

**CITY OF EL PASO, TEXAS
AGENDA ITEM
DEPARTMENT HEAD'S SUMMARY FORM**

DEPARTMENT: Capital Improvement
AGENDA DATE: January 4, 2022
CONTACT PERSON/PHONE: Sam Rodriguez, P.E., City Engineer, (915) 212-1845
DISTRICT(S) AFFECTED: 2, 3, and 5

STRATEGIC GOAL: No 7: Enhance and Sustain El Paso's Infrastructure Network

SUBJECT:

That the City Council approves a Change Order to the Montana Corridor RTS project, Contract No. 2018-836 with Venegas Engineering Management and Construction, Inc., in the amount of ONE HUNDRED THIRTY THREE THOUSAND ONE HUNDRED FIFTY FIVE AND 22/100 DOLLARS (\$133,155.22) for the additional cost related to the additional wiring with an increased gauge and additional conduit required to account for relocated electrical services. This notice provides for the additional scope of work, which allows for additional capacity to the awarded contract. The new contract sum, including this change order notice is Twenty Million Forty Six Thousand One Hundred Seven and 45/100 Dollars (\$20,046,107.45). The City Manager is authorized to establish the funding sources and make any necessary budget transfers.

BACKGROUND / DISCUSSION:

The Montana Rapid Corridor Transit System (RTS) project contains station canopy shelters that require the furnishing and installation of electrical services. Site constraints forced installation of services farther than anticipated requiring increased lengths and thickness on electrical cabling. As a result, additional wiring with an increase in gauge, additional conduit and bores were required for the relocated services to accommodate the proposed service loads. Affected stations include Station 01 Copia IB/OB, Station 02 Huckleberry IB/OB, Station 03 Geronimo IB/OB, Station 08 McRae OB, Station 09 Lorne OB, Station 11 George Dieter IB/OB, Station 12 Saul Kleinfeld IB/OB and Station 13 Tierra Este IB/OB. The contractor and city have negotiated and have agreed on a fair and reasonable cost for these additional components. This change order is within the project budget.

COUNCIL REPRESENTATIVE BRIEFING:

Was a briefing provided? Yes or Not Applicable (Routine)

If yes, select the applicable districts.

- District 1
- District 2
- District 3
- District 4
- District 5
- District 6
- District 7
- District 8
- All Districts

PRIOR COUNCIL ACTION:

DATE AWARDED BY COUNCIL – December 11, 2018 – City Council Awards Solicitation No. 2018-836, CSJ 0374-02-089 to Venegas Engineering Management and Construction, Inc.

AMOUNT AND SOURCE OF FUNDING:

Total = \$133,155.22
FTA/FHWA
\$9,645.85 – City

BOARD / COMMISSION ACTION:

N/A

*****REQUIRED AUTHORIZATION*****

DEPARTMENT HEAD:

Gvette Hernandez

RESOLUTION

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EL PASO:

That the City Council approves a Change Order to the Montana Corridor RTS project, Contract No. 2018-836 with Venegas Engineering Management and Construction, Inc., in the amount of ONE HUNDRED THIRTY THREE THOUSAND ONE HUNDRED FIFTY FIVE AND 22/100 DOLLARS (\$133,155.22) for the additional cost related to the additional wiring with an increased gauge and additional conduit required to account for relocated electrical services. This notice provides for the additional scope of work, which allows for additional capacity to the awarded contract. The new contract sum, including this change order notice is Twenty Million Forty Six Thousand One Hundred Seven and 45/100 Dollars (\$20,046,107.45). The City Manager is authorized to establish the funding sources and make any necessary budget transfers.

APPROVED THIS _____ DAY OF _____ 2022.


CITY OF EL PASO:

Oscar Leeser
Mayor

ATTEST:

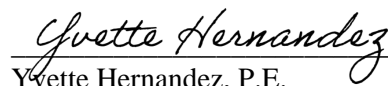
Laura D. Prine
City Clerk

APPROVED AS TO FORM:



Leslie B. Jean-Pierre (for)
Assistant City Attorney

APPROVED AS TO CONTENT



Yvette Hernandez, P.E.
Director of Capital Improvement Department

Contract Change Order Coversheet /Checklist City of El Paso Capital Improvements Department

Project Name: **Montana RTS Improvements** Date Received: **August 16, 2021**

Solicitation Number: **CSJ 0374-02-089 / Sol 2018-836** Contractor: **Venegas Engineering Management and Construction, Inc. (VEMAC)**

Change Order Number: **CO #13** Date CO was identified: **May 5, 2021**

Funding Type: QOL ___ General Fund ___ TX DOT **X** CDBG ___ AIRPORT ___ FTA **X** FAA ___

Contingency: Original Budget **\$1,772,194.87** Current Remaining Budget **\$1,378,391.73 (after CO#13)** PO No.(s) **2000000322**

Identified by: DOR ___ Contractor **X** User Dept. ___ CID **X** Other ___ (identify: _____)

Impacts: Cost **\$133,155.22** Time* **0workweek days** (Check all that Apply) * Identify Schedule activity impacted, **attach** frag-net justifying time.

No change order shall be approved unless work is ordered in writing by the Owner Designated Rep

If Written Order provided prior to formal execution of CO **attach** copy of the written directive, and justification, as why the direction was necessary prior to a formal agreement. Attach concurrence of representative having authority to execute change order(s) for the city of El Paso, Contract Specific by Resolution. If formal RFP was provided to contractor **attach** copy. If E-mail was direction provided to contractor **attach** copy.

REFER TO THE ATTACHED DOCUMENTATION.

Change order Type Check One: Mandatory **X** Discretionary ___ (Mandatory Violets Written code/standard, or will not function for intended purpose)

If mandatory **attach** justification, Direction from DOR and /or code/ standards references that the CO corrects, or Documentation from User Department Head explaining why the change is required

| | | | |
|--------------------------|----------|--|-----|
| Differing site condition | ___ | Engineering Change/Construction Deficiency | ___ |
| User requested Change ** | X | Substitution Contractor initiated | ___ |
| Designer Directive (ASI) | ___ | Error and omission | ___ |
| Value Engineering Change | ___ | Quantity Adjustment | ___ |
| Other | ___ | | |

** Identify Funding source Funding from FHWA & FTA Grant Funded Projects **attach** Concurrence of Grant Funded Programs Director

Justification: **Change Item #01: As part of the coordination with El Paso Electric Company (EPECo), the service location resulted to be far away from the anticipated location at Station 01 Copia IB/OB, Station 02 Huckleberry IB/OB, Station 03 Geronimo OB, Station 08 McRae OB, Station 09 Lorne OB, Station 11 IB/OB, Station 12 Saul Kleinfeld IB/OB and Station 13 Tierra Este IB/OB. As a result, additional wiring with an increase in gauge and additional conduit & bores were required to account for the relocated services and to accommodate the proposed service loads.**

Costs related to new items on this change order were reviewed, validated and approved by CID. Costs related to increase and decrease of quantities were based on current bid items and were found to be reasonable. No additional time was required or granted with this change.

Work at these stations did not affect the critical path and was adjusted to fit in the project schedule.

THIS CHANGED, CLASSIFIED AS OTHER CONDITION, WAS REQUESTED AND APPROVED BY CID.

Final amount increased due to additional quantities required which were not initially accounted during the RFP process. Final Negotiated amount is based on actual quantities and approved unit pricing.

REFER TO ATTACHED DOCUMENTATION.

Method Utilized for implementing change

(Reference general conditions 2.5.2) Check all that apply

- . 1 Unit Bid Prices Previously Approved **X** (attach Copy of supporting documents)
- . 2 An Agreed upon Lump Sum **X** (Attach record of Negotiations, and Cost Analysis)
- . 3 Actual Cost (Force Account Change) ___ (Attach Detailed record as per 2.2.5.2.3)

Cost/Price/Time Analysis

Attach Copy of analyst justifying cost and quantities

Contractors Original Proposal on NEW ITEMS: **\$31,656.69**
 Final Negotiated amount on NEW ITEMS: **\$134,309.49** ←
 NET Amount due to Qty Increase/Decrease: **\$(1,154.27)**
FINAL Amount on approved CO: **\$133,155.22**
 Time: Requested **0-workweek days**, justified **0 workweek days**

Independent Cost Estimate prepared Yes **X** No ___ Validated, Vendor Quotes, Published Data, Previously agreed Costs, Other (attach documentation of cost analysis)

Contract Change Reference: Reference Plan /Spec change, Describe Change (Attach additional sheets if necessary)

Narrative Description of Change SOW: **Refer to Change Order for detailed scope of work.**

Existing Drawing Reference: **Sheets 296, 303, 304, 311, 354, 366, 367, 379, 380, 389, 390, 398 and 399.**

Existing Specification Reference: **Item ELP 19 Electrical Services, ELP 20 Ground Boxes, ELP 25 Electrical Conduit and ELP 26 Electrical Conductors remain unchanged.**

New Drawings/Specifications Reference: **No new nor revisions were issued. Contractor will incorporate changes in the as-built drawings.**

User Department Concurrence (if required): _____ Print Name _____

Requested by Project /Construction Manager: _____ 12/15/2021 Print Name _____

Recommended for Approval by City Engineer: _____ Date: _____

Michael J. Vonasek, P.E.
Assistant Director Construction

CITY OF EL PASO CONSTRUCTION CHANGE ORDER

| | | | | | |
|---|--------------------------|--|--|-------------------------------------|---------------------|
| CONSTRUCTION CHANGE ORDER NO.: | 13 | DATE: | December 13, 2021 | <input checked="" type="checkbox"/> | SCOPE CHANGE |
| PROJECT: | Montana RTS Improvements | SOLICITATION NO.: | CSJ 0374-02-089 Solicitation 2018-836 | <input checked="" type="checkbox"/> | CONSTRUCTION CHANGE |
| Original Contract Amount: | \$ 19,583,784.49 | Contract Time to Final Completion: | 373 | | |
| Net Change by previous Change Orders: | \$ 329,167.74 | Total days added due to Change Orders and CQN's: | 71 | | |
| Net Change by previous Construction Quantity Notices: | \$ - | Total days added for this Change Order: | 0 | | |
| Amount of this Construction Change Order: | \$ 133,155.22 | New Contract Time to Final Completion: | 444 | | |
| New Amended Contract Amount: | \$ 20,046,107.45 | Estimated FINAL Completion Due Date: | Mar 2, 2022 | | |
| Change Order Percentage: | 2.36% | | | | |

CONTRACTOR NAME: **Venegas Engineering Management and Construction, Inc.**

PLEASE PROVIDE A DETAILED SCOPE OF WORK OF THE CHANGE ORDER (SEE BACK FOR REASON/JUSTIFICATION):

• **Change Item #01:** Furnish and install additional electrical conductors, additional electrical conduit & bores, and additional ground boxes at Station 01 Copia IB/OB, Station 02 Huckleberry IB/OB, Station 03 Geronimo OB, Station 08 McRae OB, Station 09 Lorne OB, Station 11 IB/OB, Station 12 Saul Kleinfeld IB/OB and Station 13 Tierra Este IB/OB.

- **Scope of Work:** Scope of work includes furnishing and installing conduit; hanging, strapping, jacking, boring, tunneling, trenching, furnishing and placing backfill, encasing in steel or concrete; replacing pavement structure, sod, riprap, curbs, or other surface; marking location of conduit; furnishing and installing fittings, junction boxes, and expansion joints; furnishing, installing, and testing electrical conductors; furnishing and installing breakaway connectors; furnishing, installing and connecting all components including poles, service supports, foundations, anchor bolts, riprap, enclosures, switches, breakers, service conduit, fittings, service conductors, grounding conductors, ground bus bar, ground rods, weather-proof junction boxes, splice kits, wire connectors, meter housings, fuses, wireways, brackets, bolts, hangers, hardware; and for materials, equipment, labor, tools, and incidentals as needed to complete the work.

- **Specifications:** Item *ELP 19 Electrical Services, ELP 20 Ground Boxes, ELP 25 Electrical Conduit and ELP 26 Electrical Conductors* remain unchanged.

- **Drawings:** Sheets 296, 303, 304, 311, 354, 366, 367, 379, 380, 389, 390, 398 and 399 remain unchanged. Contractor will incorporate the changes in the as-built drawings.

- **Cost and Bid Schedule:** Compensation for the additional scope of work will be done as follows:

ADD the following new contract items:

- BB1 - 159 ELP0 CO#13.01A LENGTH OF #2 AWG CABLE** with an estimated quantity of 580-LF and at a negotiated unit price of \$6.24/LF.
 - BB1 - 160 ELP-26-5 CO#13.01B LENGTH OF #4 AWG CABLE** with an estimated quantity of 1,285-LF and at a current contract unit price of \$4.04/LF.
 - BB1 - 161 ELP0 CO#13.01C LENGTH OF #2/0 AWG CABLE** with an estimated quantity of 1,110-LF and at a negotiated unit price of \$8.90/LF.
 - BB1 - 162 ELP-26-2 CO#13.01D LENGTH OF #3/0 AWG CABLE** with an estimated quantity of 2,745-LF and at a current contract unit price of \$11.76/LF.
 - BB1 - 163 ELP0 CO#13.01E LENGTH OF #4/0 AWG CABLE** with an estimated quantity of 1,740-LF and at a negotiated unit price of \$10.48/LF.
 - BB1 - 164 ELP-25-3 CO#13.01F (PVC)(SCHD 40)(3")** with an estimated quantity of 1,150-LF and at a negotiated unit price of \$19.35/LF.
 - BB1 - 165 ELP-25-4 CO#13.01G (PVC)(BORE)(SCHD 40)(3")** with an estimated quantity of 345-LF and at a negotiated unit price of \$32.57/LF.
 - BB2 - 240 ELP0 CO#13.01H LENGTH OF #4/0 AWG CABLE** with an estimated quantity of 2,055-LF at a negotiated unit price of \$10.48/LF.
 - BB2 - 241 ELP-19-1 CO#13.01I SVC. POINT ELECT. METER & POLE (OVERHEAD)** with an estimated quantity of 1-EA at a current contract unit price of \$10,077.94/EA.
- Therefore, a total amount of **\$134,309.49** in new contract items.

- CONTINUED IN NEXT PAGE.

0

TOTAL CHANGE ORDER AMOUNT: **\$ 133,155.22**

CONTRACTOR

I, _____, of _____ agree and accept the terms and conditions of this change order.

Signature: _____

Date: _____

CITY OF EL PASO (OWNER)

I, **Sam Rodriguez, P.E.** of the City of El Paso hereby authorize and direct the Contractor to proceed with additional work as described in this form.

Signature: _____

Date: _____

Sam Rodriguez, P.E., City Engineer

CITY OF EL PASO CONSTRUCTION CHANGE ORDER - Pg. 2

| | | | | | |
|---|--------------------------|---|--|-------------------------------------|---------------------|
| CONSTRUCTION CHANGE ORDER NO.: | 13 | DATE: | December 13, 2021 | <input checked="" type="checkbox"/> | SCOPE CHANGE |
| PROJECT: | Montana RTS Improvements | SOLICITATION NO.: | CSJ 0374-02-089 Solicitation 2018-836 | <input checked="" type="checkbox"/> | CONSTRUCTION CHANGE |
| Original Contract Amount: | \$ 19,583,784.49 | Contract Time to Final Completion | 0 | | |
| Net Change by previous Change Orders: | \$ 329,167.74 | Total days added due to Change Orders and CQN's | 0 | | |
| Net Change by previous Construction Quantity Notices: | \$ - | Total days added for this Change Order | 0 | | |
| Amount of this Construction Change Order: | \$ 133,155.22 | New Contract Time to Final Completion: | 0 | | |
| New Amended Contract Amount: | \$ 20,046,107.45 | Estimated FINAL Completion Due Date | Mar 2, 2022 | | |
| Change Order Percentage: | 2.36% | | | | |

CONTRACTOR NAME: **Venegas Engineering Management and Construction, Inc.**

PLEASE PROVIDE A DETAILED SCOPE OF WORK OF THE CHANGE ORDER (SEE BACK FOR REASON/JUSTIFICATION):

INCREASE the quantity on the following items:

- BB1-141 ELP-19-2 SERVICE POINT - CUSTOM (OVERHEAD)** by 1-EA at the current contract unit price of \$15,833.12/EA.
- BB1-152 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12** by 4-EA at the current contract unit price of \$2,597.11/EA.
- BB2-204 ELP-19-2 SERVICE POINT - CUSTOM (OVERHEAD)** by 1-EA at the current unit price of \$15,833.12/EA.
- BB2-206 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12** by 2-EA at the current unit price of \$2,597.11/EA.
- BB2-207 ELP-25-1 (PVC) (SCHD 40) (2")** by 111-LF at the current unit price of \$17.82/LF.
- BB2-209 ELP-25-3 (PVC) (SCHD 40) (3")** by 610-LF at the current contract unit price of \$19.35/LF.
- BB2-210 ELP-25-4 (PVC) (BORE) (SCHD 40) (3")** by 160-LF at the current unit price of \$32.57/LF.
- BB2-214 ELP-26-2 LENGTH OF #3/0 AWG CABLE** by 960-LF at the current unit price of \$11.76/LF.
- BB2-217 ELP-26-5 LENGTH OF #4 AWG CABLE** by 320-LF at the current unit price of \$4.04/LF.
- BB2-218 ELP-26-6 LENGTH OF #8 AWG CABLE** by 450-LF at the current unit price of \$3.10/LF.

Therefore, a total amount of **\$80,219.02** in increase of quantities from current contract items.

DECREASE the quantity on the following items:

- BB1-140 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD)** by 1-EA at the current contract unit price of \$10,077.94/EA.
- BB1-142 ELP-25-1 (PVC) (SCHD 40) (2")** by 318-LF at the current contract unit price of \$17.82/LF.
- BB1-143 ELP-25-2 (PVC) (BORE) (SCHD 40) (2")** by 230-LF at the current contract unit price of \$28.51/LF.
- BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE** by 2,727-LF at the current contract unit price of \$6.92/LF.
- BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE** by 909-LF at the current contract unit price of \$3.10/LF.
- BB2-203 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD)** by 3-EA at the current contract unit price of \$8,810.44/EA.
- BB2-208 ELP-25-2 (PVC) (BORE) (SCHD 40) (2")** by 213-LF at the current contract unit price of \$28.51/LF.
- BB2-215 ELP-26-3 LENGTH OF #1 AWG CABLE** by 705-LF at the current contract unit price of \$6.92/LF.

Therefore, a total amount of **(\$81,373.29)** in decrease of quantities from current contract items.

The new change item totals an amount of \$133,155.22.

- **Time:** The critical path is not affected by this change; therefore, no additional time was justified/granted.

Work described above shall be performed in accordance to applicable specifications, special provisions, terms and conditions of the original contract. Unless specifically noted, this Change Order addresses all compensation for time and costs, including all direct and indirect costs associated with the above scope of work.

- SUMMARY:

INCREASE contract amount by **\$133,155.22**.
NO CHANGE in contract time.

STANDARD WORKWEEK DAYS ADDED TO COMPLETION TIME: **0**

TOTAL CHANGE ORDER AMOUNT: **\$ 133,155.22**

CONTRACTOR

I, _____, of _____ agree and accept the terms and conditions of this change order.

Signature: _____

Date: _____

CITY OF EL PASO (OWNER)

I, **Sam Rodriguez, P.E.** of the City of El Paso hereby authorize and direct the Contractor to proceed with additional work as described in this form.

Signature: _____

Date: _____

Sam Rodriguez, P.E., City Engineer

CITY OF EL PASO CONSTRUCTION CHANGE ORDER - Pg. 3

CONSTRUCTION CHANGE ORDER NO.: **13** DATE: **December 13, 2021** SCOPE CHANGE
 PROJECT: **Montana RTS Improvements** SOLICITATION NO.: **CSJ 0374-02-089 Solicitation 2018-836** CONSTRUCTION CHANGE

| | | | | | |
|----------------|------------------------|----------------|------------------------|------------------|------------|
| Project Number | PCP 11MT050 | Project Number | PCP 11MT050 | PURCHASE ORDER # | 2000000322 |
| Class | 28330 | Class | 28330 | | |
| Department | 190 | Department | 190 | | |
| Fund | 4530, 4743, 4950, 4746 | Fund | 4530, 4743, 4950, 4746 | | |
| Account | 580270 | Account | 580270 | | |

CONTRACTOR NAME: **Venegas Engineering Management and Construction, Inc.**

PROVIDE REASON/JUSTIFICATION FOR CHANGE ORDER:

• **Change Item #01:** As part of the coordination with El Paso Electric Company (EPECo), the service location resulted to be far away from the anticipated location at Station 01 Copia IB/OB, Station 02 Huckleberry IB/OB, Station 03 Geronimo OB, Station 08 McRae OB, Station 09 Lorne OB, Station 11 IB/OB, Station 12 Saul Kleinfeld IB/OB and Station 13 Tierra Este IB/OB. As a result, additional wiring with an increase in gauge and additional conduit & bores were required to account for the relocated services and to accommodate the proposed service loads.

Costs related to new items on this change order were reviewed, validated and approved by CID.

Costs related to increase and decrease of quantities were based on current bid items and were found to be reasonable.

No additional time was required or granted with this change.

Work at these stations did not affect the critical path and was adjusted to fit in the project schedule.

THIS CHANGED, CLASSIFIED AS OTHER CONDITION, WAS REQUESTED AND APPROVED BY CID.

- REFER TO ATTACHMENTS FOR ADDITIONAL BACKUP DOCUMENTATION.

STANDARD WORKWEEK DAYS ADDED TO COMPLETION TIME: **0**

TOTAL CHANGE ORDER AMOUNT: **\$ 133,155.22**

Project Manager recommends approval: _____ *Alex Avila*
Project Manager

Engineering Division Manager recommends approval: _____ *Margaret K Schroeder*
Engineering Division Manager

Financing Department approval: _____
 (if Required)

Attachment 1, 20 S-2 Documenting Change Order Cost Reasonableness, Sample Summary, Page 1

Contract Change Order Documentation Summary and Determination of Cost Reasonableness:

Contract Name: Montana RTS Improvements

Solicitation /Project Number: CSJ 0374-02-089 / Solicitation No. 2018-836

Change Order Number: CO #13 – Item 013.01

Prepared By: ECM International, Inc.

RFP:

In response to an (Select one and entry number and date) RFP number RFP#010 or Field Directive number _____ dated June 25, 2021 (Attach Copy). Or In response to (describe the situation that resulted in the unsolicited proposal) _____ and unsolicited proposal was provided . (RFP #010 entailed new items of work not in the contract ONLY.)

Initial Cost Estimate:

Check all that apply:

_____ No initial estimate of the change order costs was attempted. (Attach Justification countersigned by assigned DM).

_____ A ROM Estimate in the amount of \$ _____ was prepared on _____ attach copy

X A Detailed Estimate in the amount of \$27,002.45 was prepared on September 1, 2021 attach copy. (For new contract items only and based on the original takeoff from RFI #110 Electrical Services Issue).

_____ The Design Consultant provided a detailed estimate in the amount of \$ _____ was prepared on _____ attach copy.

Contractors Proposal:

The contractor provided a proposal Dated August 16, 2021 (attach copy) in the amount of \$31,656.69 and requesting 0 Calendar/Working days . (For new contract items only and based on the original takeoff from RFI #110 Electrical Services Issue, the proposal did not include quantity changes).

The proposal was reviewed as to the required Scope of work and found to accurately reflect the Scope of Work **Yes X No** . If No, a formal revision was requested on this date _____ (attach Copy(s) of request) and received date _____ , in the amount of _____ and requesting _____ Calendar/Working days **Or Check if applicable** _____ after review with assigned DM the city elected to proceed with negotiations and address the scope inconsistencies in Negotiations without a proposal revision (list inconsistencies to be addressed in negotiations). Unit pricing for new items was approved, however, final take-off on new items and existing items resulted in an increase in the final change order amount.

Attach continuation sheet if necessary

Cost evaluation: Cost reasonableness was determined using the following methods check all that apply.

Utilizing existing Bid Item

Price Analysis

Cost Analysis

(Provide narrative description for each method utilized and how reasonableness was determined) Attach mark up a proposal with negotiation objectives, including accepted cost, Dated and initialed by the Preparer and Assigned Division Manager. Label Marked UP Proposal:

Narrative description of determination of reasonableness: (Attach Continuation sheets as necessary, include detailed table showing Proposed/Objective /and Negotiated when appropriate. (Sample included)

Narrative:

Upon coordination with El Paso Electric Company (EPECo), electrical services to the Stations had to be relocated due to unforeseen conflicts not within the Owner's nor Contractor's control. In general, the conflicts were generated due to the unavailability to get a service connection from the service points originally identified on the plans. The new locations resulted to be farther away from the original locations, thus, requiring additional wiring, ground boxes, underground conduit, and bore crossings.

Due to the relocation of electrical services, an increase in wire gauge was necessary to account for the required service loads. A request for proposal, was issued requesting pricing on three (3) new wiring items not in the contract that included: #2 AWG, #2/0 AWG and #4/0 AWG cable. Quantities for these items were estimated based on the stations affected and originally identified under RFI #110 (Station 08 McRae OB, Station 09 Lorne OB, Station 12 Saul Kleinfeld OB, and Station 13 Tierra Este OB). Contractor's proposal totaled an amount of **\$31,656.69** for new wiring items and identified stations under RFI #110.

The Contractor's proposal **DID NOT** include quantity changes on electrical conduit and bores resulting from the relocation of the electrical services as it was agreed to overrun the current contract items for such (summary on increase/decrease of quantities is presented on Work Change Directive #22).

An itemized opinion of construction cost based on RSMeans data and historic production rates for the **NEW ELECTRICAL CONDUCTOR** items was developed. Labor, equipment, and material costs were estimated based on observed and historic production and hourly rates. Equipment and materials rates were estimated via validated material quotes of suppliers from the local market. Applicable TxDOT markups were incorporated into each category and a total estimated construction cost of **\$27,002.45** was calculated.

CID concurred and approved the proposed unit pricing on the new wiring items. No additional time was granted as the electrical work remains concurrent with other work activities in the project.

In summary, the NEW items added to the contract and validated are:

- BB1 – 159 ELPO CO#13.01A LENGTH OF #2 AWG CABLE
- BB1 – 161 ELPO CO#13.01C LENGTH OF #2/0 AWG CABLE
- BB1 – 163 ELPO CO#13.01E LENGTH OF #4/0 AWG CABLE
- BB2 – 240 ELPO CO#13.01H LENGTH OF #4/0 AWG CABLE

However, after further coordination with EPECo and the Contractor, additional Stations were identified requiring adjustments to the electrical services including Station 01 Copia IB/OB, Station 02 Huckleberry IB/OB, Station 03 Geronimo OB, Station 11 George Dieter IB/OB, Station 12 Saul Kleinfeld IB, and Tierra Este IB. These changes generated an increase/decrease of existing bid item quantities and an increase/decrease of new wiring items as well. A detailed breakdown of the quantity change per station is found on the Work Change Directive #22.

As part of the change order, existing items of work are being added to Base Bid 1 and Base Bid 2, respectively. Items will be incorporated into Base Bid 1 and Base Bid 2 at the current contract unit pricing, respectively. These changes are required to compensate the contractor for the additional scope of work resulting from the electrical changes **under the respective Base Bid. Contractor agreed to maintain contract unit pricing.** These changes include:

ADDED existing bid items to Base Bid 2 from Base Bid 1:

- BB1 - 160 ELP-26-5 CO#13.01B LENGTH OF #4 AWG CABLE
- BB1 - 162 ELP-26-2 CO#13.01D LENGTH OF #3/0 AWG CABLE
- BB1 - 164 ELP-25-3 CO#13.01F (PVC)(SCHD 40)(3")
- BB1 - 165 ELP-25-4 CO#13.01G (PVC)(BORE)(SCHD 40)(3")

ADDED existing bid items to Base Bid 1 from Base Bid 2:

- BB2 - 241 ELP-19-1 CO#13.01I SVC. POINT ELECT. METER & POLE (OVERHEAD)

Lastly and as previously mentioned, the additional scope of work warranted an increase and decrease of existing contract items as follow:

INCREASE of quantities in the following EXISTING items:

- BB1-141 ELP-19-2 SERVICE POINT - CUSTOM (OVERHEAD).
- BB1-152 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12.
- BB2-204 ELP-19-2 SERVICE POINT - CUSTOM (OVERHEAD).
- BB2-206 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12.
- BB2-207 ELP-25-1 (PVC) (SCHD 40) (2").
- BB2-209 ELP-25-3 (PVC) (SCHD 40) (3").
- BB2-210 ELP-25-4 (PVC) (BORE) (SCHD 40) (3").
- BB2-214 ELP-26-2 LENGTH OF #3/0 AWG CABLE.
- BB2-217 ELP-26-5 LENGTH OF #4 AWG CABLE.
- BB2-218 ELP-26-6 LENGTH OF #8 AWG CABLE.

DECREASE of quantities in the following CURRENT items:

- BB1-140 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD).
- BB1-142 ELP-25-1 (PVC) (SCHD 40) (2").
- BB1-143 ELP-25-2 (PVC) (BORE) (SCHD 40) (2").
- BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE.
- BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE.
- BB2-203 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD).
- BB2-208 ELP-25-2 (PVC) (BORE) (SCHD 40) (2").
- BB2-215 ELP-26-3 LENGTH OF #1 AWG CABLE.

In summary, the Contractor's original proposal of **\$31,656.69** did not reflect all the Stations requiring relocation and did not include changes to the contract quantities. Based on the final take-off for all affected stations and for total wiring, conduit and bore crossings required, the Change Order totaled an amount of **\$133,155.22**.

Work Change Directive #22 was issued to the Contractor that encompassed the additional scope of work related to the changes in Electrical Services with new items of work, increase of quantities, and decrease of quantities, respectively.

REFER TO THE BACKUP DOCUMENTATION.



Capital Improvement Department

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Cissy Lizarraga

CITY MANAGER

Tommy Gonzalez

Work Change Directive No. 22

December 16, 2021

Venegas Engineering Management and Construction/VEMAC
Attn: Mr. Robert Martinez
Vice-President and Operations Manager
1919 E. Rio Grande Street
El Paso, Texas 79902

Subject: Montana RTS Improvements
Solicitation No. 2018-836
TxDOT CSJ No. 0374-02-089
Changes in the Electrical Service

Dear Mr. Martinez,

Please consider this letter as your field change directive to proceed with the additional scope of work related to the relocated electrical services at Station 01 Copia IB/OB, Station 02 Huckleberry IB/OB, Station 03 Geronimo OB, Station 08 McRae OB, Station 09 Lorne OB, Station 11 IB/OB, Station 12 Saul Kleinfeld IB/OB and Station 13 Tierra Este IB/OB and in reference to Request for Information, *RFI #110*.

Scope of Work:

The additional scope of work includes furnishing additional wiring, additional conduit, additional ground boxes and modified electrical services in conformance to Items *ELP 19 Electrical Services, ELP 20 Ground Boxes, ELP 25 Electrical Conduit and ELP 26 Electrical Conductors*.

Purpose of Work Change Directive:

The purpose of this directive is to expedite the work described above and complete the electrical services work at the subject locations. The additional scope of work was requested and approved by the Capital Improvement Department (CID).

Yvette Hernandez, P.E. – Grant Funded Program Director
Capital Improvement Dept., 218 N. Campbell, El Paso, TX 79901





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CITY MANAGER

Tommy Gonzalez

Summarized Change in Drawings:

Sheets 296, 303, 304, 311, 354, 366, 367, 379, 380, 389, 390, 398 and 399 remain unchanged. Contractor will incorporate the changes in the as-built drawings.

Summarized Change in Specifications:

Item ELP 19 Electrical Services, ELP 20 Ground Boxes, ELP 25 Electrical Conduit and ELP 26 Electrical Conductors remain unchanged.

Estimated Change in Contract Amount:

The additional scope of work will be compensated as follows:

NEW Items to the Contract:

- BB1 - 159 ELP0 CO#13.01A LENGTH OF #2 AWG CABLE with an estimated quantity of 580-LF and at a negotiated unit price of \$6.24/LF, therefore, **\$3,619.20.**
- BB1 - 160 ELP-26-5 CO#13.01B LENGTH OF #4 AWG CABLE with an estimated quantity of 1,285-LF and at a current contract unit price of \$4.04/LF, therefore, **\$5,191.40.**
- BB1 - 161 ELP0 CO#13.01C LENGTH OF #2/0 AWG CABLE with an estimated quantity of 1,110-LF and at a negotiated unit price of \$8.90/LF, therefore, **\$9,879.00.**
- BB1 - 162 ELP-26-2 CO#13.01D LENGTH OF #3/0 AWG CABLE with an estimated quantity of 2,745-LF and at a current contract unit price of \$11.76/LF, therefore, **\$32,281.20.**
- BB1 - 163 ELP0 CO#13.01E LENGTH OF #4/0 AWG CABLE with an estimated quantity of 1,740-LF and at a negotiated unit price of \$10.48/LF, therefore, **\$18,235.20.**
- BB1 - 164 ELP-25-3 CO#13.01F (PVC)(SCHD 40)(3") with an estimated quantity of 1,150-LF and at a negotiated unit price of \$19.35/LF, therefore, **\$22,252.50.**
- BB1 - 165 ELP-25-4 CO#13.01G (PVC)(BORE)(SCHD 40)(3") with an estimated quantity of 345-LF and at a negotiated unit price of \$32.57/LF, therefore, **\$11,236.65.**
- BB2 - 240 ELP0 CO#13.01H LENGTH OF #4/0 AWG CABLE with an estimated quantity of 2,055-LF at a negotiated unit price of \$10.48/LF, therefore, **\$21,536.40.**
- BB2 - 241 ELP-19-1 CO#13.01I SVC. POINT ELECT. METER & POLE (OVERHEAD) with an estimated quantity of 1-EA at a current contract unit price of \$10,077.94/EA, therefore, **\$10,077.94.**

INCREASE of quantities in contract items:

- BB1-141 ELP-19-2 SERVICE POINT - CUSTOM (OVERHEAD) by 1-EA at the current contract unit price of \$15,833.12/EA, therefore, **\$15,833.12.**
- BB1-152 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24 x 12 x12 by 4-EA at the current contract unit price of \$2,597.11/EA, therefore, **\$10,388.44.**
- BB2-204 ELP-19-2 SERVICE POINT - CUSTOM (OVERHEAD) by 1-EA at the current unit price of \$15,833.12/EA, therefore, **\$15,833.12.**
- BB2-206 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12 by 2-EA at the current unit price of \$2,597.11/EA, therefore, **\$5,194.22.**

Yvette Hernandez, P.E. – Grant Funded Program Director

Capital Improvement Dept., 218 N. Campbell, El Paso, TX 79901





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CITY MANAGER

Tommy Gonzalez

- BB2-207 ELP-25-1 (PVC) (SCHD 40) (2") by 111-LF at the current unit price of \$17.82/LF, therefore, **\$1,978.02.**
- BB2-209 ELP-25-3 (PVC) (SCHD 40) (3") by 610-LF at the current contract unit price of \$19.35/LF, therefore, **\$11,803.50.**
- BB2-210 ELP-25-4 (PVC) (BORE) (SCHD 40) (3") by 160-LF at the current unit price of \$32.57/LF, therefore, **\$5,211.20.**
- BB2-214 ELP-26-2 LENGTH OF #3/0 AWG CABLE by 960-LF at the current unit price of \$11.76/LF, therefore, **\$11,289.60.**
- BB2-217 ELP-26-5 LENGTH OF #4 AWG CABLE by 320-LF at the current unit price of \$4.04/LF, therefore, **\$1,292.80.**
- BB2-218 ELP-26-6 LENGTH OF #8 AWG CABLE by 450-LF at the current unit price of \$3.10/LF, therefore, **\$1,395.00.**

DECREASE of quantities in contract items:

- BB1-140 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD) by 1-EA at the current contract unit price of \$10,077.94/EA, therefore, **(\$10,077.94).**
- BB1-142 ELP-25-1 (PVC) (SCHD 40) (2") by 318-LF at the current contract unit price of \$17.82/LF, therefore, **(\$5,666.76).**
- BB1-143 ELP-25-2 (PVC) (BORE) (SCHD 40) (2") by 230-LF at the current contract unit price of \$28.51/LF, therefore, **(\$6,557.30).**
- BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE by 2,727-LF at the current contract unit price of \$6.92/LF, therefore, **(\$18,870.84).**
- BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE by 909-LF at the current contract unit price of \$3.10/LF, therefore, **(\$2,817.90).**
- BB2-203 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD) by 3-EA at the current contract unit price of \$8,810.44/EA, therefore, **(\$26,431.32).**
- BB2-208 ELP-25-2 (PVC) (BORE) (SCHD 40) (2") by 213-LF at the current contract unit price of \$28.51/LF, therefore, **(\$6,072.63).**
- BB2-215 ELP-26-3 LENGTH OF #1 AWG CABLE by 705-LF at the current contract unit price of \$6.92/LF, therefore, **(\$4,878.60).**

Quantities are estimated. Quantities will be field measured, quantified and paid accordingly. The increase in the contract amount is estimated to be **\$133,155.22.**

Estimated Increase in Contract Time:

Upon presentation by the Contractor, the impact to the critical path will be evaluated for the possibility of granting additional contract time. **No additional time is being contemplated for the additional scope of work as it remains concurrent with other on-going work activities.**

This is not a Change Order, but only a field directive to proceed with the changes summarized above. The Contract Sum and Contract Time may only be changed by an Executed Contract Change Order.

Yvette Hernandez, P.E. – Grant Funded Program Director
Capital Improvement Dept., 218 N. Campbell, El Paso, TX 79901





Capital Improvement Department

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Cissy Lizarraga

CITY MANAGER

Tommy Gonzalez

If you have any questions or comments, please don't hesitate to contact Alex Avila, CID Construction Superintendent, at (915) 478-3789 or AvilaAX@elpasotexas.gov.

Sincerely,

A handwritten signature in cursive script that reads "Yvette Hernandez".

Yvette Hernandez, P.E.

CID Grant Funded Programs Director

Attachments: *Refer to RFI #110 Electrical Services
Redlined Drawings with Detailed Scope of Work*

Cc: *Margaret Schroeder, P.E.
Victoria Villareal
Project File*

*Ismael Cepeda, P.E.
Alex Avila*

Yvette Hernandez, P.E. – Grant Funded Program Director
Capital Improvement Dept., 218 N. Campbell, El Paso, TX 79901



DELIVERING **EXCEPTIONAL** SERVICES



ECM International
 404 Executive Center Boulevard
 El Paso, Texas 79902
 P: (915) 351-1900
 F: (915) 351-1908

Project: 0374-02-089 Montana RTS Improvements
 Montana Avenue
 El Paso, Texas 79925

RFI #110: Electrical Services Issue

| | | | |
|------------------------|--|------------------------|---|
| Status | Closed on 06/29/21 | | |
| To | Jose Reyes (Dannenbaum Engineering Corporation, LLC.) Silverio Villalobos (Dannenbaum Engineering Corporation, LLC.) | From | Rene Gonzalez (Venegas Engineering Management and Construction) 1919 Rio Grande Street El Paso, 79902 |
| Date Initiated | Apr 21, 2021 | Due Date | May 5, 2021 |
| Location | | Project Stage | Course of Construction |
| Cost Impact | Yes (Unknown) | Schedule Impact | Yes (Unknown) |
| Spec Section | ELP 19 - Electrical Services | Cost Code | |
| Drawing Number | | Reference | |
| Linked Drawings | 303 , 354 , 366 , 367 , 398 , 399 | | |
| Received From | Rene Gonzalez (Venegas Engineering Management and Construction) | | |
| Copies To | Alex Avila (City of El Paso - Capital Improvement Department), Obed Cano (City of El Paso - Capital Improvement Department), Ismael Cepeda (City of El Paso - Capital Improvement Department), Gerardo Garcia (ECM International, Inc.), Rene Gonzalez (Venegas Engineering Management and Construction), Robert Martinez (Venegas Engineering Management and Construction), Eduardo Nunez (ECM International, Inc.), Alex Pedroza (City of El Paso - Capital Improvement Department), Jose Reyes (Dannenbaum Engineering Corporation, LLC.), Abel Salazar (Venegas Engineering Management and Construction), Daniel Urrutia (Venegas Engineering Management and Construction), Silverio Villalobos (Dannenbaum Engineering Corporation, LLC.), Victoria Villarreal (City of El Paso - Capital Improvement Department) | | |

Activity

| | |
|--------------------------|--|
| Question | <p>Question from Rene Gonzalez Venegas Engineering Management and Construction on Tuesday, Apr 20, 2021 at 05:44 PM MDT</p> <p>Alex, As mentioned previously, please advise how to proceed with several stations (McRae, Huckleberry, Tierra Este, and Lorne) that the electrical service is too far away. Thank you, RG</p> |
| Official Response | <p>Response from Gerardo Garcia ECM International, Inc. on Tuesday, Jun 29, 2021 at 09:01 AM MDT</p> <p>CID is in agreement in using the 3" conduit in lieu of the 2" conduit. Compensation for the 3" conduit will be done under the current contract item BB2-209 ELP-25-3 (PVC)(SCHED 40)(3"). Item for 3" conduit will be added to Base Bid 1 via a change order.</p> |
| Official Response | <p>Response from Rene Gonzalez Venegas Engineering Management and Construction on Wednesday, Jun 16, 2021 at 02:30 PM MDT</p> <p>Below are comments from subcontractor:</p> <ul style="list-style-type: none"> • A 3" conduit is recommended versus the 2" conduit stated by the EOR as it better serves the install/pulling of the conductors for those distances and for example, it's what's called-out to install per plans on Mettler/Hawkins & Sunmount/Hawkins corridors, therefore, we would be following suit per contract. • How will the conductors be paid as they are not listed as payable items in the contract? <p>Please provide clarification, thank you. RG</p> |

Official Response

Response from Gerardo Garcia ECM International, Inc. on Wednesday, Jun 16, 2021 at 01:56 PM MDT

In summary, the proposed increase in quantities is as follows:

- ELP-25-1 (PVC)(SCHED 40) (2") **1,865 LF**
- ELP-26-5 LENGHT OF #4 AWG CABLE **1,285 LF**
- ELP-XX LENGHT OF #2/0 AWG CABLE **1,110 LF** (No bid item, a proposal will be issued to get pricing on)
- ELP-26-2 LENGHT OF #3/0 AWG CABLE **2,745 LF**
- ELP-XX LENGHT OF #4/0 AWG CABLE **1,740 LF** (No bid item, a proposal will be issued to get pricing on).

Let me know if questions. Thanks.

Official Response

Response from Silverio Villalobos Dannenbaum Engineering Corporation, LLC. on Monday, Jun 7, 2021 at 04:38 PM MDT

Attached response from the EOR

Attachments

[0374-02-089-Montana_RTS-110-ELC_Services_Response.pdf](#)



ECM International
404 Executive Center Boulevard
El Paso, Texas 79902
Phone: (915) 351-1900
Fax: (915) 351-1908

Project: 0374-02-089 - Montana RTS Improvements
Montana Avenue
El Paso, Texas 79925

Electrical Services Issue

| | | | |
|-------------------------|---|-------------------------|---|
| TO: | Silverio Villalobos (Dannenbaum Engineering Corporation, LLC.) Jose Reyes (Dannenbaum Engineering Corporation, LLC.) | FROM: | Rene Gonzalez (Venegas Engineering Management and) 1919 Rio Grande Street El Paso, 79902 |
| DATE INITIATED: | 04/21/2021 | STATUS: | Open |
| LOCATION: | | DUE DATE: | 05/05/2021 |
| PROJECT STAGE: | Course of Construction | COST CODE: | |
| COST IMPACT: | Yes (Unknown) | SCHEDULE IMPACT: | Yes (Unknown) |
| DRAWING NUMBER: | | SPEC SECTION: | ELP 19 - Electrical Services |
| LINKED DRAWINGS: | | REFERENCE: | |
| RECEIVED FROM: | Rene Gonzalez (Venegas Engineering Management and Cons) | | |

COPIES TO:
Alex Avila (City of El Paso - Capital Improvement D), Obed Cano (City of El Paso - Capital Improvement D), Ismael Cepeda (City of El Paso - Capital Improvement D), Gerardo Garcia (ECM International Inc. - El Paso), Rene Gonzalez (Venegas Engineering Management and Cons), Robert Martinez (Venegas Engineering Management and Cons), Eduardo Nunez (ECM International Inc. - El Paso), Alex Pedroza (City of El Paso - Capital Improvement D), Jose Reyes (Dannenbaum Engineering Corporation, LLC), Abel Salazar (Venegas Engineering Management and Cons), Daniel Urrutia (Venegas Engineering Management and Cons), Silverio Villalobos (Dannenbaum Engineering Corporation, LLC), Victoria Villarreal (City of El Paso - Capital Improvement D)

Question from Rene Gonzalez (Venegas Engineering Management and Con) at 05:44 PM on 04/20/2021

Alex,
As mentioned previously, please advise how to proceed with several stations (McRae, Huckleberry, Tierra Este, and Lorne) that the electrical service is too far away.
Thank you,
RG

Awaiting an Official Response

All Replies:

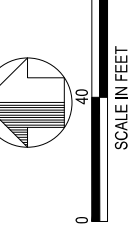
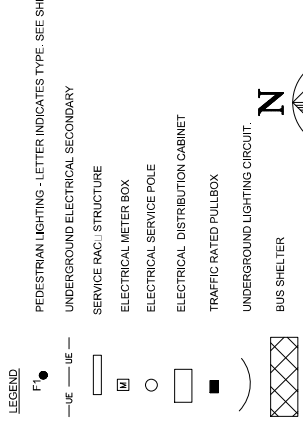
Atkins Response:
Voltage drop calculations were conducted assuming 80 amp electrical service (80% of the 100-amp Main Circuit Breaker per NEC). Per NEC Articles 210.19(A) and 215.2(A), the recommended maximum voltage drop for the branch circuit and feeder is 5 percent. The present 3#1 feeder size is not adequate and would provide a voltage drop percentage that exceeds the NEC recommended percentage.

Based on the revised distances indicated for the meter location, the service feeder size needs to be increased. The following are the recommendations:

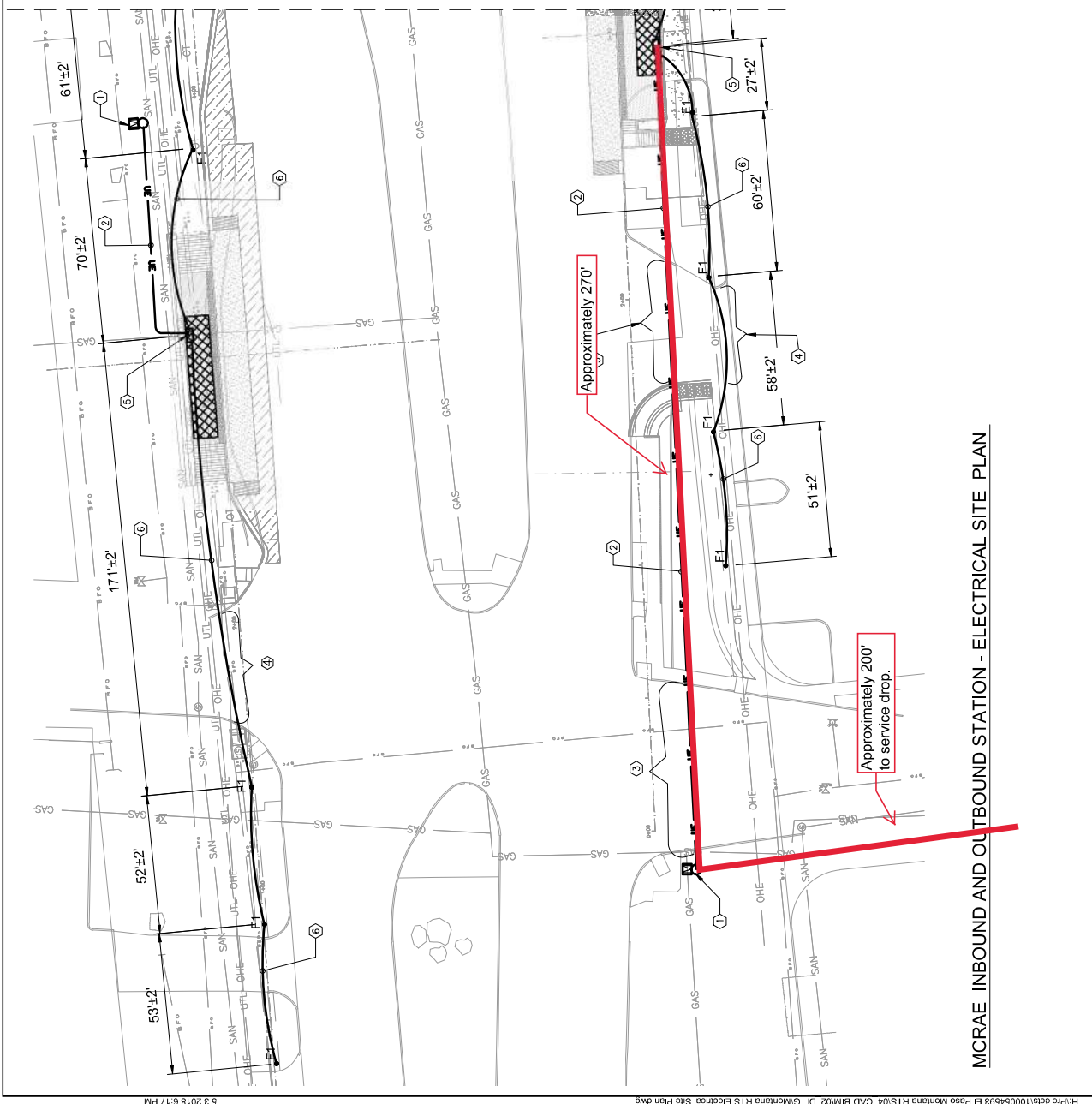
- McRae Station (470 feet from pole to station panel) – use 3#3/0 and 1#4 ground in 2-inch conduit for a 2.9% voltage drop
- Lorne Station (370 feet from pole to station panel) – use 3#2/0 and 1#4 ground in 2-inch conduit for a 2.7% voltage drop
- Saul Station (580 feet from pole to station panel) – use 3#4/0 and 1#2 ground in 2-inch conduit for a 3.1% voltage drop
- Tierra Este Station (445 feet from pole to station panel) – use 3#3/0 and 1#4 ground in 2-inch conduit for a 2.8% voltage drop

| | | |
|-----------------|------------|-----------------|
| Pedro L. Trevin | 6/7/2021 | |
| BY _____ | DATE _____ | COPIES TO _____ |

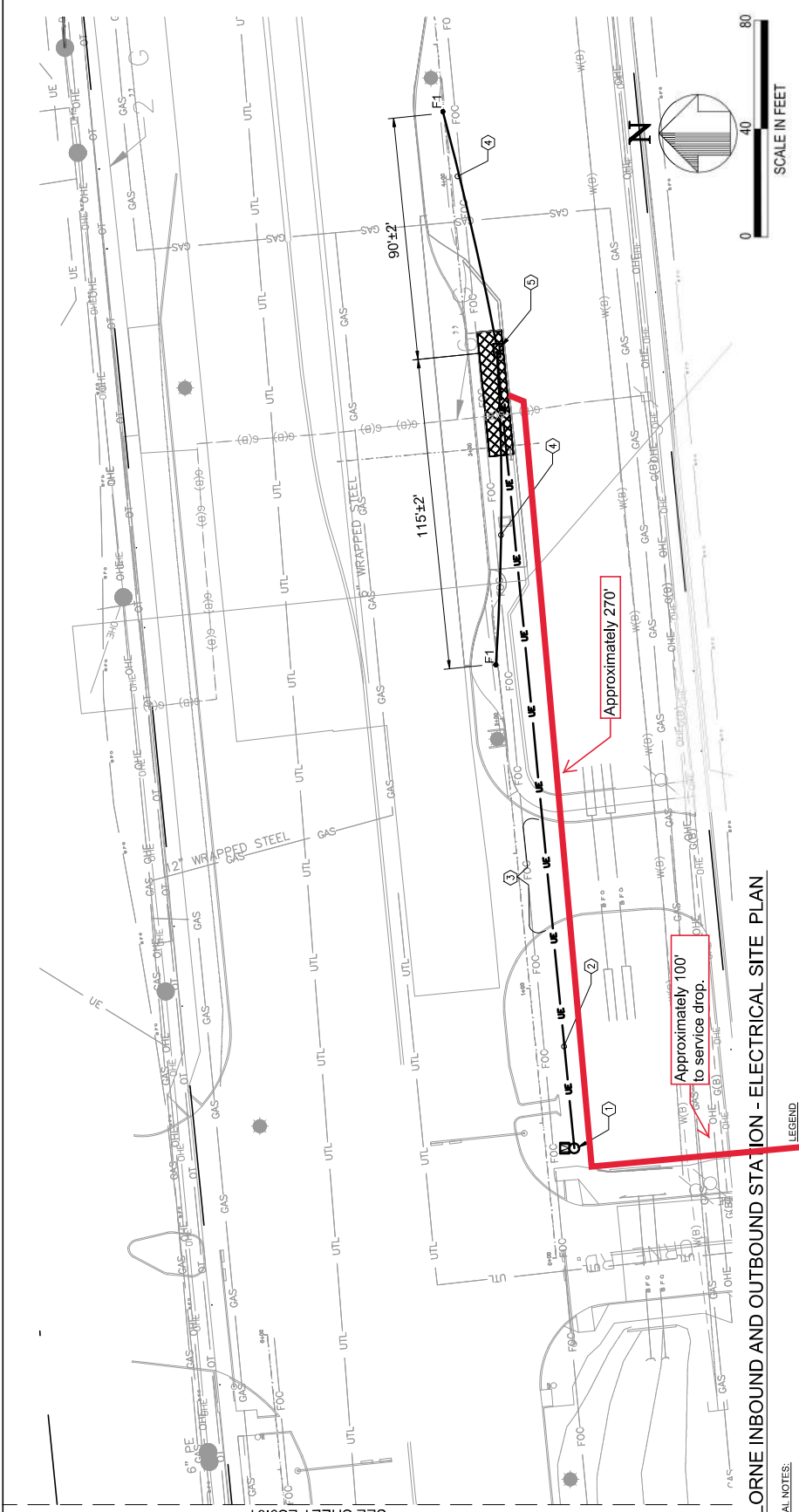
GENERAL NOTES:
 1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR
 FAC AND BORE ANY PIT FOR CONDUIT RUNS.
KEY NOTES:
 1. PROVIDE ELECTRICAL METER AND POLE AS INDICATED ON DETAIL 1 ON
 SHEET E040.
 2. PROVIDE (1) 2" C. (1) TH (3) 1" A (1) G AND (1) 8 GND. AS INDICATED ON
 DRAWINGS.
 3. AC, BORE AND PROVIDE (1) 2" PVC SCHEDULE 40 (1) TH (3) 1" A, G AND
 (1) 8 GND. COORDINATE WITH TxDOT AND CIVIL DRAWINGS.
 4. BORE AND PROVIDE (1) 1" PVC SCHEDULE 40 (1) TH (3) 1/2" (1) 10 GND AND
 CIRCUIT AS INDICATED IN SHEET E040.
 5. TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE
 ELECTRICAL CABINET. REFER TO SHEET E040 FOR MORE INFORMATION.
 6. PROVIDE (1) 1" C, (1) TH (2) 1/2" A (1) G AND (1) 10GND CIRCUIT AS INDICATED
 IN SHEET E040.



SEE SHEET ES8.02
 MATCHLINE STA 3+00



MCRAE INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN



SHEET SUMMARY OF ESTIMATED QUANTITIES LORNE ES9.02

| NO. Series | Description | Unit | # OF CONDUCTORS | LENGTH OF THE RUNS | QTY |
|------------|--|------|-----------------|--------------------|-----|
| ELP-19 | -1 Service Point Electrical Meter and Pole | EA | | | 1 |
| ELP-20 | -1 Traffic rated pullbox Quazite pc style 24x12x12 | EA | | | 266 |
| ELP-25 | -1 Length of 2" Conduit | LF | | | 44 |
| ELP-25 | -2 Length of 2" Conduit (BORE) | LF | | | 221 |
| ELP-25 | -5 Length of 1" Conduit (BORE) | LF | | | 930 |
| ELP-26 | -3 Length of #1 AWG Cable | LF | 3 | 310 | 310 |
| ELP-26 | -6 Length of #8 AWG Cable | LF | 1 | 310 | 663 |
| ELP-26 | -7 Length of #10 AWG Cable | LF | 3 | 221 | 2 |
| ELP-5 | Pedestrian Illumination | EA | | | 12 |
| 416 | Drill Shaft (18in) | LF | | | |

THESE QUANTITIES ARE APPROXIMATE VALUES

GENERAL NOTES:

- VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR 'AC' AND BORE ANY PIT FOR CONDUIT RUNS.
- PROVIDE ELECTRICAL METER AND POLE AS INDICATED ON DETAIL 1 ON SHEET E0.02.
- AC, BORE AND PROVIDE (1) 2" PVC SCHEDULE 40 WITH (3) 1" A G AND (1) S GND, AS INDICATED ON DRAWINGS.
- AC, BORE AND PROVIDE (1) 2" PVC SCHEDULE 40 WITH (3) 1" A G, (1) S GND, COORDINATE WITH TxDOT AND CIVIL DRAWINGS.
- PROVIDE (1) 1" PVC SCHEDULE 40 WITH (2) 10 A G AND (1) 10 S GND CIRCUIT AS INDICATED IN SHEET E0.04
- TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL CABINET. REFER TO SHEET E0.03 FOR MORE INFORMATION.

LEGEND

- PEDESTRIAN LIGHTING - LETTER INDICATES TYPE. SEE SHEET E0.01
- UNDERGROUND ELECTRICAL SECONDARY
- METER POLE
- ELECTRICAL METER BOX
- ELECTRICAL SERVICE POLE
- ELECTRICAL DISTRIBUTION CABINET
- TRAFFIC RATED PULLBOX
- UNDERGROUND LIGHTING CIRCUIT.
- BUS SHELTER

LORNE INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN

SEE SHEET ES9.01
 MACHINE STA 5.50

DATE: 04/09/2018
 DESIGN BY: LF
 CHECK BY: LF
 APPROVED BY: LF
 SCALE: _____
 MONTANA RAPID TRANSIT SYSTEM
ATKINS
 442 So. T. Weber Road
 Orlando, Florida 32810
 WWW.ATKINS.US.COM
 Copyright © Atkins Limited (2017)

DATE: 04/09/2018
 DESIGN BY: LF
 CHECK BY: LF
 APPROVED BY: LF
 SCALE: _____
 MONTANA RAPID TRANSIT SYSTEM
PLAN
ELECTRICAL SITE
STATION 9
LORNE -

CITY OF EL PASO
 CAPITAL IMPROVEMENT
 DEPARTMENT
 ELECTRICAL SHEETS
 ES9.02
 367

| | | | |
|-----|------|----------|---------|
| NO. | DATE | REVISION | REMARKS |
| | | | |
| | | | |
| | | | |

ATKINS

442 So. T. Miller Road
Orlando, Florida 32810
Tel: 407-477-7275
www.atkins.com
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DATE: 04/09/2018
DESIGN BY: [Signature]
DRN. NBR.: [Signature]
APPROVED BY: [Signature]
SCALE: [Signature]

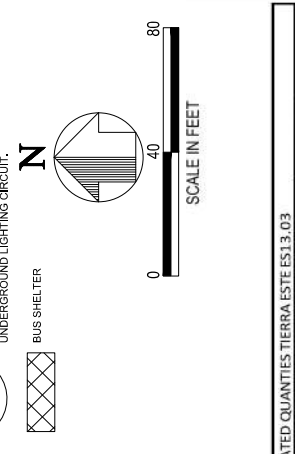
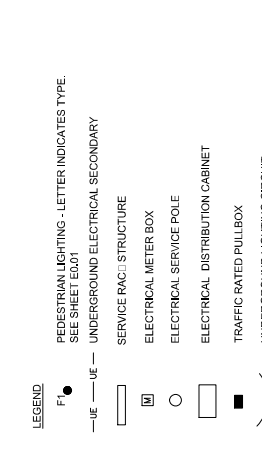
MONTANA RAPID TRANSIT SYSTEM
ELECTRICAL SITE PLAN
TERRA ESTE - STATION J3

CITY OF EL PASO
CAPITAL IMPROVEMENT
2700 N. GARDNER STREET
EL PASO, TEXAS 79907
PHONE: 972.574.3141 FAX: 972.574.2088

ES13.03
399

- GENERAL NOTES:**
1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR TAC AND BORE ANY PIT FOR CONDUIT RUNS.
- KEYED NOTES:**
- 1 PROVIDE ELECTRICAL METER AND POLE AS INDICATED ON DETAIL 1 ON SHEET E002.
 - 2 PROVIDE (1) 2" C. IN. SCHEDULE 40 - ITH (3) 1" A. G AND (1) .8GND AS INDICATED ON DRAWINGS.
 - 3 TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL CABINET. REFER TO SHEET E003 FOR MORE INFORMATION.
 - 4 PROVIDE (1) 1" C. L. ITH (2) .10 A. G AND (1) .10GND AND CIRCUIT AS INDICATED IN SHEET E004.

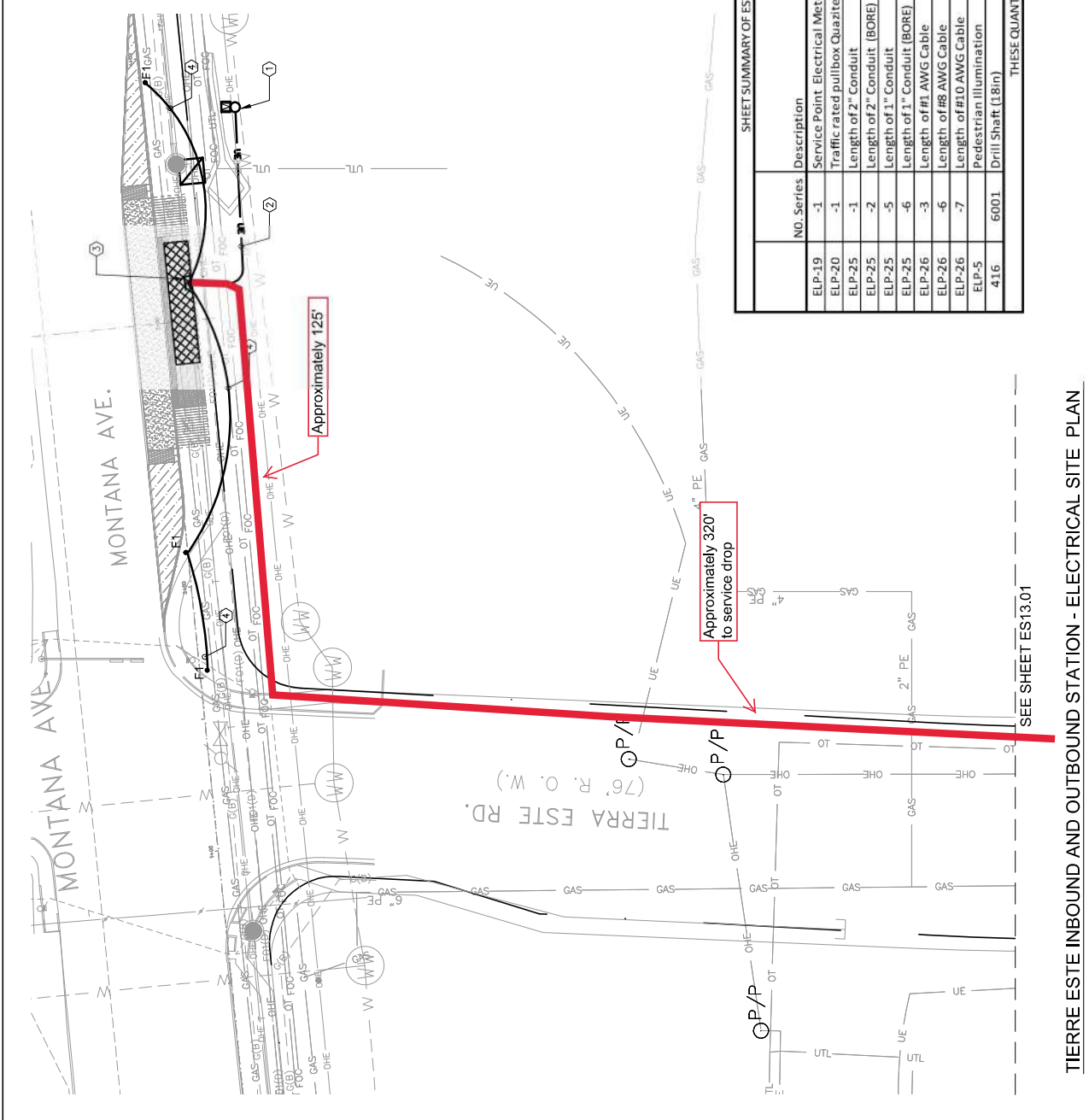
- LEGEND**
- PEDESTRIAN LIGHTING - LETTER INDICATES TYPE. SEE SHEET E001
 - UE --- UE --- UNDERGROUND ELECTRICAL SECONDARY
 - SERVICE RAC: STRUCTURE
 - ELECTRICAL METER BOX
 - ELECTRICAL SERVICE POLE
 - ELECTRICAL DISTRIBUTION CABINET
 - TRAFFIC RATED PULL BOX
 - UNDERGROUND LIGHTING CIRCUIT.
 - BUS SHELTER



SHEET SUMMARY OF ESTIMATED QUANTITIES TERRA ESTE ST 3.03

| NO. Series | Description | Unit | # OF CONDUCTORS | LENGTH OF THE RUNS | QTY |
|------------|--|------|-----------------|--------------------|-----|
| ELP-19 | -1 Service Point Electrical Meter and Pole | EA | | | 1 |
| ELP-20 | -1 Traffic rated pullbox Quazite pc style 24x12x12 | EA | | | 107 |
| ELP-25 | -1 Length of 2" Conduit | LF | | | 241 |
| ELP-25 | -2 Length of 2" Conduit (BORE) | LF | | | 321 |
| ELP-25 | -5 Length of 1" Conduit | LF | | | 107 |
| ELP-25 | -6 Length of 1" Conduit (BORE) | LF | | | 723 |
| ELP-26 | -3 Length of #1 AWG Cable | LF | 3 | | 3 |
| ELP-26 | -6 Length of #8 AWG Cable | LF | 1 | | 3 |
| ELP-26 | -7 Length of #10 AWG Cable | LF | 3 | | 18 |
| ELP-5 | Pedestrian Illumination | EA | | | |
| 416 | 6001 Drill Shaft (1.8in) | LF | | | |

THESE QUANTITIES ARE APPROXIMATE VALUES



SEE SHEET ES13.01

TERRA ESTE INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN



SUMMARY OF COST FOR CHANGES IN ELECTRICAL SERVICES

STATION 01 COPIA IB/OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|----------|--|----------|------|----------|---------------------|
| BB2-206 | ELP-20-1 | TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12 | 2,597.11 | EA | 1.00 | \$ 2,597.11 |
| BB2-209 | ELP-25-3 | (PVC) (SCHD 40) (3") | 19.350 | LF | 320.00 | \$ 6,192.00 |
| BB2-214 | ELP-26-2 | LENGTH OF #3/0 AWG CABLE | 11.760 | LF | 960.00 | \$ 11,289.60 |
| BB2-217 | ELP-26-5 | LENGTH OF #4 AWG CABLE | 4.040 | LF | 320.00 | \$ 1,292.80 |
| <i>Increase Subtotal</i> | | | | | | \$ 21,371.51 |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 21,371.51 |

STATION 02 HUCKLEBERRY IB/OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|-----------|--|-----------|------|----------|---------------------|
| BB2-204 | ELP-19-2 | SERVICE POINT - CUSTOM (OVERHEAD) | 15,833.12 | EA | 1.00 | \$ 15,833.12 |
| BB2-209 | ELP-25-3 | (PVC) (SCHD 40) (3") | 19.350 | LF | 290.00 | \$ 5,611.50 |
| BB2-210 | ELP-25-4 | (PVC) (BORE) (SCHD 40) (3") | 32.570 | LF | 160.00 | \$ 5,211.20 |
| BB2-206 | ELP-20-1 | TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12 | 2,597.11 | EA | 1.00 | \$ 2,597.11 |
| BB2-218 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | 685.00 | \$ 2,123.50 |
| BB2-240 | CO#13.01H | LENGTH OF #4/0 AWG CABLE | 10.480 | LF | 2,055.00 | \$ 21,536.40 |
| <i>Increase Subtotal</i> | | | | | | \$ 52,912.83 |
| BB2-203 | ELP-19-1 | SVC. POINT ELECT. METER & POLE (OVERHEAD) | 8,810.44 | EA | (2.00) | \$ (17,620.88) |
| BB2-215 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (627.00) | \$ (4,338.84) |
| BB2-218 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (209.00) | \$ (647.90) |
| <i>Decrease Subtotal</i> | | | | | | \$ (22,607.62) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 30,305.21 |

STATION 03 GERONIMO OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|----------|--|-----------|------|----------|--------------------|
| BB1-141 | ELP-19-2 | SERVICE POINT - CUSTOM (OVERHEAD) | 15,833.12 | EA | 1.00 | \$ 15,833.12 |
| <i>Increase Subtotal</i> | | | | | | \$ 15,833.12 |
| BB1-140 | ELP-19-1 | SVC. POINT ELECT. METER & POLE (OVERHEAD) | 10,077.94 | EA | (1.00) | \$ (10,077.94) |
| <i>Decrease Subtotal</i> | | | | | | \$ (10,077.94) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 5,755.18 |



STATION 08 McRAE OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|-----------|--|----------|------|----------|---------------------|
| BB1-152 | ELP-20-1 | TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12 | 2,597.11 | EA | 1.00 | \$ 2,597.11 |
| BB1-160 | CO#13.01B | LENGTH OF #4 AWG CABLE | 4.040 | LF | 470.00 | \$ 1,898.80 |
| BB1-162 | CO#13.01D | LENGTH OF #3/0 AWG CABLE | 11.760 | LF | 1,410.00 | \$ 16,581.60 |
| BB1-164 | CO#13.01F | (PVC) (SCHD 40) (3") | 19.350 | LF | 340.00 | \$ 6,579.00 |
| BB1-165 | CO#13.01G | (PVC) (BORE) (SCHD 40) (3") | 32.570 | LF | 130.00 | \$ 4,234.10 |
| | | <i>Increase Subtotal</i> | | | | \$ 31,890.61 |
| BB1-142 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | (300.00) | \$ (5,346.00) |
| BB1-143 | ELP-25-2 | (PVC) (BORE) (SCHD 40) (2") | 28.510 | LF | (130.00) | \$ (3,706.30) |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (900.00) | \$ (6,228.00) |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (300.00) | \$ (930.00) |
| | | <i>Decrease Subtotal</i> | | | | \$ (16,210.30) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 15,680.31 |

STATION 09 LORNE OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|-----------|--|----------|------|----------|--------------------|
| BB1-142 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | 105.00 | \$ 1,871.10 |
| BB1-152 | ELP-20-1 | TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12 | 2,597.11 | EA | 1.00 | \$ 2,597.11 |
| BB1-160 | CO#13.01B | LENGTH OF #4 AWG CABLE | 4.040 | LF | 370.00 | \$ 1,494.80 |
| BB1-161 | CO#13.01C | LENGTH OF #2/0 AWG CABLE | 8.900 | LF | 1,110.00 | \$ 9,879.00 |
| | | <i>Increase Subtotal</i> | | | | \$ 15,842.01 |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (930.00) | \$ (6,435.60) |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (310.00) | \$ (961.00) |
| | | <i>Decrease Subtotal</i> | | | | \$ (7,396.60) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 8,445.41 |

STATION 11 GEORGE DIETER IB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|----------|-----------------------------|--------|------|----------|--------------------|
| BB1-142 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | 160.00 | \$ 2,851.20 |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | 480.00 | \$ 3,321.60 |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | 160.00 | \$ 496.00 |
| | | <i>Increase Subtotal</i> | | | | \$ 6,668.80 |
| BB1-143 | ELP-25-2 | (PVC) (BORE) (SCHD 40) (2") | 28.510 | LF | (100.00) | \$ (2,851.00) |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (528.00) | \$ (3,653.76) |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (176.00) | \$ (545.60) |
| | | <i>Decrease Subtotal</i> | | | | \$ (7,050.36) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ (381.56) |



STATION 11 GEROGGE DIETER OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|----------|-----------------------------|--------|------|----------|----------------------|
| BB2-207 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | 145.00 | \$ 2,583.90 |
| BB2-215 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | 435.00 | \$ 3,010.20 |
| BB2-218 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | 145.00 | \$ 449.50 |
| <i>Increase Subtotal</i> | | | | | | \$ 6,043.60 |
| BB2-207 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | (34.00) | \$ (605.88) |
| BB2-208 | ELP-25-2 | (PVC) (BORE) (SCHD 40) (2") | 28.510 | LF | (213.00) | \$ (6,072.63) |
| BB2-215 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (513.00) | \$ (3,549.96) |
| BB2-218 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (171.00) | \$ (530.10) |
| <i>Decrease Subtotal</i> | | | | | | \$ (10,758.57) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ (4,714.97) |

STATION 12 SAUL KLEINFELD IB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|----------|------------------------|--------|------|----------|----------------------|
| BB1-142 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | 20.00 | \$ 356.40 |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | 60.00 | \$ 415.20 |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | 20.00 | \$ 62.00 |
| <i>Increase Subtotal</i> | | | | | | \$ 833.60 |
| BB1-142 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | (119.00) | \$ (2,120.58) |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (357.00) | \$ (2,470.44) |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (119.00) | \$ (368.90) |
| <i>Decrease Subtotal</i> | | | | | | \$ (4,959.92) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ (4,126.32) |

STATION 12 SAUL KLEINFELD OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|-----------|--|----------|------|----------|---------------------|
| BB1-152 | ELP-20-1 | TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12 | 2,597.11 | EA | 1.00 | \$ 2,597.11 |
| BB1-159 | CO#13.01A | LENGTH OF #2 AWG CABLE | 6.240 | LF | 580.00 | \$ 3,619.20 |
| BB1-163 | CO#13.01E | LENGTH OF #4/0 AWG CABLE | 10.480 | LF | 1,740.00 | \$ 18,235.20 |
| BB1-164 | CO#13.01F | (PVC) (SCHD 40) (3") | 19.350 | LF | 405.00 | \$ 7,836.75 |
| BB1-165 | CO#13.01G | (PVC) (BORE) (SCHD 40) (3") | 32.570 | LF | 175.00 | \$ 5,699.75 |
| <i>Increase Subtotal</i> | | | | | | \$ 37,988.01 |
| BB1-142 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | (77.00) | \$ (1,372.14) |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (231.00) | \$ (1,598.52) |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (77.00) | \$ (238.70) |
| <i>Decrease Subtotal</i> | | | | | | \$ (3,209.36) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 34,778.65 |



STATION 13 TIERRA ESTE OB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|-----------|--|----------|------|--------------------------|---------------------|
| BB1-152 | ELP-20-1 | TRAFFIC RELATED GROUND BOXES QUAZITEC PC STYLE 24x12x12 | 2,597.11 | EA | 1.00 | \$ 2,597.11 |
| BB1-160 | CO#13.01B | LENGTH OF #4 AWG CABLE | 4.040 | LF | 445.00 | \$ 1,797.80 |
| BB1-162 | CO#13.01D | LENGTH OF #3/0 AWG CABLE | 11.760 | LF | 1,335.00 | \$ 15,699.60 |
| BB1-164 | CO#13.01F | (PVC) (SCHD 40) (3") | 19.350 | LF | 405.00 | \$ 7,836.75 |
| BB1-165 | CO#13.01G | (PVC) (BORE) (SCHD 40) (3") | 32.570 | LF | 40.00 | \$ 1,302.80 |
| | | | | | <i>Increase Subtotal</i> | \$ 29,234.06 |
| BB1-142 | ELP-25-1 | (PVC) (SCHD 40) (2") | 17.820 | LF | (107.00) | \$ (1,906.74) |
| BB1-146 | ELP-26-3 | LENGTH OF #1 AWG CABLE | 6.920 | LF | (321.00) | \$ (2,221.32) |
| BB1-147 | ELP-26-6 | LENGTH OF #8 AWG CABLE | 3.100 | LF | (107.00) | \$ (331.70) |
| | | | | | <i>Decrease Subtotal</i> | \$ (4,459.76) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 24,774.30 |

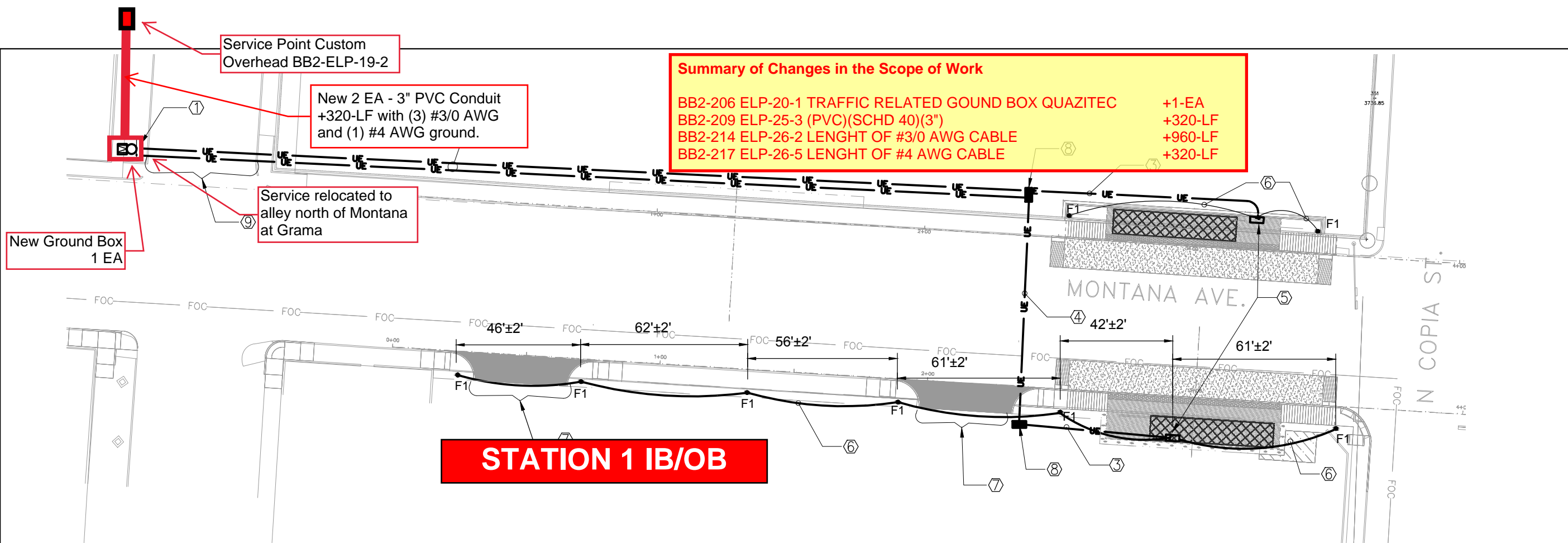
STATION 13 TIERRA ESTE IB

| LN # | ITEM | DESCRIPTION | U.P. | UNIT | EST. QTY | EXT. AMOUNT |
|----------------------------------|-----------|--|------------|------|--------------------------|--------------------|
| BB2-241 | CO#13.01I | SVC. POINT ELECT. METER & POLE (OVERHEAD) | 10,077.940 | EA | 1.00 | \$ 10,077.94 |
| | | | | | <i>Increase Subtotal</i> | \$ 10,077.94 |
| BB2-203 | ELP-19-1 | SVC. POINT ELECT. METER & POLE (OVERHEAD) | 8,810.440 | EA | (1.00) | \$ (8,810.44) |
| | | | | | <i>Decrease Subtotal</i> | \$ (8,810.44) |
| ESTIMATED CONTRACT CHANGE | | | | | | \$ 1,267.50 |

| | | | | | | |
|--------------------|--|--|--|--|--|----------------------|
| GRAND TOTAL | | | | | | \$ 133,155.22 |
|--------------------|--|--|--|--|--|----------------------|

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Summary of Changes in the Scope of Work

BB2-206 ELP-20-1 TRAFFIC RELATED GOUND BOX QUAZITEC +1-EA
 BB2-209 ELP-25-3 (PVC)(SCHD 40)(3") +320-LF
 BB2-214 ELP-26-2 LENGHT OF #3/0 AWG CABLE +960-LF
 BB2-217 ELP-26-5 LENGHT OF #4 AWG CABLE +320-LF

STATION 1 IB/OB

COPIA INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN

GENERAL NOTES:

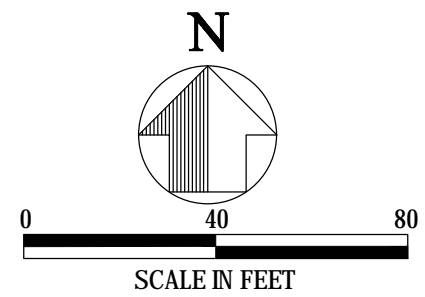
1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR JACK AND BORE ANY PIT FOR CONDUIT RUNS.

KEY NOTES:

- ① PROVIDE ELECTRICAL SERVICE AS INDICATED ON DETAIL 2 SHEET E0.02
- ② PROVIDE (2) 3"C PVC SCHEDULE 40 EACH. WITH (3)#3/0 AWG AND (1)#4 GND FROM SERVICE RACK TO PULLBOX.
- ③ PROVIDE (1) 3"C PVC SCHEDULE 40, WITH (3)#3/0 AWG AND (1)#4 GND FROM PULLBOX TO ELECTRICAL CABINET
- ④ JACK/BORE AND PROVIDE (1) 3"C PVC SCHEDULE 40 WITH (3)#3/0 AWG AND (1)#4 GND COORDINATE WITH TXDOT.
- ⑤ TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL DISTRIBUTION CABINET. REFER TO SHEET E0.03 FOR MORE INFORMATION.
- ⑥ PROVIDE (1) 1" C. WITH (2)#10 AWG AND (1)#10GND CIRCUIT AS INDICATED ON SHEET E0.04
- ⑦ BORE AND PROVIDE (1) 1"C PVC SCHEDULE 40 WITH (2)#10 AWG AND (1)#10 GND.
- ⑧ PROVIDE 24"X12x12" QUAZITE PC STYLE POLYMER CONCRETE ASSEMBLY TRAFFIC RATED PULLBOX
- ⑨ JACK/BORE AND PROVIDE (2) 3"C PVC SCHEDULE 40 EAC WITH (3)#3/0 AWG AND (1)#4 GND COORDINATE WITH TXDOT.

LEGEND

- F1 ● PEDESTRIAN LIGHTING - LETTER INDICATES TYPE. REFER TO SHEET E0.01
- UE — UE — UNDERGROUND ELECTRICAL SECONDARY
- [Service Rack Structure Symbol] SERVICE RACK STRUCTURE
- [Electrical Meter Box Symbol] ELECTRICAL METER BOX
- [Electrical Service Pole Symbol] ELECTRICAL SERVICE POLE
- [Electrical Distribution Cabinet Symbol] ELECTRICAL DISTRIBUTION CABINET
- [Traffic Rated Pullbox Symbol] TRAFFIC RATED PULLBOX
- [Underground Lighting Circuit Symbol] UNDERGROUND LIGHTING CIRCUIT.
- [Bus Shelter Symbol] BUS SHELTER



SHEET SUMMARY OF ESTIMATED QUANTIES COPIA ES2.01

| Special Spec | NO. Series | Description | Unit | # OF CONDUCTORS | LENGTH OF THE RUNS | QTY |
|--------------|------------|---|------|-----------------|--------------------|------|
| ELP-19 | -2 | Service Point | EA | | | 1 |
| ELP20 | -1 | Traffic rated pullbox Quazite pc style 24x12x12 | EA | | | 2 |
| ELP-25 | -3 | Length of 3" Conduit | LF | | | 736 |
| ELP-25 | -4 | Length of 3" Conduit (BORE) | LF | | | 170 |
| ELP-25 | -5 | Length of 1" Conduit | LF | | | 364 |
| ELP-26 | -6 | Length of 1" (BORE) | | | | 70 |
| ELP-26 | -2 | Length of #3/0 AWG Cable | LF | 3 | 906 | 2718 |
| ELP-26 | -5 | Length of #4 AWG Cable | LF | 1 | 906 | 906 |
| ELP-26 | -7 | Length of #10 AWG Cable | LF | 3 | 434 | 1302 |
| ELP-5 | | Pedestrian Illumination | EA | | | 8 |
| 416 | 6001 | Drill Shaft (18in) | LF | | | 48 |

THESE QUANTIES ARE APPROXIMATE VALUES

| NO. | DATE | REVISION | REMARKS |
|-----|------|----------|---------|
| | | | |

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DATE: 04/09/2018
 DESIGN BY: LF
 DRAWN BY: LF
 CHECKED BY: LF
 APPROVED BY: LF
 JOB No: 17-100

MONTANA RAPID TRANSIT SYSTEM

**COPIA - STATION 1
 ELECTRICAL SITE
 PLAN**

CAPITAL IMPROVEMENT
 CITY OF EL PASO
 218 N. CAMPBELL STREET
 EL PASO, TEXAS 79901
 TEL: 915.312.1000
 FAX: 915.312.0080

ELECTRICAL SHEETS

ES2.01

SHEET

296

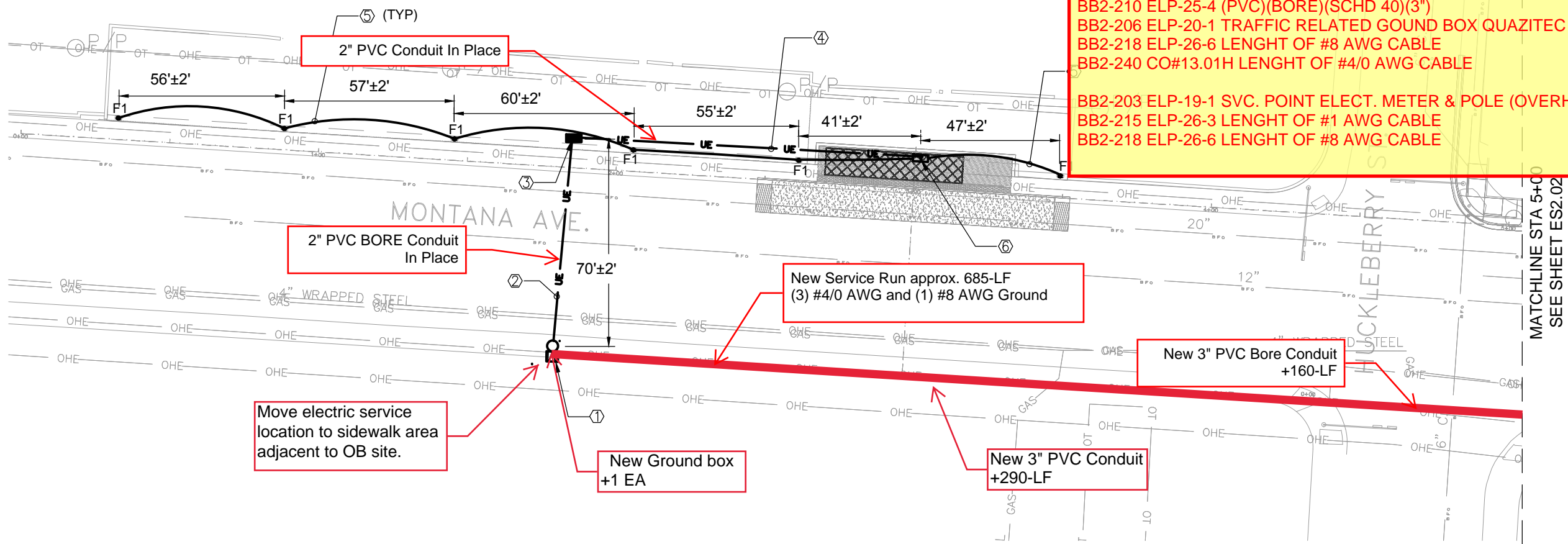
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STATION 2 IB/OB

Summary of Changes in the Scope of Work

| | |
|--|-----------|
| BB2-204 ELP-19-2 SERVICE POINT - CUSTOM (OVERHEAD) | +1-EA |
| BB2-209 ELP-25-3 (PVC)(SCHD 40)(3") | +290-LF |
| BB2-210 ELP-25-4 (PVC)(BORE)(SCHD 40)(3") | +160-LF |
| BB2-206 ELP-20-1 TRAFFIC RELATED GROUND BOX QUAZITEC | +1-EA |
| BB2-218 ELP-26-6 LENGTH OF #8 AWG CABLE | +685-LF |
| BB2-240 CO#13.01H LENGTH OF #4/0 AWG CABLE | +2,055-LF |
| BB2-203 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD) | -2-EA |
| BB2-215 ELP-26-3 LENGTH OF #1 AWG CABLE | -627-LF |
| BB2-218 ELP-26-6 LENGTH OF #8 AWG CABLE | -209-LF |



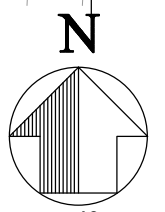
HUCKLEBERRY INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN

GENERAL NOTES:

1. VERIFY CLEARANCES WITH TRENCHING OR JACK AND B

KEY NOTES:

- ① PROVIDE ELECTRICAL METE E0.02
- ② JACK/BORE AND PROVIDE (GND.
- ③ PROVIDE 24\"X12x12\" QUAZIT TRAFFIC RATED PULLBOX
- ④ PROVIDE (1) 2\" C PVC SCHE
- ⑤ PROVIDE (1) 1\" C. WITH (2)# SHEET E0.04
- ⑥ TERMINATE ELECTRICAL FE ELECTRICAL CABINET. REF



SHEET SUMMARY OF ESTIMATED QUANTITIES HUCKLEBERRY E53.01

| NO. Series | Description | Unit | # OF CONDUCTORS | LENGTH OF THE RUNS | QTY |
|------------|---|------|-----------------|--------------------|-----|
| -1 | Service Point Electrical Meter and Pole | EA | | | 1 |
| -1 | Traffic rated pullbox Quazite pc style 24x12x12 | EA | | | 1 |
| -1 | Length of 2\" Conduit | LF | | | 138 |
| -2 | Length of 2\" Conduit (BORE) | LF | | | 71 |
| -5 | Length of 1\" Conduit | LF | | | 242 |
| -6 | Length of 1\" Conduit (BORE) | LF | | | 86 |
| -3 | Length of #1 AWG Cable | LF | 3 | 209 | 627 |
| -6 | Length of #8 AWG Cable | LF | 1 | 209 | 209 |
| -7 | Length of #10 AWG Cable | LF | 3 | 328 | 984 |
| | Pedestrian Illumination | EA | | | 6 |
| 6001 | Drill Shaft (18in) | LF | | | 36 |

THESE QUANTITIES ARE APPROXIMATE VALUES

| | | | |
|-----|------|----------|---------|
| NO. | DATE | REVISION | REMARKS |
| | | | |

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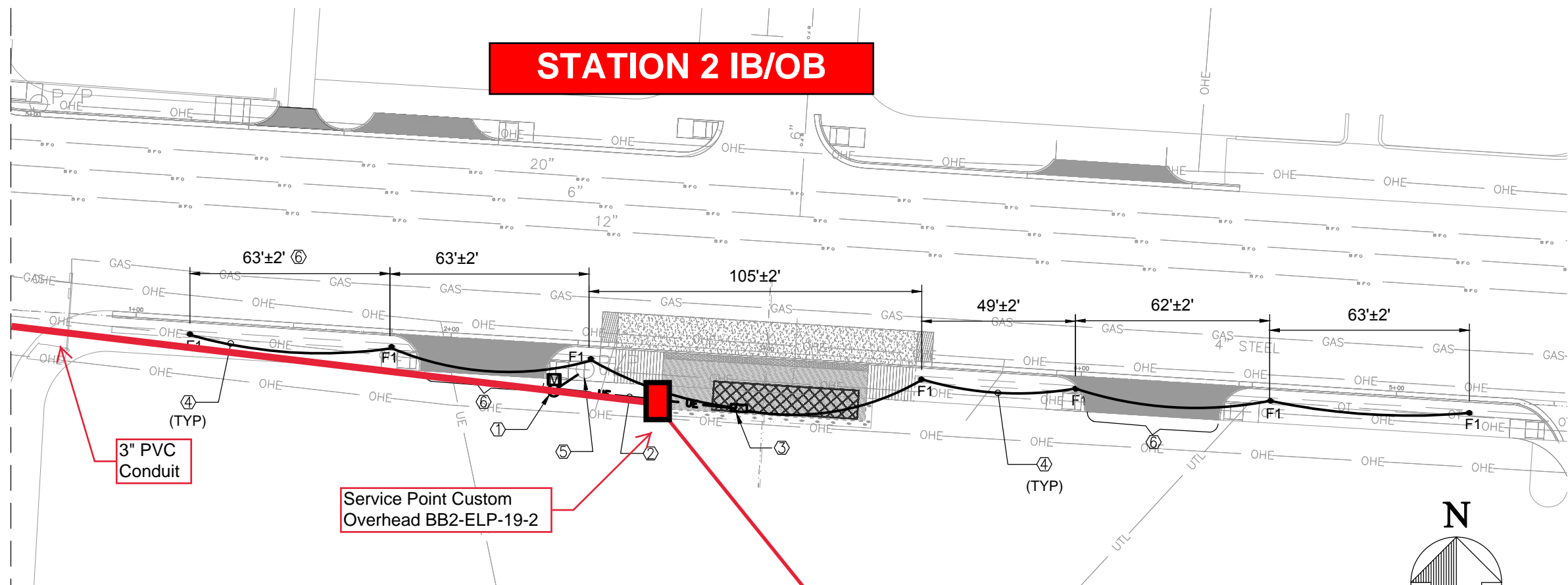
SEAL: PEDRO L. TREVIN, REGISTERED PROFESSIONAL ENGINEER, STATE OF TEXAS, LICENSE NO. 07216

SCALE: DATE: 04/09/2018, DESIGN BY: L.F., DRAWN BY: L.F., CHECKED BY: L.F., APPROVED BY: L.F., JOB No.: 17-100

MONTANA RAPID TRANSIT SYSTEM
HUCKLEBERRY - STATION 2 ELECTRICAL SITE PLAN

CAPITAL IMPROVEMENT CITY OF EL PASO
218 N. CAMPBELL STREET
EL PASO, TEXAS 79901
PHONE: 915.763.3100
FAX: 915.232.0080

ELECTRICAL SHEETS
ES3.01
SHEET
303



MATCHLINE STA 5+00
SEE SHEET ES2.01

3" PVC
Conduit

Service Point Custom
Overhead BB2-ELP-19-2

HUCKLEBERRY INBOUND

GENERAL NOTES:

1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START AND BORE ANY PIT FOR CONDUIT RUNS.

KEY NOTES:

- ① PROVIDE ELECTRICAL METER AND POLE AS INDICATED
- ② PROVIDE (1) 2" C SCHEDULE 40 WITH (3)#1 AWG, (1)#8
- ③ TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAK ELECTRICAL CABINET. REFER TO SHEET E0.03 FOR MORE
- ④ PROVIDE (1) 1" C. WITH (2)#10 AWG AND (1)#10GND CIR SHEET E0.04.
- ⑤ EXISTING OVERHEAD POWER LINE TO NEW ELECTRICAL
- ⑥ JACK/BORE AND PROVIDE (1) 1" C. WITH (2)#10 AWG AND

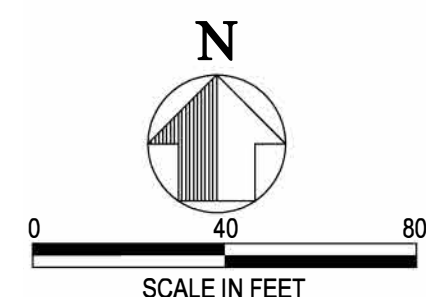
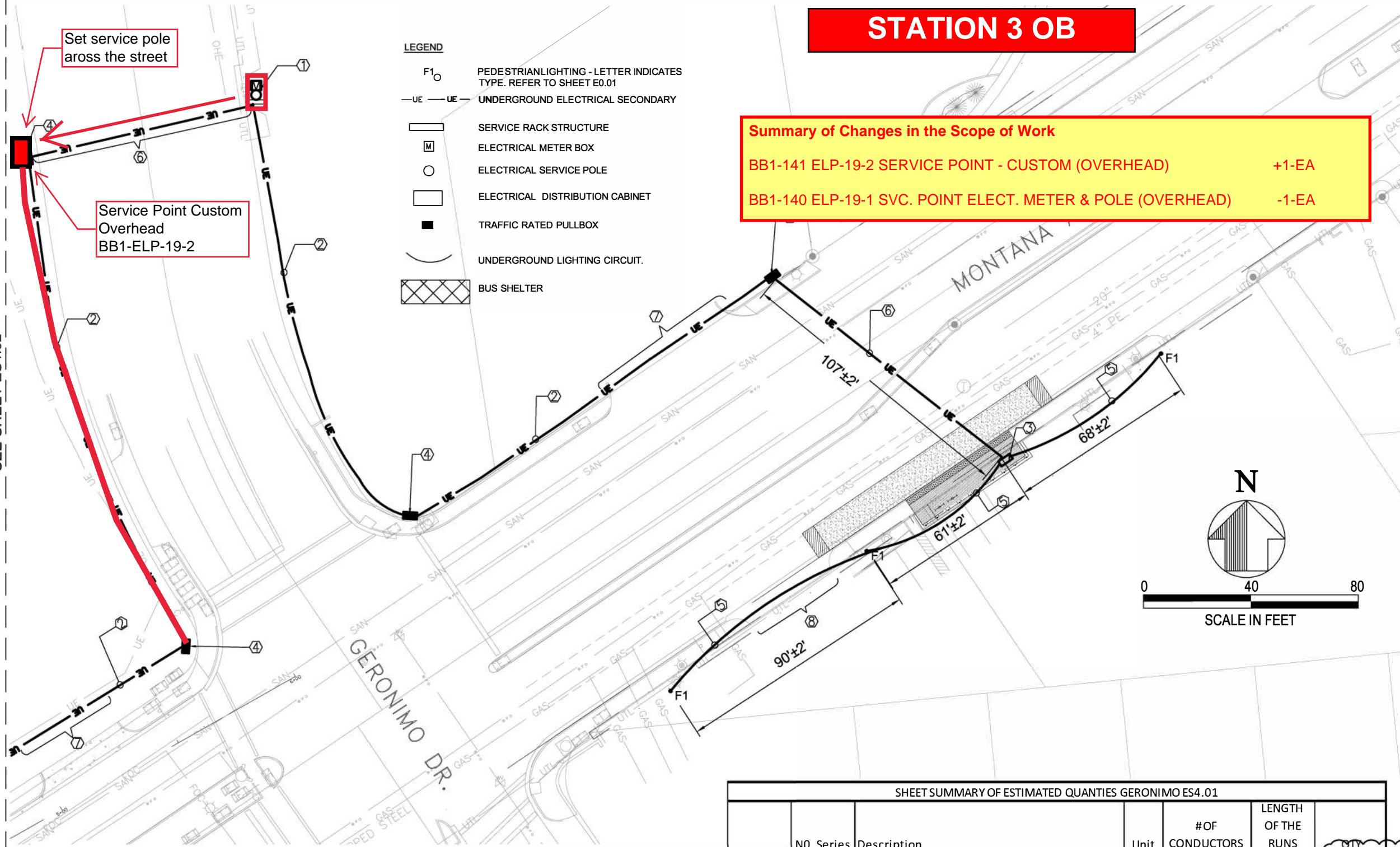


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| SCALE | DATE: 04/09/2018 | DESIGN BY: LF | DRAWN BY: LF | CHECKED BY: | APPROVED BY: 17-100 |
| MONTANA RAPID TRANSIT SYSTEM HUCKLEBERRY - STATION 2 ELECTRICAL SITE PLAN | | | | | |
| CAPITAL IMPROVEMENT CITY OF EL PASO 218 N. CAMPBELL STREET EL PASO, TEXAS 79901 TEL: 915.232.0000 FAX: 915.232.0000 | | | | | |
| | | | | | |
| ELECTRICAL SHEETS | | | | | |
| ES3.02 | | | | | |
| SHEET | | | | | |
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MATCHLINE STA 5+00
SEE SHEET ES4.02



GERONIMO OUTBOUND STATION - ELECTRICAL SITE PLAN

GENERAL NOTES:

1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR JACK AND BORE ANY PIT FOR CONDUIT RUNS.

KEY NOTES:

- ① PROVIDE ELECTRICAL SERVICE AS INDICATED ON DETAIL 2 SHEET E0.02
- ② PROVIDE (1) 3" C PVC SCHEDULE 40. WITH (3)#3/0 AWG AND (1)#4 GND FROM THE ELECTRICAL METER TO BUS STATION AS INDICATED.
- ③ TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL CABINET. REFER TO SHEET E0.03 FOR MORE INFORMATION.
- ④ PROVIDE 24"x12x12" QUAZITE PC STYLE POLYMER CONCRETE ASSEMBLY TRAFFIC RATED PULLBOX

⑤ PROVIDE (1) 1" C. WITH (2)#10 AWG AND (1)#10GND CIRCUIT AS INDICATED ON SHEET E0.04.

⑥ JACK/BORE AND PROVIDE (1) 3" C PVC SCHEDULE 40 WITH (3)#3/0 AWG, (1)#4 GND COORDINATE WITH TXDOT.

⑦ JACK/BORE AND PROVIDE (1) 3" C PVC SCHEDULE 40 WITH (3)#3/0 AWG, (1)#4 GND.

⑧ JACK/BORE AND PROVIDE (1) 1" C. WITH (2)#10 AWG AND (1)#10GND.

SHEET SUMMARY OF ESTIMATED QUANTITIES GERONIMO ES4.01

| | N0. Series | Description | Unit | # OF CONDUCTORS | LENGTH OF THE RUNS | QTY |
|--|------------|--|------|-----------------|--------------------|------|
| | ELP-19 | -1 Service Point | EA | | | 1 |
| | ELP-20 | -1 Traffic rated pullbox Quazite pc style 24x12x12 | EA | | | 4 |
| | ELP-25 | -3 Length of 3" Conduit | LF | | | 495 |
| | ELP-25 | -4 Length of 3" Conduit (BORE) | LF | | | 295 |
| | ELP-25 | -5 Length of 1" Conduit | LF | | | 200 |
| | ELP-25 | -6 Length of 1" Conduit (BORE) | LF | | | 37 |
| | ELP-26 | -2 Length of #3/0 AWG Cable | LF | 3 | 790 | 2370 |
| | ELP-26 | -5 Length of #4 AWG Cable | LF | 1 | 790 | 790 |
| | ELP-26 | -7 Length of #10 AWG Cable | LF | 3 | 237 | 711 |
| | ELP-5 | Pedestrian Illumination | EA | | | 3 |
| | 416 | 6001 Drill Shaft (18in) | LF | | | 18 |

THESE QUANTITIES ARE APPROXIMATE VALUES

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STATE OF TEXAS
PEDRO L. TREVIN
REGISTERED PROFESSIONAL ENGINEER
No. 072113

DATE: 04/09/2018
DESIGN BY: L.F.
DRAWN BY: L.F.
CHECKED BY:
APPROVED BY:
JOB No: 17-100

MONTANA RAPID TRANSIT SYSTEM

**GERONIMO - STATION 3
ELECTRICAL SITE
PLAN**

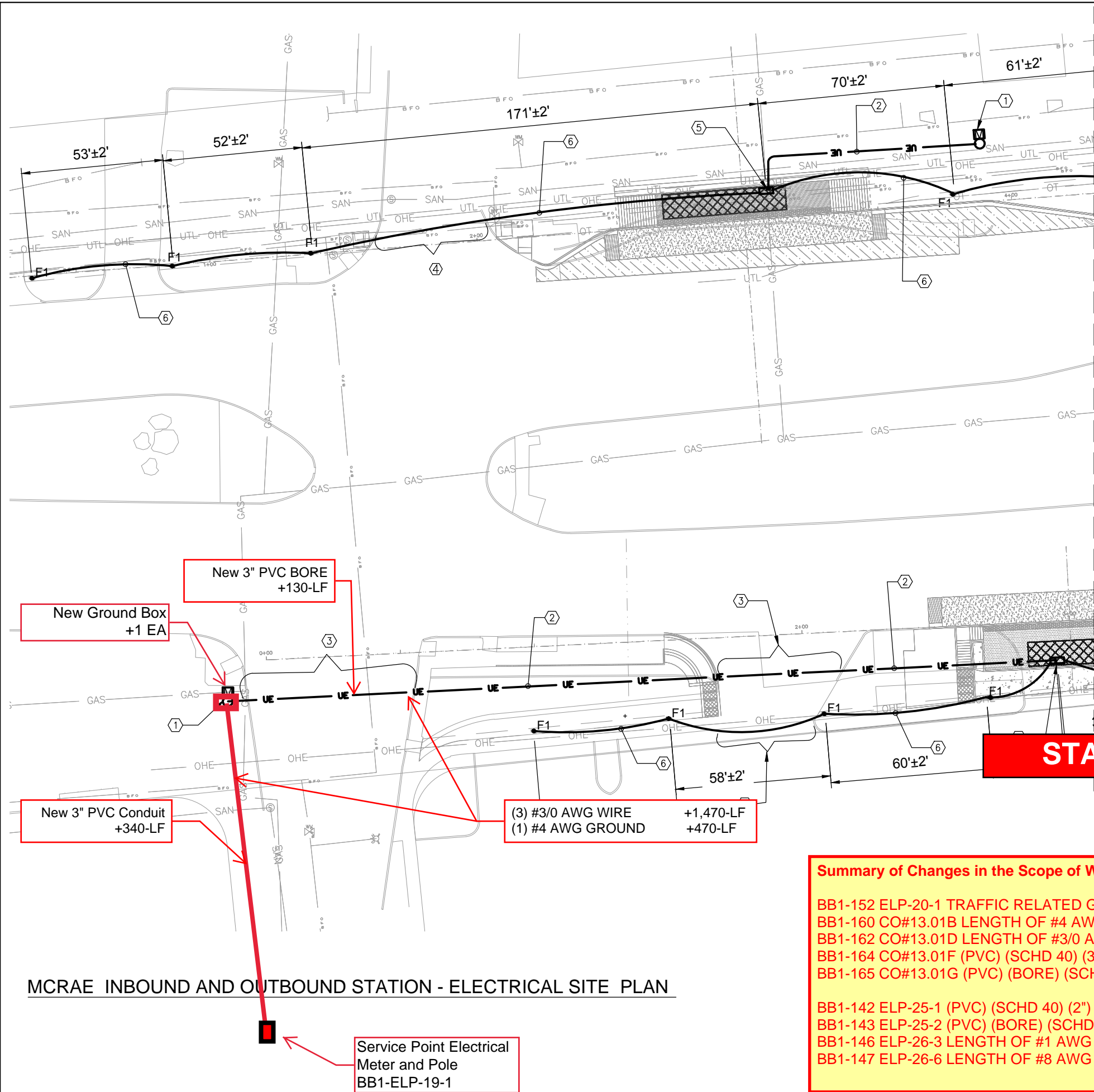
CAPITAL IMPROVEMENT
CITY OF EL PASO
218 W. CAMPBELL STREET
EL PASO, TEXAS 79901
TEL: 915.762.2000
FAX: 915.762.0008

ELECTRICAL SHEETS
ES4.01
SHEET

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GENERAL NOTES:

1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR JACK AND BORE ANY PIT FOR CONDUIT RUNS.

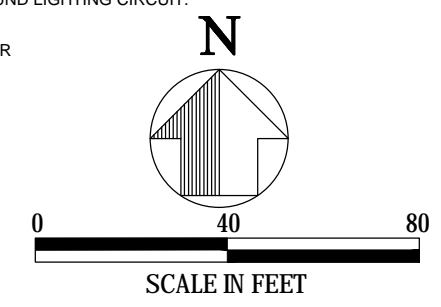
KEY NOTES:

- ① PROVIDE ELECTRICAL METER AND POLE AS INDICATED ON DETAIL 1 ON SHEET E0.02
- ② PROVIDE (1) 2" C. WITH (3)#1 AWG AND (1)#8 GND, AS INDICATED ON DRAWINGS.
- ③ JACK/BORE AND PROVIDE (1) 2" PVC SCHEDULE 40 WITH (3)#1 AWG AND (1)#8 GND. COORDINATE WITH TXDOT AND CIVIL DRAWINGS.
- ④ BORE AND PROVIDE (1) 1" PVC SCHEDULE 40 WITH (3)#10, (1)#10 GND AND CIRCUIT AS INDICATED IN SHEET E0.04.
- ⑤ TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL CABINET. REFER TO SHEET E0.03 FOR MORE INFORMATION.
- ⑥ PROVIDE (1) 1" C. WITH (2)#10 AWG AND (1)#10GND CIRCUIT AS INDICATED IN SHEET E0.04.

LEGEND

- F1 ● PEDESTRIAN LIGHTING - LETTER INDICATES TYPE. SEE SHEET E0.01
- UE -UE- UNDERGROUND ELECTRICAL SECONDARY
- [Symbol] SERVICE RACK STRUCTURE
- [Symbol] ELECTRICAL METER BOX
- [Symbol] ELECTRICAL SERVICE POLE
- [Symbol] ELECTRICAL DISTRIBUTION CABINET
- [Symbol] TRAFFIC RATED PULLBOX
- [Symbol] UNDERGROUND LIGHTING CIRCUIT.
- [Symbol] BUS SHELTER

MATCHLINE STA 3+00
SEE SHEET ES8.02



MCRAE INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN

- New 3" PVC BORE +130-LF
- New Ground Box +1 EA
- New 3" PVC Conduit +340-LF
- (3) #3/0 AWG WIRE +1,470-LF
- (1) #4 AWG GROUND +470-LF
- Service Point Electrical Meter and Pole BB1-ELP-19-1

STATION 8 OB

| Summary of Changes in the Scope of Work | |
|--|-----------|
| BB1-152 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC | +1-EA |
| BB1-160 CO#13.01B LENGTH OF #4 AWG CABLE | +470-LF |
| BB1-162 CO#13.01D LENGTH OF #3/0 AWG CABLE | +1,470-LF |
| BB1-164 CO#13.01F (PVC) (SCHD 40) (3") | +340-LF |
| BB1-165 CO#13.01G (PVC) (BORE) (SCHD 40) (3") | +130-LF |
| BB1-142 ELP-25-1 (PVC) (SCHD 40) (2") | -300-LF |
| BB1-143 ELP-25-2 (PVC) (BORE) (SCHD 40) (2") | -130-LF |
| BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE | -900-LF |
| BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE | -300-LF |

| | | | |
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| MONTANA RAPID TRANSIT SYSTEM MCRAE - STATION 8 ELECTRICAL SITE PLAN | | | |
| CAPITAL IMPROVEMENT CITY OF EL PASO 218 N. CAMPBELL STREET EL PASO, TEXAS 79901 TEL: 915.323.0000 FAX: 915.323.0088 | | | |
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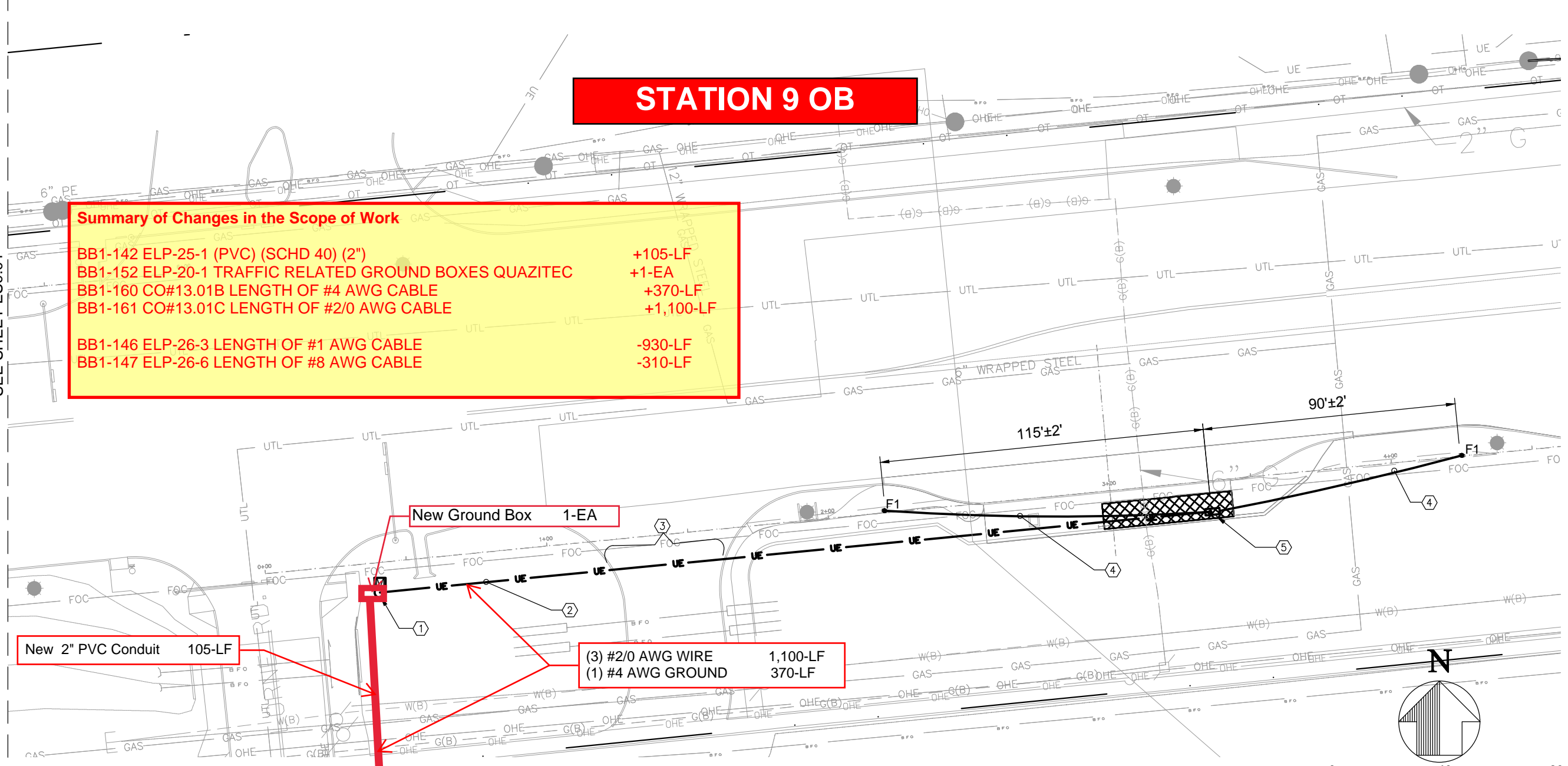
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MATCHLINE STA 5+50
SEE SHEET ES9.01

STATION 9 OB

Summary of Changes in the Scope of Work

| | |
|--|-----------|
| BB1-142 ELP-25-1 (PVC) (SCHD 40) (2") | +105-LF |
| BB1-152 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC | +1-EA |
| BB1-160 CO#13.01B LENGTH OF #4 AWG CABLE | +370-LF |
| BB1-161 CO#13.01C LENGTH OF #2/0 AWG CABLE | +1,100-LF |
| BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE | -930-LF |
| BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE | -310-LF |



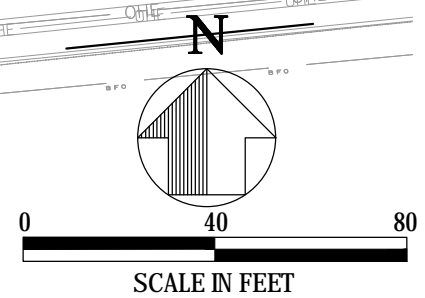
LORNE INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN

GENERAL NOTES:

- VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR JACK AND BORE ANY PIT FOR CONDUIT RUNS.
- KEY NOTES:**
- PROVIDE ELECTRICAL METER AND POLE AS INDICATED ON DETAIL 1 ON SHEET E0.02.
 - PROVIDE (1) 2" C. PVC SCHEDULE 40 WITH (3)#1 AWG AND (1)#8 GND, AS INDICATED ON DRAWINGS.
 - JACK/BORE AND PROVIDE (1) 2" C. PVC SCHEDULE 40 WITH (3)#1 AWG, (1)#8 GND. COORDINATE WITH TXDOT AND CIVIL DRAWINGS.
 - PROVIDE (1) 1" C. PVC SCHEDULE 40 WITH (2)#10 AWG AND (1)#10 GND CIRCUIT AS INDICATED IN SHEET E0.04
 - TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL CABINET. REFER TO SHEET E0.03 FOR MORE INFORMATION.

LEGEND

- F1 ● PEDESTRIAN LIGHTING - LETTER INDICATES TYPE. SEE SHEET E0.01
- UE — UE — UNDERGROUND ELECTRICAL SECONDARY
- M ○ METER POLE
- M ○ Service Point Electrical Meter and Pole BB1-ELP-19-1
- ELECTRICAL DISTRIBUTION CABINET
- TRAFFIC RATED PULLBOX
- UNDERGROUND LIGHTING CIRCUIT.
- ▨ BUS SHELTER

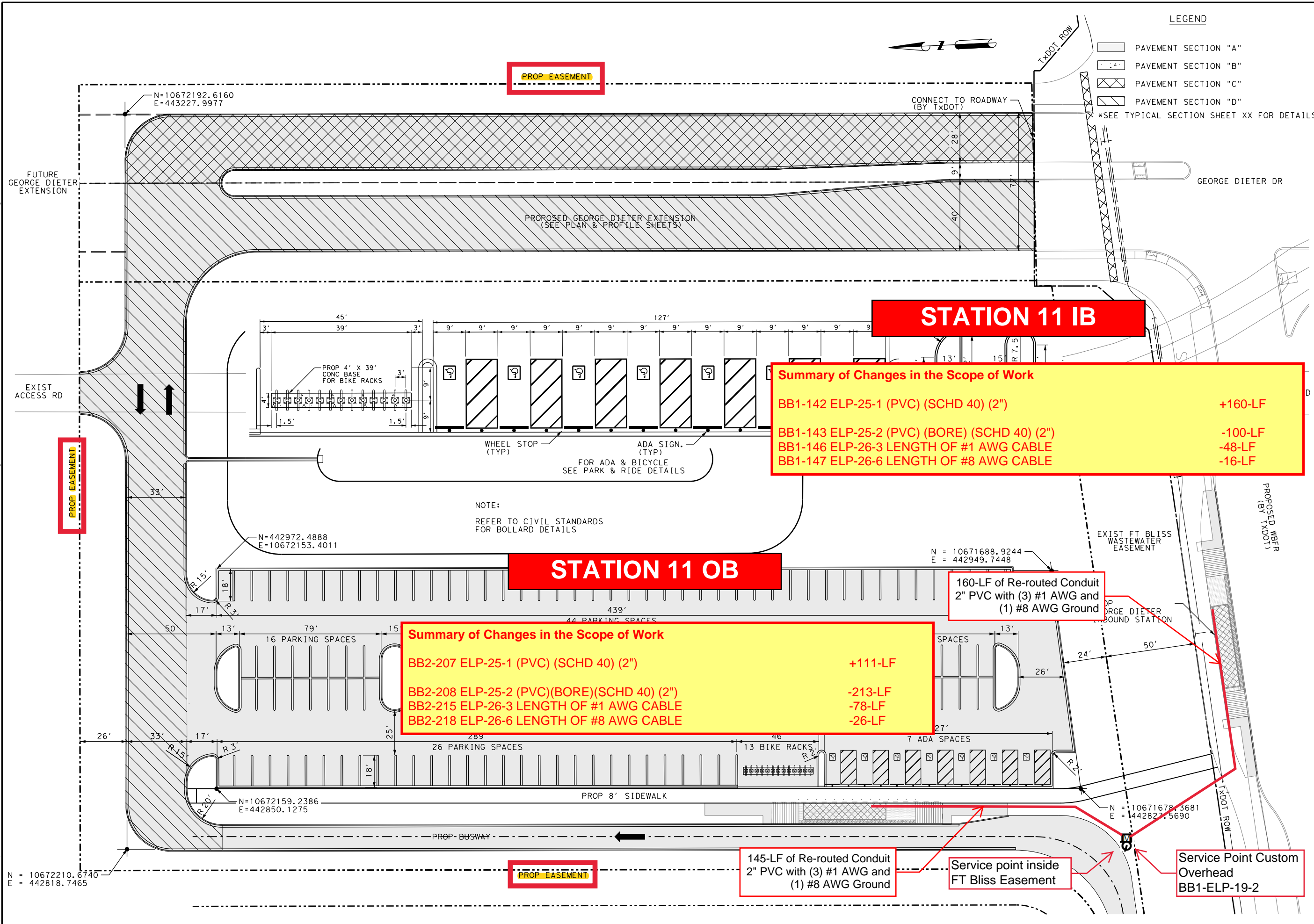


| SHEET SUMMARY OF ESTIMATED QUANTITIES LORNE ES9.02 | | | | | | | |
|--|------|--------|---|------|-----------------|--------------------|-----|
| | NO. | Series | Description | Unit | # OF CONDUCTORS | LENGTH OF THE RUNS | QTY |
| ELP-19 | -1 | | Service Point Electrical Meter and Pole | EA | | | 1 |
| ELP-20 | -1 | | Traffic rated pullbox Quazite pc style 24x12x12 | EA | | | |
| ELP-25 | -1 | | Length of 2" Conduit | LF | | | 266 |
| ELP-25 | -2 | | Length of 2" Conduit (BORE) | LF | | | 44 |
| ELP-25 | -5 | | Length of 1" Conduit | LF | | | 221 |
| ELP-25 | -6 | | Length of 1" Conduit (BORE) | LF | | | |
| ELP-26 | -3 | | Length of #1 AWG Cable | LF | 3 | 310 | 930 |
| ELP-26 | -6 | | Length of #8 AWG Cable | LF | 1 | 310 | 310 |
| ELP-26 | -7 | | Length of #10 AWG Cable | LF | 3 | 221 | 663 |
| ELP-5 | | | Pedestrian Illumination | EA | | | 2 |
| 416 | 6001 | | Drill Shaft (18in) | LF | | | 12 |

THESE QUANTITIES ARE APPROXIMATE VALUES

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| MONTANA RAPID TRANSIT SYSTEM LORNE - STATION 9 ELECTRICAL SITE PLAN | | | | |
| CAPITAL IMPROVEMENT CITY OF EL PASO 218 E. CAMPBELL STREET EL PASO, TEXAS 79901 TEL: 915.312.1000 FAX: 915.312.1006 | | | | |
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| ELECTRICAL SHEETS | | | | |
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| SHEET | | | | |
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STATION 11 IB

| Summary of Changes in the Scope of Work | |
|--|---------|
| BB1-142 ELP-25-1 (PVC) (SCHD 40) (2") | +160-LF |
| BB1-143 ELP-25-2 (PVC) (BORE) (SCHD 40) (2") | -100-LF |
| BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE | -48-LF |
| BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE | -16-LF |

STATION 11 OB

| Summary of Changes in the Scope of Work | |
|--|---------|
| BB2-207 ELP-25-1 (PVC) (SCHD 40) (2") | +111-LF |
| BB2-208 ELP-25-2 (PVC)(BORE)(SCHD 40) (2") | -213-LF |
| BB2-215 ELP-26-3 LENGTH OF #1 AWG CABLE | -78-LF |
| BB2-218 ELP-26-6 LENGTH OF #8 AWG CABLE | -26-LF |

145-LF of Re-routed Conduit
 2" PVC with (3) #1 AWG and
 (1) #8 AWG Ground

Service point inside
 FT Bliss Easement

Service Point Custom
 Overhead
 BB1-ELP-19-2

160-LF of Re-routed Conduit
 2" PVC with (3) #1 AWG and
 (1) #8 AWG Ground

LEGEND

- PAVEMENT SECTION "A"
- PAVEMENT SECTION "B"
- PAVEMENT SECTION "C"
- PAVEMENT SECTION "D"

*SEE TYPICAL SECTION SHEET XX FOR DETAILS.

| | | | | | | | | | | | | | | | | | | | | | |
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| ENGINEER'S SEAL | ENGINEERING CORPORATION DANNENBAUM T.B.P.E. FIRM REGISTRATION #392 3100 WEST ALABAMA HOUSTON, TX 77098 (713) 526-9970 | NO. DATE REVISION REMARKS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table> | | | | | | | | | | | | | | | | | SCALE HORIZ. 1" = 50' VERT. 1" = 10' DATE: 6/28/2018 DESIGN BY: XX DRAWN BY: XX CHECKED BY: XX APPROVED BY: XX JOB No. 5018-01 | MONTANA RAPID TRANSIT SYSTEM GEORGE DIETER PARK & RIDE PROPOSED HORIZONTAL CONTROL | CAPITAL IMPROVEMENT CITY OF EL PASO 218 N. CAMPBELL STREET EL PASO, TEXAS 79901 TEL: 915.762.0000 FAX: 915.762.0000 |
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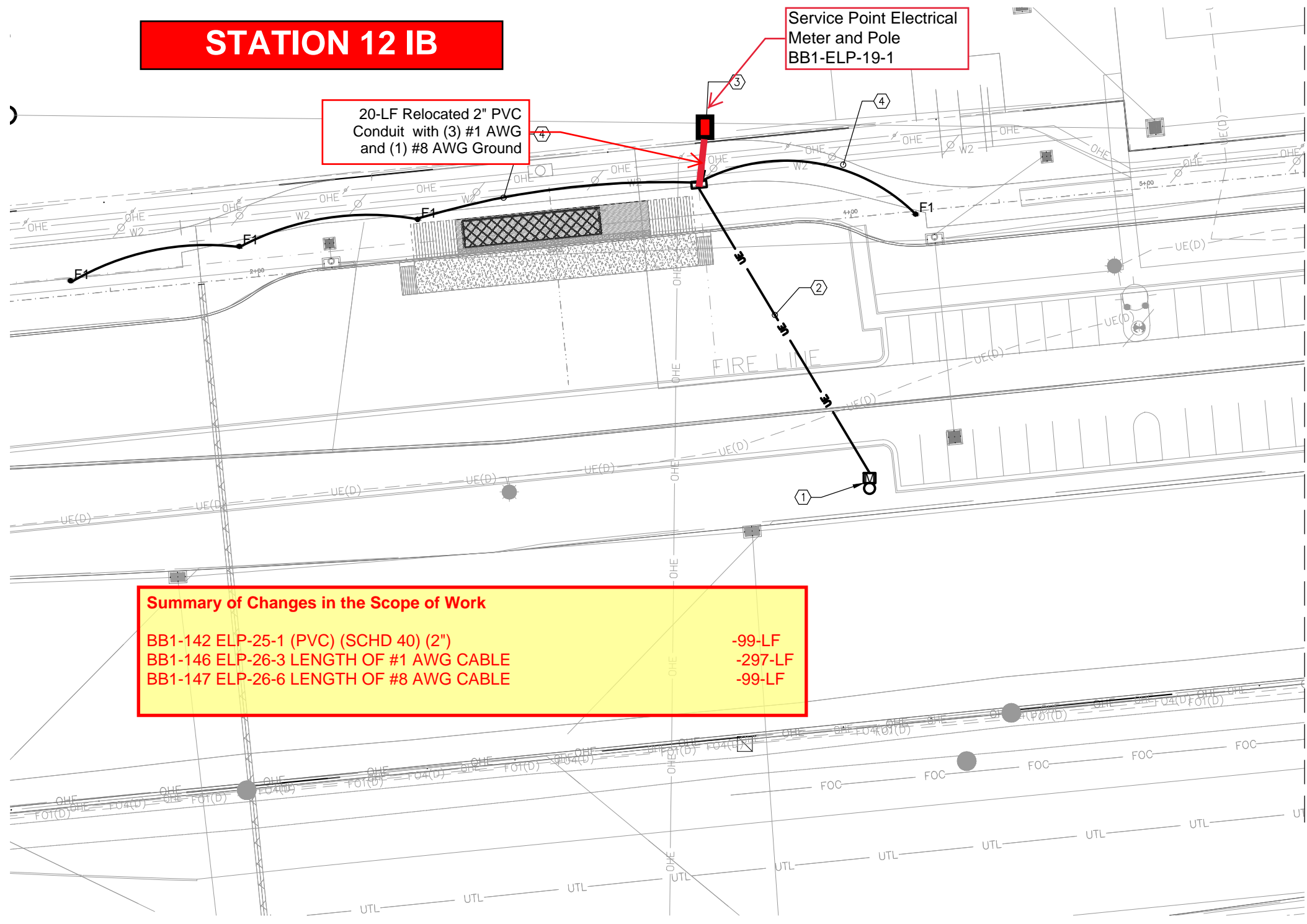
STATION 12 IB

20-LF Relocated 2" PVC Conduit with (3) #1 AWG and (1) #8 AWG Ground

Service Point Electrical Meter and Pole BB1-ELP-19-1

Summary of Changes in the Scope of Work

| | |
|---|---------|
| BB1-142 ELP-25-1 (PVC) (SCHD 40) (2") | -99-LF |
| BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE | -297-LF |
| BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE | -99-LF |



GENERAL NOTES:

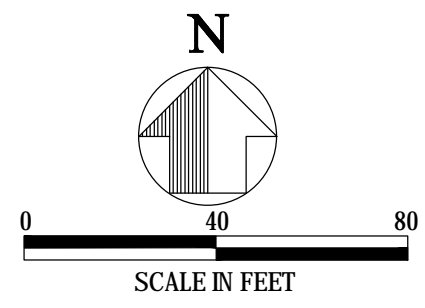
1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR JACK AND BORE ANY PIT FOR CONDUIT RUNS.

KEYED NOTES:

- ① PROVIDE ELECTRICAL METER AND POLE AS INDICATED ON DETAIL 1 ON SHEET E0.02.
- ② PROVIDE (1) 2" C. WITH (3)#1 AWG AND (1)#8GND AS INDICATED ON DRAWINGS.
- ③ TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL CABINET. REFER TO SHEET E0.03 FOR MORE INFORMATION.
- ④ PROVIDE (1) 1" C. WITH (2)#10 AWG AND (1)#10GND CIRCUIT AS INDICATED IN SHEET E0.04.

LEGEND

- F1 ● PEDESTRIAN LIGHTING - LETTER INDICATES TYPE. SEE SHEET E0.01
- UE — UNDERGROUND ELECTRICAL SECONDARY
- [] SERVICE RACK STRUCTURE
- [M] ELECTRICAL METER BOX
- [O] ELECTRICAL SERVICE POLE
- [] ELECTRICAL DISTRIBUTION CABINET
- [■] TRAFFIC RATED PULLBOX
- () UNDERGROUND LIGHTING CIRCUIT.
- [X] BUS SHELTER



SAUL KLEINFELD INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN

| NO. | DATE | REVISION | REMARKS | BY |
|-----|------|----------|---------|----|
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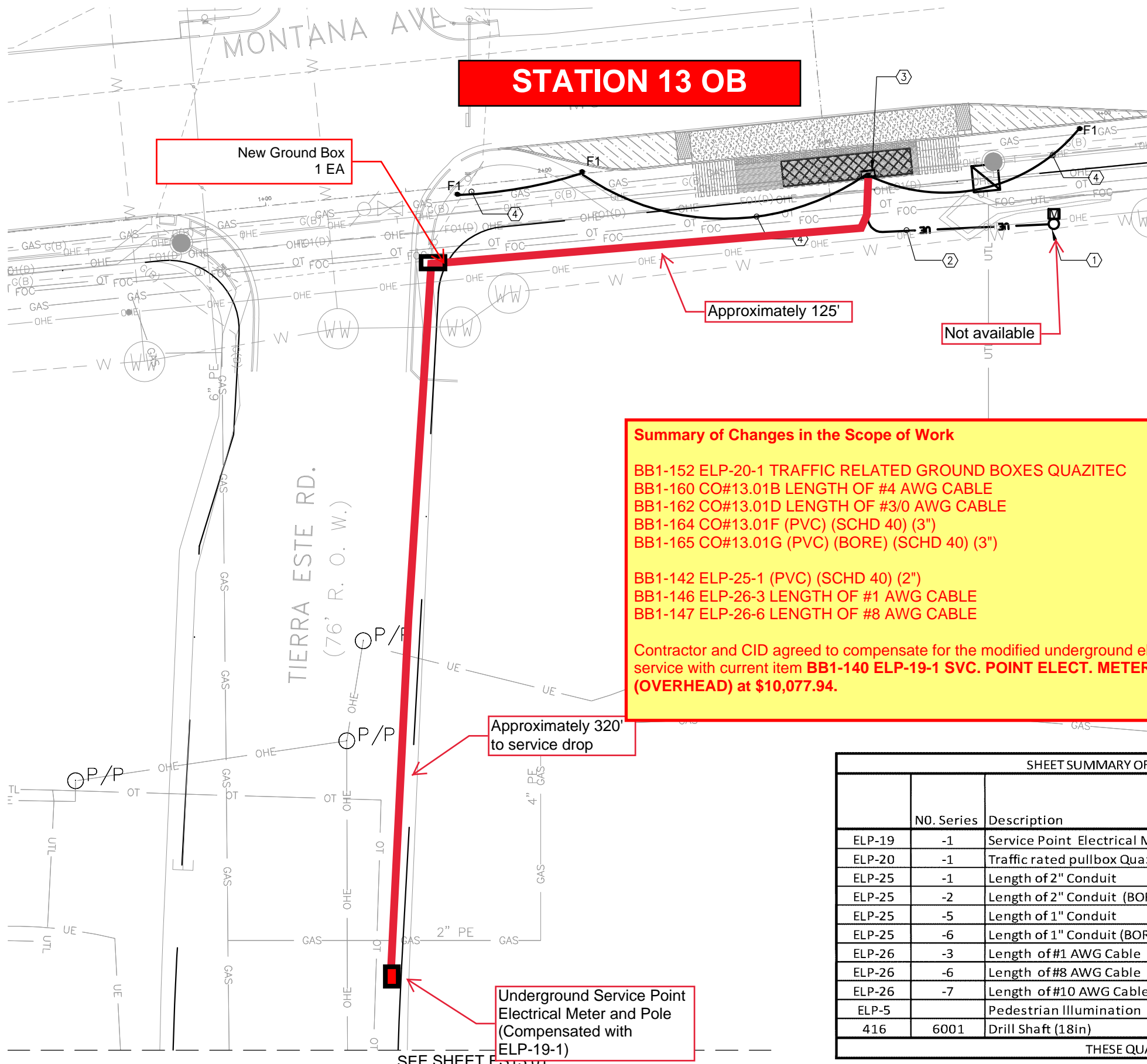
DATE: 04/09/2018
 DESIGN BY: LF
 DRAWN BY: LF
 CHECKED BY: LF
 APPROVED BY: LF
 JOB No: 17-100

MONTANA RAPID TRANSIT SYSTEM
SAUL KLEINFELD - STATION 12 ELECTRICAL SITE PLAN

CAPITAL IMPROVEMENT
 CITY OF EL PASO
 218 N. CAMPBELL STREET
 EL PASO, TEXAS 79901
 TEL: 915.762.3000
 FAX: 915.232.0086

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STATION 13 OB

New Ground Box
1 EA

Approximately 125'

Not available

Summary of Changes in the Scope of Work

BB1-152 ELP-20-1 TRAFFIC RELATED GROUND BOXES QUAZITEC +1-EA
 BB1-160 CO#13.01B LENGTH OF #4 AWG CABLE +445-LF
 BB1-162 CO#13.01D LENGTH OF #3/0 AWG CABLE +1,335-LF
 BB1-164 CO#13.01F (PVC) (SCHD 40) (3") +405-LF
 BB1-165 CO#13.01G (PVC) (BORE) (SCHD 40) (3") +40-LF

BB1-142 ELP-25-1 (PVC) (SCHD 40) (2") -107-LF
 BB1-146 ELP-26-3 LENGTH OF #1 AWG CABLE -321-LF
 BB1-147 ELP-26-6 LENGTH OF #8 AWG CABLE -107-LF

Contractor and CID agreed to compensate for the modified underground electrical service with current item **BB1-140 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD)** at \$10,077.94.

Approximately 320'
to service drop

Underground Service Point
Electrical Meter and Pole
(Compensated with
ELP-19-1)

SEE SHEET ES13.01

GENERAL NOTES:

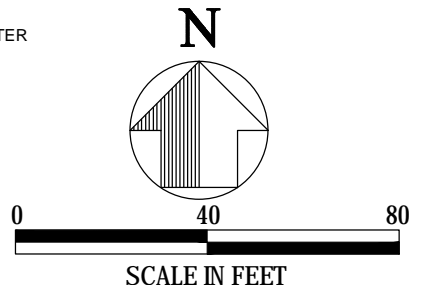
1. VERIFY CLEARANCES WITH UTILITIES BEFORE THE START OF TRENCHING OR JACK AND BORE ANY PIT FOR CONDUIT RUNS.

KEYED NOTES:

- ① PROVIDE ELECTRICAL METER AND POLE AS INDICATED ON DETAIL 1 ON SHEET E0.02.
- ② PROVIDE (1) 2" C. IN SCHEDULE 40 WITH (3)#1 AWG AND (1)#8GND AS INDICATED ON DRAWINGS.
- ③ TERMINATE ELECTRICAL FEEDERS IN 100A MAIN BREAKER PANEL INSIDE ELECTRICAL CABINET. REFER TO SHEET E0.03 FOR MORE INFORMATION.
- ④ PROVIDE (1) 1" C. WITH (2)#10 AWG AND (1)#10GND AND CIRCUIT AS INDICATED IN SHEET E0.04.

LEGEND

- F1 ● PEDESTRIAN LIGHTING - LETTER INDICATES TYPE. SEE SHEET E0.01
- UE — UE — UNDERGROUND ELECTRICAL SECONDARY
- ▭ SERVICE RACK STRUCTURE
- ⊠ ELECTRICAL METER BOX
- — ELECTRICAL SERVICE POLE
- — ELECTRICAL DISTRIBUTION CABINET
- — TRAFFIC RATED PULLBOX
- — UNDERGROUND LIGHTING CIRCUIT.
- ⊠ BUS SHELTER



| SHEET SUMMARY OF ESTIMATED QUANTITIES TIERRA ESTE ES13.03 | | | | | | |
|---|------------|---|------|-----------------|--------------------|-----|
| | NO. Series | Description | Unit | # OF CONDUCTORS | LENGTH OF THE RUNS | QTY |
| ELP-19 | -1 | Service Point Electrical Meter and Pole | EA | | | 1 |
| ELP-20 | -1 | Traffic rated pullbox Quazite pc style 24x12x12 | EA | | | |
| ELP-25 | -1 | Length of 2" Conduit | LF | | | 107 |
| ELP-25 | -2 | Length of 2" Conduit (BORE) | LF | | | |
| ELP-25 | -5 | Length of 1" Conduit | LF | | | 241 |
| ELP-25 | -6 | Length of 1" Conduit (BORE) | LF | | | |
| ELP-26 | -3 | Length of #1 AWG Cable | LF | 3 | 107 | 321 |
| ELP-26 | -6 | Length of #8 AWG Cable | LF | 1 | 107 | 107 |
| ELP-26 | -7 | Length of #10 AWG Cable | LF | 3 | 241 | 723 |
| ELP-5 | | Pedestrian Illumination | EA | | | 3 |
| 416 | 6001 | Drill Shaft (18in) | LF | | | 18 |

THESE QUANTITIES ARE APPROXIMATE VALUES

TIERRA ESTE INBOUND AND OUTBOUND STATION - ELECTRICAL SITE PLAN

ATKINS
 482 South Keller Road.
 Orlando, Florida 32810
 Tel: 407-647-7275
 www.atkinsglobal.com
 Copyright © Atkins Limited (2017)

SEAL
 PEDRO L. TREVIN
 REGISTERED PROFESSIONAL ENGINEER

SCALE
 DATE: 04/09/2018
 DESIGN BY: LF
 DRAWN BY: LF
 CHECKED BY:
 APPROVED BY:
 JOB No.: 17-100

MONTANA RAPID TRANSIT SYSTEM
TIERRA ESTE - STATION 13 ELECTRICAL SITE PLAN

CAPITAL IMPROVEMENT
 CITY OF EL PASO
 218 N. CAMPBELL STREET
 EL PASO, TEXAS 79901
 TEL: 915.763.3000
 FAX: 915.232.0080

ELECTRICAL SHEETS
ES13.03
 SHEET
399

STATION 13 OB

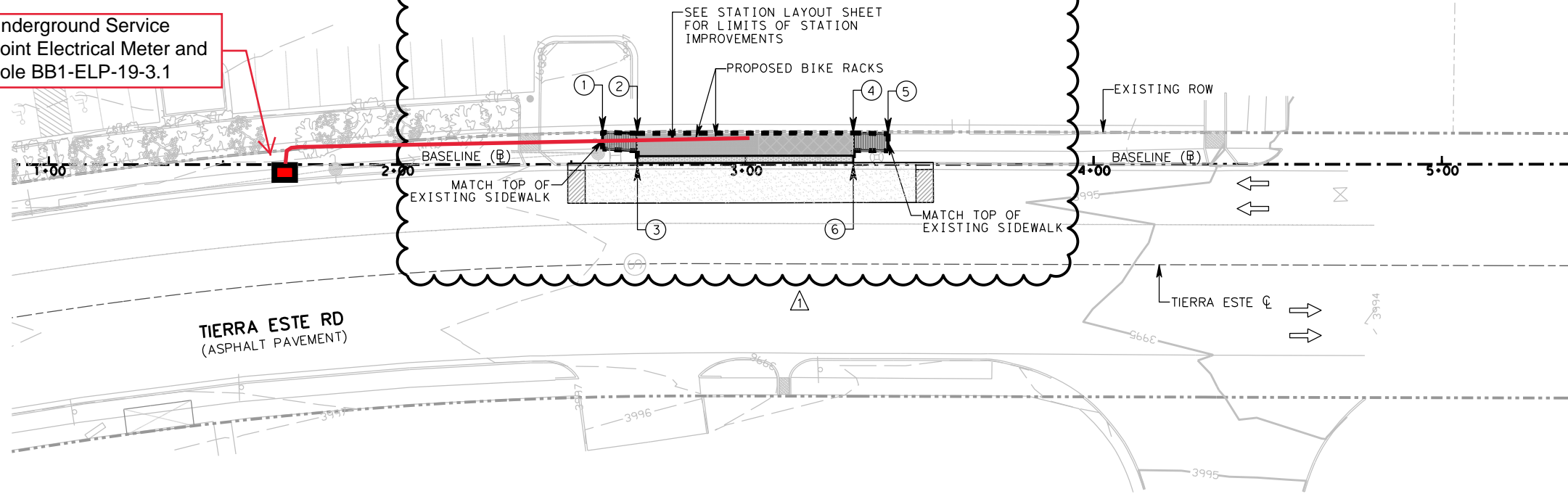
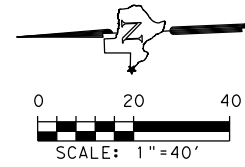
Summary of Changes in the Scope of Work

Contractor and CID agreed to compensate for the modified underground electrical service with current item ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD) at \$10,077.94/EA. Not currently under BB2 but to be added via CO#13.

BB2-241 CO#13.011 SVC. POINT ELECT. METER & POLE (OVERHEAD) +1-EA

BB2-203 ELP-19-1 SVC. POINT ELECT. METER & POLE (OVERHEAD) -1-EA

Underground Service
Point Electrical Meter and
Pole BB1-ELP-19-3.1



LEGEND:

- PROPOSED ROW - PENDING ACQUISITION BY CITY
- EXISTING ROW
- - - STREET CENTERLINE (C)
- LIMITS OF STATION IMPROVEMENTS
- [Pattern] PROPOSED CONCRETE SIDEWALK
- [Pattern] PROPOSED CONCRETE DRIVEWAY
- [Pattern] PROPOSED CURB RAMP DETECTABLE WARNING SURFACE
- [Pattern] PROPOSED CONCRETE BUS PAD
- [Pattern] PROPOSED HMAC APPROACH PAD
- [Pattern] PROPOSED CONCRETE RAMP
- [Pattern] PROPOSED CONCRETE PLATFORM
- PROPOSED CONCRETE CURB & GUTTER
- PROPOSED BIKE RACK
- ← TRAFFIC FLOW DIRECTION
- D1 DRIVEWAY NUMBER (REFER TO DRIVEWAY SHEETS FOR DRIVEWAY DATA)
- ① CONTROL DATA POINT AND NUMBER

NOTES:

1. MANHOLES, SEWER, WATER VALVES, RINGS AND COVERS, THAT REMAIN SHALL BE ADJUSTED TO MATCH FINISHED GRADE ELEVATIONS.
2. CONTRACTOR SHALL PROTECT FROM DAMAGE EXISTING UTILITIES, UTILITY METERS, FIRE HYDRANTS, STREET SIGNS AND ILLUMINATION POLES DURING CONSTRUCTION ACTIVITIES.
3. COORDINATE THE CONSTRUCTION LIMITS OF THE SIDEWALK, RAMPS AND DRIVEWAYS IMPROVEMENTS AREA WITH THE DEMOLITION PLANS SO THAT EXACT BOUNDARIES OF DEMOLITION MAY BE DETERMINED.
4. THERE ARE NUMEROUS UTILITIES IN THE PROJECT AREA. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES BEFORE STARTING ANY CONSTRUCTION OPERATIONS IN THE PROJECT AREA.
5. THE FINISHED GRADE AT NEWLY CONSTRUCTED SURFACES AROUND THE PERIMETER OF SIDEWALK IMPROVEMENTS SHALL BE FLUSH WITH THE EXISTING ADJACENT SURFACE GRADE UNLESS OTHERWISE SHOWN ON PLANS.
6. REFER TO DEMOLITION SHEETS FOR LIMITS OF PAVEMENT REMOVAL.
7. EXTEND NEW CONCRETE DRIVEWAY IN DRIVEWAY TRANSITIONAL AREAS TO DAY LIGHT. MATCH EXISTING ADJACENT SURFACE GRADE(S). COORDINATE IMPROVEMENTS AND RIGHT-OF-ENTRY WITH CITY INSPECTOR AND PROPERTY OWNER PRIOR TO ANY WORK.
8. SIDEWALK IMPROVEMENTS SHALL MATCH EXISTING GRADES.
9. GROOVES SHOWN ON STATION RAMPS SHALL NOT BE CONSTRUCTED. (DISPLAY PURPOSES ONLY)
10. SEE ALIGNMENT DATA SHEET FOR PROJECT BASELINE CONTROL.
11. BIKE RACKS FINAL PLACEMENT LOCATION TO BE DETERMINED BY CITY INSPECTOR.

SIDEWALK LIMITS

| POINT NO | NORTHING | EASTING | ELEVATION |
|----------|--------------|------------|------------|
| 1 | 10671797.870 | 456449.493 | 3996.61 TS |
| 2 | 10671787.891 | 456448.754 | 3996.87 EP |
| 3 | 10671788.234 | 456439.749 | 3996.73 EP |
| 4 | 10671725.936 | 456446.398 | 3996.72 EP |
| 5 | 10671715.953 | 456445.761 | 3996.45 TS |
| 6 | 10671726.279 | 456437.393 | 3996.59 EP |

SIDEWALK QUANTITY SUMMARY TABLE

TIERRA ESTE STATION - BASE BID II

| ITEM | DESCRIPTION | QUANTITY | UNIT |
|----------|-----------------------------|----------|------|
| 529 6034 | CONC CURB (MONO)(TYII)(MOD) | 105 | LF |
| 531 6027 | CURB RAMP (TY 10) | 2 | EA |
| 531 6001 | CONC SIDEWALKS (4") | 12 | SY |

| | | | | |
|---|---------------------|--|---|---------------------------------------|
| ENGINEER'S SEAL | ENGINEER'S SEAL | REVISION REMARKS NO. DATE 1 08/23/19 STATION REDESIGN O.G. | MONTANA RAPID TRANSIT SYSTEM STATION NO. 13 TIERRA ESTE STATION INBOUND SIDEWALK LAYOUT SHEET 1 OF 1 | CIVIL SHEETS C-134 SHEET 230 |
| CAPITAL IMPROVEMENT CITY OF EL PASO 218 N. CAMPBELL STREET EL PASO, TEXAS 79901 TELE 915.732.0065 FAX 915.732.0066 | | MCI Cardenas Inc. Leaders in Project Delivery & Performance 2105 E. Missouri Ave. El Paso, TX 79901 P(915) 832-3991 Texas Board of Professional Engineers Registration No. F-060534 | | |

c:\projects\se\dannenbaum\workdir\aurora.caval\0118822\US62_RTS_STA13_SDWLAY.dgn 10/16/2019 4:31:45 PM \$USERNAME\$



September 1, 2021

Attn: Alex Avila

Construction Superintendent
City of El Paso - Capital Improvements Department
218 N. Campbell Street
El Paso, TX 79901

RE: Montana RTS Improvements
TxDOT CSJ No. 0374-02-089
Solicitation No. 2018-836
RFP #010 – Additional Electrical Wiring
Opinion of Probable Construction Cost (OPCC)

Dear Mr. Avila:

We have performed an independent opinion of probable construction cost in reference to *Request for Proposal, RFP #010*, issued to Venegas Engineering Management and Construction (VEMAC) for the aforementioned project. The subject RFP is in reference to additional work and costs associated with the furnishing and installation of additional electrical wiring for the new electrical services. The additional scope of work was requested by the Capital Improvement Department (CID). This memorandum outlines the background, opinion of construction cost, and suggested course of action.

BACKGROUND

The project improvements consist on furnishing and installing electrical wiring from the canopy structures and to the new electrical services throughout the project sites. As part of the coordination with El Paso Electric Company (EPECo), the service location resulted to be far away from the anticipated location at Station 08 McRae, Station 09 Lorne, Station 12, Saul Kleinfeld, and Station 13 Tierra Este. As a result, additional wiring with an increase in gauge was required to account for the relocated service and to accommodate the proposed service load. The Contractor issued a Request for Information, *RFI #110*, on *April 21, 2021* requesting direction on how to proceed. The Engineer of Record agreed to incorporate new bid items for electrical wiring needed to accommodate this unforeseen condition. A Request for Proposal, *RFP #010*, was issued on *June 17, 2021*, and the Contractor provided a proposal dated on *August 16, 2021* with a total amount of **\$31,656.69**. No additional time was requested. If the proposal is accepted as is, a net change in the contract amount is estimated to be:

| | | |
|--------------------------------------|--------------------------|-------------------|
| ➤ RFP #010A #2 AWG Insulated Cable | 580-LF | \$3,619.20 |
| ➤ RFP #010B #2/0 AWG Insulated Cable | 1,100-LF | \$9,790.92 |
| ➤ RFP #010C #4/0 AWG Insulated Cable | 1,740-LF | \$18,235.2 |
| | Percent Contract Change: | 0.16% |

OPINION OF PROBABLE CONSTRUCTION COST

In an effort to establish an agreeable construction cost for the furnishing and installation of additional electrical wiring, we developed an opinion of probable construction cost based on industry standards and estimating best practices alongside with recommendations from the Construction Management Association of America (CMAA) and TxDOT Best Practices Handbook.

The construction cost was estimated based on available contract pricing and was complemented with TxDOT 12-month Moving Unit Price Averages for the Statewide Averages. No historic data was found on the El Paso Districts' database. Table 1 presents the available historic data.

To provide further contrast, a detailed and itemized estimate was developed based on RSMeans data and historic production rates for this type of work. Labor, equipment, and material costs were estimated. Applicable TxDOT markups were incorporated into each category and a total estimated construction cost was calculated. Equipment and material rates were obtained from the local market. Detail breakdown is found on the attachments. Table 2 presents the estimated construction cost.

Table 1 Construction Cost Based on Historic Data

| Construction Cost Based on Historic Data | | | | | |
|--|---|----------|-----------------|------------|---------------------|
| Reference | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
| TxDOT Average Statewide | 620 6022 ELEC CONDR (No. 2) INSULATED | 580 | LF | 3.28 | 1,902.40 |
| | 620 6022 ELEC CONDR (No. 2/0) INSULATED | 1,100 | LF | 7.54 | 8,294.00 |
| | 620 6022 ELEC CONDR (No. 4/0) INSULATED | 1,740 | LF | 8.16 | 14,198.40 |
| Total Estimated Amount | | | | | \$ 24,394.80 |

Table 2 – Opinion of Construction Cost for RFP #010

| Opinion of Probable Construction Cost | | | | | | | |
|---------------------------------------|-------|-------|-------------|--------------|-------------|-------------|---------------------|
| Description | Qty | U.O.M | Labor | Material | Equipment | Subcontract | Estimate Total |
| Electrical Wiring #2 AWG | 580 | LF | 1,062.00 | 1,943.75 | 451.95 | - | 3,457.70 |
| Electrical Wiring #2/0 AWG | 1,110 | LF | 1,258.00 | 6,688.75 | 512.95 | - | 8,459.70 |
| Electrical Wiring #4/0 AWG | 1,740 | LF | 1,520.00 | 12,818.75 | 478.95 | - | 14,817.70 |
| Subtotal | | | \$ 3,840.00 | \$ 21,451.25 | \$ 1,443.85 | \$ - | \$ 26,735.10 |
| Bond Compensation (1%) | | | \$ 38.40 | \$ 214.51 | \$ 14.44 | | \$ 267.35 |
| Total Estimated Amount | | | | | | | \$ 27,002.45 |

A probable construction cost for the furnishing and installation of additional electrical wiring is estimated at **\$27,003**. The Contractor's proposal of **\$31,657** exceeds our estimated construction cost by only **14.7%**. The Contractor's breakdown was reviewed and validated. Additionally, the Contractor's proposed unit pricing was reviewed against similar electrical wiring work on the contract and was found to be within reasonable limits. For instance, the contract's unit price on the furnishing and installation of a #1 AWG cable was priced at **\$6.92/LF** whereas the proposed unit price for a #2 AWG cable is at **\$6.02/LF**. This unit price reflects similar scope of work but with a different gauge wire material. As a result, the proposal was **found to be fair and reasonable cost**.

SUGGESTED COURSE OF ACTION

Based on the presented findings, we recommend to accept the proposal as is and incorporate the change into an upcoming change order. Pending your instructions, we will move forward as recommended, or proceed with any other action you believe prudent.

Please do not hesitate to contact us should you require additional information.

Sincerely,
ECM INTERNATIONAL, INC.



Gerardo Garcia, **PE, CCM**
Construction Project Manager

Attachment: *Estimate Breakdown*
RFP #010 Additional Electrical Wiring
Contractor's Original Proposal



OPINION OF PROBABLE CONSTRUCTION COST

RFP #010 ADDITIONAL ELECTRICAL WIRING (#2 AWG)

Estimated Manpower Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|-----------------|----------|-----------------|------------|-----------------|
| L-01 | Foreman | 4.00 | HR | 35.00 | 140.00 |
| L-02 | Skilled Laborer | 10.00 | HR | 18.00 | 180.00 |
| L-03 | Laborer | 10.00 | HR | 15.00 | 150.00 |
| L-04 | Electrician | 4.00 | HR | 30.00 | 120.00 |
| L-05 | | - | | - | - |

Subtotal on Labor: \$ **590.00**
Labor Burden per Item 9L, 7.1.1. (55%): \$ **324.50**
Labor Compensation per Item 9L, 7.1.2. (25%): \$ **147.50**

Estimated Material Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|--------------------------------------|----------|-----------------|------------|-----------------|
| M-01 | #2 XHHW CONDUCTOR | 580.00 | LF | 2.25 | 1,305.00 |
| M-02 | Tape, Pull Lube, and Misc. Materials | 1.00 | LS | 250.00 | 250.00 |
| M-03 | | | | - | - |
| M-04 | | | | - | - |
| M-05 | | | | - | - |

Subtotal on Materials: \$ **1,555.00**
Materials Compensation per Item 9L, 7.1.3. (25%): \$ **388.75**

Estimated Equipment Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|---------------------------------|----------|-----------------|------------|-----------------|
| E-01 | Foreman Truck | 4.00 | HR | 22.00 | 88.00 |
| E-02 | Utility Truck & Pulling Machine | 10.00 | HR | 30.50 | 305.00 |
| E-03 | | - | | - | - |
| E-04 | | - | | - | - |
| E-05 | | - | | - | - |

Subtotal on Equipment: \$ **393.00**
Equipment Compensation per Item 9L, 7.1.4. (15%): \$ **58.95**

Estimated Subcontractor's Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|-------------|----------|-----------------|------------|-----------------|
| S-01 | | - | | - | - |
| S-02 | | - | | - | - |
| S-03 | | - | | - | - |
| S-04 | | - | | - | - |
| S-05 | | - | | - | - |

Subtotal on Subcontract \$ **-**
Subcontract's Compensation per Item 9L, 7.1.5. (5%): \$ **-**

SUBTOTAL

\$ 3,457.70

BOND COST PER ITEM 9L, 7.1.8 (1%)

\$ 34.58

TOTAL ESTIMATED COST

\$ 3,492.28



OPINION OF PROBABLE CONSTRUCTION COST

RFP #010 ADDITIONAL ELECTRICAL WIRING (#2/0 AWG)

Estimated Manpower Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|-----------------|----------|-----------------|------------|-----------------|
| L-01 | Foreman | 6.00 | HR | 35.00 | 210.00 |
| L-02 | Skilled Laborer | 12.00 | HR | 18.00 | 216.00 |
| L-03 | Laborer | 12.00 | HR | 15.00 | 180.00 |
| L-04 | Electrician | 6.00 | HR | 30.00 | 180.00 |
| L-05 | | - | | - | - |

Subtotal on Labor: \$ **786.00**
Labor Burden per Item 9L, 7.1.1. (55%): \$ **324.50**
Labor Compensation per Item 9L, 7.1.2. (25%): \$ **147.50**

Estimated Material Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|--------------------------------------|----------|-----------------|------------|-----------------|
| M-01 | #2/0 XHHW CONDUCTOR | 1,100.00 | LF | 5.50 | 6,050.00 |
| M-02 | Tape, Pull Lube, and Misc. Materials | 1.00 | LS | 250.00 | 250.00 |
| M-03 | | - | | - | - |
| M-04 | | - | | - | - |
| M-05 | | - | | - | - |

Subtotal on Materials: \$ **6,300.00**
Materials Compensation per Item 9L, 7.1.3. (25%): \$ **388.75**

Estimated Equipment Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|---------------------------------|----------|-----------------|------------|-----------------|
| E-01 | Truck | 4.00 | HR | 22.00 | 88.00 |
| E-02 | Utility Truck & Pulling Machine | 12.00 | HR | 30.50 | 366.00 |
| E-03 | | - | | - | - |
| E-04 | | - | | - | - |
| E-05 | | - | | - | - |

Subtotal on Equipment: \$ **454.00**
Equipment Compensation per Item 9L, 7.1.4. (15%): \$ **58.95**

Estimated Subcontractor's Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|-------------|----------|-----------------|------------|-----------------|
| S-01 | | - | | - | - |
| S-02 | | - | | - | - |
| S-03 | | - | | - | - |
| S-04 | | - | | - | - |
| S-05 | | - | | - | - |

Subtotal on Subcontract \$ **-**
Subcontract's Compensation per Item 9L, 7.1.5. (5%): \$ **-**

| | |
|-----------------|--------------------|
| SUBTOTAL | \$ 8,459.70 |
|-----------------|--------------------|

| | |
|--|-----------------|
| BOND COST PER ITEM 9L, 7.1.8 (1%) | \$ 84.60 |
|--|-----------------|

| | |
|-----------------------------|--------------------|
| TOTAL ESTIMATED COST | \$ 8,544.30 |
|-----------------------------|--------------------|



OPINION OF PROBABLE CONSTRUCTION COST

RFP #010 ADDITIONAL ELECTRICAL WIRING (#4/0 AWG)

Estimated Manpower Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|-----------------|----------|-----------------|------------|-----------------|
| L-01 | Foreman | 8.00 | HR | 35.00 | 280.00 |
| L-02 | Skilled Laborer | 16.00 | HR | 18.00 | 288.00 |
| L-03 | Laborer | 16.00 | HR | 15.00 | 240.00 |
| L-04 | Electrician | 8.00 | HR | 30.00 | 240.00 |
| L-05 | | - | | - | - |

Subtotal on Labor: \$ 1,048.00
Labor Burden per Item 9L, 7.1.1. (55%): \$ 324.50
Labor Compensation per Item 9L, 7.1.2. (25%): \$ 147.50

Estimated Material Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|--------------------------------------|----------|-----------------|------------|-----------------|
| M-01 | #4/0 XHHW CONDUCTOR | 1,740.00 | LF | 7.00 | 12,180.00 |
| M-02 | Tape, Pull Lube, and Misc. Materials | 1.00 | LS | 250.00 | 250.00 |
| M-03 | | - | | - | - |
| M-04 | | - | | - | - |
| M-05 | | - | | - | - |

Subtotal on Materials: \$ 12,430.00
Materials Compensation per Item 9L, 7.1.3. (25%): \$ 388.75

Estimated Equipment Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|---------------------------------|----------|-----------------|------------|-----------------|
| E-01 | Truck | 8.00 | HR | 22.00 | 176.00 |
| E-02 | Utility Truck & Pulling Machine | 8.00 | HR | 30.50 | 244.00 |
| E-03 | | - | | - | - |
| E-04 | | - | | - | - |
| E-05 | | - | | - | - |

Subtotal on Equipment: \$ 420.00
Equipment Compensation per Item 9L, 7.1.4. (15%): \$ 58.95

Estimated Subcontractor's Costs

| Item ID# | Description | Quantity | Unit of Measure | Unit Price | Extended Amount |
|----------|-------------|----------|-----------------|------------|-----------------|
| S-01 | | - | | - | - |
| S-02 | | - | | - | - |
| S-03 | | - | | - | - |
| S-04 | | - | | - | - |
| S-05 | | - | | - | - |

Subtotal on Subcontract \$ -
Subcontract's Compensation per Item 9L, 7.1.5. (5%): \$ -

SUBTOTAL

\$ 14,817.70

BOND COST PER ITEM 9L, 7.1.8 (1%)

\$ 148.18

TOTAL ESTIMATED COST

\$ 14,965.88



ECM International
404 Executive Center Boulevard
El Paso, Texas 79902
Phone: (915) 351-1900
Fax: (915) 351-1908

Project: 0374-02-089 - Montana RTS Improvements
Montana Avenue
El Paso, Texas 79925

ADDITIONAL ELECTRICAL WIRING

| | | | |
|------------------|------|---------------|-------------|
| REVISION: | 0 | CREATED DATE: | 6/17/2021 |
| STATUS: | Open | DUE DATE: | 6/25/2021 |
| COST CODE: | | COST IMPACT: | \$0.00 |
| SCHEDULE IMPACT: | | LOCATION: | Projectwide |

DESCRIPTION:

Mr. Robert Martinez
Vice-president and Operations Manager
Venegas Engineering Management and Construction/VEMAC
1919 Rio Grande Street
El Paso, Texas 79902

RE: **Montana RTS Improvements**
Solicitation No. **2018-836**
TxDOT CSJ. **0374-02-089**

Mr. Martinez,

Please submit a detailed and itemized proposal for changes in the Contract Sum and Contract Time for the proposed modifications to the Contract Documents described on the following items:

- **ELP 26-8 LENGHT OF #2 AWG CABLE 580 LF**
 1. Scope of Work: Provide the necessary equipment, manpower, tools, expertise, coordination and incidentals to furnish and install #2 AWG electrical conductor for the new electrical services at Station 08 McRae, Station 09 Lorne, Station 12, Saul Klenfield, and Station 13 Tierra Este. The pricing shall fully compensate for furnishing, installing, and testing electrical conductors; furnishing and installing breakaway connectors; and for materials, equipment, labor, tools and incidentals.
 2. Measurement for and payment for this item will be by the linear foot. Please provide a unit price proposal.
- **ELP 26-9 LENGHT OF #2/0 AWG CABLE 1,110 LF**
 1. Scope of Work: Provide the necessary equipment, manpower, tools, expertise, coordination and incidentals to furnish and install #2/0 AWG electrical conductor for the new electrical services at Station 08 McRae, Station 09 Lorne, Station 12, Saul Klenfield, and Station 13 Tierra Este. The pricing shall fully compensate for furnishing, installing, and testing electrical conductors; furnishing and installing breakaway connectors; and for materials, equipment, labor, tools and incidentals.
 2. Measurement for and payment for this item will be by the linear foot. Please provide a unit price proposal.
- **ELP 26-10 LENGHT OF #4/0 AWG CABLE 1,740 LF**
 1. Scope of Work: Provide the necessary equipment, manpower, tools, expertise, coordination and incidentals to furnish and install #4/0 AWG electrical conductor for the new electrical services at Station 08 McRae, Station 09 Lorne, Station 12, Saul Klenfield, and Station 13 Tierra Este. The pricing shall fully compensate for furnishing, installing, and testing electrical conductors; furnishing and installing breakaway connectors; and for materials, equipment, labor, tools and incidentals.
 2. Measurement for and payment for this item will be by the linear foot. Please provide a unit price proposal.
- **SUMMARIZED CHANGE IN SPECIFICATIONS:**
 - **UNCHANGED** - Special Specification *ELP-26 Electrical Conductor*.
- **SUMMARIZED CHANGE IN DRAWINGS:**
 - **NONE.**
- **OTHER DOCUMENTS:**
 - Request for Information, RFI #110, *Electrical Services Issue*.
- **REFER TO THE ATTACHMENTS FOR YOUR REFERENCE**



Pricing shall be valid for the entire duration of the Project, and inclusive of all materials, equipment, trucking, qualified personnel, and all direct and indirect costs required to successfully execute the scope of work. All applicable Specifications, Special Provisions, Terms and General Conditions of your original contract shall remain in full effect.

Changes in bid quantities due to field adjustments shall be measured, quantified and paid in accordance to your Contract's schedule of unit prices and applicable Contract's General Conditions and Specifications. Traffic control shall be paid under its respective bid items as stipulated on your Original Construction Contract.

This is not a Change Order, a Construction Change Directive or a direction to proceed with the work described in the proposed modifications. If the proposal is found acceptable, a Change Order will be processed and executed in accordance to the Contract's General Conditions. The Contract Sum and Contract Time may only be changed via an executed Change Order.

Do not hesitate to contact me should you have any questions.

Thanks.
ECM INTERNATIONAL, INC.
Gerardo Garcia, P.E., CCM
Project Manager

ATTACHMENTS:

[0347-02-089 RFI #110.pdf](#)

| Workflow History | | | | | |
|-------------------------|-------------|---------------------|----------------|--------------------|------------------|
| Action By | Role | Action Taken | Comment | Attachments | Date/Time |



ECM International
 404 Executive Center Boulevard
 El Paso, Texas 79902
 P: (915) 351-1900
 F: (915) 351-1908

Project: 0374-02-089 Montana RTS Improvements
 Montana Avenue
 El Paso, Texas 79925

RFI #110: Electrical Services Issue

| | | | |
|------------------------|--|------------------------|---|
| Status | Closed on 06/29/21 | | |
| To | Jose Reyes (Dannenbaum Engineering Corporation, LLC.) Silverio Villalobos (Dannenbaum Engineering Corporation, LLC.) | From | Rene Gonzalez (Venegas Engineering Management and Construction) 1919 Rio Grande Street El Paso, 79902 |
| Date Initiated | Apr 21, 2021 | Due Date | May 5, 2021 |
| Location | | Project Stage | Course of Construction |
| Cost Impact | Yes (Unknown) | Schedule Impact | Yes (Unknown) |
| Spec Section | ELP 19 - Electrical Services | Cost Code | |
| Drawing Number | | Reference | |
| Linked Drawings | 303 , 354 , 366 , 367 , 398 , 399 | | |
| Received From | Rene Gonzalez (Venegas Engineering Management and Construction) | | |
| Copies To | Alex Avila (City of El Paso - Capital Improvement Department), Obed Cano (City of El Paso - Capital Improvement Department), Ismael Cepeda (City of El Paso - Capital Improvement Department), Gerardo Garcia (ECM International, Inc.), Rene Gonzalez (Venegas Engineering Management and Construction), Robert Martinez (Venegas Engineering Management and Construction), Eduardo Nunez (ECM International, Inc.), Alex Pedroza (City of El Paso - Capital Improvement Department), Jose Reyes (Dannenbaum Engineering Corporation, LLC.), Abel Salazar (Venegas Engineering Management and Construction), Daniel Urrutia (Venegas Engineering Management and Construction), Silverio Villalobos (Dannenbaum Engineering Corporation, LLC.), Victoria Villarreal (City of El Paso - Capital Improvement Department) | | |

Activity

| | |
|--------------------------|--|
| Question | <p>Question from Rene Gonzalez Venegas Engineering Management and Construction on Tuesday, Apr 20, 2021 at 05:44 PM MDT</p> <p>Alex, As mentioned previously, please advise how to proceed with several stations (McRae, Huckleberry, Tierra Este, and Lorne) that the electrical service is too far away. Thank you, RG</p> |
| Official Response | <p>Response from Gerardo Garcia ECM International, Inc. on Tuesday, Jun 29, 2021 at 09:01 AM MDT</p> <p>CID is in agreement in using the 3" conduit in lieu of the 2" conduit. Compensation for the 3" conduit will be done under the current contract item BB2-209 ELP-25-3 (PVC)(SCHD 40)(3"). Item for 3" conduit will be added to Base Bid 1 via a change order.</p> |
| Official Response | <p>Response from Rene Gonzalez Venegas Engineering Management and Construction on Wednesday, Jun 16, 2021 at 02:30 PM MDT</p> <p>Below are comments from subcontractor:</p> <ul style="list-style-type: none"> • A 3" conduit is recommended versus the 2" conduit stated by the EOR as it better serves the install/pulling of the conductors for those distances and for example, it's what's called-out to install per plans on Mettler/Hawkins & Sunmount/Hawkins corridors, therefore, we would be following suit per contract. • How will the conductors be paid as they are not listed as payable items in the contract? <p>Please provide clarification, thank you. RG</p> |

V E M A C
VENEGAS ENGINEERING MANAGEMENT & CONSTRUCTION

August 16, 2021

Yvette Hernandez
C.I.D. Grant Funded Programs Director
Capital Improvements Department

218 N. Campbell Street
El Paso TX. 79901

Reference: RFP#10 – Additional Electrical Wiring

Mr. Alex Avila,

Please see proposal per RFP #10.

| Item | Description | Price | 6% OH&P, BOND | LF | Grand Totals |
|------|---------------------------------------|---------|------------------|----------|--------------|
| A. | ELP 26-8 LENGHT OF #2 AWG CABLE | \$ 5.89 | \$ 6.24 | 580.00 | \$ 3,621.17 |
| B. | ELP 26-9 LENGHT OF #2/0 AWG CABLE | \$ 8.40 | \$ 8.90 | 1,100.00 | \$ 9,794.40 |
| C. | ELP 26-10 LENGHT OF #4/0 AWG CABLE | \$ 9.89 | \$ 10.48 | 1,740.00 | \$ 18,241.12 |
| | | | | | |

Sincerely,

VEMAC, Inc



Rene Gonzalez
Project Engineer

| | | | | |
|--------------------------|-------|----|-----------------|------------|
| LABOR | | \$ | 803.50 | |
| LABOR BURDEN | 55% | \$ | 441.93 | |
| TOTAL LABOR | | \$ | 1,245.43 | |
| | | | | |
| EQUIPMENT | | \$ | 378.00 | |
| MATERIAL | | \$ | 1,200.60 | |
| SUBTOTAL (E+M+TL) | | \$ | 2,824.03 | |
| | | | | |
| OVERHEAD (E+M+TL) | 10% | \$ | 282.40 | |
| SUBTOTAL OVERHEAD | | \$ | 3,106.43 | |
| | | | | |
| PROFIT | 10% | \$ | 310.64 | |
| SUBTOTAL PROFIT | | \$ | 3,417.07 | |
| MOBILIZATION | | \$ | - | |
| | | | | |
| SUBTOTAL | | \$ | 3,417.07 | |
| | | | | |
| BOND | 0.00% | \$ | - | |
| GRAND TOTAL | | \$ | 3,417.07 | \$ 5.89 LF |

| | | | | |
|--------------------------|-------|----|-----------------|--------------|
| <i>LABOR BURDEN</i> | 55% | \$ | 502.70 | |
| TOTAL LABOR | | \$ | 1,416.70 | |
| EQUIPMENT | | \$ | 468.00 | |
| MATERIAL | | \$ | 5,751.75 | |
| SUBTOTAL (E+M+TL) | | \$ | 7,636.45 | |
| OVERHEAD (E+M+TL) | 10% | \$ | 763.65 | |
| SUBTOTAL OVERHEAD | | \$ | 8,400.10 | |
| PROFIT | 10% | \$ | 840.01 | |
| SUBTOTAL PROFIT | | \$ | 9,240.10 | |
| MOBILIZATION | | \$ | - | |
| SUBTOTAL | | \$ | 9,240.10 | |
| BOND | 0.00% | \$ | - | |
| GRAND TOTAL | | \$ | 9,240.10 | \$ 8.40 L.F. |

| | | | | |
|--------------------------|-------|----|------------------|------------|
| <i>LABOR BURDEN</i> | 55% | \$ | 745.80 | |
| TOTAL LABOR | | \$ | 2,101.80 | |
| EQUIPMENT | | \$ | 468.00 | |
| MATERIAL | | \$ | 11,658.00 | |
| SUBTOTAL (E+M+TL) | | \$ | 14,227.80 | |
| OVERHEAD (E+M+TL) | 10% | \$ | 1,422.78 | |
| SUBTOTAL OVERHEAD | | \$ | 15,650.58 | |
| PROFIT | 10% | \$ | 1,565.06 | |
| SUBTOTAL PROFIT | | \$ | 17,215.64 | |
| MOBILIZATION | | \$ | - | |
| SUBTOTAL | | \$ | 17,215.64 | |
| BOND | 0.00% | \$ | - | |
| GRAND TOTAL | | \$ | 17,215.64 | \$ 9.89 LF |