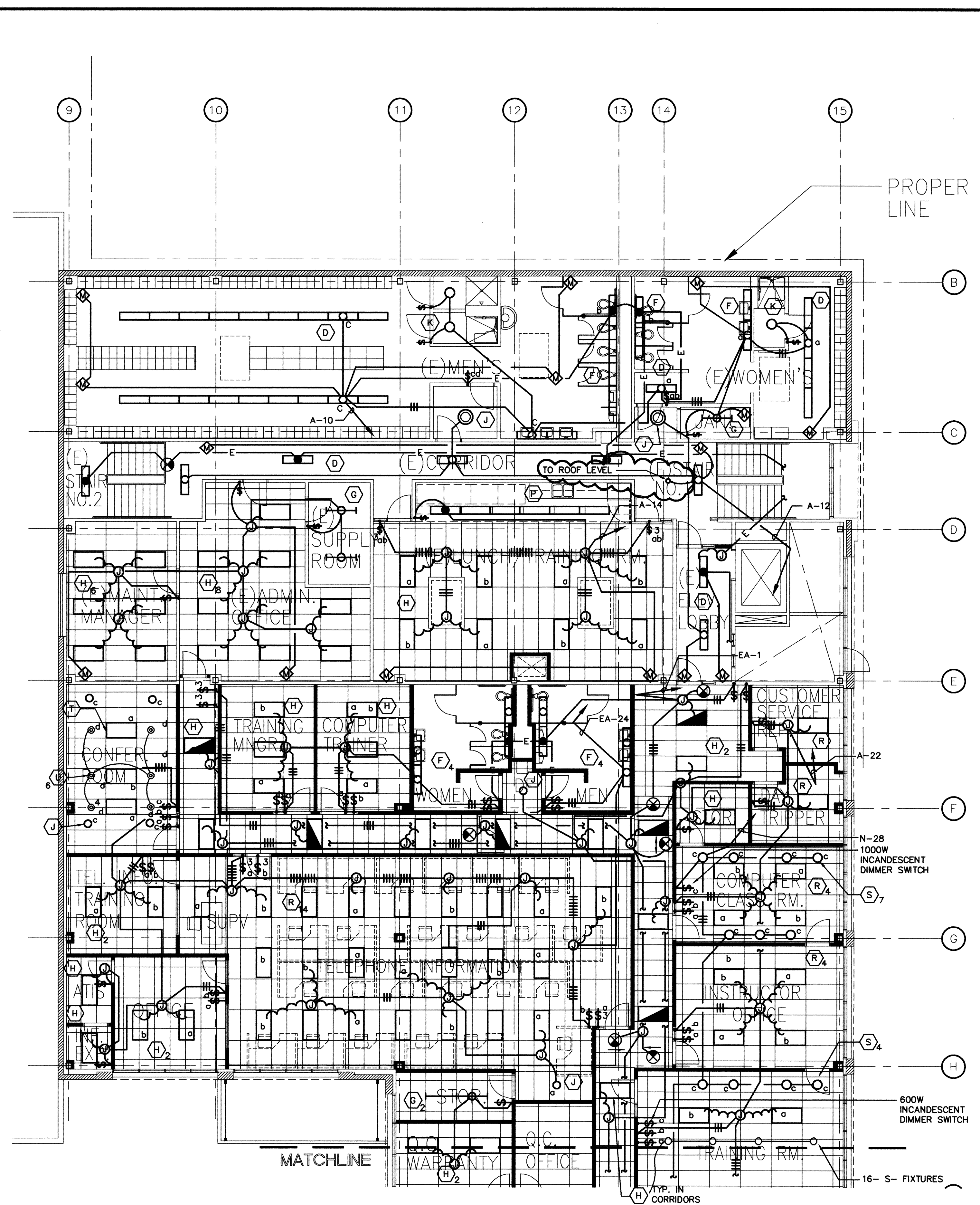
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	DATE 11/98
CHECKED BY M. NIEDERHAUS	DATE 11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

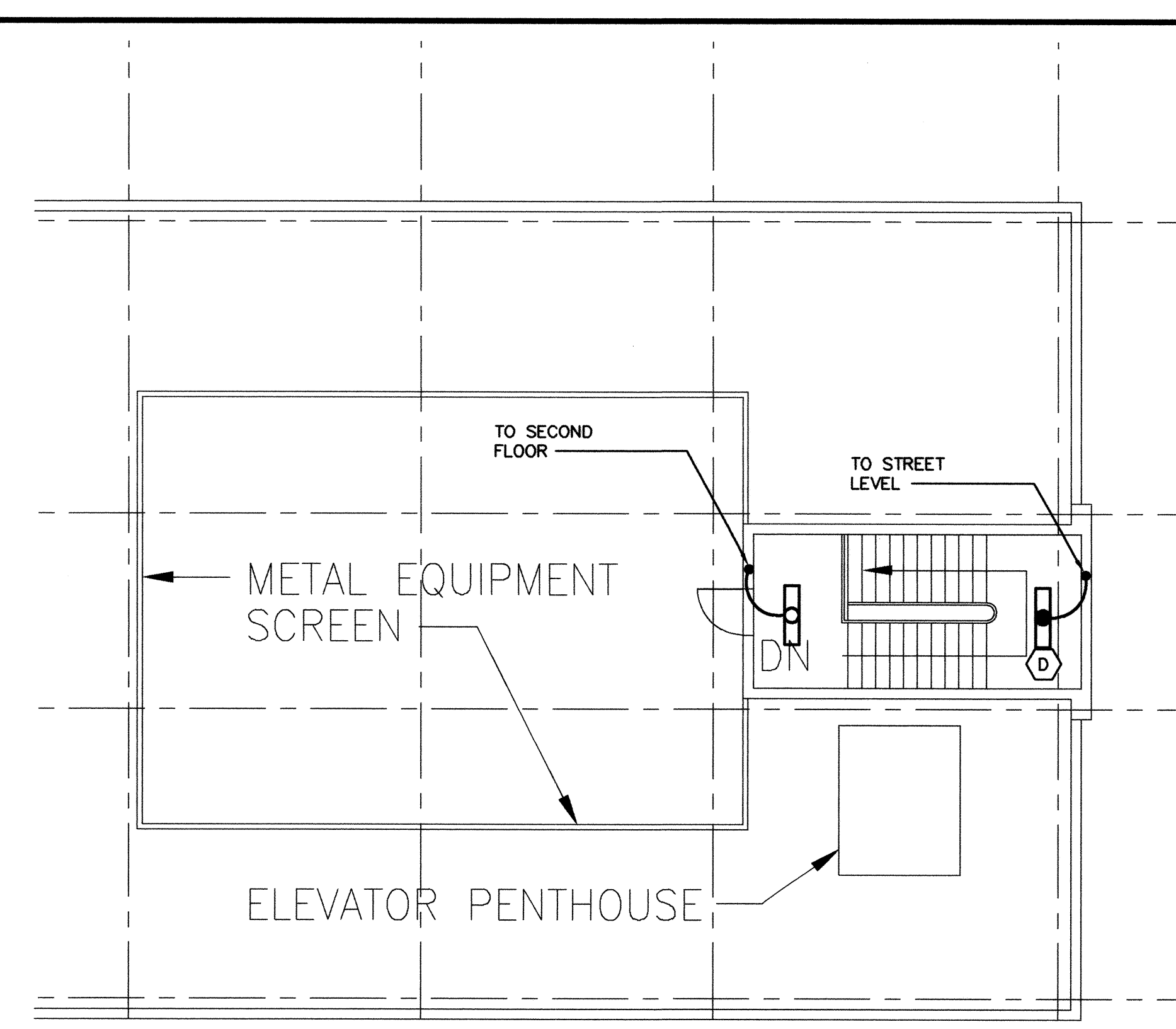
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

GROUND FLOOR SOUTH LIGHTING PLAN

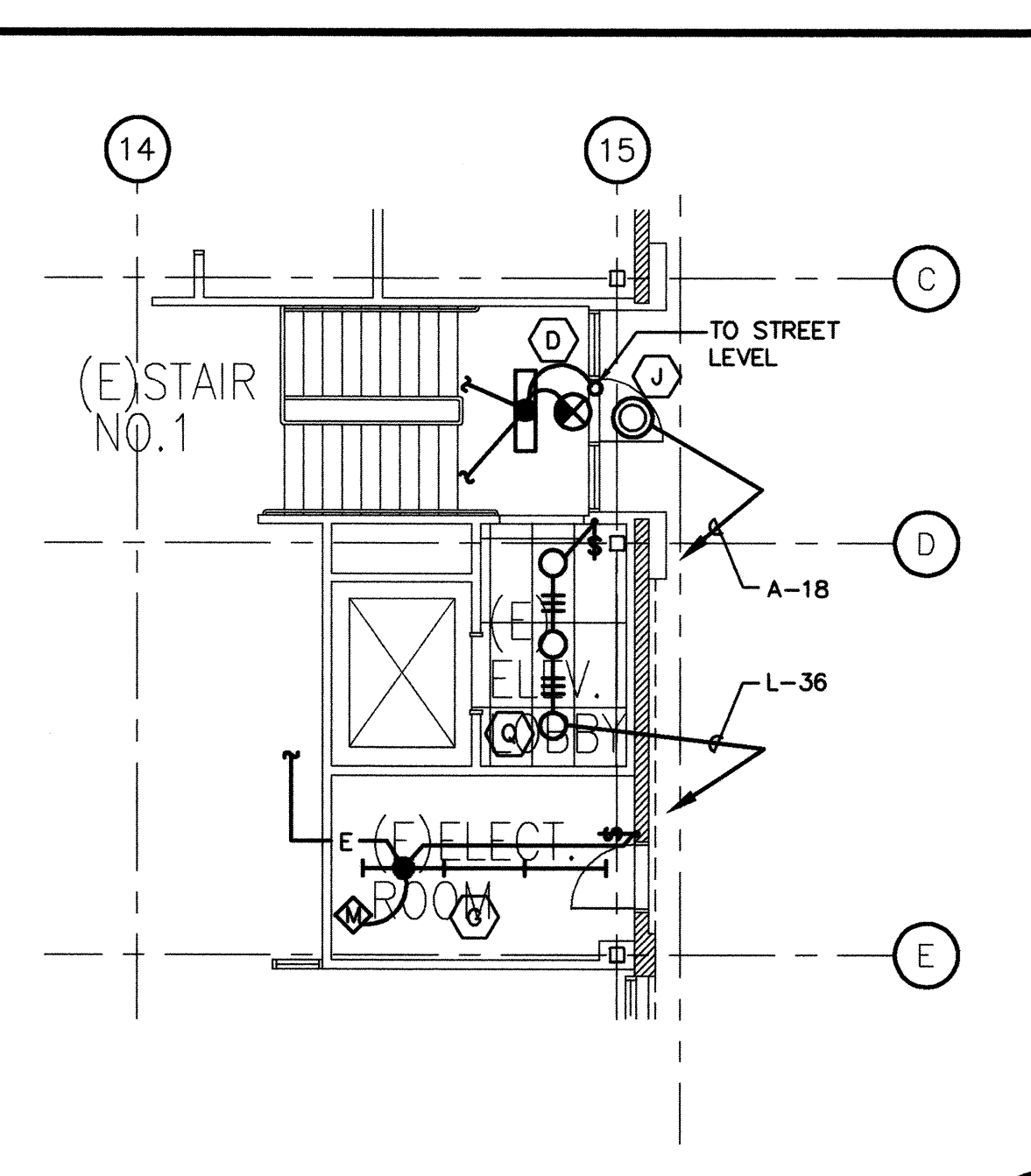
SCALE 1/8"=1'-0"	
MTDB CONTRACT NO. BUS-443B	
DRAWING NO. E11.2	SHEET NO. 81



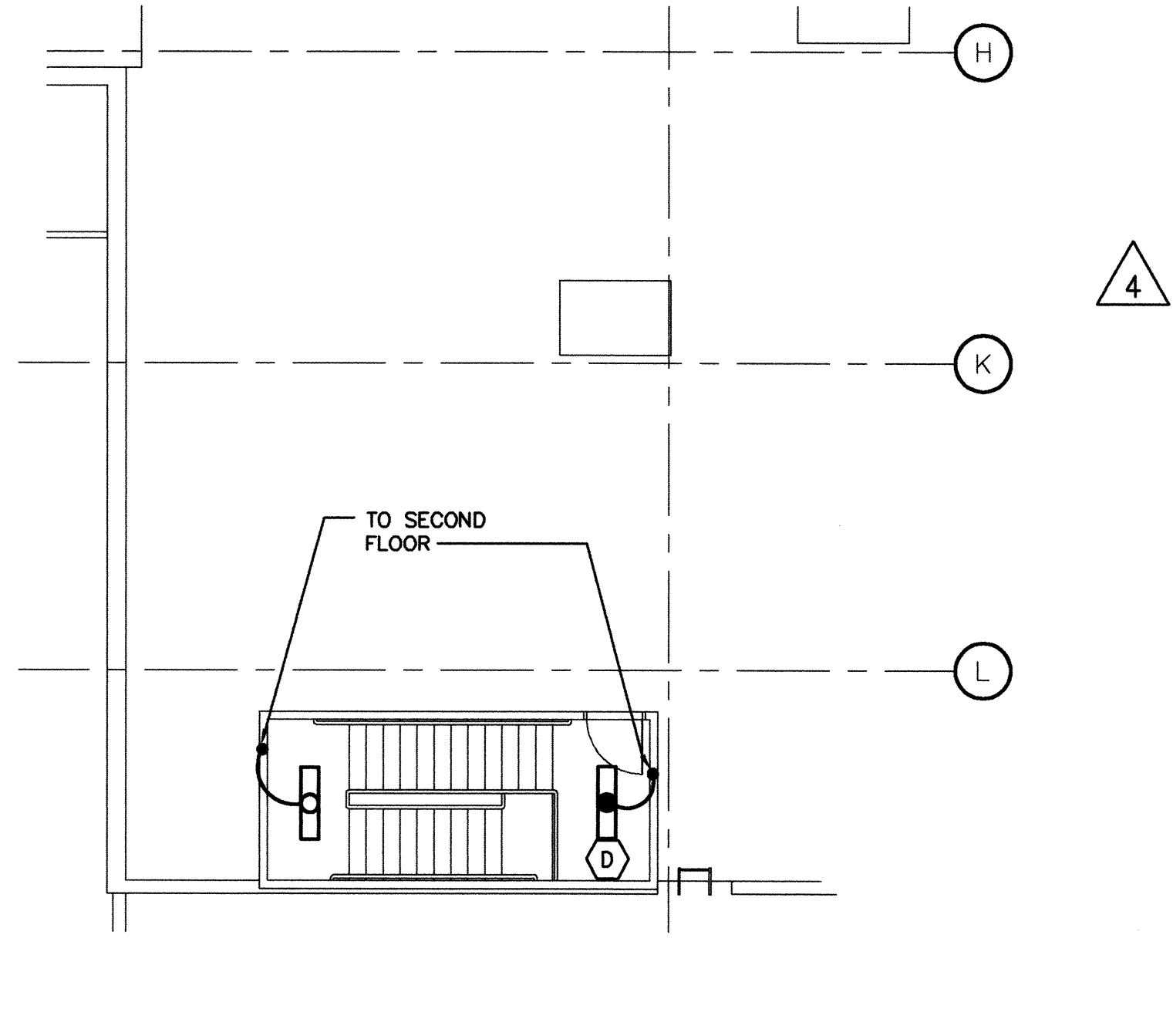
SECOND FLOOR LIGHTING PLAN
 1/8"=1'-0" **1** E11.3



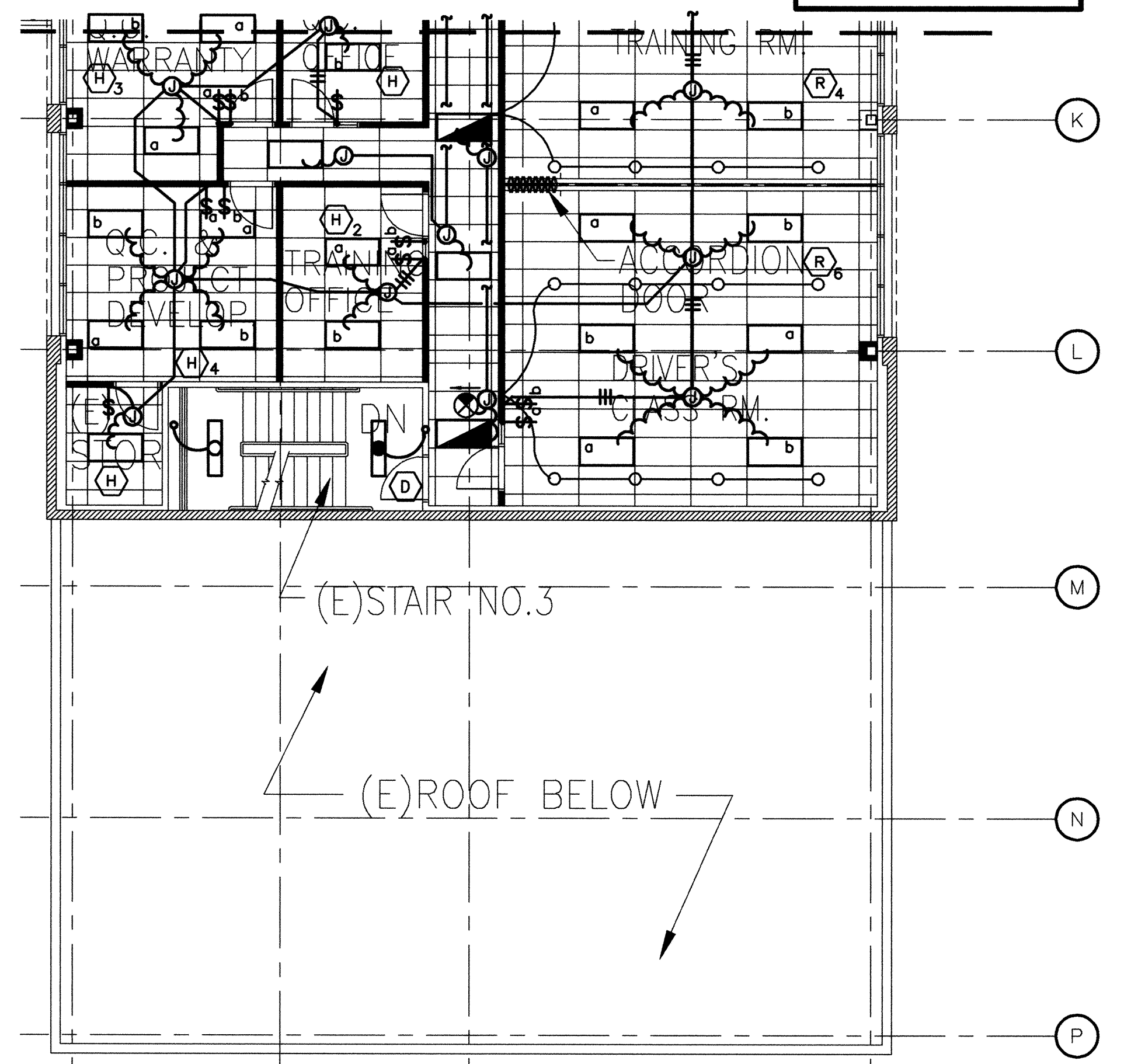
ROOF LEVEL LIGHTING PLAN
 1/8"=1'-0" **2** E11.3



STREET LEVEL LIGHTING PLAN
 1/8"=1'-0" **3** E11.3

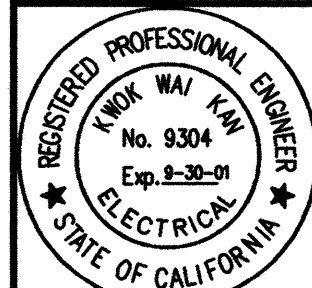


ROOF LEVEL LIGHTING PLAN
 1/8"=1'-0" **4** E11.3



SECOND FLOOR LIGHTING PLAN
 1/8"=1'-0" **5** E11.3

AS-BUILT
Q. deBorja
 Contract No. **BUS-443B**
 Date **NOV. 2000**



KAWAHO PROJECT NUMBER 1007

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

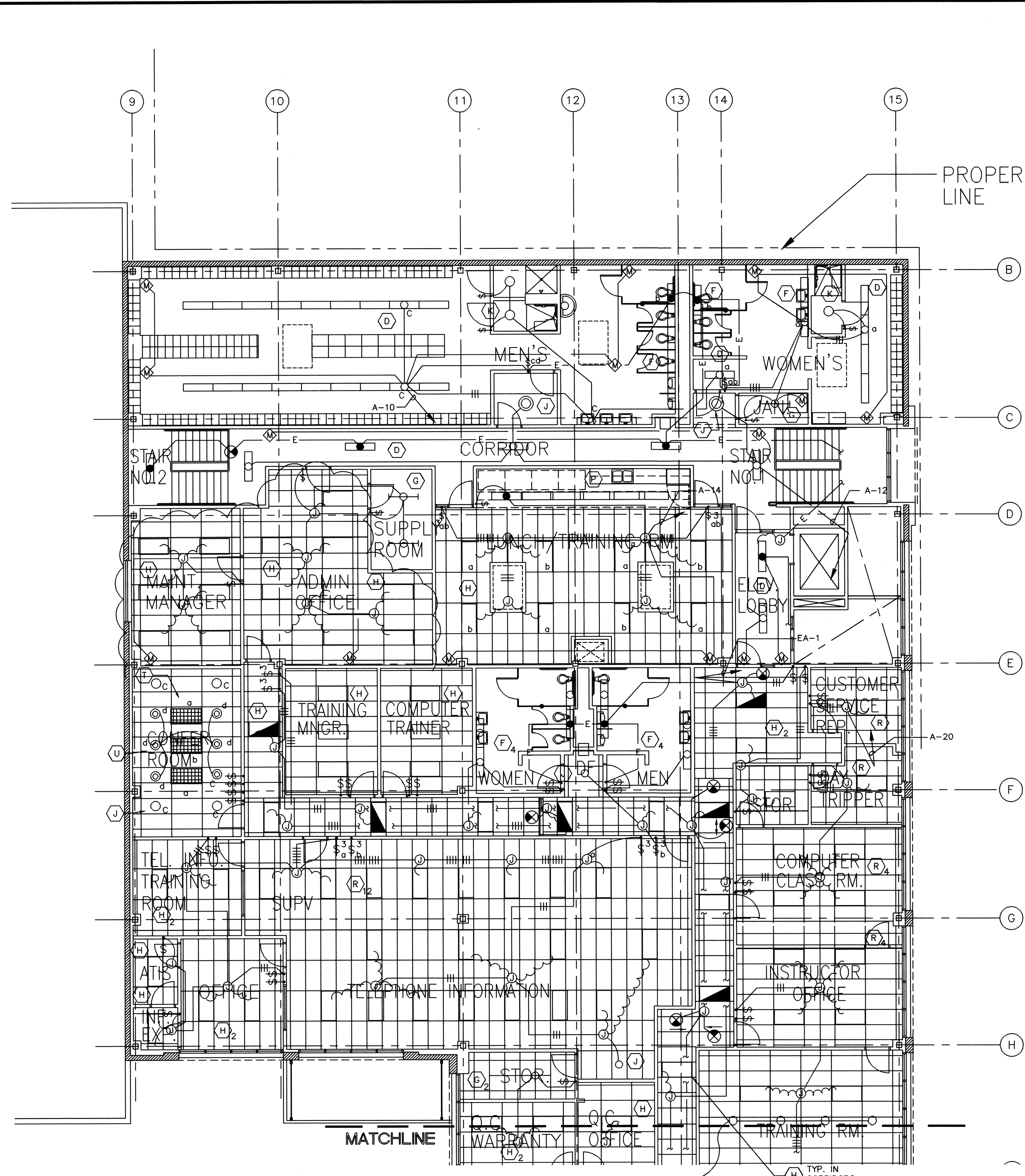
DESIGNED BY
M. NIEDERHAUS
 DRAWN BY
K. SPRADLING
 CHECKED BY
M. NIEDERHAUS
 MTDB PRJ. ENG.

DATE
6/00
6/00
6/00

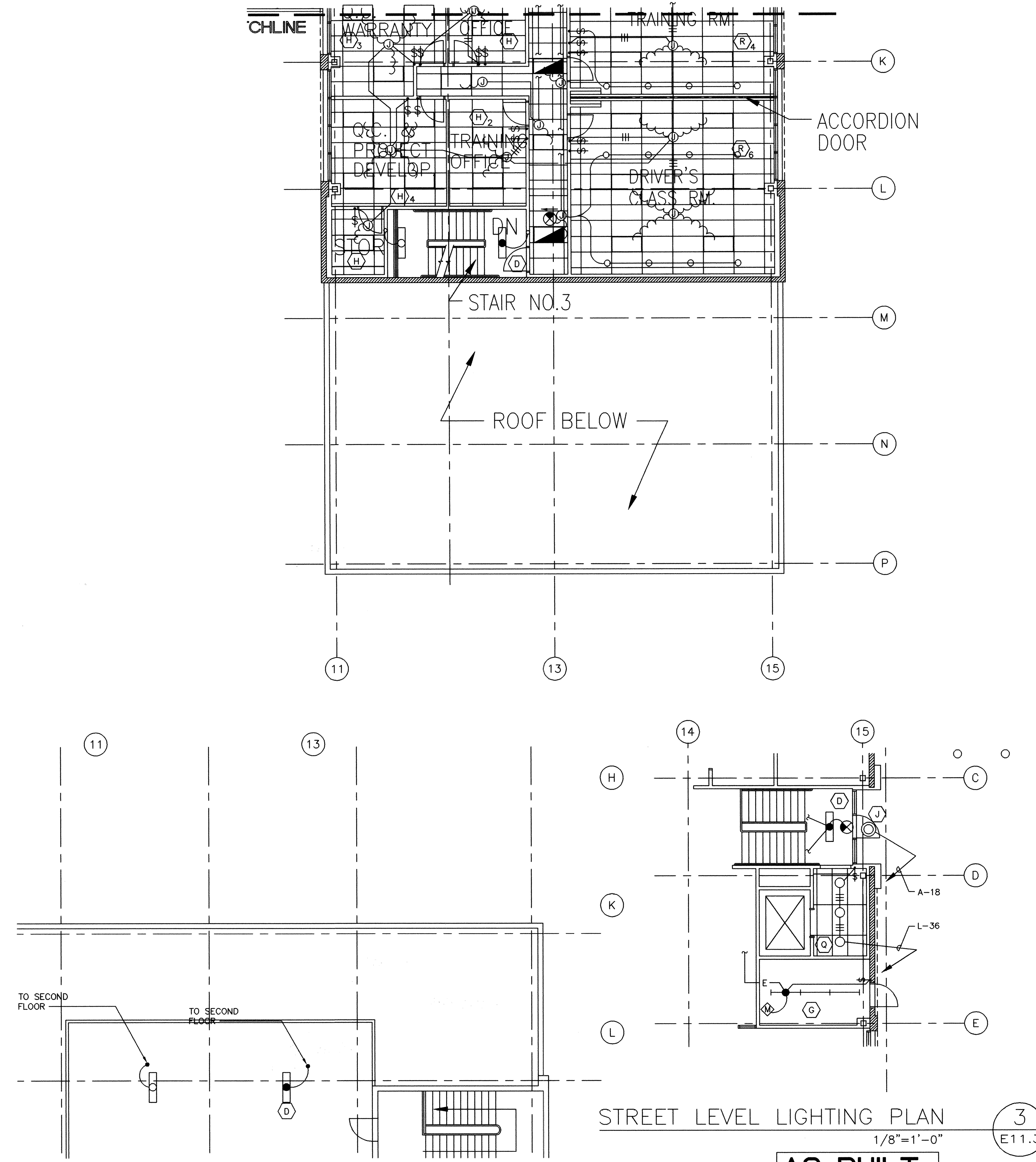
MTDB
 Metropolitan Transit Development Board
 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

**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**



SECOND FLOOR LIGHTING PLAN
 1
 1/8"=1'-0" E11.3



ROOF LEVEL LIGHTING PLAN
 2
 1/8"=1'-0" E11.3

STREET LEVEL LIGHTING PLAN
 3
 1/8"=1'-0" E11.3

AS-BUILT
A. Oberman
 Contract No. **BUS-443B**
 Date **NOV. 2000**

REGISTERED PROFESSIONAL ENGINEER
 No. 9304
 Exp. 8-30-07
 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

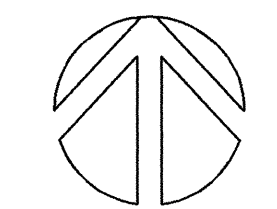
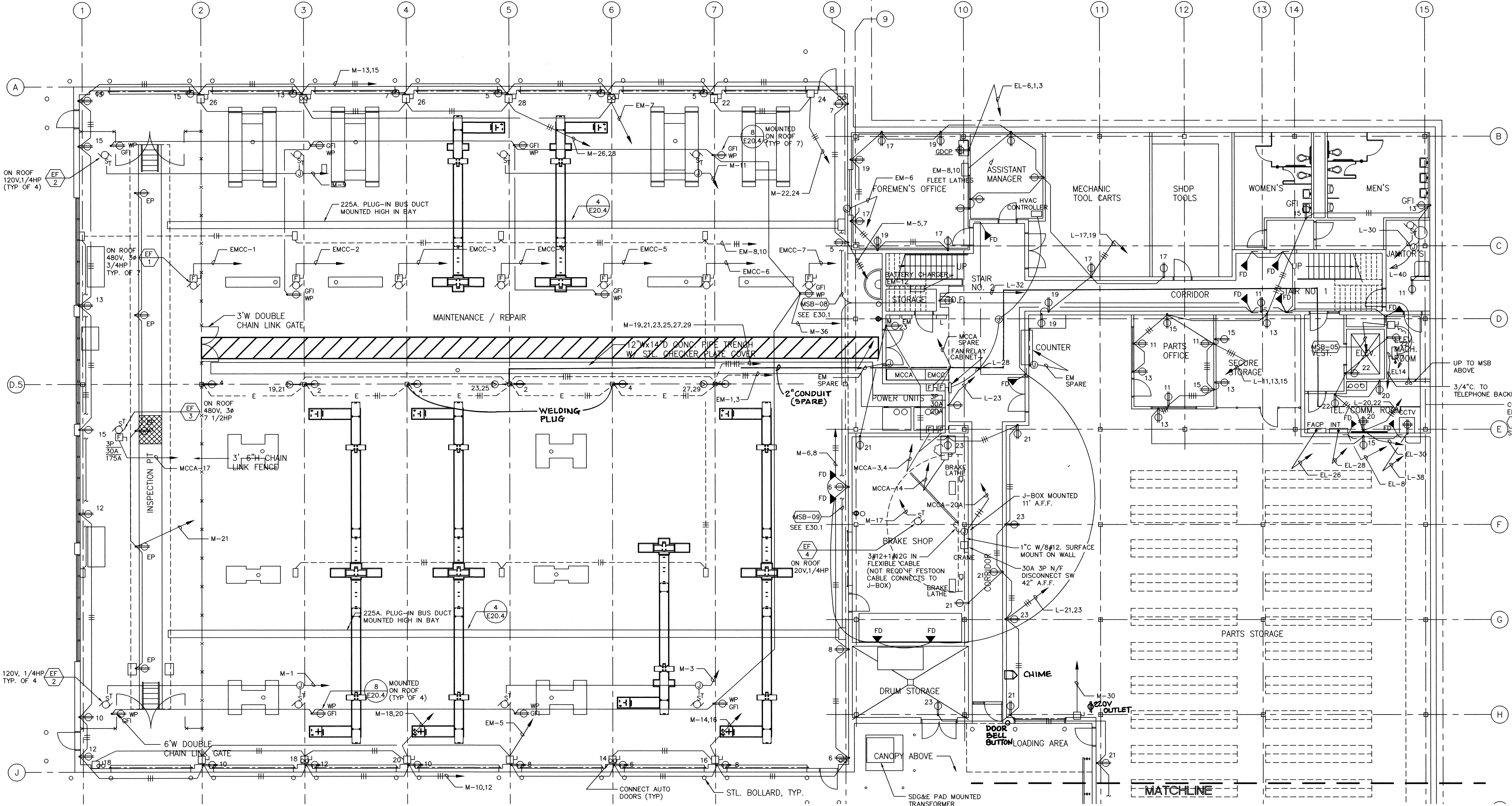
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
 Metropolitan Transit Development Board
 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION
 BUS MAINTENANCE FACILITY

SECOND FLOOR LIGHTING PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E11.3
SHEET NO. 82

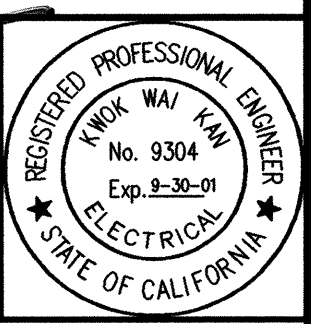


GROUND FLOOR NORTH POWER PLAN

1/8"=1'-0"

1
E12.1

AS-BUILT
A. deland
 Contract No. BUS-443B
 Date NOV. 2000



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

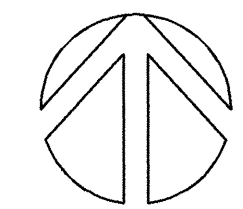
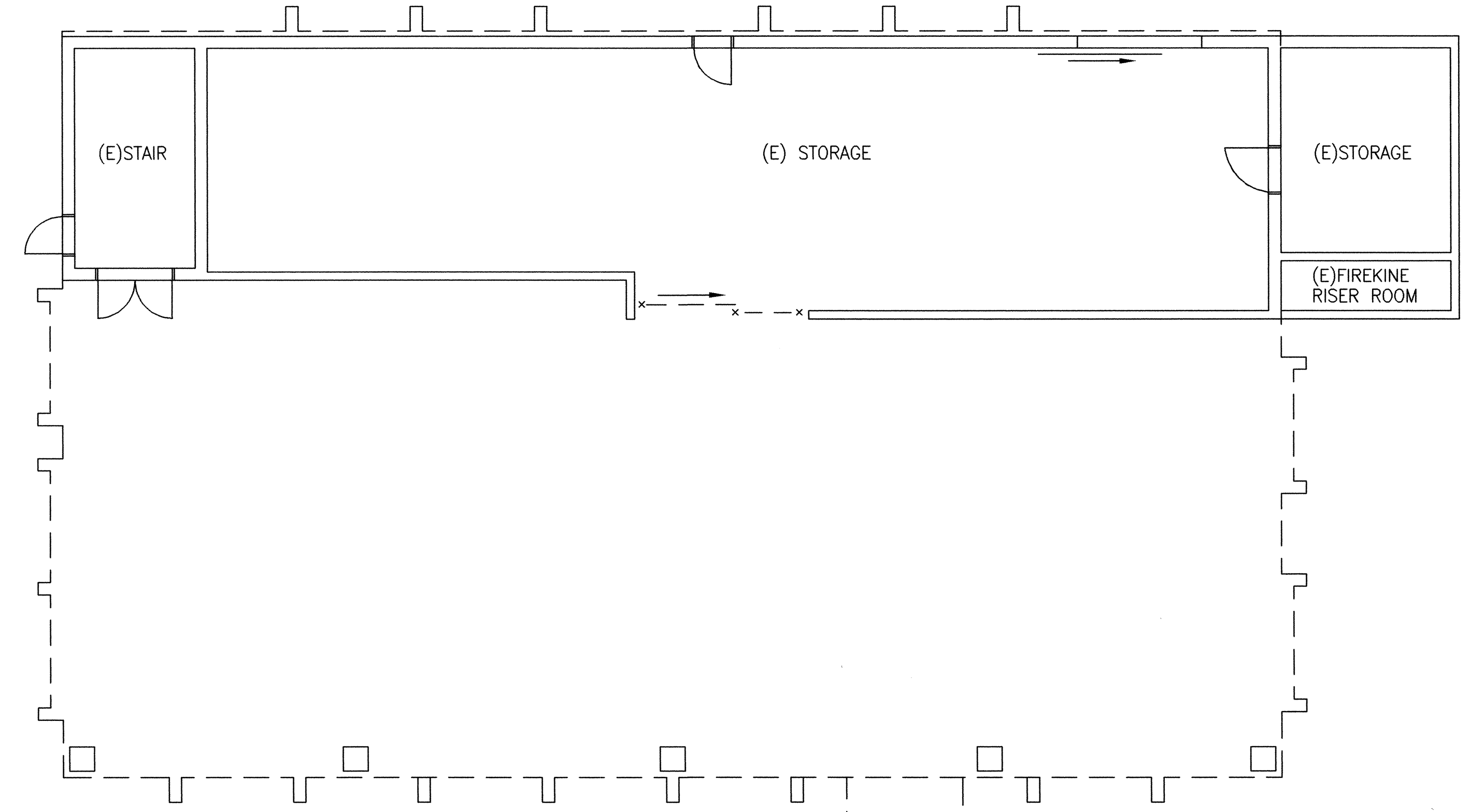
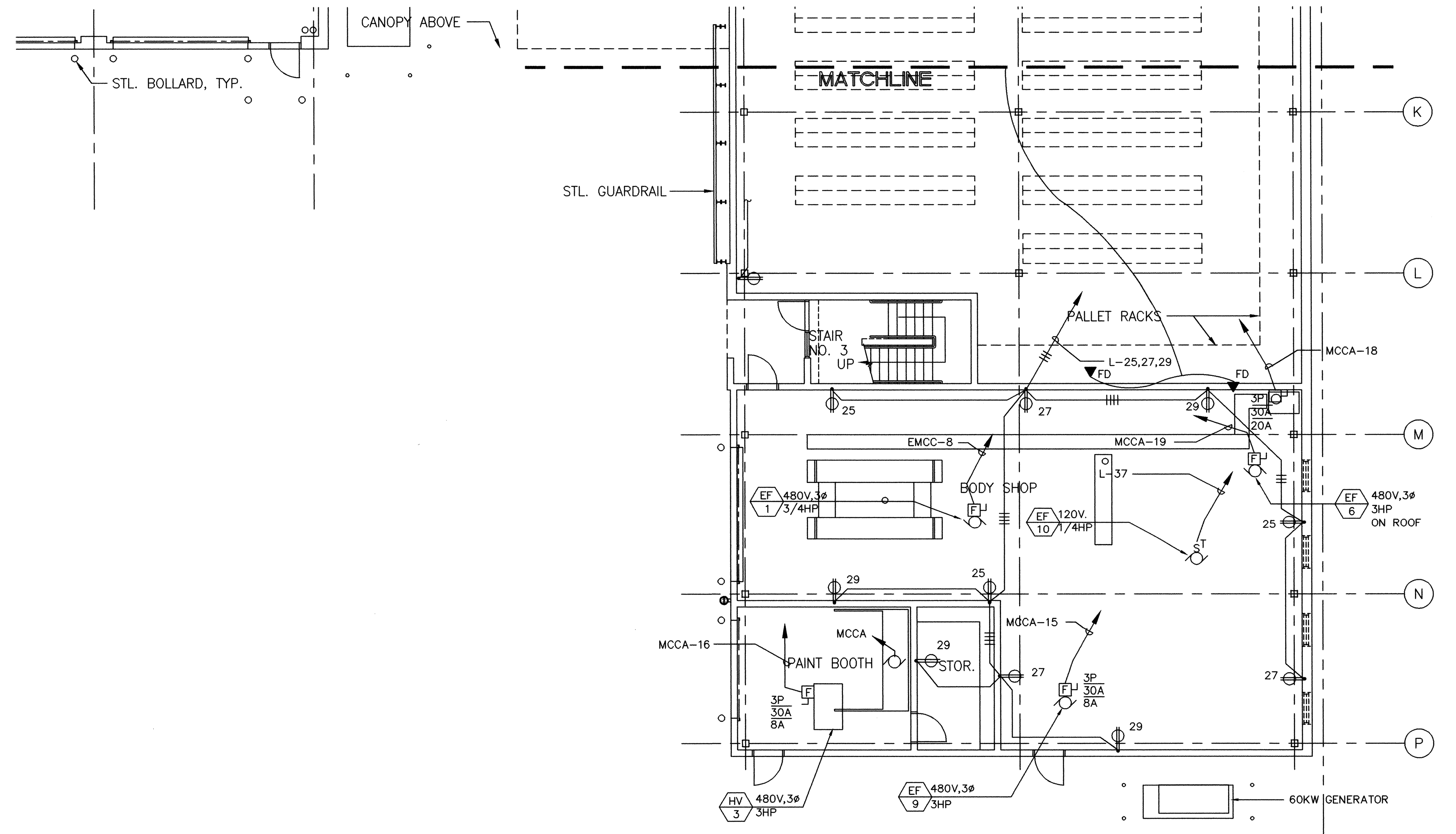
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	DATE 11/98
CHECKED BY M. NIEDERHAUS	DATE 11/98
MTDB PRJ. ENG.	

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 POWER PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. SHEET NO. E12.1 83

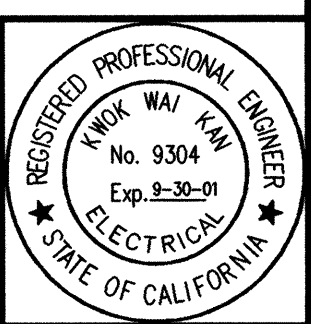


GROUND FLOOR SOUTH POWER PLAN

1/8"=1'-0"

1
E12.2

AS-BUILT
A. delano
Contract No. BUS-443B
Date NOV. 2000



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

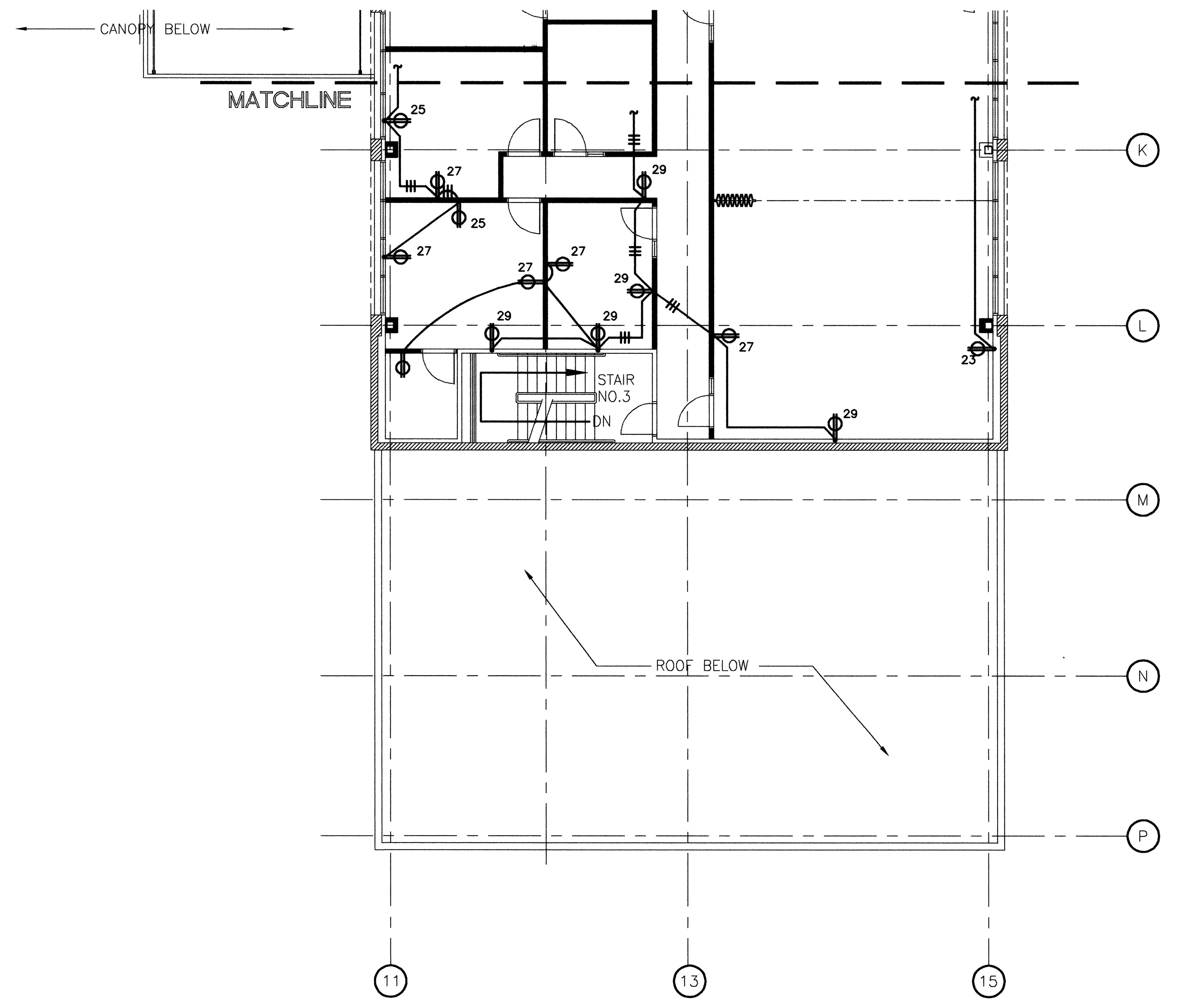
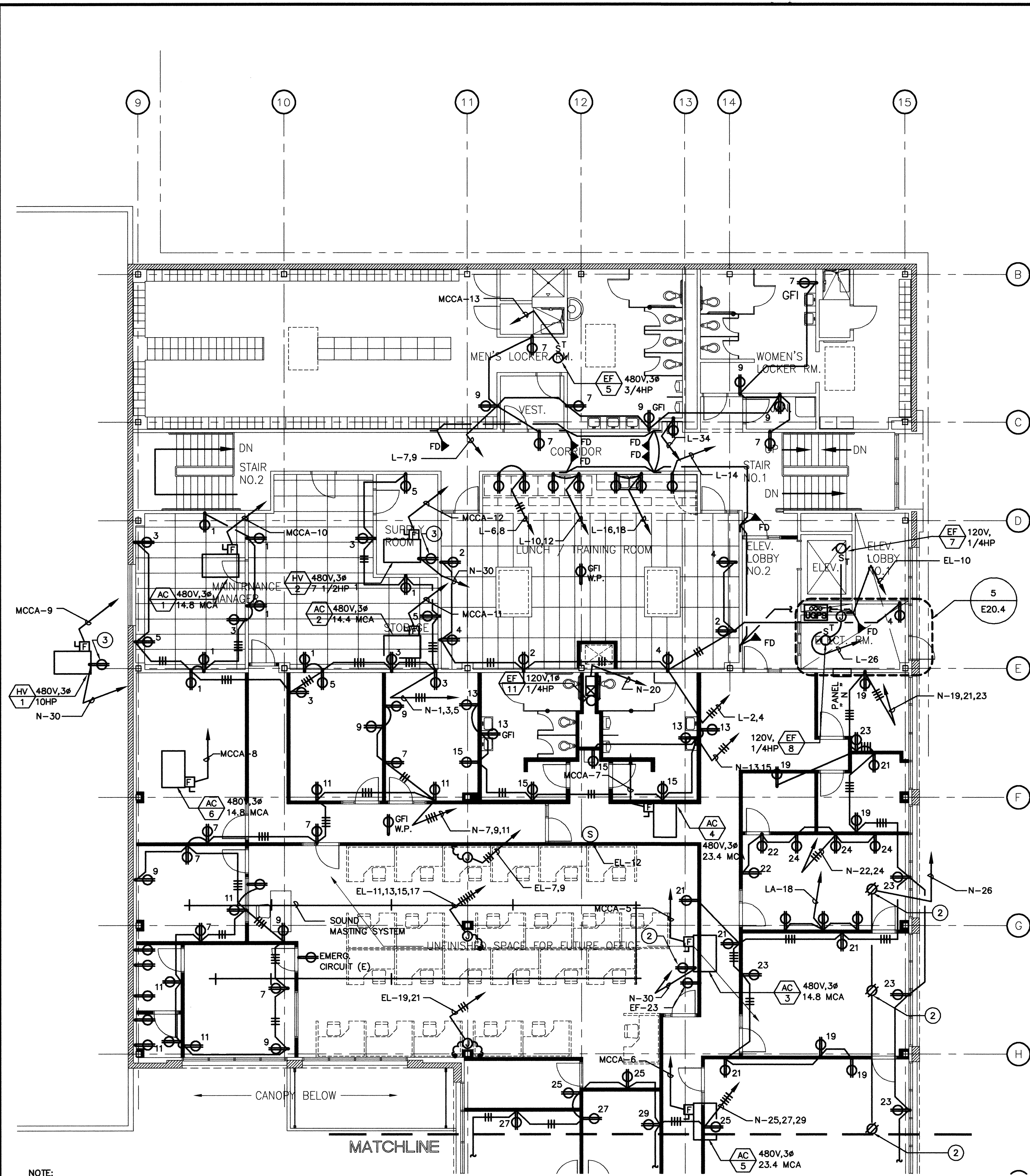
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	DATE 11/98
CHECKED BY M. NIEDERHAUS	DATE 11/98
MTDB PRJ. ENG.	

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. SHEET NO. E12.2 84

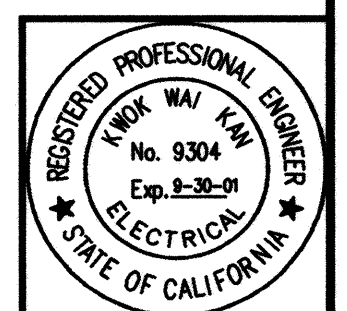


NOTE:
SEE MCC SCHEDULES FOR SWITCH AND FUSE SIZE FOR DISCONNECTS. ALL ROOF MOUNTED DISCONNECTS SHALL BE WEATHERPROOF.

- NOTE:
- CONNECT TO RECEPTACLE RACEWAY.
 - PROVIDE DUPLEX RECEPTACLE FLUSH IN CEILING FOR OVERHEAD PROJECTOR. VERIFY EXACT LOCATION WITH OWNER REPRESENTATIVE PRIOR TO INSTALLATION.
 - PROVIDE GROUND FAULT PROTECTED DUPLEX RECEPTACLE IN WEATHERPROOF ENCLOSURE, ON ROOF, PER MECHANICAL CODE.

SECOND FLOOR POWER PLAN
1
E12.3

AS-BUILT
A. de la Cruz
 Contract No. **BUS-443B**
 Date **NOV. 2000**



KANRAD PROJECT NUMBER: 9007

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS

STV Incorporated
ENGINEERS & PLANNERS
1005 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA. 90017

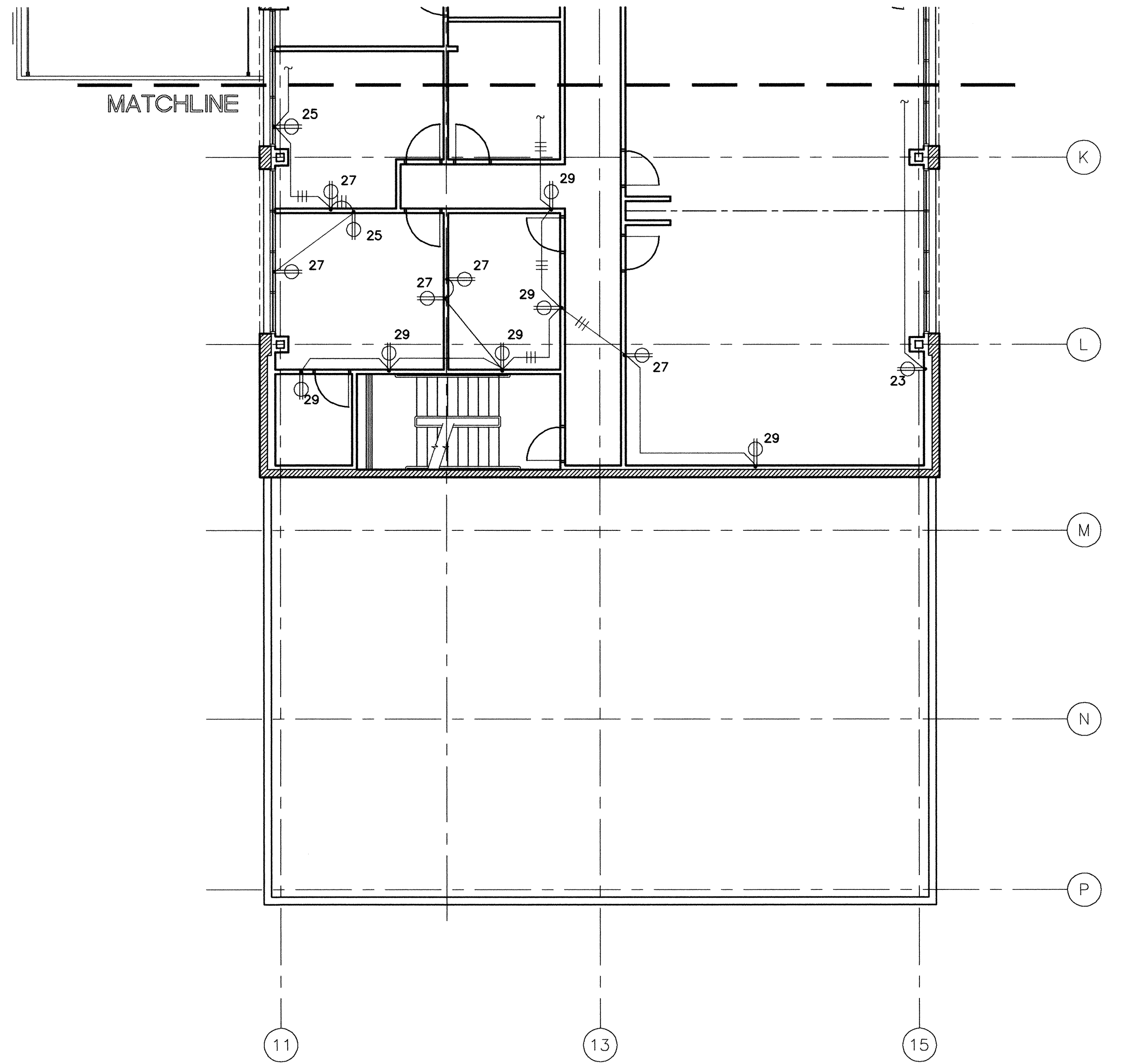
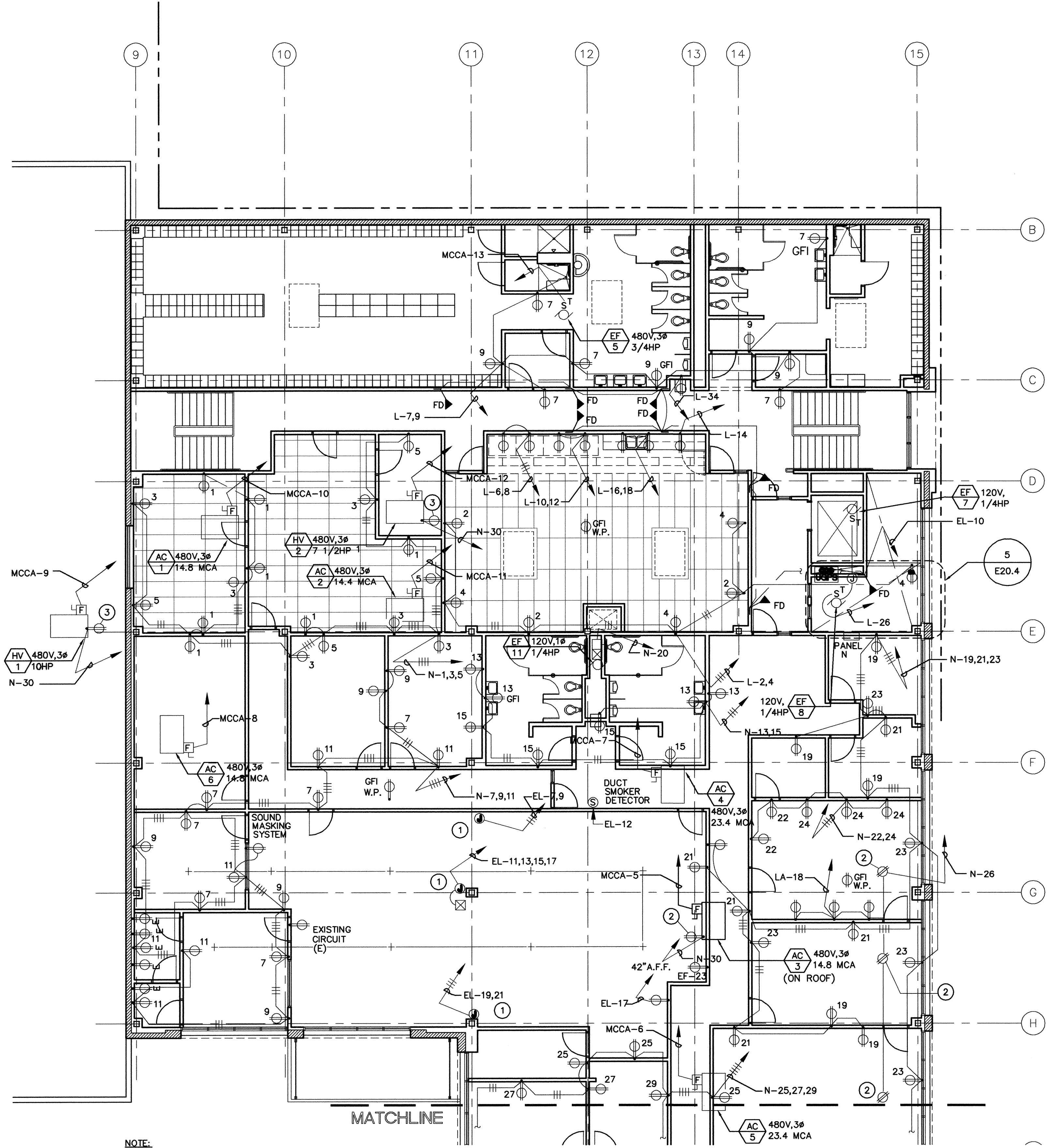
DESIGNED BY
M. NIEDERHAUS
 DATE
6/00
 DRAWN BY
K. SPRADLING
 CHECKED BY
M. NIEDERHAUS
 MTDB PRJ. ENG.

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**

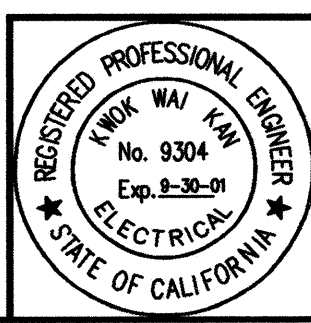


NOTE:
SEE MCC SCHEDULES FOR SWITCH AND FUSE SIZE FOR DISCONNECTS. ALL ROOF MOUNTED DISCONNECTS SHALL BE WEATHERPROOF.

- 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
E12.3

AS-BUILT
A. detemul
 Contract No. BUS-443B
 Date NOV. 2000



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

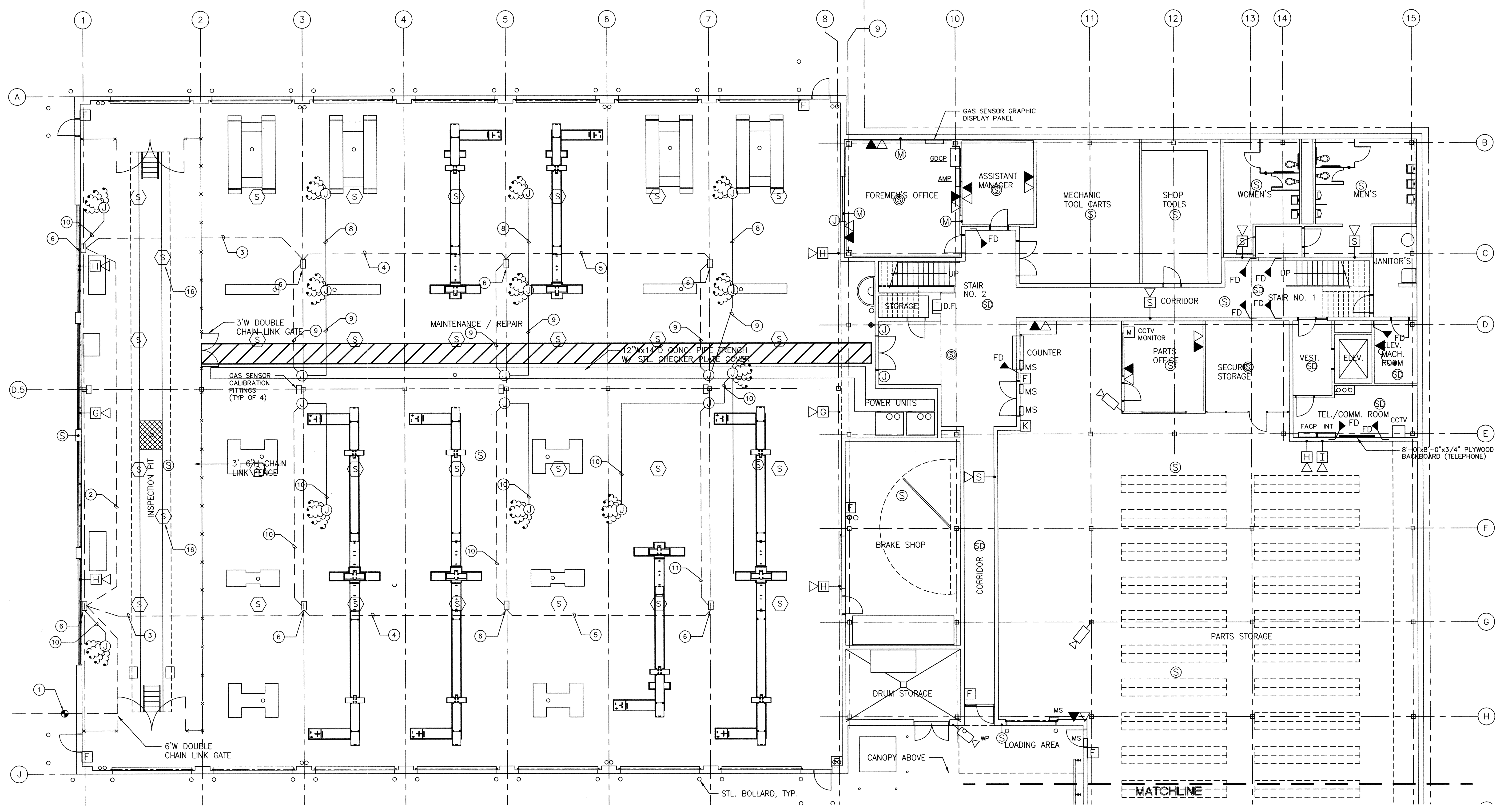
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

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

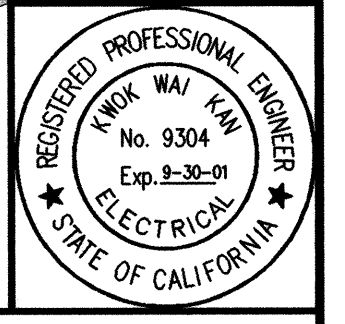


NOTE:
SEE NOTES AND GENERAL NOTES
ON SHEET E20.1

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
A. de la Cruz
Contract No. BUS-443B
Date NOV. 2000



CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE

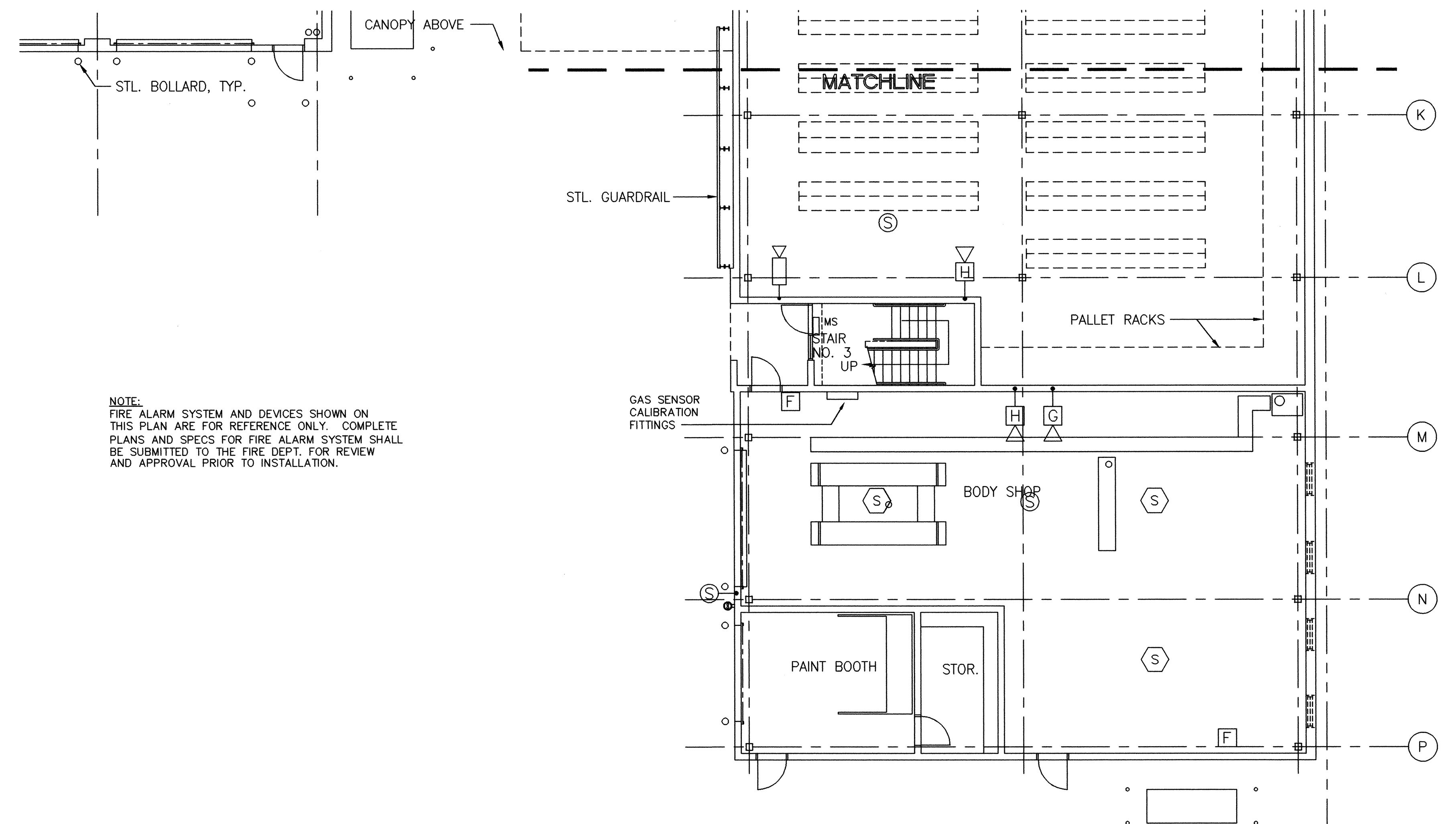
STV Incorporated
ENGINEERS & PLANNERS
1085 WILSHIRE BLVD., SUITE 1455
LOS ANGELES, CA 90017

DESIGNED BY
S. CONNER
DATE 11/98
DRAWN BY
K. SPRADLING
11/98
CHECKED BY
M. NIEDERHAUS
11/98
MTDB PRJ. ENG.

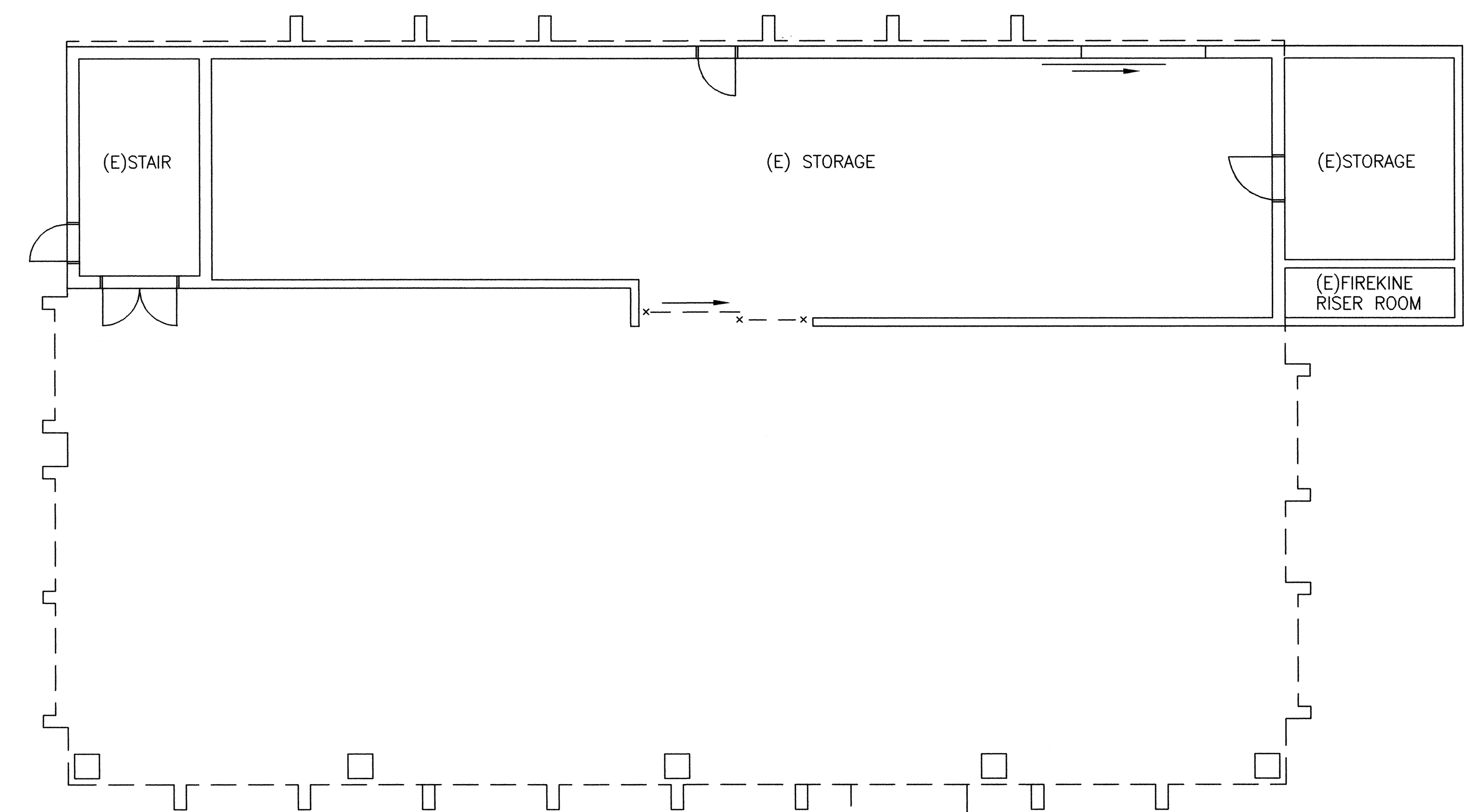
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

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

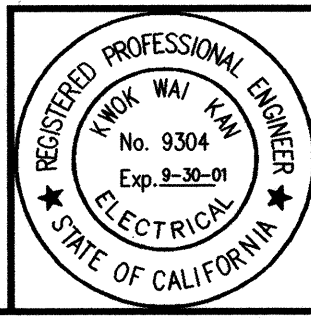


NOTE:
FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.



GROUND FLOOR SOUTH SIGNAL PLAN 1
1/8"=1'-0" E13.2

AS-BUILT
A. deBorja
Contract No. BUS-443B
Date NOV. 2000



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

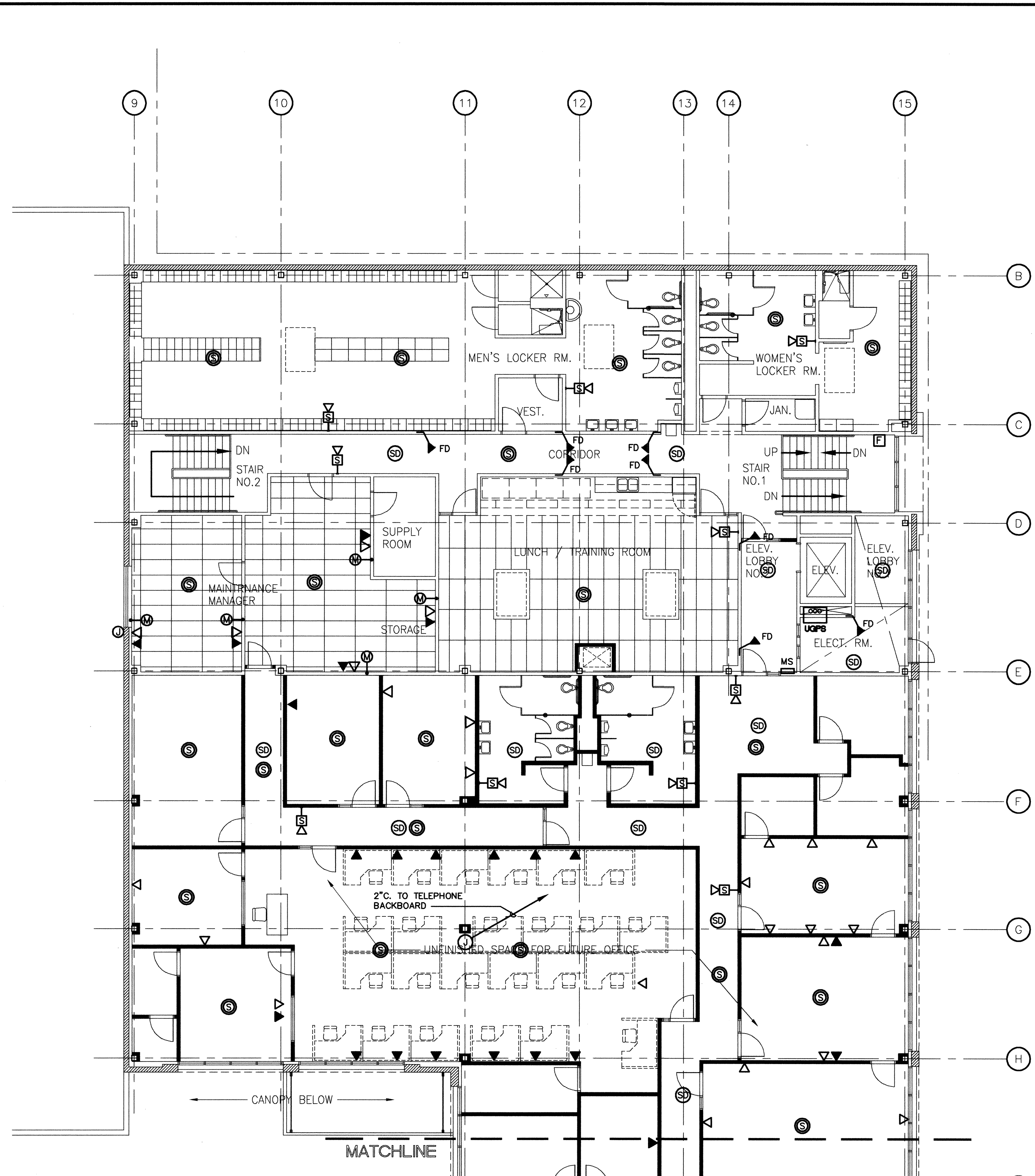
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	DATE 11/98
CHECKED BY M. NIEDERHAUS	DATE 11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

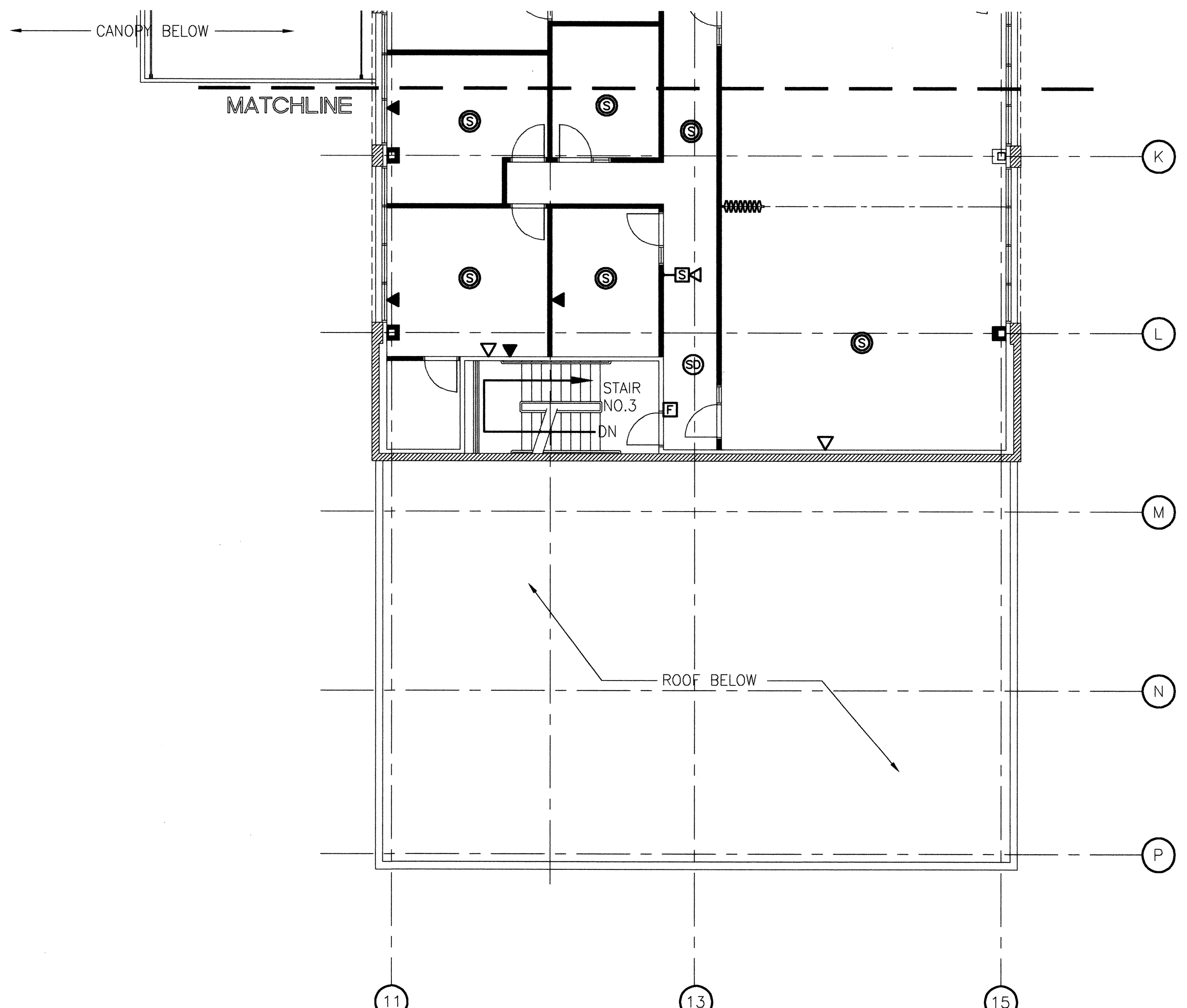
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

GROUND FLOOR SOUTH SIGNAL PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E13.2
SHEET NO. 87



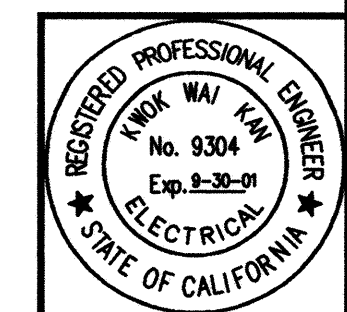
 **SECOND FLOOR SIGNAL PLAN** 1
1/8"=1'-0" E13.3




STREET LEVEL SIGNAL PLAN 2
1/8"=1'-0" 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
A. delacruz
 Contract No. BUS-443B
 Date NOV. 2000

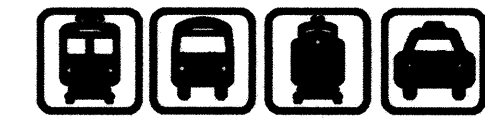


KAWAID PROJECT NUMBER 16007

CONSTRUCTION CHANGE TABLE		
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
	4/7/00	SECOND FLOOR INTERIOR IMPROVEMENTS



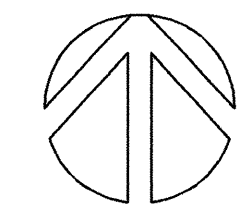
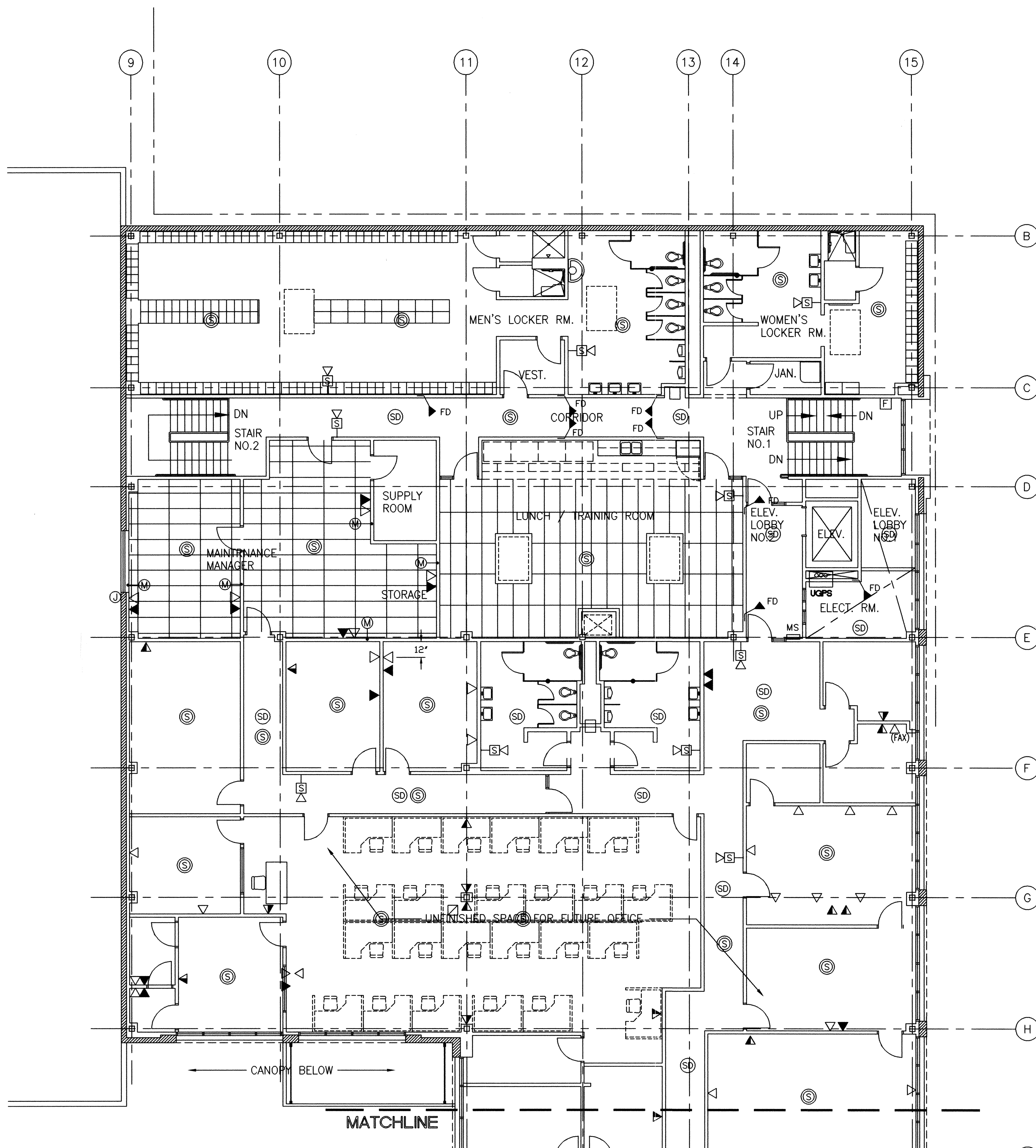
DESIGNED BY
 M. NIEDERHAUS
 DATE 6/00
 DRAWN BY
 K. SPRADLING
 6/00
 CHECKED BY
 M. NIEDERHAUS
 6/00
 MTDB PRJ. ENG.

MTDB

Metropolitan Transit Development Board
 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

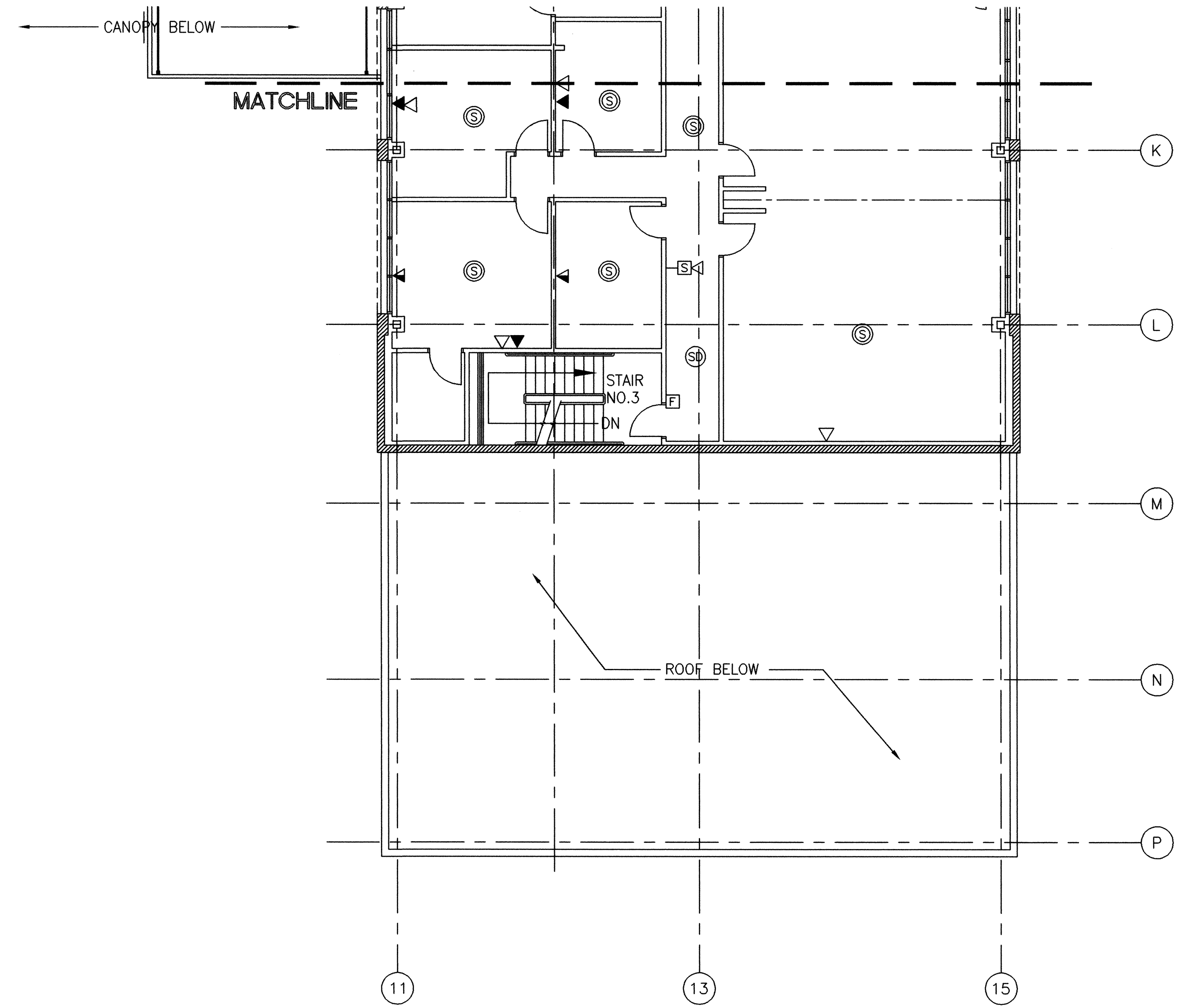
**IMPERIAL AVENUE DIVISION
 BUS MAINTENANCE FACILITY**

SECOND FLOOR SIGNAL PLAN

SCALE 1/8"=1'-0"	
MTDB CONTRACT NO.	
DRAWING NO. E13.3	SHEET NO. 88

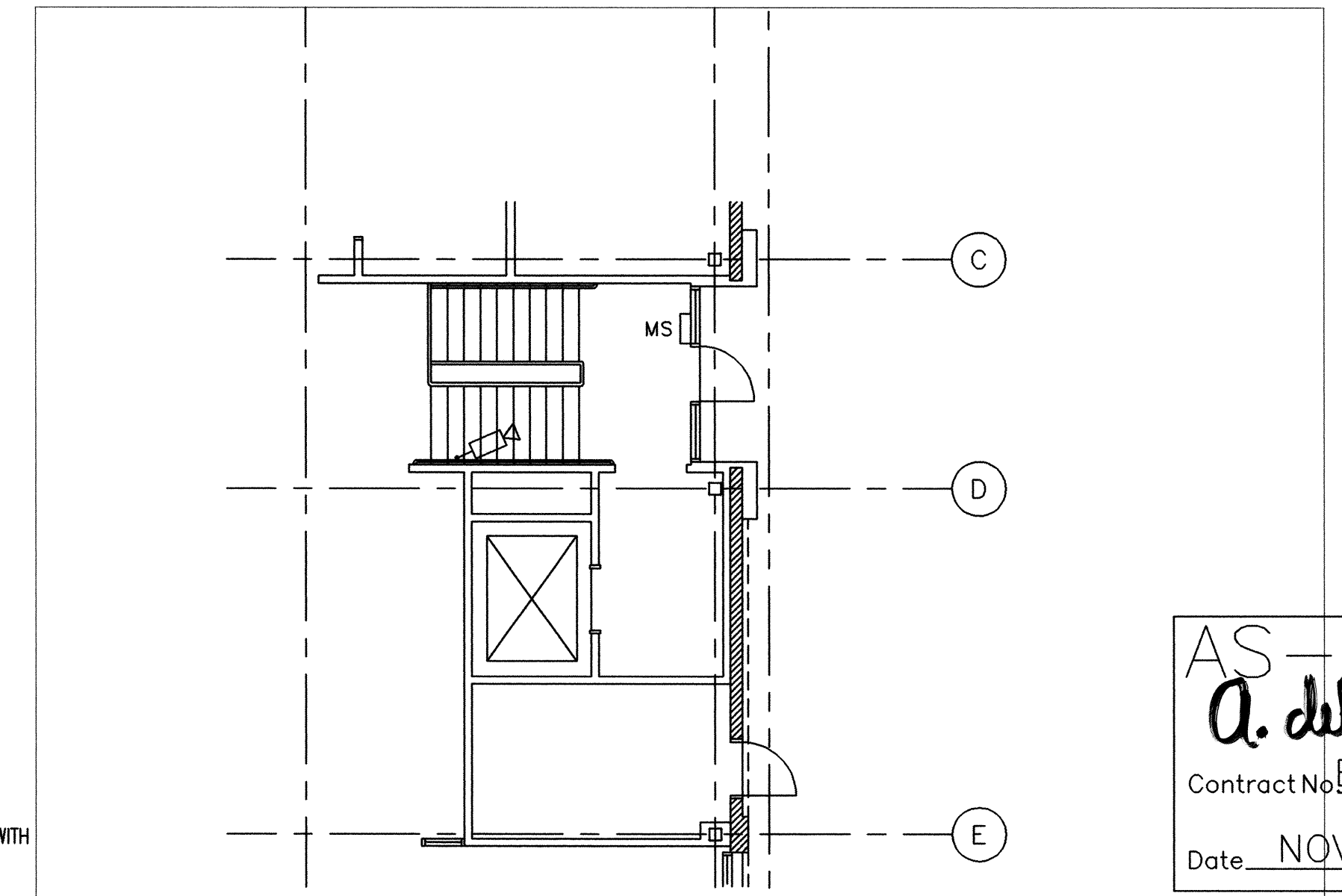


SECOND FLOOR SIGNAL PLAN
1/8"=1'-0" E13.3



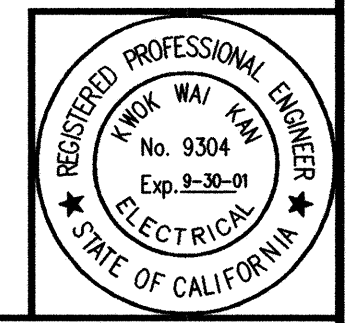
NOTE:
FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

- ◁ TELEPHONE OUTLET 15" A.F.F. UNLESS OTHERWISE NOTED, WITH 1/2" STUBBED ABOVE CEILING.
- ▲ COMPUTER DATA PORT 15" A.F.F. UNLESS OTHERWISE NOTED, WITH 1/2" STUBBED ABOVE CEILING.
- ▲ DUPLEX TEL./ DATA PORT 15" A.F.F. UNLESS OTHERWISE NOTED, WITH 1/2" STUBBED ABOVE CEILING.



STREET LEVEL SIGNAL PLAN
1/8"=1'-0" E13.3

AS-BUILT
A. J. J. J.
Contract No. BUS-443B
Date NOV. 2000



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

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
SECOND FLOOR SIGNAL PLAN

SCALE 1/8"=1'-0"
MTDB CONTRACT NO. BUS-443B
DRAWING NO. SHEET NO. E13.3 88

LIGHTING FIXTURE SCHEDULE

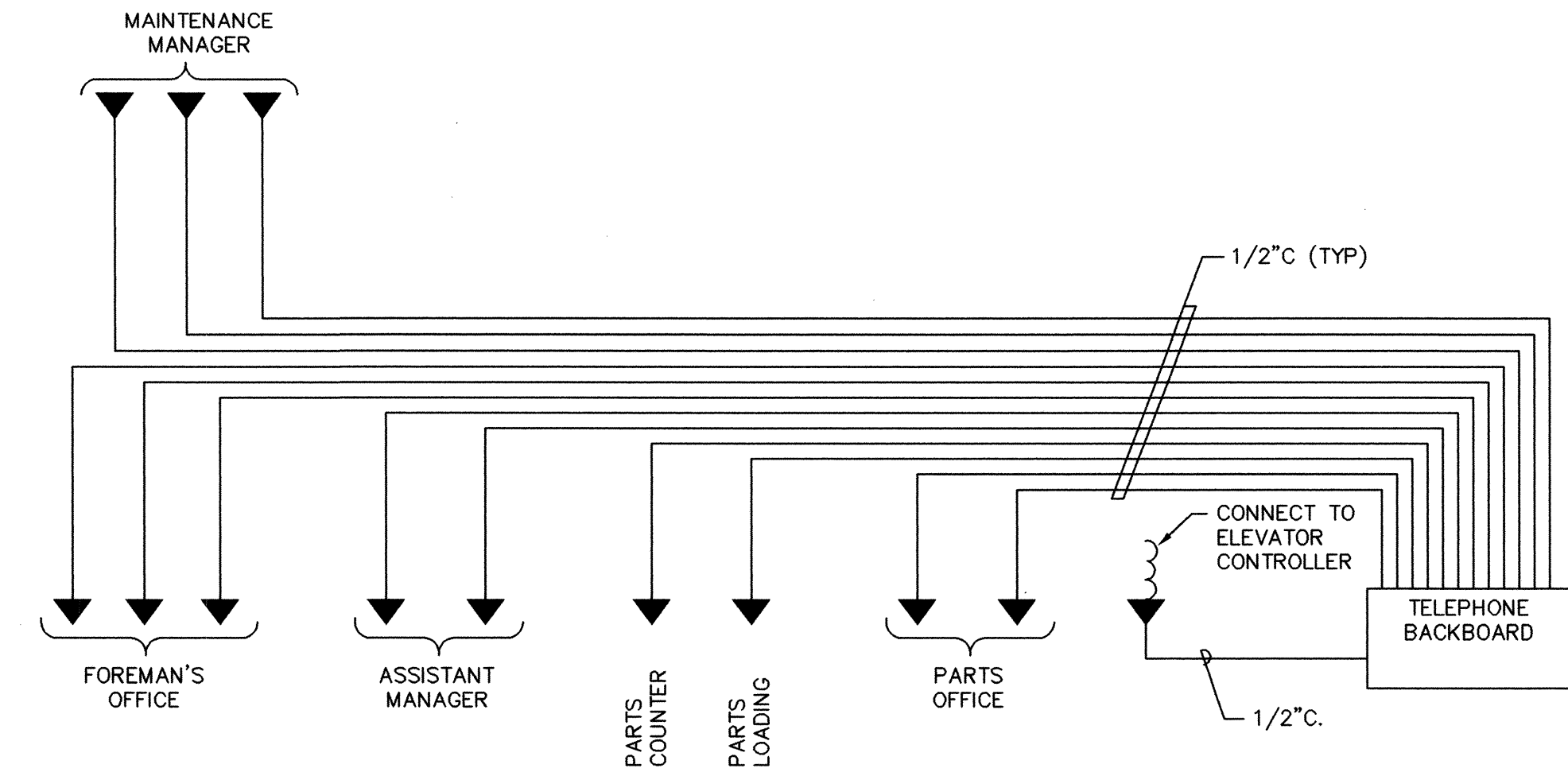
TYPE	FIXTURE					VOLTS			LAMPS			MOUNTING					DESCRIPTION	MFR & CATALOG NO.	
	FLUOR	INCAN	HPS	LPS	MH	LED	120	277	480	NO.	TYPE	WATTS	REC	SURE	PEND	WALL			POLE
A					X		X			1	250W M.H.	295			X			HIGH BAY INDUSTRIAL WITH BOROSILICATE GLASS OPTICS, 25% UPLIGHT & 75% DOWNLIGHT FIXTURE TO BE MOUNTED 20' A.F.F.	HOLOPHANE #CG250MPXPDB
A1					X		X			1	250W M.H. 250W QUARTZ	295			X			SAME AS FIXTURE TYPE "A" EXCEPT WITH A QUARTZ RESTRIKE SYSTEM	HOLOPHANE #CG250MPXPDB-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 #LOMLEDSWIR120/277EL
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 #LGF2/26DTT7RWFLL277GEB
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

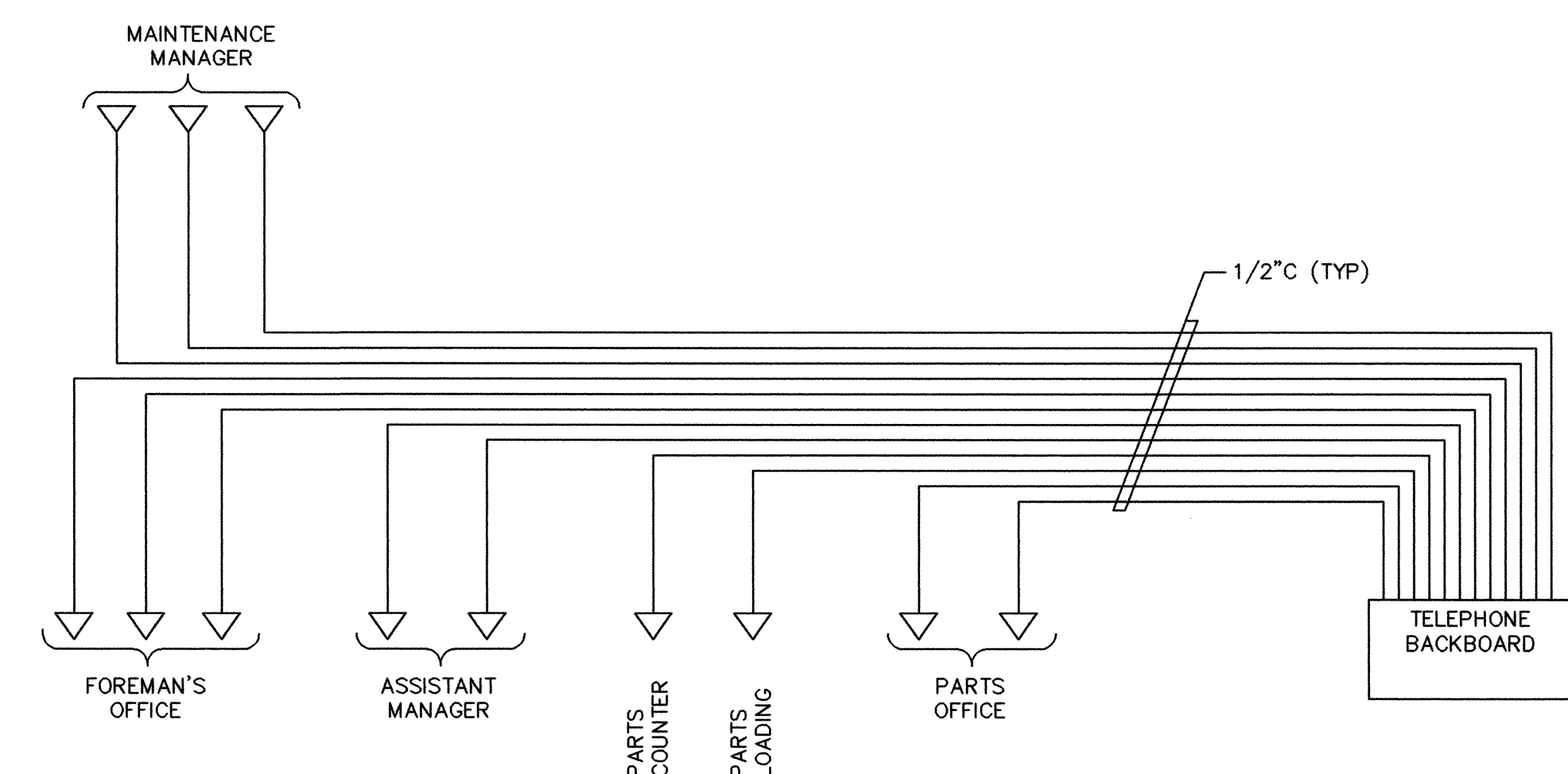
- ① INTERCEPT EXISTING UNDERGROUND CONDUIT FROM EXISTING FLEET WATCH CONTROLLER C50 LOCATED IN BUILDING 4. EXTEND TO REMOTE ISLAND HEAD UNIT WITH 1 1/4". PROVIDE NEW (8) 3 TSP #18.
- ② PROVIDE NEW 1"C-(4) 3 TSP #18.
- ③ PROVIDE NEW 3/4"C-(3) 3 TSP #18.
- ④ PROVIDE NEW 3/4"C-(2) 3 TSP #18.
- ⑤ PROVIDE 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.

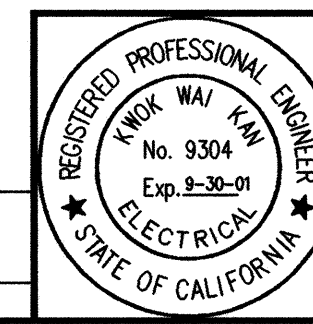


RISER DIAGRAM - TELEPHONE



RISER DIAGRAM - DATA

AS-BUILT
A. detent
 Contract No. BUS-443B
 Date: NOV. 2000



CONSTRUCTION CHANGE TABLE

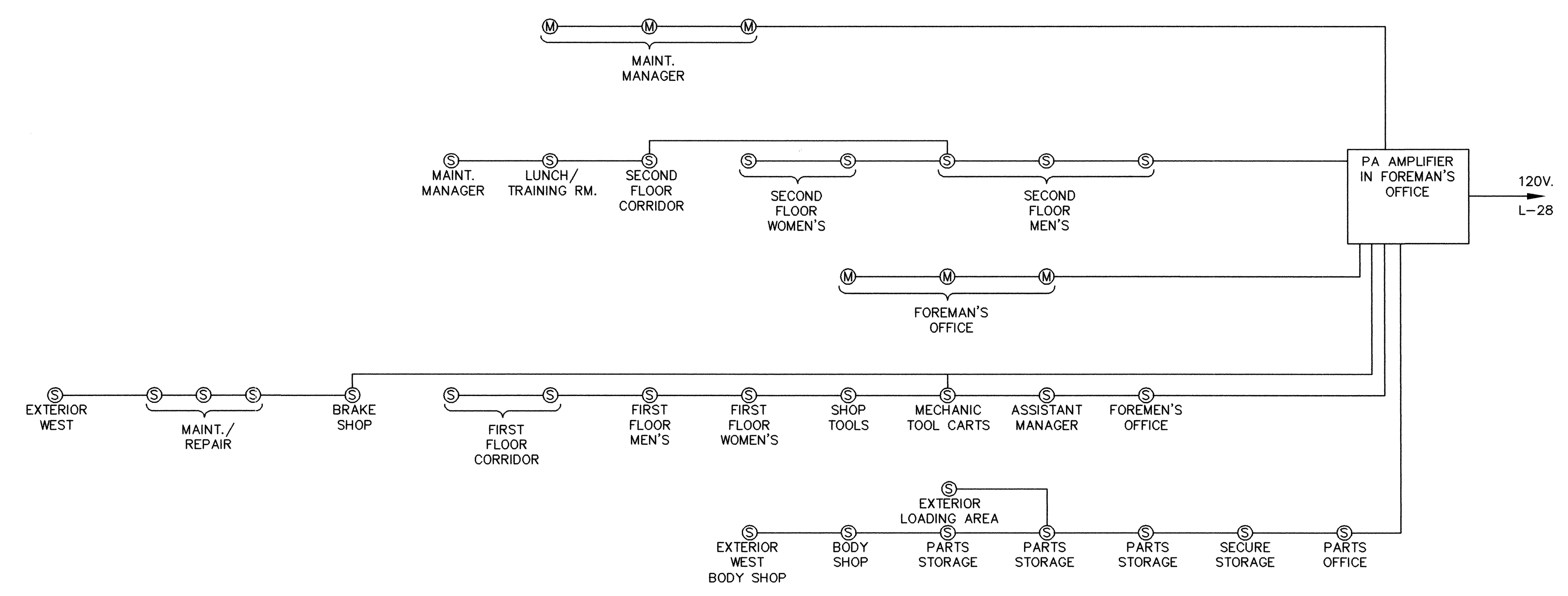
CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE



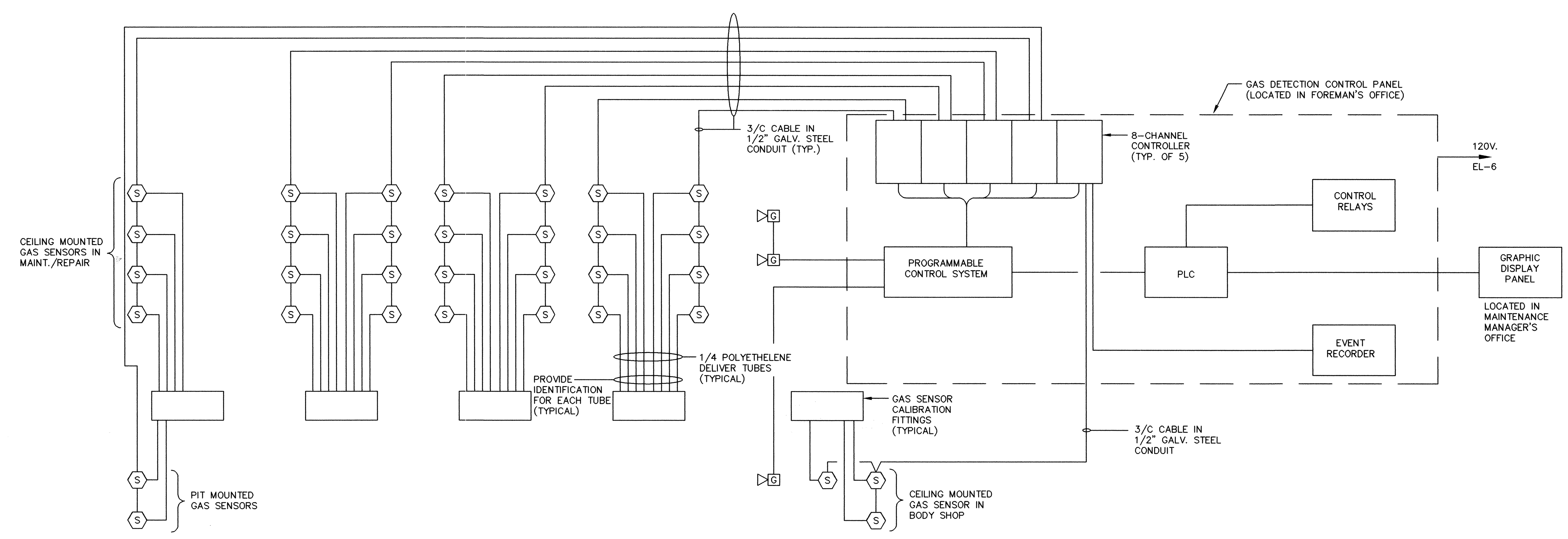
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	DATE 11/98
CHECKED BY M. NIEDERHAUS	DATE 11/98
MTDB PRJ. ENG.	

MTDB
 Metropolitan Transit Development Board
 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY		SCALE NONE
FIXTURE SCHEDULE & RISER DIAGRAMS		MTDB CONTRACT NO. BUS-443B
DRAWING NO. E20.1	SHEET NO. 89	



RISER DIAGRAM - P.A. SYSTEM 1
NONE E20.2



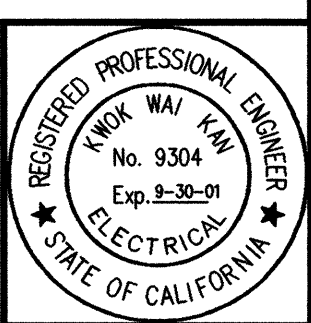
RISER DIAGRAM - CNG. DETECTION SYSTEM 2
NONE E20.2

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**
- 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)
 - HIGH LEVEL ALARM (40% LEL) -
 - SHUNT TRIP ALL CIRCUIT BREAKERS ON CIRCUITS TO MAINTENANCE/REPAIR AND BODY SHOP.

AS-BUILT
A. di...
Contract No. BUS-443B
Date NOV. 2000



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

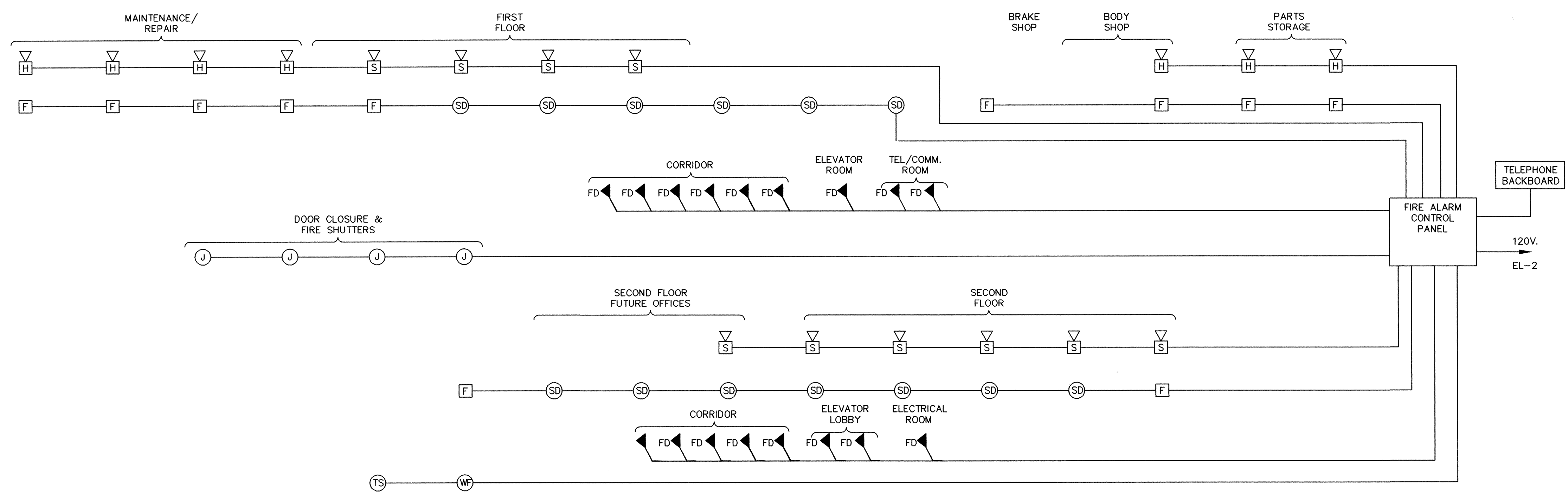
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

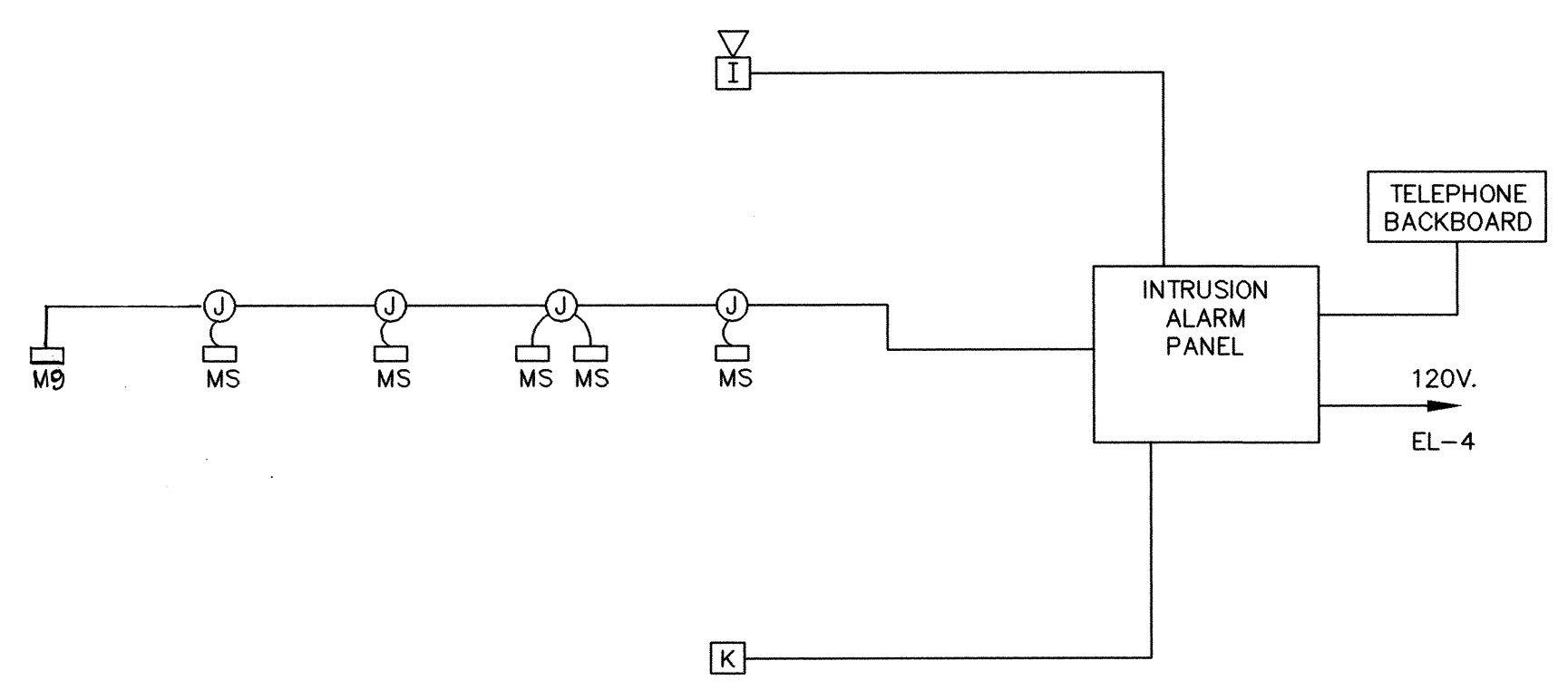
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY
RISER DIAGRAMS

SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. E20.2
SHEET NO. 90

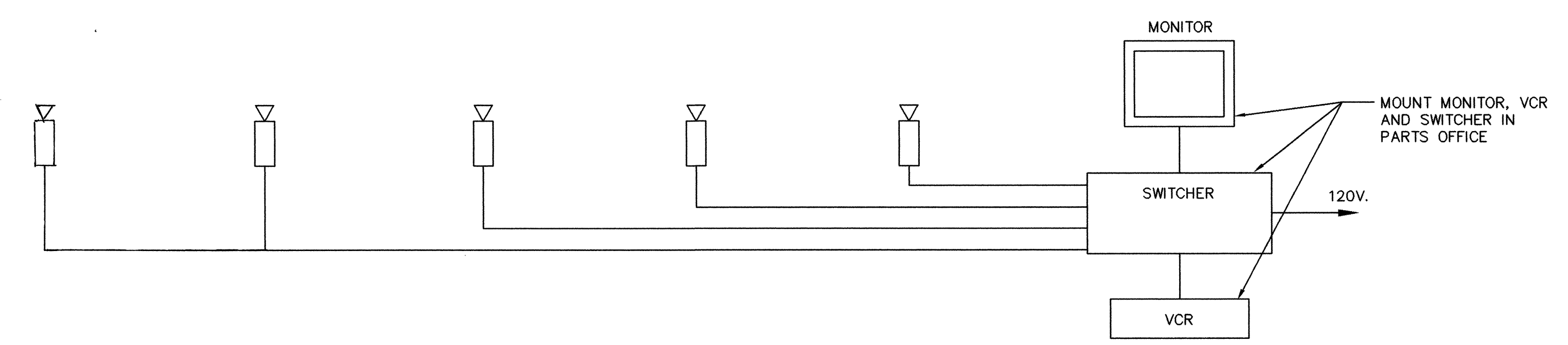
NOTE:
FIRE ALARM SYSTEM AND DEVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. COMPLETE PLANS AND SPECS FOR FIRE ALARM SYSTEM SHALL BE SUBMITTED TO THE FIRE DEPT. FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.



RISER DIAGRAM - FIRE ALARM SYSTEM 1
NONE E20.3

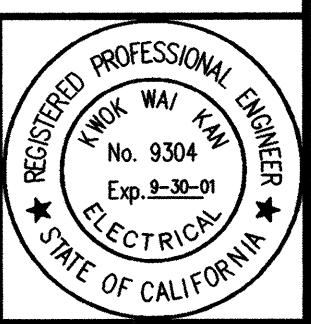


RISER DIAGRAM - INTRUSION ALARM SYSTEM 2
NONE E20.3



RISER DIAGRAM - CCTV SYSTEM 3
NONE E20.3

AS-BUILT
A. deBorja
Contract No. BUS-443B
Date NOV. 2000



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

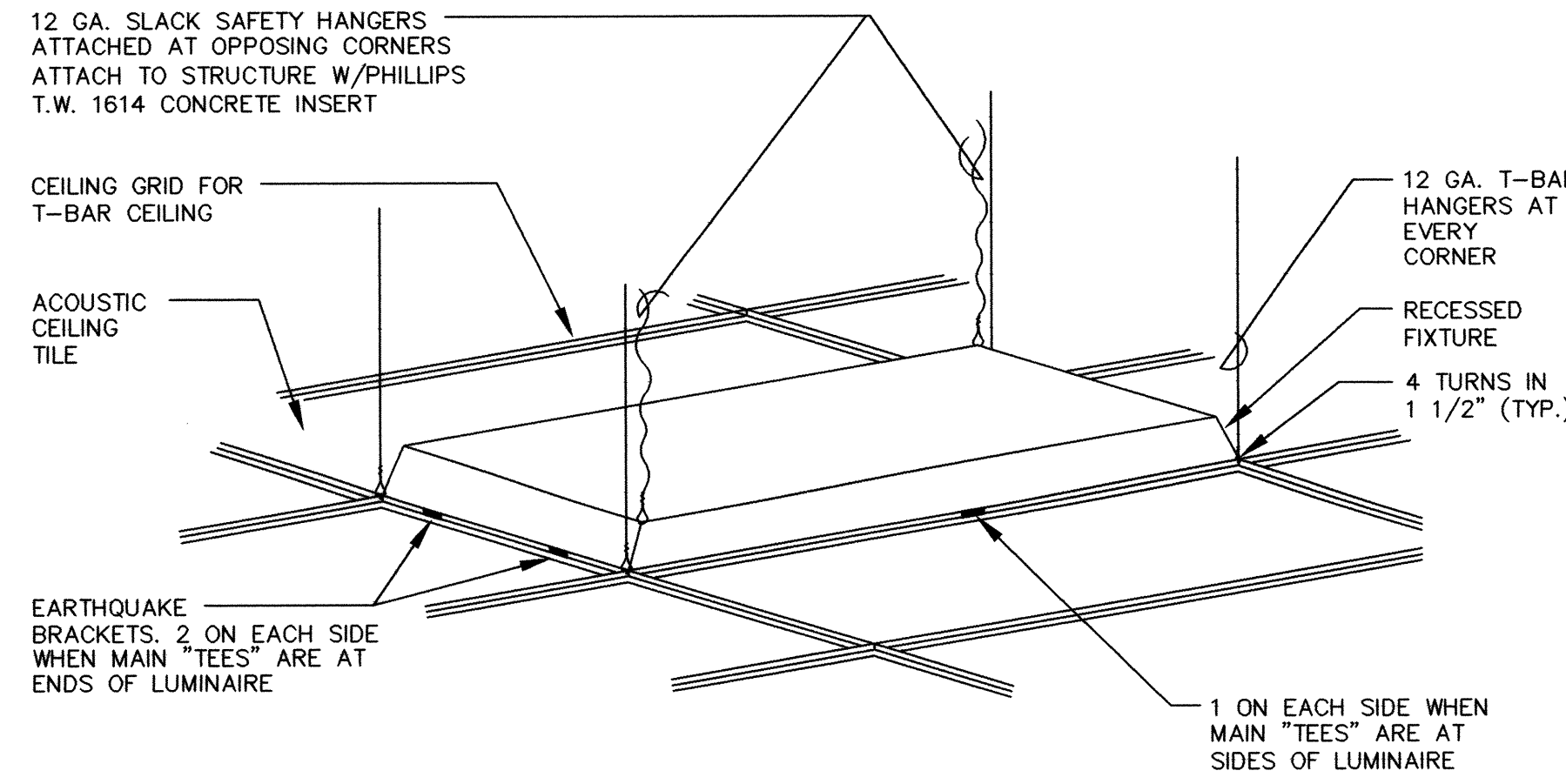
DESIGNED BY S. CONNER	DATE 11/98
DRAWN BY K. SPRADLING	11/98
CHECKED BY M. NIEDERHAUS	11/98
MTDB PRJ. ENG.	

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

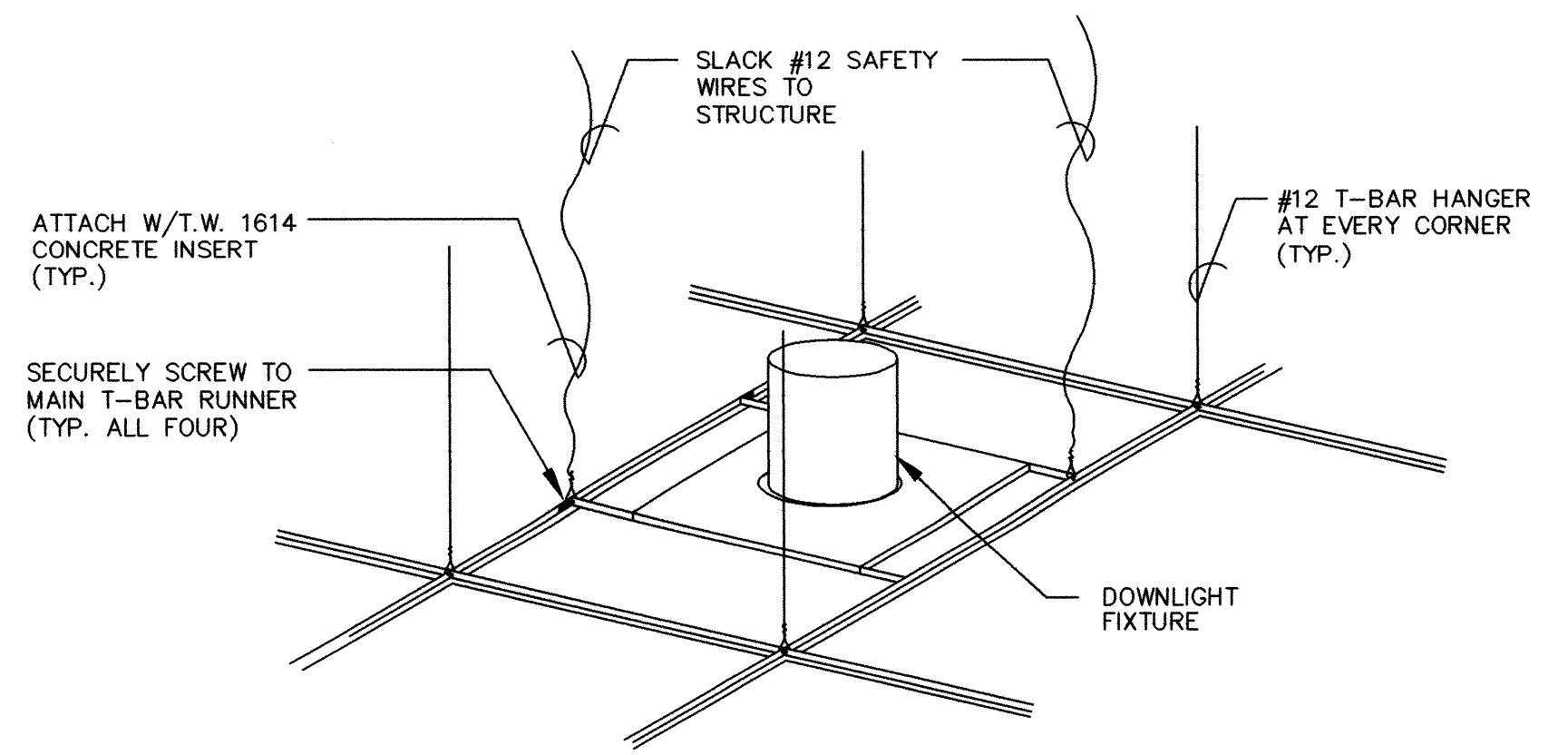
IMPERIAL AVENUE DIVISION
BUS MAINTENANCE FACILITY

RISER DIAGRAMS

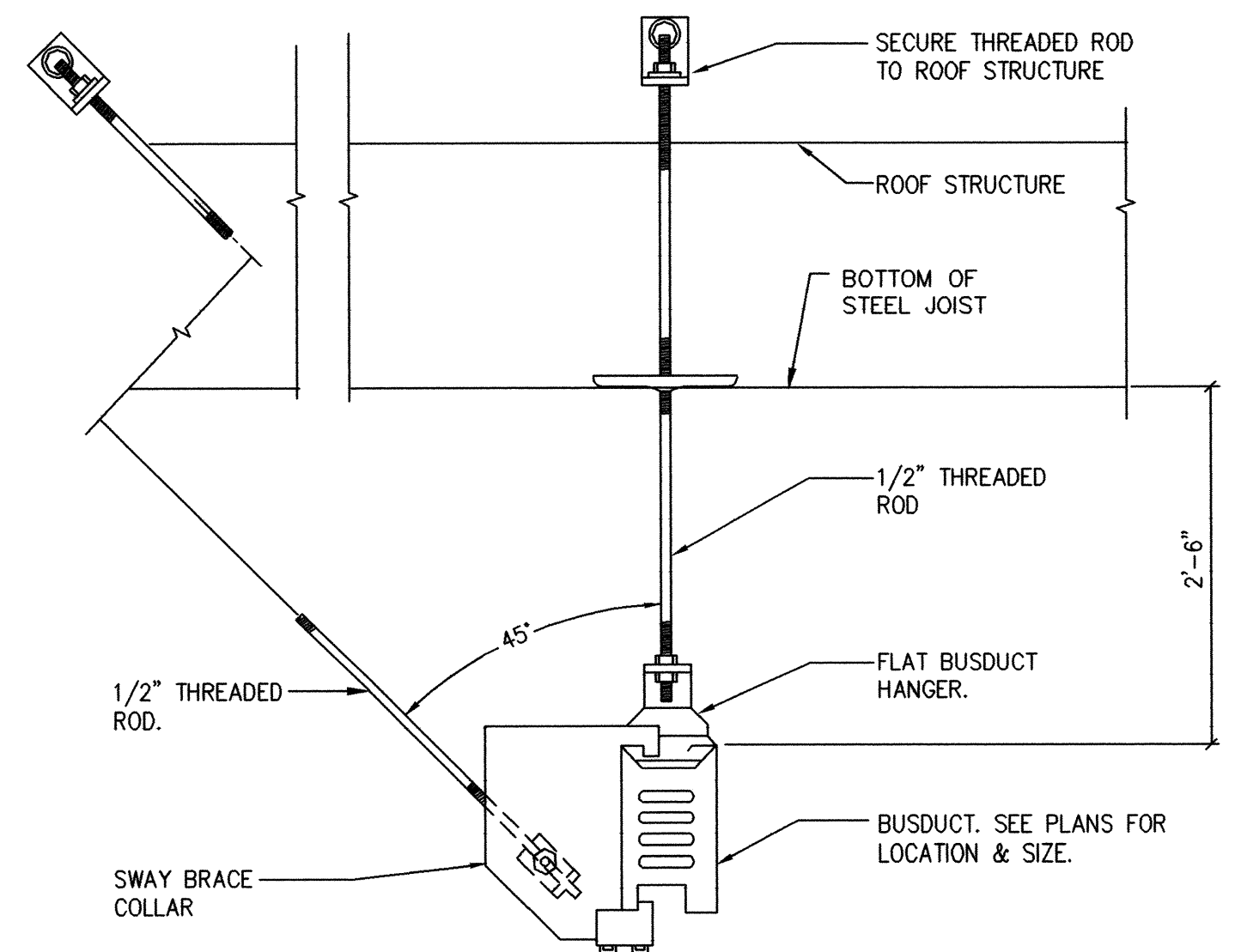
SCALE NONE
MTDB CONTRACT NO. BUS-443B
DRAWING NO. SHEET NO. E20.3 91



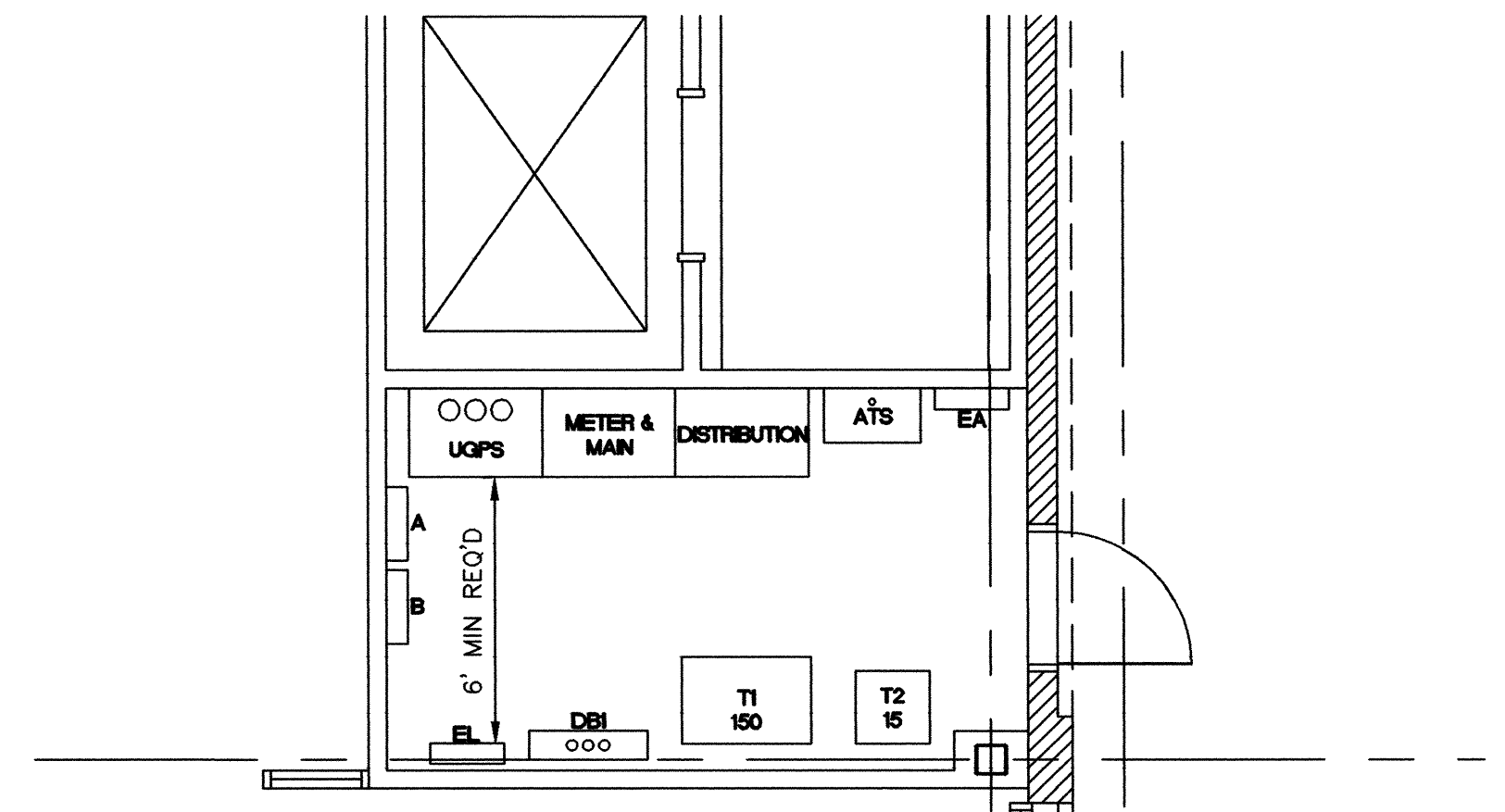
SEISMIC RESTRAINT SUPPORT DETAIL 1 NONE E20.4



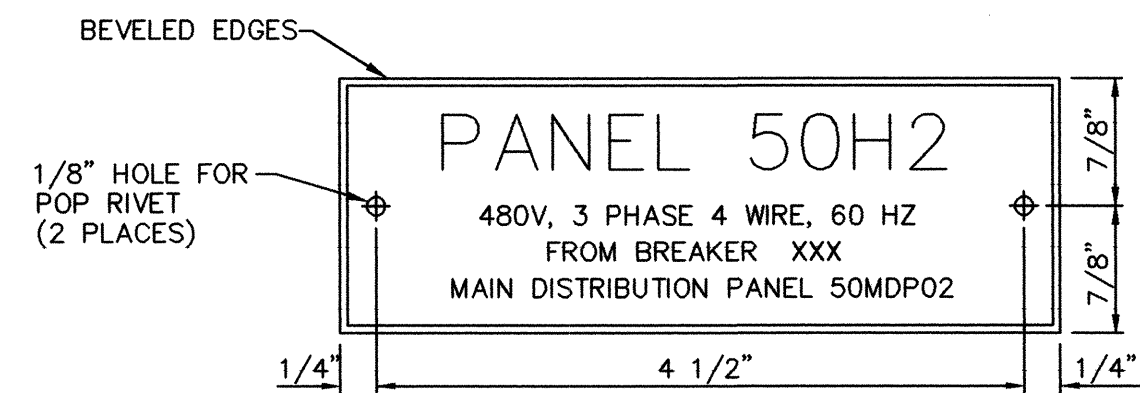
SEISMIC RESTRAINT SUPPORT DETAIL 2 NONE E20.4



BUS DUCT SUPPORT DETAIL 4 NONE E20.4



ELECTRICAL ROOM ENLARGED PLAN 5 SCALE: 1/4" = 1'-0" E20.4

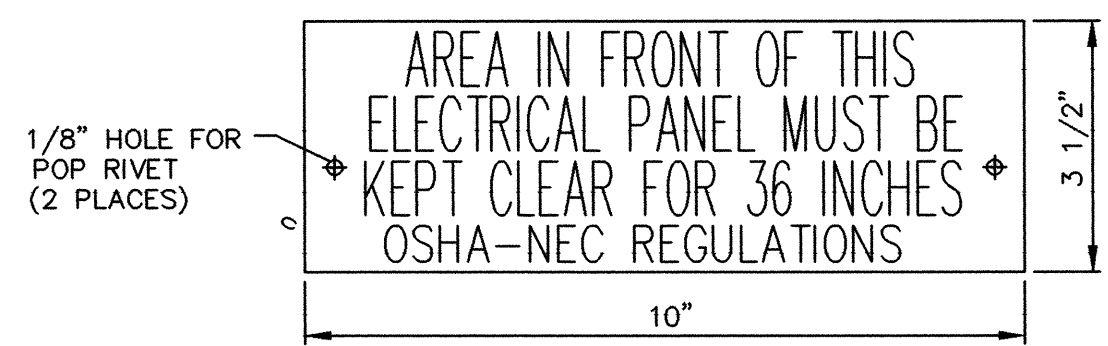


REQUIRED DATA

FIRST LINE: PANEL DESIGNATION
 SECOND LINE: PHASE, VOLTAGE, FREQUENCY
 THIRD & FOURTH LINES: POWER SOURCE & BREAKER
 XXX = BASED ON FINAL DESIGN SHOP DRAWING

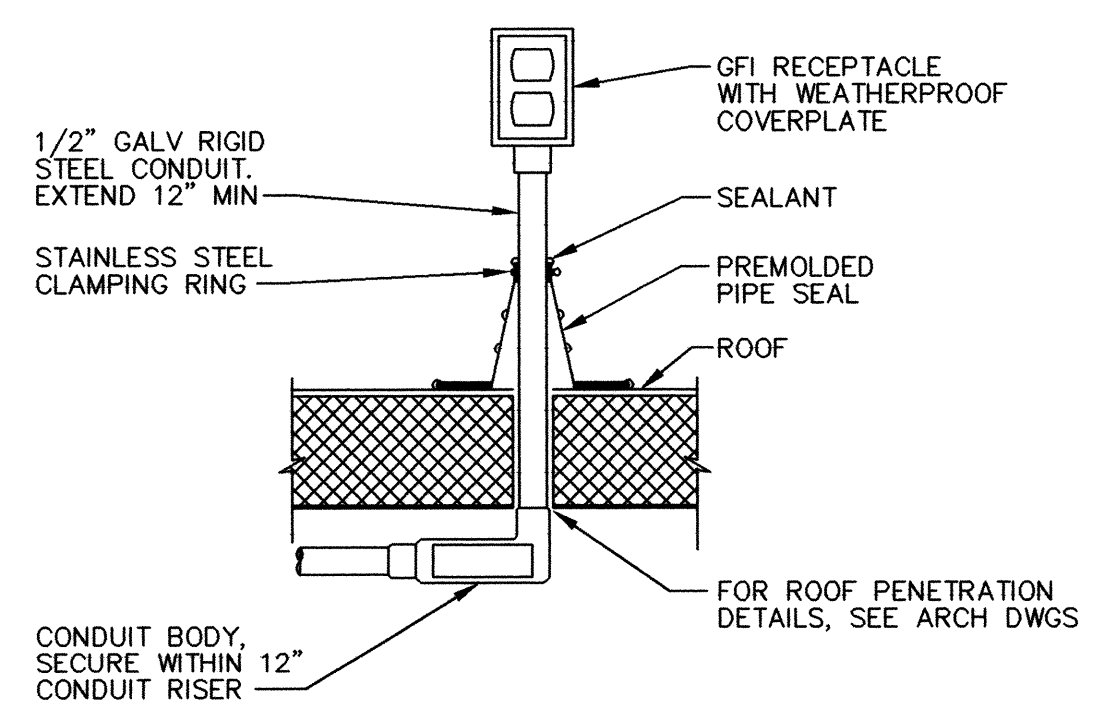
PANEL TYPE	BACKGROUND	LETTERING
208/120 VOLT, 60 HZ	GREEN	BLACK
480 VOLT, 60 HZ	GREEN	BLACK
EMERGENCY SERVICES	RED	BLACK

PANELBOARD NAMEPLATE DETAIL 6 NONE E20.4

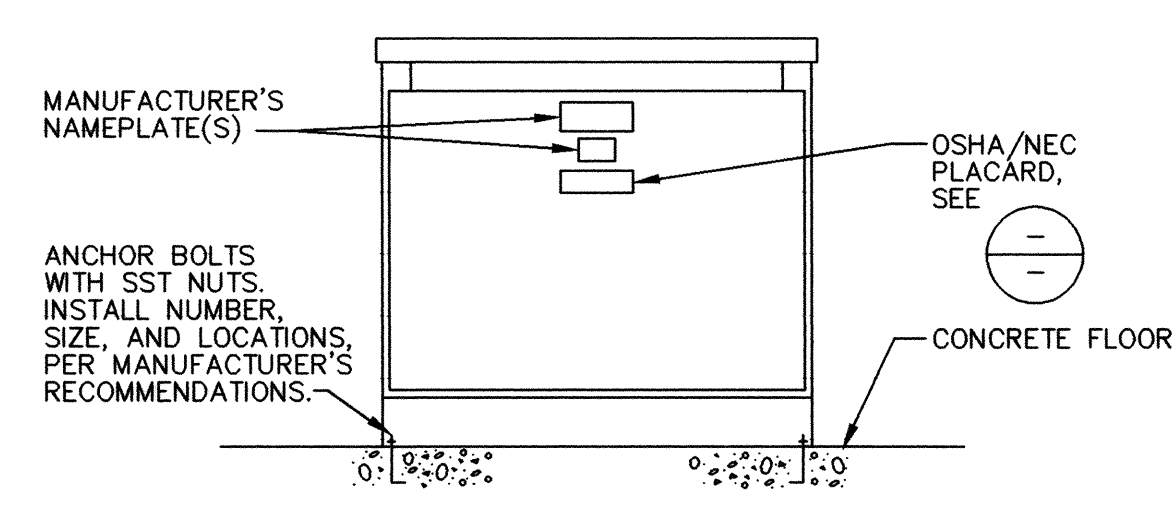


TOP 3 ROWS: 3/4" LETTERS
 BOTTOM ROW: 1/2" LETTERS
 BLACK LETTERING ON WHITE BACKGROUND

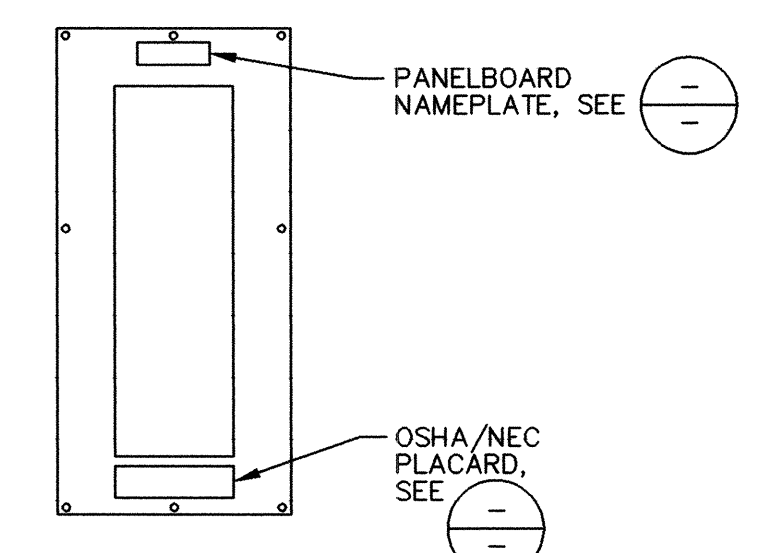
OSHA/NEC PLCARD DETAIL 7 NONE E20.4



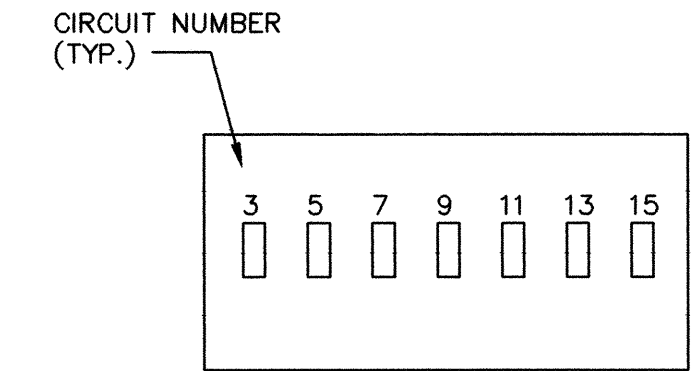
RECEPTACLE AT ROOF DETAIL 8 NONE E20.4



TRANSFORMER DETAIL 9 NONE E20.4

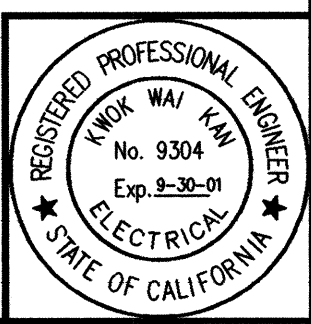


TYP. PANELBOARD DOOR 10 NONE E20.4



MAINTENANCE BAY SWITCHES 11 NONE E20.4

AS-BUILT
A. de la Cruz
 Contract No. BUS-443B
 Date: NOV. 2000



CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
⚠	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

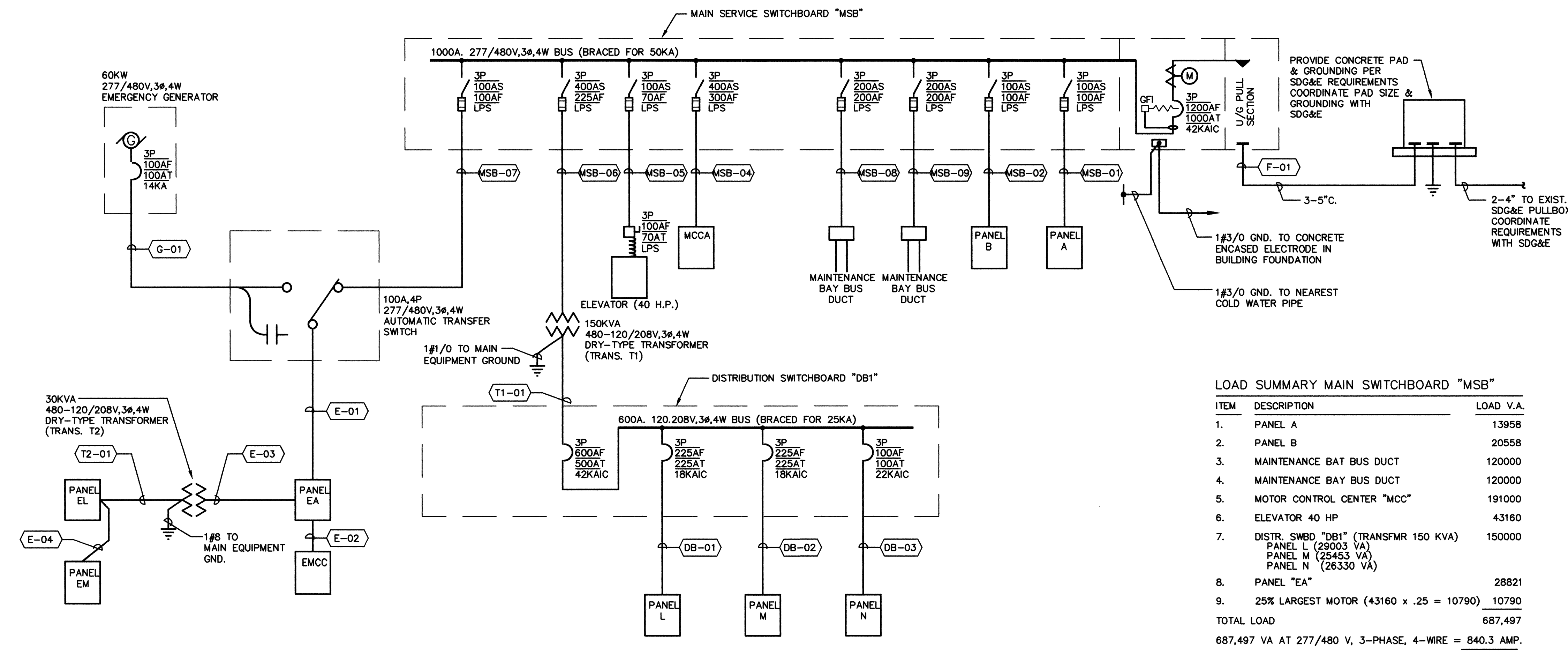
SCALE NONE

MTDB CONTRACT NO. BUS-443B

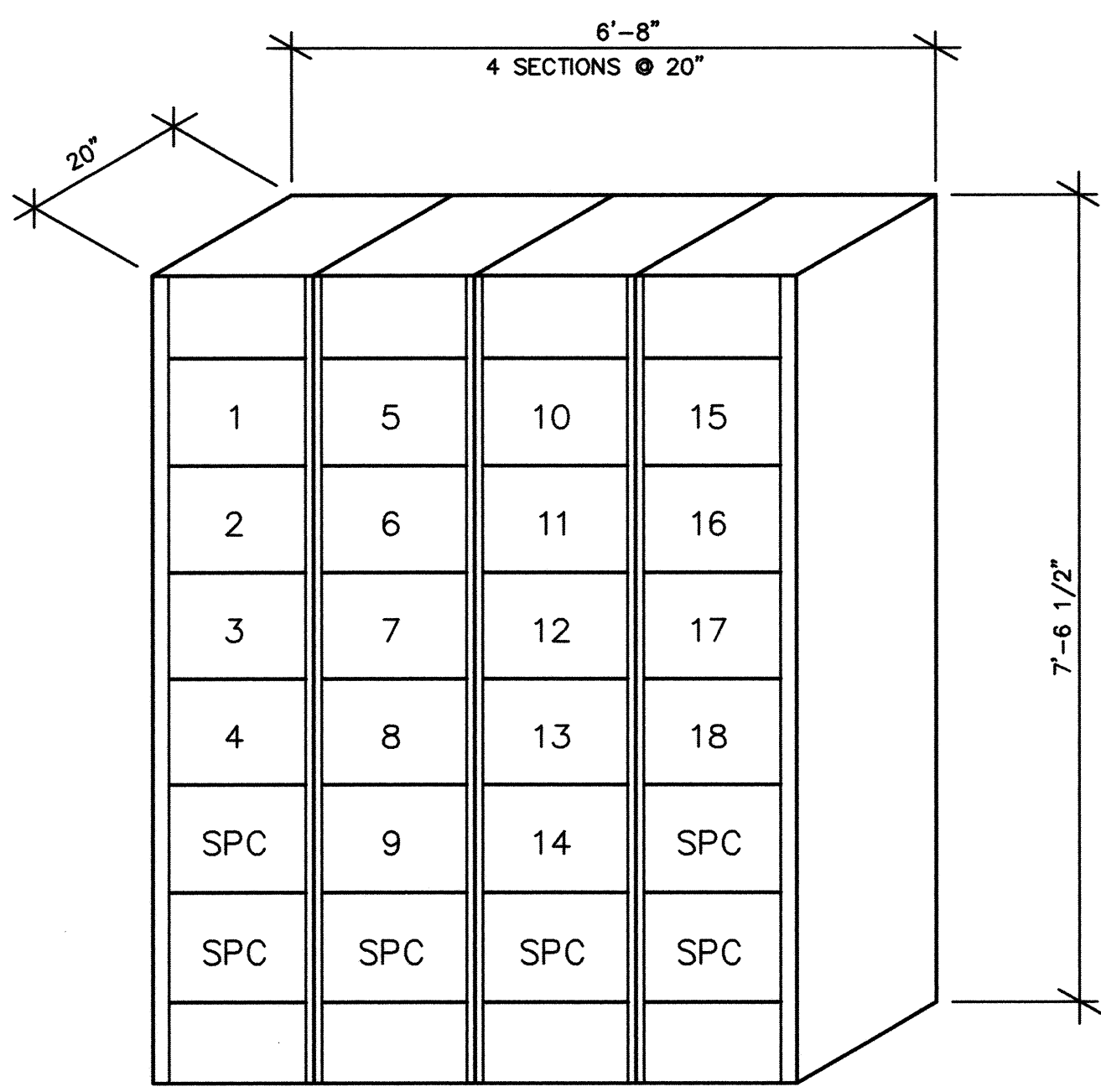
DRAWING NO.	SHEET NO.
E20.4	92

FEEDER SCHEDULE

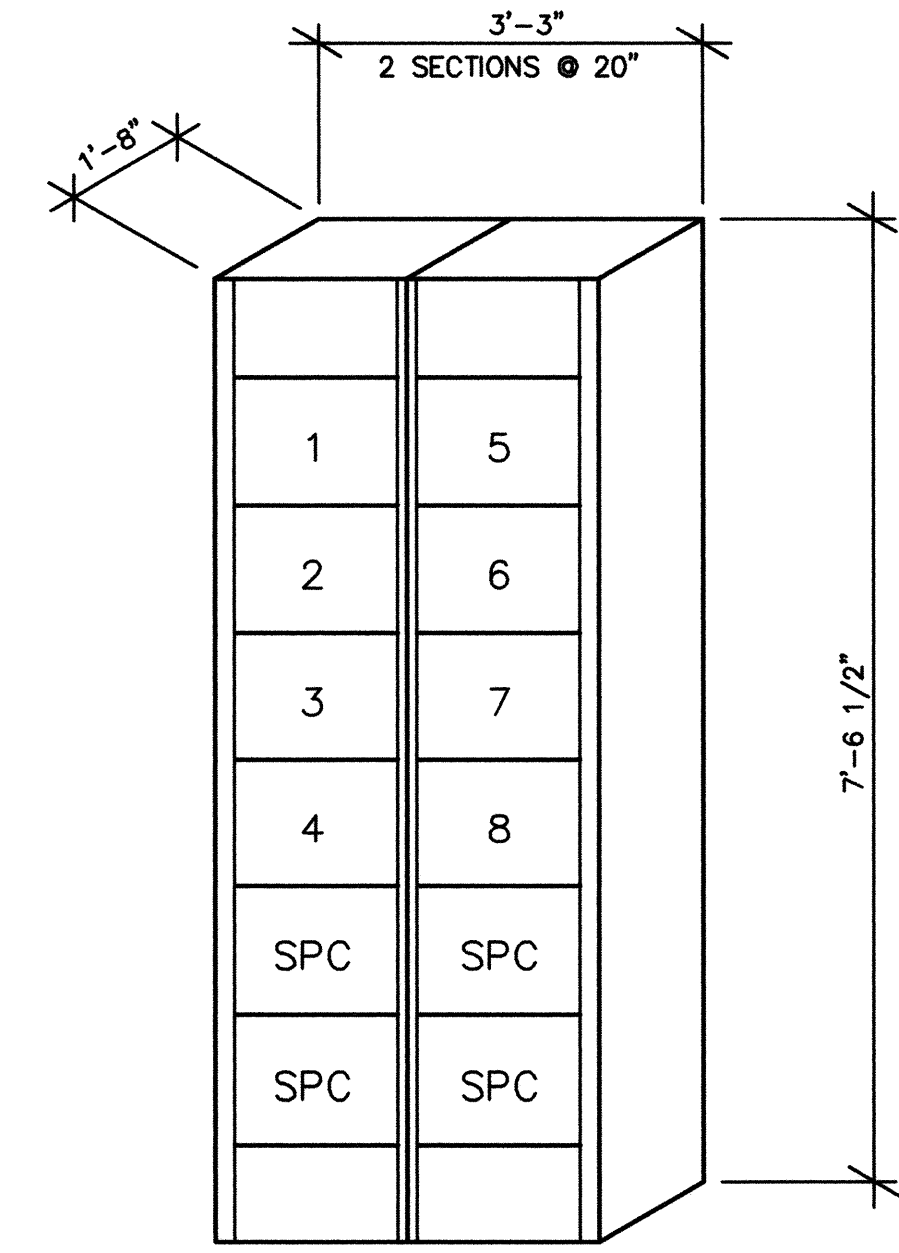
NO.	CONDUIT		CONDUCTORS (EACH CONDUIT)	FROM	TO
	QUANTITY	SIZE			
F-01	3	5"	BY POWER CO.	PAD MOUNT TRANS.	MAIN SWITCHBOARD "MSB"
MSB-01	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL "A"
MSB-02	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL "B"
MSB-04	1	2 1/2"	4#350MCM, 1#4	MAIN SWITCHBOARD "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"



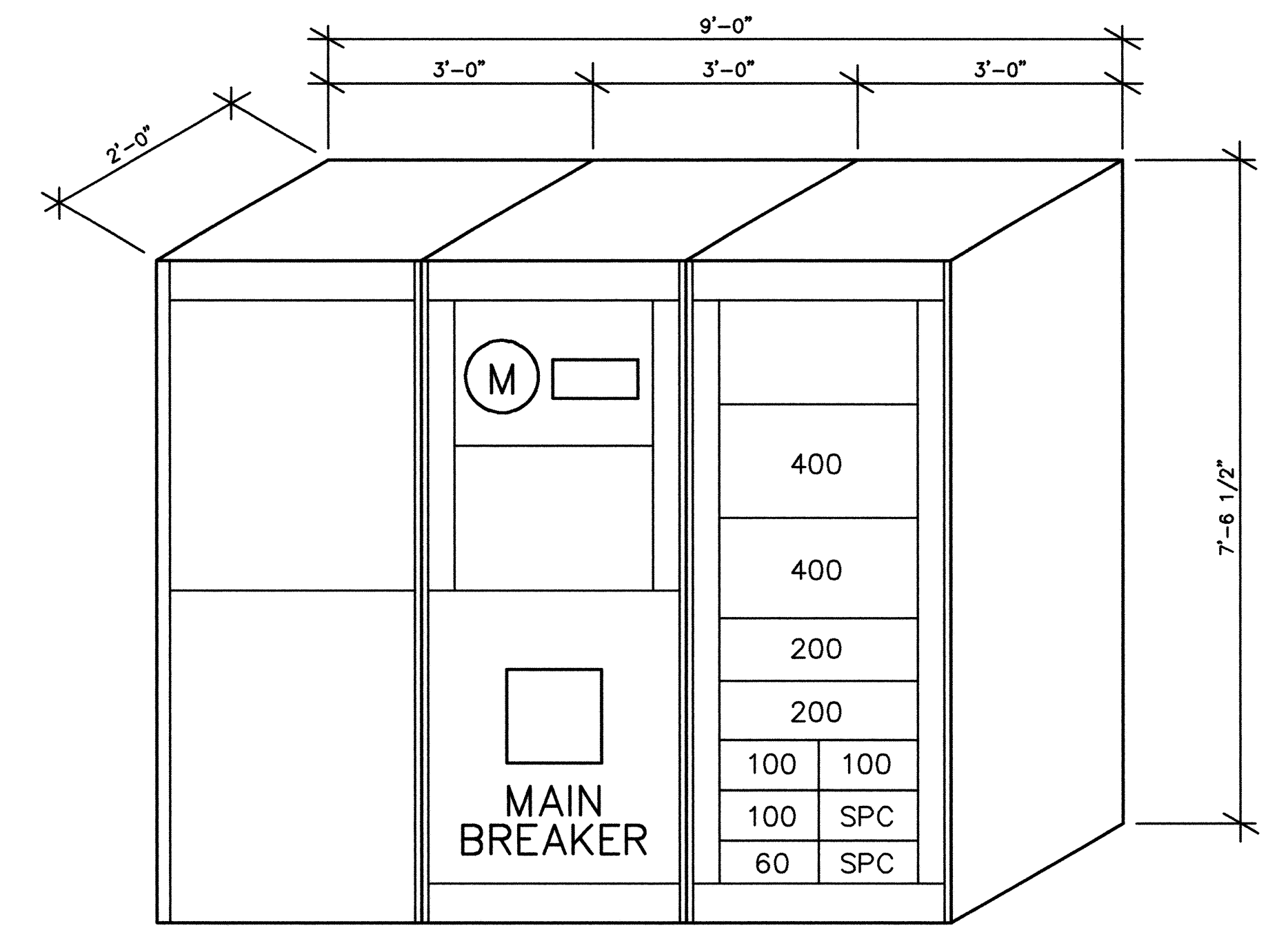
SINGLE LINE DIAGRAM 1
NONE E30.1



MCCA ELEVATION 2
NONE E30.1

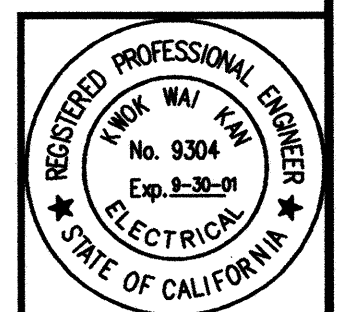


EMCC ELEVATION 3
NONE E30.1



MSB ELEVATION 4
NONE E30.1

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000



KAWRAD PROJECT NUMBER: 1007

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	SHEET NUMBERS REVISED OR ADDED THIS CHANGE
4	4/17/00	SECOND FLOOR INTERIOR IMPROVEMENTS



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

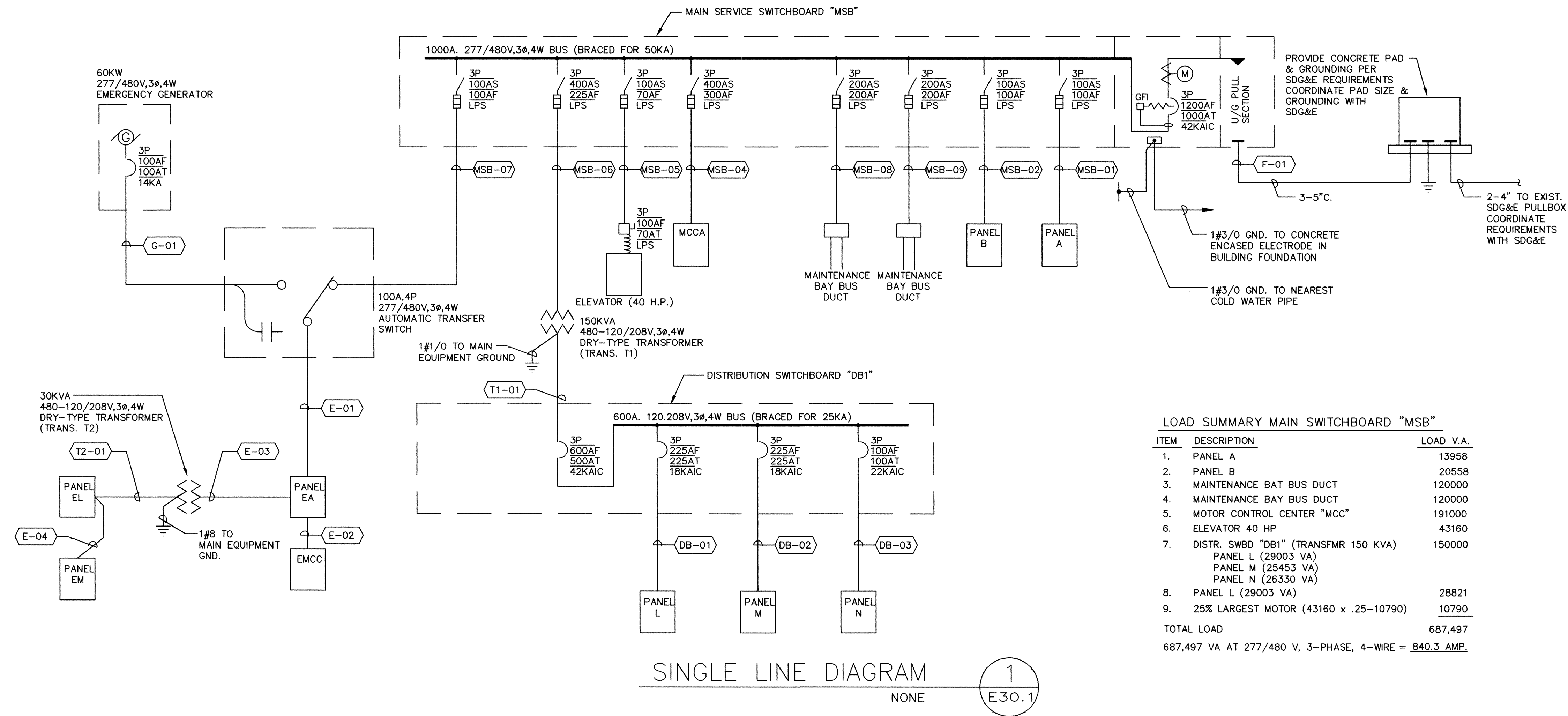
SCALE: NONE

MTDB CONTRACT NO. BUS-443B

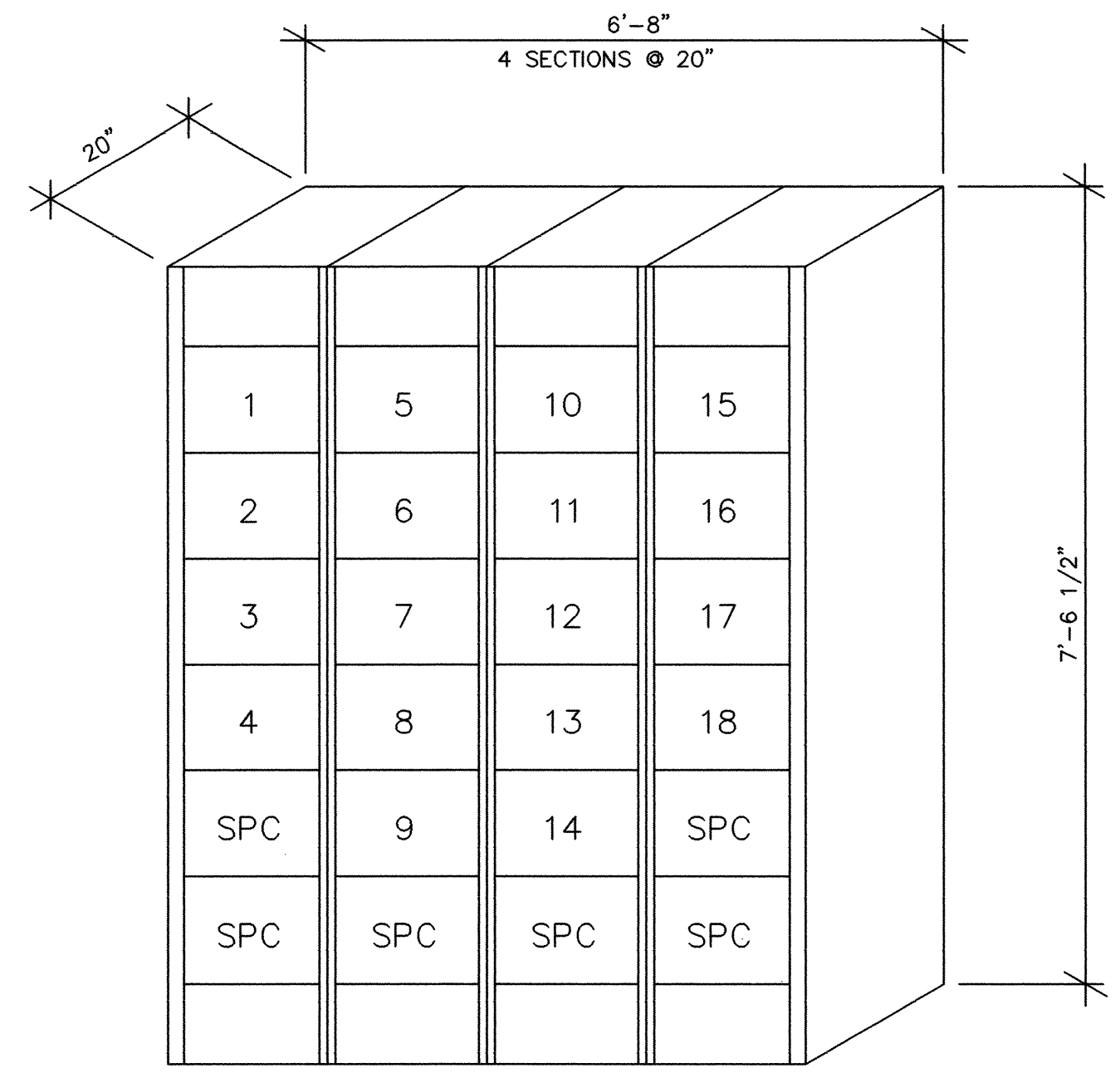
DRAWING NO. E30.1 SHEET NO. 93

FEEDER SCHEDULE

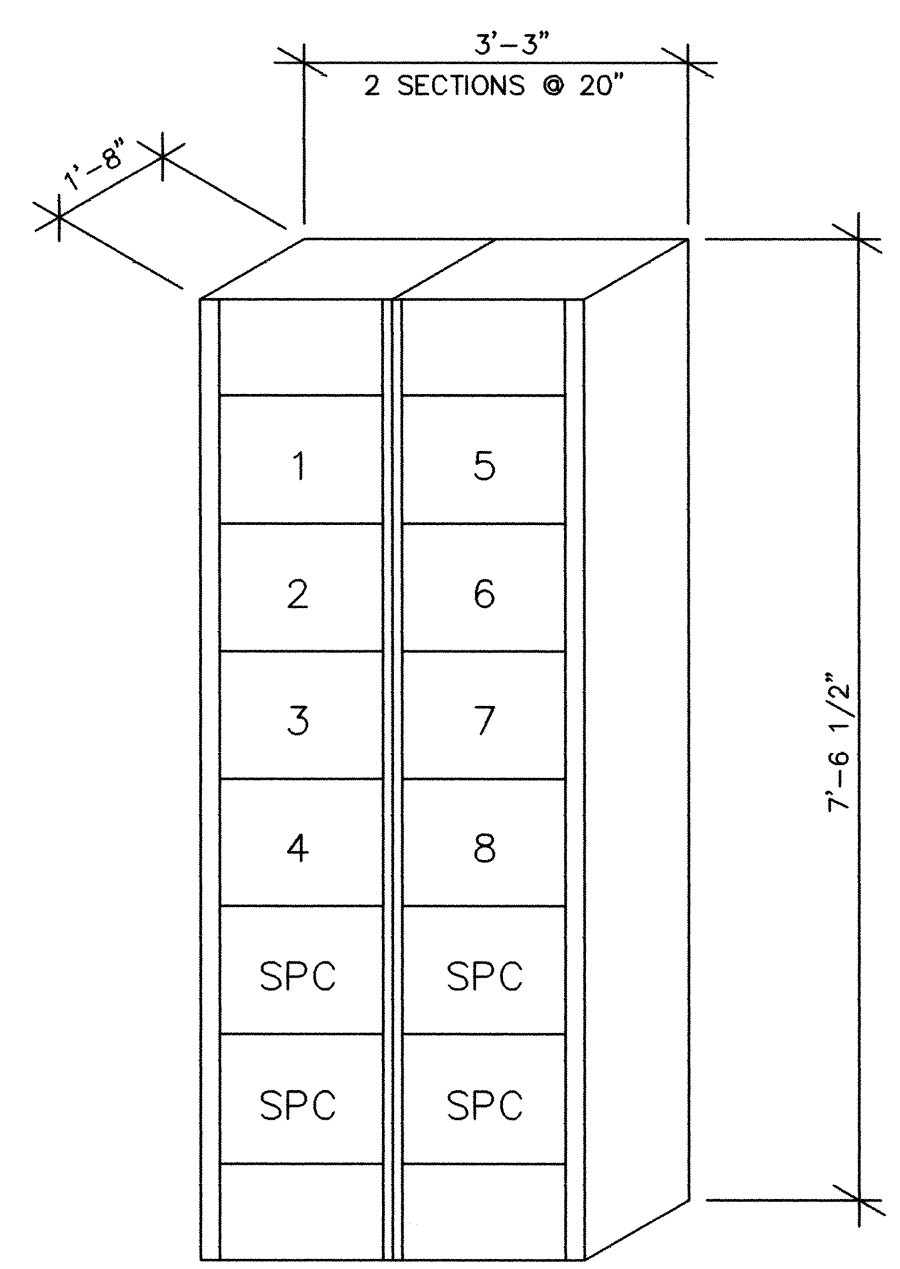
NO.	CONDUIT		CONDUCTORS (EACH CONDUIT)	FROM	TO
	QUANTITY	SIZE			
F-01	3	5"	BY POWER CO.	PAD MOUNT TRANS.	MAIN SWITCHBOARD "MSB"
MSB-01	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL A
MSB-02	1	1 1/4"	4#2, 1#8 GND.	MAIN SWITCHBOARD "MSB"	PANEL B
MSB-04	1	2 1/2"	4#350MCM, 1#4	MAIN SWITCHBOARD "MSB"	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



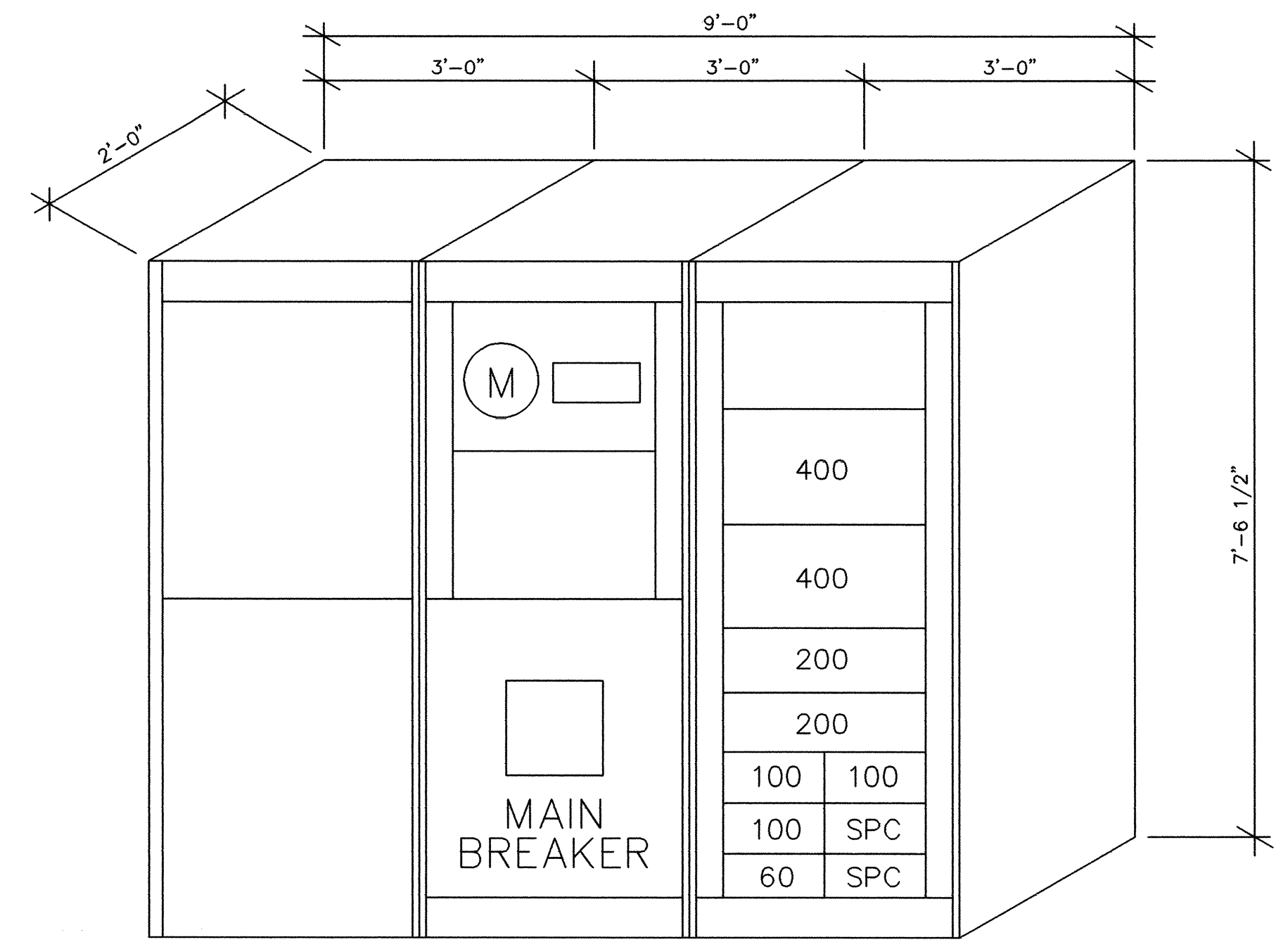
SINGLE LINE DIAGRAM 1
NONE E30.1



MCCA ELEVATION 2
NONE E30.1



EMCC ELEVATION 3
NONE E30.1



MSB ELEVATION 4
NONE E30.1

AS-BUILT
A. delacruz
Contract No. BUS-443B
Date NOV. 2000
REGISTERED PROFESSIONAL ENGINEER
No. 9304
Exp. 8-30-01
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
SINGLE LINE DIAGRAM

SCALE NONE	MTDB CONTRACT NO. BUS-443B
DRAWING NO. E30.1	SHEET NO. 93

MOTOR CONTROL CENTER: EMCC
 VOLTAGE 480V, 3Ø, 3W
 BUS 100A BRACED FOR 14,000A. SYM

NO	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 LARGEST MOTOR					
								12.0 A		TOTAL LCL LOAD					

MOTOR CONTROL CENTER: MCCA
 VOLTAGE 480V, 3Ø, 3W
 BUS 400A BRACED FOR 14,000A SYM

300A/3P MAIN BREAKER

NO	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					

PANEL EA LOCATION ELECTRIC ROOM
 MOUNTING SURFACE (IN NEMA 1 ENCLOSURE)
 VOLTAGE 480/277 PHASE 3 WIRE 4

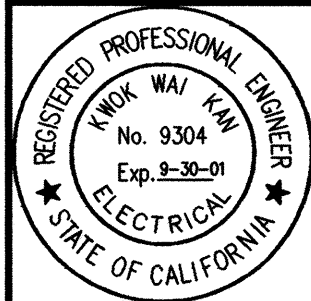
LOCATION	WATTAGE			L T G	R E I S	M P O L	B K R	C I P H	C I R	B K R	P O L S	L T G	WATTAGE			LOCATION						
	ØA	ØB	ØC										ØA	ØB	ØC							
UNDEVELOPED SPACE LIGHTING	249			8			1	20	1	A	2	100			3102	SUBFEED EMCC						
PARTS STORAGE LIGHTING		2143		30			1	20	3	B	4				3102	SUBFEED EMCC						
GROUND FLOOR CORR. LIGHTING			1178	19			1	20	5	C	6				3102	SUBFEED EMCC						
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			6600	SUBFEED EL						
SPARE				8			1	20	13	A	14	20				SPARE						
SPARE				7			1	20	15	B	16	20				SPARE						
SPARE				-			15	1	20	17	C	18	20			SPARE						
SPARE				-			1	20	19	A	20	20				SPARE						
SPARE				-			1	20	21	B	22	20				SPARE						
SPARE				-			1	20	23	C	24	20			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			→ 38,615					
TOTAL ØB:													11645	WATTS			→ 46					
TOTAL ØC:													13515	WATTS			→ 49					
														HIGH PHASE AMPS → 49								
														HIGH PHASE LCL AMPS → 54								

1. PROVIDE SHUNT-TRIP CONNECTED TO GAS DETECTION SYSTEM.

PANEL N LOCATION ELECTRIC ROOM
 MOUNTING SURFACE (IN NEMA 1 ENCLOSURE)
 VOLTAGE 120/1208 PHASE 3 WIRE 4

LOCATION	WATTAGE			L T G	R E I S	M P O L	B K R	C I P H	C I R	B K R	P O L S	L T G	WATTAGE			LOCATION						
	ØA	ØB	ØC										ØA	ØB	ØC							
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			→ 19,570					
TOTAL ØB:													6510	WATTS			→ 54					
TOTAL ØC:													6120	WATTS			→ 58					
														HIGH PHASE AMPS → 58								

AS-BUILT
A. deBarand
 Contract No. BUS-443B
 Date NOV. 2000



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 LTC-1

PROJECT NAME, DATE, PROJECT ADDRESS, BUILDING PERMIT #, GENERAL INFORMATION, BUILDING TYPE, PHASE OF CONSTRUCTION, METHOD OF LIGHTING COMPLIANCE.

STATEMENT OF COMPLIANCE
This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations.

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.

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.

PRINCIPAL LIGHTING DESIGNER - NAME, SIGNATURE, LIC. NO., DATE

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.

Nonresidential Compliance Form December 1991

CERTIFICATE OF COMPLIANCE - Lighting Part 2 of 2 LTC-1

INSTALLED LIGHTING SCHEDULE table with columns for LUMINAIRE NAME, TYPE, LAMPS, BALLASTS, and NOTE TO FIELD.

MANDATORY AUTOMATIC CONTROLS table with columns for CONTROL LOCATION, CONTROL IDENTIFICATION, CONTROL TYPE, SPACE CONTROLLED, and NOTE TO FIELD.

CONTROLS FOR CREDIT table with columns for CONTROL LOCATION, CONTROL IDENTIFICATION, CONTROL TYPE, LUMINAIRES CONTROLLED, and NOTE TO FIELD.

NOTES TO FIELD - For Building Department Use Only
Nonresidential Compliance Form December 1991

NOTE: BUILDING IS 24 HOUR OPERATION.

LIGHTING COMPLIANCE SUMMARY LTC-2

ACTUAL LIGHTING POWER table with columns for LUMINAIRE NAME, DESCRIPTION, NUMBER OF LUMINAIRES, WATTS PER LUMINAIRE, CEC DEFAULT, TOTAL WATTS.

ALLOWED LIGHTING POWER (Choose One Method) table with columns for BUILDING CATEGORY, WATTS PER SF, COMPLETE BLDG. AREA, ALLOWED WATTS.

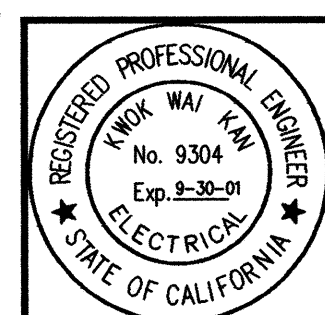
AREA CATEGORY METHOD table with columns for AREA CATEGORY, WATTS PER SF, COMPLETE BLDG. AREA, ALLOWED WATTS.

TAILORED OR PERFORMANCE METHOD
Nonresidential Compliance Form December 1991

MANDATORY MEASURES

- BUILDING LIGHTING SHUT-OFF
NOT APPLICABLE
OVERRIDE FOR BUILDING LIGHTING SHUT-OFF
NOT APPLICABLE
AUTOMATIC CONTROL DEVICES CERTIFIED
FLUORESCENT BALLASTS AND LUMINAIRES CERTIFIED
TANDEM WIRING FOR 2-LAMP BALLASTS
INDIVIDUAL ROOM/AREA CONTROLS
UNIFORM REDUCTION FOR INDIVIDUAL ROOMS
DAYLIT AREA CONTROL
CONTROL OF EXTERIOR LIGHTS

AS-BUILT
Contract No. BUS-443B
Date NOV. 2000



CONSTRUCTION CHANGE TABLE with columns for CHANGE, DATE, SHEET NUMBERS REVISED OR ADDED THIS CHANGE.



DESIGNED BY S. CONNER DATE 11/98
DRAWN BY K. SPRADLING 11/98
CHECKED BY M. NIEDERHAUS 11/98
MTDB PRJ. ENC.

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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 OPERATIONS 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.
- 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.

- 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.
- 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.
- ALL SIGNS, DELINEATORS, BARRICADES, ETC., SHALL CONFORM TO THE LATEST CALTRANS MANUAL FOR TRAFFIC CONTROL THROUGH CONSTRUCTION ZONES.
- EQUIPMENT, MATERIAL OR DEBRIS SHALL NOT BE STORED IN THE PUBLIC RIGHT-OF-WAY WITHOUT PRIOR APPROVAL BY THE CITY TRAFFIC ENGINEER.
- IF CONSTRUCTION IS TO BE PERFORMED IN STAGES, ALL WORK SHALL BE COMPLETED IN EACH STAGE PRIOR TO BEGINNING WORK ON THE NEXT STAGE.
- ALL TRAVEL LANES WILL BE MINIMUM OF 12' WIDE UNLESS APPROVED BY THE CITY TRAFFIC ENGINEER.
- PEDESTRIAN OR BICYCLIST FLOW WILL NOT BE DISTURBED OR INTERRUPTED UNLESS APPROVED BY THE CITY TRAFFIC ENGINEER.
- CONSTRUCTION TO TAKE PLACE WITHIN ONLY ONE INTERSECTION AT A TIME.
- 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.
- SIGN PANELS SHALL BE REFLECTORIZED HIGH INTENSITY SURFACES.
- ALL ADVANCE WARNING SIGN INSTALLATIONS SHALL BE EQUIPPED WITH FLAGS FOR DAYTIME CLOSURES.
- ALL DIRT, DUST AND DEBRIS SHALL BE REMOVED FROM STREET AT END OF EACH DAY AND AT END OF EACH JOB.

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)

- 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.
- THINNING OF PAINT WILL NOT BE ALLOWED.
- THE CONTRACTOR SHALL INSTALL REFLECTORIZED PAVEMENT MARKERS ON ALL LANE LINES AND CENTERLINE STRIPING.
- CONTRACTOR IS RESPONSIBLE FOR ALL SAND BLASTING OF CONFLICTING STRIPING AND REPLACING ALL STRIPING AND PAVEMENT MARKING REMOVED DUE TO CONSTRUCTION.
- 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

- 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:

BIKE LANE DETECTOR LOOPS
LIMIT LINE DETECTOR LOOPS
INTERMEDIATE AND ADVANCE DETECTOR LOOPS
ALL OTHER DETECTOR LOOPS

TYPE O
TYPE D
TYPE B
TYPE A
- 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.
- 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.
- CONTRACTOR MUST RECEIVE APPROVAL FROM THE CITY PRIOR TO DETECTOR LOOP INSTALLATION.

TRAFFIC STRIPING, PAVEMENT MARKINGS AND PAVEMENT MARKERS

- 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.
- CONTROL OF ALIGNMENT AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND IS SUBJECT TO APPROVAL BY THE TRAFFIC ENGINEER.

LEGEND

	WORK ZONE
	DELINEATOR
	DIRECTION OF TRAVEL
	SIGN
	TYPE III BARRICADES
	TYPE III BARRICADES WITH SIGN PANEL
	PEDESTRIAN ACCESS

	48" X 48"		30" X 30"
C1		R1	
	48" X 30"		24" X 30"
C2		R26	
	60" X 30"		48" X 18"
C3A		SC3	
	48" X 48"		24" X 30"
C12		SR45	
	60" X 24"		48" X 30"
C13		R49 (LT)	
	48" X 48"		48" X 18"
C18		W1 (LT)	
	48" X 48"		48" X 48"
C21		W11 (LT)	
	48" X 48"		48" X 48"
C30		W15	

JOB NUMBER 24690 R-114 FILE NAME: 4432.TC10.1 NOTES.DWG 3/17/99

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610



DESIGNED BY	DATE
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**

SCALE: NONE

TRAFFIC CONTROL NOTES AND LEGEND

MTDB CONTRACT NO. BUS-443B
DRAWING NO. TC10.1 SHEET NO. 97

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)
DATE: 4/28/99
CONTRACTOR: C.E. WYLLIE
INSPECTOR: SEVERINO MENDOZA
DATE STARTED: 5-15-1999
DATE COMPLETED: 9-24-2000
29557-5-D

AS-BUILT

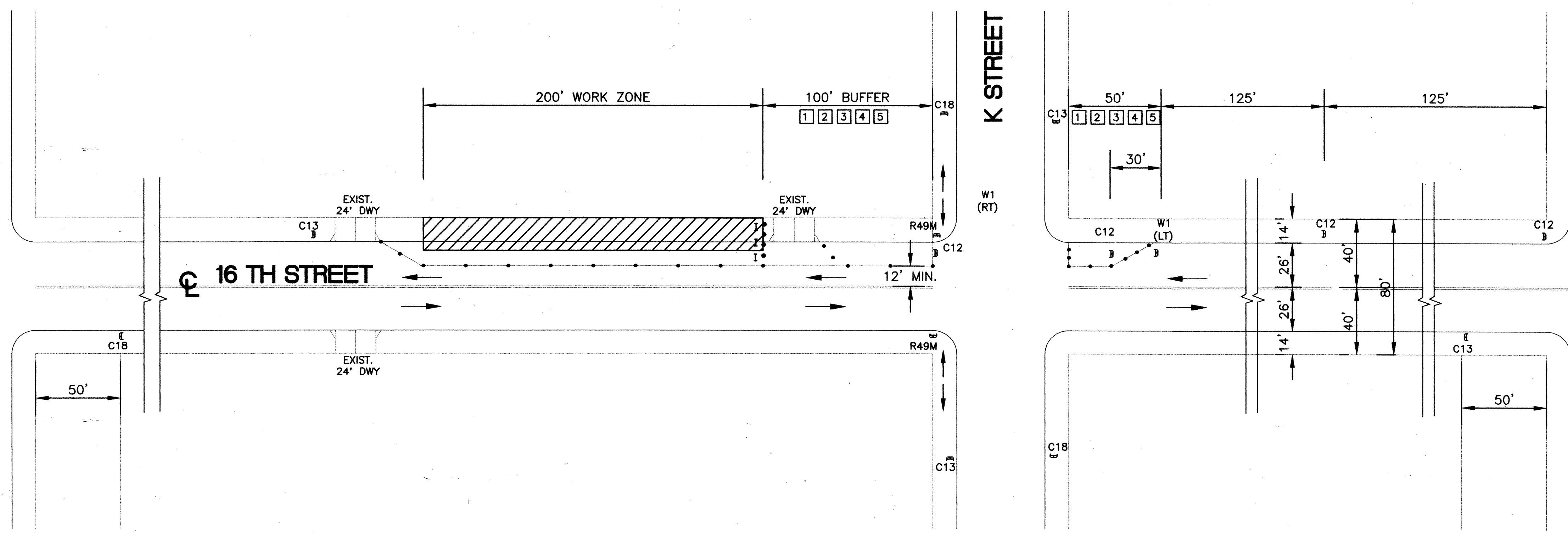
TRAFFIC CONTROL NOTES:

- 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.

IMPERIAL AVENUE



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			W.O. No. 98-267
ENGINEERING DEPARTMENT			(037000)
SHEET 6 OF 13 SHEETS			
FOR CITY ENGINEER		DATE	
<i>M. Hamak</i>		4/28/99	
DESCRIPTION	BY	APPROVED	DATE
ORIGINAL	EARTH TECH		SEP 29 99
			1837-6283
			CONTROL CERTIFICATION
			NAD 83
			197-1723
			LAMBERT COORDINATES
AS-BLT. G.E. <i>W</i>		DATE STARTED 5-15-1999	
INSPECTOR SEVERINO MENDOZA		DATE COMPLETED 9-26-2000	
			29557-6-D
DWG NO.			

JOB NUMBER 24990 R-114 FILE NAME: 438_TC-2.DWG 3/17/99

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610



DESIGNED BY	SDM	DATE	11/5/98
DRAWN BY	LES	DATE	11/5/98
CHECKED BY	KAG	DATE	11/5/98
MTDB PRJ. ENG.	GPD	DATE	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

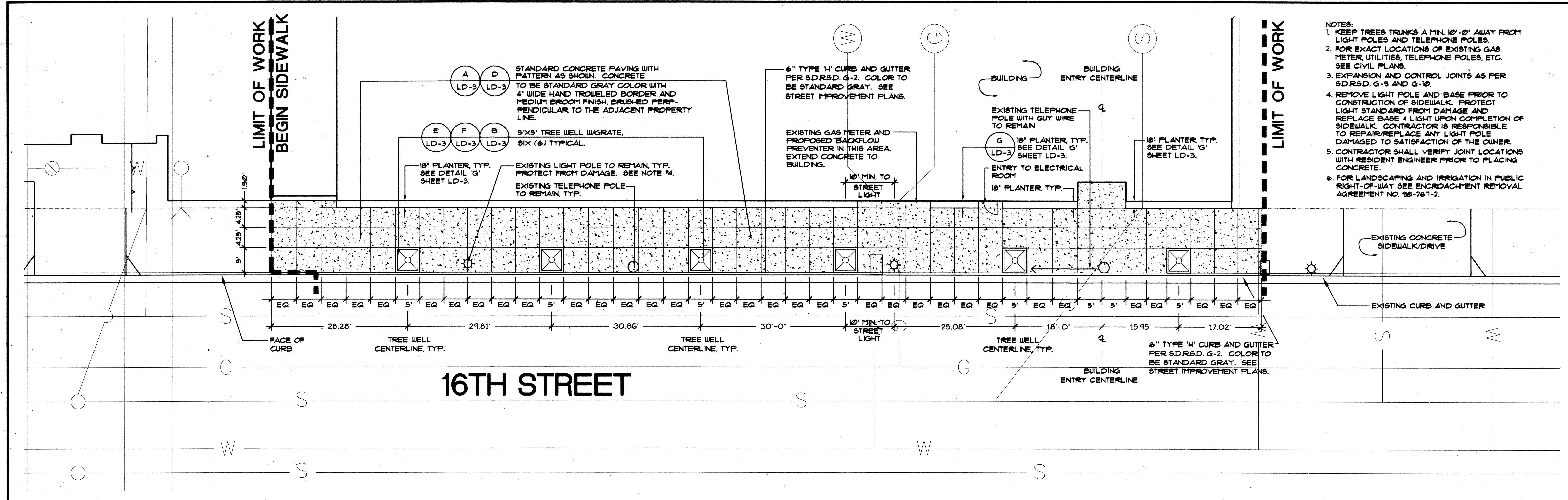
SCALE 1"=40'

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



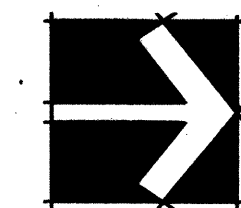
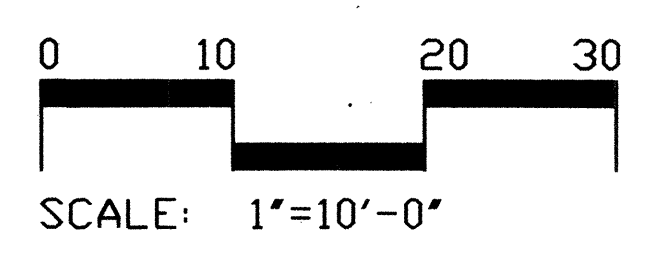
- NOTES:
1. KEEP TREES TRUNKS A MIN. 10'-0" AWAY FROM LIGHT POLES AND TELEPHONE POLES.
 2. FOR EXACT LOCATIONS OF EXISTING GAS METER, UTILITIES, TELEPHONE POLES, ETC. SEE CIVIL PLANS.
 3. EXPANSION AND CONTROL JOINTS AS PER S.D.R.S.D. G-9 AND G-10.
 4. REMOVE LIGHT POLE AND BASE PRIOR TO CONSTRUCTION OF SIDEWALK. PROTECT LIGHT STANDARD FROM DAMAGE AND REPLACE BASE 4 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. 98-261-2.

NOTE:
SEE DWG. LD-3 FOR DETAILS. SEE SPECIFICATIONS AND SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

PRIVATE CONTRACT
IMPROVEMENT PLAN FOR:

16 TH STREET
SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

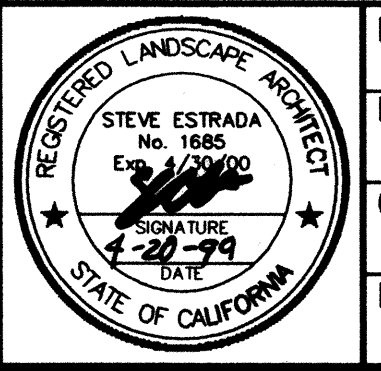
CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT SHEET 7 OF 13 SHEETS		W.O. NO. 98-267 (037000)
<i>M. Hearn</i> 4/25/99 FOR CITY ENGINEER DATE		
DESCRIPTION	BY	APPROVED
ORIGINAL	ELP	SEP 99
		1837-6283 NAD 83 COORDINATES
		197-1723 LAMBERT COORDINATES
AS-BLT.	C.E.	DATE STARTED 5-15-1999 DATE COMPLETED 9-26-2000
CONTRACTOR C.E. WYLLIE	INSPECTOR G. F. RIND	29557-7-D DWG. NO.



JOB NUMBER 338-06 R-14 FILE NAME: MAIN/PROJECTS/33806/LYDING 4/20/99

EARTHTECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

ESTRADA
Estrada Land Planning
Urban Design Landscape Architecture Computer Imaging
85 Horizon Plaza, Suite 300 (Building)
750 Broadway Circle, Suite 300 (Mapping)
San Diego, California 92101
619.228.0140 Fax: 619.228.0078
elp@estradalandplan.com



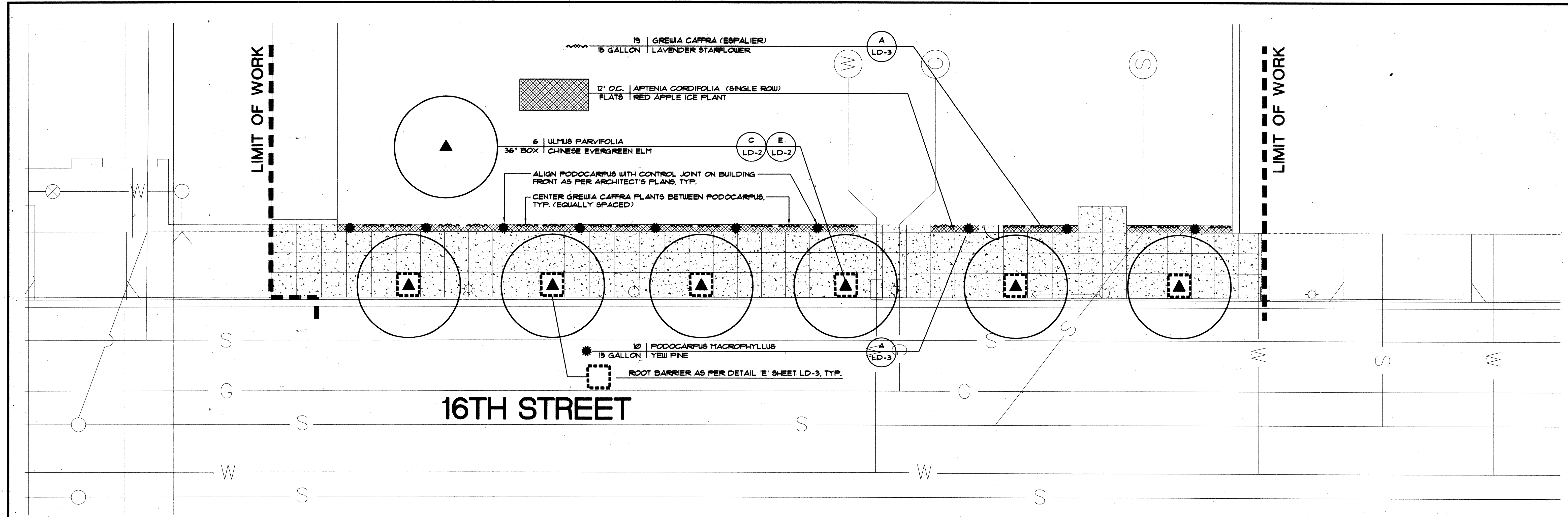
DESIGNED BY	TRS	DATE	4/20/99
DRAWN BY	TRS	DATE	4/20/99
CHECKED BY	SM	DATE	4/20/99
MTDB PRJ. ENG.			

MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY		SCALE 1"=10'-0"
LANDSCAPE CONSTRUCTION PLAN		MTDB CONTRACT NO. BUS-443B
DRAWING NO. LD-1	SHEET NO. 99	

AS-BUILT

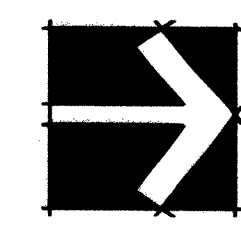
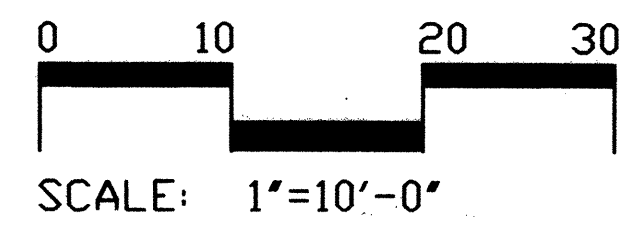
IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY



NOTE:
SEE SHEETS LD-3 AND LD-4 FOR
PLANTING DETAILS, LEGEND AND NOTES.

PRIVATE CONTRACT
PLANTING PLAN FOR:
16 TH STREET
SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

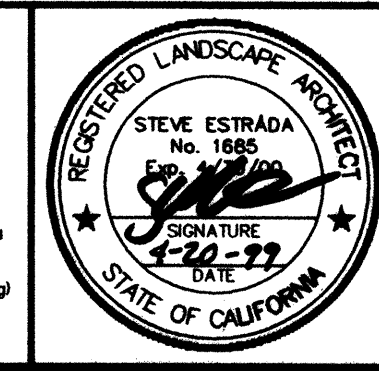
CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT SHEET 8 OF 13 SHEETS		V.O. No. 98-267 (037000)
FOR CITY ENGINEER <i>[Signature]</i> DATE 4/29/99		
DESCRIPTION	BY	APPROVED
ORIGINAL	ELP	SEP 99 99
AS-BLT. C.E. <i>[Signature]</i>		1837-6283 KAD 88 COORDINATES
CONTRACTOR C.E. WYLIE DATE STARTED 5-15-1999 INSPECTOR SEVERINO MENDOZA DATE COMPLETED 9-26-2000		197-1723 LANDSCAPE COORDINATES
		29557-8-D DWG NO.



JOB NUMBER 339-06 R-14 FILE NAME: M:\PROJECTS\33906\33906_P1.DWG 4/20/99

EARTH TECH
9675 BUSINESS PARK AVENUE, SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

ESTRADA
Estrada Land Planning
85 Horton Plaza, Suite 300 (Building)
750 Broadway Circle, Suite 300 (Opposite)
San Diego, California 92103
619.238.0343 fax: 619.236.0578
elp@earthtech.com



DESIGNED BY	TRS	DATE	4/20/99
DRAWN BY	TRS	DATE	4/20/99
CHECKED BY	SM	DATE	4/20/99
MTDB PRJ. ENG.			

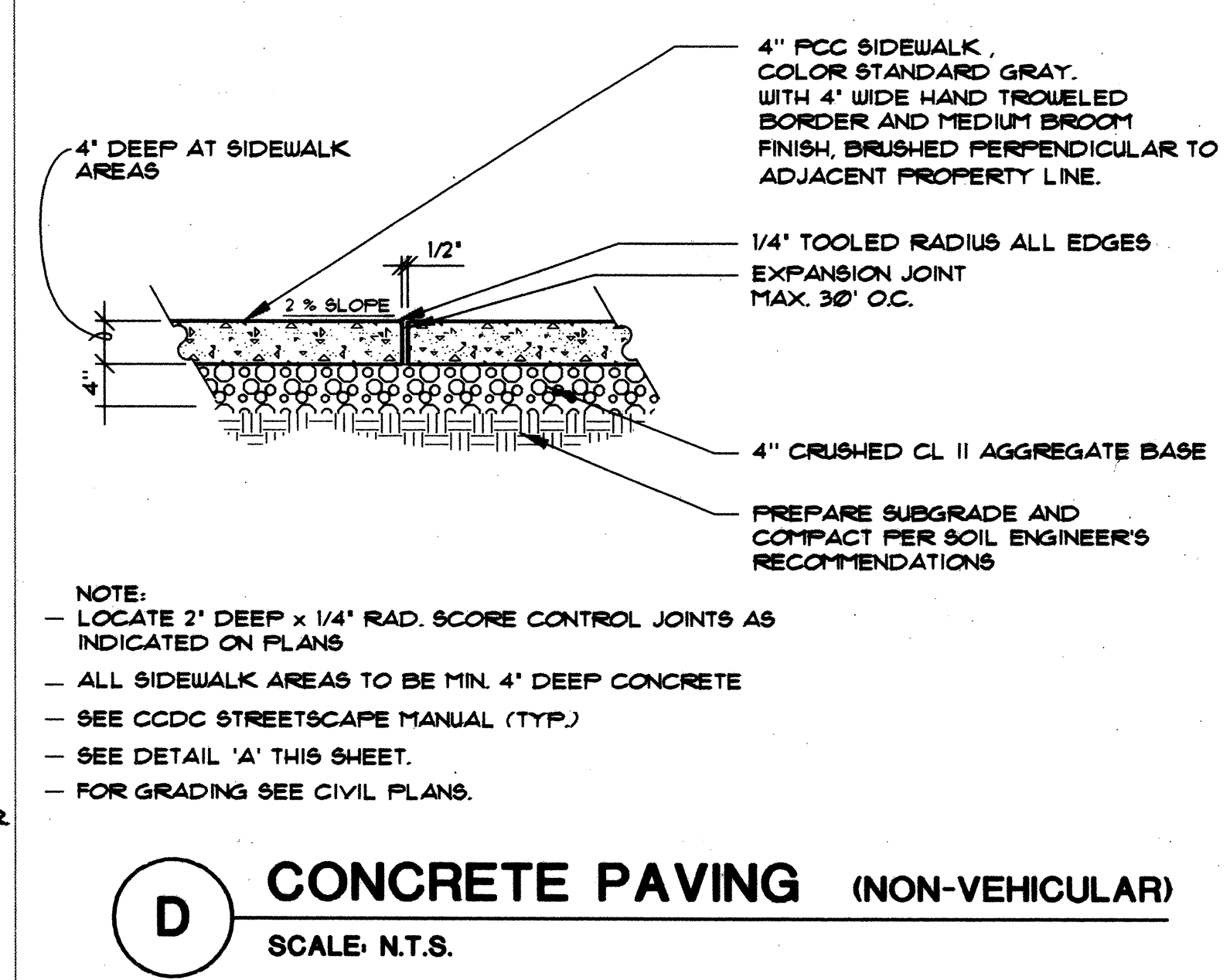
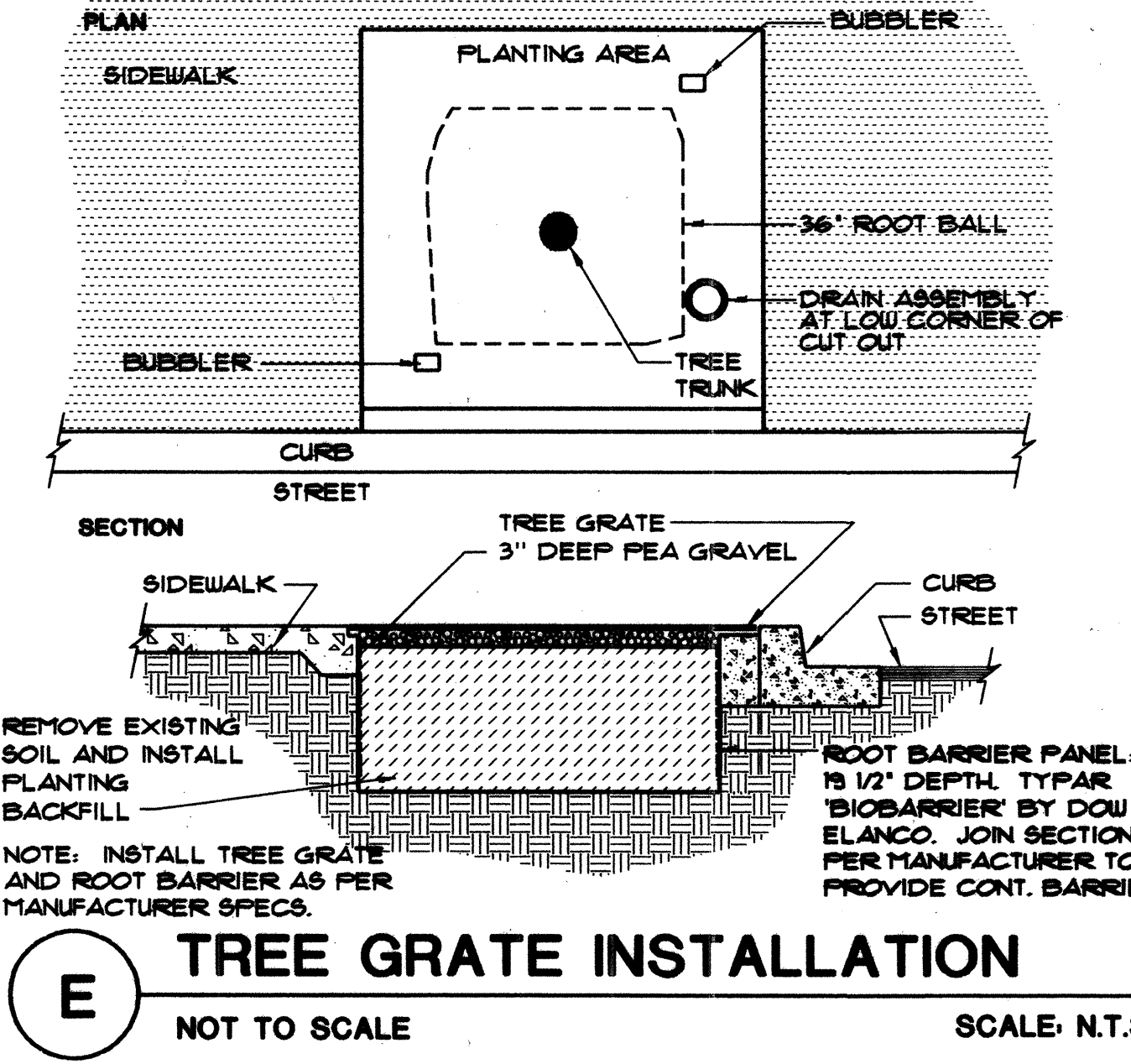
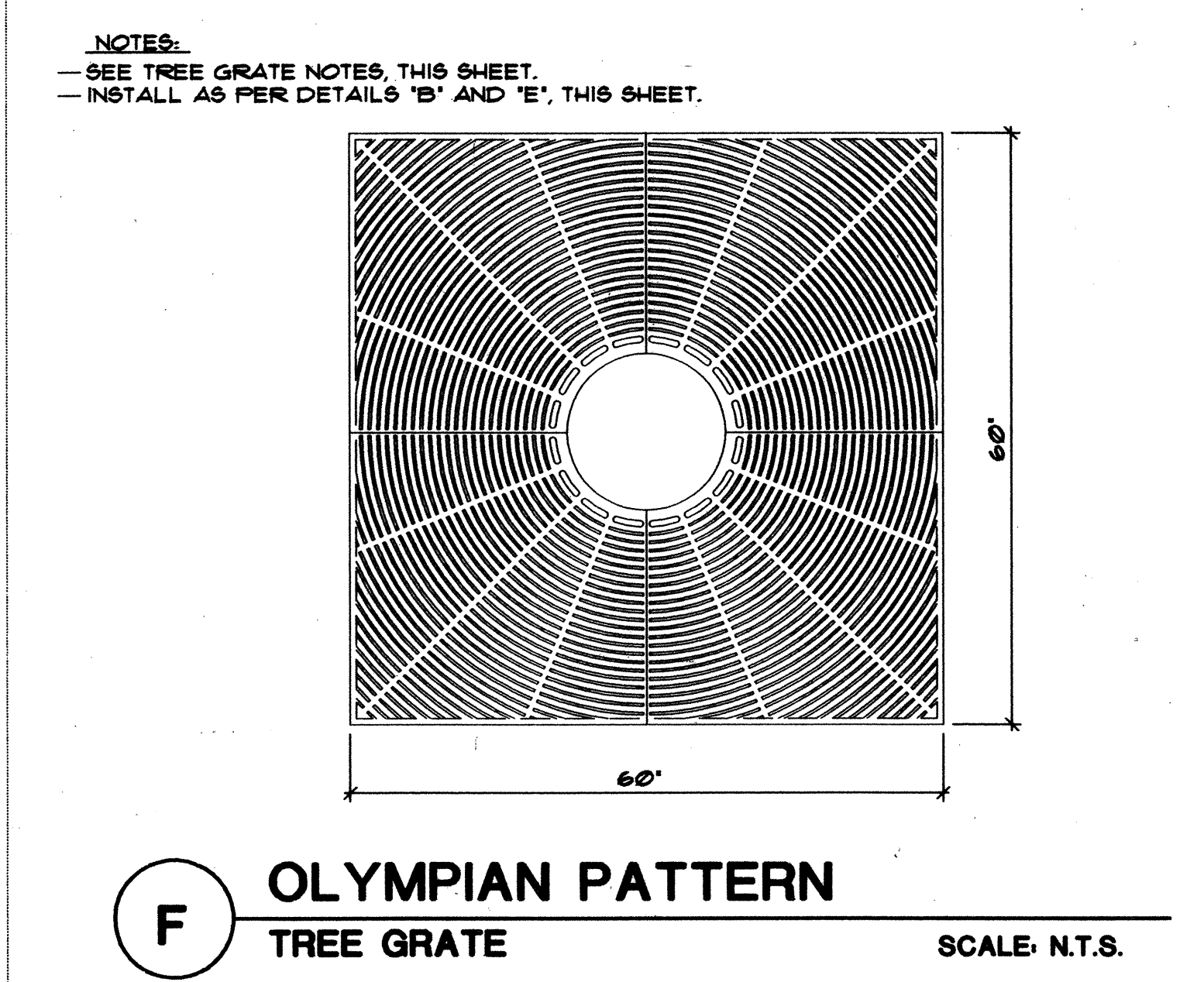
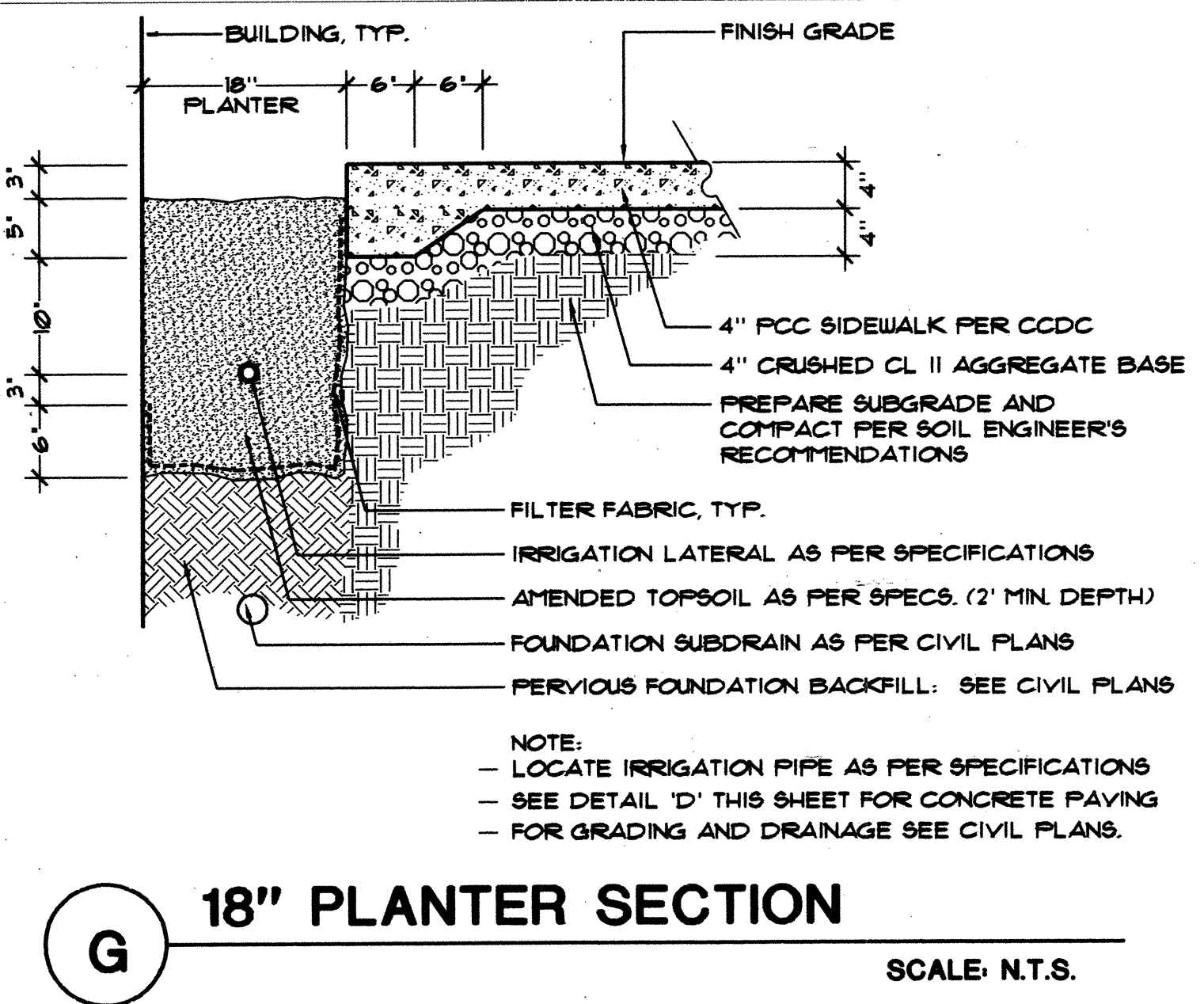
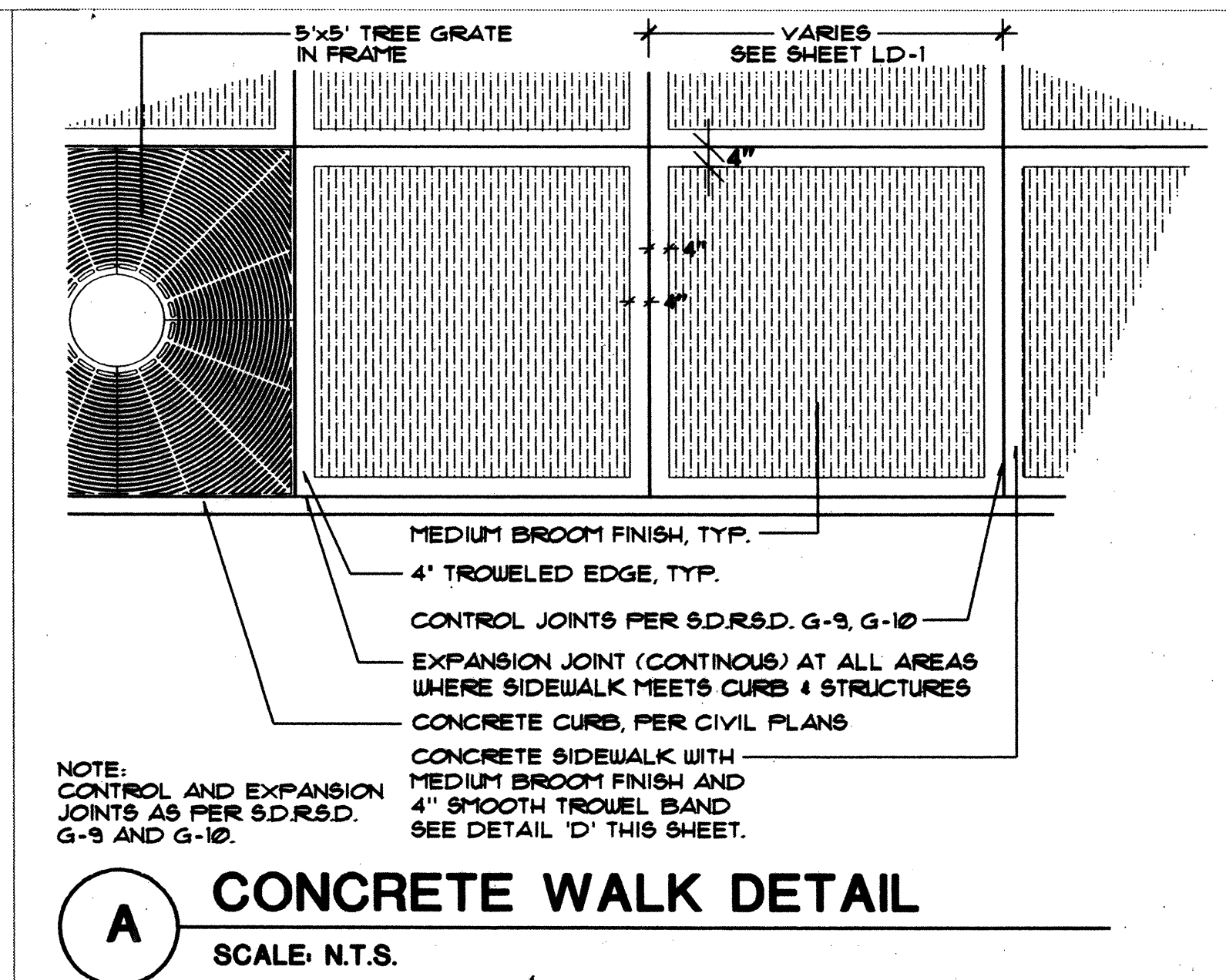
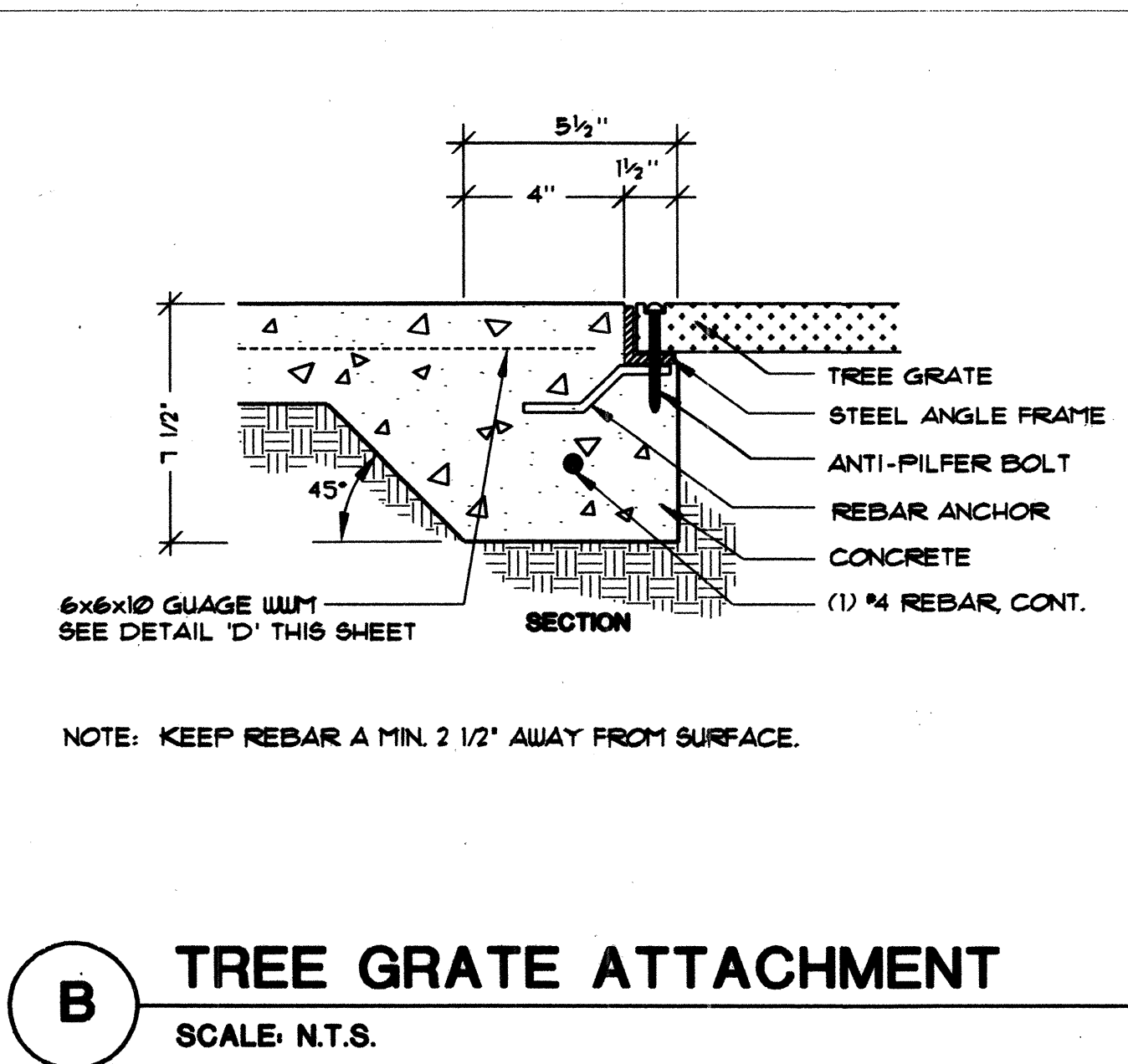
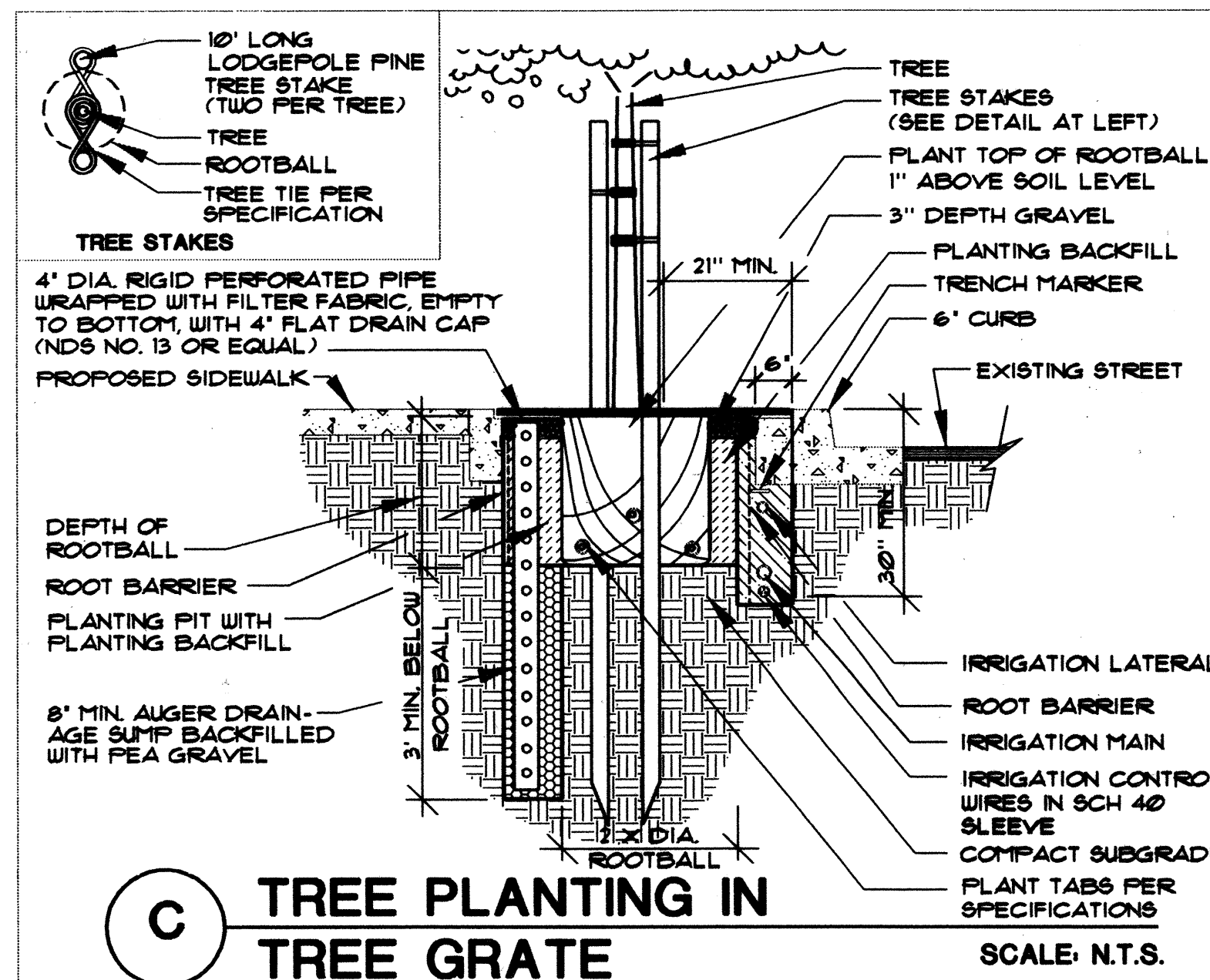
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

**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

AS-BUILT

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY



JOB NUMBER 139-08 R-12 FILE NAME: MAM/PROJECTS/13908/13908_PAVING 4/20/99

PRIVATE CONTRACT				
PAVING/PLANTING/CONSTRUCTION DETAILS FOR:				
16 TH STREET				
SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY				
CITY OF SAN DIEGO, CALIFORNIA			V.O. NO. 98-267	
ENGINEERING DEPARTMENT			(037000)	
SHEET 9 OF 13 SHEETS				
<i>M. Tamrak</i>		DATE 4/28/99		
FOR CITY ENGINEER				
DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP			SEP 28 99
AS-BLT			C.E. <i>N</i>	1837-6283
CONTRACTOR C.E. WYLLIE			DATE STARTED 5-15-1999	197-1723
INSPECTOR VERILIO MENDOZA			DATE COMPLETED 9-74-2000	29557-9-D
			DWG NO.	101

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 Horizon Plaza, Suite 300 (4th floor)
750 Broadway Circle, Suite 500 (4th floor)
San Diego, California 92101
619-291-1343 Fax: 619-291-0678
www.estradalandplanning.com

DESIGNED BY TRS DATE 4/20/99
DRAWN BY TRS DATE 4/20/99
CHECKED BY SM DATE 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
SCALE: N.T.S.
LANDSCAPE CONSTRUCTION DETAILS AND PLANTING LEGEND, DETAILS AND NOTES
MTDB CONTRACT NO. BUS-443B
DRAWING NO. LD-3 SHEET NO. 101

AS-BUILT

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

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

GROUND COVER 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 18" 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

- 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:
- THE PLANTING PLANS ARE DIAGRAMMATIC. MINOR ADJUSTMENTS IN PLANT LOCATIONS, ORIENTATION, AND TYPE MAY BE MADE AT THE DISCRETION OF THE ENGINEER.
- THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE OTHER TRADES AND MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION.
- DO NOT DAMAGE ROOTBALL AND/OR FOLIAGE OF PLANTS DURING TRANSPORTATION OR PLANT INSTALLATION.
- ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER AND REPLACED UPON REQUEST BEFORE OR AFTER PLANTING.
- THE ENGINEER SHALL APPROVE FINAL PLACEMENT AND ORIENTATION OF ALL TREES AND SHRUBS PRIOR TO PLANTING.
- 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.
- INSTALL 3" LAYER OF PEA GRAVEL THROUGHOUT ENTIRE SURFACE OF TREE PLANTING AREAS UNDER TREE GRATE, TYPICAL.
- 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 M60065, 60" X 60" SQUARE (2-PIECE) GRATE 1/4" SLOTS, WITH 12" TREE OPENING, AND ONE PIECE STEEL FRAME UNIT.

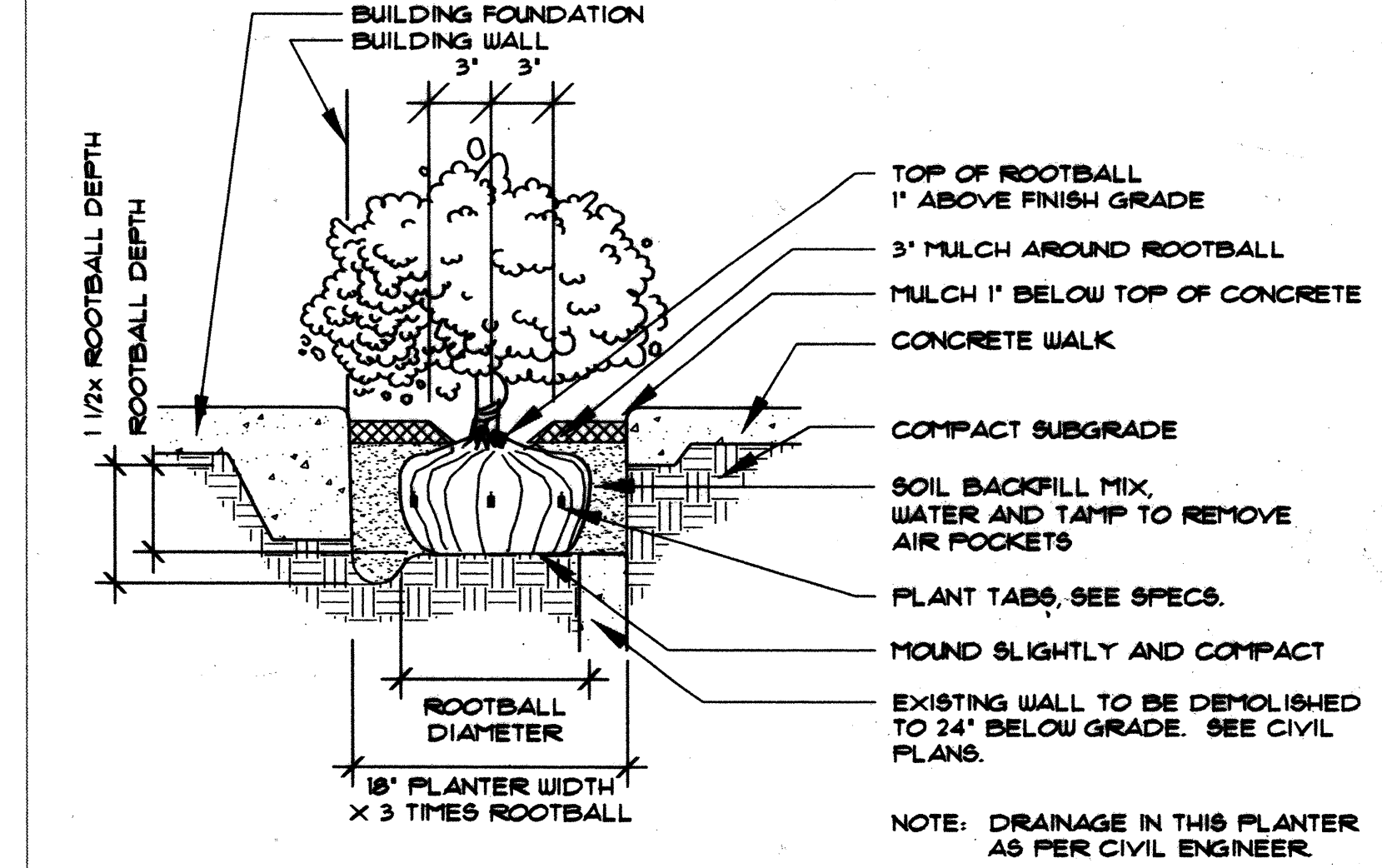
FINISH: FACTORY APPLIED FINISH, CONSISTING OF ONE COAT PRIMER AND ONE TOP COAT BLACK ENAMEL.

HARDWARE: GALVANIZED, ANTI-FILFER HARDWARE. PAINT EXPOSED HARDWARE TO MATCH GRATE.

MANUFACTURER: IRONSMITH
41651 CORPORATE WAY, SUITE 3
PALM DESERT, CA 92260
(800) 338-4166

OR APPROVED EQUAL

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.

JOB NUMBER: 339-06 R-12 FILE NAME: MAIN/PROJECTS/33906/33906_P0.DWG 4/20/99

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: *M. Jammak* DATE: 4/28/99

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP		SEP 29 99	

1837-6283
M.B. IS COORDINATOR

197-1723
LANSBET COORDINATOR

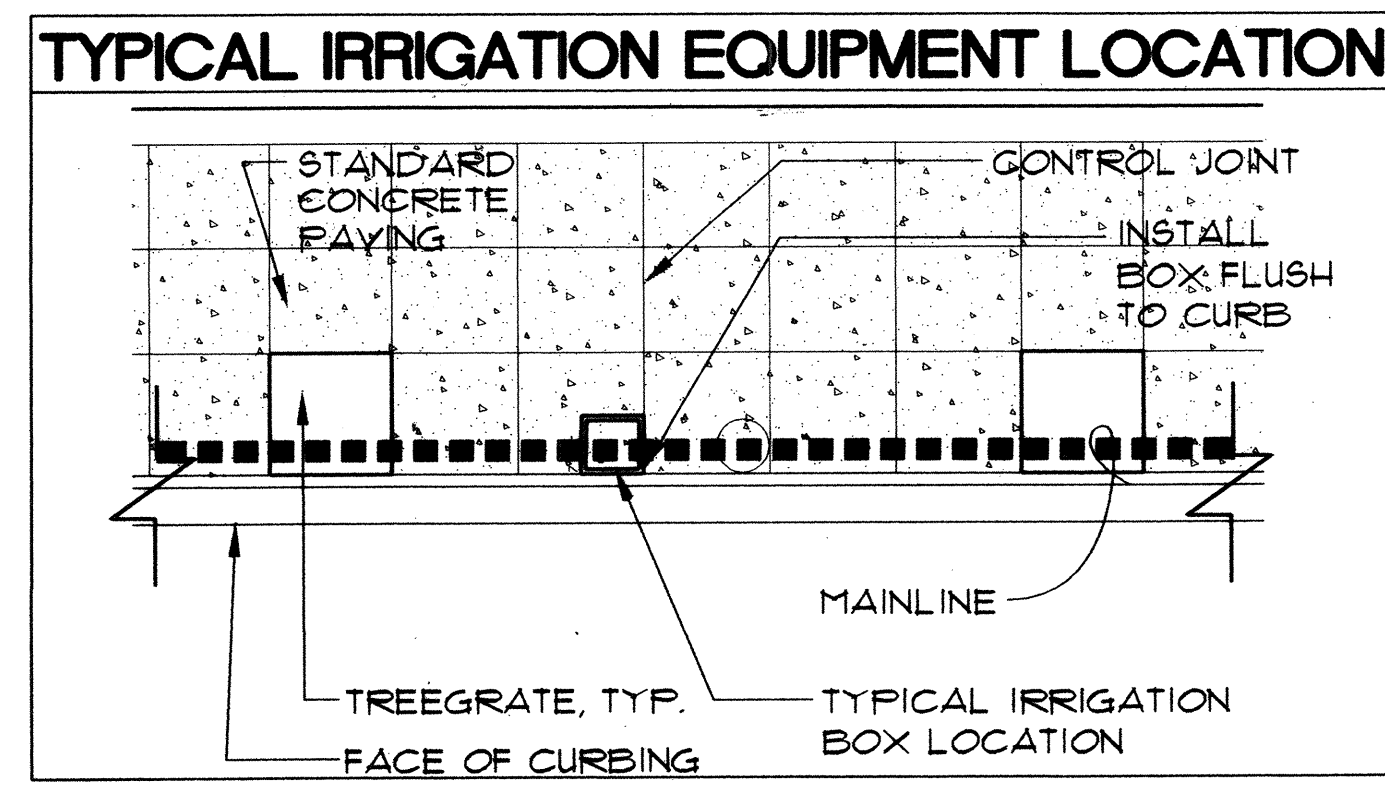
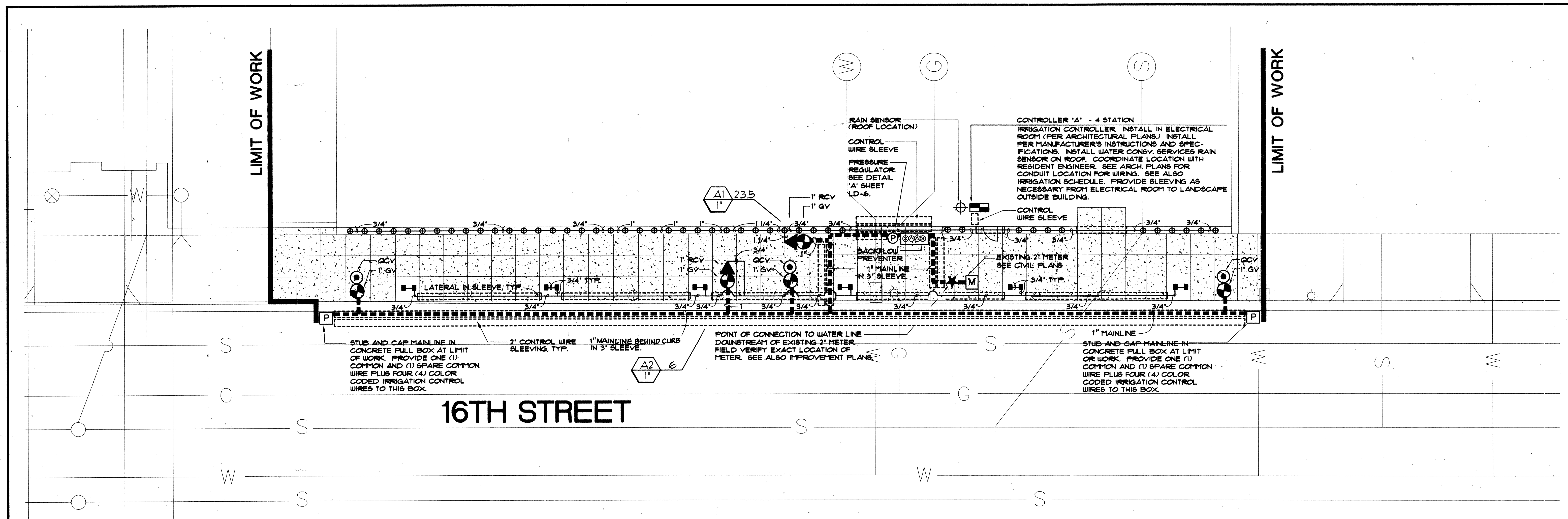
AS-BLT C.E. *[Signature]*

CONTRACTOR: G.E. WYLLIE DATE STARTED: 5-15-1999
INSPECTOR: CEVERINA MENDOZA DATE COMPLETED: 9-24-2000

29557-10-D
DWG. NO.

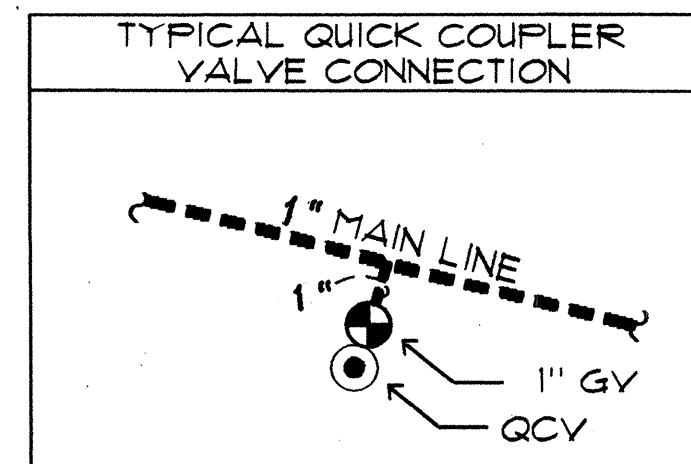
 9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131 TEL: (619) 536-5610	 85 Hoston Plaza, Suite 300 (Leasing) 756 Broadway Circle, Suite 300 (Approval) San Diego, California 92101 619.238.0343 fax: 619.238.0678 epl@earthtech.com		DESIGNED BY TRS	DATE 4/20/99	 Metropolitan Transit Development Board 1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466		IMPERIAL AVENUE DIVISION BUS MAINTENANCE	SCALE NTS
			DRAWN BY TRS	4/20/99			LANDSCAPE PLANTING DETAILS AND NOTES	MTDB CONTRACT NO. BUS-443B
		CHECKED BY SM		4/20/99			DRAWING NO. LD-4	SHEET NO. 102
		MTDB PRJ. ENG.						

AS-BUILT



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



- 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. 98-261-2.

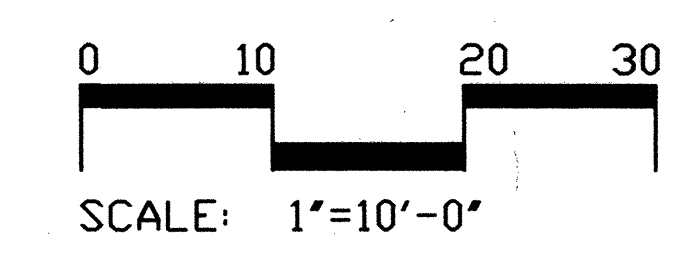
NOTE:
SEE SHEETS LD-6 AND LD-7 FOR IRRIGATION DETAILS, LEGEND AND NOTES.

PRIVATE CONTRACT
IRRIGATION PLAN FOR:

16 TH STREET

SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

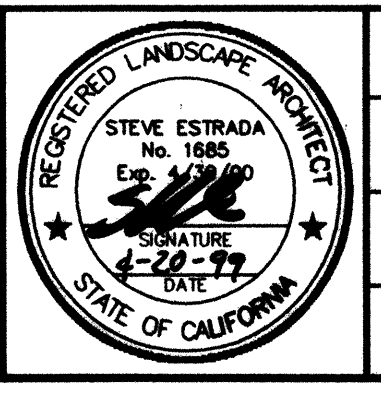
CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT SHEET 11 OF 13 SHEETS	W.O. NO. 98-267 (037000)			
<i>M. Kamak</i> FOR CITY ENGINEER	DATE 4/28/99			
DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	ELP			SEP 99 V1
				1837-6283 MAD 88 COORDINATES
				197-1723 LANDSCAPE COORDINATES
CONTRACTOR G.E. WYLLIE INSPECTOR G. ERIN MENON	C.E. <i>[Signature]</i>	DATE STARTED 5-15-1999 DATE COMPLETED 9-16-2000		29557-11-D DWG NO.



JOB NUMBER 339-06 R-14 FILE NAME: MAN/PROJECTS/33906/33906_IR.DWG 4/20/99

EARTHTECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

ESTRADA
Estrada Land Planning
95 Horizon Plaza, Suite 300 (off I-15)
750 Broadway, Suite 300 (off I-16)
San Diego, California 92101
619-291-1163 fax: 619-291-0578
epl@estradalandplanning.com



DESIGNED BY	TRS	DATE	4/20/99
DRAWN BY	TRS	DATE	4/20/99
CHECKED BY	SM	DATE	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

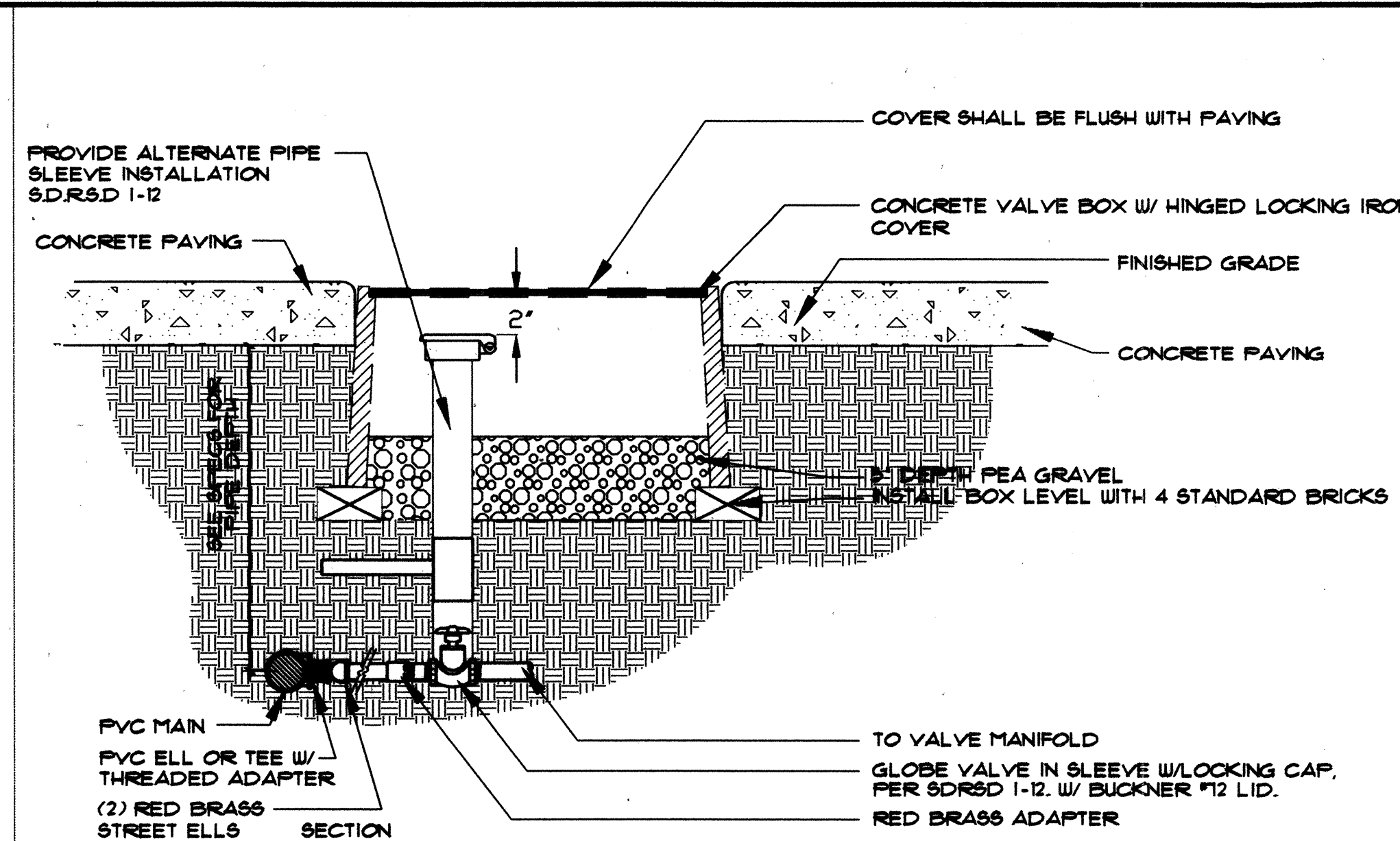
SCALE 1"=10'-0"

MTDB CONTRACT NO. BUS-443B

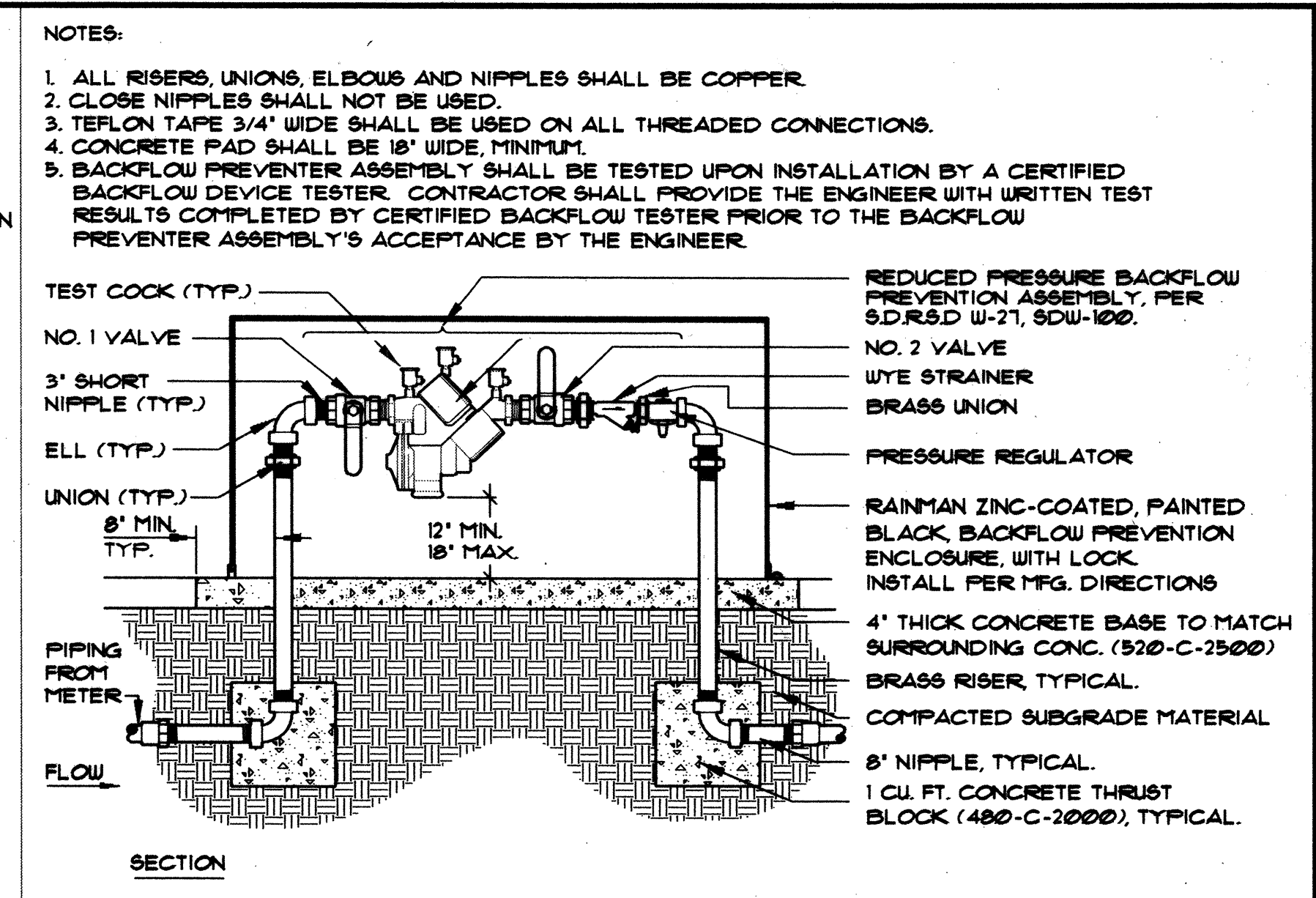
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AS-BUILT

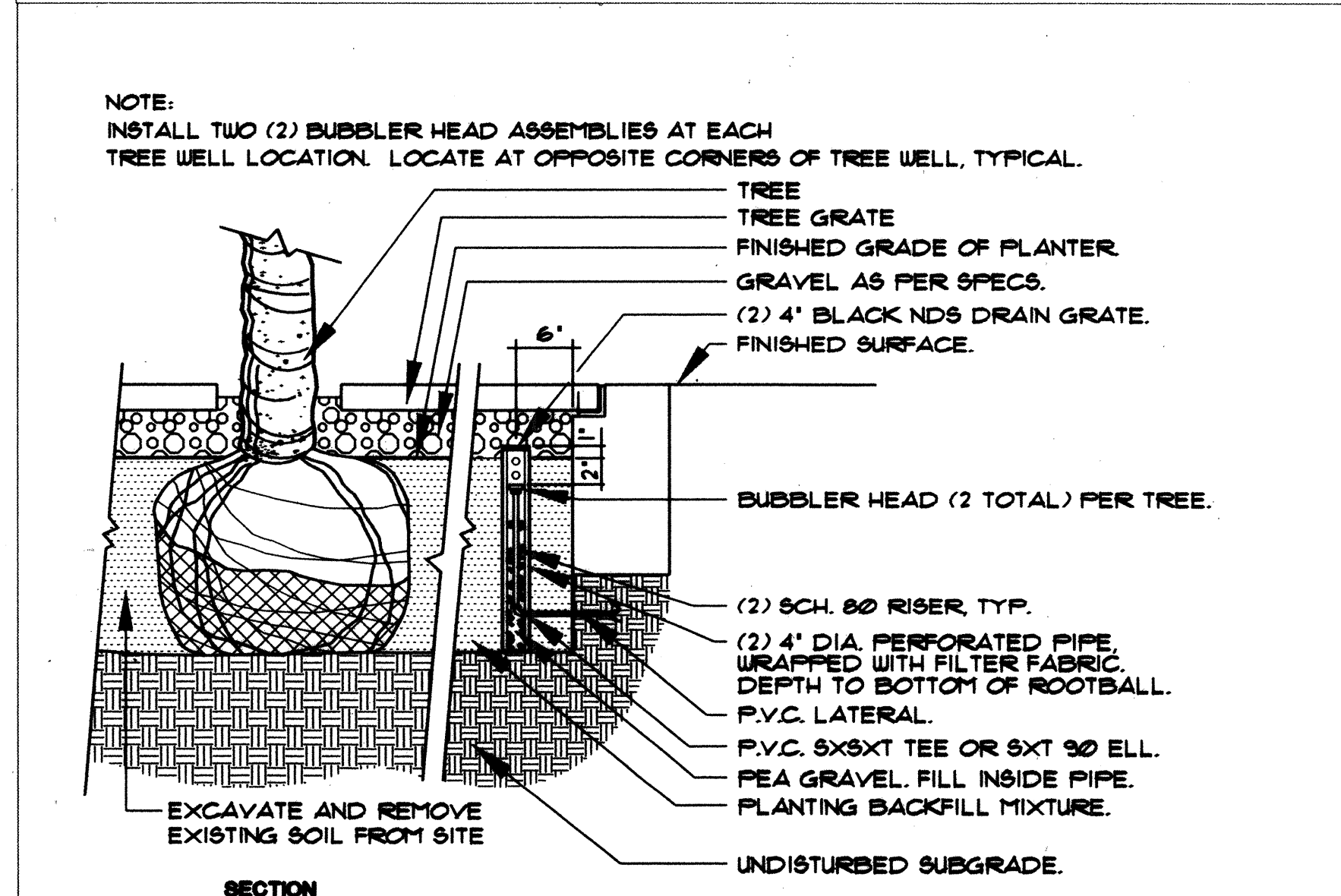
IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY



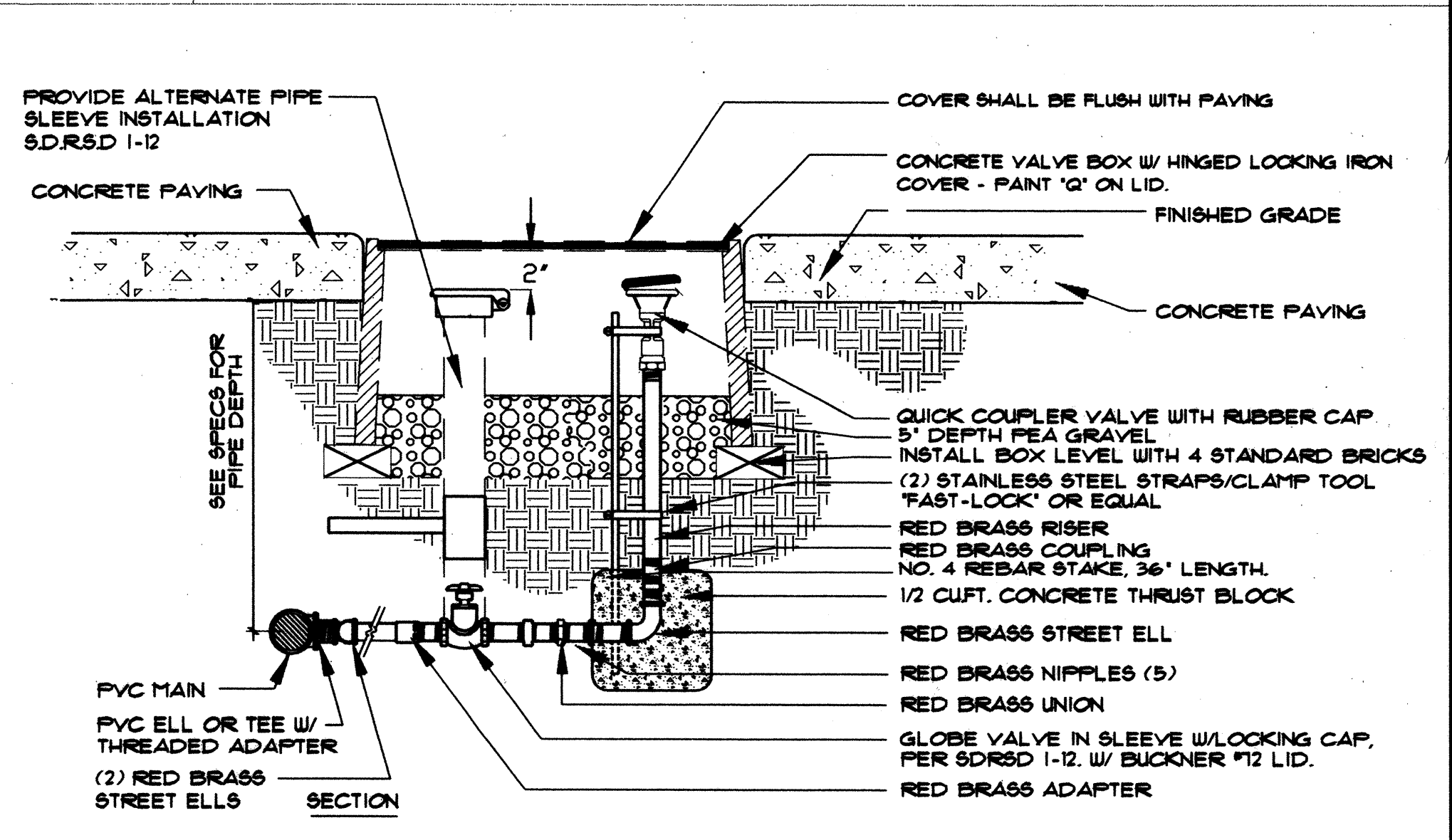
B GLOBE VALVE
NOT TO SCALE (LOCATED IN PAVING AREAS)



A BACKFLOW PREVENTER ASSEMBLY
NOT TO SCALE



D BUBBLER HEADS AT TREE WELL
NOT TO SCALE



C QUICK COUPLER VALVE WITH GLOBE VALVE
NOT TO SCALE (LOCATED IN PAVING AREAS)

PRIVATE CONTRACT
IRRIGATION DETAILS FOR:

16 TH STREET
SAN DIEGO TRANSIT, IMPERIAL AVE DIVISION - BUS MAINTENANCE FACILITY

CITY OF SAN DIEGO, CALIFORNIA		V.O. NO. 98-267 (037000)
ENGINEERING DEPARTMENT		
SHEET 12 OF 13 SHEETS		
FOR CITY ENGINEER		DATE 4/28/99
DESCRIPTION	BY	APPROVED
ORIGINAL	ELP	SEP 20 99
		1837-6283 NAD 83 COORDINATES
AS-BLT		C.E. [Signature]
CONTRACTOR: C.E. WYLIE		DATE STARTED: 5-15-1999
INSPECTOR: SEVERINO MENDOZA		DATE COMPLETED: 9-24-2000
		29557-12-D DWG NO.

JOB NUMBER: 339-06 R-14 FILE NAME: MAIN/PROJECTS/33906/33906_ID.DWG 4/20/99

EARTHTECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA. 92131
TEL: (619) 536-5610

Estrada Land Planning
Urban Design Landscape Architecture Consulting Group
85 Horton Plaza, Suite 300 (Building 755)
755 Broadway, Suite 300 (Infrared)
San Diego, California 92101
(619) 291-0140 fax: (619) 291-0078
epl@estrada-land.com

REGISTERED LANDSCAPE ARCHITECT
STEVE ESTRADA
No. 1585
EXPIRES 4-30-19
STATE OF CALIFORNIA

DESIGNED BY	TRS	DATE	4/20/99
DRAWN BY	TRS	DATE	4/20/99
CHECKED BY	SM	DATE	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 DETAILS

SCALE	NTS
MTDB CONTRACT NO.	BUS-443B
DRAWING NO.	LD-6
SHEET NO.	104

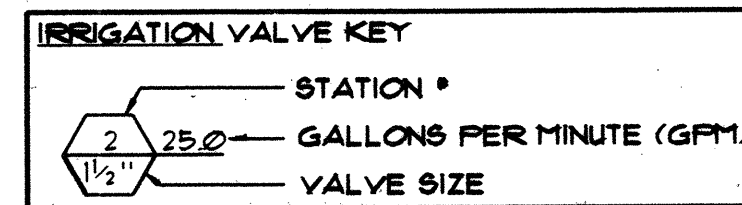
AS-BUILT

IMPERIAL AVENUE DIVISION BUS MAINTENANCE FACILITY

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
□	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	R1BF-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. 1-18
⊕	'RAIN GUARD' RAIN SENSOR IN VANDAL RESISTANT ENCLOSURE	WATER CONSY. SERVICES	UCS 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	500Y58R 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-EPB	INSTALL IN CONCRETE VALVE BOX SIZE PER PLAN. INSTALL IN CONCRETE PAVING. SEE DETAIL S.D.R.S.D. 1-14.	S.D.R.S.D. 1-14
■	PRESSURE COMPENSATING FULL-CIRCLE BUBBLERS	RAINBIRD	1402	50 GPM. INSTALL TWO PER TREE	DETAIL D /LD-6
⊕	MFR STREAM BUBBLERS 1006-SAM-FRS-5CST-B	RAINBIRD	1006-SAM-FRS-5CST-B	50 GPM. INSTALL AS PER PLAN WITH FCS-030 SCREEN.	S.D.R.S.D. 1-2
⊙	QUICK COUPLING VALVE	RAINBIRD	44LRC	1" SIZE - ISOLATE FROM MAIN WITH GLOBE 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. 1-25
-----	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. 1-25
-----	IRRIGATION SLEEVE	---	SCH. 40 PVC	MINIMUM 2X DIA OF PIPE BEING SLEEVED. 1 PIPE PER SLEEVE. SIZE AS NOTED.	---
⊗	IRRIGATION ELECTRICAL FULL BOX	---	---	ALL SPLICES SHALL OCCUR IN FULL BOX OR CONTROL VALVE BOXES	S.D.R.S.D. 1-15

NOTE: IRRIGATION CONTROL WIRE SHALL BE INSTALLED IN 1" SCH. 40 PVC SLEEVE UNDER PAVING.



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:

- CONTRACTOR SHALL INSTALL IRRIGATION SYSTEMS THAT ARE COMPLETE AND FUNCTIONING IN EVERY WAY.
- PLANS ARE DIAGNOSTIC 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.
- ALL MATERIALS AND EQUIPMENT USED IN THE IRRIGATION WORK SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS AND OF QUALITY AND PERFORMANCE AS SPECIFIED.
- 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.
- 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.
- CONTRACTOR SHALL CHECK AND VERIFY ALL SITE CONDITIONS, UTILITIES, AND SERVICES PRIOR TO TRENCHING. VERIFY POINT OF CONNECTION LOCATION PRIOR TO BEGINNING OF WORK.
- 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.
- 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.
- CONTRACTOR SHALL REQUEST INSPECTIONS BY THE RESIDENT ENGINEER NO LESS THAN FORTY-EIGHT (48) HOURS IN ADVANCE.
- FLUSH ALL PIPE CLEAN OF DEBRIS PRIOR TO INSTALLATION OF BUBBLER HEADS.
- ALL IRRIGATION LINES UNDER PAVING SHALL BE SLEEVED WITH SCHEDULE 40 PIPE 2X DIA. OF PIPE BEING SLEEVED. (TYP)
- 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.
- VERIFY LOCATION OF RAIN SENSOR ON ROOF WITH RESIDENT ENGINEER AND COORDINATE INSTALLATION WITH APPROPRIATE TRADES.
- SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

JOB NUMBER: 139-08 R-14 FILE NAME: IAWM/PROJECTS/13908/13908_0.DWG 4/20/99

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)
FOR CITY ENGINEER: <i>M. Tomalak</i> DATE: 4/29/99		
DESCRIPTION	BY	APPROVED DATE FILMED
ORIGINAL	ELP	SEP 99
AS-BLT. C.E. <i>AW</i>		1837-6283 NAD 83 COORDINATES
CONTRACTOR: C.E. WYLLIE DATE STARTED: 5-15-1999 INSPECTOR: GERRINO MENDIOLA DATE COMPLETED: 9-26-2000		197-1723 LAMBERTY COORDINATES
		29557-13-D DWG NO.

EARTH TECH
9675 BUSINESS PARK AVENUE SUITE 110, SAN DIEGO, CA 92131
TEL: (619) 536-5610

Estrella Land Planning
55 Horton Plaza, Suite 900 (Building)
750 Broadway Suite 900 (Shopping)
San Diego, California 92101
619-231-1211 Fax: 619-231-0278
www.estrellalandscape.com



DESIGNED BY	TR	DATE	4/20/99
DRAWN BY	TR	DATE	4/20/99
CHECKED BY	SM	DATE	4/20/99
MTDB PRJ. ENG.			

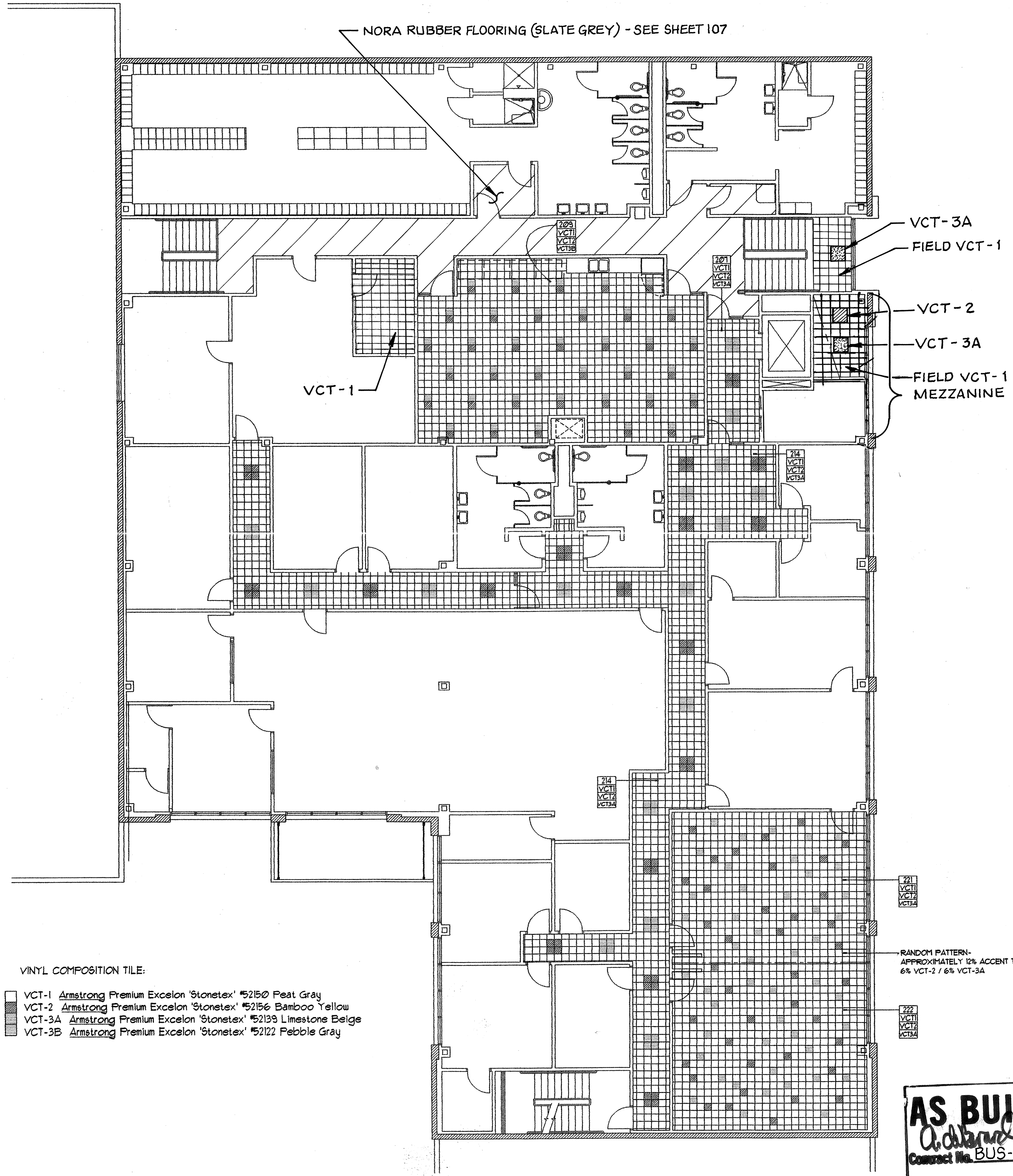
MTDB
Metropolitan Transit Development Board
1255 Imperial Avenue, Suite 1000, San Diego, Ca. 92101-7490 (619)231-1466

**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



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' #52133 Limestone Beige
- VCT-3B Armstrong Premium Excelon 'Stonetex' #52122 Pebble Gray

AS BUILT
A. J. Bennett
 Contract No. BUS-443B
 Date NOV. 2000

Cooper Roberts Bennett
 COMMERCIAL DESIGN
 SPACE PLANNING
 1000 UNIVERSITY AVENUE SUITE C103
 SAN DIEGO, CA 92103
 (619) 291-1011 FAX (619) 291-2832

IMPERIAL AVENUE DIVISION
 BUS MAINTENANCE FACILITY
 1255 IMPERIAL AVENUE, SUITE 1000 SAN DIEGO, CA 92101

DATE	07/14/00	PROJECT NO.	23500
SCALE	1/8" = 1'-0"	TITLE	VCT PATTERNS
DRAWN BY		CHECKED BY	REVISIONS
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 #51028 B/U, #116 Slate Grey
- B-2 Roppe 4" Rubber Base #128 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 1'-0" solid-core, stain-grade plain sliced Red Oak, Clear Finish w/Timely pre-finished metal frames, Stone Gray #C106

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 #D115 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:

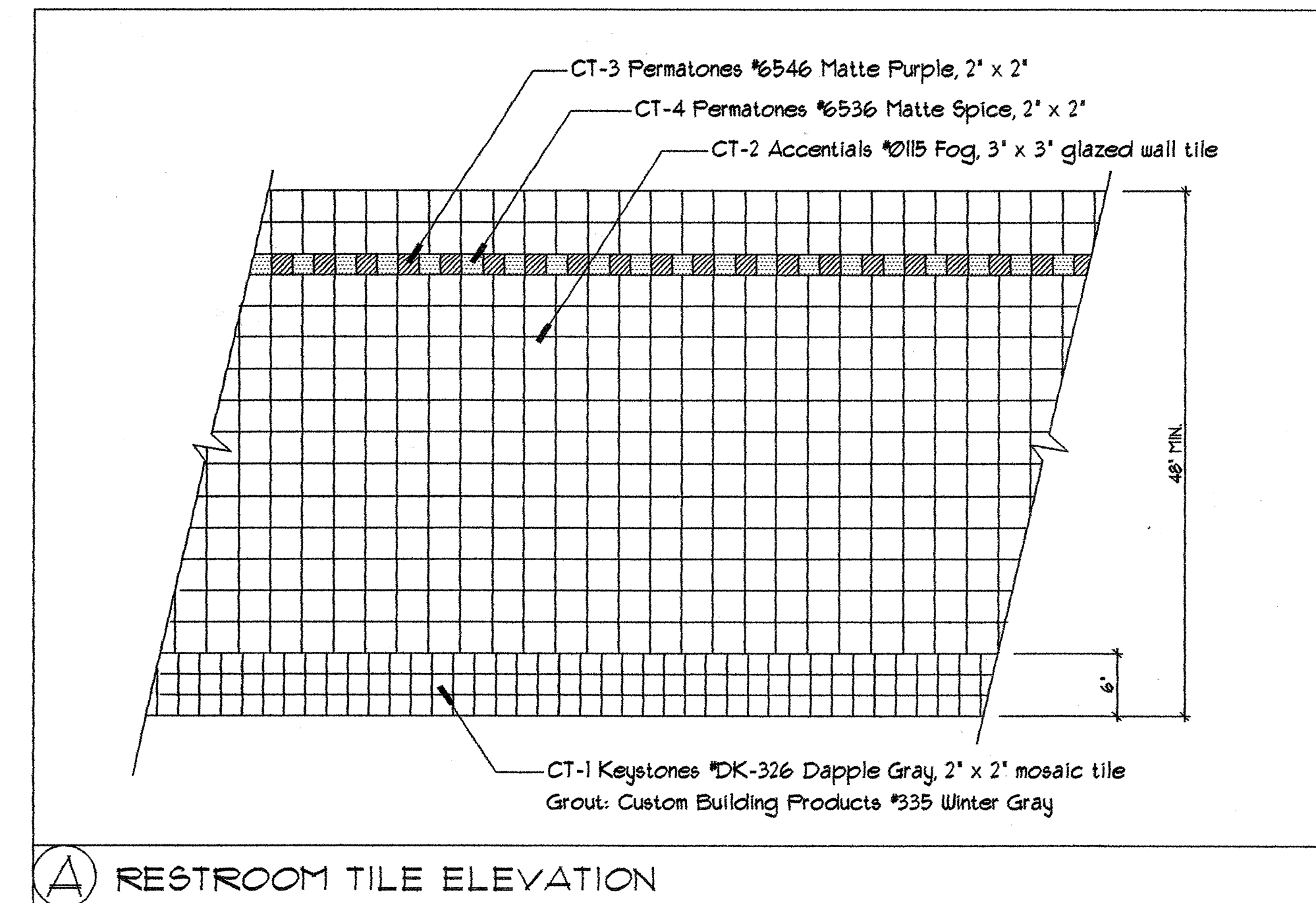
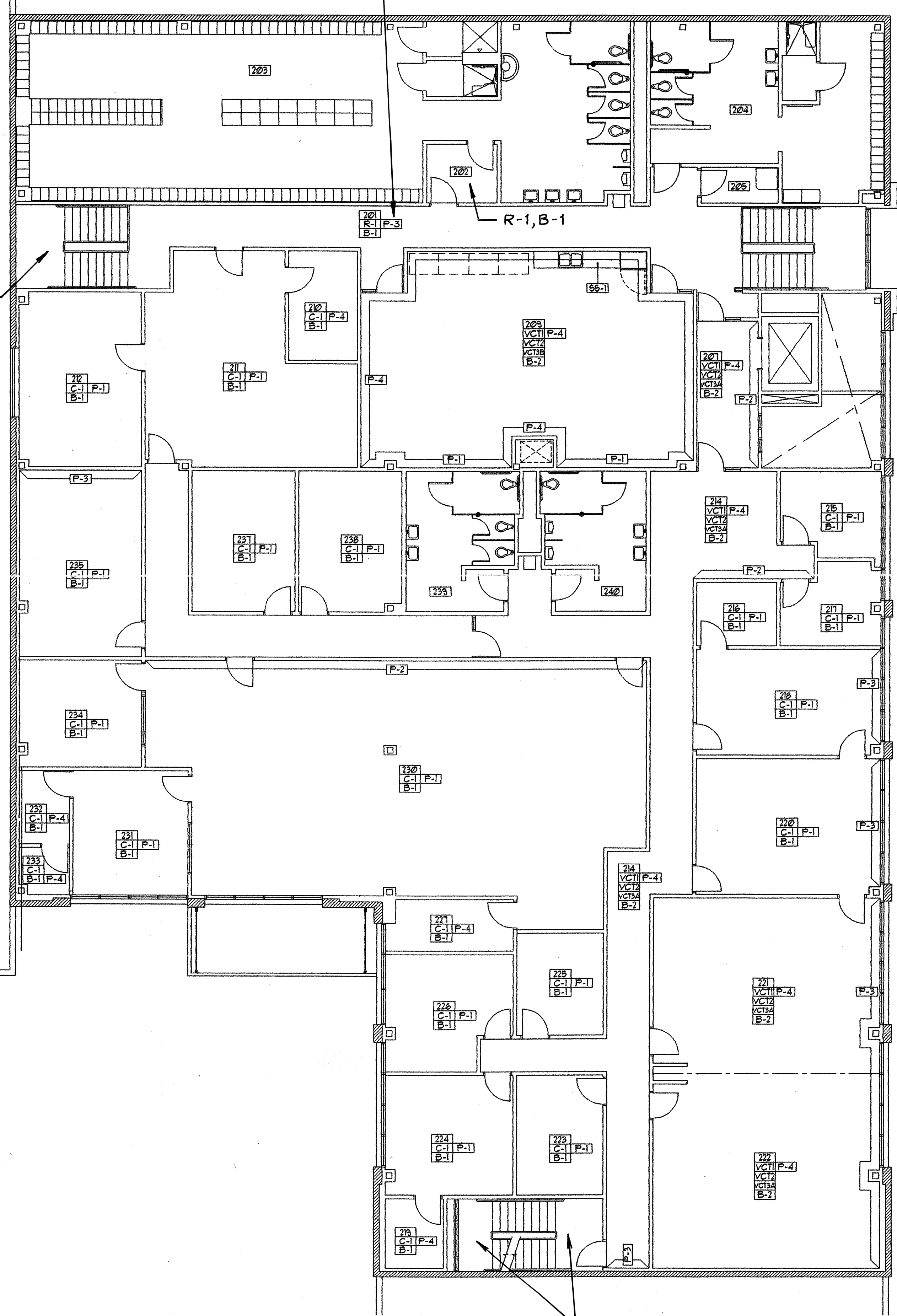
P-4 ICI #2006 Frost, Semi-gloss Finish

PLASTIC LAMINATE:

- PL-1 Wilsonart #4793-60 Windswept (stall partitions)
- PL-2 Wilsonart #4661-60 Iron Legacy (lavatory countertop)

EPOXY COATING SYSTEM

P-3 PER DRAWING A51.1 (WHISPER GREY, SP-856, DUNN EDWARDS)



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 STORAGE
- 234 OFFICE
- 235 CONFERENCE
- 236 CORRIDOR
- 237 OFFICE
- 238 OFFICE
- 239 WOMEN'S RR
- 240 MEN'S RR

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

DATE	PROJECT NO.	SCALE	T/LN	REVISIONS
06/22/00	235-00	1/8" = 1'-0"		
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

Att.A, AI 24, 09/15/22



Job Order: Job Order: MTSJOC324-13

Job Order Name: IAD RAM HVAC
Name: 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

Att.A, AI 24, 09/15/22



Job Order: Job Order: MTSJOC324-13

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	Quantity	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	Quantity	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

Att.A, AI 24, 09/15/22



Job Order: Job Order: MTSJOC324-13

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%