

CITY AND COUNTY OF DENVER
STATE OF COLORADO



Department of Public Works

Contract Documents

Contract No: 201734986



MILL LEVY 7A

TRAFFIC SIGNAL UPGRADE

May 22, 2017



NOTICE OF APPARENT LOW BIDDER

Sturgeon Electric Company, Inc.
12150 E 112th Avenue
Henderson, CO 80640

The EXECUTIVE DIRECTOR OF PUBLIC WORKS has considered the Bids submitted on **June 22, 2017**, for work to be done and materials to be furnished in and for:

CONTRACT #201734986 Mill Levy 7A Traffic Signal Upgrade

as set forth in detail in the Contract Documents for the City and County of Denver, Colorado. It appears that your Bid is fair, equitable, and to the best interest of the City and County; therefore, said Bid is hereby accepted at the bid price contained herein, subject to the approval and execution of the Contract Documents by the City in accordance with the Charter of the City and County of Denver, and to your furnishing the items specified below. The award is based on the total bid items: **202-01 through 630-02(Seventy-Six[76]) total bid items**, the total estimated cost thereof being: **One Million Five Hundred Sixteen Thousand Four Hundred Twenty-Nine Dollars and Fifty-Six Cents (\$1,516,429.56)**.

It will be necessary for you to appear forthwith at the office of the Department of Public Works, Contract Administration, 201 W. Colfax Ave., Dept 614, Denver, Colorado 80202, to receive the said Contract Documents, execute the same and return them to the Department of Public Works, Contract Administration within the time limit set forth in the Bid Package Documents.

In accordance with the requirements set forth in the Contract Documents, you are required to furnish the following documents:

- a. Insurance Certificates: General Liability and Automotive Liability, Workman's Compensation and Employer Liability;
- b. Payment and Performance Bond along with One original Power of Attorney relative to Performance and/or Payment Bond; and,

All construction Contracts made and entered into by the City and County of Denver are subject to Affirmative Action and Equal Opportunity Rules and Regulations, as adopted by the Manager of Public Works, and each contract requiring payment by the City of one-half million dollars (\$500,000.00) or more shall first be approved by the City Council acting by ordinance and in accordance with Section 3.2.6 of the Charter of the City and County of Denver.

Prior to issuance of Notice to Proceed, all Equal Opportunity requirements must be completed. Additional information may be obtained by contacting the Director of Contract Compliance at (720-913-1700).



NOTICE OF APPARENT LOW BIDDER

CONTRACT NO. 201734986

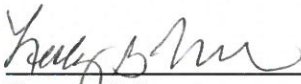
Page 2

The Bid Security submitted with your Bid, will be returned upon execution of the Contract and furnishing of the Performance Bond. In the event you should fail to execute the Contract and to furnish the performance Bond within the time limit specified, said Bid Security will be retained by the City and County of Denver as liquidated damages, and not as a penalty for the delay and extra work caused thereby.

Dated at Denver, Colorado this 27th day of June 2017.

CITY AND COUNTY OF DENVER

By


George Delaney

Interim Executive Director of Public Works

cc: Kristen Moore (CAO), Cindy Bills and Sophia Hassman (Treasury/Tax Compliance), Natalie Fraunfelder (DSBO), John Yu (PM), (PW-Aud), File.

Denver Public Works/Office of the Executive Director
201 West Colfax Avenue, Dept 608 | Denver, CO 80202

www.denvergov.org/dpw

p. 720.865.8630 | f. 720.865.8795

CITY AND COUNTY OF DENVER

STATE OF COLORADO



Department of Public Works

Bid Form Packet

Contract No: 201734986



MILL LEVY 7A

TRAFFIC SIGNAL UPGRADE

May 22, 2017

**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division**

**TABLE OF CONTENTS
FOR
BID FORM AND SUBMITTAL PACKAGE**

Table of Contents	BF-1
Bidder's Checklist	BF-2 through BF-3
Bid Form and Submittal Package Acknowledgment Form	BF-4 through BF-5
Bid Form	BF-6 through BF-8
List of Proposed Minority/Woman Business Enterprise(s)	BF-9 through BF-12
Commitment to Minority/Woman Business Enterprise Participation	BF-13
Minority/Woman Business Enterprise Letter(s) of Intent & Checklist	BF-14 through BF-15
Joint Venture Affidavit	BF-16
Joint Venture Eligibility Form	BF-17 through BF-19
Bid Bond	BF-20
Diversity and Inclusiveness in City Solicitations Form	BF-21 through BF-24



This Checklist is provided solely for the assistance of the bidders, and need not be returned by Bidders with your BID FORM PACKAGE.

BIDDER'S CHECKLIST

These forms comprise the Bid Form and Submittal Package. Designated forms must be completed and turned in at the time of Bid Opening. Bidders should refer to the Contract Documents, particularly the Instructions to Bidders, accompanying this package, in completing these forms.

FORM/ PAGE NO.	COMMENTS	COMPLETE
BF-4 – BF-5	a.) Legal name, address, Acknowledgment signature and attestation (if required.)	<input type="checkbox"/>
BF-6+	a.) Fill in individual bid item dollars and totals in Numerical figures only b.) Complete all blanks c.) Legal name required	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
BF-7	a.) Write out bid total or bid totals in words and figures in the blank form space(s) provided b.) Calculate Textura® Construction Payment Management System Fee from chart on pg. BF-3 and write % and fee in the space provided	<input type="checkbox"/> <input type="checkbox"/>
BF-8	a.) List all subcontractors who are performing work on this project	<input type="checkbox"/>
BF-9 – BF-10	a.) Fully complete List of Proposed Minority /Woman Business Enterprise Bidders, Subcontractors, Suppliers, Manufacturers, or Brokers – check appropriate boxes.	<input type="checkbox"/>
BF-11	a.) Complete all blanks b.) If Addenda have been issued, complete bottom section.	<input type="checkbox"/> <input type="checkbox"/>
BF-12	a.) Complete appropriate sections - signature(s) required. b.) If corporation, then corporate seal required.	<input type="checkbox"/> <input type="checkbox"/>
BF-13	a.) Fully complete Commitment to Participation	<input type="checkbox"/>
BF-16	a.) If applicable, fully complete Joint Venture Affidavit (Submit 10 days prior to Bid Opening date)	<input type="checkbox"/>
BF-17 – BF-19	a.) If applicable, fully complete Joint Venture Eligibility Form (Submit 10 days prior to Bid Opening date)	<input type="checkbox"/>
BF-20	a.) Fill in all Bid Bond blanks b.) Signatures required c.) Corporate Seal if required d.) Dated e.) Attach Surety Agents Power of Attorney or Certified or cashier's check made out to the Manager of Revenue referencing Bidder's Company and Contract Number.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
BF-21- BF-24	a.) Each bidder, as a condition of responsiveness to this solicitation, shall <u>complete and return</u> the "Diversity and Inclusiveness in City Solicitations Information Request Form" with their Bid.	<input type="checkbox"/>

Textura® Construction Payment Management System (CPM System)

Contractor recognizes and agrees that it shall be required to use the Textura® Construction Payment Management System (CPM System) for this Project. All fees associated with the CPM System are to be paid by the Contractor for billings for work performed. Bidders are required, when preparing a bid, to enter the price of the CPM service on the line provided for the service. The fee is all inclusive of all subcontractor, project and subscription fees associated with the CPM system. The bidder will calculate the fee based on a percentage of their total bid, and then should include it on the line item provided in the bid form labeled “Textura® Construction Payment Management System Fee”. This expense becomes part of the contract and billable to the City. All costs including but not limited to costs associated with training, entering data or utilizing Textura other than the Textura Construction Payment Management System Fee are overhead and shall not be reimbursed by the City. Contractor is responsible for any tax on Textura fee. As with other taxes, the City will not reimburse Contractor for this cost and therefore this cost should be included in Contractor’s bid. Textura will invoice the awarded contractor directly.

PROJECT SIZE	FEE (% OF BID)
< \$1,000,000	0.22% (.0022)
\$1,000,001 - \$5,000,000	0.17% (.0017)
\$5,000,001 - \$20,000,000	0.12% (.0012)
\$20,000,001 - \$50,000,000	0.10% (.0010)
\$50,000,001 - \$100,000,000	0.08% (.0008)
\$100,000,001 - \$500,000,000	0.05% (.0005)
> \$500,000,000	CONTACT TEXTURA FOR PROGRAM PRICING

For more information:

<http://www.denvergov.org/content/denvergov/en/contract-administration/bidding-process.html>

**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division**

BID FORM AND SUBMITTAL PACKAGE ACKNOWLEDGMENT

CONTRACT NO. 201734986

MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE

BIDDER: Sturgeon Electric Company, Inc.
(Legal Name per Colorado Secretary of State)

ADDRESS: 12150 E. 112th Ave.
Henderson, CO 80640

The undersigned bidder states that the undersigned bidder has received and had an opportunity to fully and thoroughly examine a complete set of the Contract Documents for **Contract No. 201734986, MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE**, made available to the undersigned bidder pursuant to Notice of Invitation for Bids dated May 22, 2017.

The undersigned bidder acknowledges that a complete and final set of the Contract Documents for the referenced Project, the components of which are identified below, are bound and maintained as the record set of Contract Documents by the Contract Administration Division of the Department of Public Works and that this Record Set is available for examination by the undersigned bidder.

The undersigned bidder, having thoroughly examined each of the components identified below and contained in Contract Documents, HEREBY SUBMITS THIS BID FORM AND SUBMITTAL PACKAGE, fully understanding that the Contract Documents, as defined in Paragraph 1 of the contract, including this executed Bid Form and Submittal Package, constitute all of the terms, conditions and requirements upon which this submission is based and further understanding that, by submission of this Bid Form and Submittal Package, the City shall rely on the representations and commitments of the undersigned bidder contained herein.

The following completed documents comprising this Bid Form and Submittal Package will be included with and, by this reference, are expressly incorporated into the Contract Documents specified at Paragraph 1 of the Contract:

- Bid Form and Submittal Package Acknowledgment Form
- Bid Form
- List of Proposed Minority/Woman Owned Business Enterprise(s)
- Commitment to Minority/Woman Owned Business Enterprise Participation
- Minority/Woman Owned Business Enterprise(s) of Intent
- Joint Venture Affidavit (if applicable)
- Joint Venture Eligibility Form (if applicable)
- Bid Bond
- Certificate of Insurance

The following designated documents constitute that portion of the Contract Documents made available by the Notice of Invitation for Bids, but not included in the Bid Form and Submittal Package:

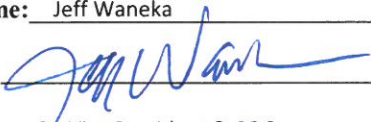
- Notice of Invitation for Bids
- Instructions to Bidders
- Addenda (as applicable)
- Equal Employment Opportunity Provisions (Appendix A and Appendix F)
- Contract Form
- General Contract Conditions
- Special Contract Conditions
- Performance and Payment Bond
- Notice to Apparent Low Bidder
- Notice to Proceed
- Contractor's Certification of Payment Form
- Final/Partial Lien Release Form
- Final Receipt
- Change Orders (as applicable)
- Federal Requirements (as applicable)
- Prevailing Wage Rate Schedule(s)
- Technical Specifications
- Contract Drawings
- Accepted Shop Drawings

The undersigned bidder expressly assumes responsibility for the complete contents of these designated documents as bound together with the Bid Form and Submittal Package submitted herewith and designated the Contract Documents.

IN WITNESS WHEREOF, the undersigned bidder has signed personally or by duly authorized officer or agent and duly attested.


BIDDER:

Name: Jeff Waneka

By: 

Title: Sr. Vice President & COO

ATTEST:

By: 

Diane Lynch - Asst. Secretary

[SEAL]



**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division**

BID FORM

**CONTRACT NO. 201734986
MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE**

BIDDER Sturgeon Electric Company, Inc.
(Legal Name per Colorado Secretary of State)

TO: The Manager of Public Works
City and County of Denver
c/o Contract Administration
201 West Colfax, Dept. 614
Denver, Colorado 80202

The Undersigned Bidder, having examined the plans, technical specifications, and remainder of the proposed Contract Documents as designated and enumerated in the General and Special Contract Conditions and any and all addenda thereto; having investigated the location of and conditions affecting the proposed Work; and being acquainted with and fully understanding the extent and character of the Work covered by this bid, and all factors and conditions affecting or which may be affected by Work, HEREBY SUBMITS THIS BID, pursuant to an advertisement of a Notice of Invitation for Bids as published on **May 22, 2017**, to furnish all required materials, tools, appliances, equipment and plant; to perform all necessary labor and to undertake and complete: **CONTRACT NO. 201734986, MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE**, in Denver, Colorado, in full accordance with and conformity to the Plans, Technical Specifications, and Contract Documents hereto attached or by reference made a part hereof, at and for the following price(s) set forth on this Bid Form.

The following documents, which taken as a whole constitute the Contract Documents for this Project, and which are incorporated herein, by reference, were made available to the Bidder as provided in the Advertisement of Notice of Invitation for Bids, were received by the bidder, and form the basis for this bid:

Advertisement of Notice of Invitation for Bids
Instructions to Bidders
Commitment to M/WBE Participation
Article III, Divisions 1 and 3 of Chapter 28, D.R.M.C.
Bid Bond
Addenda (as applicable)
Equal Employment Opportunity Provisions (Appendix A and Appendix F)
Bid Form
Contract Form
General Contract Conditions
Special Contract Conditions
Performance and Payment Bond
Notice to Apparent Low Bidder
Notice to Proceed
Contractor's Certification of Payment Form
Final/Partial Lien Release Form
Final Receipt
Change Orders (as applicable)
Federal Requirements (as applicable)
Prevailing Wage Rate Schedule(s)
Technical Specifications
Contract Drawing
Accepted Shop Drawings
Certificate of Insurance

Item No.	Description and Price	Estimated Quantity	Estimated Cost
202-01	REMOVAL OF CURB AND GUTTER at the unit price of \$ <u>9.00</u> per LINEAR FOOT.	453 LF	\$ <u>4,077.00</u>
202-02	REMOVAL OF SIDEWALK at the unit price of \$ <u>2.50</u> per SQUARE FOOT.	6,308 SF	\$ <u>15,770.00</u>
202-03	REMOVAL OF CONCRETE PAVEMENT at the unit price of \$ <u>3.00</u> per SQUARE FOOT.	4,727 SF	\$ <u>14,181</u>
202-04	REMOVAL OF ASPHALT PAVEMENT at the unit price of \$ <u>3.00</u> per SQUARE FOOT.	4,193 SF	\$ <u>12,579.00</u>
202-05	REMOVAL OF CONCRETE CURB RAMP at the unit price of \$ <u>2.50</u> per SQUARE FOOT.	3,170 SF	\$ <u>7,925.00</u>
202-06	REMOVAL OF EXISTING GROUND SIGN at the unit price of \$ <u>160.00</u> per EACH.	5 EA	\$ <u>800.00</u>
202-07	REMOVAL OF BOLLARD at the unit price of \$ <u>535.00</u> per EACH.	2 EA	\$ <u>1,070.00</u>
202-08	RESET SURVEY MONUMENT at the unit price of \$ <u>985.00</u> per EACH.	3 EA	\$ <u>2,955.00</u>
202-09	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT at the unit price of \$ <u>34,750.00</u> per LUMP SUM.	1 LS	\$ <u>34,750.00</u>
202-13	RESET GARBAGE BIN at the unit price of \$ <u>320.00</u> per EACH.	1 EA	\$ <u>320.00</u>
203-01	POTHOLING at the unit price of \$ <u>350.00</u> per EACH.	75 EA	\$ <u>26,250.00</u>
208-01	ROCK SOCK at the unit price of \$ <u>45.00</u> per EACH.	153 EA	\$ <u>6,885.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
208-02	SWEEPING (SEDIMENT REMOVAL) at the unit price of \$ <u>165.00</u> per HOUR.	40 HR	\$ <u>6,600.00</u>
208-03	INLET PROTECTION at the unit price of \$ <u>370.00</u> per EACH.	7 EA	\$ <u>2,590.00</u>
208-04	CONCRETE WASHOUT STRUCTURE at the unit price of \$ <u>2,180.00</u> per EACH.	4 EA	\$ <u>8,720.00</u>
208-05	TEMPORARY CONSTRUCTION SITE FENCE at the unit price of \$ <u>7.00</u> per LINEAR FOOT.	3,149 LF	\$ <u>22,043.00</u>
210-01	MODIFY INLET at the unit price of \$ <u>5,425.00</u> per EACH.	3 EA	\$ <u>16,275.00</u>
212-01	SOD at the unit price of \$ <u>4.00</u> per SQUARE FOOT.	526 SF	\$ <u>2,104.00</u>
212-02	SEEDING at the unit price of \$ <u>4.00</u> per SQUARE FOOT.	200 SF	\$ <u>800.00</u>
212-03	LANDSCAPE RESTORATION at the unit price of \$ <u>25.00</u> per SQUARE FOOT.	200 SF	\$ <u>5,000.00</u>
403-01	HOT MIX ASPHALT (PATCHING) at the unit price of \$ <u>235.00</u> per TON.	66 TON	\$ <u>15,510.00</u>
403-02	HOT MIX ASPHALT (PG 64-22) (100) at the unit price of \$ <u>140.00</u> per TON.	296 TON	\$ <u>41,440.00</u>
412-01	CONCRETE PAVEMENT at the unit price of \$ <u>10.00</u> per SQUARE FOOT.	2,970 SF	\$ <u>29,700.00</u>
503-01	DRILLED CAISSON (24 INCH) at the unit price of \$ <u>355.00</u> per LINEAR FOOT.	10 LF	\$ <u>3,550.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
503-02	VACUUMED CAISSON (24 INCH) at the unit price of \$ <u>490.00</u> per LINEAR FOOT.	5 LF	\$ <u>2,450.00</u>
503-03	DRILLED CAISSON (36 INCH) at the unit price of \$ <u>410.00</u> per LINEAR FOOT.	129 LF	\$ <u>52,890.00</u>
503-04	VACUUMED CAISSON (36 INCH) at the unit price of \$ <u>485.00</u> per LINEAR FOOT.	106 LF	\$ <u>51,410.00</u>
503-05	DRILLED CAISSON (48 INCH) at the unit price of \$ <u>490.00</u> per LINEAR FOOT.	17 LF	\$ <u>8,330.00</u>
503-06	VACUUMED CAISSON (48 INCH) at the unit price of \$ <u>635.00</u> per LINEAR FOOT.	34 LF	\$ <u>21,590.00</u>
508-01	AGGREGATE (6 INCH DEPTH) (WITH GEOTEXTILE BARRIER) at the unit price of \$ <u>55.00</u> per SQUARE FOOT.	185 SF	\$ <u>10,175.00</u>
608-01	CONCRETE SIDEWALK (6 INCH) at the unit price of \$ <u>7.00</u> per SQUARE FOOT.	5,327 SF	\$ <u>37,289.00</u>
608-02	CONCRETE CURB RAMP at the unit price of \$ <u>12.00</u> per SQUARE FOOT.	2,997 SF	\$ <u>35,964.00</u>
608-03	CONCRETE CURB AND GUTTER at the unit price of \$ <u>28.00</u> per LINEAR FOOT.	1,127 LF	\$ <u>31,556.00</u>
608-04	CONCRETE MEDIAN COVER (4 INCH) at the unit price of \$ <u>12.00</u> per SQUARE FOOT.	2,259 SF	\$ <u>27,108.00</u>
613-01	2 INCH ELECTRICAL CONDUIT at the unit price of \$ <u>29.00</u> per LINEAR FOOT.	1,462 LF	\$ <u>42,398.00</u>
613-02	3 INCH ELECTRICAL CONDUIT at the unit price of \$ <u>30.00</u> per LINEAR FOOT.	2,983 LF	\$ <u>89,490.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
613-03	PULL BOX (SPECIAL) at the unit price of \$ <u>1,350.00</u> per EACH.	4 EA	\$ <u>5,400.00</u>
613-04	ELECTRICAL METER PEDESTAL AND BASE at the unit price of \$ <u>4,995.00</u> per EACH.	4 EA	\$ <u>19,980.00</u>
614-01	10' PEDESTAL POLE at the unit price of \$ <u>1,860.00</u> per EACH.	7 EA	\$ <u>13,020.00</u>
614-02	15' PEDESTAL POLE at the unit price of \$ <u>1,975.00</u> per EACH.	1 EA	\$ <u>1,975.00</u>
614-02	OVERHEAD SIGN PANEL at the unit price of \$ <u>40.00</u> per SQUARE FOOT.	121 SF	\$ <u>4,840.00</u>
614-03	SIGN PANEL (CLASS 1) at the unit price of \$ <u>36.00</u> per SQUARE FOOT.	31 SF	\$ <u>1,116.00</u>
614-04	STEEL SIGN POST (2X2 INCH TUBING) at the unit price of \$ <u>13.00</u> per LINEAR FOOT.	40 LF	\$ <u>520.00</u>
614-05	PEDESTRIAN SIGNAL FACE (16) (COUNTDOWN) at the unit price of \$ <u>650.00</u> per EACH.	36 EA	\$ <u>23,400.00</u>
614-06	TRAFFIC SIGNAL FACE (12-12-12) at the unit price of \$ <u>1,105.00</u> per EACH.	61 EA	\$ <u>67,405.00</u>
614-07	TRAFFIC SIGNAL FACE (12-12-12) (PROGRAMMABLE) at the unit price of \$ <u>3,625.00</u> per EACH.	6 EA	\$ <u>21,750.00</u>
614-08	TRAFFIC SIGNAL FACE (12-12-12-12) at the unit price of \$ <u>1,315.00</u> per EACH.	17 EA	\$ <u>22,355.00</u>
614-09	TRAFFIC SIGNAL FACE (12-12-12-12) (PROGRAMMABLE) at the unit price of \$ <u>4,140.00</u> per EACH.	2 EA	\$ <u>8,280.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
614-10	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY) at the unit price of \$ <u>4,340.00</u> per EACH.	4 EA	\$ <u>17,360.00</u>
614-11	PEDESTRIAN PUSH BUTTON AND INSTRUCTION SIGN at the unit price of \$ <u>395.00</u> per EACH.	25 EA	\$ <u>9,875.00</u>
614-12	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-35 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>2,095.00</u> per EACH.	1 EA	\$ <u>2,095.00</u>
614-13	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-40 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>2,095.00</u> per EACH.	4 EA	\$ <u>8,380.00</u>
614-14	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-45 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>2,175.00</u> per EACH.	2 EA	\$ <u>4,350.00</u>
614-15	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-50 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>2,255.00</u> per EACH.	5 EA	\$ <u>11,275.00</u>
614-16	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-55 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>2,255.00</u> per EACH.	3 EA	\$ <u>6,765.00</u>
614-17	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-60 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>2,415.00</u> per EACH.	1 EA	\$ <u>2,415.00</u>
614-18	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-70 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>2,575.00</u> per EACH.	2 EA	\$ <u>5,150.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
614-19	TRAFFIC SIGNAL-LIGHT POLE STEEL (2-40 MAST ARM) (INSTALL ONLY) at the unit price of \$ <u>3,370.00</u> per EACH.	1 EA	\$ <u>3,370.00</u>
614-20	LUMINAIRE (5300 LED) at the unit price of \$ <u>815.00</u> per EACH.	17 EA	\$ <u>13,855.00</u>
614-21	STREET LIGHT STANDARD (INSTALL ONLY) at the unit price of \$ <u>480.00</u> per EACH.	3 EA	\$ <u>1,440.00</u>
614-22	FLIR INTERSECTION DETECTION SYSTEM (CAMERA) at the unit price of \$ <u>7,460.00</u> per EACH.	12 EA	\$ <u>89,520.00</u>
614-23	AUTOSCOPE VISION INTERSECTION DETECTION (SYSTEM) CAMERA at the unit price of \$ <u>7,050.00</u> per EACH.	4 EA	\$ <u>28,200.00</u>
614-24	TRAFFIC SIGNAL WIRING at the unit price of \$ <u>54,500.00</u> per LUMP SUM.	1 LS	\$ <u>54,500.00</u>
614-25	TELEMETRY (FIELD) at the unit price of \$ <u>4,630.00</u> per EACH.	4 EA	\$ <u>18,520.00</u>
614-26	FURNISH AND INSTALL EMERGENCY VEHICLE PRIORITY CONTROL SYSTEM (OPTICOM) at the unit price of \$ <u>2,005.00</u> per EACH.	15 EA	\$ <u>30,075.00</u>
614-27	RESET BIKE SIGNAL at the unit price of \$ <u>695.00</u> per EACH.	2 EA	\$ <u>1,390.00</u>
623-01	RESET PTZ CAMERA (BY CONTRACTOR) at the unit price of \$ <u>1,055.00</u> per EACH.	4 EA	\$ <u>4,220.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
623-01	SPRINKLER SYSTEM - IRRIGATION RECONSTRUCTION at the unit price of \$ <u>31.00</u> per LINEAR FOOT.	160 LF	\$ <u>4,960.00</u>
623-02	SPRINKLER SYSTEM - NEW SPRINKLER HEAD at the unit price of \$ <u>125.00</u> per EACH.	8 EA	\$ <u>1,000.00</u>
623-03	SPRINKLER SYSTEM - ADJUST SPRINKLER HEAD at the unit price of \$ <u>50.00</u> per EACH.	8 EA	\$ <u>400.00</u>
625-01	CONSTRUCTION SURVEYING at the unit price of \$ <u>26,800.00</u> per LUMP SUM.	1 LS	\$ <u>26,800.00</u>
626-01	MOBILIZATION at the unit price of \$ <u>70,000.00</u> per LUMP SUM.	1 LS	\$ <u>70,000.00</u>
627-01	EPOXY PAVEMENT MARKING at the unit price of \$ <u>875.00</u> per GALLON.	4 GAL	\$ <u>3,500.00</u>
627-02	PREFORMED THERMOPLASTIC PAVEMENT MARKING at the unit price of \$ <u>12.00</u> per SQUARE FOOT.	4,418 SF	\$ <u>53,016.00</u>
630-01	CONSTRUCTION TRAFFIC CONTROL at the unit price of \$ <u>155,000.00</u> per LUMP SUM.	1 LS	\$ <u>155,000.00</u>
630-02	UNIFORMED TRAFFIC CONTROL at the unit price of \$ <u>120.00</u> per HOUR.	32 HR	\$ <u>3,840.00</u>

76 Items

Bid Items Total Amount, (202-01 through 630-02(Seventy-Six[76]) total bid items)	\$ <u>1,513,856.00</u>
Textura ® Fee from table on Page BF-3 <u>0.17</u> % of Bid Items Total Amount	\$ <u>2,573.56</u>
 Bid Items Total Amount plus Textura® Fee equals Total Bid Amount	 \$ <u>1,516,429.56</u>

Total Bid Amount:
 One Million Five Hundred Sixteen Thousand Four Hundred Twenty Nine Dollars and Fifty Six Cents

 _____ **Dollars (\$ 1,516,429.56)** _____

If the Manager mails a written Notice of Apparent Low Bidder, addressed to the Bidder's business address stated on this Bid Form, the Undersigned Bidder shall, in accordance with the Contract Documents, be ready to, and shall, within five (5) days after the date of the Notice: (i) execute the attached form of Contract in conformity with this bid; (ii) furnish the required proofs of insurance; and (iii) furnish the required bond or bonds in the sum of the full amount of this bid, executed by a surety company acceptable to the Manager.

The Liberty Mutual Surety, a corporation of the State of Mass., is hereby offered as Surety on said bond. If such surety is not approved by the Manager, another and satisfactory surety company shall be furnished.

Enclosed with this bid is a bid guarantee, as defined in the attached Instructions to Bidders, in the amount of 5%. The Undersigned Bidder agrees that the entire amount of this bid guarantee is to be paid to and become the property of the City as liquidated damages, and not as a penalty, if: (i) the bid is considered to be the best by the City; (ii) the City notifies the Undersigned Bidder that it is the Apparent Low Bidder; and (iii) the Undersigned Bidder fails to execute the Contract in the form prescribed or to furnish the required bond and proofs of insurance, within five (5) days after the date of such notification.

The following persons, firms or corporations are interested with the Undersigned Bidder in this bid:

Name: _____ Name: _____
 Address: _____ Address: _____

If there are no such persons, firms, or corporations, please so state in the following space: NONE

The Undersigned Bidder proposes to subcontract the following Work in accordance with General Contract Conditions, Title 5, SUBCONTRACTS, and represents that, to the greatest degree practical, all subcontractors known at the time of bid submittal have been identified.

Item of Work	Percent (%) of Total; Work	Proposed Subcontractor and Address
Concrete/ Asphalt	13.54%	Affordable Concrete
		9725 E Hampden Ave S 100 Denver, CO 80231
Directional Boring	3.6%	Drilltech Directional Boring
		7080 York Street Denver, CO 80229
Traffic Control	8.1%	Zenitram Traffic Service, Inc.
		4284 Meadow Lark Rd Ft. Lupton, CO 80621

(Copy this page if additional room is required.)



DENVER
OFFICE OF ECONOMIC
DEVELOPMENT

**List of Proposed
MWBE
Bidders, Subcontractors,
Suppliers (Manufacturers) or
Brokers**

Office of Economic Development
Division of Small Business Opportunity
Compliance Unit
201 W. Colfax Ave. Dept. 907
Denver, CO 80202
Phone: 720-913-1999
DSBO@denvergov.org

City & County of Denver Contract No.: 201734986

The undersigned Bidder proposes to utilize all listed firms. The following MWBE(s) firms listed are **CURRENTLY** certified by the City and County of Denver. Only the level of MWBE participation listed at the bid opening will count toward satisfaction of the project goal. Only bona fide commissions may be counted for Brokers. MWBE prime bidders must detail their bid information below. Please copy and attach this page to list additional MWBE.

Prime Bidder

Business Name: Sturgeon Electric Company, Inc.		
Address: 12150 E. 112th Ave., Henderson, CO 80640	Contact Person: Chris Cervera, Estimator	
Type of Service: Electrical Construction	Dollar Amount: \$:	Percent of Project:

Certified MWBE Prime Bidder

Business Name:		
Address:	Contact Person:	
Type of Service:	Dollar Amount: \$:	Percent of Project:

Subcontractors, Suppliers Manufacturers or Brokers (check one box)

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subcontractor (✓)	Supplier (✓)	Manufacturer (✓)	Broker (✓)	

Business Name: Affordable Concrete			
Address: 9725 E Hampden Ave S 100 Denver, CO 80231	Type of Service: Concrete/ Asphalt		
Contact Person: Frances FitzGerald	Dollar Amount: \$: \$205,362.95	Percent of Project: 13.54%	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subcontractor (✓)	Supplier (✓)	Manufacturer (✓)	Broker (✓)

Business Name:			
Address:	Type of Service:		
Contact Person:	Dollar Amount: \$:	Percent of Project:	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subcontractor (✓)	Supplier (✓)	Manufacturer (✓)	Broker (✓)

Business Name:		
Address:	Type of Service:	
Contact Person:	Dollar Amount: \$:	Percent of Project:

Rev 031816JE

Subcontractors, Suppliers Manufacturers or Brokers (check one box)							
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:				Type of Service:			
Contact Person:				Dollar Amount: \$:		Percent of Project:	
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:				Type of Service:			
Contact Person:				Dollar Amount: \$:		Percent of Project:	
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:				Type of Service:			
Contact Person:				Dollar Amount: \$:		Percent of Project:	
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:				Type of Service:			
Contact Person:				Dollar Amount: \$:		Percent of Project:	
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:				Type of Service:			
Contact Person:				Dollar Amount: \$:		Percent of Project:	
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:				Type of Service:			
Contact Person:				Dollar Amount: \$:		Percent of Project:	

Rev 031816JE

The undersigned Bidder hereby certifies that the aforementioned subcontractors and suppliers have full knowledge that their names have been offered as subcontractors and suppliers for the work, and the Bidder further certifies that the dollar amount of work to be performed by the aforementioned M/WBE(s) was furnished to the Bidder prior to the bid opening. The undersigned Bidder agrees that after the bid opening, it shall submit to the City an executed and completed W/MBE "Letter of Intent" in three working days (3) on each of its M/WBE subcontractors. The "Letter of Intent" form is contained in the Contract Documents.

The undersigned Bidder acknowledges the right of the City to reject any or all bids submitted, to waive informalities in bids and to re-advertise this Project for bids.

The undersigned certifies that it has carefully checked all works and figures and all statements made in these Bid Forms.

This bid is submitted upon the declaration that neither, I (we), nor, to the best of my (our) knowledge, none of the members of my (our) firm or company have either directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this bid.

Business Address of Bidder: 12150 E. 112th Ave.

City, State, Zip Code: Henderson, CO 80640

Telephone Number of Bidder: (303) 286-8000 Fax No. (303) 286-1811

Social Security or Federal Employer ID Number of Bidder: 84-0681206

Name and location of the last work of this kind herein contemplated upon which the Bidder was engaged:
SHE 2014/FASTER 2015 Traffic Signal Upgrade, Denver, CO

For information relative thereto, please refer to:

Name: Brenda Hageman

Title: Contracts Administrator

Address: City & County of Denver, 201 W. Colfax Ave., Dept. 614, Denver, CO 80202

The undersigned acknowledges receipt, understanding, and full consideration of the following addenda to the Contract Documents:

Addenda Number 1 Date 6/12/2017

Addenda Number _____ Date _____

Addenda Number _____ Date _____

Dated this 22nd day of June, 2017.

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS

CONTRACT NO: 201734986
PROJECT NAME: Mill Levy 7A Traffic Signal Upgrade

ADDENDUM NO. 1 TO CONTRACT DOCUMENTS


Bidders are hereby instructed that the drawings, specifications, and other contract documents are modified, corrected, supplemented and/or superseded for the above-mentioned project as hereinafter described in the following attachments:

QUESTIONS & ANSWERS

- Q1** Will the contractor be required to clean the storm drain? The volume would be difficult to determine at bid time and could change before the project starts. How will the City handle this item?
- A1** **The City and County of Denver will waive the need to clean the storm drains and inlets prior to the implementation of the appropriate inlet protection devices. However, if construction sediments, debris, or pollutants enters the storm drains resulting from improperly installed storm inlet protection devices, the contractor and/or the authorized agents shall be responsible for any remediation for any adverse impacts to the storm sewer system.**
- Q2** I did not see the project duration listed, what is the time frame for this project?
- A2** **This project duration is 210 calendar days.**
- Q3** Is it the cities preference to have the Bid Item 630-01 – Traffic Control as a Lump Sum Item for this project? This could be an Item that per an individual’s judgement, could increase pricing for this Item and the overall cost of the project?
- A3** **Yes, the CCD will prefer to have bid item 630-01, Traffic Control, as a Lump Sum item and in accordance with Revision of Section 630 of this project’s Special Provision.**
- Q4** On plan page 2 under general notes, questions #8 states to clean out all inlets, laterals, mains and other storm runoff appurtenances. Can the city provide a quantity take off for this work and to what bid Item should the cost be allocated to as there is no pay item for this work?
- A4** **The CCD of Denver will waive the need to clean the storm drains and inlets prior to the implementation of the appropriate inlet projection devises. Again, if construction sediments, debris, or pollutants enters the storm drains resulting from improperly installed storm inlet protection devices, the contractor and/or the authorized agents shall be responsible for any remediation for any adverse impacts to the storm sewer system.**
- Q5** There is a reset item for Bike Signal and CCTV Camera. Can the city verify that all components are in proper working condition? And what will be the contractors’ responsibility for these resets? I.E. New wire, new mounting hardware etc.
- A5** **CCD anticipates that all existing equipment to be reset are in good working orders. The contractor shall coordinate with PW T&M staff to ensure the reset equipment are in good working order. If any reset equipment that are not operating correctly, the contractor shall document these equipment and PW T&M shall furnish and replace the equipment for reset. In addition, the contractor shall be responsible to for furnishing all necessary mounting hardware and wiring to reset the required equipment.**

- Q6** With dealing with the irrigation and sprinkler system who is allowed to shut the system off to perform the work? Does the city have to be there for this work to happen?
- A6** **The contractor shall be responsible for all coordination with the affected stakeholders, including CCD Parks & Rec and private property owners, that are necessary to restore the landscaping to its original condition. In addition, the city engineer does not need to be present for this work to happen, however contractor shall coordinate and notify the city engineer prior to start of work.**

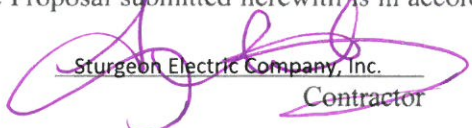
This **ADDENDUM** shall be attached to, become a part of, and be returned with the Bid Proposal.



 Lesley B. Thomas
 City Engineer
 6-12-17

 Date

The undersigned bidder acknowledges receipt of this Addendum. The Proposal submitted herewith is in accordance with the stipulations set forth herein.



 Sturgeon Electric Company, Inc.
 Contractor
 06/13/2017

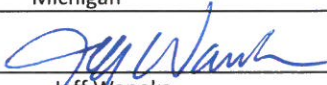
 Date

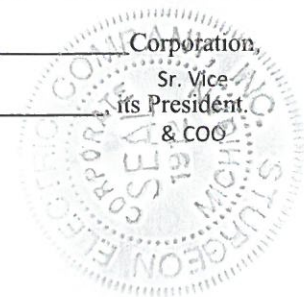
ADDENDUM NO. 1

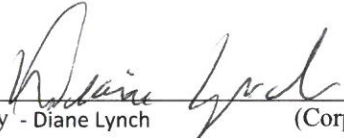
Signature of Bidder:

If an Individual: _____ doing business
as _____.

If a Partnership: _____
by: _____ General Partner.

If a Corporation: Sturgeon Electric Company, Inc.
a Michigan Corporation,
by:  Sr. Vice
President & COO
Jeff Waneka



Attest: 
Asst. Secretary - Diane Lynch (Corporate Seal)

If a Joint Venture, signature of all Joint Venture participants.

Firm: _____

Corporation (), Partnership () or () Limited Liability Company

By: _____ (If a Corporation)
Attest: _____
Title: _____ Secretary (Corporate Seal)

Firm: _____

Corporation (), Partnership () or () Limited Liability Company

By: _____ (If a Corporation)
Attest: _____
Title: _____ Secretary (Corporate Seal)

Firm: _____

Corporation (), Partnership () or () Limited Liability Company

By: _____ (If a Corporation)
Attest: _____
Title: _____ Secretary (Corporate Seal)



**COMMITMENT TO MWBE
PARTICIPATION**

The undersigned has satisfied the MWBE participant requirements in the following manner (Please check the appropriate box):

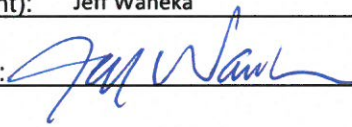
The Bidder/Proposer is committed to the minimum 12 % **MWBE** utilization on the project, and will submit Letters of Intent (LOI) for each subcontractor/subconsultant listed in the Bid Forms as follows:
Hard Bids: Three (3) business days after the bid opening.
Request for Proposals/Qualifications: With the proposal when due.
Compliance Plans: With each task/work order

The Bidder/Proposer is unable to meet the project goal of _____ % **MWBE**, but is committed to a minimum of _____ % **MWBE** utilization on the project. The Bidder/Proposer understands that they must submit a detailed statement of their good faith effort under sealed bid procedures, as a matter of responsiveness, or with initial proposals, under contract negotiation procedures; or no later than **three (3)** days after bid opening as a matter of responsibility as in accordance with DRMC Section 28-62 and 28-67 of Ordinance 85 to the Division of Small Business Opportunity.

The Bidder/Proposer is a certified **MWBE** in good standing with the City and is committed to self-perform a minimum of _____ % of the work on the contract.

Bidder/Proposer (Name of Firm): Sturgeon Electric Company, Inc.

Firm's Representative (Please print): Jeff Waneka

Signature (Firm's Representative): 

Title: Sr. Vice President & COO

Address: 12150 E. 112th Ave.

City: Henderson

State: CO

Zip: 80640

Phone: (303) 286-8000

Fax: (303) 286-1811

Email: JWaneka@MYRGroup.com

A copy of the MWBE Certification letter must be attached to each Letter of Intent (LOI).



Office of Economic Development
 Division of Small Business Opportunity
 Compliance Unit
 201 West Colfax Ave., Dept. 907
 Denver, CO 80202
 Phone: 720-913-1999

LETTER OF INTENT (LOI)
 INSTRUCTIONS FOR COMPLETION & SUBMISSION:

- All lines must be completed or marked N/A for Not Applicable
- Certification Letter must be submitted with LOI
- Submit the attached completed checklist with this letter
- Email to dabo@denvergov.org
- FOR RFPs and RFQs: LOIs should be included with Submittal

Contract No.: 201734986		Project Name: Mill Levy 7A					
A. The Following Section Is To Be Completed by the Bidder/Consultant This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE							
Name of Bidder/Consultant: Sturgeon Electric Company, Inc.				Self-Performing: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Phone: (303) 286-8000	
Contact Person: Chris Cervera, Estimator			Email: ccervera@myrgroup.com		Fax: (303) 286-1811		
Address: 12150 E. 112th Ave.			City: Henderson		State: CO	Zip: 80640	
B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, at any Tier This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant							
Name of Certified Firm: Affordable Concrete					Phone: 720-318-3400		
Contact Person: Frances FitzGerald			Email: Frances@copavement.com		Fax: 303-926-7165		
Address: 9725 E Hampden Ave S 100			City: Denver		State: CO	Zip: 80231	
Please check the designation which applies to the certified firm.		M/WBE (v) <input checked="" type="checkbox"/>	SBE (v) <input checked="" type="checkbox"/>	EBE (v) <input checked="" type="checkbox"/>	DBE (v) <input checked="" type="checkbox"/>		
Indirect Utilization: If this M/WBE, SBE, EBE or DBE is not a direct first tier subcontractor/subconsultant, supplier or broker to the Bidder/ Consultant, please indicate the name of the subcontractor/subconsultant, supplier or broker which is utilizing the participation of this firm:							
A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached							
Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. <u>On unit price bids only, identify which bid line items the M/WBE/SBE/EBE/DBEs scope of work or supply corresponds to.</u>							
Concrete/ Asphalt							
X	Subcontractor/Subconsultant (v)		Supplier (v)		Broker (v)		
Bidder intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The cost of the work and percentage of the total subcontractor M/WBE, SBE, EBE or DBE bid amount is:							
\$	205,362.95			13.54	%		
Consultant intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The percentage of the work of the total sub consultant M/WBE, SBE, EBE or DBE will perform is:							
	N/A			%			
If the fee amount of the work to be performed is requested, the fee amount, is:							
\$	N/A						
Bidder/Consultant's Signature:					Date: 6/27/2017		
Title: Estimator							
M/WBE, SBE, EBE or DBE or Self Performing Firm's Signature:					Date: 6/27/17		
Title: Managing Member							
If the above named Bidder/Consultant is not determined to be the successful Bidder/Consultant, this Letter of Intent shall be null and void.							

Letter of Intent (LOI) Checklist

*All lines must be completed or marked N/A for Not Applicable
Submit the attached completed checklist with this letter.*

Completed ✓	
<input type="checkbox"/>	Project Number & Project Name
<input type="checkbox"/>	Section A: Name of Bidder/Consultant, Contact Person, Address, City, State, Zip, Phone, Email
<input type="checkbox"/>	Section B: Name of Certified Firm, Contact Person, Address, City, State, Zip, Phone, Email
<input type="checkbox"/>	Designation checked for MBE/WBE, SBE, EBE or DBE
<input type="checkbox"/>	Indirect Utilization: Name of subcontractor/subconsultant, supplier or broker is indicated if using the participation of a 2 nd tier subcontractor/subconsultant, supplier or broker.
<input type="checkbox"/>	Scope of work performed or item supplied by M/WBE, SBE, EBE or DBE
<input type="checkbox"/>	Line items performed, if line-item bid.
<input type="checkbox"/>	Copy of M/WBE, SBE, EBE or DBE Letter of Certification Attached
<input type="checkbox"/>	Designation checked for Subcontractor/Subconsultant, Supplier or Broker
	If project is a hard bid...
<input type="checkbox"/>	Bidder has indicated dollar amount for value of work going to Subcontractor/ Subconsultant, Supplier or Broker
<input type="checkbox"/>	Bidder has indicated percentage for value of work going to Subcontractor/ Subconsultant, Supplier or Broker
	If project is an RFP/RFQ...
<input type="checkbox"/>	Consultant has indicated percentage for value of work going to Subcontractor/ Subconsultant, Supplier or Broker Name & contact name for MWBE.
<input type="checkbox"/>	Fee amount if fee amount of work to be performed is requested.
<input type="checkbox"/>	Bidder/Consultant's Signature, Title & Date
<input type="checkbox"/>	M/WBE, SBE, EBE or DBE Firm's Signature, Title and Date

Select One ✓	SUBMITTED VIA... For Construction Hard Bids ONLY, Bidders are strongly urged to deliver the LOI via one of the methods below. (The preferred method is to scan/email completed forms to email address below. Delivery to any other point cannot be guaranteed timely delivery.)
<input type="checkbox"/>	Email to DSBO@denvergov.org

The complete and accurate information that is required for the Letter of Intent is based on the following sections of the Ordinance 85: Section 28-63 and Section 28-68. Failure to complete this information on the Letter of Intent (LOI) may automatically deem a bid or proposal non-responsive.

NOT APPLICABLE



DENVER
OFFICE OF ECONOMIC
DEVELOPMENT

Joint Venture Affidavit

Office of Economic Development
Division of Small Business Opportunity
Compliance Unit
201 W. Colfax Ave. Dept. 907
Denver, CO 80202
Phone: 720-913-1999
DSBO@denvergov.org

The Undersigned swears that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operation of our joint venture and the intended participation by each joint venturer in the undertaking. Further, the Undersigned covenant and agree to provide the City current, complete, and accurate information regarding actual joint venture work and the payment thereof and any proposed changes in any of the joint venture arrangements and to permit the audit and examination of the books, records, and files of the joint venture, by authorized representatives of the City or Federal funding agency, if applicable. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under Federal or State laws concerning false statements.

Name of Firm: _____

Print Name: _____

Title _____

Signature: _____

Date: _____

Notary Public

County of _____

State of _____

My Commission Expires: _____

Subscribed and sworn before me this

_____ day of _____, 20_____

Notary Seal

Notary Signature: _____

Notary Commission #: _____

Address: _____

Name of Firm: _____

Print Name: _____

Title _____

Signature: _____

Date: _____

Notary Public

County of _____

State of _____

My Commission Expires: _____

Subscribed and sworn before me this

_____ day of _____, 20_____

Notary Seal

Notary Signature: _____

Notary Commission #: _____

Address: _____

NOT APPLICABLE



DENVER
OFFICE OF ECONOMIC
DEVELOPMENT

JOINT VENTURE ELIGIBILITY FORM

Office of Economic Development
Division of Small Business Opportunity
Compliance Unit
201 W. Colfax Ave. Dept. 907
Denver, CO 80202
Phone: 720-913-1999
DSBO@denvergov.org

Joint Venture means an association of two (2) or more business enterprises to constitute a single business enterprise to perform a City construction or professional design and construction services contract for which purpose they combine their property, capital, efforts, skills and knowledge, and in which each joint venturer is responsible for a distinct, clearly defined portion of the work of the contract, performs a commercially useful function, and whose share in the capital contribution, control, management responsibilities, risks and profits of the joint venture are equal to its ownership interest. Joint ventures must have an agreement in writing specifying the terms and conditions of the relationships between the joint venturers and their relationship and responsibility to the contract.

The Division of Small Business Opportunity (DSBO) requires the following information be provided from participants of a prospective joint venture, to assist DSBO in evaluating the proposed joint venture. This Joint Venture Eligibility form and the Joint Venture Affidavit apply if SBEs, EBEs, MBEs, WBEs or DBEs participate in this joint venture.

Please return this form, the Joint Venture Affidavit, and a copy of your Joint Venture Agreement to: Division of Small Business Opportunity, 201 West Colfax Avenue, Denver, CO 80202, at least **ten (10) working days** prior to bid opening or proposal.

If you have questions regarding this process, please contact DSBO at 720-913-1999.

Joint Venture Information

Name:		Contact Person:	
Address:			
City:	State:	Zip:	Phone:

Joint Venture Participants

Name:		Contact Person:	
Address:			
City:	State:	Zip:	Phone:
% Ownership:	Certifying Entity:	Type Certification & Date: (S/E/M/W or DBE)	
Type of Work for which Certification was granted:			

Name:		Contact Person:	
Address:			
City:	State:	Zip:	Phone:
% Ownership:	Certifying Entity:	Type Certification & Date: (S/E/M/W or DBE)	
Type of Work for which Certification was granted:			

General Information

SBE/EBE/MBE/WBE/DBE Initial Capital Contributions: \$	%
Future capital contributions (explain requirements) (attach additional sheets if necessary):	
Source of Funds for the SBE/EBE/MBE/WBE/DBE Capital Contributions:	
Describe the portion of the work or elements of the business controlled by the SBE/EBE/MBE/WBE or DBE: (attach additional sheets if necessary)	

NOT APPLICABLE

Describe the portion of the work or elements of the business controlled by non-SBE/EBE/MBE/WBE or DBE: (attach additional sheets if necessary)

JOINT VENTURE ELIGIBILITY FORM

General information

Describe the SBE/EBE/MBE/WBE or DBE's involvement in the overall management of the joint venture (e.g., participation on a management committee or managing board voting rights, etc.) (attach additional sheets if necessary)

Describe the SBE/EBE/MBE/WBE or DBE's share in the profits of the joint venture:

Describe the SBE/EBE/MBE/WBE or DBE's share in the risks of the joint venture:

Describe the roles and responsibilities of each joint venture participant with respect to managing the joint venture (use additional sheets if necessary):

a. SBE/EBE/MBE/WBE or DBE joint venture participant:

b. Non- SBE/EBE/MBE/WBE or DBE joint venture participant:

Describe the roles and responsibilities of each joint venture participant with respect to operation of the joint venture (use additional sheets if necessary):

a. SBE/EBE/MBE/WBE or DBE joint venture participant:

b. Non- SBE/EBE/MBE/WBE or DBE joint venture participant:

NOT APPLICABLE

Which firm will be responsible for accounting functions relative to the joint venture's business?			
Explain what authority each party will have to commit or obligate the other to insurance and bonding companies, financing institutions, suppliers, subcontractors, and/or other parties?			
Please provide information relating to the approximate number of management, administrative, support and non-management employees that will be required to operate the business and indicate whether they will be employees of the S/E/MWBE/DBE, non- S/E/MWBE/DBE or joint venture:			
	Non- SBE/EBE/MWBE/DBE	SBE/EBE/MWBE/DBE	Joint Venture
Management			
Administrative			
Support			
Hourly Employees			
JOINT VENTURE ELIGIBILITY FORM			
General Information			
Please provide the name of the person who will be responsible for hiring employees for the joint venture.			
Who will they be employed by?			
Are any of the proposed joint venture employees currently employees of any of the joint venture partners?		Yes (v)	No (v)
If yes, please list the number and positions and indicate which firm currently employs the individual(s). (use additional sheets if necessary)			
Number of employees	Position	Employed By	
<u>Attach</u> a copy of the proposed joint venture agreement, promissory note or loan agreement (if applicable), and any and all written agreements between the joint venture partners.			
List all other business relationships between the joint venture participants, including other joint venture agreements in which the parties are jointly involved.			
If there are any significant changes in or pertaining to this submittal, the joint venture members must immediately notify the Division of Small Business Opportunity.			

COMP-FRM-015

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT Sturgeon Electric Company, Inc.
Liberty Mutual Insurance Company, as Principal, and
Liberty Mutual Insurance Company, a corporation organized and existing under and
by virtue of the laws of the State of Massachusetts and authorized to do business within the State of Colorado, as Surety, are
held and firmly bound unto the City and County of Denver, Colorado, as Obligee, in full and just sum of _____
five percent of the accompanying bid amount Dollars, (\$5%), lawful money of the United States, for
the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and
assigns, jointly and severally, firmly by these presents:

WHEREAS, the said Principal is herewith submitting its bid, dated June 22, 2017, for the
construction of: **Contract No. 201734986, MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE**, as set forth in detail in the
Contract Documents for the City and County of Denver, Colorado, and said Obligee has required as a condition for receiving said
bid that the Principal deposit specified bid security in the amount of not less than five percent (5%) of the amount of said bid, as it
relates to work to be performed for the City, conditioned that in event of failure of the Principal to execute the Contract, for such
construction and furnish required Performance and Payment Bond if the contract is offered him that said sum be paid immediately
to the Obligee as liquidated damages, and not as a penalty, for the Principal's failure to perform.

The condition of this obligation is such that if the aforesaid Principal shall, within the period specified therefore, on the
prescribed form presented to him for signature, enter into a written contract with the Obligee in accordance with his bid as accepted
and give Performance and Payment Bond with good and sufficient surety or sureties, upon the form prescribed by the Obligee, for
the faithful performance and the proper fulfillment of said Contract, or in the event of withdrawal of said bid within the time
specified, or upon the payment to the Obligee of the sum determined upon herein, as liquidated damages and not as penalty, in the
event the Principal fails to enter into said contract and give such Performance and Payment Bond within the time specified, then
this Obligation shall be null and void, otherwise to remain in full force and effect.

Signed, sealed and delivered this 22nd day of June, 2017.

ATTEST

Secretary

Seal if Bidder is Corporation
(Attach Power-of-Army)

Sturgeon Electric Company, Inc.

Principal

By

Title

Liberty Mutual Insurance Company

Surety

By

Sheree Hsieh, Attorney-in-Fact

[SEAL]

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7774268

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Brenda Johnston; Cindy Stellhorn; Cynthia L. Jenkins; Edward L. Mournighan; Ginger J. Krahn; Kimberly E. Kinkead; Michael H. Bill; Michael J. Marsella; Michael M. Bill; Rebecca A. Virt; Sheree Hsieh

all of the city of Indianapolis, state of IN each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 19th day of May, 2017.



The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 19th day of May, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 22nd day of June, 2017.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.



Office of Economic Development
 Division of Small Business Opportunity
 201 W. Colfax Ave, Dept. 907
 Denver, CO 80202
 p: 720.913.1999
 f: 720.913.1809
www.denvergov.org/dsbo

Diversity and Inclusiveness * in City Solicitations Information Request Form

Type in your response, print out, sign and date; or print out and complete manually. Please print legibly.

Denver Executive Order No. 101 establishes strategies between the City and private industry to use diversity and inclusiveness to promote economic development in the City and County of Denver and to encourage more businesses to compete for City contracts and procurements. The Executive Order requires, among other things, the collection of certain information regarding the practices of the City's contractors and consultants toward diversity and inclusiveness and encourages/requires City agencies to include diversity and inclusiveness policies in selection criteria where legally permitted in solicitations for City services or goods.

Answer each question below. Missing or incomplete responses will be recorded as "no", "not applicable", or "none". A proposal or response to a solicitation by a contractor/consultant that does not include this completed form shall be deemed non-responsive and rejected.

Business Email Address: ccervera@myrgroup.com

Please include the Email address of the contact person facilitating this solicitation for the City and County of Denver: ccervera@myrgroup.com

Agency Name:

- | | | |
|---|--|--|
| <input type="checkbox"/> Arts and Venue | <input type="checkbox"/> Purchasing Division | <input type="checkbox"/> Sheriff Department |
| <input type="checkbox"/> Auditor Office | <input type="checkbox"/> Human Services | <input type="checkbox"/> Technology Services |
| <input type="checkbox"/> Community Planning | <input type="checkbox"/> Economic Development | <input type="checkbox"/> Other |
| <input type="checkbox"/> Denver International Airport | <input type="checkbox"/> Parks and Recreation | |
| <input type="checkbox"/> Environmental Health | <input type="checkbox"/> Police Department | |
| <input type="checkbox"/> Fire Department | <input checked="" type="checkbox"/> Public Works | |

Project Name: Mill Levy 7A

BID / RFP No.: 201734986

Name of Contractor/Consultant: Sturgeon Electric Company, Inc.

What industry is your business? Electrical Construction

Address:

12150 E. 112th Ave.
Henderson, CO 80640

Business Phone No.: (303) 286-8000

Business Facsimile No.: (303) 286-1811

OED - Executive Order No. 101
 Diversity and Inclusiveness in City Solicitations Information Request Form
 Rev. 12/29/2015

1. How many employees does your company employ?

- 1-10 51-100
 11-50 over 100

1.1. How many of your company's employees are:

Full-time 100% Part-Time 0%

2. Do you have a Diversity and Inclusiveness Program? Yes No

If No, and your company size is less than 10 employees continue to question 11.
Complete and sign the form.

If Yes, does it address:

- 2.1 Employment and retention? Yes No
2.2 Procurement and supply chain activities? Yes No
2.3 Customer service? Yes No

3. Provide a detailed narrative of your company's diversity and inclusiveness principles and programs. This may include, for example, (i) diversity and inclusiveness employee training programs, equal opportunity policies, and the budget amount spent on an annual basis for workplace diversity; or (ii) diversity and inclusiveness training and information to improve customer service.

See attached Equal Opportunity Employment Policy & Supplier Diversity Program

4. Does your company regularly communicate its diversity and inclusiveness policies to employees?

If Yes, how does your company regularly communicate its diversity and inclusiveness policies to employees? (select all that apply)

- Employee Training
 Pamphlets
 Public EEO postings
 Other
 Not Applicable

5. If you responded that you do not have a diversity and inclusiveness program, describe any plans your company may have to adopt such a program.

N/A

6. How often do you provide training in diversity and inclusiveness principles?

- Monthly Annually
 Quarterly Not Applicable Other As Needed

6.1 What percentage of the total number of employees generally participate?

- 0 - 25% 51 - 75%
 26 - 50% 76 - 100% Not Applicable

7. State how you achieve diversity and inclusiveness in supply and procurement activities. This may include, for example, narratives of training programs, equal opportunity policies, diversity or inclusiveness partnership programs, mentoring and outreach programs, and the amount and description of budget spent on an annual basis for procurement and supplier diversity and inclusiveness.

See attached Equal Opportunity Employment Policy & Supplier Diversity Program

8. Do you have a diversity and inclusiveness committee? Yes No

8.1 If Yes, how often does it meet?

- Monthly Annually No Committee
 Quarterly Other _____

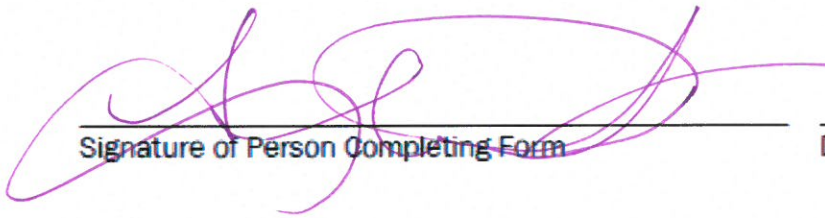
8.2 If you responded that you do not have a diversity and inclusiveness committee, describe any plans your company may have to establish such a committee.

None

9. Do you have a budget for diversity and inclusiveness efforts? Yes No
10. Does your company integrate diversity and inclusion competencies into executive/manager performance evaluation plans? Yes No
11. Would you like information detailing how to implement a Diversity and Inclusiveness program? Yes No

If yes, please email X0101@denvergov.org.

I attest that the information represented herein is true, correct and complete, to the best of my knowledge.



Signature of Person Completing Form

06/22/2017

Date

Tracy Lathrop, Estimating Coordinator

Printed Name of Person Completing Form

NOTE: Attach additional sheets or documentation as necessary for a complete response.

*"Diversity and inclusiveness program" means a program that invites values, perspectives and contributions of people from diverse backgrounds, and integrates diversity into its hiring and retention policies, training opportunities, and business development methods to provide an equal opportunity for each person to participate, contribute, and succeed within the organization's workplace. "Diversity" encompasses a wide variety of human differences, including differences such as race, age, gender, gender identity, sexual orientation, ethnicity, physical disabilities, appearance, historically underutilized and disadvantaged persons, as well as social identities such as religion, marital status, socio-economic status, lifestyle, education, parental status, geographic background, language ability, and veteran status."

CITY AND COUNTY OF DENVER
STATE OF COLORADO



Department of Public Works

Bid Documents

Contract No: 201734986



MILL LEVY 7A

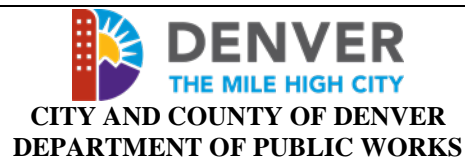
TRAFFIC SIGNAL UPGRADE

May 22, 2017

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division

TABLE OF CONTENTS FOR CONTRACT DOCUMENTS

BID FORM AND SUBMITTAL PACKAGE	<u>PAGE</u>
Bid Form and Submittal Package (bound separately and attached as part of these Bid Documents)	
Table of Contents	BF-1
Bidder's Checklist	BF-2 through BF-3
Bid Form and Submittal Package Acknowledgment Form	BF-4 through BF-5
Bid Form	BF-6 through BF-8
List of Proposed Minority and Woman Business Enterprise(s)	BF-9 through BF-12
Commitment to Minority and Woman Business Enterprise Participation	BF-13
Minority and Woman Business Enterprise Letter(s) of Intent & Checklist	BF-14 through BF-15
Joint Venture Affidavit	BF-16
Joint Venture Eligibility Form	BF-17 through BF-19
Bid Bond	BF-20
Diversity and Inclusiveness in City Solicitations Form	BF-21 through BF-24
 BID DOCUMENTS	
Table of Contents	BDP-1
Statement of Quantities	SQ-1 through SQ-5
Notice of Invitation for Bids	BDP-2 through BDP-3
Instructions to Bidders	BDP-4 through BDP-15
Equal Employment Opportunity Provisions	BDP-16 through BDP-25
Appendix A	
Appendix F	
Contract Form	BDP-26 through BDP-30
Index of the General Contract Conditions	BDP-31 through BDP-35
Special Contract Conditions	BDP-36 through BDP-44
Final/Partial Release and Certificate of Payment Forms (Samples)	BDP-39 through BDP-41
Performance and Payment Bond Form	BDP-45 through BDP-46
Performance and Payment Bond Surety Authorization letter (Sample)	BDP - 47
Notice to Apparent Low Bidder (Sample)	BDP-48 through BDP-49
Notice To Proceed (Sample)	BDP-50
Certificate of Contract Release (Sample)	BDP-51
Prevailing Wage Rate Schedule	8 pages
Technical Specifications	99 pages
Contract Drawings	39 pages



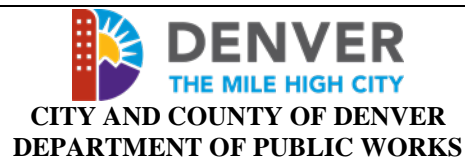
STATEMENT OF QUANTITIES

Item No.	Description	Estimated Quantity	
202-01	REMOVAL OF CURB AND GUTTER	453	LF
202-02	REMOVAL OF SIDEWALK	6,308	SF
202-03	REMOVAL OF CONCRETE PAVEMENT	4,727	SF
202-04	REMOVAL OF ASPHALT PAVEMENT	4,193	SF
202-05	REMOVAL OF CONCRETE CURB RAMP	3,170	SF
202-06	REMOVAL OF EXISTING GROUND SIGN	5	EA
202-07	REMOVAL OF BOLLARD	2	EA
202-08	RESET SURVEY MONUMENT	3	EA
202-09	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1	LS
202-13	RESET GARBAGE BIN	1	EA
203-01	POTHOLING	75	EA
208-01	ROCK SOCK	153	EA
208-02	SWEEPING (SEDIMENT REMOVAL)	40	HR
208-03	INLET PROTECTION	7	EA
208-04	CONCRETE WASHOUT STRUCTURE	4	EA
208-05	TEMPORARY CONSTRUCTION SITE FENCE	3,149	LF
210-01	MODIFY INLET	3	EA
212-01	SOD	526	SF
212-02	SEEDING	200	SF



STATEMENT OF QUANTITIES

Item No.	Description	Estimated Quantity	
212-03	LANDSCAPE RESTORATION	200	SF
403-01	HOT MIX ASPHALT (PATCHING)	66	TON
403-02	HOT MIX ASPHALT (PG 64-22) (100)	296	TON
412-01	CONCRETE PAVEMENT	2,970	SF
503-01	DRILLED CAISSON (24 INCH)	10	LF
503-02	VACUUMED CAISSON (24 INCH)	5	LF
503-03	DRILLED CAISSON (36 INCH)	129	LF
503-04	VACUUMED CAISSON (36 INCH)	106	LF
503-05	DRILLED CAISSON (48 INCH)	17	LF
503-06	VACUUMED CAISSON (48 INCH)	34	LF
508-01	AGGREGATE (6 INCH DEPTH) (WITH GEOTEXTILE BARRIER)	185	SF
608-01	CONCRETE SIDEWALK (6 INCH)	5,327	SF
608-02	CONCRETE CURB RAMP	2,997	SF
608-03	CONCRETE CURB AND GUTTER	1,127	LF
608-04	CONCRETE MEDIAN COVER (4 INCH)	2,259	SF
613-01	2 INCH ELECTRICAL CONDUIT	1,462	LF
613-02	3 INCH ELECTRICAL CONDUIT	2,983	LF
613-03	PULL BOX (SPECIAL)	4	EA
613-04	ELECTRICAL METER PEDESTAL AND BASE	4	EA

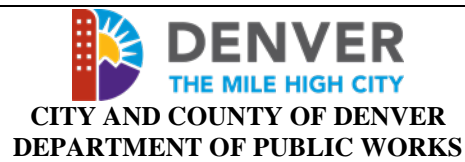


STATEMENT OF QUANTITIES

Item No.	Description	Estimated Quantity	
614-01	10' PEDESTAL POLE	7	EA
614-02	15' PEDESTAL POLE	1	EA
614-02	OVERHEAD SIGN PANEL	121	SF
614-03	SIGN PANEL (CLASS 1)	31	SF
614-04	STEEL SIGN POST (2X2 INCH TUBING)	40	LF
614-05	PEDESTRIAN SIGNAL FACE (16) (COUNTDOWN)	36	EA
614-06	TRAFFIC SIGNAL FACE (12-12-12)	61	EA
614-07	TRAFFIC SIGNAL FACE (12-12-12) (PROGRAMMABLE)	6	EA
614-08	TRAFFIC SIGNAL FACE (12-12-12-12)	17	EA
614-09	TRAFFIC SIGNAL FACE (12-12-12-12) (PROGRAMMABLE)	2	EA
614-10	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	4	EA
614-11	PEDESTRIAN PUSH BUTTON AND INSTRUCTION SIGN	25	EA
614-12	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-35 MAST ARM) (INSTALL ONLY)	1	EA
614-13	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-40 MAST ARM) (INSTALL ONLY)	4	EA
614-14	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-45 MAST ARM) (INSTALL ONLY)	2	EA

STATEMENT OF QUANTITIES

Item No.	Description	Estimated Quantity	
614-15	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-50 MAST ARM) (INSTALL ONLY)	5	EA
614-16	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-55 MAST ARM) (INSTALL ONLY)	3	EA
614-17	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-60 MAST ARM) (INSTALL ONLY)	1	EA
614-18	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-70 MAST ARM) (INSTALL ONLY)	2	EA
614-19	TRAFFIC SIGNAL-LIGHT POLE STEEL (2-40 MAST ARM) (INSTALL ONLY)	1	EA
614-20	LUMINAIRE (5300 LED)	17	EA
614-21	STREET LIGHT STANDARD (INSTALL ONLY)	3	EA
614-22	FLIR INTERSECTION DETECTION SYSTEM (CAMERA)	12	EA
614-23	AUTOSCOPE VISION INTERSECTION DETECTION (SYSTEM) CAMERA	4	EA
614-24	TRAFFIC SIGNAL WIRING	1	LS
614-25	TELEMETRY (FIELD)	4	EA
614-26	FURNISH AND INSTALL EMERGENCY VEHICLE PRIORITY CONTROL SYSTEM (OPTICOM)	15	EA
614-27	RESET BIKE SIGNAL	2	EA
623-01	RESET PTZ CAMERA (BY CONTRACTOR)	4	EA
623-01	SPRINKLER SYSTEM - IRRIGATION RECONSTRUCTION	160	LF
623-02	SPRINKLER SYSTEM - NEW SPRINKLER HEAD	8	EA



STATEMENT OF QUANTITIES

<u>Item No.</u>	<u>Description</u>	<u>Estimated Quantity</u>	
623-03	SPRINKLER SYSTEM - ADJUST SPRINKLER HEAD	8	EA
625-01	CONSTRUCTION SURVEYING	1	LS
626-01	MOBILIZATION	1	LS
627-01	EPOXY PAVEMENT MARKING	4	GAL
627-02	PREFORMED THERMOPLASTIC PAVEMENT MARKING	4,418	SF
630-01	CONSTRUCTION TRAFFIC CONTROL	1	LS
630-02	UNIFORMED TRAFFIC CONTROL	32	HR
76 Items			

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division

NOTICE FOR INVITATION FOR BIDS
FOR CONTRACT NO. 201734986

MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE

BID SCHEDULE:
11:00 a.m., Local Time
June 22, 2017

Sealed bids will be received in Room 6.G.7, 201 W. Colfax Ave., Denver, CO 80202, beginning at 10:30 a.m., no later than 11:00 a.m., on bid day. All properly delivered bids will then be publicly opened and read aloud.

Bids submitted prior to 10:30 a.m. on the specified bid opening date/time shall be presented at the Office of Contract Administration, Attention: Public Works Contract Administration, 201 W. Colfax Ave., Department 614, Denver, CO 80202.

Prior to submitting a bid, the bidder shall consult the Contractor's Bulletin Board located at 201 W. Colfax Ave., 2nd Floor, Denver, CO 80202 and/or www.work4denver.com.

GENERAL STATEMENT OF WORK:

To reconstruct and upgrade four (4) existing traffic signals within the City and County of Denver. These signals are located on Monaco St Pkwy at MLK and at Alameda, Broadway at Alameda, and Peoria at 47th. The scope of work is to rebuild the traffic signals - remove and replace the existing traffic signal equipment (poles, signal and pedestrian indications, and associated equipment) with new traffic signal equipment in accordance with the City and County of Denver standards. The new traffic signal equipment include new mast arm traffic signal poles/mast arms, multiple 12-12-12 overhead and side mounted indications, 16" pedestrian signal face, and vehicle detection system. Additional project scopes include new signing and striping packages in accordance with ASTM Type 11 retroreflective sheeting and CCD/MUTCD criteria respectively, and intersection civil reconstruction (ADA handicap ramp, curb and gutter, and sidewalk).

ESTIMATED CONSTRUCTION COST:

The estimated cost of construction for this project is between \$1,229,581.00 and \$1,502,821.00.

TEXTURA CONSTRUCTION PAYMENT MANAGEMENT:

Bidders are required, when preparing a bid, to agree that it shall use the Textura® Construction Payment Management System (CPM System) for this Project and recognizes that all fees associated with the CPM System are to be paid by the awarded Contractor for billings for work performed. Use the pricing scale provided in Instructions to Bidders to price the Textura service appropriately. For details on the company and service contact the Textura® Corporation 866-TEXTURA or www.texturacorp.com.

DOCUMENTS AND BID INFORMATION AVAILABLE:

Contract Documents complete with Technical Specifications and, if applicable, construction drawings will be available on the first day of publication at: www.work4denver.com. To download digital Contract Documents at a cost of \$10.00 per download, reference eBid Document Number #5134800. Contact QuestCDN at 952-233-1632 or info@questcdn.com for assistance.

PRE-BID CONFERENCE:

A pre-bid conference will be held for this project at 2:30 p.m., local time, on June 01, 2017. This meeting will take place at: WEBB Building, 201 W Colfax Avenue, 4th floor conference room 4.I.5., Denver, CO 80202.

DEADLINE TO SUBMIT QUESTIONS: June 9, 2017 by 2:00 p.m. local time.

PREQUALIFICATION REQUIREMENTS:

Each bidder must be prequalified as 1(D)1 Traffic Signals in the \$1,500,000.00 monetary level in accordance with the City’s Rules and Regulations Governing Prequalification of Contractors. Each bidder must have submitted a prequalification application a minimum of ten (10) calendar days prior to the bid opening date. Applications must be submitted to the Department of Public Works, Prequalification Section, 201 W. Colfax Ave., Department 614, Denver, CO 80202. To view the Rules and Regulations and to obtain a prequalification application, please visit our website at www.denvergov.org/prequalification or call 720-865-2539 for prequalification information ONLY.

MINORITY AND WOMAN BUSINESS ENTERPRISE PARTICIPATION:

Construction, reconstruction and remodeling contracts made and entered into by the City and County of Denver are subject to Article III, Divisions 1 and 3 of Chapter 28 of the Denver Revised Municipal Code, (Sections 28-31 to 28-36 and 28-52 to 28-90 D.R.M.C) and all Minority and Woman Business Enterprise and Equal Employment Opportunity Rules and Regulations adopted by the Director of the Division of Small Business Opportunity.

Article III, Division 3 of Chapter 28 of the D.R.M.C. directs the Director of the Division of Small Business Opportunity to establish a project goal for expenditures on construction, reconstruction, and remodeling work contracted by the City and County of Denver. The specific goal for this project is:

12% Minority and Woman Business Enterprise (M/WBE) Participation

Project goals must be met with certified participants as set forth in Section 28-60, D.R.M.C. or through the demonstration of a sufficient good faith effort under Section 28-62 D.R.M.C. For compliance with good faith requirements under Section 28-62(b), **the M/WBE percentage solicitation level required for this project is 100%.**

The Director of the Division of Small Business Opportunity urges all participants in City construction, reconstruction and remodeling projects to assist in achieving these goals.

MISCELLANEOUS:

Contracts for construction, reconstruction, and remodeling are subject to the City prevailing wage rate requirements established pursuant to Section 20-76, D.R.M.C.

As its best interest may appear, the City and County of Denver reserves the right to reject any or all bids and to waive informalities in bids.

A modified version of this Notice of Invitation for Bids and the project’s Statement of Quantities is available on the City and County of Denver’s website at: www.work4denver.com.

Publication Dates: May 22, 23, 24, 2017
Published In: The Daily Journal

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division

INSTRUCTIONS TO BIDDERS

IB-1 INSTRUCTION TO BIDDERS

These Instructions to Bidders are a part of the Contract Documents and are intended to serve as a guide to bidders. They are general in nature and may be amended or supplemented as needed to support any one specific invitation to bid. Each bidder shall prepare its bid in strict compliance with all requirements of the Contract Documents and by careful application of these instructions.

IB-2 BIDDING

The copy of the Contract Documents contains the Bid Form and Submittal Package for this Project, which must be used to submit a bid hereunder. The bidder must fully complete, execute and submit this Bid Form and Submittal Package, along with any other specified components of the Contract Documents, as its bid for the referenced Project.

A bidder is not required to submit as part of its bid the entire set of Contract Documents distributed by the City pursuant to the Notice of Invitation for Bids, if the bidder executes and submits the Bidder Acknowledgment Form included with the Bid Form and Submittal Package as part of its bid. However, each bidder, by submitting its bid, shall be conclusively presumed to have received and reviewed all of the information contained in the Contract Documents as this term is further defined herein.

Each bid must be enclosed in a sealed envelope, must be addressed to the Manager and must show on the face of the envelope the full name of the bidder, the City Project number, and descriptive title of the Project for which the bid is made.

The advertisement for Notice of Invitation for Bids will identify where and when the bid must be delivered.

IB-3 CONTRACT DOCUMENTS AS PUBLISHED BY CITY

Each bidder shall be responsible for, and shall be deemed to have received, all the information contained in the Contract Documents as distributed by the City pursuant to the Notice of Invitation for Bids, including addenda, whether or not such bidder has reviewed all or part of the Contract Documents in either its hard copy form or in any other format. If organizations or companies other than the City or its design professional distribute the City's Contract Documents for review by prospective bidders, whether in hard copy or via electronic or other media, neither the City nor its design professional shall be responsible for the content, completeness or accuracy of any information distributed or transmitted by any such organization or company.

IB-4 COMPLETING AND SIGNING THE BID FORMS

The bidder must complete the Bid Form by legibly writing or printing in ink, in words and figures as required, all the bidder's prices offered for the Work to be performed. All blank spaces, which require a response of the bidder, must be properly completed in full. If in the process of evaluating a bid, words and figures, as written on the Bid Form by the bidder, do not agree, the written words will govern.

For Bid Forms requiring unit price bids, the bidder shall write in the Bid Form spaces provided a unit price for each item for which a quantity is given and shall also write the product of each unit price and the quantity specified in the "Amount" or "Total" space provided.

Each bidder must sign the Bid Form and give the bidder's current business address. If an individual, the signature must be of the individual offering the bid; if a partnership, the signature must be that of a general partner; and if a corporation, both the president and the secretary must sign and the seal of the corporation must be affixed. Signatures of other persons may be acceptable if the bid contains sufficient evidence, satisfactory to the City in its sole discretion, to indicate that the other persons are authorized to bind the bidder.

IB-5 UNACCEPTABLE BIDS

The City will not accept bids from Bidders not prequalified with the Department of Public Works (if prequalification is required for this project), in arrears to the City upon debt or contract, or which are defaulters (as surety or otherwise) upon any obligation to the City.

IB-6 INFORMAL AND UNBALANCED BIDS

Any alteration, interlineations, erasure, omission, deletion or addition by the bidder to the Bid Form and Submittal Package or other parts of the Contract Documents submitted with the Bid Form and Submittal Package, as originally issued to the bidder, shall render the accompanying bid informal and may constitute cause for rejection.

Any unauthorized addition, conditional or alternate bids, failure to provide a unit price, lump sum amount or authorized alternate item specified or other irregularities of any kind which tend to render the bid incomplete, indefinite or ambiguous shall render the bid informal and may constitute cause for rejection.

Bids that are unbalanced so that each item does not reasonably carry its own proportion of cost or that contain inadequate or unreasonable prices for any item may be rejected. Bids, which have not acknowledged all addenda to the Contract Documents issued for this bid, may also be rejected.

The right is reserved by the City to reject any or all bids and to waive any informalities where it is deemed by the City to be in the best interests of the City to do so.

IB-7 ONLY ONE BID ACCEPTED

The City will accept only one bid for the same work from any one bidder. This includes bids that may be submitted under different names by one business enterprise.

IB-8 BID GUARANTEE

As a guarantee of good faith on the part of the bidder, each bid must be accompanied by a bid guarantee, consisting of either a certified or cashier's check made payable without condition to the order of the City and County of Denver or a bid bond written by an approved corporate surety in favor of the City and County of Denver. If the bid of a bidder is acceptable and the bidder is notified by the Manager that it is considered to be the Apparent Low Bidder and said bidder fails to execute a contract in the form prescribed or to furnish a performance and payment bond with a legally responsible and approved surety or to furnish the required evidence of insurance or satisfy all conditions precedent to contract execution within five (5) days after such notice is made by the City, said bid guarantee shall be forfeited to the City as liquidated damages and not as a penalty.

The bid guarantee shall be in the amount of five percent (5%) of the total bid unless otherwise specified in the Notice of Invitation for Bids and on the form appearing in the Contract Documents in the Bid Form and Submittal Package. Failure to submit a properly executed bid guarantee, on the form provided herein may, in the City's sole discretion, constitute cause for rejection.

Following award and execution of the Contract by the Apparent Low Bidder, or earlier in the sole discretion of the City, bid guarantees of all but the Apparent Low Bidder will be returned. When the Apparent Low Bidder executes the Contract and delivers to the City satisfactory performance and payment bonds, required insurance documentation, and has satisfied all conditions precedent to contract execution by the City, and after approval, if any, by the Council of the City of the proposed Contract with the Apparent Low Bidder, the bid guarantee of the Apparent Low Bidder shall be returned. Such return shall be made within one hundred twenty (120) days from date bids are opened unless otherwise specified in the Special Contract Conditions.

IB-9 SITE INSPECTION AND INVESTIGATIONS

Prior to submitting a bid, the bidder is invited to inspect the work site and its surroundings. Although the bidder is not required to make such an inspection before bidding, for purposes of the Contract it shall be conclusively presumed that by failing to make such an inspection, the bidder has waived the right to later claim additional compensation or time extensions for conditions which would have been evident had the site been inspected.

Drawings and Technical Specifications, defining the Work to be done, were prepared on the basis of interpretation by the design professionals of information derived from investigations of the work site. Such information and data are subject to sampling errors, and the interpretation of the information and data depends to a degree on the judgment of the design professional. In view of this, the bidder is invited to make such additional investigations as the bidder's judgment dictates the need for such investigations. Information about the degree of difficulty of the Work to be done cannot totally be derived from either the Drawings or Technical Specifications or from the Manager or his representatives.

Since the bid information cannot be guaranteed, the Contractor shall have assumed the risks attendant to successful performance of the Work and shall never make claim for additional compensation or time extensions on the grounds that the nature or amount of work to be done was not understood by the bidder at the time of the bidding.

IB-10 INCONSISTENCIES

Any seeming inconsistencies or ambiguities between different provisions of the Contract Documents or any point which the bidder believes requires a decision or interpretation by the City must be inquired into by the bidder by addressing a formal written communication to the Manager of Public Works and sending or delivering it to the offices of the Division of Public Works advertising this Project for bid at least forty-eight (48) hours, excluding Saturdays, Sundays, and holidays, before the time set for the opening of bids

Information about the decision or interpretation made in response to any inquiry will be posted on the Contractor's Bulletin Board (refer to IB-12 CONTRACTOR'S BULLETIN BOARD, for the location of the Contractor's Bulletin Board). If the matter raised requires, in the sole discretion of the Manager, that an addendum to the bid documents be issued, such addendum will be published and each bidder shall be required to acknowledge the addendum by signing and identifying it in the Bid Form when submitting the bid.

After bids are opened, all bidders must abide by the formal response of the Manager, as to any interpretation. The City shall not be bound and the bidder shall not rely on any oral communication, interpretation clarification or determination of the Contract Documents prior to bid opening.

IB-11 WITHDRAWAL OF BID

A bidder may withdraw its bid at any time prior to the time for receipt of bids set forth in the Notice of Invitation for Bids by making written request upon the Manager of Public Works. After such time, no bid may be withdrawn or modified.

Such request must be signed by the persons authorized to bind the bidder as defined in IB-3, COMPLETING AND SIGNING BID FORMS.

IB-12 CONTRACTOR'S BULLETIN BOARD

It shall be conclusively presumed that the bidder has, before submitting any bid, read and shall take full responsibility for all addenda, posted decisions, and other information relevant to the bid posted by the City on the Contractor's Bulletin Board. The Contractor's Bulletin Board is located at 201 W. Colfax, 2nd Floor, Denver, CO 80202, in the Wellington E. Webb Municipal Office Building.

IB-13 PRE-BID MEETING

Bidders are urged to attend the pre-bid meeting(s) scheduled for this Project. Attendance is not mandatory; however, bidders will be held responsible for all information presented at such meeting(s).

IB-14 ADDENDA

As its best interests may require, the City may issue addenda to the Contract Documents. Such addenda shall be posted on the Contractor's Bulletin Board and made available to all persons having purchased a set of Contract Documents as set forth in the Notice of Invitation for Bids contained herein. All bidders must acknowledge receipt of all addenda on the Bid Form at the time of submission of the bid.

IB-15 BID OPENING

Bidders are invited to be present at the bid opening. Unless otherwise suspended, delayed or canceled by posted notice from the Manager, bid opening will occur at the time and place designated in the Notice of Invitation for Bid.

IB-16 EVALUATION OF BIDS AND BASIS OF BID SELECTION

Bids will be evaluated after being read in open meeting at the place designated for such bid opening. All low bidders' bids will be reviewed for responsiveness to the requirements of the Contract Documents and whether or not the bids contain irregularities which could give any bidder an unfair advantage.

Selection will be made on the basis of the lowest, total, responsive, qualified bid, which bid shall include the total base bid set forth on the Bid Form, plus the total of any alternates set forth on the Bid Form and selected by the City during evaluation. Alternates, if any are included in the bid, will be selected in the priority shown on the Bid Form, subject to the limits of available funds. Bid selection will be subject to all requirements and special bidder qualifications contained herein and subject to approval of such resulting Contract in accordance with the Charter and Revised Municipal Code of the City and County of Denver. In addition to all other specified requirements, the City will correct arithmetical errors in all bids and corrected totals only will be considered as the basis of selection.

Upon concluding that the bid is, in fact, the lowest, total, responsive bid to the bidding conditions and that of a responsible, qualified bidder, the City will notify the Apparent Low Bidder.

As its best interests may appear, the City and County of Denver reserves the right to waive informalities in bids, to reject any and all bids and to rebid the Project.

IB-17 NOTICE TO APPARENT LOW BIDDER

The Notice to Apparent Low Bidder, a form of which is included in the Contract Special Conditions Section of the Contract Documents, is issued by the City directly to the selected bidder and informs the bidder that the Manager intends to seek approval of the execution of the Contract by the City in accordance with the Charter and Revised Municipal Code of the City and County of Denver. Specifically, it informs the bidder of its obligations with respect to execution of the Contract and instructs the bidder on how to proceed toward execution of the Contract. The City reserves the right to notify the Apparent Low Bidder, at any time within one hundred twenty (120) days from the date of the opening of the bids, that approval to contract with the Apparent Low Bidder shall be sought in accordance with the Charter and Revised Municipal Code of the City and County of Denver.

In accordance with the terms and conditions contained in the Bid Form and Submittal Package and any additional requirements set forth in the Notice to Apparent Low Bidder or elsewhere in the Contract Documents, the Apparent Low Bidder shall execute the Contract Form contained in the Contract Documents made available by the City for execution in the appropriate number of counterparts. The Apparent Low Bidder shall return the fully executed Contract Document sets, along with any supplemental documents required herein, to the City and shall comply with all other conditions precedent to Contract execution within five (5) days of the date of issuance of the Notice to Apparent Low Bidder by the City. Failure to comply with each of these requirements within five (5) days of the date of issuance of the Notice to Apparent Low Bidder by the City shall render the bid nonresponsive and may constitute cause for rejection.

Issuance of such Notice shall not, however, constitute a commitment on the part of the City or create any rights in the Apparent Low Bidder to any contract with the City.

IB-18 EXECUTION OF CONTRACT

The process of executing a contract requires action by both the apparent low bidder and the City. After it notifies the Apparent Low Bidder, the City will prepare the Contract Documents by incorporating all of the documents submitted by the Apparent Low Bidder into one or more executable copies. Upon notification that contracts documents are ready for execution the Apparent Low Bidder shall execute the contract documents. At this time, the successful bidder shall also provide certain supplemental documents for incorporation into the Contract Documents. These supplemental documents shall include: the properly executed Certificate of Insurance Forms evidencing the apparent low bidder's satisfactory compliance with

the insurance requirements set forth in the Contract Documents; a properly executed Payment and Performance Bond Form and appropriate Power of Attorney evidencing the Apparent Low Bidder's satisfactory compliance with the bonding requirements set forth in the Contract Documents; and documentation of compliance with any other conditions precedent to execution of the Contract by the City set forth in the Contract Documents. The insurance and bond forms contained in the Contract Special Conditions Section of the Contract Documents must be used in satisfying these supplemental document requirements.

These documents are then delivered to the City within the prescribed time period for examination of the documents to determine whether or not the Contractor has correctly executed the Contract and has correctly provided the required supplemental documents and that these documents are satisfactorily and properly completed. From here, all of the documents are forwarded to the City Attorney who will, if the insurance and bonding offered is acceptable and if all other elements of the Contract Documents are in order, recommend that the Manager and the Mayor approve the documents and, when required by the City Charter, prepare an ordinance for submittal to City Council authorizing the execution of the Contract. The City Attorney shall in all applicable instances submit the proposed contract and ordinance to City Council. After City Council approval, the Contract shall be reviewed by the City Attorney and routed for execution by the Mayor, the Clerk for attestation and the Auditor for countersignature and registration. When the total process of contract execution is complete, a Notice to Proceed will be issued and a single executed copy of the Contract will be delivered to the Contractor. Any work performed or a material purchased prior to the issuance of Notice to Proceed is at the Contractor's risk.

IB-19 BONDING REQUIREMENTS

In accordance with the provisions of General Contract Conditions, Title 15, PERFORMANCE AND PAYMENT BONDS, the minimum bonding requirements for this Contract are set forth in the form **CITY AND COUNTY OF DENVER PERFORMANCE AND PAYMENT BOND** contained in the Special Conditions Section of the Contract Documents. Upon receipt of Notice to Apparent Low Bidder, the apparent low bidder must cause this form bond to be purchased, executed and furnished, along with appropriate Powers of Attorney and a surety authorization letter (in form similar to the one attached), to the City in accordance with the instructions contained herein.

IB-20 INSURANCE REQUIREMENTS

The minimum insurance requirements for this Contract are set forth in the Special Conditions Section of the Contract Documents. Bidders are urged to consider, in preparing a bid hereunder, that each condition, requirement or specification set forth in the form certificate must be complied with by the Contractor and all subcontractors performing Work on the Project, unless such requirements are specifically accepted in writing by the City's Risk Management Office. The Contractor must either include all subcontractors performing work hereunder as insureds under each required policy or furnish a separate certificate for each subcontractor. In either case, the Contractor shall insure that each subcontractor complies with all of the coverage requirements.

IB-21 PERMITS AND LICENSES

All permits, licenses and approvals required in the prosecution of the work shall be obtained and paid for by the Contractor.

IB-22 PREVAILING WAGE REQUIREMENTS

Contractor shall comply with, and agrees to be bound by, all requirements, conditions and City determinations regarding the Payment of Prevailing Wages Ordinance, Sections 20-76 through 20-79, D.R.M.C. including, but not limited to, the requirement that every covered worker working on a City owned or leased building or on City-owned land shall be paid no less than the prevailing wages and fringe benefits in effect on the date the bid or request for proposal was advertised. In the event a request for bids, or a request for proposal, was not advertised, Contractor shall pay every covered worker no less than the prevailing wages and fringe benefits in effect on the date funds for the contract were encumbered.

Date bid or request for qualifications/proposals was advertised: May 22, 2017.

Prevailing wage and fringe rates will adjust on, and only on, the anniversary of the date the Contract was fully executed. Unless expressly provided for in this Agreement, Contractor will receive no additional compensation for increases in prevailing wages or fringe benefits.

Contractor shall provide the Auditor with a list of all subcontractors providing any services under the contract.

Contractor shall provide the Auditor with electronically-certified payroll records for all covered workers employed under the contract.

Contractor shall prominently post at the work site the current prevailing wage and fringe benefit rates. The posting must inform workers that any complaints regarding the payment of prevailing wages or fringe benefits may be submitted to the Denver Auditor by calling 720-913-5000 or emailing auditor@denvergov.org.

If Contractor fails to pay workers as required by the Prevailing Wage Ordinance, Contractor will not be paid until documentation of payment satisfactory to the Auditor has been provided. The City may, by written notice, suspend or terminate work if Contractor fails to pay required wages and fringe benefits.

IB-23 TAX REQUIREMENTS

General. Bidders are referred to the General Contract Condition 323, TAXES, as to taxes to which they may be subject in performing the Work under this Contract, including but not limited to sales and use taxes and the Denver Occupational Privilege Tax. The following instructions are to be considered along with the General Contract Conditions and not in lieu of them.

Sales and Use Tax. Construction and building materials sold to contractors and subcontractors for use on structures, roads, streets, highways, and other public works owned by the City and County of Denver are exempt from state, RTD, and Cultural Facilities District sales and use taxes. However, such materials will be subject to sales and use taxes imposed by the City and County of Denver.

It is the responsibility of the Contractor and its subcontractors to apply to the Colorado Department of Revenue (“CDOR”) for a certificate, or certificates, of exemption indicating that their purchase of construction or building materials is for a public project, and to deliver to the City copies of such applications as soon as possible after approval by the CDOR. Bidders shall not include in their bid amounts the exempt state, RTD, and Cultural Facilities District Sales and Use Taxes.

Denver Occupational Privilege Tax. Any employee working for a contractor, or a subcontractor, who earns over \$500 working in Denver during a calendar month, is subject to the payment of the Employee Occupational Privilege Tax. The Contractor and any subcontractor must pay the Business Occupational Privilege Tax for each of its employees who are subject to such tax.

IB-24 DIVERSITY AND INCLUSIVENESS IN CITY SOLICITATIONS

Each bidder shall, as a condition of responsiveness to this solicitation, complete and return the “Diversity and Inclusiveness in City Solicitations Information Request Form” with their Bid.

Using the “Diversity and Inclusiveness in City Solicitations Information Request Form” provided, please state whether you have a diversity and inclusiveness program for employment and retention, procurement and supply chain activities, or customer service and provide the additional information requested on the form. The information provided on the “Diversity and Inclusiveness in City Solicitations Information Request Form” will provide an opportunity for City contractors to describe their own diversity and inclusiveness practices. Contractors are not expected to conduct intrusive examinations of its employees, managers, or business partners in order to describe diversity and inclusiveness measures. Rather, the City simply seeks a description of the contractor’s current practices, if any.

Diversity and Inclusiveness information provided by City contractors in response to City solicitations for services or goods will be collated, analyzed, and made available in reports consistent with City Executive Order No. 101. However, no personally identifiable provided by or obtained from contractor’s will be in such reports.

IB-25 MINORITY AND WOMAN BUSINESS ENTERPRISE (M/WBE) REQUIREMENTS

Article III, Divisions 1 and 3 of Chapter 28, Denver Revised Municipal Code (D.R.M.C.), designated as Sections 28-31 – 28-36 and 28-52 – 28-90 D.R.M.C. and referred to in these Bid Documents as the “M/WBE Ordinance” and any Rules or Regulations promulgated pursuant thereto apply to this Project and are incorporated into these Bid Documents by reference. Generally, the M/WBE Ordinance provides for the adoption of a good faith goals program, to be administered by the Division of Small Business Opportunity (DSBO), devised to provide increased bidding opportunities for Minority and Woman Business Enterprises (M/WBEs). As such, each bidder must comply with the terms and conditions of the M/WBE Ordinance in making its bid and, if awarded the Contract, in performing all Work thereunder. A bidder’s failure to comply with the M/WBE Ordinance, any Rules or Regulations promulgated pursuant thereto, or any additional requirement contained herein shall render the bid non-responsive and shall constitute cause for rejection. Failure by the contractor awarded the contract to comply with M/WBE Ordinance requirements during the performance of the contract is a material breach of the contract, which may result in the imposition of sanctions on the Contractor, as deemed appropriate by DSBO. Copies of the M/WBE Ordinance and its accompanying Rules and Regulations are available for the use and review of bidders from DSBO. In order to comply with the bid requirements of the M/WBE Ordinance, a bidder shall either meet the established project goal or, in the alternative, demonstrate that the bidder has made sufficient good faith efforts to meet the goal in accordance with the M/WBE Ordinance.

Meeting Established Goal

In preparing a bid to meet the established Project goal, bidders should consider the following instructions relating to compliance with the M/WBE Ordinance:

1. Under the M/WBE Ordinance, the Director of DSBO (“Director”) is directed to establish project goals for expenditures on construction, reconstruction, and remodeling work performed for the City and County of Denver. The specific goal for this project is stated in the Notice of Invitation for Bids bound herein.
2. In preparing its bid, each bidder shall list on the Bid Form pages entitled "List of Proposed MWBE Bidders, Subcontractors, Suppliers, Manufacturers, Manufacturers' Representatives or Brokers" the name, address, work description/supply, committed level of participation and other required information for each M/WBE of any tier which the bidder intends to use in performing the work on this Project. **Only the M/WBEs identified and the precise levels of participation listed for each on the Bid Form page, at the time of bid opening, will be considered in determining whether the bidder has met the designated participation goal. Additional, revised or corrected participation submitted after bid opening will not be considered.** M/WBE bidders may count self-performance or joint venture activity in meeting the M/WBE project goal, but only for the scope of work performed as a commercially useful function and at a percentage level the M/WBE will be performing itself.
3. Any agreement between a bidder or proposer and an MBE or WBE in which the bidder or proposer requires that the MBE or WBE not provide subcontracting quotations to other bidders or proposers is prohibited and shall render a bidder's bid or proposer's proposal nonresponsive. D.R.M.C. 28-63(f)
4. If a bidder/proposer is participating in a joint venture with a certified M/WBE firm, complete the Joint Venture Eligibility Form and Joint Venture Affidavit contained in this bid document/RFP. Submit the aforementioned forms with the firm’s Joint Venture Agreement, to the DSBO Director, **at least 10 working days prior to the proposal submittal.** The Joint Venture must be approved prior to the bid opening or proposal submittal by the DSBO Director. Approval by the DSBO Director includes determining the amount the Joint Venture will count towards meeting the project goal.
5. All M/WBEs listed on the Bid Form must be properly certified by the City on or before the date bids are opened in order to count towards meeting the designated goal. DSBO maintains an M/WBE Directory (“Directory”), which is a current listing of M/WBEs that have been certified by the City. A copy of the DSBO Directory is located at DSBO web site at <https://www.denvergov.org/dsbo>.

Bidders are encouraged to use the Directory to assist in locating M/WBEs for the work and supplies required on the Project. Bidders are reminded that changes may be made to the Directory at anytime in accordance with the City's M/WBE Ordinance and procedures established to administer this program and a current copy of the Directory must always be used in preparing a bid. M/WBE certification or listing in the Directory is not a representation or warranty by the City as to the qualifications of any listed M/WBE.

6. In accordance with the provisions of the M/WBE Ordinance, DSBO will evaluate each bid to determine the responsiveness of the bid to the requirements of the M/WBE Ordinance. In determining whether a bidder's committed level of participation meets or exceeds the stated M/WBE goal, DSBO shall base its calculation of applicable amounts and percentages on the total base bid amount, not including any listed alternates, of each bid as follows:
 - a. The bid information provided by the agency will be used to determine the total base bid amount of each bid. Each bidder's total base bid amount will be multiplied by the M/WBE percentage established for the project to determine the exact dollar amount of required M/WBE participation for the Project. This amount will then be compared against the exact dollar amounts for the M/WBE committed for participation by the bidder. If the total dollar amount of participation listed meets or exceeds the established M/WBE dollar amount goal listed, then DSBO will determine that the goal has been met.
 - b. In addition, DSBO will determine the exact commitment percentage for each listed M/WBE by dividing the dollar amount listed for each M/WBE by the total base bid dollar amount submitted by the bidder. These individual percentages, when totaled for all listed M/WBE, will establish the total committed percentage level of M/WBE participation that the bidder must comply with during the life of the contract. In all cases, the committed percentage level of M/WBE participation must equal or exceed the assigned M/WBE goal for the Project.
 - c. In providing the exact dollar amount of participation for each listed M/WBE, a bidder should take care never to round up in determining whether or not the total of these amounts meets or exceeds the established percentage goal. The goal must be met or exceeded by dollar amounts and percentages in order for DSBO to determine that the bidder has met or exceeded the applicable M/WBE goal.
 - d. As previously mentioned, compliance with the M/WBE goal will be determined on the base bid alone. If a bid contains alternates, participation contained in any alternate will not count towards satisfaction of the Project goal. However, should any designated alternate be selected by the City for inclusion in the contract ultimately awarded, the M/WBE goal percentage level submitted at bid time, on the base bid, will also apply to the selected alternates and must be maintained for the life of the contract on the total contract amount, including any alternate work. Thus, even though such participation will not be considered in evaluating bids, bidders are urged to consider participation in preparing bids for designated alternates.
 - e. On projects where force account or allowance bid items have been included, bidders must meet the M/WBE goal percentage based upon the total base bid, including all such items that are submitted to the City. However, when a force account or allowance is designated by the City to be either performed or purchased from a specific company, the bidder may back out the dollar amount of the force account or allowance from the total base bid and meet the M/WBE goal on the remaining reduced amount.
 - f. On bids which, at the time of bid opening, are equal to or exceed Five Million Dollars (\$5,000,000.00), including any alternates which may be selected, only sixty percent (60%) of the value of the commercially useful function performed by M/WBE suppliers shall count toward satisfaction of the Project goal. On Projects under Five Million (\$5,000,000.00) the value of the commercially useful function of M/WBE supplier(s) will

count at a one hundred percent (100%) level. Manufacturer's representatives and packagers shall be counted in the same manner as brokers.

- g. In utilizing the M/WBE participation of a Broker only the bona fide commissions earned by such Broker for its performance of a commercially useful function will count toward meeting the Project goals. The bidder must separate the bona fide brokerage commissions from the actual cost of the supplies or materials provided to determine the actual dollar amount of participation that can be counted towards meeting the goal.
7. On or before the third (3rd) working day after bid opening, all of the Bidders are required to submit an executed "Letter of Intent" for each M/WBE listed on the Bid Form as a joint venture member, subcontractor, supplier, manufacturer, manufacturers' representative or broker of any tier. **An MBE or WBE Prime Bidder needs to submit a Letter of Intent for itself for self-performed work**, and must identify their level of participation on the designated M/WBE participation page bound herein. A Letter of Intent shall be submitted only for the M/WBEs listed at the time of bid opening, since this is the only participation that will be counted toward satisfaction of the project goal. A form for the M/WBE Letter of Intent is included with the Bid Form. The M/WBE Letter of Intent is a written communication from the Bidder to the City evidencing an understanding that the Bidder has or will enter into a contractual relationship with the M/WBE or that its subcontractor(s) and supplier(s), manufacturer(s), manufacturers' representative(s) and broker(s) will do so. Each M/WBE Letter of Intent shall be accompanied by a copy of the City and County of Denver's M/WBE certification letter for each proposed M/WBE identified at bid time. Bidders are urged to carefully review these Letters before submission to the City to ensure that they are properly completed and executed by the appropriate parties.

Good Faith Effort.

In preparing a bid to demonstrate a good faith effort, bidders should consider the following instructions relating to compliance with the M/WBE Ordinance:

1. If the bidder or proposer has not fully met the project goal as provided in section 28-60, then it shall demonstrate that it has made good faith efforts to meet such goal. The bidder or proposer shall furnish to the director, within three (3) working days after bid opening by the City or on or before the time of the final project-specific proposal submitted to and authorized by the City pursuant to a competitive selection process, or bid selection by a private owner, a detailed statement of its good faith efforts to meet the project goal set by the director. This statement shall address each of the items in subsection (b) and any additional criteria that the director may establish by rule or regulation consistent with the purposes of this division 3. Good faith efforts must be demonstrated to be meaningful and not merely for formalistic compliance with this Division 3. The scope and intensity of the efforts will be considered in determining whether the bidder or proposer has achieved a good faith effort.
2. The statement of good faith efforts shall include a specific response and verification with respect to each of the following good faith effort categories, which may be further defined by rule or regulation. A bidder or proposer may include any additional information it believes may be relevant. Failure of a bidder or proposer to show good faith efforts as to any one (1) of the following categories shall render its overall good faith effort showing insufficient and its bid or proposal non-responsive:
 - a. If prebid or preselection meetings are scheduled by the City at which MBEs and WBEs may be informed of subcontracting or joint venture opportunities under a proposed contract to be bid, or procured pursuant to the competitive selection process, attendance at such prebid or preselection meetings is not mandatory; however, bidders and proposers are responsible for the information provided at these meetings.
 - b. The bidder or proposer must solicit through all reasonable and available means, the interest of all MBEs and WBEs certified in the scopes of work of the contract. The bidder or proposer must solicit the interest of such MBEs and WBEs within sufficient time, prior to the bid opening or date of final project-specific proposal in the case of a competitive selection process, to allow such MBEs and WBEs to respond to the solicitation. The bidder or proposer must determine with certainty

- if the MBEs and WBEs are interested by demonstrating appropriate steps to follow up initial solicitations.
- c. The bidder or proposer must select portions of the work of the contract to be performed by MBEs and WBEs in order to increase the likelihood that the project goal will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MBE and WBE participation as subcontractors or joint venturers, and for bidder or proposer self-performed work, as suppliers, manufacturers, manufacturer's representatives and brokers, all reasonably consistent with industry practice, even when the bidder or proposer would otherwise prefer to perform these work items with its own forces. The bidder or proposer must identify what portions of the contract will be self-performed and what portions of the contract will be opened to solicitation of bids, proposals and quotes from MBE and WBEs. All portions of the contract not self-performed must be solicited for MBE and WBE participation. The ability or desire of a bidder or proposer to perform the work of a contract with its own forces does not relieve the bidder or proposer of the responsibility to meet the project goal or demonstrate good faith efforts to do so.
 - d. The bidder or proposer, consistent with industry practice, must provide MBEs and WBEs at a clearly stated location with timely, adequate access to and information about the plans, specifications, and requirements of the contract, including bonding and insurance requirements, if any, to assist them in responding to a solicitation.
 - e. The bidder or proposer must negotiate in good faith with interested MBEs and WBEs and provide written documentation of such negotiation with each such MBE or WBE.
 - f. For each MBE or WBE which contacted the bidder or proposer or which the bidder or proposer contacted or attempted to subcontract or joint venture with, consistent with industry practice, the bidder or proposer must supply a statement giving the reasons why the bidder or proposer and the MBE or WBE did not succeed in negotiating a subcontracting, supplier, manufacturer, manufacturer's representative, broker or joint venture agreement, as applicable.
3. The bidder or proposer must provide verification that it rejected each non-utilized MBE and WBE because the MBE or WBE did not submit the lowest bid or it was not qualified. Such verification shall include a verified statement of the amounts of all bids received from potential or utilized subcontractors, suppliers, manufacturers, manufacturer's representatives, brokers or joint venturers on the contract, whether or not they are MBEs or WBEs. In making such a determination of not being qualified, the bidder or proposer shall be guided by the definition of qualified in section 28-54(42), but evidence of lack of qualification must be based on factors other than solely the amount of the MBE's or WBE's bid. For each MBE or WBE found not to be qualified by the bidder or proposer, the verification shall include a statement giving the bidder's or proposer's reasons for its conclusion. A bidder's or proposer's industry standing or group memberships may not be the cause of rejection of an MBE or WBE. A bidder or proposer may not reject an MBE or WBE as being unqualified without sound reasons based on a reasonably thorough investigation and assessment of the MBE's or WBE's capabilities and expertise.
 4. If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining bonding, lines of credit, or insurance as required by the City or by the bidder or proposer, provided that the bidder or proposer need not provide financial assistance toward this effort.
 5. If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining necessary and competitively priced equipment, supplies, materials, or related assistance or services for performance under the contract, provided that the bidder or proposer need not provide financial assistance toward this effort.

6. The bidder or proposer must use the DSBO MBE/WBE directories to identify, recruit, and place MBEs and WBEs.
7. In determining whether a bidder or proposer has satisfied good faith efforts as to a project goal, the success or failure of other bidders or proposers on the contract in meeting such project goal may be considered.

Continuing Commitments.

In accordance with the provisions of the M/WBE Ordinance, the bidder agrees that it is committed to meeting either the M/WBE participation goal or the M/WBE participation set forth in its statement of good faith. This commitment must be expressly indicated on the "Commitment to MWBE SBE Participation" form included with the Bid Form. This commitment includes the following understandings:

1. The bidder understands it must maintain M/WBE goals throughout the performance of the Contract pursuant to the requirements set out in D.R.M.C. 28-72.
2. The bidder understands that it must establish and maintain records and submit regular reports, as required, which will allow the City to assess progress in achieving the M/WBE participation goal.
3. The bidder understands that if change orders or any other contract modifications are issued under the contract, the bidder shall have a continuing obligation to immediately inform DSBO in writing of any agreed upon increase or decrease in the scope of work of such contract, upon any of the bases discussed in Section 28-73 of the M/WBE Ordinance, regardless of whether such increase or decrease in scope of work has been reduced to writing at the time of notification.
4. The bidder understands that if change orders or other contract modifications are issued under the contract, that include an increase in scope of work of a contract for construction, reconstruction, or remodeling, whether by amendment, change order, force account or otherwise which increases the dollar value of the contract, whether or not such change is within the scope of work designated for performance by an M/WBE at the time of contract award, such change orders or contract modification shall be immediately submitted to DSBO for notification purposes. Those amendments, change orders, force accounts or other contract modifications that involve a changed scope of work that cannot be performed by existing project subcontractors or by the contractor shall be subject to a goal for M/WBEs equal to the original goal on the contract which was included in the bid. The contractor shall satisfy such goal with respect to such changed scope of work by soliciting new M/WBEs in accordance with Section 28-73 of the M/WBE Ordinance as applicable, or the contractor must show each element of modified good faith set out in Section 28-75(c) of the M/WBE Ordinance. The contractor shall supply to the director the documentation described in Section 28-75(c) of the M/WBE Ordinance with respect to the increased dollar value of the contract.

All bidders are charged with knowledge of and are solely responsible for complying with each and every provision of the M/WBE Ordinance in making a bid and, if awarded, in performing the work described in the Contract Documents. Failure to comply with these provisions could constitute cause for rejection of a bid or subject the selected contractor to sanctions set forth in the M/WBE Ordinance. These instructions are intended only to generally assist the bidder in preparing and submitting a compliant bid. Should any questions arise regarding specific circumstances, bidders must consult the M/WBE Ordinance or contact the Project's designated DSBO representative at (720) 913-1999.

IB- 26 DISCLOSURE OF INFORMATION

All submissions and other materials provided or produced pursuant to this Invitation for Bids may be subject to the Colorado Open Records Law, C.R.S. 24-72-201, et seq. As such, bidders are urged to review these disclosure requirements and any exceptions to disclosure of information furnished by another party and, prior to submission of a bid to the City, appropriately identify materials that are not subject to disclosure. In the event of a request to the City for disclosure of such information, the City shall advise the bidder of such request to give the bidder an opportunity to object to the disclosure of designated confidential materials furnished to the City. In the event of the filing of a lawsuit to compel such disclosure, the City will tender all such material to the court for judicial determination of the issue of disclosure and each bidder agrees to intervene in such lawsuit to protect and assert its claims of privilege against disclosure of such material. Each

bidder further agrees to defend, indemnify and save and hold harmless the City, its officers, agents and employees, from any claim, damages, expense, loss or costs arising out of the bidder's intervention to protect and assert its claims of privilege against disclosure under the Open Records Law including, but not limited to, prompt reimbursement to the City of all reasonable attorney fees, costs and damages that the City may incur directly or may be ordered to pay by such court.

IB-27 GENERAL BIDDING INFORMATION

Bidders are instructed to contact the Contract Administrator designated below for this Project for pre-bid, post-bid and general City bidding information. Bidders can also visit www.work4denver.com for information, both general and project specific. The Contract Administrator assigned to this project is Diane Urbina who can be reached via email at diane.urbina@denvergov.org.

IB-28 PAYMENT PROCEDURE REQUIREMENTS

Contractor recognizes and agrees that it shall be required to use the Textura® Construction Payment Management System (CPM System) for this Project. All fees associated with the CPM System are to be paid by the Contractor for billings for work performed. Bidders are required, when preparing a bid, to enter the price of the CPM service on the line provided for the service. The fee is all inclusive of all subcontractor, project and subscription fees associated with the CPM system. The bidder will calculate the fee based on a percentage of their total bid, and then should include it on the line item provided in the bid form labeled **“Textura® Construction Payment Management System Fee”**. This expense becomes part of the contract and billable to the City. Textura will invoice the awarded contractor directly. All costs including but not limited to costs associated with training, entering data or utilizing Textura other than the Textura Construction Payment Management System Fee are overhead and shall not be reimbursed by the City. Contractor is responsible for tax on Textura fee. As with other taxes, the City will not reimburse Contractor for this cost and therefore this cost should be included in Contractor's bid. Textura will invoice the awarded contractor directly.

PROJECT SIZE	FEE (% OF BID)
< \$1,000,000	0.22% (.0022)
\$1,000,001 - \$5,000,000	0.17% (.0017)
\$5,000,001 - \$20,000,000	0.12% (.0012)
\$20,000,001 - \$50,000,000	0.10% (.0010)
\$50,000,001 - \$100,000,000	0.08% (.0008)
\$100,000,001 - \$500,000,000	0.05% (.0005)
> \$500,000,000	CONTACT TEXTURA FOR PROGRAM PRICING

For more information:

<http://www.denvergov.org/content/denvergov/en/contract-administration/bidding-process.html>

**RULES AND REGULATIONS
REGARDING
EQUAL EMPLOYMENT OPPORTUNITY**

Promulgated and adopted by the Manager of Public Works pursuant to and by authority of Article III, Division 2, Chapter 28 of the Revised Municipal Code of the City and County of Denver, and for the purpose of insuring that contractors, subcontractors and suppliers soliciting and receiving compensation for contract work from or through the City and County of Denver provide equal opportunity in employment without regard to race, color, creed, sex, national origin, age, religion, marital status, political opinion or affiliation or mental or physical handicap and meet certain requirements for the hiring, training, promotion, and treatment during employment of members of ethnic groups subject to differential treatment, including persons of African descent (Black), Spanish-surnamed (Hispanic), Asian-American and American Indian Groups.

RULE I - DEFINITIONS

- A. "City" means the City and County of Denver.
- B. "Manager" shall mean the Manager of Public Works for the City and County of Denver.
- C. "Contract" means a contract entered into with the City and County of Denver, financed in whole or in part by local resources or funds of the City and County of Denver, for the construction of any public building or prosecution or completion of any public work.
- D. "Contractor" means the original party to a contract with the City and County of Denver, also referred to as the "general" or "prime" contractor.
- E. "Director" means the Director of the Division of Small Business Opportunity.
- F. "Subcontractor" means any person, company, association, partnership, corporation, or other entity, which assumes by subordinate agreement some or all of the obligations of the general or prime contractor.
- G. The phrase "Bidding Specifications" as used in Article III, Division 2 of Chapter 28 of the Revised Municipal Code shall include BID CONDITION, INVITATION TO BID, and NOTICE OF PROPOSAL.
- H. "Affirmative Action Program" means a set of specific and result-oriented procedures or steps to which a contractor commits himself to apply every good faith effort to employ members of ethnic minority groups, to include persons of African descent (Black), Spanish surnamed (Hispanic), Asian-American, American Indians, and persons with mental or physical handicap.
- I. "Division of Small Business Opportunity" means the City agency established pursuant to Article III, Division 1 of Chapter 28 of the Denver Revised Municipal Code.

RULE II - NOTICE OF HEARING

When results of conciliation efforts are unsatisfactory to the Manager and he is informed in accordance with Article III, Division 2 of Chapter 28 of the Revised Municipal code that a contractor or subcontractor has apparently failed to meet affirmative action and equal employment opportunity requirements after a reasonable period of notice to correct deficiencies, the Manager will, prior to imposition of any sanctions, afford the general contractor a hearing in order to determine whether the contractor or his subcontractors have failed to comply with the affirmative action and equal employment opportunity requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code or of the contract. Written notice of such hearing shall be delivered personally or sent by certified mail, return receipt requested, to the contractor and to any subcontractor involved, at least ten (10) days prior to the date scheduled for the hearing.

RULE III - HEARING

- A. Contractors will appear at hearings and may be represented by counsel, and may present testimony orally and other evidence.
- B. Hearings shall be conducted by one or more hearing examiners designated as such by the Manager.
- C. The Director of the Division of Small Business Opportunity may participate in hearings as a witness.
- D. Hearings shall be held at the place specified in the notice of hearing.
- E. All oral testimony shall be given under oath or affirmation and a record of such proceedings shall be made.
- F. All hearings shall be open to the public.
- G. The hearing officer shall make recommendations to the Manager who shall make a final decision.

REGULATIONS

REGULATION NO. 1 - ORDINANCE:

The Rules and Regulations of the Manager shall be inserted in the bidding specifications for every contract for which bidding is required.

REGULATION NO. 2 - EXEMPTIONS:

Each contract and subcontract, regardless of the dollar amount, shall be subject to affirmative action requirements unless specifically exempted in writing individually by the Manager. Exemptions apply only to "affirmative action" in equal employment opportunity, and are not to be construed as condonation in any manner of "discrimination" or "discriminatory practices" in employment because of race, color, creed, sex, age, national origin, religion, marital status, political opinion or mental or physical handicap.

REGULATION NO. 3 - DIRECTOR OF CONTRACT COMPLIANCE:

The Director of the Division of Small Business Opportunity shall perform the duties assigned to such official by Article III, Division 2 Chapter 28 of the Revised Municipal Code and by the Manager. (1) The Director of the Division of Small Business Opportunity or designated representatives shall inform bidders and contractors of affirmative action procedures, programs, and goals in accordance with the Ordinance at pre-bid and pre-construction conference; (2) make regular on-site inspections; (3) supply contractors and subcontractors with report forms to be completed by them when requested, and furnished to the Director of the Division of Small Business Opportunity; and (4) review payroll records, employment records and practices of general contractors and their subcontractors and suppliers during the performance of any contract. The Director of the Division of Small Business Opportunity shall promptly report apparent affirmative action deficiencies to the Manager.

REGULATION NO. 4 - GOALS AND TIMETABLES:

In general, goals and timetables should take into account anticipated vacancies and the availability of skills in the market place from which employees should be drawn. In addition, where discrimination in employment by a general contractor or any of his subcontractors is indicated, a corrective action program will take into account the need by the general contractor and his subcontractors to correct past discriminatory practices and reach goals of minority manpower utilization on a timely basis through such recruiting and advertising efforts as are necessary and appropriate.

REGULATION NO. 5 - AWARD OF CONTRACTS:

It shall be the responsibility of the Director of the Division of Small Business Opportunity to determine the affirmative action capability of bidders, contractors and subcontractors and to recommend to the Manager the award of contracts to those bidders, contractors and subcontractors and suppliers who demonstrate the ability and willingness to comply with the terms of their contract.

REGULATION NO. 6 - PUBLICATION AND DUPLICATION:

Copies of these Rules and Regulations as amended by the Manager from time to time, shall as soon as practicable and after Notice being published will be made a part of all City Contracts.

REGULATION NO. 7 - NOTICE TO PROCEED:

Prior to issuance of the Notice to Proceed, a sign-off will be required of the Director of the Division of Small Business Opportunity or his designee.

REGULATION NO. 8 - CONTRACTS WITH SUBCONTRACTORS:

To the greatest extent possible, the contractor shall make a good faith effort to contract with minority contractors, subcontractors and suppliers for services and supplies by taking affirmative actions, which include but are not limited to the following:

1. Advertise invitations for subcontractor bids in minority community news media.
2. Contact minority contractor organizations for referral of prospective subcontractors.
3. Purchase materials and supplies from minority material suppliers.

REGULATION NO. 9 - AGENCY REFERRALS:

It shall be no excuse that the union with which the contractor or subcontractor has an agreement providing for referral, exclusive or otherwise, failed to refer minority employees.

REGULATION NO. 10 - CLAUSES:

The Manager shall include the appropriate clauses in every contract and the contractor shall cause to be inserted in every subcontract the appropriate clauses:

1. APPENDIX A: City and County of Denver Equal Opportunity Clause - ALL CONTRACTS funded only with City and County of Denver monies.
2. APPENDIX B: Equal Opportunity Clause (11246) - ALL FEDERAL ASSISTED.
3. APPENDIX C: Section 3 - Assurance of Compliance - HUD ASSISTED PROJECTS.
4. APPENDIX D: Section 3 - Clause - HUD ASSISTED PROJECTS.

All amendments to the appendices shall be included by reference.

REGULATION NO. 11 - SHOW CAUSE NOTICES:

When the Manager has reasonable cause to believe that a contractor has violated Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code, he may issue a notice requiring the contractor to show cause, within fifteen (15) days why enforcement procedures, or other appropriate action to insure compliance, should not be instituted.

REGULATION NO. 12 - BID CONDITIONS - AFFIRMATIVE ACTION REQUIREMENTS - EQUAL EMPLOYMENT OPPORTUNITY:

1. APPENDIX E: The Bid Conditions - Affirmative Action Requirements - Equal Employment Opportunity as amended and published by the U.S. Department of Labor Employment Standards Administration, Office of Federal Contract Compliance, shall be inserted verbatim for bidding specification for every non-exempt contract involving the use of Federal funds.
2. APPENDIX F: The Bid Conditions - Affirmative Action Requirements - Equal Employment Opportunity as published by the Department of Public Works, City and County of Denver, shall be inserted verbatim as bidding specifications for every non-exempt contract using City funds.

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division

APPENDIX A

**CITY AND COUNTY OF DENVER EQUAL OPPORTUNITY CLAUSE -
ALL CONTRACTS**

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap.
3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided, advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. Each Contractor will comply with all provisions of Article III, Division 2 of Chapter 28 of the Revised Municipal Code, and the rules, regulations, and relevant orders of the Manager and the Director.
5. The Contractor will furnish all information and reports required by Article III, Division 2 of Chapter 28 of the Revised Municipal Code, and by rules, regulations and orders of the Manager and Director or pursuant thereto, and will permit access to his books, records, and accounts by the Manager, Director, or their designee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further City contracts in accordance with procedures authorized in Article III, Division 2, Chapter 28 of the Revised Municipal Code, or by rules, regulations, or order of the Manager.
7. The Contractor will include Regulation 12, Paragraph 2 and the provisions of paragraphs (1) through (6) in every subcontract of purchase order unless exempted by rules, regulations, or orders of the Manager issued pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code, so that such provisions will be binding on each subcontractor or supplier. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

The applicant further agrees to be bound by the above equal opportunity clauses with respect to its own employment practices when it participates in City contracts. The Contractor agrees to assist and cooperate actively with the Manager and the Director in obtaining compliance of subcontractors and suppliers with the equal opportunity clause and the rules, regulations and relevant orders of the Manager, and will furnish the Manager and the Director such information as they may require for the supervision of compliance, and will otherwise assist the Manager and Director in the discharge of the City's primary responsibility for securing

compliance. The Contractor further agrees to refrain from entering into any contract or contract modification subject to Article III, Division 2 of Chapter 28 of the Revised Municipal Code with a contractor debarred from, or who has not demonstrated eligibility for, City contracts.

The Contractor will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the Manager and Director. In addition, the Contractor agrees that failure or refusal to comply with these undertakings the Manager may take any or all of the following actions:

- A. Cancellation, termination, or suspension in whole or in part of this contract.
- B. Refrain from extending any further assistance to the applicant under the program with respect to which the failure occurred until satisfactory assurance of future compliance has been received from such applicant.
- C. Refer the case to the City Attorney for appropriate legal proceedings.

SUBCONTRACTS: Each prime Contractor or Subcontractor shall include the equal opportunity clause in each of its subcontracts.

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division

APPENDIX F

AFFIRMATIVE ACTION REQUIREMENTS

EQUAL EMPLOYMENT OPPORTUNITY

For All Non-Exempt Construction Contracts to Be Awarded by the
City and County of Denver, Department of Public Works.

NOTICE

EACH BIDDER, CONTRACTOR OR SUBCONTRACTOR (HEREINAFTER THE CONTRACTOR) MUST FULLY COMPLY WITH THE REQUIREMENTS OF THESE BID CONDITIONS AS TO EACH CONSTRUCTION TRADE IT INTENDS TO USE ON THIS CONSTRUCTION CONTRACT, AND ALL OTHER CONSTRUCTION WORK (BOTH CITY AND NON-CITY) IN THE DENVER AREA DURING THE PERFORMANCE OF THIS CONTRACT OR SUBCONTRACT. THE CONTRACTOR COMMITS ITSELF TO THE GOALS FOR MINORITY MANPOWER UTILIZATION, AS APPLICABLE, AND ALL OTHER REQUIREMENTS, TERMS AND CONDITION OF THESE BID CONDITIONS BY SUBMITTING A PROPERLY SIGNED BID.

THE CONTRACTOR SHALL APPOINT A COMPANY EXECUTIVE TO ASSUME THE RESPONSIBILITY FOR THE IMPLEMENTATION OF THE REQUIREMENTS, TERMS AND CONDITIONS OF THESE BID CONDITIONS.

/s/ _____

Executive Director of Public Works
City and County of Denver

A. REQUIREMENTS - AN AFFIRMATIVE ACTION PLAN:

Contractors shall be subject to the provisions and requirements of these bid conditions including the goals and timetables for minority* and female utilization, and specific affirmative action steps set forth by the Division of Small Business Opportunity (DSBO). The contractor's commitment to the goals for minority, and female utilization as required constitutes a commitment that it will make every good faith effort to meet such goals.

1. GOALS AND TIMETABLES:

The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade are as follows:

GOALS FOR MINORITY PARTICIPATION FOR EACH TRADE	GOALS FOR FEMALE PARTICIPATION FOR EACH TRADE
From January 1, 1982 to Until Further Notice	From January 1, 1982 to Until Further Notice
21.7% - 23.5%	6.9%

The goals for minority and female utilization above are expressed in terms of hours of training and employment as a proportion of the total number of hours to be worked by the contractor's aggregate workforce, which includes all supervisory personnel, in each trade, on all projects for the City and County of Denver during the performance of its contract (i.e., The period beginning with the first day of work on the City and County of Denver funded construction contract and ending with the last day of work).

The hours of minority and female employment and training must be substantially uniform throughout the length of the contract in each trade and minorities and females must be employed evenly on each of a contractor's projects. Therefore, the transfer of minority or female employees from contractor to contractor or from project to project for the purpose of meeting the contractor's goals shall be a violation of these Bid Conditions.

If the Contractor counts the nonworking hours of apprentices they must be employed by the Contractor during the training period; the Contractor must have made a commitment to employ apprentices at the completion of their training subject to the availability of employment opportunities; and the apprentices must be trained pursuant to training programs approved by the Bureau of Apprenticeship and Training.

* "Minority" is defined as including, Blacks, Spanish Surname Americans, Asian Americans, and American Indians, and includes both men and minority women.

2. SPECIFIC AFFIRMATIVE ACTION STEPS:

No contractor shall be found to be in noncompliance solely on account of its failure to meet its goals, but will be given an opportunity to demonstrate that the contractor has instituted all the specific affirmative action steps specified and has made every good faith effort to make these steps work toward the attainment of its goals within the timetables, all to the purpose of expanding minority and female utilization in its aggregate workforce. A contractor, who fails to comply with its obligation under the Equal Opportunity Clause of its contract and fails to achieve its commitments to the goals for minority and female utilization has the burden of proving that it has engaged in an Affirmative Action Program directed at increasing minority and female utilization and that such efforts were at least as extensive and as specific as the following:

- a. The Contractor should have notified minority and female organizations when employment opportunities were available and should have maintained records of the organization's response.

- b. The Contractor should have maintained a file of the names and addresses of each minority and female referred to it by any individual or organization and what action was taken with respect to each such referred individual, and if the individual was not employed by the Contractor, the reasons. If such individual was sent to the union hiring hall for referral and not referred back by the union or if referred, not employed by the Contractor, the file should have documented this and their reasons.
- c. The Contractor should have promptly notified the Department of Public Works, and the Division of Small Business Opportunity when the union or unions with which the Contractor has collective bargaining agreements did not refer to the contractor a minority or female sent by the contractor, or when the Contractor has other information that the union referral process has impeded efforts to meet its goals.
- d. The Contractor should have disseminated its EEO policy within its organization by including it in any employee handbook or policy manual; by publicizing it in company newspapers and annual reports and by advertising such policy at reasonable intervals in union publications. The EEO policy should be further disseminated by conducting staff meetings to explain and discuss the policy; by posting of the policy; and by review of the policy with minority and female employees.
- e. The Contractor should have disseminated its EEO policy externally by informing and discussing it with all recruitment sources; by advertising in news media, specifically including minority and female news media; and by notifying and discussing it with all subcontractors.
- f. The Contractor should have made both specific and reasonably recurrent written and oral recruitment efforts. Such efforts should have been directed at minority and female organizations, schools with substantial minority and female enrollment, and minority and female recruitment and training organizations within the Contractor's recruitment area.
- g. The Contractor should have evidence available for inspection that all tests and other selection techniques used to select from among candidates for hire, transfer, promotion, training, or retention are being used in a manner that does not violate the OFCCP Testing Guidelines in 41 CFR Part 60-3.
- h. The Contractor should have made sure that seniority practices and job classifications do not have a discriminatory effect.
- i. The Contractor should have made certain that all facilities are not segregated by race.
- j. The Contractor should have continually monitored all personnel activities to ensure that its EEO policy was being carried out including the evaluation of minority and female employees for promotional opportunities on a quarterly basis and the encouragement of such employees to seek those opportunities.
- k. The Contractor should have solicited bids for subcontracts from available minority and female subcontractors engaged in the trades covered by these Bid Conditions, including circulation of minority and female contractor associations.

NOTE: The Director and the Division of Small Business Opportunity will provide technical assistance on questions pertaining to minority and female recruitment sources, minority and female community organizations, and minority and female news media upon receipt of a request for assistance from a contractor.

3. NON - DISCRIMINATION:

In no event may a contractor utilize the goals and affirmative action steps required in such a manner as to cause or result in discrimination against any person on account of race, color, religion, sex, marital status, national origin, age, mental or physical handicap, political opinion or affiliation.

4. COMPLIANCE AND ENFORCEMENT:

In all cases, the compliance of a contractor will be determined in accordance with its obligations under the terms of these Bid Conditions. All contractors performing or to perform work on projects subject to these Bid Conditions hereby agree to inform their subcontractors in writing of their respective obligations under the terms and requirements of these Bid Conditions, including the provisions relating to goals of minority and female employment and training.

B. CONTRACTORS SUBJECT TO THESE BID CONDITIONS:

In regard to these Bid Conditions, if the Contractor meets the goals set forth therein or can demonstrate that it has made every good faith effort to meet these goals, the Contractor shall be presumed to be in compliance with Article III, Division 2 of Chapter 28 of the Revised Municipal Code, the implementing regulations and its obligations under these Bid Conditions. In the event, no formal sanctions or proceedings leading toward sanctions shall be instituted unless the contracting or administering agency otherwise determines that the contractor is violating the Equal Opportunity Clause.

1. Where the Office of Contract Compliance finds that a contractor failed to comply with the requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code or the implementing regulations and the obligations under these Bid Conditions, and so informs the Manager, the Manager shall take such action and impose such sanctions, which include suspension, termination, cancellation, and debarment, as may be appropriate under the Ordinance and its regulations. When the Manager proceeds with such formal action it has the burden of proving that the Contractor has not met the goals contained in these Bid Conditions. The Contractor's failure to meet its goals shall shift to it the requirement to come forward with evidence to show that it has met the good faith requirements of these Bid Conditions.
2. The pendency of such proceedings shall be taken into consideration by the Department of Public Works in determining whether such contractor can comply with the requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code, and is therefore a "responsible prospective contractor".
3. The Division of Small Business Opportunity shall review the Contractor's employment practices during the performance of the contract. If the Division of Small Business Opportunity determines that the Contractor's Affirmative Action Plan is no longer an acceptable program, the Director shall notify the Manager.

C. OBLIGATIONS APPLICABLE TO CONTRACTORS:

It shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority or female employees. Discrimination in referral for employment, even if pursuant to provisions of a collective bargaining agreement, is prohibited by the National Labor Relations Act, as amended, Title VI of the Civil Rights Act of 1964, as amended, and Article III, Division 2 of Chapter 28 of the Revised Municipal Code. It is the policy of the Department of Public Works that contractors have a responsibility to provide equal employment opportunity, if they wish to participate in City and County of Denver contracts. To the extent they have delegated the responsibility for some of their employment practices to a labor organization and, as a result, are prevented from meeting their obligations pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code, such Contractors cannot be considered to be in compliance with Article III, Division 2, Chapter 28 of the Revised Municipal Code, or its implementing rules and regulations.

D. GENERAL REQUIREMENTS:

Contractors are responsible for informing their subcontractors in writing regardless of tier, as to their respective obligations. Whenever a Contractor subcontracts a portion of work in any trade covered by these Bid Conditions, **it shall include these Bid Conditions in such subcontracts and each subcontractor shall**

be bound by these Bid Conditions to the full extent as if it were the prime contractor. The Contractor shall not, however, be held accountable for the failure of its subcontractors to fulfill their obligations under these Bid Conditions. However, the prime contractor shall give notice to the Director of any refusal or failure of any subcontractor to fulfill the obligations under these Bid Conditions. A subcontractor's failure to comply will be treated in the same manner as such failure by a prime contractor.

1. Contractors hereby agree to refrain from entering into any contract or contract modification subject to Article III, Division 2, Chapter 28 of the Revised Municipal Code with a contractor debarred from, or who is determined not to be a "responsive" bidder for the City and County of Denver contracts pursuant to the Ordinance.
2. The Contractor shall carry out such sanctions and penalties for violation of these Bid Conditions and the Equal Opportunity Clause including suspension, termination and cancellation of existing subcontracts and debarment from future contracts as may be ordered by the Manager pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code and its implementing regulations.
3. Nothing herein is intended to relieve any contractor during the term of its contract from compliance with Article III, Division 2, Chapter 28 of the Revised Municipal Code, and the Equal Opportunity Clause of its contract with respect to matters not covered in these Bid Conditions.
4. Contractors must keep such records and file such reports relating to the provisions of these Bid Conditions as shall be required by the Office of Contract Compliance.
5. Requests for exemptions from these Bid Conditions must be made in writing, with justification, to the Manager of Public Works, 201 W. Colfax, Dept. 608, Denver, Colorado 80202, and shall be forwarded through and with the endorsement of the Director.

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division

CONTRACT NO. 201734986

MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE

CONTRACT

THIS CONTRACT AND AGREEMENT, made and entered into by and between the City and County of Denver, a municipal corporation of the State of Colorado, hereinafter referred to as the "City," party of the first part, and

STURGEON ELECTRIC COMPANY, INC.
12150 East 112th Avenue
Henderson, CO 80640

, hereinafter referred to as the "Contractor," party of the second part,

WITNESSETH, commencing on **May 22, 2017**, and for at least three (3) days the City advertised that sealed bids would be received for furnishing all labor, tools, supplies, equipment, materials, and everything necessary and required for the following:

CONTRACT NO. 201734986

MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE

WHEREAS, bids pursuant to said advertisement have been received by the Manager of Public Works, who has recommended that a Contract for said work be made and entered into with the above-named Contractor who was the lowest, responsive, qualified bidder therefore, and

WHEREAS, said Contractor is now willing and able to perform all of said work in accordance with said advertisement and its bid.

NOW THEREFORE, in consideration of the compensation to be paid the Contractor, the mutual agreements hereinafter contained, and subject to the terms hereinafter stated, it is mutually agreed as follows:

1. CONTRACT DOCUMENTS

It is agreed by the parties hereto that the following list of documents, instruments, technical specifications, plans, drawings and other materials which are attached hereto and bound herewith, incorporated herein by reference or otherwise referenced in these documents constitute and shall be referred to either as the "Contract Documents" or the "Contract," and all of said documents, instruments, technical specifications, Plans, Drawings and other materials taken together as a whole constitute the Contract between the parties hereto, and they are as fully a part of this agreement as if they were set out verbatim and in full herein:

Advertisement of Notice of Invitation for Bids
Instructions to Bidders
Commitment to M/WBE Participation
Article III, Divisions 1, 2, and 3 of Chapter 28, D.R.M.C.
Bid Bond
Addenda (as applicable)

Equal Employment Opportunity Provisions (Appendix A and Appendix F)
Bid Form
Contract Form
General Contract Conditions
Special Contract Conditions
Performance and Payment Bond
Notice to Apparent Low Bidder
Notice to Proceed
Contractor's Certification of Payment Form
Final/Partial Lien Release Form
Certificate of Contract Release
Change Orders (as applicable)
Federal Requirements (as applicable)
Prevailing Wage Rate Schedule(s)
Technical Specifications
Contract Drawings
Accepted Shop Drawings

2. SCOPE OF WORK

The Contractor agrees to and shall furnish all labor, tools, supplies, equipment, materials and everything necessary for and required to do, perform and complete all of the Work described, drawn, set forth, shown and included in said Contract Documents.

3. TERMS OF PERFORMANCE

The Contractor agrees to undertake the performance of the Work under this Contract within ten (10) days after being notified to commence work by issuance of a Notice to Proceed in substantially the form contained herein from the Manager and agrees to fully complete said Work within **210** (Two Hundred Ten Days) consecutive calendar days from the effective date of said Notice, plus such extension or extensions of time as may be granted in accordance with the provisions of the General Contract Conditions and any applicable Special Contract Conditions.

4. TERMS OF PAYMENT

The City agrees to pay the Contractor for the performance of all of the Work required under this Contract, and the Contractor agrees to accept as the Contractor's full and only compensation therefore, such sum or sums of money as may be proper in accordance with the price or prices set forth in the Contractor's Bid Form hereto attached and made a part hereof for **bid item numbers 202-01 through 630-02(Seventy-Six[76] total bid items**, the total estimated cost thereof being, **One Million Five Hundred Sixteen Thousand Four Hundred Twenty-Nine Dollars and Fifty-Six Cents (\$1,516,429.56)**. Adjustments to said Contract Amount and payment of amounts due hereunder shall be made in accordance with the provisions of the General Contract Conditions and any applicable Special Contract Conditions.

5. NO DISCRIMINATION IN EMPLOYMENT

In connection with the performance of the Work under this Contract, the Contractor agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability; and the Contractor further agrees to insert the foregoing provision in all subcontracts hereunder.

6. COMPLIANCE WITH M/WBE REQUIREMENT

This Contract is subject to all applicable provisions of Divisions 1 and 3 of Article III, of Chapter 28, Denver Revised Municipal Code (D.R.M.C.), designated as Sections 28-31 – 28-36 and 28-52 – 28-90 D.R.M.C. and referred to in this Contract as the "M/WBE Ordinance". Without limiting the general applicability of the foregoing, the Contractor acknowledges its continuing duty, pursuant to Sections 28-72, 28-73 and 28-75 of the D.R.M.C., to maintain throughout the duration of this Contract, compliance with the level of minority and Woman business enterprise participation, upon which the City approved the award of this Contract to the Contractor and the Contractor further acknowledges that failure to maintain such participation commitments or otherwise comply with the requirements of the M/WBE Ordinance shall subject the

Contractor to sanctions in accordance with Section 28-77 of the D.R.M.C. Nothing contained in this provision or in the M/WBE Ordinance shall negate the City's right to prior approval of subcontractors, or substitutes therefore, under this Contract

7. WAGE RATE REQUIREMENTS

In performance of all Work hereunder, the Contractor agrees to comply with and be bound by all requirements and conditions of the City's Payment of Prevailing Wages Ordinance, Sections 20-76 through 20-79, D.R.M.C. and any determinations made by the City pursuant thereto.

8. APPLICABILITY OF LAWS

The Agreement between the Contractor and the City shall be deemed to have been made in the City and County of Denver, State of Colorado and shall be subject to, governed by, and interpreted and construed by or in accordance with the laws of the State of Colorado and the Charter, Revised Municipal Code, Rules, Regulations, Executive Orders and fiscal rules of the City. As such, the Contractor shall at all times comply with the provisions of the Charter, Revised Municipal Code, Rules, Regulations, Executive Orders and fiscal rules of the City, and those State of Colorado and Federal Laws, Rules and Regulations, which in any manner limit, control or apply to the actions or operations of the Contractor, any subcontractors, employees, agents or servants of the Contractor engaged in the Work or affecting the materials and equipment used in the performance of the Work, as the same may be, from time to time, promulgated, revised or amended. The Charter and Revised Municipal Code of the City and County of Denver, as the same may be amended from time to time, are hereby expressly incorporated into this Agreement as if fully set out herein by this reference.

9. APPROPRIATION

The amount of money, which has been appropriated and encumbered for the purpose of this contract, to date, is equal to or in excess of the Contract Amount. The Manager, upon reasonable written request, will advise the Contractor in writing of the total amount of appropriated and encumbered funds, which remain available for payment for all Work under the Contract.

The issuance of any change order or other form or order or directive by the City which would cause the aggregate payable under the contract to exceed the amount appropriated for the contract is expressly prohibited. In no event shall the issuance of any change order or other form of order or directive by the City be considered valid or binding if it requires additional compensable work to be performed, which work will cause the aggregate amount available under the Contract to exceed the amount appropriated and encumbered for this Contract, unless and until such time as the Contractor has been advised in writing by the Manager that a lawful appropriation, sufficient to cover the entire cost of such additional work, has been made.

It shall be the responsibility of the Contractor to verify that the amounts already appropriated for this Contract are sufficient to cover the entire cost of such work, and any work undertaken or performed in excess of the amount appropriated is undertaken or performed in violation of the terms of this contract, without the proper authorization for such work, and at the Contractor's own risk.

10. APPROVALS

In the event this Contract calls for the payment by the City of five hundred thousand dollars (\$500,000.00) or more, approval by the Board of Councilmen of the City and County of Denver, acting by ordinance, in accordance with Section 3.2.6 of the Charter of the City and County of Denver, is and shall be an express condition precedent to the lawful and binding execution and effect and performance of this contract.

11. ASSIGNMENT

The Contractor shall not assign any of its rights, benefits, obligations or duties under this Contract except upon the prior written consent and approval of the Manager to such assignment.

12. DISPUTES RESOLUTION PROCESS

It is the express intention of the parties to this Contract that all disputes of any nature whatsoever regarding the Contract including, but not limited to, any claims for compensation or damages arising out of breach or default under this Contract, shall be resolved by administrative hearing pursuant to the provisions of Section 56-106, D.R.M.C., or, as applicable, Section 28-33 D.R.M.C. for Minority and Woman Business Enterprise disputes. The Contractor expressly agrees that this dispute resolution process is the only dispute resolution

mechanism that will be recognized by the parties for any claims put forward by the Contractor, notwithstanding any other claimed theory of entitlement on the part of the Contractor or its subcontractors or suppliers.

13. CONTRACT BINDING

It is agreed that this Contract shall be binding on and inure to the benefit of the parties hereto, their heirs, executors, administrators, assigns and successors.

14. PARAGRAPH HEADINGS

The captions and headings set forth herein are for convenience of reference only and shall not be construed so as to define or limit the terms and provisions hereof.

15. SEVERABILITY

It is understood and agreed by the parties hereto that, if any part, term, or provision of this Contract, except for the provisions of this Contract requiring prior appropriation and limiting the total amount to be paid by the City, is by the courts held to be illegal or in conflict with any law of the State of Colorado, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular part, term or provision held to be invalid.

16. ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS:

Contractor consents to the use of electronic signatures by the City. The Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

Contract Control Number:

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at Denver, Colorado as of

SEAL

CITY AND COUNTY OF DENVER

ATTEST:

By _____

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

By _____

By _____

By _____



IN WITNESS WHEREOF, the parties have executed this agreement and affixed their seals at Denver, Colorado as of the day first above written.

Contract Control Number: 201734986

Vendor Name: STURGEON ELECTRIC COMPANY, INC.

By: 

Name: Don Egan
(please print)

Title: Regional Vice President
(please print)

ATTEST: [if required]

By: 

Name: Krysta Brewer
(please print)

Title: Manager Administrator
(please print)



**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS**

General Contract Conditions

INDEX

TITLE 1		
DEFINITIONS		1
101	CITY	1
102	CONTRACT	1
103	CONTRACT AMOUNT	1
104	CONTRACT DOCUMENTS	1
105	CONTRACT TIME	1
106	CONTRACTOR	2
107	CONTRACTOR PERSONNEL	2
108	DAYS	2
109	DEPUTY MANAGER	2
110	DESIGNER	2
111	FINAL COMPLETION	2
112	MANAGER	3
113	PRODUCT DATA	3
114	PROJECT	3
115	PROJECT MANAGER	3
116	SAMPLES	3
117	SHOP DRAWINGS	3
118	SUBCONTRACTOR	3
119	SUBSTANTIAL COMPLETION	3
120	SUPPLIER	4
121	WORK	4
TITLE 2		
CITY ADMINISTRATIVE ORGANIZATIONS; LINE OF AUTHORITY		5
201	DEPARTMENT OF AVIATION	5
202	MANAGER OF AVIATION	5
203	DEPARTMENT OF PUBLIC WORKS	5
204	MANAGER OF PUBLIC WORKS	5
205	BUILDING INSPECTION	5
206	ZONING	5
207	DIVISION OF SMALL BUSINESS OPPORTUNITY	6
208	CITY AUDITOR	6
209	MANAGER OF FINANCE	6
210	CITY ATTORNEY	6
211	OFFICE OF RISK MANAGEMENT	6
212	CITY'S CONTRACT ADMINISTRATION LINE OF AUTHORITY	6
213	CITY'S COMMUNICATION WITH THE CONTRACTOR	7

TITLE 3		
CONTRACTOR PERFORMANCE AND SERVICES.....		8
301 CONSIDERATION		
(CONTRACTOR'S PROMISE OF PERFORMANCE).....		8
302 NOTICE TO PROCEED AND COMPLETION OF THE WORK		8
303 EXACT CONTRACTOR PERFORMANCE		8
304 SUBSTITUTED PERFORMANCE.....		8
305 WORK PERFORMED UNDER ADVERSE		
WEATHER CONDITIONS.....		9
306 WORKING HOURS AND SCHEDULE		9
307 CONTRACTOR'S SUPERINTENDENT		10
308 COMMUNICATIONS		10
309 CONTRACTOR SUBMITTALS		
AND OTHER WRITTEN COMMUNICATIONS TO THE CITY.....		10
310 COMPETENCE OF CONTRACTOR'S WORK FORCE		11
311 NO EMPLOYMENT OF ILLEGAL ALIENS		
TO PERFORM WORK UNDER THE CONTRACT		11
312 CONDUCT OF CONTRACTOR'S PERSONNEL		12
313 SUGGESTIONS TO CONTRACTOR.....		12
314 WORK FORCE		12
315 CONSTRUCTION MACHINES AND STANDBY EQUIPMENT		13
316 CUTTING AND PATCHING THE WORK		13
317 PERMITS AND LICENSES		13
318 CONSTRUCTION SURVEYS		14
319 PRESERVATION OF PERMANENT		
LAND SURVEY CONTROL MARKERS		14
320 TRADEMARKS, COPYRIGHTS AND PATENTED DEVICES,		
MATERIALS, AND PROCESSES		15
321 PROJECT SIGNS.....		15
322 PUBLICITY AND ADVERTISING.....		16
323 TAXES		16
324 DOCUMENTS AND SAMPLES AT THE SITE		17
325 CLEANUP DURING CONSTRUCTION.....		17
326 SANITARY FACILITIES.....		18
327 POWER, LIGHTING, HEATING, VENTILATING,		
AIR CONDITIONING AND WATER SERVICES		18
 TITLE 4		
CONTRACT DOCUMENTS (DRAWINGS AND TECHNICAL SPECIFICATIONS).....		19
401 CONTRACT DOCUMENTS - REVIEW AND INTERPRETATION.....		19
402 OWNERSHIP OF CONTRACT DRAWINGS		
AND TECHNICAL SPECIFICATIONS.....		20
403 CONTRACT DRAWINGS AND TECHNICAL SPECIFICATIONS		
ISSUED TO THE CONTRACTOR		20
404 REQUESTS FOR INFORMATION OR CLARIFICATION		21
405 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES		21
406 SUBSTITUTION OF MATERIALS AND EQUIPMENT		22
 TITLE 5		
SUBCONTRACTS		24
501 SUBCONTRACTS.....		24
502 SUBCONTRACTOR ACCEPTANCE		24
 TITLE 6		
TIME OF COMMENCEMENT AND COMPLETION		27
601 BEGINNING, PROGRESS AND TIME OF COMPLETION		27
602 LIQUIDATED DAMAGES; ADMINISTRATIVE COSTS;		

ACTUAL DAMAGES.....	27
603 DELAY DAMAGES.....	28
TITLE 7	
COOPERATION, COORDINATION AND RATE OF PROGRESS	29
701 COOPERATION WITH OTHER WORK FORCES	29
702 COORDINATION OF THE WORK.....	30
703 COORDINATION OF PUBLIC CONTACT.....	30
704 RATE OF PROGRESS	30
TITLE 8	
PROTECTION OF PERSONS AND PROPERTY	32
801 SAFETY OF PERSONS	32
802 PROTECTIVE DEVICES AND SAFETY PRECAUTIONS	33
803 PROTECTION OF PROPERTY AND WORK IN PROGRESS	33
804 PROTECTION OF MUNICIPAL, PUBLIC SERVICE OR PUBLIC UTILITY SYSTEMS	34
805 PROTECTION OF STREET AND ROAD SYSTEM	35
806 PROTECTION OF DRAINAGE WAYS.....	36
807 PROTECTION OF THE ENVIRONMENT	36
808 HAZARDOUS AND EXPLOSIVE MATERIALS OR SUBSTANCES.....	37
809 ARCHAEOLOGICAL AND HISTORICAL DISCOVERIES	37
TITLE 9	
COMPENSATION	38
901 CONSIDERATION (CITY'S PROMISE TO PAY).....	38
902 PAYMENT PROCEDURE	38
903 SCHEDULE OF VALUES IN LUMP SUM CONTRACTS	39
904 UNIT PRICE CONTRACTS.....	39
905 PROGRESS PERIOD.....	39
906 APPLICATIONS FOR PAYMENT.....	40
907 RELEASES AND CONTRACTORS CERTIFICATIONS OF PAYMENT	41
908 RETAINAGE	41
909 ADDITIONAL WITHHOLDING OF PROGRESS PAYMENTS	42
910 FINAL ESTIMATE AND PAYMENT.....	43
911 ACCOUNTING OF COSTS AND AUDIT	43
TITLE 10	
WAGE	45
1001 PREVAILING WAGE ORDINANCE.....	45
1002 POSTING OF THE APPLICABLE WAGE RATES.....	45
1003 RATE AND FREQUENCY OF WAGES PAID.....	45
1004 REPORTING WAGES PAID	45
1005 FAILURE TO PAY PREVAILING WAGES	46
TITLE 11	
CHANGES IN THE WORK, CONTRACT PRICE OR CONTRACT TIME	47
1101 CHANGE ORDER.....	47
1102 CITY INITIATED CHANGES	47
1103 CONTRACTOR CHANGE REQUEST.....	48
1104 ADJUSTMENT TO CONTRACT AMOUNT	51
1105 TIME EXTENSIONS.....	54
TITLE 12	
CONTRACTOR CLAIMS FOR ADJUSTMENT AND DISPUTES.....	56
1201 NOTICE OF INTENT TO CLAIM.....	56

1202	SUBMITTAL OF CLAIMS	56
1203	WAIVER OF CLAIMS	58
TITLE 13		
DISPUTES		59
1301	DISPUTES	59
TITLE 14		
SITE CONDITIONS		60
1401	DIFFERING SITE CONDITIONS.....	60
1402	SITE INSPECTIONS AND INVESTIGATIONS.....	60
TITLE 15		
PERFORMANCE AND PAYMENT BONDS		62
1501	SURETY BONDS	62
1502	PERFORMANCE BOND	62
1503	PAYMENT BOND.....	62
TITLE 16		
INSURANCE AND INDEMNIFICATION		63
1601	INSURANCE	63
1602	DEFENSE AND INDEMNIFICATION	63
TITLE 17		
INSPECTION AND DEFECTS		64
1701	CONSTRUCTION INSPECTION BY THE CITY	64
1702	AUTHORITY OF INSPECTORS	64
1703	OBSERVABLE DEFECTS.....	64
1704	DEFECTS - UNCOVERING WORK	64
1705	LATENT DEFECTS	65
1706	REMOVAL OF DEFECTIVE MATERIALS AND WORK	65
TITLE 18		
WARRANTIES, GUARANTEES AND CORRECTIVE WORK.....		66
1801	CONTRACTOR'S WARRANTIES, GUARANTEES AND CORRECTION OF WORK	66
1802	PERFORMANCE DURING WARRANTY PERIOD	67
TITLE 19		
SUBSTANTIAL COMPLETION OF THE WORK.....		69
1901	CONTRACTOR'S NOTICE OF SUBSTANTIAL COMPLETION	69
1902	INSPECTION AND PUNCH LIST	69
1903	CERTIFICATE OF SUBSTANTIAL COMPLETION.....	69
1904	RIGHT OF EARLY OCCUPANCY OR USE	69
TITLE 20		
FINAL COMPLETION AND ACCEPTANCE OF THE WORK.....		71
2001	CLEAN-UP UPON COMPLETION.....	71
2002	FINAL COMPLETION AND ACCEPTANCE OF THE WORK	71
2003	FINAL SETTLEMENT.....	71
TITLE 21		
SUSPENSION OF WORK.....		74
2101	SUSPENSION OF WORK.....	74
2102	SUSPENSION OF THE WORK FOR THE CITY'S CONVENIENCE	74
2103	SUSPENSION BECAUSE OF ORDER OF CITY, STATE	

OR FEDERAL COURT OR AGENCY	75
2104 SUSPENSION RESULTING FROM CONTRACTOR'S FAILURE TO PERFORM.....	75
TITLE 22	
CITY'S RIGHT TO TERMINATE THE CONTRACT	76
2201 TERMINATION OF CONTRACT FOR CAUSE	76
2202 TERMINATION OF CONTRACT FOR CONVENIENCE OF THE CITY	77
TITLE 23	
MISCELLANEOUS PROVISIONS	80
2301 PARTIES TO THE CONTRACT.....	80
2302 FEDERAL AID PROVISIONS.....	80
2303 NO WAIVER OF RIGHTS	80
2304 NO THIRD PARTY BENEFICIARY	80
2305 GOVERNING LAW; VENUE.....	81
2306 ABBREVIATIONS	81
2307 STATUTE OF LIMITATIONS IN C.R.S. § 13-80-102(1)(h)	81

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Transportation & Mobility Division

SPECIAL CONTRACT CONDITIONS

SC-1 CONSTRUCTION SPECIFICATIONS

Except as amended herein or in the attached Technical Specifications, all Work performed under the terms of this Contract shall be governed by the applicable provisions of the following latest editions:

City and County of Denver:

Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS,
2011 Edition.

Transportation Standards and Details for the Engineering Division

City and County of Denver Traffic Standard Drawings

Wastewater Management Division

– *Standard Detail Drawings*

– *Public Works Wastewater Capital Projects Management Standard Construction Specifications*

Colorado Department of Transportation:

Standard Specifications for Road and Bridge Construction
(Sections 200 through 700 of the 2011 Edition)

Federal Highway Administration:

Manual on Uniform Traffic Control Devices for Streets & Highways (MUTCD)

Building & Fire Codes:

Building Code of the City and County of Denver

(International Building Code 2009 Series, City and County of Denver Amendments 2011)

National Fire Protection Association Standards

(As referenced in the Building Code of the City and County of Denver)

The aforementioned City and County of Denver documents are available for review at the Capital Projects Management Office, 201 W. Colfax Ave., Dept. 506, (5th floor), Denver, CO 80202. The *Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS* is available at: <https://www.denvergov.org/content/denvergov/en/contract-administration/contractor-resources.html>. *Transportation Standards and Details for the Engineering Division* and the Wastewater Management Division – *Standard Detail Drawings*, are available at <http://www.denvergov.org>.

The “*Colorado Department of Transportation Standard Specifications for Road and Bridge Construction*” is available for review on CDOT’s website at <http://www.coloradodot.info/> and can be purchased from the Colorado Department of Transportation.

The *Manual on Uniform Traffic Control Devices for Streets & Highways* is available for review at the Federal Highway Administration Website at: www.fhwa.dot.gov. The FHWA website also contains purchasing information.

SC-2 DEPUTY MANAGER / CITY ENGINEER

General condition 109 DEPUTY MANAGER is hereby deleted in its entirety and replaced with the following:

The “Deputy Manager” means the official who reports directly to the Manager and exercises supervisory responsibility in the City agency defined in Title 2 herein that is responsible for the Project. The Manager hereby designates the City Engineer as the Deputy Manager for purposes of this Contract. The City Engineer shall have responsibility for this Project and shall undertake all duties, responsibilities, rights and authority, including specific actions and decisions, delegated to the Deputy Manager under the various terms and conditions of this Contract.

SC-3 ENGINEERING DIVISION / CITY ENGINEER

The Engineering Division is a unit of the Department of Public Works and is supervised by the City Engineer, who is subordinate to the Manager of Public Works. This Division is responsible for the planning, design, construction, operation and maintenance of all of the City's transportation facilities and the planning, design and construction of all of the City’s wastewater facilities, except for the City's Municipal Airport System. All other references to the Transportation Division or the Deputy Manager of Public Works for Transportation are deleted and replaced with references to the Engineering Division and City Engineer, respectively.

SC-4 WASTEWATER MANAGEMENT DIVISION

The Wastewater Management Division is a unit of the Department of Public Works and is supervised by the Deputy Manager of Public Works for Wastewater Management, who is subordinate to the Manager of Public Works. This Division is responsible for the operation and maintenance of the City's wastewater facilities.

SC-5 CITY DELEGATION OF AUTHORITY

With reference to General Contract Condition 109, DEPUTY MANAGER and General Contract Condition 212, CITY’S CONTRACT ADMINISTRATION LINE OF AUTHORITY, the Manager hereby designates the City Engineer as the City official responsible for those certain actions and decisions designated as the responsibility of the Deputy Manager under the General Conditions and delegates to the City Engineer the authority necessary to undertake those responsibilities under this Contract. The Director shall have supervisory responsibility over the Project Manager. Additionally, Contractor questions concerning the Plans and Technical Specifications shall be directed to:

Denver Department of Public Works / Engineering Division,

City Project Manager
John Yu

Telephone
(720) 865-3176

Consultant
Kimley-Horn

Telephone
(303) 228-2300

SC-6 LIQUIDATED DAMAGES

Should the Contractor fail to complete all Work within the Contract Time allocated under the Contract Form at Paragraph 3, TERMS OF PERFORMANCE, the Contractor shall become liable to the City and County of Denver for liquidated damages, and not as a penalty, at the rate of \$500.00 for each Day that the Contractor exceeds the time limits herein specified, all in accordance with provisions of General Contract Condition 602, LIQUIDATED DAMAGES; ADMINISTRATIVE COSTS; ACTUAL DAMAGES.

Representative hourly rates for the City administrative costs described in General Contract Condition 602.2 shall be as follows for this Project:

Project Manager	\$69 per hour
Project Engineer	\$63 per hour
Inspector	\$49 per hour
Surveying, if necessary	\$100 per hour

SC-7 SUBCONTRACTS

In accordance with General Contract Condition 501, SUBCONTRACTS, no limit shall apply to that percentage of the Work, which may be sublet providing that the subcontractors receive prior approval in accordance with General Contract Condition 502, SUBCONTRACTOR ACCEPTANCE.

SC-8 RESERVED

SC-9 PAYMENTS TO CONTRACTORS

The application for payment shall be submitted through Textura® Corporations Construction Management Website. Contractor recognizes and agrees that it shall be required to use the Textura Construction Payment Management System for this Project. Contractor further agrees that, to the fullest extent possible within the CPM System, the City shall be entitled to all non-Confidential records, reports, data and other information related to the project that are available to Contractor through the CPM System, including, but not limited to, information related to Contractor and subcontractor billings. To that end, Contractor agrees that it will activate any available settings within the CPM System that are necessary to grant the City access to such non-Confidential information related to the contract and the project. Applications for payment shall be based on the Contract Unit Prices or the approved Schedule of Values described in GC 903.1

In accordance with General Contract Condition 902, PAYMENT PROCEDURE, the party(ies) responsible for review of all Pay Applications shall be:

<u>Agency/Firm</u>	<u>Name</u>	<u>Telephone</u>
Public Works/Transportation & Mobility Division	John Yu	(720) 865-3176

In accordance with General Contract Condition 906, APPLICATIONS FOR PAYMENT, each Application submitted shall include the following:

1. The estimate of Work completed shall be based on the approved schedule of values or unit prices, as applicable, and the percent of the Work complete.
2. Each Application for Payment shall include each and every independent subcontractor's payroll information including pay dates and pay amounts.
3. The Contractor shall also submit to the Auditor and other appropriate officials of the City in a timely fashion, information required by General Contract Condition 1004, REPORTING WAGES PAID.
4. Applications for Payment must be accompanied by completed Partial or Final Claim Release Form, as appropriate, from EACH subcontractor and supplier, **AND** the Contractors' Certification of Payment Form (CCP), unless an exception is approved pursuant to General contract condition 907.

The forms, Final/Partial Release and Certificate of Payment (Subcontractor/Supplier) and the Contractor's Certification of Payment (CCP), both of which must be used are attached below. If subcontractor or supplier payments are disbursed via Textura® CPM, those systems generated Release and CCP forms are acceptable.

**DEPARTMENT OF PUBLIC WORKS
Engineering Division**

**FINAL/PARTIAL RELEASE AND CERTIFICATE OF PAYMENT
(SUBCONTRACTOR/SUPPLIER)**

(PROJECT NO. and NAME)	Date: _____, 20__.
(NAME OF CONTRACTOR)	Subcontract #: _____.
(NAME OF SUBCONTRACTOR/SUPPLIER)	Subcontract Value: \$ _____.
Check Applicable Box:	Last Progress Payment: \$ _____.
<input type="checkbox"/> MBE <input type="checkbox"/> WBE	Date: _____.
	Total Paid to Date: \$ _____.
	Date of Last Work: _____.

The Undersigned hereby certifies that all costs, charges or expenses incurred by the undersigned or on behalf of the undersigned for any work, labor or services performed and for any materials, supplies or equipment provided on the above referenced Project or used in connection with the above referenced Subcontract (the "Work Effort") have been duly paid in full.

The Undersigned further certifies that each of the undersigned's subcontractors and suppliers that incurred or caused to be incurred, on their behalf, costs, charges or expenses in connection with the undersigned's Work Effort on the above referenced Project have been duly paid in full.

In consideration of \$ _____ representing the Last Progress Payment referenced above and in further consideration of the Total Paid to Date, also referenced above, and other good and valuable consideration received and accepted by the undersigned this ____ day of _____, 20__, the Undersigned hereby releases and discharges the City and County of Denver (the "City"), the above referenced City Project, the City's premises and property and the above referenced Contractor from all claims, liens, rights, liabilities, demands and obligations, whether known or unknown, of every nature arising out of or in connection with the performance of the work effort.

As additional consideration for the payments referenced above, the undersigned agrees to defend, indemnify and save and hold harmless the City, its officers, employees, agents and assigns and the above-referenced Contractor from and against all costs, losses, damages, causes of action, judgments under the subcontract and expenses arising out of or in connection with any claim or claims against the City or the Contractor which arise out of the Undersigned's performance of the Work Effort and which may be asserted by the Undersigned or any of its suppliers or subcontractors of any tier or any of their representatives, officers, agents, or employees.

It is acknowledged that this release is for the benefit of and may be relied upon by the City and the referenced Contractor.

The foregoing shall not relieve the undersigned of any obligation under the provisions of the Undersigned's subcontract, as the subcontract may have been amended, which by their nature survive completion of the Undersigned's work effort including, without limitation, warranties, guarantees, insurance requirements and indemnities.

STATE OF COLORADO) ss. CITY OF _____)	(Name of Subcontractor)
Signed and sworn before me this day of _____, 20__.	By: _____
_____ Notary Public/Commissioner of Oaths My Commission Expires	Title: _____



Instructions for Completing the Contractor/Consultant Certification of Payment Form

Office of Economic Development
Division of Small Business Opportunity
Compliance Unit
201 W. Colfax Ave. Dept. 907
Denver, CO 80202
Phone: 720-913-1999
DSBO@denvergov.org

Note: The attached Contractor/Consultant Certification of Payment form must be completed by the Contractor/ Subconsultant and all subcontractors/subconsultant or suppliers used on the project at **any tier** and submitted with each pay application. The Contractor/Consultant is responsible for the accuracy of all information provided and is required to have each subcontractor/subconsultant or supplier fill out the appropriate forms. Please be sure to complete all information requested at the top of the form, including the name of the person who prepared this form.

If you reproduce this form, you must continue to list each of the originally listed firms, as well as any additional firms used during the performance period of the contract. Please complete an additional CCP if there is second tier-ing involved.

If you have any questions, please call the Compliance Unit of DSBO at 720.913.1999.

Instructions for Completing the Contractor/Consultant Certification of Payment Form, per Column

Contractor/Subcontractor or Subconsultant/Supplier Name: In the space provided, list all subcontractors/ subconsultants and suppliers used on the project. For all M/W/S/E/DBEs use the exact name listed in the DSBO Directory.

M/W/S/E/DBE/NON: For each name listed, indicate whether the entity is a certified M/W/S/E/DBE.

Column A: Provide the contract amount, as listed at bid time, for the Contractor/Consultant and each subcontractor/subconsultant or supplier.

Column B: Provide the percentage portion of each listed subcontractor/subconsultant or supplier contract amount (Column A) compared to the total original contract amount in (I).

Column C: Provide the original contract amount (Column A) for each subcontractor/subconsultant or supplier plus any awarded alternate and/or change order amounts applicable. If an alternate/change order does not apply to the listed firm, re-enter the original contract amount (Column A).

Column D: Provide the percent portion of each listed subcontractor/subconsultant or supplier contract amount (Column C) compare to the current total contract amount in (II).

Column E: Provide the amount requested for work performed or materials supplied by each listed subcontractor/subconsultant or supplier for this pay application. The sum of the items in this column should equal the estimated amount requested for this pay application.

Column F: Provide the amount paid to each subcontractor/subconsultant or supplier on the previous pay application. Enter the previous pay application number in the column heading. The sum of the items listed in this column should equal the warrant amount paid to the Contractor/Consultant on the previous pay application. The amounts paid to the subcontractor/subcontractor or suppliers should be the actual amount of each check issued.

Column G: Provide the net paid to date for the Contractor/Subconsultant and each listed subcontractor/subconsultant or supplier.

Column H: Provide the percent portion of the net paid to date (Column G) for the Contractor/Subconsultant and each listed subcontractor/subconsultant or supplier of the current total contract amount in (II).

Rev: 031816

SC-10 CONTRACT FORMS

In accordance with the terms and conditions of the Contract Documents, the City requires the use of certain form documents in complying with or satisfying various obligations, notifications and conditions in contracting with the City or performing Work hereunder. These form documents are referenced by title throughout the Contract Documents for mandatory use as directed. The following are the forms that shall be detached and utilized in accordance with the Contract Documents:

1. Performance and Payment Bond
2. Performance and Payment Bond Surety Authorization Letter (Sample)
3. Final/Partial Lien Release.

The following are forms that will be issued by the City during construction:

1. Notice to Apparent Low Bidder (Sample)
2. Notice to Proceed (Sample)
3. Certificate of Contract Release (Sample)

SC-11 CONSTRUCTION INSPECTION BY THE CITY

General Condition 1701, CONSTRUCTION INSPECTION BY THE CITY, is modified as follows:

.1 Persons who are employees of the City or who are under contract to the City or the City as lessee will be assigned to inspect and test the Work. These persons may perform any tests and observe the Work to determine whether or not designs, materials used, manufacturing and construction processes and methods applied, and equipment installed satisfy the requirements of the drawings and specifications, accepted Shop Drawings, Product Data and Samples, and the General Contractor's warranties and guarantees. The General Contractor shall permit these inspectors unlimited access to the Work and provide means of safe access to the Work, which cost shall be included as a Cost of the Work without any increase to the Guaranteed Maximum Price. In addition, General Contractor shall provide whatever access and means of access are needed to off-site facilities used to store or manufacture materials and equipment to be incorporated into the Work and shall respond to any other reasonable request to further the inspector's ability to observe or complete any tests. Such inspections shall not relieve the General Contractor of any of its quality control responsibilities or any other obligations under the Contract. All inspections and all tests conducted by the City are for the convenience and benefit of the City. These inspections and tests do not constitute acceptance of the materials or Work tested or inspected, and the City may reject or accept any Work or materials at any time prior to the inspections pursuant to G.C. 2002, whether or not previous inspections or tests were conducted by the inspector or a City representative.

.2 Building Inspection will perform building code compliance inspections for structures designed for human occupancy. It is the General Contractor's responsibility to schedule and obtain these inspections. If a code compliance inspection results in identification of a condition which will be at variance to the Contract Documents, the General Contractor shall immediately notify the Project Manager and confirm such notification with formal correspondence no later than forty-eight (48) hours after the occurrence.

.3 When any unit of government or political subdivision, utility or Railroad Corporation is to pay a portion of the cost of the Work, its respective representatives shall have the right to inspect the Work. This inspection shall not make any unit of government or political subdivision, utility or Railroad Corporation a party to the Contract, and shall not interfere with the rights of either party.

SC-12 DISPOSAL OF NON-HAZARDOUS WASTE AT DADS

In accordance with the Landfill Agreement made between the City and Waste Management of Colorado, Inc., bidders will be required to haul dedicated loads (non-hazardous entire loads of waste) to the Denver-Arapahoe Disposal Site ("DADS") for disposal. DADS is located at Highway 30 and Hampden Avenue in Arapahoe County, Colorado. The City will pay all fees associated with such disposal but the bidder shall be responsible for the costs of transporting the loads. Non-hazardous waste is defined as those substances and materials not defined or classified as hazardous by the Colorado Hazardous Waste Commission pursuant to C.R.S. §25-15-101(6), as amended from time to time, and includes construction debris, soil and asbestos. Bidders shall not use Gun Club Road between I-70 and Mississippi Avenue as a means of access to DADS.

SC-13 PROHIBITION ON USE OF CCA-TREATED WOOD PRODUCTS

The use of any wood products pressure-treated with chromated copper arsenate (CCA) is prohibited. Examples of CCA-treated wood products include wood used in play structures, decks, picnic tables, landscaping timbers, fencing, patios, walkways and boardwalks.

SC-14 WAIVER OF: PART 8 OF ARTICLE 20 OF TITLE 13, COLORADO REVISED STATUTES.

The Contractor specifically waives all the provisions of Part 8 of Article 20 of Title 13, Colorado Revised Statutes regarding defects in the Work under this Construction Contract.

SC-15 ATTORNEY'S FEES

Colorado Revised Statute 38-26-107 requires that in the event any person or company files a verified statement of amounts due and unpaid in connection with a claim for labor and materials supplied on this project, the City shall withhold from payments to the Contractor sufficient funds to insure the payment of any such claims. Should the City and County of Denver be made a party to any lawsuit to enforce such unpaid claims or any lawsuit arising out of or relating to such withheld funds, the Contractor agrees to pay to the City its costs and a reasonable attorney's fee which cost shall be included as a Cost of the Work.

Because the City Attorney Staff does not bill the City for legal services on an hourly basis, the Contractor agrees a reasonable fee shall be computed at the rate of one hundred dollars per hour of City Attorney time.

SC-16 INSURANCE

General Condition 1601 is hereby deleted in its entirety and replaced with the following:

(1) **General Conditions:** Contractor agrees to secure, at or before the time of execution of this Agreement, the following insurance covering all operations, goods or services provided pursuant to this Agreement. Contractor shall keep the required insurance coverage in force at all times during the term of the Agreement, or any extension thereof, during any warranty period, and for eight (8) years after termination of the Agreement. The required insurance shall be underwritten by an insurer licensed or authorized to do business in Colorado and rated by A.M. Best Company as "A-"VIII or better. Each policy shall contain a valid provision or endorsement requiring notification to the City in the event any of the required policies be canceled or non-renewed before the expiration date thereof. Such written notice shall be sent to the parties identified in the Notices section of this Agreement. Such notice shall reference the City contract number listed on the signature page of this Agreement. Said notice shall be sent thirty (30) days prior to such cancellation or non-renewal unless due to non-payment of premiums for which notice shall be sent ten (10) days prior. If such written notice is unavailable from the insurer, contractor shall provide written notice of cancellation, non-renewal and any reduction in coverage to the parties identified in the Notices section by certified mail, return receipt requested within three (3) business days of such notice by its insurer(s) and referencing the City's contract number. If any policy is in excess of a deductible or self-insured retention, the City must be notified by the Contractor. Contractor shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Agreement are the minimum requirements, and these requirements do not lessen or limit the liability of the Contractor. The Contractor shall maintain, at its own expense, any additional kinds or amounts of insurance that it may deem necessary to cover its obligations and liabilities under this Agreement.

(2) **Proof of Insurance:** Contractor shall provide a copy of this Agreement to its insurance agent or broker. Contractor may not commence services or work relating to the Agreement prior to placement of coverage. Contractor certifies that the certificate of insurance attached as part of the Contract Documents, preferably an ACORD certificate, complies with all insurance requirements of this Agreement. The City requests that the City's contract number be referenced on the Certificate. The City's acceptance of a certificate of insurance or other proof of insurance that does not comply with all insurance requirements set forth in this Agreement shall not act as a waiver of Contractor's breach of this Agreement or of any of the City's rights or remedies under this Agreement. The City's Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements.

(3) **Additional Insureds:** For Commercial General Liability and Auto Liability, Contractor and subcontractor's insurer(s) shall name the City and County of Denver, its elected and appointed officials, employees and volunteers as additional insured.

(4) **Waiver of Subrogation:** For all coverages, Contractor's insurer shall waive subrogation rights against the City.

(5) **Subcontractors and Subconsultants:** All subcontractors and subconsultants (including independent contractors, suppliers or other entities providing goods or services required by this Agreement) shall be subject to all of the requirements herein and shall procure and maintain the same coverages required of the Contractor. Contractor shall include all such subcontractors as additional insured under its policies (with the exception of Workers' Compensation) or shall ensure that all such subcontractors and subconsultants maintain the required

coverages. Contractor agrees to provide proof of insurance for all such subcontractors and subconsultants upon request by the City.

(6) **Workers' Compensation/Employer's Liability Insurance:** Contractor shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of \$100,000 per occurrence for each bodily injury claim, \$100,000 per occurrence for each bodily injury caused by disease claim, and \$500,000 aggregate for all bodily injuries caused by disease claims. Contractor expressly represents to the City, as a material representation upon which the City is relying in entering into this Agreement, that none of the Contractor's officers or employees who may be eligible under any statute or law to reject Workers' Compensation Insurance shall effect such rejection during any part of the term of this Agreement, and that any such rejections previously effected, have been revoked as of the date Contractor executes this Agreement.

(7) **Commercial General Liability:** Contractor shall maintain a Commercial General Liability insurance policy with limits of \$1,000,000 for each occurrence, \$1,000,000 for each personal and advertising injury claim, \$2,000,000 products and completed operations aggregate, and \$2,000,000 policy aggregate.

(8) **Business Automobile Liability:** Contractor shall maintain Business Automobile Liability with limits of \$1,000,000 combined single limit applicable to all owned, hired and non-owned vehicles used in performing services under this Agreement

(9) **Additional Provisions:**

- (a) For Commercial General Liability, the policies must provide the following:
 - (i) That this Agreement is an Insured Contract under the policy;
 - (ii) Defense costs in excess of policy limits;
 - (iii) A severability of interests or separation of insureds provision (no insured vs. insured exclusion); and
 - (iv) A provision that coverage is primary and non-contributory with other coverage or self-insurance maintained by the City.
- (b) For claims-made coverage:
 - (i) The retroactive date must be on or before the contract date or the first date when any goods or services were provided to the City, whichever is earlier
- (c) Contractor shall advise the City in the event any general aggregate or other aggregate limits are reduced below the required per occurrence limits. At their own expense, and where such general aggregate or other aggregate limits have been reduced below the required per occurrence limit, the Contractor will procure such per occurrence limits and furnish a new certificate of insurance showing such coverage is in force.

SC-17 GREENPRINT DENVER REQUIREMENTS

In accordance with the City and County of Denver Executive Order 123: Greenprint Denver Office and Sustainability Policy, as amended, Contractor shall adhere to sections of Executive Order 123 pertinent to the construction of the built environment. This includes but is not limited to: all construction and renovation of buildings shall follow instructions and memorandum for high performance buildings; horizontal projects shall include the use of fly ash concrete and recycled aggregate where possible; and, all projects shall recycle construction and demolition waste, and install materials that contain recycled content whenever possible using the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) as guidance. Non-hazardous solid waste that is eligible for reuse or recycling is not subject to the DADS disposal requirement defined in SC-12.

A completed "Greenprint Denver Closeout Form for Construction Projects" shall be delivered to the Project Manager as a submittal requirement of Final Acceptance.

<http://www.denvergov.org/constructioncontracts/Home/ContractorResources/tabid/443154/Default.aspx>

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS

PERFORMANCE AND PAYMENT BOND

Bond No. 014077321

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned STURGEON ELECTRIC COMPANY, INC., 12150 East 112th Avenue Henderson, CO 80640, a corporation organized and existing under and by virtue of the laws of the State of Michigan, hereafter referred to as the "Contractor", and Liberty Mutual Insurance Company, a corporation organized and existing under and by virtue of the laws of the State of Massachusetts, and authorized to transact business in the State of Colorado, as Surety, are held and firmly bound unto the CITY AND COUNTY OF DENVER, a municipal corporation of the State of Colorado, hereinafter referred to as the "City", in the penal sum of One Million Five Hundred Sixteen Thousand Four Hundred Twenty-Nine Dollars and Fifty-Six Cents (\$1,516,429.56), lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves and our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents;

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT:

WHEREAS, the above bounden Contractor has entered into a written contract with the aforesaid City for furnishing all labor and tools, supplies, equipment, superintendence, materials and everything necessary for and required to do, perform and complete the construction of **CONTRACT NO. 201734986 MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE**, Denver, Colorado, and has bound itself to complete the project within the time or times specified or pay liquidated damages, all as designated, defined and described in the said Contract and Conditions thereof, and in accordance with the Plans and Technical Specifications therefore, a copy of said Contract being made a part hereof;

NOW, THEREFORE, if the said Contractor shall and will, in all particulars well and truly and faithfully observe, perform and abide by each and every Covenant, Condition and part of said Contract, and the Conditions, Technical Specifications, Plans, and other Contract Documents thereto attached, or by reference made a part thereof and any alterations in and additions thereto, according to the true intent and meaning in such case, then this obligation shall be and become null and void; otherwise, it shall remain in full force and effect;

PROVIDED FURTHER, that if the said Contractor shall satisfy all claims and demands incurred by the Contractor in the performance of said Contract, and shall fully indemnify and save harmless the City from all damages, claims, demands, expense and charge of every kind (including claims of patent infringement) arising from any act, omission, or neglect of said Contractor, its agents, or employees with relation to said work; and shall fully reimburse and repay to the City all costs, damages, and expenses which it may incur in making good any default based upon the failure of the Contractor to fulfill its obligation to furnish maintenance, repairs or replacements for the full guarantee period provided in the Contract Documents, then this obligation shall be null and void; otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if said Contractor shall at all times promptly make payments of all amounts lawfully due to all persons supplying or furnishing it or its subcontractors with labor and materials, rental machinery, tools or equipment used or performed in the prosecution of work provided for in the above Contract and that if the Contractor will indemnify and save harmless the City for the extent of any and all payments in connection with the carrying out of such Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if the said Contractor fails to duly pay for any labor, materials, team hire, sustenance, provisions, provender, gasoline, lubricating oils, fuel oils, grease, coal, or any other supplies or materials used or consumed by said Contractor or its subcontractors in performance of the work contracted to be done, or fails to pay any person who supplies rental machinery, tools or equipment, all amounts due as the result of the use of such machinery, tools or equipment in the prosecution of the work, the Surety will pay the same in any amount not exceeding the amount of this obligation, together with interest as provided by law;

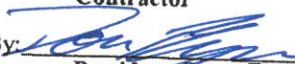
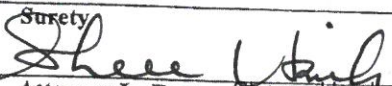
PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to contracts with others in connection with this project, or the work to be performed thereunder, or the Technical Specifications and Plans accompanying the same, shall in any way affect its obligation on this bond and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract, or contracts, or to the work, or to the Technical Specifications and Plans.

IN WITNESS WHEREOF, said Contractor and said Surety have executed these presents as of this

10th day of July, 2017.

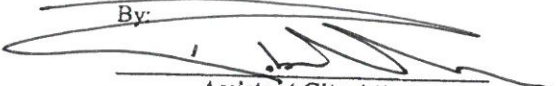
Attest:

Secretary

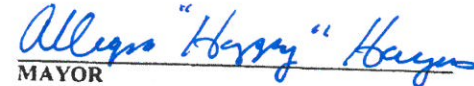

Sturgeon Electric Company, Inc.
Contractor
By: 
President Don Egan, Regional Vice President
Liberty Mutual Insurance Company
Surety
By: 
Attorney-In-Fact Sheree Hsieh

(Accompany this bond with Attorney-in-Fact's authority from the Surety to execute bond, certified to include the date of the bond).

APPROVED AS TO FORM:
Attorney for the City and County of Denver

By: 
Assistant City Attorney

APPROVED FOR THE CITY AND COUNTY OF DENVER

By: 
MAYOR
By: 
EXECUTIVE DIRECTOR OF PUBLIC WORKS
h

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7774331

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Brenda Johnston; Cindy Stellhorn; Cynthia L. Jenkins; Edward L. Mournighan; Ginger J. Krahn; Kimberly E. Kinkead; Michael H. Bill; Michael J. Marsella; Michael M. Bill; Rebecca A. Virt; Sheree Hsieh

all of the city of Indianapolis, state of IN each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 19th day of May, 2017.



The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 19th day of May, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 10th day of July, 2017.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.



MJ INSURANCE

July 13, 2017

Assistant City Attorney
201 W. Colfax Ave. Dept 1207
Denver, Colorado 80202

RE: Sturgeon Electric Company, Inc.

Contract No: 201734986
Project Name: Mill Levy 7A – Traffic Signal Upgrade
Contract Amount: \$1,516,429.56
Performance and Payment Bond No.: 014077321

Dear Assistant City Attorney,

The Performance and Payment Bonds covering the above captioned project were executed by this agency, through Liberty Mutual Insurance Company, on July 10, 2017.

We hereby authorize the City and County of Denver, Department of Public Works, to date all bonds and Powers of attorney to coincide with the date of the contract.

If you should have any additional questions or concerns, please don't hesitate to give me a call at (317) 805-7500.

Thanks you.

Sincerely yours,

Sheree Hsieh
Attorney-in-Fact to Liberty Mutual Insurance Company

Cc: Mr. Mike Ulrich, Liberty Mutual Insurance Company

Your future in focus.

9225 Priority Way West Dr. | Suite 100 | Indianapolis, IN 46240
O 317.805.7500 | F 317.805.7515 | W mjinsurance.com

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7774338

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint Brenda Johnston; Cindy Stellhorn; Cynthia L. Jenkins; Edward L. Mournighan; Ginger J. Krahn; Kimberly E. Kinkead; Michael H. Bill; Michael J. Marsella; Michael M. Bill; Rebecca A. Viri; Sheree Hsieh

all of the city of Indianapolis, state of IN each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 19th day of May, 2017.



The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 19th day of May, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 26, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS - Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts - SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 13th day of July, 20 17.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
7/11/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher Risk Management Services, Inc. Two Pierce Place Itasca IL 60143	CONTACT NAME: Shannon Lentz PHONE (A/C, No., Ext.): 630-285-4418 E-MAIL ADDRESS: shannon_lentz@ajg.com		FAX (A/C, No.): 630-285-3922
	INSURER(S) AFFORDING COVERAGE		
INSURED MYRGROU-01 Sturgeon Electric Company, Inc. 12150 E. 112th Avenue Henderson, CO 80640	INSURER A: Zurich American Insurance Company		NAIC # 16535
	INSURER B: American Zurich Insurance Company		40142
	INSURER C: National Fire & Marine Insurance Co		20079
	INSURER D:		
	INSURER E:		
	INSURER F:		

COVERAGES **CERTIFICATE NUMBER: 33724032** **REVISION NUMBER:**

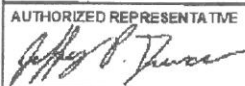
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS EXCLUSION MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	Y	GL0837415422	9/30/2016	9/30/2017	EACH OCCURRENCE	\$1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$100,000
							MED EXP (Any one person)	\$10,000
							PERSONAL & ADV INJURY	\$1,000,000
							GENERAL AGGREGATE	\$2,000,000
							PRODUCTS - COMPOP AGG	\$2,000,000
								\$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	Y	Y	BAP837415520	9/30/2016	9/30/2017	COMBINED SINGLE LIMIT (Ea accident)	\$1,000,000
							BODILY INJURY (Per person)	\$
							BODILY INJURY (Per accident)	\$
							PROPERTY DAMAGE (Per accident)	\$
								\$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB <input checked="" type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$0	Y		42UM030293701	9/30/2016	9/30/2017	EACH OCCURRENCE	\$5,000,000
							AGGREGATE	\$5,000,000
								\$
B	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	WC837415220 (A/O/S) WC837415320 (MA/WI)	9/30/2016 9/30/2016	9/30/2017 9/30/2017	<input checked="" type="checkbox"/> PER STATUTE	
							<input type="checkbox"/> OTH-ER	
							E.L. EACH ACCIDENT	\$1,000,000
							E.L. DISEASE - EA EMPLOYEE	\$1,000,000
							E.L. DISEASE - POLICY LIMIT	\$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Job: #841528 Mill Levy 7A Traffic Signal Upgrade - Contract #201734986

City and County of Denver, its elected and appointed officials, employees and volunteers are shown as additional insured with respect to the General Liability and Automobile Liability coverage as evidenced herein on a primary/non-contributory basis as required by written contract with respect to work performed by the named insured.
See Attached...

CERTIFICATE HOLDER 1556 City and County of Denver Dept of Public Works 201 West Colfax Ave. Dept. 614 Denver CO 80202 USA	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
---	--



**PERFORMANCE AND PAYMENT BOND
SURETY AUTHORIZATION
(SAMPLE)**

FAX NUMBER: 720-913-3183
TELEPHONE NUMBER: 720-913-3267

Assistant City Attorney
201 W. Colfax Ave. Dept 1207
Denver, Colorado 80202

RE: (Company name)

Contract No: 201734986
Project Name: MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE
Contract Amount:
Performance and Payment Bond No.:

Dear Assistant City Attorney,

The Performance and Payment Bonds covering the above captioned project were executed by this agency, through _____ insurance company, on _____, 20_____.

We hereby authorize the City and County of Denver, Department of Public Works, to date all bonds and powers of attorney to coincide with the date of the contract.

If you should have any additional questions or concerns, please don't hesitate to give me a call at _____.

Thank you.

Sincerely,

Denver Public Works/Office of the Executive Director
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/dpw
p. 720.865.8630 | f. 720.865.8795

311 | POCKETGOV.COM | DENVERGOV.ORG | DENVER 8 TV



NOTICE OF APPARENT LOW BIDDER
(SAMPLE)

Current Date

To:

Gentlemen:

The EXECUTIVE DIRECTOR OF PUBLIC WORKS has considered the Bids submitted on June 22, 2017 for work to be done and materials to be furnished in and for:

PROJECT No. 201734986 MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE

as set forth in detail in the Contract Documents for the City and County of Denver, Colorado. It appears that your Bid is fair, equitable, and to the best interest of the City and County; therefore, said Bid is hereby accepted at the bid price contained herein, subject to execution of the Contract Documents and your furnishing the items specified below, the total cost thereof (Contract Amount Written), (Contract Amount Numeric).

It will be necessary for you to appear forthwith at the office of the Department of Public Works, Finance and Administration, 201 W. Colfax Ave. Dept 614, Denver, Colorado 80202, to receive the said Contract Documents, execute the same and return them to the Department of Public Works, Finance and Administration, within the time limit set forth in the Bid Proposal.

In accordance with the requirements set forth in the Contract Documents, you are required to furnish the following documents:

- a. Insurance Certificates: General Liability and Automotive Liability, Workman's Compensation and Employer Liability; or any other coverage required by the contract; and
- b. One original plus four copies of the Power of Attorney relative to Performance and/or Payment Bond;

All construction Contracts made and entered into by the City and County of Denver are subject to Affirmative Action and Equal Opportunity Rules and Regulations, as adopted by the Manager of Public Works, and each contract requiring payment by the City of one-half million dollars (\$500,000.00) or more shall first be approved by the City Council acting by ordinance and in accordance with Section 3.2.6 of the Charter of the City and County of Denver.

Prior to issuance of Notice to Proceed, all Equal Opportunity requirements must be completed. Additional information may be obtained by contacting the Director of Contract Compliance at (720-913-1700).

**NOTICE OF APPARENT LOW BIDDER
(SAMPLE)**

PROJECT NO. 201734986

Page 2

The Bid Security submitted with your Bid, will be returned upon execution of the Contract and furnishing of the Performance Bond. In the event you should fail to execute the Contract and to furnish the performance Bond within the time limit specified, said Bid Security will be retained by the City and County of Denver as liquidated damages, and not as a penalty for the delay and extra work caused thereby.

Dated at Denver, Colorado this _____ day of _____ 20_____.

CITY AND COUNTY OF DENVER

By _____
Executive Director of Public Works

Denver Public Works/Office of the Executive Director
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/dpw
p. 720.865.8630 | f. 720.865.8795

311 | POCKETGOV.COM | DENVERGOV.ORG | DENVER 8 TV



Current Date

**NOTICE TO PROCEED
(SAMPLE)**

Name
Company
Street
City/State/Zip

CONTRACT NO. 201734986, MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE

In accordance with General Contract Condition 302 of the Standard Specifications for Construction, General Contract Conditions, 2011 Edition, you are hereby authorized and directed to proceed on _____ with the work of constructing contract number 201734986, as set forth in detail in the contract documents for the City and County of Denver.

With a contract time of _____ calendar days, the project must be complete on or before _____.

If you have not already done so, you must submit your construction schedule, in accordance with General Contract Condition 306.2.B, to the Project Manager within 10 days. Additionally, you must submit your tax exempt certificate, and copies of your subcontractors' certificates, in accordance with General Contract Condition 323.5, to the Project Manager as soon as possible. Failure to submit these certificates will delay processing of payment applications.

Sincerely,

Lesley B. Thomas
City Engineer

cc:

Denver Public Works/Office of the Executive Director
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/dpw
p. 720.865.8630 | f. 720.865.8795

311 | POCKETGOV.COM | DENVERGOV.ORG | DENVER 8 TV



Certificate of Contract Release
(SAMPLE)

Date

Name

Company

Street

City/State/Zip

RE: Certificate of Contract Release for
201734986, MILL LEVY 7A - TRAFFIC SIGNAL UPGRADE

Received this date of the City and County of Denver, as full and final payment of the cost of the improvements provided for in the foregoing contract, _____ dollars and _____ cents (\$ _____), in cash, being the remainder of the full amount accruing to the undersigned by virtue of said contract; said cash also covering and including full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto, and the undersigned hereby releases said City and County of Denver from any and all claims or demands whatsoever, regardless of how denominated, growing out of said contract.

And these presents are to certify that all persons performing work upon or furnishing materials for said improvements under the foregoing contract have been paid in full and this payment to be made is the last or final payment.

Contractor's Signature

Date Signed

If there are any questions, please contact me by telephone at (720) 913-XXXX. Please return this document via facsimile at (720) 913-1805 and mail to original to the above address.

Denver Public Works/Office of the Executive Director
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/dpw
p. 720.865.8630 | f. 720.865.8795

311 | POCKETGOV.COM | DENVERGOV.ORG | DENVER 8 TV

CITY AND COUNTY OF DENVER
STATE OF COLORADO



Department of Public Works
Prevailing Wage Rates
Contract No: 201734986



MILL LEVY 7A
TRAFFIC SIGNAL UPGRADE

May 22, 2017



DENVER
THE MILE HIGH CITY

Career Service Authority

Denver's Human Resource Agency

201 W. Colfax, Department 412

Denver, CO 80202

p: 720.913.5751

f: 720.913.5720

www.denvergov.org/csa

TO: All Users of the City of Denver Prevailing Wage Schedules

FROM: Susan Keller, Human Resources Technician

DATE: Friday, January 27, 2017

SUBJECT: Latest Change to Prevailing Wage Schedules

Please be advised, prevailing wage rates for some building, heavy, and highway construction trades have not been updated by the United States Department of Labor (DOL) since March 1, 2002. The Career Service Authority Board, in their meeting held on April 21, 2011, approved the use of the attached supplemental wage rates until prevailing wage rates for these classifications of work are again published by the United States Department of Labor in accordance with the Davis-Bacon Act.

The effective date for this publication is **Friday, January 27, 2017** and applies to the City and County of Denver for **HIGHWAY CONSTRUCTION PROJECTS** in accordance with the Denver Revised Municipal Code, Section 20-76(c).

General Wage Decision No. CO170019
Superseded General Decision No. CO20160019
Modification No. 1
Publication Date: 1/27/2017
(8 pages)

Unless otherwise specified in this document, apprentices shall be permitted only if they are employed pursuant to, and individually registered in, a bona fide apprenticeship program registered with the U.S. Department of Labor (DOL). The employer and the individual apprentice must be registered in a program, which has received prior approval, by the DOL. Any employer, who employs an apprentice and is found to be in violation of this provision, shall be required to pay said apprentice the full journeyman scale.

For questions call (720) 913-5726.

Attachments as listed above.

General Decision Number: CO170019 01/27/2017 CO19

Superseded General Decision Number: CO20160019

State: Colorado

Construction Type: Highway

Counties: Denver and Douglas Counties in Colorado.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2017
1	01/27/2017

* CARP9901-008 11/01/2016

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 25.50	7.47

ELEC0068-016 03/01/2011

	Rates	Fringes
TRAFFIC SIGNALIZATION:		
Traffic Signal Installation		
Zone 1.....	\$ 26.42	4.75%+8.68
Zone 2.....	\$ 29.42	4.75%+8.68

TRAFFIC SIGNAL INSTALLER ZONE DEFINITIONS

Zone 1 shall be a 35 mile radius, measured from the following addresses in each of the following cities:
Colorado Springs - Nevada & Bijou
Denver - Ellsworth Avenue & Broadway
Ft. Collins - Prospect & College
Grand Junction - 12th & North Avenue
Pueblo - I-25 & Highway 50
All work outside of these areas shall be paid Zone 2 rates.

ENGI0009-008 10/23/2013

	Rates	Fringes
--	-------	---------

POWER EQUIPMENT OPERATOR:

(3)-Hydraulic Backhoe (Wheel Mounted, under 3/4 yds), Hydraulic Backhoe (Backhoe/Loader combination), Drill Rig Caisson (smaller than Watson 2500 and similar), Loader (up to and including 6 cu. yd.).....\$ 24.73	9.15
(3)-Loader (under 6 cu. yd.) Denver County.....\$ 24.73	9.15
(3)-Motor Grader (blade- rough) Douglas County.....\$ 24.73	9.15
(4)-Crane (50 tons and under), Scraper (single bowl, under 40 cu. yd).....\$ 24.88	9.15
(4)-Loader (over 6 cu. yd) Denver County.....\$ 24.88	9.15
(5)-Drill Rig Caisson (Watson 2500 similar or larger), Crane (51-90 tons), Scraper (40 cu.yd and over),.....\$ 25.04	9.15
(5)-Motor Grader (blade- finish) Douglas County.....\$ 25.04	9.15
(6)-Crane (91-140 tons).....\$ 25.19	9.15

SUCO2011-004 09/15/2011

	Rates	Fringes
CARPENTER (Excludes Form Work)....\$ 19.27		5.08
CEMENT MASON/CONCRETE FINISHER		
Denver.....\$ 20.18		5.75
Douglas.....\$ 18.75		3.00
ELECTRICIAN (Excludes Traffic Signal Installation).....\$ 35.13		6.83
FENCE ERECTOR (Excludes Link/Cyclone Fence Erection).....\$ 13.02		3.20
GUARDRAIL INSTALLER.....\$ 12.89		3.20
HIGHWAY/PARKING LOT STRIPING:Painter		
Denver.....\$ 12.62		3.21
Douglas.....\$ 13.89		3.21
IRONWORKER, REINFORCING (Excludes Guardrail Installation).....\$ 16.69		5.45
IRONWORKER, STRUCTURAL (Includes Link/Cyclone Fence Erection, Excludes Guardrail		

Installation).....\$	18.22	6.01
LABORER		
Asphalt Raker.....\$	16.29	4.25
Asphalt Shoveler.....\$	21.21	4.25
Asphalt Spreader.....\$	18.58	4.65
Common or General		
Denver.....\$	16.76	6.77
Douglas.....\$	16.29	4.25
Concrete Saw (Hand Held)....\$	16.29	6.14
Landscape and Irrigation....\$	12.26	3.16
Mason Tender-		
Cement/Concrete		
Denver.....\$	16.96	4.04
Douglas.....\$	16.29	4.25
Pipelayer		
Denver.....\$	13.55	2.41
Douglas.....\$	16.30	2.18
Traffic Control (Flagger)....\$	9.55	3.05
Traffic Control (Sets Up/Moves Barrels, Cones, Install Signs, Arrow Boards and Place Stationary Flags)(Excludes Flaggers).....\$		
	12.43	3.22
PAINTER (Spray Only).....\$	16.99	2.87
POWER EQUIPMENT OPERATOR:		
Asphalt Laydown		
Denver.....\$	22.67	8.72
Douglas.....\$	23.67	8.47
Asphalt Paver		
Denver.....\$	24.97	6.13
Douglas.....\$	25.44	3.50
Asphalt Roller		
Denver.....\$	23.13	7.55
Douglas.....\$	23.63	6.43
Asphalt Spreader.....\$	22.67	8.72
Backhoe/Trackhoe		
Douglas.....\$	23.82	6.00
Bobcat/Skid Loader.....\$	15.37	4.28
Boom.....\$	22.67	8.72
Broom/Sweeper		
Denver.....\$	22.47	8.72
Douglas.....\$	22.96	8.22
Bulldozer.....\$	26.90	5.59
Concrete Pump.....\$	21.60	5.21
Drill		
Denver.....\$	20.48	4.71
Douglas.....\$	20.71	2.66
Forklift.....\$	15.91	4.68
Grader/Blade		
Denver.....\$	22.67	8.72
Guardrail/Post Driver.....\$	16.07	4.41
Loader (Front End)		
Douglas.....\$	21.67	8.22
Mechanic		
Denver.....\$	22.89	8.72
Douglas.....\$	23.88	8.22
Oiler		

Denver.....	\$ 23.73	8.41
Douglas.....	\$ 24.90	7.67
Roller/Compactor (Dirt and Grade Compaction)		
Denver.....	\$ 20.30	5.51
Douglas.....	\$ 22.78	4.86
Rotomill.....	\$ 16.22	4.41
Screed		
Denver.....	\$ 22.67	8.38
Douglas.....	\$ 29.99	1.40
Tractor.....	\$ 13.13	2.95

TRAFFIC SIGNALIZATION:

Groundsman

Denver.....	\$ 17.90	3.41
Douglas.....	\$ 18.67	7.17

TRUCK DRIVER

Distributor

Denver.....	\$ 17.81	5.82
Douglas.....	\$ 16.98	5.27

Dump Truck

Denver.....	\$ 15.27	5.27
Douglas.....	\$ 16.39	5.27

Lowboy Truck.....\$ 17.25 5.27

Mechanic.....\$ 26.48 3.50

Multi-Purpose Specialty &
Hoisting Truck

Denver.....	\$ 17.49	3.17
Douglas.....	\$ 20.05	2.88

Pickup and Pilot Car

Denver.....	\$ 14.24	3.77
Douglas.....	\$ 16.43	3.68

Semi/Trailer Truck.....\$ 18.39 4.13

Truck Mounted Attenuator....\$ 12.43 3.22

Water Truck

Denver.....	\$ 26.27	5.27
Douglas.....	\$ 19.46	2.58

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Office of Human Resources
Supplemental rates
(Specific to the Denver Projects)
(Supp 35, Date: 01-13-2012)

<u>Classification</u>		<u>Base</u>	<u>Fringe</u>
Millwrights		\$28.00	\$10.00
Line Construction:			
	Lineman, Gas Fitter/Welder	\$36.88	\$9.55
	Line Eq Operator/Line Truck Crew	\$25.74	\$8.09
Power Equipment Operators (Tunnels Above and Below Ground, shafts and raises):			
	GROUP 1	\$25.12	\$10.81
	GROUP 2	\$25.47	\$10.85
	GROUP 3	\$25.57	\$10.86
	GROUP 4	\$25.82	\$10.88
	GROUP 5	\$25.97	\$10.90
	GROUP 6	\$26.12	\$10.91
	GROUP 7	\$26.37	\$10.94
Power Equipment Operators:			
	GROUP 1	\$22.97	\$10.60
	GROUP 2	\$23.32	\$10.63
	GROUP 3	\$23.67	\$10.67
	GROUP 4	\$23.82	\$10.68
	GROUP 5	\$23.97	\$10.70
	GROUP 6	\$24.12	\$10.71
	GROUP 7	\$24.88	\$10.79
Ironworkers (Ornamental)		\$24.80	\$10.03
Laborers (Removal of Asbestos)		\$21.03	\$8.55
Plumbers		\$30.19	\$13.55
Pipefitters		\$30.45	\$12.85
Truck Drivers:			
	GROUP 1	\$18.42	\$10.00
	GROUP 2	\$19.14	\$10.07
	GROUP 3	\$19.48	\$10.11
	GROUP 4	\$20.01	\$10.16
	GROUP 5	\$20.66	\$10.23
	GROUP 6	\$21.46	\$10.31

POWER EQUIPMENT OPERATOR CLASSIFICATIONS
(TUNNELS ABOVE AND BELOW GROUND, SHAFTS, AND RAISES):

GROUP 1 - Brakeman

GROUP 2 - Motorman

GROUP 3 - Compressor

GROUP 4 - Air Tractors; Grout Machine; Gunnite Machine; Jumbo Form

GROUP 5 - Concrete Placement Pumps; Mucking Machines and Front End Loaders, Underground, Slusher; Mine Hoist Operator; Mechanic

GROUP 6 - Mechanic Welder

GROUP 7 - Mole

NOTE: Any equipment listed below being used in tunnel work, below or above ground shall be paid not less than \$2.00 per hour above the listed wage rates.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1 - Air compressor, brakeman, drill operator -smaller than Watson 2500 and similar, operators of 5 or more light plants, welding machines, generators, single unit conveyor, pumps, vacuum well point system, tractor, under 70 hp with or without attachments compressors, 360 C.F.M. or less

GROUP 2 - Conveyor, handling building materials, ditch witch and similar trenching machine, forklift, haulage motor man, pugmill, portable screening plant with or without a spray bar, screening plants, with classifier, self-propelled roller, rubber-tires under 5 tons.

GROUP 3 - asphalt plant, backfiller; cableway signalman; C.M.I. and similar, concrete batching plants, concrete finish machine, concrete gang saw on concrete paving, concrete mixer, less than 1 yd., under 8 inches, distributors, bituminous surfaces dozer, drill, diamond or core, elevating graders, elevator operator, lubricating and service engineer, grout machine, gunnite machine, hoist, 1 drum, horizontal directional drill operator, hydraulic backhoes; road stabilization machine, sandblasting Machine, single unit portable crusher, with or without washer, Tie tamper, wheel mounted, trenching machine operator, winch on truck.

GROUP 4 - Cable operated power shovels, draglines, articulated truck operator, clamshells, 5 cubic yards and under, concrete mixer over 1 Cubic yard, concrete pavers 34E or similar, grade Checker, hoist, 2 drums, mechanic, mixer mobile, Portable crusher, with or without washer; tractor with sideboom, roto-M ill and similar, welder.

GROUP 5 - Cable operated power shovels, draglines, clamshells and Backhoes over 5 cubic yards, caisson drill Watson 2500 similar or larger, motor grader blade-finish, hoist 3 drum or more.

GROUP 6 - Cableway, derrick, quad nine push unit, wheel excavator, belt or elevating loader.

GROUP 7 - tower cranes all types.

TRUCK DRIVER CLASSIFICATIONS:

GROUP 1 - Greasemen, Servicemen and Ambulance Drivers, Battery Men, Shuttle Truck or Bus, Flat Rack Tandem Axle.

GROUP 2 - Fork Lift Driver, Straddle Truck Driver, Lumber Carrier, Liquid and Bulk Tankers Single Axle, Combination, Euclid Electric or Similar, Specialty and Hoisting, Truck Drivers Fuel Truck, Grease Truck, Combination Fuel and Grease.

GROUP 3 - Truck Driver Snow Plow, Truck Driver Dump or Type Jumbo and similar type equipment.

GROUP 4 - Cement Mixer Agitator Truck over 10 cubic yards to and including 15 cubic yards, Tire Man, Cab Operated Distributor Truck Driver.

GROUP 5 - Heavy Duty Diesel Mechanic, Body Man, Welders or Combination Men.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

CITY AND COUNTY OF DENVER
STATE OF COLORADO



Department of Public Works
Technical Specifications
Contract No: 201734986



MILL LEVY 7A
TRAFFIC SIGNAL UPGRADE

May 22, 2017

**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS - TRANSPORTATION AND MOBILITY
MILL LEVY 7A TRAFFIC SIGNAL UPGRADE
CCD MASTER PROJECT NO. 2016-PROJMSTR-0000085
CCD PRO TRACKING NO. PWTES2016-001**

General contract conditions used for this project shall be the City & County of Denver, Department of Public Works, "Standard Specifications for Construction General Contract Conditions," 2011 Edition and revisions thereto as hereinafter modified.

STANDARD CONSTRUCTION SPECIFICATIONS

The Standard Specifications for Construction for this Project shall consist of the applicable sections and subsections, numbered Section 200 through Section 700, of the 2011 "Colorado Department of Transportation Standard Specifications for Road and Bridge Construction" adopted in 2011 and as hereinafter modified. With the exception of Section 101, the City and County of Denver Department of Public Works' "Standard Specifications for Construction, General Contract Conditions," 2011 Edition, shall apply to this contract.

The following Project Special Provisions supplement or amend the referenced "Standard Specifications for Road and Bridge Construction" adopted in 2011 by the Colorado Department of Transportation.

DETAILED CONSTRUCTION SPECIFICATIONS

The Detailed Specifications for this project are defined in the City of Denver Contract Requirements and Contract Documents.

STANDARD CONSTRUCTION DETAILS

It is the intent of the City to use applicable details from the Colorado Department of Transportation M&S Standards, the City of Denver's Wastewater Management Division Standard Details, and the Denver Water Department's Standard Drawings, most recent editions. Drainage related appurtenances shall follow the City and County of Denver (CCD), Department of Public Works document titled "Storm Drainage and Sanitary Sewer Construction Detail and Technical Specifications". This document can be found at the following web address: www.denvergov.org

The Colorado Department of Transportation (CDOT) Special Provisions, Standard Special Provisions are to be used for the project. Use CDOT Project Special Provisions that revise the above described documents, and prevail over above described documents.

**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS - TRANSPORTATION AND MOBILITY
MILL LEVY 7A TRAFFIC SIGNAL UPGRADE
CCD MASTER PROJECT NO. 2016-PROJMSTR-0000085
CCD PRO TRACKING NO. PWTES2016-001**

CONSTRUCTION LIMITS

Construction limits for the project are defined as the following four intersections:

1. South Broadway and Alameda Avenue
2. Monaco Street Parkway and Alameda Avenue
3. Monaco Street Parkway and Martin Luther King Jr Boulevard
4. East 47th Avenue & Peoria Street

Construction limits include the main and cross streets at each intersection as necessary to complete the work, and placement of any signage on any public street, sidewalk or alley to be used for construction phasing and construction traffic control purposes. All work shall occur within the City & County of Denver right-of-way. Impacts to existing landscaping, concrete, sidewalk, structures, sprinklers, curbs, gutters and so on that occur beyond the right-of-way shall be repaired by the Contractor at its own expense. Impacts to existing landscaping, concrete, sidewalk, structures, sprinklers, curbs, gutters and so on that occur within the right-of-way, but are not specifically designated to be removed by the plans or as directed by the Engineer, shall be repaired by the Contractor at its own expense.

**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS - TRANSPORTATION AND MOBILITY
MILL LEVY 7A TRAFFIC SIGNAL UPGRADE
CCD MASTER PROJECT NO. 2016-PROJMSTR-0000085
CCD PRO TRACKING NO. PWTES2016-001**

CDOT STANDARD SPECIAL PROVISIONS

Description	Date	# Pages
Revision of Section 203 – Imported Material for Embankment	(February 3, 2011)	2
Revision of Sections 203, 206, 304 and 613 – Compaction	(July 19, 2012)	2
Revision of Section 206 – Imported Material for Structure Backfill	(July 19, 2012)	2
Revision of Section 206 – Structure Backfill (Flow-Fill)	(April 26, 2012)	2
Revision of Section 208 – Erosion Control	(March 29, 2016)	23
Revision of Section 250 – Environmental, Health and Safety Management	(January 15, 2015)	14
Revision of Sections 304 and 703 – Aggregate Base Course (RAP)	(October 31, 2013)	1
Revision of Section 401 – Compaction of Hot Mix Asphalt	(April 26, 2012)	1
Revision of Section 401 – Composition of Mixtures – Voids Acceptance	(February 3, 2011)	1
Revision of Section 401 – Plant Mix Pavements	(February 3, 2011)	1
Revision of Section 401 – Reclaimed Asphalt Pavement	(May 2, 2013)	2
Revision of Section 401 – Temperature Segregation	(February 3, 2011)	1
Revision of Section 401 – Tolerances for Hot Mix Asphalt (Voids Acceptance)	(January 6, 2012)	1
Revision of Section 412 – Portland Cement Concrete Pavement Finishing	(February 3, 2011)	1
Revision of Sections 412, 601, and 711 - Liquid Membrane-Forming Compounds for Curing Concrete	(May 5, 2011)	1
Revision of Sections 412 and 705 – Preformed Compression Seals	(February 3, 2011)	2
Revision of Section 507, 601, and 606 – Macro Fiber-Reinforced Concrete	(May 2, 2013)	1
Revision of Section 601 – Class B, BZ, D, DT, and P Concrete	(February 18, 2016)	2
Revision of Section 601 – Concrete Batching	(February 3, 2011)	1
Revision of Section 601 – Concrete Finishing	(February 3, 2011)	1
Revision of Section 601 – Concrete Slump Acceptance	(October 29, 2015)	1
Revision of Section 601 – Fiber-Reinforced Concrete	(February 18, 2016)	1
Revision of Section 601 – QC Testing Requirements for Structural Concrete	(May 8, 2014)	1
Revision of Sections 601 and 701 – Cements and Pozzolans	(November 6, 2014)	4
Revision of Section 603 – Culvert Pipe Inspection	(October 2, 2014)	1
Revision of Sections 603, 624, 705, 707, and 712 – Drainage Pipe	(April 30, 2015)	3
Revision of Sections 613 and 715 – LED Roadway Luminaire	(January 30, 2014)	5
Revision of Section 614 – Accessible Pedestrian Signal	(November 1, 2012)	3
Revision of Section 614 – Pedestrian Push Button Assembly	(July 19, 2012)	1
Revision of Section 618 – Prestressed Concrete	(April 26, 2012)	24
Revision of Section 620 – Field Laboratories with Ignition Furnace	(February 3, 2011)	1
Revision of Section 627 – Preformed Plastic Pavement Marking	(May 12, 2016)	2
Revision of Section 630 – Mobile Pavement Marking Zone (Group 1 without Attenuator)	(February 3, 2011)	1
Revision of Section 630 – Retroreflective Sign Sheeting	(May 8, 2014)	1
Revision of Section 630 - Rolling Roadblock	(November 1, 2012)	2
Revision of Section 702 – Bituminous Materials	(March 29, 2016)	11
Revision of Section 703 - Aggregate for Bases	(October 31, 2013)	1
Revision of Section 703 - Aggregate for Bases (Without RAP)	(October 31, 2013)	1
Revision of Section 703 – Aggregate for Cover Coat Material	(October 29, 2015)	1
Revision of Section 703 – Aggregate for Hot Mix Asphalt	(November 1, 2012)	2
Revision of Section 703 – Aggregate for Stone Matrix Asphalt	(April 26, 2012)	1
Revision of Section 703 – Concrete Aggregate	(July 28, 2011)	1
Revision of Section 703 – Mineral Filler	(May 8, 2014)	1
Revision of Section 712 – Water for Mixing or Curing Concrete	(February 3, 2011)	1

**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS - TRANSPORTATION AND MOBILITY
MILL LEVY 7A TRAFFIC SIGNAL UPGRADE
CCD MASTER PROJECT NO. 2016-PROJMSTR-0000085
CCD PRO TRACKING NO. PWTES2016-001**

The Colorado Department of Transportation’s Standard Specifications for Road and Bridge Construction, dated 2011, controls construction of this project. The following Special Provisions supplement or modify the Standard Specifications and take precedence over the Standard Specifications and Plans.

PROJECT SPECIAL PROVISIONS

<u>Description</u>	<u>Page No.</u>
Notice to Bidders	PSP-1
Revision of Section 101 - Definition and Terms	PSP-2
Revision of Section 201 – Clearing and Grubbing	PSP-3
Revision of Section 202 – Removal of Traffic Signal Equipment.....	PSP-4
Revision of Section 203 – Potholing.....	PSP-5
Revision of Section 203 – Excavation and Embankment	PSP-6
Revision of Section 203 – Sweeping (Sediment Removal)	PSP-7
Revision of Section 208 – Erosion Control	PSP-8
Revision of Section 212 – Landscaping Restoration	PSP-21
Revision of Section 212 – Seeding, Fertilizer, and Sodding.....	PSP-22
Revision of Section 306 – Reconditioning	PSP-23
Revision of Section 401 & 403 Plant Mix Pavements.....	PSP-24
Revision of Section 412 – Portland Cement Concrete Pavement	PSP-25
Revision of Section 503 – Drilled and Vacuumed Caisson	PSP-29
Revision of Section 608 – Sidewalks and Curb Ramps.....	PSP-30
Revision of Section 609 – Curb and Gutter	PSP-33
Revision of Section 610 – Concrete Median Cover.....	PSP-34
Revision of Section 613 – Electrical Conductor Identification	PSP-35
Revision of Section 613 – Electrical Conduit - General	PSP-36
Revision of Section 613 – Electric Meter Pedestal Cabinet and Base.....	PSP-38
Revision of Section 613 – Pull Boxes.....	PSP-39
Revision of Section 614 – Lighting (Luminaire) (LED 5300 Lumens).....	PSP-40
Revision of Section 614 – LED Pedestrian Signal Heads (Count Down)	PSP-41
Revision of Section 614 – Traffic Control Devices	PSP-42
Revision of Section 614 – Traffic Signal Cabinet Base (Install Only)	PSP-45
Revision of Section 614 – Traffic Signal Controller and Cabinet (Install Only).....	PSP-47
Revision of Section 614 – Ethernet Managed Switch (Install Only)	PSP-49
Revision of Section 614 – Uninterrupted Power Supply System (Install Only).....	PSP-51
Revision of Section 614 – Pedestrian Push Button and Instruction Sign.....	PSP-60
Revision of Section 614 – Emergency Vehicle Traffic Signal Priority Control System (Opticom)...	PSP-62
Revision of Section 614 – Intersection Detection System (FLIR)(Camera).....	PSP-67
Revision of Section 614 – Intersection Detection System (Autoscope Vision)(Camera).....	PSP-73
Revision of Section 614 – Traffic Signal Poles	PSP-74
Revision of Section 614 – Telemetry (Field).....	PSP-76
Revision of Section 623 – Irrigation System	PSP-79
Revision of Section 625 – Construction Surveying	PSP-80
Revision of Section 626 – Mobilization	PSP-83
Revision of Section 629 – Survey Monumentation	PSP-84
Revision of Section 630 – Construction Traffic Control	PSP-86
Denver Noise Ordinance.....	PSP-91

NOTICE TO BIDDERS

City and County of Denver Project Manager: John Yu
Office Phone: (720) 865-3176

On-Site Traffic Signal Project Inspector: Dominick Tufano
Office Phone: (720) 641-5439

All references to the Colorado Division of Highways, Colorado Department of Transportation, and/or Department or Division shall also mean the City and County of Denver.

**REVISION OF SECTION 101
DEFINITIONS AND TERMS**

Section 101 of the Standard Specifications is hereby revised for this project as follows:

Technical Specifications related to construction materials and methods for the Work under this Contract shall consist of the *State Department of Highways, Division of Highways, State of Colorado, Standard Specifications for Road and Bridge Construction* dated 2011.

Certain terms utilized in the Specifications referred to in the paragraph above shall be interpreted to have different meaning within the scope of this Contract. A summary of redefinitions follows:

- Subsection 101.28** **“Department”** shall mean the City and County of Denver, Colorado.
- Subsection 101.29** **“Engineer”** shall mean the Director of Public Works, Denver, Colorado, or designated representative.
- Subsection 101.39** **“Laboratory”** shall mean City and County of Denver, Colorado or their designated representative.
- Subsection 101.51** **“Project Engineer”** shall mean the Director of Public Works, Denver, Colorado, or designated representative.
- Subsection 101.76** **“State”** shall mean City and County of Denver, Colorado (where applicable).

End Revision of Section 101 Definitions and Terms

REVISION OF SECTION 201 CLEARING AND GRUBBING

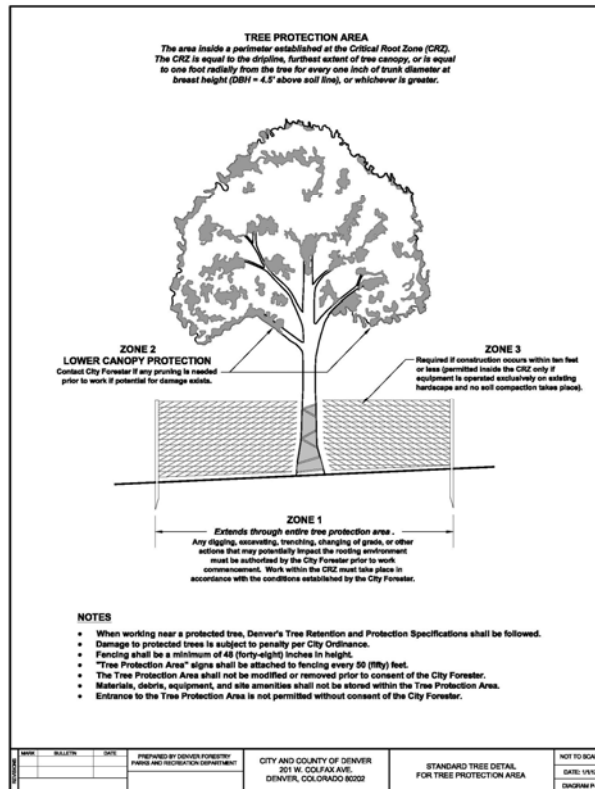
Section 201 of the Standard Specifications is hereby revised to include:

Subsection 201.02, paragraph 8 shall be deleted and replaced with the following:

All tree trimming will be performed by the City and County of Denver through the City Forester's Office. Contact Jim Myers two (2) days prior.

Subsection 201.02 is hereby revised to include:

All trees designated to remain shall be protected in accordance with Denver's Standard Detail for Tree Protection Area – see detail.



Subsection 201.04 is hereby revised to include:

Clearing and grubbing will not be measured and paid for separately but shall be included in the cost of the work.

Tree protection will not be measured separately, but will be considered as subsidiary obligation of the Contractor under the contract.

End Revision of Section 201 Clearing and Grubbing

**REVISION OF SECTION 202
REMOVAL OF TRAFFIC SIGNAL EQUIPMENT**

Section 202 of the Standard Specification is hereby revised for this project as follows:

Subsection 202.03 shall include the following:

The Contractor shall safeguard any salvageable materials designated by Denver Public Works – Transportation (Denver Traffic), and shall be responsible for the expense of repairing or replacing damaged or missing material until it is delivered to the City and County of Denver Traffic Maintenance Yard at 5440 Roslyn Street.

Designation of salvageable equipment and times for delivery of such items shall be coordinated with Denver Traffic (contact Chris Lillie at 720-865-4066 or Jeff Lancaster at (720) 865-4065.

Signal operations shall be maintained at each of the project intersections throughout construction.

Subsection 202.04 shall include the following:

Removal of the traffic signal equipment shall include signal poles (without luminaire), pedestal poles, footings, span wire cable, traffic signal controller and cabinet, pedestrian push button, cabinet footings, all attachment hardware, and all incidental equipment, except as noted on plans. All existing foundations and pull boxes shall be removed and back-filled. All wiring shall be removed from existing conduit and the conduit shall be abandoned in place.

Xcel Energy shall remove all signal poles with luminaire attached. Xcel Energy will remove only the signal pole and luminaire, and the Contractor shall remove the remainder of the traffic signal equipment, as noted in the plans. The Contractor shall coordinate with Xcel Energy for these removals and is referred to the Project Special Revision “Utilities” herein.

All “Light Emitting Diode” (LED) signal lenses in existing signal faces shall be removed prior to the removal of the signal face. These LED lenses shall be protected from damage and delivered to 5440 Roslyn Street, Denver. This work shall be included in the cost of Removal of Traffic Signal Equipment and will not be paid for separately.

Times for delivery to the maintenance yard shall be coordinated with Denver Traffic at (720) 865-4000.

Subsection 202.12 shall include the following:

Pay Item

Removal of Traffic Signal Equipment

Pay Unit

Lump Sum

Removal of Traffic Signal Equipment shall be per each intersection. Payment includes all labor, equipment, and materials necessary to complete the work.

End Revision of Section 202 Removal of Traffic Signal Equipment

**REVISION OF SECTION 203
POTHOLING**

Section 203 of the Standard Specification is hereby revised for this project as follows:

Subsection 203.05(g) Excavation shall include the following:

The work shall include One Pothole per utility per conduit crossing or as approved by the Engineer.

All surface material disturbed by potholing shall be restored in kind in accordance with the provisions of the most recent release of the *Standards and Details for the City and County of Denver*.

- All potholes must be core drilled.
- All potholes must be backfilled using only one of the following methods:
 - Wet Sand
 - Flowfill
 - Flashfill
 - The Contractor may submit a written request to use a material not specified above (squeegee, pea gravel, and native material will not be allowed)
- Potholes in an asphalt street must be patched back using hot bituminous asphalt, minimum 9-inch in depth.
- Potholes in a concrete street must be patched back with fast curing high strength concrete no less than 8000 psi in 28 days and a 3000 psi in 60 minutes.
- Full concrete panel replacement is required when a third pothole is core drilled in the same panel. The contractor that cut the last pothole (i.e. 3rd) will be required to replace the panel.
- Any pothole in a sidewalk will require a full panel replacement.
- Any pothole in the curb and gutter or any drainage way will require at a minimum, a half panel replacement.

Delete Subsection 203.13(e) and replace with the following:

(e) Potholing. Potholing will be measured by each. All other related work, including removal of existing pavement, backfilling, shoring and labor will not be measured and paid for separately, but shall be included in the work. All surface material disturbed by potholing shall be restored in kind in accordance with the provisions of the Standards and Details for the City and County of Denver (Latest Revision). FOR CCD Streets (all) – related work also includes permanent backfill with CLSM (flow fill or flashfill), permanent asphalt patches in asphalt street, and new concrete panel for sidewalk if one pothole in sidewalk, new street concrete panel if 3 or more potholes result after work is done. Follow CCD TS&D for restoration.

Subsection 203.14 of the Standard Specifications shall be modified as follows:

Payment will be made under:

Pay Item
Potholing

Pay Unit
Each

End Revision of Section 203 Potholing

**REVISION OF SECTION 203
EXCAVATION AND EMBANKMENT**

Section 203 of the Standard Specification is hereby revised for this project as follows:

Subsection 203.03 shall include the following:

(c) *Subgrade Preparation.* Subgrade preparation is the preparation of the underlying subgrade directly below and prior to placement of any new subbase, base course layers, pavement, and/or structure.

In Subsection 203.09, third paragraph, delete the first sentence.

Subsection 203.13 Item (f) is hereby deleted in its entirety and replaced with the following

Proof Rolling. Proof Rolling will not be measured or paid for separately but will be considered incidental to other items in the work.

Subsection 203.13 is hereby revised to include the following:

(g) *Subgrade Preparation.* Subgrade preparation will not be measured or paid for separately, but will be considered incidental to the work item of the overlying structure

Subsection 203.14 is hereby revised to include the following:

Stockpiling of embankment material utilized for utility backfill will not be measured or paid for separately but shall be considered incidental to other work items.

End Revision of Section 203 Excavation and Embankment

**REVISION OF SECTION 203
SWEEPING (SEDIMENT REMOVAL)**

Section 208 of the Standard Specification is hereby revised for this project as follows:

Subsection 203.01 shall include the following:

This work is for sweeping paved surfaces during construction as part of the project Best Management Practices (BMP).

Subsection 203.04 shall include the following:

Paved surfaces adjacent to the construction site shall be swept by the close of business day and during the day as needed when sediment and other materials are tracked or discharged onto them. Sweeping shall be completed with a pickup broom or equipment capable of collecting sediment. Sweeping with a kick broom will not be allowed. Street sweepers using water while sweeping is preferred in order to minimize dust. Flushing off paved surfaces with water is prohibited.

Subsection 203.13 shall include the following:

Sweeping, when used as a BMP as shown in the Contract, will be measured by the number of hours that a pickup broom or equipment capable of collecting sediment, authorized by the Engineer, is used to remove sediment from the roadway or other paved surfaces. Each week the Contractor shall submit to the Engineer a statement detailing the type of sweeping equipment used and the number of hours it was used to pick up sediment. Operator will not be measured and paid for separately, but shall be included in the work.

Subsection 203.14 of the Standard Specifications shall be modified as follows:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Sweeping (Sediment Removal)	Hour

Payment for Sweeping shall be full compensation for all work necessary to complete this item.

End Revision of Section 203 Sweeping (Sediment Removal)

**REVISION OF SECTION 208
EROSION CONTROL**

Section 208 of the Standard Construction Specifications is hereby removed in its entirety and replaced with the following:

PART I: DEFINITIONS

Definitions used for this Section shall consist of those listed in Title 1 of the City and County of Denver “Standard Specifications for *Construction*, General Contract Conditions”, 2011 edition.

Definitions used for this Section hereby incorporate those identified within the City and County of Denver Construction Activities Stormwater Manual (CASM).

Additional Definitions applicable to this Section are listed heretofore:

Basis of Payment: The terms under which “Work” is paid, as a designated “Pay Item” in accordance with the quantity measured and the “Pay Unit.”

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, installation of devices, maintenance procedures, and other management practices deployed to stabilize the construction site to prevent or reduce the pollution of State Waters (see definition below). Stormwater BMPs can be classified as "structural" (i.e., devices installed or constructed on a site) or "non-structural" (procedures, such as modified landscaping practices).

Colorado Department of Health and Environment (CDPHE): State of Colorado, Water Quality Control Division responsible for issuance of State Construction Stormwater Permit.

Construction Activities Stormwater Discharge Permit (CASDP): Permit issued by the City for compliance with City & County of Denver Revised Municipal Code and Department of Public Works Rules & Regulations concerning the discharge of pollutants in storm generated runoff from construction sites to Municipal Separate Storm Sewer System (MS4, see definition below) or State Waters, via the Municipal Separate Storm Sewer System (MS4).

Construction Activities Stormwater Manual (CASM): City and County of Denver Construction Activities Stormwater Manual (CASM), 2010 edition.

Colorado Department of Transportation (CDOT): State agency that has published standards for Erosion Control with accompanying Erosion Control Supervisor certification courses.

Erosion Control Supervisor (ECS): The Erosion Control Supervisor is assigned by the Contractor to perform duties as described in this Section. The ECS shall be properly trained in BMPs per requirements of Part V below, and shall be under the direction of a Professional Engineer licensed in the State of Colorado when performing any modifications to the Project Stormwater Management Plan (SWMP), as required by CDPHE.

Final Stabilization: Point of construction when all ground surface disturbing activities at the site have been completed and uniform vegetative cover has reached 70% of pre-disturbance vegetative cover, or equivalent permanent features have been employed. At this point, all temporary BMPs can be removed, all construction and equipment maintenance wastes have been disposed of properly; and all elements of the Stormwater Management Plan have been completed.

**REVISION OF SECTION 208
EROSION CONTROL**

Major SWMP Modification: Changes to the original SWMP that removes or adds additional area to the Project, or modifies the final hydrology or drainage of the Project. A Major SWMP Modification requires the submission of revised Stormwater Management Plan (SWMP) elements to the Permit Authority for review and approval. Any adjustments to a SWMP must be performed either by or under the direction of a Professional Engineer licensed in the State of Colorado.

Minor SWMP Modification: Modification to the SWMP that does NOT increase the scope or change hydrology of the Project but: modifies/improves specific BMPs in use at site, indicates progression in phasing of the Project, or specifies relocation of previously approved BMPs within the Project. Any adjustments to a SWMP must be performed either by or under the direction of a Professional Engineer licensed in the State of Colorado.

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- a) Owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of stormwater or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under Section 208 of the Federal Clean Water Act that discharges to State Waters;
- b) Designed or used for collecting or conveying stormwater;
- c) Which is not a combined sewer; and
- d) Which is not part of a Publicly Owned Treatment Works (POTW).

Permit Authority: The Department authorized by the City to review and process CASDP Applications for Capital and/ or governmental sponsored Projects. The responsible City department serving as the Permit Authority is the Public Works Project Controls Office. As a clarification, the Development Services Department of the City serves as the point of intake and permit processing center.

Permit Enforcement Authority: The Department authorized by the City to inspect and enforce CASDP Rules and Conditions for all construction Projects within the City's MS4 Boundary. The responsible City department serving as the Permit Enforcement Authority is the Wastewater Management Division of the Department of Public Works.

State Construction Stormwater Permit: Colorado Revised Statutes require that all construction sites/development Projects, which, by definition, disturb one or more acres in area, shall be covered by a State issued general permit for construction activities. Information on the application requirements for the State permit can be obtained by phone at 303-692-3500; or by visiting their offices located at 4300 Cherry Creek Drive South, Denver, CO 80246 – 1530, or on the Web at:

<https://www.colorado.gov/pacific/cdphe/news/water-quality-permits>

State Waters: Any and all surface waters which are contained in or flow in or through this State, not to include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

**REVISION OF SECTION 208
EROSION CONTROL**

Examples of State Waters include, but are not limited to, perennial streams, intermittent or ephemeral gulches and arroyos, ponds, lakes, reservoirs, irrigation canals or ditches, wetlands, stormwater conveyances (when they discharge to a surface water), and groundwater.

Stormwater Management Plan (SWMP): The Stormwater Management Plan contains the requirements necessary to accomplish all the following:

The SWMP establishes a minimum standard to construct, install, maintain, and remove required BMPs during the life of the Contract to prevent or minimize pollution of stormwater due to erosion, sediment transport, and construction related pollutant generated during all phases of the Project. A SWMP consists of the following elements:

- (i) CASDP Narrative Worksheet with Narrative Report. The Narrative Report and supporting documents should fully address the methods to be used to prevent sediment, debris, and other pollutants from entering the MS4 and/ or State Waters in and around the Project area. Proposed structural and non-structural BMPs should be described with sufficient implementation detail to insure that the logical phases of the proposed construction Project meet the performance standards listed in the CASM.
- (ii) Proposed site drawings and Best Management Practice (BMP) installation details as they apply to the site conforming to the Urban Storm Drainage Criteria Manual, Vol. 3, "Best Management Practices", most current version as issued by the Urban Drainage and Flood Control District (UDFCD), or those established by the City's Department of Public Works. If erosion control drawings were included within the bid documents for the Project, they shall be used for bid purposes and initial planning/ deployment of BMPs on the Project. If provided drawings are signed/ sealed by a Professional Engineer, they have been pre-approved by the Permit Authority and may be used without revision for purposes of submitting for CASDP. If provided drawings do not have signature/ seal of Professional Engineer licensed by the State of Colorado, they will require revision by the Contractor with Professional Engineer signature/ seal prior to submission to the City and County of Denver for CASDP.
- (iii) Supporting documentation related to proposed BMPs that are not currently identified in UDFCD Vol. 3 or as otherwise published by the City.

Any preparation of or adjustments to a SWMP must be performed either by or under the supervision of a Professional Engineer or Landscape Architect, licensed in the State of Colorado. SWMP elements submitted to the City shall also meet currently established criteria of the CDPHE as the SWMP must meet all local, State and Federal requirements.

Substantial Completion of Erosion Control: Point of construction when permanent BMPs have been installed, initial growth is in place, and the site is waiting for vegetative cover to reach 70% of pre-disturbance vegetative cover.

**REVISION OF SECTION 208
EROSION CONTROL**

PART II: DESCRIPTION

This Work shall consist of constructing, installing, maintaining, and removing when required, BMPs during the life of the Contract until Final Stabilization to prevent or minimize erosion, sedimentation, and pollution of any waters including storm, drainage ways, MS4, State Waters, and/ or wetlands. Work under this Section includes the Contractor obtaining required Permits, utilizing SWMP elements provided in the Contract, and/ or SWMP elements specifically prepared by the Contractor as defined herein. The work shall also consist of providing on-going maintenance and monitoring of the SWMP as may be necessary due to the specific and/or dynamic needs of the Project as well as meet all requirements set forth within the CASM.

The Contractor shall coordinate the construction of temporary BMPs with the construction of permanent BMPs to assure economical, effective, and continuous erosion and sediment control and water pollution prevention throughout the construction period until Final Stabilization is achieved.

When a provision of this Section or an order by the Permit Enforcement Authority requires that an action be immediate or taken immediately, it shall be understood that the Contractor shall at once begin effecting completion of the action and pursue it to completion in a manner acceptable to the Permit Enforcement Authority, and in accordance with applicable Permitting requirements.

PART III: MATERIALS

Materials to be used for BMPs shall conform to each specific detail as set forth within the Project SWMP or as noted on the Contract Drawings.

PART IV: EROSION CONTROL PERMIT STATUS

The current SWMP status for the Project is as follows:

A SWMP is currently not required for this project as the proposed disturbed area and/ or proximity to stream does not meet the minimum criteria for requiring a CASDP. All provisions of the following Parts V-VIII of this Section are hereby deleted and shall not be made part of the Project. However, the responsibilities for minimizing sediment pollution from the Project have not been waived, and as such, the City hereby requires the Contractor to perform as specified in the following notes. Because a SWMP and CASDP are not necessary for the Project, all cost for performance of the following notes shall not be paid for separately, but shall be included in the work unless otherwise specified in the section.

“A CASDP Permit will not be required for this project, however, the Contractor and/or their authorized agents shall ensure that all potential pollutants generated during demolition, excavation, trenching, boring, grading, or other construction Work associated with this permit, be prevented from discharge to storm water conveyance systems in the vicinity of the Project.

The Contractor and/or their authorized agents shall remove all sediment, mud, construction debris, or other potential pollutants that may have been discharged to or, accumulate in the flow lines of storm drainage appurtenances and public rights of ways of the City and County of Denver and CDOT as a result of construction activities associated with this Project. All removals shall be conducted in a timely manner.

The Contractor shall be held responsible for remediation of any adverse impacts to the CCD or CDOT MS4, State Waters, waterways, wetlands, and or other public or private properties, resulting from work done as part of this Project.

The Contractor and/or their authorized agents shall insure that all loads of cut and fill material imported to or exported from the Project shall be properly covered to prevent loss of the material during transport on public rights of way.” (Sec.49-552; Revised Municipal Code)

Approved erosion and sediment control ‘Best Management Practices’ shall be maintained and kept in good repair for the duration of the Project. All necessary maintenance and repair shall be completed immediately upon discovery of any deficiency or defect.

The Contractor and/or their authorized agents shall implement the following Best Management Practices (BMPs) on site during construction. Best Management Practice (BMP) installation details and maintenance shall conform to the Urban Storm Drainage Criteria Manual, Vol. 3, "Best Management Practices", most current version as issued by the Urban Drainage and Flood Control District (UDFCD), or those established by the City’s Department of Public Works.

1. VEHICLE TRACKING CONTROL: This BMP is required at all access points for ingress/egress from off-site impervious surfaces to construction site pervious areas that are used by vehicular traffic or construction equipment.
2. INLET PROTECTION: This BMP is required on all existing or proposed storm sewer inlets in the vicinity of the construction site that may receive site runoff. The BMP must be appropriate to the type of storm inlet and appropriate for the ground surface at the inlet.
3. INTERIM SITE STABILIZATION: This BMP is required to provide a measure for preventing the discharge of sediment from construction sites where overlot grading or other site disturbance has occurred. This BMP is particularly necessary on sites where construction activities/disturbance will be limited to small areas of the Project site. Acceptable BMPs include:
 - a) Preserving existing vegetation
 - b) Seeding and planting
 - c) Mulching
 - d) Mulching and seeding
 - e) Temporary/Permanent re-vegetation operations
 - f) Chemical soil stabilizer application (requires WMD approval)
4. WASTE MANAGEMENT/CONTAINMENT: This BMP requires that all construction wastes, fuels, lubricants, chemical wastes, trash, sanitary wastes, contaminated soils or debris shall be contained on site, protected from contact with precipitation or surface runoff, periodically removed from the construction site, and properly disposed of.

**REVISION OF SECTION 208
EROSION CONTROL**

5. **SPILL PREVENTION /CONTAINMENT:** This BMP defines the measures proposed for preventing, controlling, or containing spills of fuel, lubricants, or other pollutants; and protecting potential pollutants from contact with precipitation or runoff.
6. **CHUTE WASHOUT CONTAINMENT:** Water used in the cleaning of cement truck delivery chutes shall be discharged into a predefined, bermed containment area on the job site. The required containment area is to be bermed so that wash water is totally contained. Wash water discharged into the containment area shall be allowed to infiltrate or evaporate. Dried concrete waste shall be removed from the containment area and properly disposed of. The direct or indirect discharge of water containing waste concrete to the storm sewer system is prohibited (Sec.56-102a, c; Revised Municipal Code, City and County of Denver).
7. **SWEEPING:** This BMP requires that impervious surfaces which are adjacent to or contained within construction sites be swept on a daily basis or as needed during the day when sediment and other materials are tracked or discharged on to them. Either sweeping by hand or use of Street Sweepers is acceptable. Street sweepers using water while sweeping is preferred in order to minimize dust. Flushing off paved surfaces with water is prohibited.
8. **PERIMETER CONTROL:** This BMP requires that a construction site install a perimeter control measure along the edge of the construction Site, to prevent, or filter the discharge of surface runoff from the construction site. The type of perimeter control used shall be determined based on site conditions and location. Maintenance and repair of the control measure shall occur as needed, in a timely manner.
9. **STOCK PILES:** Soils that will be stockpiled for more than thirty (30) days shall be protected from wind and water erosion within fourteen (14) days of stockpile construction. Stabilization of stockpiles located within 100 feet of receiving waters, or with slopes 3 to 1 or greater shall be completed within seven (7) days following stockpile construction. Stabilization and protection of the stockpile may be accomplished by any of the following: Mulching, Temporary/Permanent Revegetation Operations, Chemical Soil Stabilizer Application (requires Denver Public Works approval), or erosion control matting/Geotextiles. If stockpiles are located within 100 feet of receiving waters, a drainageway or the site perimeter, additional sediment controls shall be required.
10. **SAW CUTTING OPERATIONS:** The Contractor shall protect all storm sewer facilities adjacent to any location where pavement cutting operations involving wheel cutting, saw cutting, or abrasive water jet cutting are to take place. The Contractor shall remove and properly dispose of all waste products generated by said cutting operations on a daily basis or as needed throughout the work day. The discharge of any water contaminated by waste products

**REVISION OF SECTION 208
EROSION CONTROL**

from cutting operations to the storm sewer system is prohibited. (Sec.56-102a, c; Revised Municipal Code, City and County of Denver)

PART V: CONSTRUCTION REQUIREMENTS

A) SCHEDULES:

At least 10 working days prior to the beginning of any construction work, the Contractor shall submit for approval a schedule for accomplishment of temporary and permanent BMPs shown in the SWMP. This schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent BMPs. The schedule shall include BMPs for all areas within the Project boundaries, including but not limited to, haul roads, borrow pits, and storage and other staging sites. Work shall not be started until the BMP schedule has been approved in writing by the Project Manager, and on site pre-construction inspection is performed and approved by CCD's NPDES inspector. Once the work has started, and during the active construction period, the Contractor shall update the schedule for all BMPs on a regular basis, and as required to keep the SWMP in compliance.

B) CONSTRUCTION IMPLEMENTATION:

The Contractor shall incorporate into the Project all BMPs that are appropriate for the current phase of work, as outlined in the accepted schedule.

C) UNFORSEEN CONDITIONS: The Contractor shall direct the ECS (under the supervision of a Professional Engineer licensed in the State of Colorado) to design and implement BMPs for correcting conditions unforeseen during design of the Project, or as possible for emergency situations, which arise during construction. The Project's SWMP, UDFCD Vol 3 standards and details, and CDOT's "Erosion Control and Storm-Water Quality Guide," and any approved modification to these documents as proposed by the Contractor, shall be used as reference documents for the purpose of designing appropriate BMPs. Measures and methods proposed by the Contractor to deal with unforeseen conditions shall be reviewed and approved in writing by the Permit Enforcement Authority and the Project Manager prior to implementation and construction.

In an emergency situation, the Contractor shall use best judgment for immediately responding to the emergency situation as it arises, and shall notify the Permit Enforcement Authority and ECS of the emergency situation and BMPs employed in response as soon as practical after installation.

D) PERMITS:

The Contractor shall obtain all required permits for the Project including those required by federal, state, and local agencies. The Contractor shall obtain (or transfer from the City when specified) required erosion control and water quality permits and shall be responsible for compliance with all requirements under any such permits.

E) EROSION CONTROL SUPERVISOR:

Contractor shall assign to the Project an employee or subcontractor to serve as Erosion Control Supervisor (ECS). The ECS shall be a person other than the Contractor's superintendent, foreman, or equivalent supervisory position. The ECS shall be experienced in aspects of BMP construction and have satisfactorily completed a Colorado DOT or equivalent ECS training program authorized by the City.

REVISION OF SECTION 208 EROSION CONTROL

Proof that this requirement has been met shall be submitted to the Project Manager at least ten working days prior to the beginning of any soil disturbance work. A list of authorized ECS training programs is available from the City upon request. Additionally, per definition, the ECS shall be under the direction of a Professional Engineer licensed in the State of Colorado when performing any modifications to the Project Stormwater Management Plan (SWMP).

The ECS shall be responsible for oversight of the implementation, maintenance, and revision of the SWMP for the duration of the Project. CCD requires the ECS to fulfill responsibilities as outlined by CDPS such as having financial control and authority to implement BMPs. The ECS's responsibilities shall be as follows:

- 1) Ensure compliance with all water quality permits or certifications in effect during the construction work.
- 2) Supervise the installation, construction, and maintenance of all BMPs specified in the Contract and coordinate the construction of BMPs with all other construction operations.
- 3) Direct the implementation of suitable BMPs as necessary to correct unforeseen conditions or emergency situations. Direct the dismantling of those features when their purpose has been fulfilled due to completion of each Project phase unless the Permit Enforcement Authority agrees that the features be left in place.
- 4) Attend the preconstruction conference, erosion control preconstruction inspection, Project scheduling meetings, weekly construction/ field meetings, substantial completion and final stabilization inspections, and other meetings regarding construction that could impact water quality.
- 5) Evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, the ECS shall propose appropriate SWMP modifications to the Contractor to protect off-site water from becoming contaminated with sediment or other pollutants.
- 6) Coordinate with the Contractor to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
- 7) Coordinate with the Contractor to ensure all labor, material, and equipment deployed to meet SWMP requirements is judged appropriately.
- 8) During construction, update and record the following items in the SWMP as changes occur:
 - (i) Construction boundaries (may require Major SWMP Modification)
 - (ii) Areas of disturbance (may require Major SWMP Modification)
 - (iii) Areas used for storage of construction materials, equipment, soils, or wastes.
 - (iv) Location of any dedicated asphalt or concrete batch plants.
 - (v) Location of construction offices and staging areas.
 - (vi) Location of work access routes during construction.
 - (vii) Location of borrow and waste.
 - (viii) Location of temporary and permanent stabilization

The ECS shall start a new site map before the current one becomes illegible. All site maps shall remain with the SWMP paperwork.

- 9) Amend the SWMP whenever there are: additions, deletions, or changes in locations of BMPs. SWMP revisions shall be recorded immediately. Items shall be dated and signed at time of occurrence. Specifically, amendments shall include the following:
 - (i) A change in design, construction, operation, or maintenance of the site which would require the implementation of new or revised BMPs; or

**REVISION OF SECTION 208
EROSION CONTROL**

- (ii) Changes when the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity.
 - (iii) Changes when temporary BMPs are no longer necessary from changes in Project phase and are removed. All inspection and maintenance activities or other repairs shall be documented.
- 10) All inspection and maintenance activities or other repairs shall be documented. The SWMP and documentation shall be kept on the Project site at all times.
 - 11) Modify the site map with arrows to indicate direction of surface and storm water flowing across the Project site.
 - 12) When adding or revising BMPs in the SWMP, amend the narrative to explain what, when, where, why, and how the BMP is being used, and add a detail to the SWMP.
 - 13) If using existing topography, vegetation, etc. as a BMP, label it as such in the SWMP site map; amend the Narrative to explain when, why, and how the BMP is being used in the SWMP.
 - 14) Record on the SWMP, and implement the approved plan for concrete and asphalt saw cutting, grinding, and milling containment and removal.
 - 15) Update the potential pollutants list in the SWMP throughout construction meeting CASDP requirements.
 - 16) Spills, leaks, or overflows that result in the discharge of pollutants shall be documented on the inspection form. The ECS shall record the time and date, weather conditions, reasons for spill, and how it was remediated. The ECS shall immediately report to the Contractor and Project Manager the following instances of noncompliance:
 - (i) Noncompliance which may endanger health or environment.
 - (ii) Spills or discharge of hazardous substance or oil which may cause pollution of the City MS4 or State Waters.
 - (iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
- 16) Perform a thorough inspection of the stormwater management system at least every seven (7) days and within 24 hours after any precipitation or snowmelt event with the potential to cause surface erosion. If no land disturbing construction activities are present during a storm event, post-storm event inspections shall be conducted prior to commencing any new land disturbing construction activities, but no later than seventy-two (72) hours following the storm event. The inspection records shall be kept on-site in a written or previously approved format. Inspections shall be conducted during the progress of the work, during work suspensions, or until Final Stabilization of all disturbed areas is approved by Permit Enforcement Authority and shall include the following services at a minimum:
- (i) The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. BMPs identified in the SWMP shall be observed to ensure that they are operating correctly.
 - (ii) The description of potential pollutant sources, and the BMPs identified in the SWMP, shall be revised and modified as appropriate based on the results of the inspection as soon as practicable after such inspection. Modification to the SWMP shall be implemented in a timely manner and in accordance with applicable Permit requirements.
 - (iii) The operator shall keep a record of inspections. Uncontrolled releases of sediment or polluted storm water or measurable quantities of sediment found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as

**REVISION OF SECTION 208
EROSION CONTROL**

- (iv) well as any measures taken to clean up the sediment that has left the site. Inspection records shall be made available to the City upon request. Note: documentation of uncontrolled releases at site DOES NOT alleviate any State or Federal requirements for reporting of discharges or upset conditions. Care shall be taken to ensure compliance with all regulatory requirements at site.
- (v) Seven (7) day inspections are required during construction and at all times until Final Stabilization has been achieved. Seeding and mulching of disturbed areas does NOT count as final stabilization until such time as 70% pre disturbed vegetative cover has been achieved. Sites with growth in place sufficient to deter erosion that have not yet achieved final stabilization may petition the City to grant an alternative inspection schedule while awaiting additional growth for final stabilization. These inspections must be conducted in accordance with the above paragraphs.

F) APPLYING BMPs TO STABILIZE SITE:

The duration of the exposure of incomplete construction to the effects of weather shall be as short as practicable. BMPs such as: seeding, surface roughening, mulching, applying tackifier, use of geotextiles and matting, permanent landscaping, or other selected BMPs shall be applied within fourteen (14) calendar days of completion of grading/soil disturbance activities to stabilize the construction site unless disturbed area is within 100 feet of an MS4 or State Waters or has slopes of 3 to 1 or greater in which case BMPs shall be implemented within seven (7) calendar days of completion of grading activities. Disturbed areas where work is temporarily halted shall be temporarily stabilized within seven (7) days after the activity ceased unless work is to be resumed within thirty (30) calendar days after the activity ceased.

Clearing and grubbing operations shall be scheduled and performed to minimize both the area of the Project disturbed at a given time and the amount of time that disturbed areas remain open. BMPs such as temporary seeding are required between successive construction stages when disturbed areas will not be stable or active for thirty (30) calendar days or more. No payment will be made for additional work required because the Contractor has failed to properly coordinate the BMP schedule, thus causing previously stabilized areas to be disturbed by operations that could have been performed prior to the stabilization. Upon failure of the Contractor to coordinate the permanent BMPs with the grading operations in a manner to effectively control erosion and prevent water pollution, the Permit Enforcement Authority can suspend the Contractor's grading operations and the Project Manager can withhold monies due to the Contractor on current estimates until such time that all aspects of the work are coordinated in an acceptable manner.

G) WORK OUTSIDE LIMITS OF CONSTRUCTION: Non-contiguous areas outside the limits of construction that are used by the Contractor that include, but are not limited to, borrow pits, haul routes, storage and disposal areas, field offices, maintenance, batching areas, etc., shall have appropriate BMPs implemented by the Contractor at the Contractor's expense. Should said areas meet applicable CASDP Permit criteria, the Contractor shall obtain a separate CASDP or amend existing CASDP for each area as applicable at no additional expense to the City.

H) MAINTENANCE: The Contractor shall continuously maintain erosion and sediment control BMPs on a daily basis or as directed by the ECS so that they function properly during and after construction (including

**REVISION OF SECTION 208
EROSION CONTROL**

work suspensions) until Final Stabilization has been approved by the Permit Enforcement Authority. Maintenance includes, but is not limited to, the following items:

- (i) From the time seeding and mulching work begins until the date the Project has reached Substantial Completion of Erosion Control, the Contractor shall keep all seeded areas stabilized at all times. Any damage to seeded areas or to mulch materials shall be promptly repaired.
- (ii) All inspection sediment removal, and BMP maintenance activities to comply with all Federal, State & Local erosion control permit requirements until Final Stabilization is reached.
- (iii) All removal and replacement of existing BMPs due to damage to same suffered either by the contractor, outside agencies, the public, or acts of God.
- (iv) All required mechanical and/ or manual street sweeping.
- (v) Discretionary changes required of any regulatory enforcement officer.

If the Contractor fails to maintain the BMPs in accordance with the Contract, or as directed, the City may at the expiration of a period of 48 hours, after having given the Contractor written notice, proceed to maintain BMPs as deemed necessary. The cost thereof will be deducted from any compensation due, or which may become due to the Contractor under this Contract.

I) MINOR SWMP MODIFICATIONS: Shall be made in the field by the Contractor and thoroughly documented in the Contractor's SWMP narrative and drawings. Should the Permit Enforcement Authority deem minor field modifications inadequate, the Contractor may be required to a) make specific modifications as requested by the Permit Enforcement Authority or b) return to the original approved design specifications. Minor SWMP Modifications are allowed, covered under the original CASDP, and required as part of standard maintenance and operation.

J) MAJOR SWMP MODIFICATION: The City reserves the right to require changes in the Work or Project Limits that may require a Major Modification to the SWMP and/ or CASDP due to unforeseen circumstances. Should this occur, the Contractor will be responsible for the following (as applicable) and applying for CASDP amendment:

- (i) Make required revisions to comply with changing Federal or State rulemaking if it occurs within timeframe of the Project
- (ii) Make required revisions due to unforeseen or unplanned conditions leading to deficient Drawings/ SWMP (hazardous materials encountered, landfills, expansion of work limits, etc.)
- (iii) Prepare revised SWMP elements endorsed by a Professional Engineer licensed in the State of Colorado.

K) SUBSTANTIAL COMPLETION OF EROSION CONTROL: When a CASDP is required for the Project, Substantial Completion of the Project as defined by the City and County of Denver General Contract Conditions cannot be reached until Substantial Completion of Erosion Control has been granted. Granting of Substantial Completion of Erosion Control must be requested by the Contractor and be approved by the Permit Enforcement Authority in the form of a "Certificate of Substantial Completion of Erosion Control".

L) FINAL STABILIZATION: Granting of Final Stabilization must be requested by the Contractor and be approved by the Permit Enforcement Authority. Other permanent soil stabilization techniques may be proposed, in writing, by the Contractor and used upon approval, in writing, by the Project Manager and Permit Enforcement Authority.

-11-
REVISION OF SECTION 208
EROSION CONTROL

The Contractor shall follow the following procedures for approval of Final Stabilization:

- (i) The Contractor shall file Inactivation Request for Construction Activities Stormwater Discharge Permit (available within CASDP guidance documents) with the Permit Enforcement Authority.
- (ii) The Contractor shall coordinate with the Permit Enforcement Authority to hold a Final Inactivation Inspection.
- (iii) If passing, the Permit Enforcement Authority transmits a letter of approval for Final Stabilization.
- (iv) If not passing, the Permit Enforcement Authority transmits a letter of denial for Final Stabilization with associated inspection report to Contractor.
- (v) Stabilization, inspection and maintenance requirements shall continue until confirmation of having met final closure requirements have been granted in writing by the Permit Enforcement Authority.
When Final Stabilization has been reached, the Permit Enforcement Authority shall issue a "Certificate of Final Stabilization".
- (vi) Once the Inactivation request is approved by the City and County of Denver, the contractor can apply to close the State Stormwater Permit.

M) FINAL ACCEPTANCE:

CASDP obligations (including reaching Final Stabilization) may hinder the ability to reach Final Acceptance for the overall Project as defined in the City General Contract Conditions.

PART VI: CONSTRUCTION OF BMPs

BMPs shall be constructed so that they conform to all requirements as set forth within the Project SWMP. They shall meet all requirements set forth within each BMP detail and shall be installed and maintained so that they function in an effective and operable manner.

PART VII: METHOD OF MEASUREMENT

Rock Socks will be measured by the unit as specified in the Contract that are installed and accepted. Payment will be full compensation for all work, materials and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of work.

Storm drain inlet protection will be measured by the unit as specified in the Contract. Payment will be full compensation for all work, materials and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of work.

Concrete washouts will be measured by the unit as specified in the Contract. Payment will be full compensation for all work, materials and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of work.

Temporary Construction Site Fence will be measured by the unit as specified in the Contract that are installed and accepted. Payment will be full compensation for all work, materials and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of work.

**REVISION OF SECTION 208
EROSION CONTROL**

Removal and disposal of construction sediment and debris will not be measured. Removal and disposal of construction sediment and debris shall be included in the work. Removal and disposal of sediment, concrete & trash that is or is not generated by construction activities will not be measured separately but shall be included in the work. Any excavation required for the removal of sediment will not be measured separately but shall be included in the work.

Erosion Control Supervisor (ECS) will not be measured for, but will be considered as subsidiary obligation of the Contractor under the contract. to be on the Project performing the duties (including supervision by a Professional Engineer licensed in the State of Colorado) as outlined in this Specification.

The Contractor shall record the tasks that were performed by the ECS and the hours that were required to complete each task. The records for the payment period shall be submitted to the Project Manager after completion of work, at the time of monthly pay request, for approval and acceptance.

PART V: BASIS OF PAYMENT

Erosion Control will not be measured and paid for separately, but shall be included in the work unless specified otherwise.

<u>Pay Item</u>	<u>Pay Unit</u>
Rock Sock	EA
Storm Drain Inlet Protection	EA
Concrete Washout Structure	EA
Temporary Construction Site Fence	LF

End Revision of Section 208 Erosion Control

**REVISION OF SECTION 212
LANDSCAPE RESTORATION**

Section 212 of the Standard Specifications is hereby revised for this project as follows:

Subsection 212.01 shall include the following:

Disturbance of existing landscaping shall be minimized wherever possible. The Contractor shall notify the Engineer or Project Manager of any potential disturbance before beginning of work.

Landscape restoration shall consist of the repair and/or replacement of all landscape materials that may be damaged through the actions of the Contractor or his agents. This work may include but is not limited to sod, fencing, plantings, sprinkler systems and decorative features.

Sod shall be measured and paid for by Section 212: Seeding, Fertilizer and Sodding, and sprinkler system repair shall be measured and paid for by Section 623: Sprinkler System. All other landscape repair and/or replacement of landscape materials shall be included in the cost of landscape restoration.

Subsection 212.07 shall include the following:

Landscape Restoration will be measured by actual number of square feet restored and accepted by the Engineer.

Subsection 212.08 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Landscape Restoration	Square Foot

End Revision of Section 212 Landscape Restoration

**REVISION OF SECTION 212
SEEDING, FERTILIZER AND SODDING**

Section 212 of the Standard Specifications is hereby revised as follows:

Subsection 212.01 shall include the following:

Work performed in areas under the jurisdiction of Denver Parks and Recreation Department shall conform to the standards of that Department.

Subsection 212.04 shall include the following:

At the direction of the Engineer seeding will be accepted in lieu of sodding.

Subsection 212.08 is hereby revised to include the following:

Sodding beyond the limits outlined on the plans and/or as marked in the field by the Engineer will not be paid for.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Sodding	Square Foot
Seeding	Square Foot

End Revision of Section 212 Seeding, Fertilizer, and Sodding

**REVISION OF SECTION 306
RECONDITIONING**

Section 306 of the Standard Specifications is hereby revised for this project as follows:

Section 306.02 is hereby revised to include the following:

All existing subgrade on alleys and streets from back of curb to back of curb shall be reconditioned.

Section 306.02 is hereby revised to include the following:

Unless otherwise indicated on the plans, the density requirements for reconditioning shall be: Clay Soils - 95% of the maximum density determined in accordance with AASHTO T-99 Granular Soils - 90% of the maximum density determined in accordance with AASHTO T-180. It is the Contractor's responsibility to provide Quality Control density testing and provide test results in a testing frequency, method and compile comprehensive reports as per Pre-construction submittal approved by the City Project Manager. Quality Control testing, reports and submittals will not be paid for separately but shall be included in the work.

Section 306.04 is hereby revised to include the following:

Reconditioning will not be measured and paid for separately but shall be included in the work.

End Revision of Section 306 Reconditioning

**REVISION OF SECTION 401 & 403
PLANT MIX PAVEMENTS**

Sections 401 and 403 of the Standard Specifications for Road and Bridge Construction are hereby deleted and replaced with the Comprehensive Specifications for the Metropolitan Government Pavement Engineers Council (MGPEC), included herein. Section 9.16 of the MGPEC Specifications is hereby deleted and replaced as follows:

HMAP patching or overlay shall be paid by the ton by batch ticket. Tack Coat will not be measured and paid for separately but shall be included in the cost of the work.

It is the Contractor's responsibility to provide Quality Control density testing and provide test results in a testing frequency, method and report as per Pre-construction submittal approved by the City Project Manager. Quality Control testing, reports and submittals will not be paid for separately but shall be included in the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
HBP Patch/Overlay	Ton

When the contract does not include pay items for Plant Mix Pavements, these items will not be paid for separately but shall be included in the work.

End Revision of Section 401 & 403 Plant Mix Pavements

**REVISION OF 412
PORTLAND CEMENT CONCRETE PAVEMENT**

Section 412 of the Standard Specifications is hereby revised for this project as follows:

Subsection 412.01 shall be revised to include the following:

This work shall also include driveway, crossspan, bus pad and alley paving.

Subsection 412.03 shall be revised to include the following:

Mix designs must be submitted for approval by the Engineer and shall be designed for the opening times required by the Traffic Control Plan. Such mix designs shall be submitted in a timely manner so as not to delay the scheduled commencement of the project, taking into account time for testing of the mix by the Contractor's laboratory. It is the Contractor's responsibility to provide Quality Control concrete strength testing and provide test results in a testing frequency, method and report as per Pre-construction submittal approved by the City Project Manager. Quality Control testing, reports and submittals will not be paid for separately but shall be included in the work.

Subsection 412.04 shall be deleted and replaced with Subsection 601.05, with the following revisions:

Calcium chloride (up to 1 percent by weight of cement) or Type C or E accelerators may be used under the following conditions:

- a. The median daily temperature is less than 55 degrees (Average of previous three days).
- b. The date of placement is between September 30th and May 30th.
- c. The concrete temperature may not exceed 80 degrees F prior to placement.

Difficulties encountered as a result of use of accelerators, the costs of associated delays, and corrective action costs shall be borne by the Contractor.

When High Early Strength is requested by the engineer for the convenience of the City, field strength of 2500 psi shall be achieved in 24 hours or less. An additional charge per cubic yard will be negotiated and paid for high early concrete when directed to be used by the Project Manager. If high early concrete is placed by the contractor without the request of the City the entire additional cost will be borne by the contractor. When directed by the Project Manager, a maturity meter (James Instrument Model No. 3006) shall be used to monitor on-site maturity of pavement concrete. The Contractor shall establish a maturity versus strength relationship for the concrete mixture being used. This correlation may be achieved by casting and curing cylinders on site, monitoring temperature and maturity of cylinders and paving concrete versus time, and testing cylinders at time intervals to establish the correlation.

Subsection 601.05, Paragraph 5, Item (2), referencing use of fly ash, shall be deleted. Subsection 412.10 shall be revised to include the following:

The Contractor is required to submit a detailed breakdown of paving equipment, vibratory devices, finishing tools, and provisions for protection from or avoidance of damage from weather impacts. This information shall be submitted for approval by the Engineer prior to commencing any construction activities.

**REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT**

Subsection 412.12 shall be revised to include the following:

The Contractor shall insure that new concrete items built under this contract drain properly and, as such, there are no areas of standing water on new concrete items.

The Contractor shall protect all new concrete items built under this Contract against defacement, or other injury, from any cause. If said damage cannot be adequately repaired to the satisfaction of the Engineer, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Subsection 412.13(a) 1, shall be deleted and replaced with the following:

Longitudinal Construction Joints Keyways in longitudinal construction joints are optional. Deformed steel tie bars of specified length, size, spacing, and material shall be placed perpendicular to the longitudinal joints by an approved method. When adjacent lanes of pavement are constructed separately, Grade 40 (not Grade 60) tie bars may be bent at right angles against the form of the first lane constructed and straightened into final position before the concrete of the adjacent lane is placed. If epoxy-coated steel tie bars are bent and then straightened into final position, at the Engineer's discretion the bars shall be repainted with epoxy coating prior to placement of the adjacent concrete. The tie bars shall be inserted into the plastic state concrete between the auger and the vibrators. Other methods of the bar placement may be acceptable if the Contractor can demonstrate satisfactory performance of his alternate method. Proposals of alternate methods or additional costs associated with other methods shall be at the Contractor's expense.

Subsection 412.13(b), delete the first sentence and replace it with the following:

Weakened plane joints shall be formed by sawing to the depth specified on the drawings, in accordance with the requirements of this subsection or as otherwise approved by the Engineer, except as follows: When required to adhere to the City Noise Control Ordinance, joints shall be formed initially by deep tooling or "soft-cut" methods, followed by sawing at the first available time within the ordinance.

Subsection 412.13(b) 2, delete the first and second paragraphs and replace with the following:

Transverse weakened plane joints shall be formed by sawing a groove in hardened concrete in accordance with plan details.

The Contractor shall cut the transverse and longitudinal joints to the width and depth required. The cut shall be made with a power driven saw. Any damage to the concrete pavement such as spalling or fracturing shall be repaired by the Contractor as directed by the Engineer at no cost to the project. The joints shall be immediately flushed with water to remove any sawing residue from the joint and pavement surface.

If concrete approaches or any widening beyond the width of the initial pass is constructed subsequent to the driving lanes, transverse weakened plane joints shall immediately be formed in the approaches extending from any joints in the driving lanes.

**REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT**

Subsection 412.13(b) 2, shall be revised to include the following:

The time schedule for sawing weakened plane joints shall be as follows: Every second joint shall be sawed 2 to 12 hours after pavement placement, provided the concrete has sufficiently set so as to preclude the dislodging of aggregate particles by the saw. Unless otherwise directed by the Engineer, the exact time of sawing shall be determined by the Contractor and will be dependent on weather conditions, ambient temperature, mix characteristics and other factors that may affect the setting time of the concrete. Every effort shall be made to saw early enough to control or limit random cracking. The intermediate joints shall be sawed prior to opening to traffic, but in no case longer than 48 hours after placement of the concrete.

The Contractor shall adhere to the City Noise Control Ordinance. In the event that the need for saw cutting is anticipated during restricted time periods, a "soft-cut" saw shall be used before restricted hours, or deep tooling of joints shall be performed on plastic concrete, followed by saw cutting of the concrete as soon as possible during unrestricted hours. At the discretion of the Engineer, saw cutting will be prohibited between 10:00 p.m. and 7:00 a.m.

Subsection 412.18 shall be deleted and replaced with the following:

412.18 Sealing Joints.

This work shall consist of sawing, cleaning and sealing Portland cement concrete pavement joints for new pavements.

Cleaning, repairing and proper curing of any spalls, fractures, breaks or voids in the concrete surface of the joints shall be accomplished at least 4 days prior to installing the backer rod material or joint sealant. Joint sealing or resealing shall be performed only when the ambient and pavement temperatures are 50 degrees F or higher, unless otherwise approved by the Engineer. The pavement surface and joints shall be dry and the sealant shall not be placed unless the weather conditions are dry. The sealant shall be placed a minimum of 4 days after joints are washed clean.

The Contractor shall thoroughly clean the joint and adjacent pavement for a width of not less than one inch on each side of the joint of all scale, dirt, dust, residue, or any foreign material that will impair bonding of the joint sealant. Immediately prior to the placement of backer rod material and the sealant, the joints shall be cleansed using a minimum of 100 psi compressed air.

Work shall be stopped when and if it is found that there is oil or moisture in the compressed air. Work shall not resume until suitable adjustments are made. The Contractor is to check for such oil or moisture at the start of every work cycle and periodically during the cycle using an Engineer approved method. The backer rod shall be placed in such a manner that the grade for the proper depth of the sealant material is maintained. Under no conditions shall the Contractor place the backer rod material or the sealant if there is dust, moisture, oil or any foreign material on that portion of the concrete that is to receive the backer rod material or joint sealant.

**REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT**

A copy of the manufacturer's recommendations pertaining to the heating and application of the sealant shall be submitted to the Engineer prior to the beginning of work, and these recommendations shall be adhered to by the Contractor, with such exceptions as this specification may require.

The sealant material shall be hot applied into the joint using equipment and techniques recommended by the joint sealant manufacturer. The surface of the finished joint seal shall have a flat level surface that is 3/16+/-1/16 inch below the surface of the concrete pavement. Sealant not placed within these tolerances will not be measured and paid for, and the Contractor shall remove the joint sealant material and clean and reseal these joints in accordance with the criteria outlined in the special provision at no additional cost to the project. If, in the opinion of the Engineer, the Contractor shows an inconsistency in his ability to fill the joints to the required dimensions, the Contractor shall cease his operations until such time as he can comply with the required criteria in a consistent manner.

In addition, the Engineer may elect to check for bonding or adherence to the sides of the joint. Material shall conform to Subsection 705.01(a).

The joint material must withstand a 20 pound pull force applied perpendicular to the joint as indicated in "COLORADO PROCEDURE 67-90".

Subsection 412.22 shall be deleted and replaced with the following:

The pavement shall be cleaned and opened to traffic in accordance with the time requirements shown on the plans or in the specifications.

Pavement shall not be opened until it has reached a compressive strength of 2500 psi in-place, regardless of the curing time required by the Traffic Control Plan. The TCP may necessitate the required compressive strength to be attained within 72 hours or less.

Subsection 412.24 shall be revised to include the following:

Payment under Concrete Pavement shall be full compensation for all materials and labor required to complete the various pavement sections, including expansion joints, areas of thickened edges, driveways, bus pads and alley paving.

New curb and gutter that is adjacent to new concrete pavement will not be measured and paid for separately but included in the square yard measurement for concrete pavement. Measurement and payment will be to back of curb except where curb ramp limits overlap.

Pay Item
Concrete Pavement

Pay Unit
Square Foot

End Revision of Section 412 Portland Cement Concrete Pavement

**REVISION OF SECTION 503
DRILLED AND VACUUMED CAISSON**

Section 503 of the Standard Specifications is hereby revised for this project as follows:

Section 503.01 is hereby revised to include the following:

This work consisted of constructing the Traffic Signal Pole Foundations using either a drill or vacuum method at the locations as shown on the plans and as directed by the Engineer. The placing of reinforcing steel and concrete in the excavated holes must in accordance with these specifications and in conformity with the lines and grades on the plans or established.

Traffic Signal Pole Foundations shall conform to the requirements of the City and County of Denver's Standard Details for Signal Pole Foundations (Detail 16.1.8).

Section 503.03, delete the first paragraph and replace with the following:

Caisson excavations performed with a vacuum pothole machine will be to prevent drilling through existing utilities. The locations where vacuum method is employed shall be per the approved plans or at the discretion of the Engineer.

Section 503.08 is hereby revised to include the following:

Drilled or Vacuumed Caissons (24 Inch, 36 Inch and 48 Inch) will be measured by the linear foot from the elevation shown on the plans to the bottom of the hole excavated. The pedestal pole caisson (18 Inch) will not be measured and pay for separately, but shall be included in the cost of the Pedestal Pole installation.

Furnish and installation of base plates, anchor bolts, nuts and nut covers that are required components of the traffic signal pole foundation are incidental to the Contractor's unit cost for Drill and Vacuumed Caissons.

Section 503.09 is hereby revised to include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Drilled Caisson (24 Inch)	Linear Foot
Vacuumed Caisson (24 Inch)	Linear Foot
Drilled Caisson (36 Inch)	Linear Foot
Vacuumed Caisson (36 Inch)	Linear Foot
Drilled Caisson (48 Inch)	Linear Foot
Vacuumed Caisson (48 Inch)	Linear Foot

The unit price of drilled or vacuumed caissons (24 Inch, 36 Inch and 48 Inch) shall be full compensation for making all excavations; hauling and disposal of excavated material; performing all necessary pumping; furnishing and placing required concrete and anchor bolts and reinforcement steel, including the reinforcement projecting above the tops of the caissons necessary for splicing; all backfilling; removing casings; and for furnishing all tools, labor, equipment, and incidentals necessary to complete the work. No extra payment will be made for casing left in place.

End Revision of Section 503 Drilled and Vacuumed Caisson

**REVISION OF SECTION 608
SIDEWALKS AND CURB RAMPS**

Section 608 of the Standard Specifications is hereby revised for this project as follows:

Section 608.01 is hereby revised to include the following:

Concrete curb ramp construction shall conform to the requirements of the City & County of Denver's Standard Details for Curb Ramps (Detail 7.4). Construction of concrete curb ramps shall include the installation of detectable warnings (truncated domes).

Concrete driveway construction shall conform to the requirements of the City & County of Denver's Standard Detail for Standard Commercial Driveways (Detail 6.1).

Section 608.02, shall be deleted in its entirety and replaced with the following:

Materials shall meet the requirements specified in the following subsections: Joint Fillers 705.01
Concrete for sidewalks, curb ramps and bikeways shall be class "P", broom finish with natural color as specified in subsections 601.02 and 601.03, except that No. 67 coarse aggregate shall be used..

Detectable warnings on curb ramps shall be Armor-Tile Tactile Systems or approved equal. Red detectable warning systems shall be used on gray concrete surfaces; yellow color detectable warning systems shall be used on red concrete surfaces.

Alternate materials may be used if pre-approved by the Engineer. The Contractor shall submit a sample of the product to the Engineer for approval prior to the start of the work. The sample shall include the name of the selected supplier, and documentation that the product meets all contract requirements and will be fully compatible with the curb ramp surface.

Concrete shall be cured with a non-pigmented "clear" curing compound.

All concrete used for sidewalks and curb ramps shall be reinforced with polypropylene fibers. Polypropylene fibers shall be FIBERMESH, FORTA FIBRE or approved equal. Length of fibers shall be as recommended by the manufacturer. Add 1.5 pounds of the polypropylene fibers per cubic yard of concrete. The fiber additive used in the concrete mix shall be that supplied by the Fibermesh Company, 4109 Industry Drive; Chattanooga, TN 37416; (800) 635-2308; or approved equal. The Contractor shall submit five (5) copies of fibrous concrete reinforcement product data for use by the Engineer.

Concrete will be subject to inspection and tests as required to assure compliance with quality requirements.

Section 608.03 shall include the following:

Detectable warnings on curb ramps shall be installed in strict accordance with the manufacturer's recommendations.

Section 608.03(d) is hereby revised to include the following:

Finishing shall occur only after the disappearance of bleed water and the second paragraph of Section 412.12 shall be adhered to. Sprinkling of pigment onto the fresh surface will not be permitted.

**REVISION OF SECTION 608
SIDEWALKS AND CURB RAMPS**

The Contractor shall ensure that new concrete items built under this contract drain properly and as such, there are no areas of standing water on new concrete items.

The Contractor shall protect all new concrete items built under this Contract from defacement, or other injury, from any cause. If said damage cannot be adequately repaired to the satisfaction of the Engineer, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Finished surfaces adjacent to paving work shall be adequately protected from soiling, staining and other damage.

Subsection 608.03(e) shall include the following:

All joints except expansion joints shall be completely filled with mortar. Mortar grout between granite pavers shall be uniform in appearance, texture and color. After initial set of mortar, joints shall be finished by tooling with round, non-staining jointer to produce glossy-hard, polished, slightly concave joint, free of drying cracks. Upon completion of granite paving, surfaces shall be left in a clean, unsoiled condition, to be approved by the Engineer.

Subsection 608.03(f) shall be revised to include the following:

The Contractor shall ensure that new concrete items built under this contract drain properly and as such, there are no areas of standing water on new concrete items.

The Contractor shall protect all new concrete items built under this contract against defacement, or other injury from any cause. If said damage cannot be adequately repaired to the satisfaction of the Engineer, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Add the following to Subsection 608.03:

- (g) *Adjust, Clean and Seal.* Remove and replace granite pieces that are broken, chipped, stained or otherwise damaged. Remove and replace new units which are misaligned or not to grade or do not match adjoining granite work. Provide new matching units, install as specified and fill joints to eliminate evidence of replacement. Repair defective and unsatisfactory joints as required to provide a neat, uniform appearance.

Exposed surfaces shall be kept free from mortar at all times. Any mortar smears shall be immediately removed with clean sponge and clean water before latex modified mortar can set. Wash areas of granite clean of excess grout. Clean granite work after completion of work, using clean water and stiff-bristle brushes. Do not use wire brushes, acid type cleaning agents or other cleaning compounds with caustic or harsh fillers. Apply penetrating sealant in strict accordance with manufacturer's recommendations.

- (h) *Protection.* All completed or in progress work shall be protected at all times during construction. Use a strong impervious film or fabric to securely cover granite.
- (i) *Paving in Cold Weather.* Remove any ice or snow formed on granite or concrete sub-slab by carefully applying heat until top surface is dry to touch. Remove granite work determined to be damaged by freezing

**REVISION OF SECTION 608
SIDEWALKS AND CURB RAMPS**

conditions. Do not use frozen materials or materials mixed or coated with ice or frost. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents. Do not use calcium chloride in mortar mixture or grout.

During all seasons, protect partially completed granite work against weather when work is not in progress, by a system approved by Engineer. Work shall not be left unprotected when air temperature falls below 50 degrees F.

Section 608.06 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete Sidewalk (6 Inch)	Square Foot
Concrete Curb Ramp	Square Foot

All work necessary and incidental to the construction of Concrete Sidewalk and Concrete Curb Ramp including bed course material, will not be measured and paid separately but shall be included in the work. Payment shall be full compensation for prep work; furnishing and placing all materials including detectable warnings; necessary to complete the work to the dimensions shown on the plans. Reconditioning, forms, finishing, backfill and curing will be in accordance with the plans and specifications and will not be paid for separately.

Detectable warnings on curb ramps, including all work and materials necessary for fabrication, transport, surface preparation and installation, will not be measured and pay for separately but shall be included in the cost of Concrete Curb Ramp.

Excavation to proposed subgrade elevation will not be paid for separately but shall be included in the work associated with Section 202, Removal of Structures and Obstructions.

End Revision of Section 608 Sidewalks and Curb Ramps

**REVISION OF SECTION OF 609
CURB AND GUTTER**

Section 609 of the Standard Specification is hereby revised as follows:

Subsection 609.02 shall be revised as follows:

In the first paragraph, reference to Section 703.07, Bed Course Material, shall be deleted.

Paragraph 2 shall be deleted and replaced with the following:

Concrete shall conform to the requirements for Class “P” concrete as specified in subsections 601.02 and 601.03. When curb machines are used, the Contractor will be permitted to use AASHTO M 43 Size 57 or 67 aggregate in lieu of the coarse aggregate specified in Table 601-1, and a lesser slump will be permitted.

Subsection 609.03(a) shall be revised as follows:

Excavation: Excavation shall conform to the requirements of the Revision of Section 608, Subsection 608.03(a).

Subsection 609.03(c) shall be revised to include the following:

The Contractor shall protect all new concrete items built under this Contract against defacement, or other injury, from any cause. If said damage cannot be adequately repaired to the satisfaction of the Engineer, the Contractor shall remove and replace the unacceptable items at Contractor’s expense.

Subsection 609.03(d) shall be revised to include the following:

For construction of curb and gutter adjacent to existing concrete pavement, the joint pattern shall match that of the concrete pavement. The joint pattern shall be approved by the Engineer prior to construction.

Subsection 609.03(i) shall be revised to include the following:

The Contractor shall insure that new concrete items built under this contract drain properly and, as such, there are no areas of standing water on new concrete items.

It is the Contractor’s responsibility to provide Quality Control concrete strength testing and provide test results in a testing frequency, method and report as per Pre-construction submittal approved by the City Project Manager. Quality Control testing, reports and submittals will not be paid for separately but shall be included in the work.

Subsection 609.07 shall be revised to include the following:

Payment will be made under:

Pay Item

Concrete Curb and Gutter

Pay Unit

Linear Foot

Payment shall be full compensation for labor and materials including, but not limited to, reconditioning, grading, backfill, curing compound, control and expansion joint and sealant as required completing these Pay Items.

End Revision of Section 610 Concrete Curb and Gutter

**REVISION OF SECTION 610
CONCRETE MEDIAN COVER**

Section 610 of the Standard Specifications shall be revised for this project as follows:

Subsection 610.02 shall include the following:

Aggregate for concrete median cover material shall be #67 or #57.

Subsection 610.03 shall include the following:

Landscape weed barrier fabric shall be installed in accordance with Subsection 420.08.

Subsection 610.05 shall include the following:

The accepted quantities will be paid for at the contract unit price for each of the pay items listed below.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete Median Cover (4 Inch)	Square Foot

End Revision of Section 610 Concrete Median Cover

**REVISION OF SECTION 613
ELECTRICAL CONDUCTOR IDENTIFICATION**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Subsection 613.08 shall include the following:

All electrical conductors shall be tagged as follows:

Electrical conductor cable tags shall be located below the termination in the base of the streetlight, in the pull box, in the pedestal, and at the point of termination to existing facilities of the Local Utility Company supplying electrical service. The tags shall be attached with a cable tie. The information written on the tag shall include the direction and approximate length of cable, feeds running from where and to, etc.

Each incoming conductor shall be individually color coded with one (1) tape mark, while outgoing conductors shall have two (2) tape marks.

Example:

-----	-----
FEEDS TO PULL BOX	FEEDS FROM XFMR
50' NORTH & 75' WEST	250' SOUTH & EAST
THEN TO HIGHWAY SIGN	200' WEST
-----	-----

Uniform tags are available in a Tag Kit. *The Tag Kit consists of: 100 tags, 3-part yellow with 1 hole, 100 black nylon ties and 1 black Sharpie pen.

<u>Manufacturers</u>	<u>Catalog Numbers</u>
Uticom Systems Inc.	U5025Y1
Or approved equal	

Subsection 613.11 shall include the following:

Electrical conductor tagging will not be paid for separately, but shall be included in the cost of wiring.

End Revision of Section 613 Electrical Conductor Identification

**REVISION OF SECTION 613
ELECTRICAL CONDUIT – GENERAL**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Add the following to subsection 613.07:

This work is for the installation electrical conduits. These conduits (laterals) shall be to connect the already installed traffic signal conduits to the traffic signal controller cabinets, electric meters, and traffic signal poles. The conduit installation shall be in accordance with this specification:

All conduit bends, including factory-installed bends, shall not have a bend radius less than six times the inside diameter of the conduit.

The excavations required for the installation of conduit or cable shall be performed in such a manner as to avoid unnecessary damage to streets, sidewalks, landscaping, sprinkler systems and other improvements. Trenches shall not be excavated wider than necessary for the installation of the electrical appurtenances. Excavation shall not be performed until immediately before installation of conduits. The material from the excavation shall be placed in a position not to cause damage or obstruction to vehicular or pedestrian traffic or interfere with surface drainage.

Trenches shall be made with a rock-wheel or other machine capable of cutting a narrow trench (4") so as to allow traffic to pass over prior to back filling. The machine shall be equipped with shields to direct the spoil downward and away from passing vehicles, workmen and pedestrians.

Off-street trenches shall be back-filled with the same material that was removed and shall be compacted and shaped to match the surrounding surface. On-street trenches within ALL roadway areas shall be back-filled with CDOT approved Structure Backfill (Flow-Fill) and capped with 9" minimum of Hot Mix Asphalt Pavement (Patching) in accordance with Section 403 and City and County of Denver Street Cut Regulations if applicable. If surrounding pavement depth is greater than 9 inches, the HMA (Patching) depth shall match the existing pavement.

All surface materials including sprinkler systems, landscaping, shrubs, sod grass, and native growth vegetation which is disturbed by trenching and back-filling operation shall be restored in kind equal to or exceeding the original conditions.

All conduit runs that will not have a copper conductor installed shall have a #12 AWG stranded copper conductor placed inside for locating purposes. Locating conductor and tape will not be measured and paid separately, but shall be included in the unit price for conduit.

Conduit shall always enter a pull box, hand-hole, or any other type structure from the direction of the run only.

All conduits shall be fully compatible with fiber optic cable. Plastic conduit shall be Schedule 80 in the diameters shown on the plans and shall be compliant with Bellcore TW-NWT-000356 requirements. Each conduit shall be equipped with a pull tape and each bore shall have a copper tracer wire of at least 12 gauge.

Plastic PVC conduit shall be certified by the manufacturer as meeting ANSI/UL 6 and 651. The manufacturer shall be ISO 9000 compliant.

**REVISION OF SECTION 613
ELECTRICAL CONDUIT – GENERAL**

All conduit bends, including factory-installed bends, shall not have a bend radius less than six times the inside diameter of the conduit.

Conduit plugs for sealing conduit shall also be supplied and installed in all open conduit ends as soon as the conduit is installed. Plugs shall be durable, fabricated from no metallic parts, be of the split design to allow removal and reinstallation around in-place cables and be easily removable and reusable. Plugs shall be capable of being installed by hand without any tools and shall provide a water and air tight seal of at least 100 psi and shall cause no damage to the cable when installed.

At some locations (as illustrated on the Plans or in these specifications, or as directed by the Engineer), new conduits shall be installed in an existing pull box. At these locations, the Contractor shall carefully excavate around the pull box and install the new conduit in the pull box in a manner that meets the requirements of this Special Provision. The Contractor shall not damage the existing pull box. If the existing pull boxes or concrete collars are cracked or damaged during conduit installation, the Contractor shall be required to replace either or both conforming to the requirements of the contract at no additional cost.

Subsection 613.10 shall include the following:

Electrical Conduit will be measured by the linear feet of conduit and installed in accordance with these Special Provisions, the Project Standards or as directed by the Engineer. Electrical Conduit will include groundwork, sweeps, pull cord, copper tracer wire, adapters, fittings, splice couplings, conduit plugs (for conduits both with and without fiber optic cable), equipment, labor, and all other items necessary to complete the work.

Pull Boxes shall not be measured and paid for separately, but shall be included in the work of the electrical conduit.

Subsection 613.11 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
2" Electrical Conduit	Lineal Foot
3" Electrical Conduit	Lineal Foot

End Revision of Section 613 Electrical Conduit - General

**REVISION OF SECTION 613
ELECTRIC METER PEDESTAL CABINET AND BASE**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Subsection 613.07 shall include the following:

New traffic signal installations require an Electric Meter Pedestal Cabinet and Base for the new traffic signal. Xcel Energy will furnish only the electric meter. The Contractor shall furnish the electric meter pedestal cabinet, and shall install the pedestal cabinet and base, by a licensed electrician (journeyman), at the locations as show on the plan and in accordance with the City and County of Denver’s standard – sheets 16.1.19 and 16.1.20.

Subsection 613.10 shall include the following:

Electric Meter Pedestal Cabinet and Base will be measured and installed in accordance with these Special Provisions, the Project Standards or as directed by the City. The Electric Meter Pedestal Cabinet and Base installation will include groundwork, sweeps, pull cord, copper tracer wire, adapters, fittings, splice couplings, conduit plugs, equipment, labor, and all other items necessary to complete the work.

Contractor shall submit material specifications to the Engineer for prior approval.

Subsection 613.11 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Electric Meter Pedestal Cabinet and Base	Each

End Revision of Section 613 Electric Meter Pedestal Cabinet and Base

**REVISION OF SECTION 613
PULL BOXES**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Subsection 613.07 shall include the following:

Type A pull box covers shall have the word "ELECTRIC" physically impressed (not painted) on top. Type B pull box covers shall have the word "TRAFFIC" physically impressed (not painted) on top. Type C pull box covers shall have the words "TRAFFIC COMM" physically impressed (not painted) on top. The covers shall be attached to the pull box body by screw-in bolts and shall have two lift slots to aid in the removal of the lid.

All concrete collars, footings, and location marker supports shall be Portland Cement Concrete Class B and shall be in accordance with Section 601.

Pull boxes that are to be in traveled ways shall be outfitted with traffic bearing lids rated for HS 20-44 loads. The pull boxes shall have a special concrete footing extending 8 inches around the outside and 6 inches around the inside of the pull box bottom, as shown in the plans. Pull boxes installed in dirt or landscape areas shall have a 12 inch wide by 6 inch thick concrete collar placed around the top in lieu of the concrete footing, as shown in the plans.

When the plans call for a fiber optic cable location marker to be installed at the pull box location, the concrete foundation support for the location marker shall be placed monolithically with the concrete collar.

Pull Box (Surface Mounted) shall be metal type with a hinged front door and have at least a NEMA 3R rating. The hinged door shall be provided with both a weather tight seal and a key lock mechanism. Surface mounted pull boxes shall be of the dimensions shown in the plans, and shall be mounted on or embedded into hard surfaces such as bridge decks, concrete barriers, retaining walls, or buildings, as shown on the plans. Surface mounted pull boxes shall be attached using 3/8-inch epoxy anchors or other methods, as approved by the Engineer. Surface mounted pull boxes shall not be used for ground installations.

Subsection 613.12 shall include the following:

Pay Item

Pull Box (Special)

Pay Unit

Each

Pull Box (Special) shall include the removal of any existing pull box, installation of the new pull box, modification of conduit ends, restoration of disturbed surface materials, and all other work necessary to complete the installation. All work necessary for the removal and installation of Pull Box (Special) will not be measured and paid for separately but shall be included in Pull Box (Special).

Pull Box (Special) will be paid for on the basis of the number of pull boxes installed.

All other pull boxes required to complete the work will not be measured and paid separately but shall be included in the work of the conduit installation.

End Revision of Section 613 Pull Boxes

**REVISION OF SECTION 614
LIGHTING (LUMINAIRE)(LED 5300 LUMENS)**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Subsection 613.02 shall include the following:

The Contractor shall furnish and install LED Street Light Luminaire at locations as shown on the plans. The LED Street Light Luminaire shall be compatible or interchangeable with standard LED Street Light Luminaire as stocked by the City and County of Denver.

The current LED Street Light Luminaire that are compatible with that stocked by the City and County of Denver is as follows:

<u>Manufacturer</u>	<u>Catalog Numbers</u>
E-Lite Star	ESU-CA012M03042S-525CCD1-1

The luminaire shall also include a photo cell (S-T P124-1.5-PTW or equal) and the luminaire finish shall be in Federal Green.

The Contractor shall submit a lighting materials list to the City and Denver for approval prior to ordering. Contact Chris Lillie at 720-865-4066.

Subsection 613.08 shall include the following:

At least one grounding electrode shall be installed adjacent to each light standard. Wiring shall be a 120/240 volt or 120/208 volt, 3-wire system with individual luminaire wired for 120 volts.

Subsection 613.11 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Luminaire (5300 LED)	Each

Luminaire shall be measured and paid by the number of luminaire installed. The item shall include all labor, materials, and ancillary hardware required to provide a fully-functional system to the satisfaction of the Engineer.

End Revision of Section 614 Lighting (Luminaire) (LED 5300 Lumens)

**REVISION OF SECTION 614
PEDESTRIAN SIGNAL HEADS (COUNT DOWN)**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work includes the installation of LED Pedestrian Signal Faces with countdown timers as shown in the Contract.

Subsection 614.08 (h) shall include the following:

Pedestrian signal faces with count down timers shall meet the following requirements:

- i. The dimensions of the signal housing and the LED symbols, as well as moisture and dust resistance requirements shall be in accordance with the current ITE PTCSI Standards.
- ii. Signal housing shall be aluminum, painted in Federal Green and “clam-shell” mounted.
- iii. The signal shall have user-selectable modes for countdown for walk cycle only, pedestrian cycle only, or both walk and pedestrian clearance.
- iv. The countdown module shall have an internal conflict monitor to prevent any possible conflicts between the Hand/Person signal indications and the time display. The display shall not countdown during a Solid Hand indication.
- v. LED symbols shall be solid icons and shall provide uniform light dispersion such that the “pixel” effect is minimized. Lettered or outline symbol styles will not be permitted.
- vi. The Man/Hand configuration shall provide clear and distinct lamination where either symbol is in use.
- vii. The LED module shall be rated for use in an ambient operating temperature range of - 40° F to 165° F.
- viii. The signal shall meet NEMA Standard TS2 for voltage surge protection, and shall have an automatic reset in case of a power outage.

Subsection 614.13 shall include the following:

LED Pedestrian Signal Heads (Count down) will be measured by the actual number of units that are installed and accepted.

Subsection 614.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Pedestrian Signal Heads (Count Down)	Each

End Revision of Section 614 LED Pedestrian Signal Heads (Count Down)

**REVISION OF SECTION OF 614
TRAFFIC CONTROL DEVICES**

Section 614 of the Standard Specification is hereby revised as follows:

Subsection 614.08 (h) shall include the following:

Programmable Signal Heads shall be 12” McCain Programmable Traffic Signal type, or approved equal.

“Light Emitting Diode” (LED) signal lenses shall be installed in all Red, Yellow, Green, signal displays. The LED signal lenses for the 12” and 8” circular balls and 12” circular arrows are hereby added to the Standard Specifications and shall comply with the following specifications:

Manufacturer Requirements and Approvals:

- The manufacturer supplying product to this specification shall have a minimum of 13 years of experience in the manufacture of LED Traffic Signals with High Flux LEDs used in the North American market.
- Manufacturers supplying products to this specification must be a registered participant and have the unique long life module part numbers being provided certified and listed on the Intertek-ETL LED Traffic Signal Modules Certification Program approved products website prior to bid opening.
- Manufacturers supplying products to this specification shall manufacture and assemble product on an Intertek ETL audited line located in the USA.
- Unique part number shall be listed on manufacturers label proving difference between standard modules and long life modules.
- If requested, documentation shall be provided by manufacturer demonstrating the changes made to their standard product that allows for ITE specification compliance over 15 year warranty period.

Physical & Mechanical Requirements:

General

- Tinted or Non-Tinted Lens. Unless designated otherwise in the below table the standard lens color shall be tinted with a color meeting the colors required in paragraph 4.2 of the ITE specification. The products shall be available with non-tinted lenses as an option.
- The LED module shall utilize high flux LEDs rated at 1 watt or higher and have an incandescent, non-pixelated appearance when illuminated. The use of low power LEDs, for example 5 mm LEDs, is not permissible in the design and production of long life arrow products.
- The external lens shall have a smooth outer surface to prevent the build up of dirt/dust and shall be designed to minimize the potential for sun phantom signals.
- All LEDs utilized to illuminate circular signal modules, shall be LEDs that have been manufactured utilizing materials that have industry acceptance as being suitable for uses in outdoor applications. At no time is the use of LEDs that utilize AlGaAs technology acceptable.
- The thermal management system used in the traffic ball must be self-contained and internal to the traffic module. At no time shall the thermal management system used for the power supply or LEDs form any part of the external surface of the LED module.
- All plastic components shall be molded and assembled in the USA. This includes: back housing, spreading lens and front lens. Certificate of manufacturing location must be available and supplied at time of bid requested.

REVISION OF SECTION 614 TRAFFIC CONTROL DEVICES

- All lenses shall be hard coated in the USA. Certificate of manufacturing location must be available and supplied at time of bid requested. All reflectors shall be metalized in the USA. Certificate of manufacturing location must be available and supplied at time of bid requested.

Module Identification

- In addition to the required ITE labeling all modules must be labeled with the ETL Verified label shown in Figure 1. This label designates the compliance and listing with the Intertek-ETL Traffic Signal Certification Program.

Electrical:

General

- The following color scheme shall be used for all modules AC power leads: White for Common, Red for the Red ball signal, Yellow for the Yellow ball signal, and Brown for the Green ball signal.
- The AC power leads shall exit the module via a rubber grommetted strain relief, and shall be terminated with insulated female quick connect terminals with spade/tab adapters. The leads shall be separate at the point at which they leave the module.
- All external wiring utilized in the LED traffic signal module shall be anti-capillary type wire to prevent the wicking of moisture to the interior of the module.
- LED Module and power supply shall be design to remain ITE compliant over a 15 year life.
- To minimize the temperature exposure of the power supply all power supplies should be located at the bottom of the module when the arrow is facing left.
- For additional protection from moisture, all power supplies shall be conformal coated for additional protection.

Transient Voltage Protection

- In addition to the transient test requirements defined in the Design Qualification Testing section of ITE Vehicle Traffic Control Signal Heads (VTCSH) specification all power supplies used in the circular signals supplied to this specification shall be capable of passing an additional ring-wave surge testing in accordance with the IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000V and less) AC Power Circuits, ANSI/IEEE C62.41.2-2002, 6KV, 100 kHz ring-wave with an output impedance of 30 ohms. The short circuit current shall be 200 Amps.

Power

- Typical wattages at 25° C for the 12” circular arrow LED traffic Signal Modules shall be: Red - 8 watts, Yellow - 13 watts, and Green - 8 watts.
- Typical wattages at 25° C for the 12” circular ball LED traffic Signal Modules shall be: Red - 7 watts, Yellow - 11 watts, and Green - 7 watts. Typical wattages at 25° C for the 8” circular ball LED traffic Signal Modules shall not exceed: Red - 8 watts, Yellow - 10 watts, and Green - 8 watts.

Quality Assurance

General

- Upon Request, the supplier must provide an Intertek-ETL test report for the base model being supplied to this specification.
- The base products must be listed in the Intertek Directory of LED Traffic Signal Modules Certified Products listing at the time of bid. Upon request the supplier must provide a copy of the listing in the bid package.

**REVISION OF SECTION 614
TRAFFIC CONTROL DEVICES**

Warranty Requirements:

Warranty

- Manufacturers shall provide a detailed written warranty issued by the factory of module origin with the following minimum provisions:
- Modules shall, at the manufacturer's option, be repaired or replaced if the module fails to function as intended due to workmanship or material defects within the first 15 years from the date of delivery.
- Modules shall, at the manufacturer's option, be repaired or replaced if the module exhibit luminous intensities less than the minimum specified values within the first 15 years of the date of delivery.
- Upon request, the LED lamp module manufacturer shall provide written documentation of its ability to satisfy a worst-case, catastrophic warranty claim.
- A current corporate annual report duly-certified by an independent auditing firm, containing financial statements illustrating sufficient cash-on-hand and net worth to satisfy a worst-case, catastrophic warranty claim is an example of suitable documentation.
- The documentation shall clearly disclose:
 - The country in which the factory of module origin is located
 - The name of the company or organization that owns the factory of module origin including any and all of its parent companies and/or organizations, and their respective country of corporate citizenship
- For firms with business and/or corporate citizenship in the United States of less than fifteen years, the process by which the end-users/owners of the modules will be able to obtain worst-case, catastrophic warranty service in the event of bankruptcy or cessation-of-operations by the firm supplying the modules within North America, or in the event of bankruptcy or cessation-of-operations by the owner of the factory of origin, shall be clearly disclosed.

Subsection 614.14 shall include the following:

LED signal lenses shall be included in the cost of the item for Traffic Signal Face and will not be paid for separately.

End Revision of Section 614 Traffic Control Devices

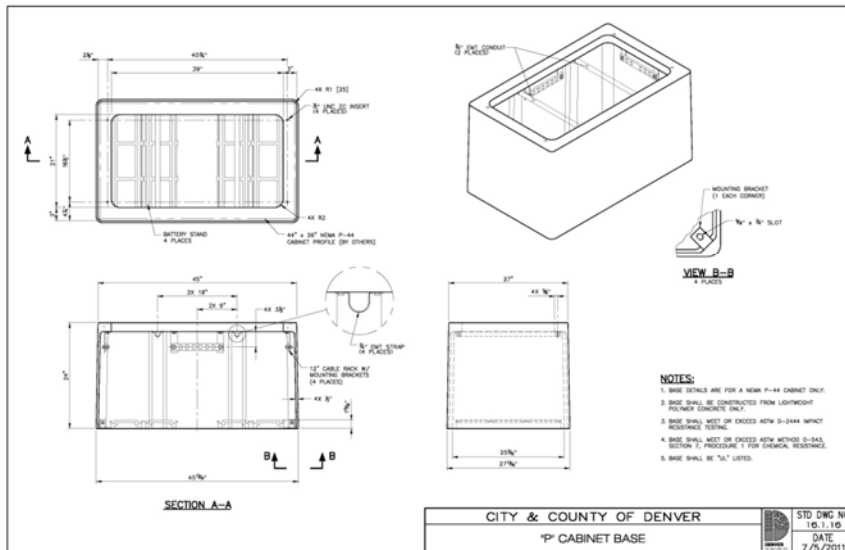
**REVISION OF SECTION 614
TRAFFIC SIGNAL CABINET BASE (INSTALL ONLY)**

Section 614 of the Standard Specifications is hereby revised for this project as follows.

Subsection 614.01 shall include the following:

This work consists of the installation of a composite Traffic Signal Controller Cabinet Base in accordance with City & County of Denver standards. The City and County of Denver will furnish the base that will fit the P-size traffic signal controller cabinet and the Contractor shall install the base at the locations as shown on the plan.

Dimensions of the cabinet base are as shown in the following drawing:



The Contractor shall pick up the base from the City & County of Denver maintenance facility at 5440 Roslyn Street, Denver and transport it to the site. Contact Chris Lillie at 720-865-4066 to schedule pick-up.

Subsection 614.10 shall include the following:

Prior to starting cabinet base installation, Contractor shall obtain field verification of the location of the cabinet from the Engineer.

Cabinet base installation shall include all labor and materials to completely install a new P-size cabinet base as directed in the plans. The item shall include all excavation, conduit installation and modification work, backfill and restoration of adjacent surface area.

**REVISION OF SECTION 614
TRAFFIC SIGNAL CABINET BASE (INSTALL ONLY)**

Subsection 614.13 shall include the following:

Installation of the traffic signal cabinet base shall not be measured and paid for separately, but shall be included in the cost for installation of the Traffic Signal Controller and Cabinet (Install Only).

Subsection 614.14 shall include the following:

Installation of the City-furnished traffic signal cabinet base will not be measured and paid for separately, but shall be included in the cost of the Traffic Signal Controller and Cabinet installation.

End Revision of Section 614 Traffic Signal Cabinet Base (Install Only)

**REVISION OF SECTION 614
TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work shall consist of the installation of a completed Traffic Signal Controller and Cabinet assembly, malfunction management units (MMU), vehicle detector amplifiers, uninterrupted power supply (UPS), other ancillary hardware, and traffic signal cabinet base as per City and County of Denver standards. The completed Traffic Signal Controller and Cabinet assembly will be furnish by the City and County of Denver and install by the Contractor at locations as shown in the plans. Material specifications are provided for information only.

Delete Subsection 614.08 (b), and replace with the following:

Traffic Signal Controllers – General

This specification sets forth the minimum requirements for a shelf-mountable, two through twelve phases, fully-actuated, digital, solid-state traffic controller. The controller shall meet, as a minimum, all applicable sections of the NEMA Standards Publication No. TS2-1998. Where differences occur, this specification shall govern. Controller versions shall be available to comply with NEMA TS2"Types 1 and 2. Type 2 versions of the controller shall be capable of operating as a Type 1. The controller shall meet or exceed the specifications of the Econolite model Cobalt (<https://www.econolite.com/files/8414/6135/8932/controller-cobalt-datasheet.pdf>), or an equivalent approved by the City and County of Denver Transportation & Mobility.

Delete Subsection 614.08 (c) and replace with the following:

All new cabinets are the P-type cabinets as per the City & County of Denver Traffic Standards. Each cabinet shall be installed on a newly installed traffic signal controller cabinet base unless otherwise specified on the plan. Contact Chris Lillie at 720-865-0466 for cabinet assembly requirements and all other necessary auxiliary hardware.

Controller cabinet assemblies shall include an integrated uninterrupted power supply (UPS) units that comply with the City and County of Denver standards (see UPS spec).

Subsection 614.09 shall include the following:

The Contractor shall deliver the traffic signal controller, and cabinet assemblies and other auxiliary hardware, to the City and County of Denver Traffic Operations Center at 5440 Roslyn Street, Building E, Denver, Colorado 80216 six (6) weeks before installation for controller programming. The Contractor shall coordinate the pick-up of the controller and cabinet assembly from the City and County of Denver's Transportation & Mobility and shall install it at the proper location. The Contractor shall coordinate pick-up times with Chris Lillie at (720) 865-4066.

The controller shall be installed in accordance with the details shown in the plans and in accordance with manufacturer's recommendations.

**REVISION OF SECTION 614
TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)**

Subsection 614.10 shall include the following:

The Contractor shall demonstrate successful traffic signal operations at all new controller and cabinet locations to the satisfaction of the Engineer or Engineer's designee prior to acceptance of this item. The Contractor shall contact the Engineer or Engineer's designee 3 days before turning on signal. Work shall include all required programming of controllers and establishing or re-establishing all required wiring connections. Phasing and timing information at each location shall be furnished to the Contractor by the City & County of Denver.

All new wiring shall conform to City & County of Denver and International Municipal Signal Association (IMSA) specifications.

Subsection 614.13 shall include the following:

The unit price for the installation of traffic signal controllers cabinets shall include all labor, materials, ancillary hardware, traffic signal cabinet base, wiring and wiring re-connection (including Xcel Energy power feed) required to provide and install a complete system and successful operation of the item. Connection of the controller to the fiber optic interconnect system shall be paid for separately under item 614 "Telemetry (Field)".

Removal and disposal of existing cabinets shall be in accordance with the Project Special Provision for the referenced item.

Subsection 614.14 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Traffic Signal Controller and Cabinet (Install Only)	Each

End Revision of Section 614 Traffic Signal Controller and Cabinet (Install Only)

**REVISION OF SECTION 614
ETHERNET MANAGED SWITCH (INSTALL ONLY)**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work consists of the installation of an Ethernet Managed Field Switch in the CCD controller cabinets. The switch will be furnish by City and County of Denver and install by the Contractor as part of the Traffic Signal Controller Cabinet (Install Only) at the locations as shown in the plans. Material specifications are provided for information only.

Subsection 614.08 shall include the following:

The Ethernet Managed Field Switch installation is hereby added to the Standard Specifications and Ethernet Switch complies with the following specifications:

General System Requirements –The Ethernet Managed Field Switch, or equivalent with the Industrial Ethernet Managed Field Switch, will be a Garrettcom Magnum Ethernet Managed Field Switch comprising of the following four (4) parts:

- (1) 6KQ-24VDC base unit with four 10/100 copper ports in slot A (without 24VDC power supply).
- (2) 6KQ-RJ45 module with four 10/100 copper ports in slot B.
- (3) 6KQ4-MLC module with four 100Mb 2km multi-mode LC fiber ports in slot C.
- (4) 6KQ-BLNK blank cover for 1 unused module in slot C.

The field switch also meets the following requirements:

- May be configured with a variety of 10/100/1000 Mb fiber and copper port connector types - 16 total ports maximum.
- Heavy duty and environmentally hardened fully enclosed metal case with advanced thermal design used as a heat sink (no fan).
- Dual LEDs for all-around status viewing.
- Wire speed filtering and forwarding across all ports - 802.3x flow control, 802.1p priority packet processing, self learning 4K-node address table, large 240KB packet buffers for 10/100 and 120KB for 1000Mb.

The unit is configured as a minimum:

Filtering/Forwarding Rate Performance:

- Ethernet (10Mb):14,880 pps
- Fast Ethernet (100Mb): 148,800 pps
- Gigabit Ethernet (1000Mb): 1, 488,000 pps
- Switching Processing Type: Store and Forward with IEEE 802.3x full duplex flow control, non-blocking
- Data Rate: 10Mbps, 100Mbps and 1000Mbps
- Address Table Capacity: 4K node, self-learning with address aging
- Packet buffer size: 240KB for 10/100 and 120KB for 1000Mb
- Latency: 5 μ s + packet time (100 to 100Mbps); 15 μ s + packet time (10 to 10 Mbps, and 10 to 100Mbps)
- Throughput with 12 10/100 and 2Glink max.- 4.76M pps (Transmit)
- Back plane- 2.66 GB/s per slot LEDs:

2-
REVISION OF SECTION 614
ETHERNET MANAGED SWITCH (INSTALL ONLY)

- Per Port (one set at the port, one set on swivel top on right side)
- LK: Steady ON when media link is operational
- ACT: ON with receiver port activity
- FDX/HDX: ON = Full-Duplex Mode; OFF = Half-Duplex Mode
- 100/10: ON = 100Mbps speed; OFF = 10 Mbps

Network cable connectors:

- 1000Mb fiber ports: all standard Gb SFP Transceiver types supported
- 1000Mb copper ports: 10/100/1000Mb auto-negotiating, Cat5e & 6 UTP/STP
- 100Mb Copper and PoE: Category 5 UTP/STP; 10 Mb: Cat. 3, 4, 5 UTP/STP
- 100 Mb Fiber ports connector options: multi-mode FX-MTRJ, LC, ST, SC; Single-mode 15Km LC, 20Km SC and ST, and 40 Km “long reach” single-modes SC.

Operating Environment:

- Ambient Temperature: -40° to 140° F (-40° to 60°C)

Alarm Relay Contacts:

- One NC indicating internal power, one NC software controllable

DC Power Supply:

- 24VDC Power Input nominal (range 18 to 36VDC)
- Power Consumption: 35 watts worst case (for a fully loaded fiber model); 12 watts typical (for a small 4 port copper-only model)

Vertical mounting normal:

- Suitable for wall or DIN-Rail mounting

Subsection 614.13 shall include the following:

The Ethernet Managed Switch installation will be tested in accordance with this specification or as directed by the Engineer. Installation shall include all wiring for hook-up, related labor, material, and all necessary documentation of testing.

Subsection 614.14 shall include the following:

Installation of the Ethernet Managed Field Switch (Install Only) will not be measured and paid for separately, but shall be included in the cost of Traffic Signal Controller/Cabinet (Install Only).

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.08 shall include the following:

The double conversion uninterruptible power supply system (UPS) is a fully integrated system within the new controller cabinet and shall provide emergency battery power to the traffic signal controller. The City and County of Denver shall furnish the UPS and install by the Contractor at locations as shown on the plans. The UPS shall conform to the following specifications:

Operation:

The UPS system shall be capable of producing a fully regenerated, conditioned, pure sine wave AC. The online operational mode shall be continuous to all loads. It shall incorporate a high frequency Pulse-Width Modulated technology and shall use an input rectifier, charger, battery and inverter in a single board configuration. The UPS double conversion UPS shall provide a clean, pure AC sine-wave output at all times with a voltage input variation of 85VAC to 145VAC while providing 120VAC to the connected load at all times. The UPS shall be capable of operating in the voltage range of 85VAC to 135VAC without using the batteries and always provide a regulated output to the protected loads.

The Input rectifier shall be rated at 2.5 times the output rating of the inverter.

The Inverter circuit shall be in continuous operation at all times (constant duty). The inverter shall be rated for 100% duty cycle and simultaneously fed from the rectifier and battery to eliminate any switching to battery or transitions during power fluctuations or power interruption. The inverter's output shall be pure clean sine wave with an efficiency of up to 85%.

The constant duty operation shall be rated in total watts. This will enable the traffic UPS to support any combination of signal heads whether Incandescent, LED or Neon, by any manufacturer, regardless of power-factor.

The UPS shall be capable of operating from a generator source without the need for over-sizing the UPS system. During operation from a generator source, the UPS shall operate in a normal fashion and provide filtered and regulated power with or without automatic input/output frequency synchronization. Upon excessive generator frequency drift, the UPS shall compensate through regeneration and supplying both continuous frequency and voltage regulation to the protected load.

The UPS shall be capable of glitch ride through capabilities and provide a seamless output to the connected load during this anomaly without the use of the batteries.

The UPS shall be capable of providing an overload output rating of 120% for 60 seconds, 150% for 10 seconds to any combinations of signal types whether Incandescent, LED or Neon during inrush or overload conditions.

The UPS shall have an internal static bypass that will transfer to line power if over load exceeds 150% for more than 5 sec. This bypass will maintain the load until this overload has cleared.

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

The UPS shall have a separate Neutral detecting circuit that shall monitor loss of utility neutral and completely disconnect any input source to the UPS system.

The UPS shall have an input back feed relay operating in series with the Neutral monitoring circuit.

Upon loss of utility power, the UPS inverter shall continue to provide seamless pure sine-wave AC from the batteries without switching, transfer or changing its' operating status. The UPS will use the battery mode in '0' ms. This will insure that the UPS provides pure sine wave power under all conditions, at all times without interruption.

The UPS will continue to provide generated AC from the inverter until the batteries are depleted.

When the batteries have been depleted, the UPS will ensure upon the return of Utility Power that the UPS will restart automatically and provide regenerated AC to the protected equipment and allow the equipment to resume normal operation.

The UPS shall be capable of operating in a full regenerated, power-conditioning mode with depleted batteries or failed batteries. The regenerative power conditioning will ensure that there will be regulated and conditioned pure AC power to the equipment. This regenerative mode will provide extended brown-output protection with wide input line regulation, noise filtering and surge protection.

The UPS shall operate in an uninterruptible regenerative on-line mode during flash or normal signal operation.

The UPS shall be rated at Unity Power Factor. The output VA and Watts rating shall be equal on the output at all times.

The UPS shall be capable of COLD starting without AC present and provide AC power to the load.

The UPS shall be capable of self diagnostics during start up or with the use of the front panel TEST button.

The UPS case shall be constructed from .064 aluminum and carbon steel.

The UPS input and output connections shall be Anderson Power Pole quick lock connector to eliminate exposed terminals or connections.

The UPS to bypass interconnect harness shall be reversible with matching Anderson Power connectors that will prevent risk of shock, or damage to the connected equipment.

The UPS shall be capable of Hot-Swapping the batteries or battery bank, without shutting down the UPS.

The UPS shall be capable of being Hot-Swapped during normal operation when used with the external Hot Swap Bypass. The UPS may also be shut-off with the Hot Swap Bypass in place without loss of AC to the loads.

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

The UPS shall be capable of providing a replaceable relay card with relay output contacts for AC fail, Inverter ON, Low Battery, Battery Fail, Bypass and Alarms.

The UPS relay card may be replaced with an SNMP card for SNMP communications and information.

The UPS shall provide a programmable Dry Relay output for flash.

The contacts shall be provided in N/O and N/C positions. The delay timer shall be a maximum of 10 hours.

The timer shall be front panel mounted.

The Timer dial shall be 4.7 inches in circumference.

The timer shall have a scale in increments of 1s to 10seconds. This scale can be changed to indicate 1 minute, to 10 minutes or a maximum scale of 1 hour to 10 hours.

The scale shall be controlled by two (2) separate dip switches on the timer face.

The timer shall indicate using a flashing RED LED that the timing function is operating.

The timer shall use a steady RED LED to indicate that the timing is now completed

The timer shall count in a down mode to '0' from the preset time indicated on the scale.

The LED indicators shall provide status for AC line, UPS Battery Mode, Charging, Low Battery, Fault, Bypass, Percentage of Load and Battery Charge.

The Event counter and Hour meter may be reset to '0' using separated buttons.

The UPS shall have a battery charger rated at 200 watts @ 36VDC with an optional of 400 watts.

This charger shall be completely separate from the rectifier/inverter included with the main UPS board.

The UPS chargers may be used in a parallel configuration for increased charger ratings.

The UPS uses a redundant internal 1 amp charger that will continue to charge the batteries if the separate board charger fails.

The UPS may be used with redundancy in mind with the use of the Dual Hot Swap Option.

That will provide a secondary UPS source in less than 20ms. The Secondary UPS may be connected to the alternate input of the Hot Swap Bypass

The Flash programming shall be a simple and field programmable without the use of an external connected device such as a laptop or computer.

The Hot swap Bypass shall allow the UPS to be removed or installed at any time during normal load operation.

The UPS shall include standard graphical real time software and connection cable.

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

The UPS shall be capable of sending programmable system alarms to the Econolite “icons” Traffic Management System.

Physical Description:

The UPS shall consist of 3 major components - the Main board Rectifier/Inverter, charger and control board.

The Main Board shall consist of a True-Sine-Wave constant duty high frequency inverter utilizing High-Frequency Pulse-Width Modulated technology.

The Input Rectifier shall be rated for the total wattage output rating of the UPS including the 150% overload and the charger rating. The inverter shall be a high efficiency constant duty design with an efficiency of 83%. The inverter shall include its own static bypass which provides an alternate AC path during overload and or Inverter alarm conditions.

The heat-sink shall be a continuous aluminum extrusion design with plenum directed airflow cooling. The 12VDC dual stage cooling fans shall be variable speed controlled by the logic board.

The charger portion shall be a 3 stage Hysterisis .5 amp, 36 or 72VDC charger with temperature compensation. The supplementary charger is a parallel design rated for 200, 500 and 1000 watts.

The Electronic Control board shall monitor the Rectifier and Inverter functions. It shall also provide the overall control of all the UPS functions and or operational capabilities.

Mounting Configuration:

The UPS shall be shelf mounted or rack mounted per the documents. Shelves and cabinets shall be supplied by others. Where rack mounting is required, the 170 style mounting method shall be 19” rack mount. Rack mounting ears shall be removable.

A separate stand alone NEMA Traffic cabinet may be supplied if required in the plans and specifications.

4 rubber feet shall be installed on the bottom of the unit for shelf mounting.

Battery System:

The batteries shall be comprised of a quantity of three (3), high temperature, deep cycle (45AH) batteries which have been proven under extreme temperature conditions. The battery system or configuration shall consist of one string. Each string shall be 36 VDC. The batteries shall be provided with the appropriate interconnect cables. The battery cables shall have a minimum conductor size rating of #10.

The battery cable shall consist of a quick release Anderson connector rated at 25 amps. For the purpose of safety, the connector shall have recessed pins and keyed interlock to prevent reversal of connection or separation.

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

Battery construction shall be of a polycarbonate high temperature design combined with high, pure lead content with internal resistance of .0028 ohms and a high impact poly case construction, to withstand high vibration and shock. The connections shall be of stainless steel 3/8 stud, with 3/8 stainless nut and locking washer. Removable lifting handle shall be standard.

The batteries shall also meet the following characteristics:

Nominal voltage:	12VDC
Capacity@ 25C:	45AH
Approx weight:	13.5Kg
Internal Resistance:	9.5 mOhms
Dimensions:	197mm x 165mm x 170mm (7.76 x 6.50 x 6.69)
Capacity (10hr rate):	75c-112% 65c-108% 55c-105% 25c-100% 0c- 85% -15c- 65%
Self Discharge:	3 months 91% capacity remaining 6 months 82% capacity remaining 12 months 65% capacity remaining
Operating Temperature:	-15c to +75C
Float Voltage:	13.5 to 13.80
Cyclic charging voltage:	14.5 to 14.90
Maximum charge current:	12A
Terminal material:	Copper
Maximum discharge current:	400A (5 sec)

The system must be 36 volt DC maximum (no exception).

Electrical Specifications:

The unit shall meet the following electrical specifications:

Design:	Double Conversion true on line.
Nominal input:	110, 115 & 120v AC single phase dip switch selectable.
Input Voltage Range:	80v to 140v AC
Input frequency:	50/60hz (47 to 63)
Efficiency:	83 %
Input configuration:	3 wire with ground
Input Protection:	15 amp re-settable breaker (on UPS 700)

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

Input Current:	10.4 amps (includes charger) (on UPS 700)
Power Rating Continuous:	700 watts, 1400watts, 2100 watts
Output Current:	@ 700 watts 5.8 amps / 11.6 @1400/ 17.7@2100
Output regulation:	+/- 3% with 100% resistive load
Output regulation w/low battery:	+/- 3% with 100% resistive load
Output Voltage:	120v AC
Output Wave Form:	Pure sine wave
Harmonic Distortion:	3% Linear Load; 5% Non Linear Load
Dynamic Response:	+/- 5% RMS for 100% step load change 1 ms recovery time
Overload Capability:	120% for 60 sec 150% watts for 10 sec
Charger:	200 watt 36VDC UPS 700, 72VDC on UPS 1400 Parallel 400, 1000 and 2000 watt.
Surge:	ANSI-C62.41
Fault Clearing:	Current Limit and automatic to bypass
Short Circuit protection:	Output Breaker / Fuse, then shut down
Load Power Factor:	.6 leading to .6 lagging
Output Connection:	Anderson Power Pole Connector 6 pin keyed.
DC Connection:	Anderson 50 amp Keyed Recessed connector
Recognition:	UL Recognized & IEE 587 / C62.41 on main UPS board

Mechanical:

The UPS shall meet the following physical dimensions:

For 700 W UPS:

Size:	6.00" H x 10.5" D x 15.15" W
Weight:	18 lbs

The enclosure shall be constructed of 0.064 Carbon steel and aluminum. The enclosure shall be painted with powder coat paint with a minimum of 1.5 mil thickness.

Environmental:

The UPS shall meet or exceed NEMA temperature standards from -40c to + 74c.

Communications, Control & Diagnostics

LED indicators shall be provided for line monitoring, battery mode, charging, low battery, fault / bypass load level, battery level and ground fault. Manual test functions shall be available for alarm function, low battery, battery fail, bypass and overload. An RS 232 port with communication software shall be provided for real time UPS operational status in place of a relay status card when required.

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

The relay status card shall have the following I/O via contact closure:

1. Bypass ON
2. AC fail or out of tolerance.
3. AC normal or in tolerance.
4. Inverter is operating (ON)
5. Battery low
6. Battery failed or bad
7. UPS general alarm
8. Ground (logic)
9. Apply 6 to +25VDC
10. between pin 9 and 10, will shut the UPS down

Options:

The UPS must be able to accept the following future options

- SNMP/WEB monitoring.
- 24/7 Adjustable perpetual timer.
- Generator input option for hot swap bypass switch.
- Rack mount hot swap bypass switch.

In place of the relay card, an SNMP card can be installed that shall support TCP/IP, UDP, SNMP, and HTTP protocols and shall provide the SNMP MIB for UPS monitoring and UPS status. Remote access to UPS real time information including unit identification, data logging and UPS status in real time shall also be provided on a by unit basis. It shall be possible to use Microsoft Internet Explorer for remote viewing of the following:

1. UPS load
2. Battery Charger status
3. UPS operation Normal/Alarm
4. Input Voltage
5. Output Voltage
6. Battery Voltage
7. UPS Temperature
8. UPS information logging
9. Remote UPS battery testing.
10. Send output email if UPS status has changed
11. Built in reset with panel mounted led indicators for SNMP status.

The SNMP card shall have the following status LEDs:

LED(1)	Green LED: Status receiving
Yellow:	Data Transmitting
LED(2)	Green: SNMP connecting
Yellow:	SNM P functioning

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

The optional 24/7 timer shall be integral to the UPS. It shall include a DB9 connector to provide the connection and programming to the timer. This timer shall be programmable for any number of flash delays related to the time of day. It allows the complete flexibility of flash delay or skipping the flash during that particular event related to traffic flow and even holidays. The time shall have the follow features:

1. 7 days, 24 hrs Flash delay timing.
2. Perpetual Clock.
3. Maximum of 31 setting per day.
4. Timing resolution to the minute.
5. 4 Possible commands per event.
6. Real-time operation, editing functions will not interrupt the unit's functions.
7. J-Tag port for instant preload of complete 7-day schedule file.
8. SPDT 10 amp 240VAC /24VDC ratings.
9. Input Voltage 110 to 240VAC or 24VDC unregulated supply.
10. Plus! Capable of scheduling for holidays or specific year/dates.
11. Capable of operating at 2400 baud micro-modem for direct phone connection
12. Capable of operating at 1200 to 230,000 baud rate on a serial port.
13. Capable of log retention

An optional generator input shall be available for the UPS.

Reliability:

Calculated MTBF shall be 120,000 hours based on component ratings. When bypass switch is installed, system MTBF shall increase to 160,000 hours.

Hot Swap Bypass Switch:

A hot bypass switch shall be provided and wired to function within the UPS system. The bypass switch shall have the following characteristics:

Bypass Rating:	30 amps maximum
Bypass Transfer:	Automatically to line in 20ms, '0' crossing at full load
Control:	Rocker On/Off switch indicating 'Auto' and Bypass
Relays:	AC internal Load relay at 'Zero Crossing' with parallel function DC relay for interlocking and protection failsafe mode to N/C for AC power direct to load when failure occurs or in Bypass position.
Protection:	Internal Snubber circuit for spike attenuation during transfer at 'Zero' crossing.
Connections:	Internal fuse required.
Indicators:	Flush mounted Anderson Power connector. With locked and keyed.
Dimensions:	LED for Line Available, Bypass, Ups On Line, UPS Available.
Weight:	7.5 x 5 x 2.5
	1.4 lbs

**REVISION OF SECTION 614
UNINTERRUPTED POWER SUPPLY SYSTEM (INSTALL ONLY)**

Warranty:

A standard (2) two year manufacturer warranty shall be provided for all electronic components. All batteries shall carry a one year warranty.

Subsection 614.13 shall include the following:

Emergency Vehicle Traffic Signal Priority Control System units shall include a four-channel card and the number of detectors as shown on the plans. Emergency Vehicle Traffic Signal Priority Control System shall be measured and paid by the number of intersections at which the system is installed. The item shall include all labor, materials, and ancillary hardware required to provide a fully functioning system to the satisfaction of the Engineer.

Subsection 614.14 shall include the following:

Traffic signal uninterrupted power supply system installation will not be paid for separately, but shall be included in the cost of the Traffic Signal Controller and Cabinet (Install Only).

End Revision of Section 614 Uninterrupted Power Supply System (Install Only)

**REVISION OF SECTION OF 614
PEDESTRIAN PUSH BUTTON AND INSTRUCTION SIGN**

Section 614 of the Standard Specification is hereby revised for this project as follows:

Subsection 614.08 (f) shall include the following:

1-1: Push button assemblies shall be of the direct push button solid state contact type and shall not have any levers, handles or toggle switches externally or internally. The pushbutton shall be of tamperproof and all weather construction. The pushbutton shall have a protective shroud that is an integral part of the cover and it shall encircle the pushbutton actuator to deter vandalism. The assembly shall be made weatherproof and shockproof by means of synthetic rubber gaskets between the cover and the enclosure and between the plunger and the cover so that it shall be impossible to receive an electrical shock under any weather conditions. The front cover plate shall be secured with stainless steel vandal resistant screws. The push button shall operate on logic ground.

1-2: The solid state switch shall be entirely insulated from the housing and operating button. The pushbutton shall consist of a 2 inch 303 stainless steel metal plunger and an oil and gasoline resistant Piezo driven solid state switch, all encased in a high impact thermoplastic enclosure with four (4) stainless steel mounting screws. The solid state switch shall be normally open and shall be closed with a minimum of pressure on the button ($3lb \pm 1lb$), restoring immediately to the normally open position when the pressure is released.

The aluminum housing shall be the flat back frame type with adjustable mounting staves that will readily enable it to be mounted on any size traffic signal pole or push button standard. The housing shall have a ½ inch access hole in the rear for wiring. The housing shall have a bottom threaded conduit entrance hole and shall be provided with a threaded plug so that access is only possible from the rear of the housing. The plug shall not be removable with ordinary tools. The housing shall be painted Dark Olive/Federal Green baked enamel matching to Federal Standard 595A color #14056.

The frame shall have a cast aluminum attachment to allow the mounting of a 9" X 12" pedestrian instruction sign. By removal of 4 screws the frame shall convert to allow the mounting of a 5" X 7 ¾" pedestrian instruction sign.

Pedestrian Instruction Sign:

2-1: Pedestrian instruction signs shall conform to the latest version of the M.U.T.C.D., published by the U.S. Department of Transportation Federal Highway Administration.

2-2: Pedestrian instruction signs shall be Type R10-3a, Type R10-3b, Type R10-3c, R10-3d, and R10-3e as specified in the contract documents (or bid documents).

Pedestrian instruction signs shall be constructed in accordance with the applicable provisions of the current CCD Standard Specifications. Pedestrian instruction sign need not be reflectorized. The sign shall be fabricated with 0.063 aluminum. The signs shall be mounted using four 5/16" mounting holes 4" X 6 ¾" for the 5" X 7 ¾" sign and 7" X 10" for the 9" x 12" sign. The pedestrian instruction signs shall have rounded corners ¾" radius for the 5" X 7 ¾" sign and 1 ½" radius for the 9" X 12" sign.

**REVISION OF SECTION OF 614
PEDESTRIAN PUSH BUTTON AND INSTRUCTION SIGN**

Subsection 614.13 shall include the following:

Pedestrian Push Button and Instruction Sign shall be measured by the number of units installed and accepted.

Subsection 614.14 shall include the following:

Pay Item

Pedestrian Push Button and Instruction Sign

Pay Unit

Each

End Revision of Section 614 Pedestrian Push Button and Instruction Sign

**REVISION OF SECTION 614
EMERGENCY VEHICLE TRAFFIC SIGNAL PRIORITY CONTROL SYSTEM**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.08 shall include the following:

System Description:

The emergency vehicle traffic signal priority control system shall enable designated vehicles to remotely cause the traffic signal controller to advance to and/or hold a desired traffic signal display by using existing controller functions. The control shall be activated at a minimum distance of 548.6M (1,800 feet) along an unobstructed "line of sight" path. The control shall not terminate until the vehicle is within 12.2M (40 feet) of the detector or at the intersection.

The system shall consist of the following components:

- A. Vehicle Emitter which shall be mounted on the emergency vehicle and shall transmit optical energy signals only in the forward direction. If the municipality presently uses optical pre-emption, the emitters shall be of the same manufacture currently used by the City and County of Denver Fire Department.
- B. Phase Selector (minimum 2 channels) which shall cause the signal controller to advance to and/or hold the desired traffic signal display for the emergency vehicle. A pre-emption system chassis shall house two phase selectors.
- C. Optical Detector which shall be mounted on or near a traffic signal and shall receive the optical energy signals generated by the Vehicle Emitter.
 - a. Detector (Type A), 1 Direction, 1 Channel
 - b. Detector (Type B), 2 Direction, 1 Channel
 - c. Detector (Type C), 2 Direction, 2 Channel
- D. Detector Cable (Optical).

System Operations:

- A. The operating sequence shall be initiated when the optical detector receives the required optical energy signal from the Emitter.
- B. The phase selector shall cause the traffic signal controller to advance to and/or hold the desired traffic signal display for the emergency vehicle.
- C. The phase selector shall cause the controller to advance to and/or hold the desired traffic signal display even if the optical energy signals cease before the desired display is obtained.
- D. The phase selector shall allow the traffic signal controller to resume normal operation within ten seconds after optical energy signals cease if the optical energy signals cease after the desired traffic signal display is obtained.
- E. The phase selector shall not respond to optical energy signals from an emergency vehicle if it is already processing optical energy signals from another emergency vehicle.

**REVISION OF SECTION 614
EMERGENCY VEHICLE TRAFFIC SIGNAL PRIORITY CONTROL SYSTEM**

System Components:

A. Vehicle Emitter:

The emitter assembly consists of an emitter and power supply and an emitter control switch assembly. The emitter assembly is mounted on a vehicle and produces a flashing optical signal when in operation. The following shall apply to the vehicle emitter:

1. Shall operate on ten to fifteen volts DC input voltage, but shall not be damaged by input voltage surges up to twenty-five volts DC.
2. Shall be controlled by a single on/off switch that requires no other adjustments by the operator. The on/off condition shall be indicated by a light located adjacent to the switch.
3. Shall be automatically disabled or de-activated by one or a combination of the following: seat switch, emergency brake switch, door switch, and transmission safety switch.
4. Shall operate over an ambient temperature range of minus 34O C to plus 60O C. (minus 30O F. to plus 140O F.)
5. Shall operate in 0 to 95 % humidity.
6. Shall be a pulsed optical energy source with a controlled repetition rate.
7. Shall not generate voltage transients on the battery input line which exceed battery voltage by more than four volts.
8. Shall produce optical energy in a cone of not more than 90 degrees horizontal and not more than 30 degrees vertical. The detectors and/or phase selector shall not sense a pre-emption signal from an emitter outside this cone.

B. Optical Detector:

The optical detector receives the high intensity optical pulses produced by the emitter. These optical energy pulses are transformed by the detector into appropriate electrical signals which are transmitted to the phase selector. The optical detector is mounted at or near the intersection in a location which permits an unobstructed line of sight to vehicular approaches. The units may be mounted on signal span wires, mast arms or other appropriate structures. The following shall apply to the optical detector:

1. Shall produce optical energy in a cone of not more than 90 degrees horizontal and not more than 30 degrees vertical. The detectors and/or phase selector shall not sense a pre-emption signal from an emitter outside this cone.
2. Shall be of solid state construction.
3. Shall operate over an ambient temperature range of minus 34O C to plus 60O C. (minus 30O F. to plus 140O F.)

**REVISION OF SECTION 614
EMERGENCY VEHICLE TRAFFIC SIGNAL PRIORITY CONTROL SYSTEM**

4. Shall have internal circuitry potted in a semi-flexible compound to ensure moisture resistance.
5. Shall operate in 0 to 95 % humidity.
6. Shall have a cone of detection of not more than 13 degrees. The detector and/or phase selector shall not sense a pre-emption signal from an emitter outside this cone.

C. Phase Selector:

The phase selector supplies power to and receives electrical signals from the optical detector. When detector signals are recognized as a valid call, the phase selector causes the signal controller to advance to and/or hold the desired traffic signal display. This is accomplished by activating the pre-empt input to the controller.

The phase selector is capable of assigning priority traffic movement to one of two channels on a first-come, first-serve basis. Each channel is connected to select a particular traffic movement from those normally available within the controller. Once a call is recognized, "commit to green" circuitry in the phase selector functions so that the desired green indication will be obtained even if optical communication is lost. After serving a priority traffic demand, the phase selector will release the controller to follow normal sequence operation. The following shall apply to the phase selector:

1. Shall include an internal power supply to supply power to the optical detectors.
2. Shall have minimum two-channel operation with the capability of interfacing with an additional phase selector for expansion of channels of operation.
3. Shall have adjustable detector range controls for each channel of operation, from 12M (40 feet) to 548M (1800 feet).
4. Shall have solid state indicator lights for power on and channel called.
5. Shall operate over an ambient temperature range of minus 34O C to plus 60O C (minus 30O F. to plus 140O F.)
6. Shall operate in 0 to 95 % humidity.

D. Detector Cable (Optical):

The following shall apply to the detector cable:

1. 3-Conductor cable with shield and ground wire.
2. AWG #20 (7x28) stranded.
3. Individually tinned copper strands.
4. Conductor insulation: 600 volt, 75 deg. C (167O F.).
5. 1 Conductor-yellow; 1 Conductor-blue; 1 Conductor-orange.
6. Aluminized Mylar shield tape or equivalent.
7. AWG #20 (7x28) stranded uninsulated drain wire
8. DC resistance not to exceed 11.0 ohms per 305M (1000 feet).
9. Capacitance from one conductor to other two conductors and shield not to exceed 157pf/M (48pf /ft.).
10. Jacket: 600 volts, 80 deg. C (176O F.), minimum average wall thickness - 1.14mm (.045").
11. Finished O.D.: 7.62mm (0.3") max.

**REVISION OF SECTION 614
EMERGENCY VEHICLE TRAFFIC SIGNAL PRIORITY CONTROL SYSTEM**

System Interface:

System shall be capable of operating in a computerized traffic management system when appropriate interfacing is provided by the computer supplier.

General:

The Contractor shall furnish the manufacturer the phasing diagrams indicating controller sequence and timing.

The Contractor shall secure from the manufacturer a guarantee for the equipment for a period of sixty (60) months, which time shall commence from the date of delivery. Manufacturer shall certify upon request that all materials furnished will conform to this specification. The manufacturer or his designated representative shall be responsible for determining and setting all required range and emitter intensity for the emergency vehicle operation.

Construction Methods:

All equipment except the vehicle emitter assembly shall be installed and wired in a neat and orderly manner in conformance with the manufacturers' instructions. The vehicle emitter assembly shall be delivered to a designated City representative.

Installation of the vehicle emitter assembly shall be the responsibility of the City and County of Denver Fire Department.

Traffic signals owned and maintained by the State that have optical pre-emption equipment owned and maintained by the town shall have an Auxiliary Equipment Cabinet (AEC) attached to the controller cabinet. The optical pre-emption equipment shall be housed in the AEC. Traffic signals owned and maintained by the town do not require an AEC to house the pre-emption equipment.

Detector cables shall be continuous with no splices between the optical detector and the AEC.

Detector locations shown on the plan are for illustration purposes only. Exact location shall be determined by the contractor or the designated representative for the best possible line of sight.

- Controller "D" harness and adapter.
- Pre-emption termination panel with terminal block and relay bases.
- Pre-emption disconnect switch, mounted on the emergency switch panel (on inside of cabinet door).
- Pre-emption test buttons, mounted on the pre-emption termination panel.

All connections from the phase selector to the "D" harness and to the cabinet wiring shall be made at the termination panel. The termination panel shall have AC+ Lights, AC-, and a switched logic ground. The switched logic ground feeds all the pre-empt inputs to the phase selector. When switched off by the pre-emption disconnect switch, the traffic controller shall not be affected by pre-empt calls from the optical pre-emption system. A minimum of two test buttons shall be provided. If there are more than two pre-empt runs, a button for each shall be installed. A chart or print out indicating the program steps and settings shall be provided along with the revised cabinet wiring diagrams.

**REVISION OF SECTION 614
EMERGENCY VEHICLE TRAFFIC SIGNAL PRIORITY CONTROL SYSTEM**

Test the Pre-emption System According to the following Guidelines:

1. Notify the system owner/user, such as the Municipal Fire Chief or City Traffic Engineer, of the scheduled inspection
2. Request a fire department representative and an emergency vehicle, which has an emitter to conduct the test. If not available, the contractor shall provide an emitter.
3. In the presence of the Engineer and the municipal representative, test each pre-empted approach with the emergency vehicle. Test the following items of the system:
 - a. Confirm that the emitter activates the phase selector and the phase selector activates the correct pre-emption input to the controller.
 - b. Confirm adequate range. The traffic signal must be pre-empted to green sufficiently in advance of the emergency vehicle arrival. The vehicle emitter shall initiate pre-emption at a minimum distance of 548.6M (1800 feet).
 - c. Confirm there are no false calls. Keep the emitter active as the emergency vehicle passes through the intersection. No other optical detectors shall sense the strobe.
4. Document the test. Provide the Engineer and, upon request, the municipality copies of the test results.

If a malfunction is found or the system needs adjustment (such as range, emitter intensity, or detector location), schedule a follow-up test. Repeat the above steps for all approaches that did not pass.

All adjustments such as emitter intensity, phase selector range, sensitivity, detector placement, shall be made at the intersection by the contractor so that the optical pre-emption operates correctly with other major manufacturers' equipment currently owned by the town.

Subsection 614.13 shall include the following:

Emergency Vehicle Traffic Signal Priority Control System units shall include a four-channel card and the number of detectors as shown on the plans. Emergency Vehicle Traffic Signal Priority Control System shall be measured and paid by the number of intersections at which the system is installed. The item shall include all labor, materials, and ancillary hardware required to provide a fully functioning system to the satisfaction of the Engineer.

Subsection 614.14 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Emergency Vehicle Traffic Signal Priority Control System (Opticom)	Each

End Revision of Section 614 Emergency Vehicle Traffic Signal Priority Control System

**REVISION OF SECTION 614
INTERSECTION DETECTION SYSTEM (FLIR)(CAMERA)**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work consists of furnishing and installing a fully-functional FLIR vehicle detection camera system at the specified locations identified in the plans.

Subsection 614.08 shall include the following:

Detection Camera:

The detection camera shall consist of a thermal camera, thermal lens, and enclosure; and shall meet the following specifications:

- ***Thermal Camera & Lens***

The detection camera shall be a 320 x 240 (minimum) and 10 frames per second (minimum) thermal camera that fits into the camera enclosure specified herein. The lens shall be a fixed thermal lens. Digital zooming is allowed.

- ***Camera Enclosure***

The camera enclosure shall consist of a dustproof and waterproof outdoor camera housing designed specifically to fit the thermal camera and thermal lens specified herein. The enclosure shall have a sun shield to prevent direct and indirect sunlight entering the lens. A thermostatically controlled heater for window defogging and defrosting is allowed.

- ***Power***

The detection camera shall be powered by a 120/240VAC, 50/60Hz power source or by a 24VDC ($\pm 10\%$) power source.

- ***Reliability***

The interface card shall be designed and manufactured to have a MTBF (Mean Time Between Failure) prediction figure of greater than or equal to 10 years continuous operation.

- ***Certifications & Environmental***

The detection camera shall meet the following Certifications and Environmental specifications:

<i>Certifications</i>	Comply with Electromagnetic Compatibility - 2004/108/EG Comply with FCC Part 15, Class A
<i>Weatherproof</i>	IP66 ingress protection standards (minimum)
<i>Operating Temperature</i>	-34°C to +74°C (-29°F to +165°F) (minimum)
<i>Relative Humidity</i>	Up to 100% non-condensing
<i>Shock & vibration</i>	NEMA II

- ***Mounting Brackets***

A versatile mounting bracket shall be supplied to mount the camera enclosure, specified herein, to a horizontal luminaire or vertical traffic signal pole.

All mounts shall be secured with stainless steel mounting straps or bolts. The mounts, including the mass and size of the detection camera, shall be designed to withstand a wind load of 120km/h (or 75mph) with a 30-second gust factor.

**REVISION OF SECTION 614
INTERSECTION DETECTION SYSTEM (FLIR)(CAMERA)**

- **Camera to Controller Cabinet Cable**
Cable needed to power the detection camera specified herein, transmit thermal video and data information to the controller cabinet shall be provided and meet the specifications of the thermal video imaging detection system manufacturer.

Thermal Video Processor:

A thermal video processor shall be included in the detection camera, specified herein, or in the interface card, specified herein; and shall meet the following specifications:

- **Functionality**

The thermal video processor shall provide the following functionality:

<i>Detector Display</i>	Capable of displaying bike detection regions on the thermal video image with associated outputs with output status shown on the screen
<i>Detector Placement</i>	By using a portable PC with graphical user interface software or web server
<i>Detector Function</i>	Capable of detecting within the view of the connected detection camera the presence of bicycles in user defined bicycle detection regions
<i>Detector Type</i>	Configurable as presence, count, delay, extension, or pulse mode of either arrival or departure of bicycles. The detector shall be capable of detecting pedestrians and small motorcycles too.
<i>Detector Modification</i>	All detectors and parameters shall be able to be changed without interrupting detection. When one detector is modified, all existing detectors shall continue to operate, including the one that is being modified. When the new detector position is confirmed, the new detector shall have no learning phase and shall be operating while the one being modified ceases to operate
<i>Detector Failure State</i>	Provide a constant call on each active detection channel, in the event of unacceptable interference or loss of the thermal video signal
<i>Regions per Video Output</i>	Up to 4 (minimum)
<i>Detector Delay & Extension</i>	Defined between 0.1-99 seconds and pulse mode between 0-500ms in 10ms increments.
<i>Direction Sensitivity</i>	Able to make a detector directional sensitive

Camera Interface/Surge Suppression Panel

When the thermal video processor is in the detection camera, a UV resistant signal cable with 3 wires (maximum) of wire diameter AWG18 (minimum) shall be provided to power the detection camera, transmits detection information to the interface card specified herein, and provides remote communication specified herein. The cable distance between detection camera and interface card is 300m or 1,000ft (maximum).

**REVISION OF SECTION 614
INTERSECTION DETECTION SYSTEM (FLIR)(CAMERA)**

When the thermal video processor is in the interface card with coax thermal video cables being used between the detection camera and the interface card, a surge suppression panel shall be provided that powers the detection camera with high-voltage transient protection and power isolation, and suppresses electrical spikes on the thermal video coax cable.

The camera interface/surge suppression panel shall meet the following specifications:

- ***Certifications and Environmental***

The interface card shall meet the following Certifications and Environmental specifications:

<i>Certifications</i>	Comply with Electromagnetic Compatibility - 2004/108/EG
<i>Weatherproof</i>	Comply with FCC Part 15, Class A
<i>Operating Temperature</i>	IP66 ingress protection standards (minimum)
<i>Relative Humidity</i>	-34°C to +74°C (-29°F to +165°F) (minimum)
<i>Shock & vibration</i>	0-95% non-condensing (minimum) NEMA II

Interface Card:

Input/output main and expansion cards shall be supplied that are designed to convert real-time detection signals from the video processor, specified herein, into contact closure signals to the traffic light controller; and to relay traffic signal phase status to the video processor, specified herein. The interface card shall meet the following specifications:

- ***Functionality***

The interface card shall provide the following functionality:

<i>Cabinet/Controller Compatibility</i>	US: EDGE card for TS-1 cabinet and 2070 TS-1 and TS-2 controllers Rest of World: EURO card for various standard controllers
<i>Status Indicators</i>	Visual for state of each detection output, visual state of power status (ON/OFF), visual state of camera status (operational/not operational)
<i>Identification</i>	Individually addressable with serial number, MAC address, IP-address, subnet mask and default gateway
<i>Program Retention</i>	Continue to operate in accordance with previous program after recovering from communication system or power failure
<i>Time Synchronization</i>	Manually or NTP time source
<i>Detector Failure State</i>	Provide a constant call on each active detection channel, in the event of unacceptable interference or loss of the thermal video signal
<i>Regions per Video Output</i>	Up to 4 (minimum)
<i>Detector Delay & Extension</i>	Defined between 0.1-99 seconds and pulse mode between 0-500ms in 10ms increments.
<i>Direction Sensitivity</i>	Able to make a detector directional sensitive

**REVISION OF SECTION 614
INTERSECTION DETECTION SYSTEM (FLIR)(CAMERA)**

- **Communication**

The interface card shall meet the following specifications:

Controller Interface Output	Contact closure via interface backplane, providing up to four channels of vehicle detection with no front panel connectors being used
ETHERNET	RJ45 port for hard-wired system set-up and monitoring
USB	USB 2.0 (minimum) on front panel for connecting a USB dongle to allow wireless set-up and monitoring via portable PC, tablet and/or smart phone 4°C to +74°C (-29°F to +165°F) (minimum)

- **Remote Communications**

Remote communications to allow remote management specified herein shall be provided via the interface card and shall meet the following specifications:

a) **Functionality**

Remote communications shall provide the following functionality:

Cabinet/Controller Compatibility	US: TS-1 cabinet and 2070 TS-1 and TS-2 controllers when Rest of World: EURO card for various standard controllers
Thermal Video Compression	MJPEG, MPEG-4 (ISO 14496-2) and/or H.264 (ISO/IEC MPEG-4 AVC)
Thermal Video Frame Rate	Constant and variable 10 frames per second (minimum)
Thermal Video Bandwidth	Between 32 kbps and 4 Mbps (minimum)
Status Indicators Identification	Ethernet link/activity Individually addressable with serial number, MAC address, IP-address, subnet mask and default gateway
Program Retention	Continue to operate in accordance with previous program after recovering from communication system or power failure

b) **Communication**

The remote communications shall meet the following specifications:

Ethernet Port	One 10/100Base-T front-panel RJ45 port (minimum)
Thermal Video Input	Via front panel connector

- **Power**

The interface card shall meet the following power specifications:

Input Voltage	24VDC \pm 10% (via cabinet detector rack backplane)
Power Consumption	10W (maximum)

**REVISION OF SECTION 614
INTERSECTION DETECTION SYSTEM (FLIR)(CAMERA)**

- ***Physical Properties***

The interface card shall meet the following physical properties specifications:

<i>Size</i>	US: Fits directly into NEMA TS-1 cabinet detector rack or fits on DIN-rail Rest of world: Fits directly in EURO half/full 19” rack or fits on DIN-rail
--------------------	---

- ***Reliability***

The interface card shall be designed and manufactured to have a MTBF (Mean Time Between Failure) prediction figure of greater than or equal to 10 years continuous operation.

- ***Certifications and Environmental***

The input/output main and expansion cards shall meet the following Certifications and Environmental specifications:

<i>Certifications</i>	Comply with FCC Part; 15 NEMA TS 2-2003 v02.06
<i>Operating Temperature</i>	-37°C to 74°C (-35°F to 165°F) (minimum)
<i>Humidity</i>	0 – 95% non-condensing

Remote Management System

Remote management system shall be provided to monitor, control, and troubleshoot the thermal video imaging detection devices remotely via the Ethernet communication system. The vendor shall provide all software that will be loaded and configured by staff on furnished server hardware that is connected to the thermal video imaging detection devices via the Ethernet communication system. Remote management shall meet the following minimum requirements:

- ***Diagnostic & Health Monitoring***

<i>Management Status</i>	Provide real-time status display of services required to access, troubleshoot, and archive data from the thermal video imaging detection system network connected devices
<i>Network Device View</i>	Provide view of all thermal video imaging detection system network connected devices
<i>Operation Log</i>	Support retrieving, displaying, and saving operational messages, warnings, and errors

- ***Remote Management & Maintenance***

<i>Video Viewing/Recording</i>	Support viewing and recording streaming video including detector overlay
<i>Device Management</i>	Support creating, editing, downloading, and uploading detector configurations
<i>Remote Firmware Updates</i>	Support updating firmware of any device from a remote location
<i>Remote Backup/Restore</i>	Support backup/restore device configuration from remote location
<i>Access Permissions</i>	Support password implementation
<i>Clock Synchronization</i>	Support the Network Time Protocol (NTP) to synchronize the internal clocks of the thermal video imaging detection system network connected devices a minimum of once a day

-6-
**REVISION OF SECTION 614
INTERSECTION DETECTION SYSTEM (FLIR)(CAMERA)**

Subsection 614.13 shall include the following:

FLIR Intersection Detection System (Camera) shall be measured and paid by the number of cameras to be installed. The item shall include all labor, materials, and ancillary hardware required to provide a fully-functional camera system to the satisfaction of the Project Manager.

Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item

FLIR Intersection Detection System (Camera)

Pay Unit

Each

**REVISION OF SECTION 614
INTERSECTION DETECTION SYSTEM (AUTOSCOPE VISION)(CAMERA)**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work consists of furnishing and installing a fully-functional Autoscope Vision video vehicle detection camera system at the specified location identified in the plans.

Subsection 614.13 shall include the following:

Autoscope Vision Intersection Detection System (Camera) shall be measured and paid by the number of cameras to be installed. The item shall include all labor, materials, and ancillary hardware required to provide a fully-functional camera system to the satisfaction of the Project Manager.

Subsection 614.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Autoscope Vision Intersection Detection System (Camera)	Each

**REVISION OF SECTION 614
TRAFFIC SIGNAL POLES (INSTALL ONLY) – GENERAL**

Section 614 of the Standard Specifications is hereby revised as follows:

Subsection 614.01 shall include the following:

The City and County of Denver will furnish and order all traffic signal poles, traffic signal light poles, and mast arms. The traffic signal poles, traffic signal light poles, and mast arms shall be ship to the Contractor's yard for storage. The Contractor shall store and protect the poles and mast arms from damage and transport them to the job site for installation. The Contractor shall install the traffic signal poles and mast arms at locations as shown on the plans.

Contractor shall furnish and install the aluminum pedestal poles at locations as shown on the plans.

Subsection 614.08 (g) shall include the following:

The mast arm traffic signal poles, light poles and the mast arms will be the type manufactured by Valmont in accordance with the City and County of Denver's standards and specifications. General specifications of the imbedded steel poles, traffic signal light poles, and traffic signal poles with mast arms are as follows:

TRAFFIC SIGNAL POLES: All traffic signal poles (imbedded poles, traffic light poles and traffic poles with mast arms) shall conform to City and County of Denver's Traffic Standard Details 16.1.3 and 16.1.9 to 16.1.12.

Traffic Signal Pedestal Poles shall conform to the requirements of the City and County of Denver's Traffic Signal Standard Detail 16.1.13.

FINISH: All traffic signal mast arm poles shall be finish in accordance with Valmont finish process F540 or equal – galvanized, epoxy primer and powder coated in accordance with the following specifications:

PAINTING: All traffic signal mast arm poles shall be powder coated in accordance with the following specifications:

General:

Super Durable Powder Coating: The super durable powder coating shall consist of a Urethane or Triglycidylisocyanurate (TGIC) Polyester Powder, and provide a minimum of 3 times the gloss retention, color retention and ultraviolet light (UV) resistance as standard powder coatings. Color shall be dark olive green, in conformance with Federal Specification No. 14056.

Surface Preparation:

The exterior steel surface shall be blast cleaned to Steel Structures Painting Council Surface Preparation Specification No. 6 (SSPC-SP6) requirements utilizing cast steel abrasives conforming to the Society of Automotive Engineers (SAE) Recommended Practice J827. The blast method is a recirculating, closed cycle centrifugal wheel system with abrasive conforming to SAE Shot Number S280.

**REVISION OF SECTION 614
TRAFFIC SIGNAL POLES – GENERAL**

Interior Color:

Interior surfaces (pole shafts only) at the base end for a length of approximately 2.0' shall be mechanically cleaned and coated with a zinc rich epoxy powder. The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit.

Exterior Coating:

All exterior surfaces shall be coated with Urethane or Triglycidylisocyanurate (TGIC) Polyester Powder to a minimum film thickness of 2.0 mils (0.002"). The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit. The thermosetting powder resin shall provide both intercoat as well as substrate fusion adhesion that meets 5A or 5B classifications of ASTM D3359.

Packaging:

Prior to shipment, small poles shall be wrapped in 0.188" thick Ultraviolet inhibiting plastic backed foam. Larger poles shall be cradled in a 1.0" rubberized foam base.

Handling and Shipment:

Poles shall be handled in a manner that will preserve the overall appearance and prevent damage to the coating. The use of chains or cables for loading, unloading, or installing is prohibited. Only 3/4 inch diameter or larger nonabrasive nylon rope or equivalent nylon belting will be used. Adequate hold-downs and appropriate blocking shall be utilized for shipping to prevent load movement and damage to the outer coating in transit. No handling should be allowed until "dry through" condition has been achieved with the coating.

Extra care will be taken not to damage the coating. Upon arrival of the poles at the delivery point, neither chains nor cables will be used to either unloading or installation of poles.

Procedure for Field Touch-Up:

The pole manufacturer will furnish extra paint, both primer and color coat, to satisfy the needs of field touch-up requirements, in the event of minor physical damage to the coating from handling or transit. Damaged area must be clean and dry before repair application. Field touch-up will be at the direction of the pole manufacturer or their authorized representative.

Subsection 614.14 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Traffic Signal-Light Pole Steel (2-xx Mast Arms) (Install Only)	Each
Traffic Signal-Light Pole Steel (1-xx Mast Arm) (Install Only)	Each
Street Light Standard (No Mast Arm) (Install Only)	Each

End Revision of Section 614 Traffic Signal Poles

**REVISION OF SECTION 614
TELEMETRY (FIELD)**

Section 614 of the Standard Specifications is hereby revised for this project as follows.

Subsection 614.01 shall include the following:

This work consists of fan-out and termination of fiber optic (interconnect) cable at each controller cabinet locations as identified in the plans. This work also includes providing and installing all necessary fiber optic lateral cables and telemetry equipment including but not limited to optical splice closures, field patch panels, splice organizers, cables, pigtails/jumpers and labels.

Color-coded fibers and buffer tubes shall be used throughout the entire project. At the terminal points the jackets shall be stripped and the ends taped. Gel filled compound shall be removed using filled cable cleaner.

At every cabinet or optical closure, only the fibers identified in the plans to be spliced and/or connected to a patch panel or other internal device are required to be landed. All cut and unconnected fibers shall be sealed in a manner recommended by the fiber optic cable manufacturer and coiled neatly in a splice organizer.

The same color-coded pairs of fibers and/or wires shall be used throughout the entire project unless shown as otherwise in the plans. Gel filling compound shall be removed using filled cable cleaner.

Subsection 614.08 shall include the following:

Fiber Optic Patch Pigtail:

The fiber optic pigtail cables shall consist of MM fibers housed individually in protective jackets. Both ends of the cable shall be connected. Fiber optic patch cord cable shall be suitable for operation over a temperature range of -30 degrees to +60 degrees Celsius. Fiber optic patch cord cables shall be of length suitably long to be connected between the interconnect panel and the communications equipment (i.e. fiber optic transceivers). Patch cord couplings shall be compatible with termination points. Appropriate strain relief in the cabinet (through cable ties) shall be installed at a minimum of three locations. Sufficient slack shall be left to allow relocation of the equipment anywhere in the cabinet. The attenuation of a fiber optic patch cord cable after installation, not including the connector loss, shall not exceed 0.1 dB measured at 850 nm and 1300 nm.

Connectors:

The connector shall have a ceramic ferrule with a nickel-plated nut and body. The connector shall be an AT&T ST style compatible field mounted connector. The connector shall be compatible with a physical contact (PC) finish. All connectors shall be polished to a PC finish such that the return loss per mated pair of connectors is less than -25 dB. The return loss when the connector is mated with previously installed connectors shall be less than -18 dB.

The connector insertion loss shall not be greater than 0.20 dB (typical). The connector loss shall not vary more than 0.20 dB after 1000 repeated matings. Tensile strength shall withstand an axial load of 20 lb. with less than 0.20 dB change.

**REVISION OF SECTION 614
TELEMETRY (FIELD)**

Index matching fluids or gels shall not be used. The connectors shall be compatible with the optical fiber surrounding jacket and shall be installed on one end of the optical fiber in accordance with the manufacturer's recommended materials, equipment and practices. The connector shall be suitable for the intended environment and shall meet the following environmental conditions:

Operating Temperature: -40° to +80° C
Storage Temperature: -40° to +85° C

The connector loss shall not vary more than 0.20 dB over the operating temperature range. Connectors shall be protected by a suitably installed waterproof protection cap.

Miscellaneous Cabling:

Fiber optic patch cords shall be fiber optic jumper cable, duplex, ceramic ferrule, MM 62.5 nm, adaptable to AT&T ST style connectors, 2 meters in length, ITT Canon Model 161001-4020 or approved equal. Cable from fiber optic modem to Port 3 controller harness shall be 25-pin cable Model 44982G4 or approved equal. The Contractor shall deliver transceivers to the City's Traffic Signal Shop. Contact Joe Strauss (720) 865-4062 for coordination.

Optical Splice Closures:

Coyote Runt or Coyote Pup Type closures shall be provided for splicing lateral fiber optic cables to the main (backbone) fiber cable in all pull box locations that are identified in the plans. All closures shall include 1-Inch future port kit (part no. 8003408, Pre-Formed Line Products). The Coyote Runt Closure shall be used at locations with 3 fiber optic cables. In locations requiring more than 3 cables, a Coyote Pup Closure shall be installed.

Subsection 614.13 shall include the following:

Telemetry (Field) shall be measured by the total number of cabinets at which the interconnect cable is fanned out, terminated, connected, patch panels and fiber-optic interfaces installed. All labor and materials required to perform panel installations, provide in-cabinet strain relief, fan-out, cable termination and connection to the controller is considered included in the unit price for this item.

This item, therefore, includes the following:

1. All required in-cabinet cable ties and strain relief (including ancillary hardware and labor to complete);
2. All required fan-out kits, kit tools, ancillary hardware and labor to accomplish the fan-out at the cabinet;
3. All required lateral fiber optic cables, pigtails and harness cables;
4. All required interconnect centers and fiber optic interface panels in individual controller cabinets as shown in the plans;
 - All required termination enclosures (including specified features), connectors, adapters, jumpers, pigtails, patch cord cables, ancillary hardware and labor required to accomplish the cabinet termination;

**REVISION OF SECTION 614
TELEMETRY (FIELD)**

- All required optical splice closures;
- All other labor and material necessary to complete the item

All labor and materials necessary to complete this item shall be considered included in the unit price and will not be paid separately.

Subsection 614.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Telemetry (Field)	Each

End Revision of Section 614 Telemetry (Field)

**REVISION OF SECTION 623
IRRIGATION SYSTEM**

Section 623 of the Standard Specifications is revised as follows:

Subsection 623.01 is revised to include the following:

Irrigation systems within twelve inches (12”) of the reconstruction areas which are damaged as a result of the reconstruction activity will be repaired and paid for. Irrigation systems beyond this limit which are damaged by the Contractor will be repaired by the Contractor at no expense to the City.

Subsection 623.02 is revised to include the following:

Materials required to be replaced shall be of like kind to those removed. If like kind materials are unavailable, the Contractor may substitute comparable materials of comparable quality, if approved by the Engineer. Materials used in areas under the jurisdiction of the Denver Parks Department shall comply with the current specifications of that department.

Subsection 623.28 is revised to include the following:

Pipes and fittings will be measured by the lineal foot, regardless of type, size or manufacturer and shall be paid under “Sprinkler System – Irrigation Reconstruction.”

New Sprinkler heads will be measured per each, regardless of type, size or manufacturer, and shall be paid under “Sprinkler System – Sprinkler Head.”

Sprinkler heads to be adjusted will be measured per each regardless of type, size or manufacturer, and shall be paid under “Sprinkler System – Adjust Sprinkler Head.”

Subsection 623.29 is revised to include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Sprinkler System – Irrigation Reconstruction	Linear Foot
Sprinkler System – New Sprinkler Head	Each
Sprinkler System – Adjust Sprinkler Head	Each

End Revision of Section 623 Irrigation System

**REVISION OF SECTION 625
CONSTRUCTION SURVEYING**

Subsection 625 of the standard specifications is hereby revised as follows:

Delete section 625 and replace with the following:

DESCRIPTION

625.1 This work consists of the construction surveying, calculating, ROW staking, and construction staking necessary for the construction of all elements of the project. The work shall be done under the supervision of a Professional Land Surveyor (PLS) who is licensed in the State of Colorado. Locating, preserving, referencing, installing and restoring land monuments such as Primary Control monuments from which the Right of Way or any land boundary will be calculated, described or monumented, Public Land Survey System (PLSS) monuments, General Land Office (GLO) monuments, Bureau of Land Management (BLM) monuments, Mineral Survey (MS) monuments, Right of Way (ROW) monuments, property boundary monuments and offsets, range points, benchmarks, easement monuments, and other monuments that are required by law or regulation to be established by a PLS, and the determination of any land boundary, shall be done under the supervision of a Professional Land Surveyor (PLS) who is licensed in the State of Colorado.

MATERIALS AND EQUIPMENT

625.2 The Contractor shall furnish all personnel, survey equipment, safety equipment, materials, and traffic control necessary to perform the required construction surveying and staking. All surveying equipment, including Electronic Distance Meters (EDM), total stations, theodolites, levels, rods, tapes, tripods, tribrachs, and Global Positioning System (GPS) receivers and equipment.

The Contractor shall furnish all personnel, survey equipment, safety equipment, materials, and traffic control necessary to perform the required construction surveying and staking. All surveying equipment, including Electronic Distance Meters (EDM), total stations, theodolites, levels, rods, tapes, tripods, tribrachs, and Global Positioning System (GPS) receivers and equipment.

CONSTRUCTION REQUIREMENTS

625.3 A Construction Survey Conference shall be held with the City Surveyor's Office prior to performing any surveying work under this section. The Contractor's Surveyor (PLS) and Party Chief shall attend. A Construction Survey Checklist shall be completed and signed by the City Surveyor's Office and the contractor.

The Contractor shall check and verify all established Primary horizontal and vertical control points.

All survey records generated shall be the property of the City and shall be available to the City Surveyor's Office for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance.

Electronic formats may be acceptable, please coordinate with the City Surveyor's Office. Copies of any new Monument Records filed by the PLS with the State Board of Registration shall be submitted to the City Surveyor prior to filing.

625.4 Contractor Surveying. The Contractor's PLS shall perform all construction surveying and construction/ROW staking that is necessary for the construction of the project.

**REVISION OF SECTION 625
CONSTRUCTION SURVEYING**

625.5 Staking. It is the responsibility of the Contractor's PLS to adhere to the industry standards and acceptable practices in regards to staking. Any restaking will be the responsibility of the contractor's PLS at no cost to the City.

625.6 Accuracy and Tolerances. It is the responsibility of the Contractor's PLS to adhere to industry standards and applicable standards with regard to horizontal and vertical accuracy tolerances.

625.7 Responsibility and Inspection. Supervision and coordination of construction surveying and staking is the Contractor's responsibility. The City Surveyor's Office or Engineer may inspect the Contractor's surveying; however, such inspection will not relieve the Contractor of any responsibility for accuracy or completeness of work. All Contractor surveying inaccuracies, errors or omissions shall be corrected at the Contractor's expense.

Locating, preserving, referencing, installing and restoring land monuments as described in 625.01 shall be done in accordance with Section 629, under the supervision of a PLS who is experienced and competent in Right of Way and boundary surveying and licensed in the State of Colorado.

625.9 Changes. All changes in lines and grades required by field conditions and all discrepancies in grades, alignment, location or dimensions detected by the Contractor shall be immediately submitted to the Engineer in writing. No changes in given data or plans will be allowed unless approved by the Engineer in writing. All changes shall be documented by the contractor.

625.10 Pay Quantities Measurements. The Engineer will perform all interim and final measurements deemed necessary by the City to determine contract pay quantities. The Contractor shall establish and maintain control points and stationing as required for these measurements.

625.11 Survey Records. Survey records shall be completed as the work is done. Field Survey notes for construction surveying and checking by the Contractor shall be recorded in survey records in conformance with industry standards and acceptable practices.

All survey records generated shall be the property of the city and shall be available to the City Surveyor's Office or the Engineer for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance. All survey records shall be stamped with the seal of, and signed by, the Contractor's PLS. Electronic Submittal of survey records may be acceptable, please coordinate with the City Surveyor's Office.

METHOD OF MEASUREMENT

625.12 Construction surveying will not be measured but will be paid for on a lump sum basis.

BASIS OF PAYMENT

625.13 Payment for construction surveying will be the contractor lump sum bid and will be full compensation for all the surveying work necessary to complete the project to include all resetting of stakes, marks, monuments and preparing survey documentation as required.

Partial payment for construction surveying, as determined by the Engineer, will be made as the work progresses.

**REVISION OF SECTION 625
CONSTRUCTION SURVEYING**

Traffic control for construction surveying will be measured and paid for in accordance with Section 630.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Construction Surveying	LS

End Revision of Section 625 Construction Surveying

**REVISION OF SECTION 626
MOBILIZATION**

Subsection 626 of the standard specifications is hereby revised as follows:

Subsection 626.01 is hereby revised to include:

This item also includes demobilization of equipment and supplies from this project site.

Subsection 626.02 is hereby deleted and replaced by the following:

Two payments will be made for the mobilization item. 50% of the amount bid for mobilization will be paid at the completion of mobilization. The remaining 50% of the amount bid for mobilization will be paid at the completion of the project when the equipment has been demobilized.

Pay Item
Mobilization

Pay Unit
LS

End Revision of Section 626 Mobilization

REVISION OF SECTION 626 SURVEY MONUMENTATION

Section 629 of the Standard Specifications is hereby deleted and replaced with the following:

DESCRIPTION

629.01 This work consists of locating, preserving, referencing, installing, restoring and resetting the following types of land monuments by a Colorado-licensed Professional Land Surveyor (PLS). The following types of monuments, if required, shall be considered included: Primary Control monuments from which Right of Way (ROW) or any land boundary will be calculated, described or monumented; Public Land Survey System (PLSS) monuments; General Land Office (GLO) monuments; Bureau of Land Management (BLM) monuments; Mineral Survey (MS) monuments; ROW monuments; property boundary monuments; and Offsets, City of Denver range points, benchmarks, easement monuments, and other monuments that are required by law or regulation to be established by a PLS, along with installing or adjusting Monument Boxes.

The production of additional documentation may be required by the City Surveyor's Office. All such work included in this section shall be performed under the supervision of a Colorado- licensed PLS.

MATERIALS AND EQUIPMENT

629.02 The Contractor shall furnish all personnel, survey equipment, safety equipment, materials and traffic control necessary to perform the required Monumentation and related surveying.

CONSTRUCTION REQUIREMENTS

629.03 A construction survey conference shall be held with the City Surveyor's Office prior to performing any surveying work under this section. The Contractor's Surveyor (PLS) and party Chief shall attend. A construction survey checklist shall be completed and signed by the City Surveyor's Office and the Contractor.

The Contractor shall check and verify all established primary horizontal and vertical control points.

All survey records generated shall be the property of the City & County of Denver and shall be available to the City Surveyor's Office for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance.

Electronic formats may be acceptable; please coordinate with the City Surveyor's Office.

Copies of any new Monument Records filed by the PLS with the State Board of Registration shall be submitted to the City Surveyor prior to filing.

629.04 Locating Monuments – This work consists of field locating all survey Monumentation as discussed in 629.01 which is in place within the project limits. A diligent search of construction zones and project limits shall be performed by the PLS.

629.05 Preserving and Referencing Monuments – All monuments as described in 629.01 shall be preserved, referenced and reset by a PLS within the project limits.

**REVISION OF SECTION 629
SURVEY MONUMENTATION**

629.05 Installing Monuments – All monuments described in 629.01 shall be preserved throughout construction. If any monuments as described in 629.01 are to be disturbed or removed during construction, it will be the responsibility of the Contractor’s PLS to reset all monuments to current City & County of Denver standards. Appropriate documentation will be required for all reset monuments.

629.07 Monument Box – If required, this work shall consist of installing or adjusting monument boxes to current City or CDOT requirements.

METHOD OF MEASUREMENT

Survey monuments, monument boxes and adjustment of monument boxes will be measured by the actual number of the various types installed and accepted by the Engineer. Measurement for locating survey monuments, preserving and referencing monuments will not be measured and paid for separately.

BASIS OF PAYMENT

629.09 The accepted items and quantities will be paid for at the contract unit price per each. Approval of the Engineer is required prior to undertaking any work identified as part of this Section.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Reset Survey Monument	Each

Prior to payment, all survey records and documentation must be submitted and accepted by the City Surveyor’s Office.

The construction survey checklist, equipment calibrations and survey records will not be paid for separately but shall be included in the work. The locating of monuments, and preserving and referencing monuments will not be paid for separately but shall be included in the work.

End Revision of Section 629 Survey Monumentation

**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

Section 630 of the Standard Specifications is hereby revised as follows:

Subsection 630.01 shall be revised to include the following:

The Contractor shall submit, in writing to the Engineer, the proposed Method of Handling Traffic (MHT) for review and approval. The MHT shall be developed according to this section and the construction plans.

Subsection 630.05 Traffic Cones shall include the following:

Steel drum channelizing devices shall not be used for traffic control

Subsection 630.06 Channelizing Device (fixed) shall include the following:

Non-metallic drums or tubular markers may be substituted for vertical panel channelizing devices.

Subsection 630.09 General shall include the following:

The flagger's STOP/SLOW sign paddle shall be 18 inches with letters six inches high.

Subsection 630.10(a), shall include the following:

When a different MHT is required for a subsequent construction phase, it must be submitted at least two weeks prior to starting that phase. All proposed methods of handling traffic shall be approved, in writing, by the Project Engineer following approval of Transportation & Mobility.

Approval of the proposed MHT does not relieve the Contractor of liability specifically assigned to him under the contract. The Contractor shall erect and maintain warning lights, signs, barricades, and sufficient safeguards around all excavations, embankments, and obstructions.

The contractor shall notify the Project Engineer by Thursday at 3:00 P.M. which streets they intend to work on the following week. This notification will be made for all phases of construction.

Subsection 630.10(a)(1) shall be added as follows:

The key elements of the Contractor's method of handling traffic (MHT) are outlined in subsection 630.10(a).

The components of the Traffic Control Plan (TCP) for this project are included in the following:

- Subsection 104.04 and Section 630 of the Standard Specifications.
- Latest revised Standard Plan S-630-1, Traffic Controls for Highway Construction and Standard Plan S-630-2.

**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

Special Traffic Control Plan requirements for this project are as follows:

1. During the construction of this project, traffic shall use the present traveled roadway.
2. Work that interferes with traffic on will only be permitted during the following hours:
 - The Contractor shall perform all the work on the roadway between the hours of 8:30 AM and 3:30 PM or as approved by the Project Engineer. Weekend and nighttime work will be allowed with the prior written approval of the Project Engineer. During this time, only one lane can closed on each approach.
 - Work will not be permitted that directly or indirectly interferes with the flow of traffic between the hours of 5:30 AM and 8:30 AM Monday through Friday; between the hours of 3:30 PM to 6:30 PM Monday through Thursday; and after 2:00 PM on Fridays unless otherwise authorized by the Project Engineer.
 - No work on Holidays
 - Contractor shall not close lanes during special events.
 - Contractor shall coordinate lane closures with adjacent projects.
 - Contractor shall maintain business access during business hours.
 - The Contractor shall coordinate all of the work on the roadway during any special event with the City and County of Denver.
3. The Contractor shall install construction traffic control devices where they do not block or impede other existing traffic control devices or sidewalks for pedestrians, disabled persons or bicyclists. The Contractor is restricted from storing any materials, construction traffic control devices, signs, etc. in any median area or park area.
4. Vertical cuts or fills greater than 1 inch resulting from construction operations adjacent to traffic lanes, or within the clear zone shall be temporarily sloped at a 6:1 or flatter slope, and delineated at 35 foot intervals immediately after removal operations to safeguard the traveling public.
5. Construction equipment used on this project shall meet the same minimum exhaust requirements as those specified by the manufacturer of the equipment.
6. The Contractor and subcontractors shall equip their construction vehicles with flashing amber lights. Equipment to be used at night shall also be equipped with flashing amber lights. Flashing amber lights on vehicles and equipment shall be visible from all directions.
7. The Contractor shall maintain access to all roadways, side streets, walkways, alleyways, driveways, and hike/bike paths at all times unless otherwise directed by the Engineer. Parking areas temporarily disturbed by construction activities shall be restored to a useable condition during non-working hours. Such temporary parking shall utilize an all weather surface. The Contractor shall develop an Access Maintenance Plan in coordination with, and based on the requirements of, the affected property owners and tenants, and submit it to the Engineer for approval prior to commencement of work. This plan shall detail all barricades, ramps, signs, and temporary means of access required by the property owners or tenants. Prior to commencing any work which affects access to a property, the Access Maintenance Plan for that property must be submitted and approved by the Engineer.

**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

8. The Access Maintenance Plan shall be coordinated with all affected owners and tenants. The Access Maintenance Plan shall include documentation of this coordination, including the approval signature of each affected owner or tenant. Should the Contractor be unable to obtain approval and signatures, documentation of the efforts made to obtain said approval and signatures must be submitted. All access shall be maintained on surfaces equal to or better than those existing at the time the access is first disturbed. For short periods of time only as allowed by the Engineer, access may be maintained on an aggregate base course surfaces.
9. The Contractor shall maintain continuous access throughout the project for pedestrians, bicyclists, and disabled persons. When the existing access route is disturbed by construction, a temporary all-weather access shall be provided. All temporary access shall be a minimum of 5 feet wide and meet Americans with Disabilities Act (ADA) requirements. Acceptable all weather surfacing shall be concrete or asphalt surface, or as approved by the Engineer. Delineation of pedestrian access through the work area shall be accomplished using temporary plastic fencing.
10. The costs of maintaining access will not be paid for separately, unless otherwise provided, but shall be included in the work. Utilization of materials to be incorporated into the work may be permitted. However, any degradation or other contamination or destruction shall be corrected at the Contractor's expense prior to acceptance.
11. During non-construction periods (evenings, weekends, holidays, etc.) all work shall be adequately protected to insure the safety of vehicular and pedestrian traffic, as detailed in the Contractor's MHT. Excavations or holes shall be filled in or fenced when unattended.
12. Whenever the Contractor removes, obliterates, or overlays any pavement markings, he /she shall replace them on a daily basis prior to opening the affected areas to traffic. All temporary pavement markings shall fully comply with the Standard Specifications and Special Provisions.
13. The Contractor shall not have construction equipment or materials in the lanes open to traffic any time unless directed by the Engineer.
14. All personal vehicle and construction equipment parking is prohibited where it conflicts with safety, access, or the flow of traffic. Landscaped areas, public park areas, and roadway shoulders shall be kept clear of parking and storage of all personal and construction equipment except where approved by the Engineer.
15. The Contractor shall not place tack coat on any surface to be paved where traffic will be forced to travel upon fresh bituminous materials.
16. The Contractor shall be required to make arrangements with the Regional Transportation district (RTD) prior to closing any existing bus stops within the project limits. Temporary stops will be required as directed by the Engineer and as required by RTD. For bus stop/route conflicts Regional Transportation District, RTD / 1560 Broadway, Suite 700, Denver, CO 80202 shall be contacted two business days prior to start of construction.

**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

17. The Contractor shall be required to maintain temporary drives at any existing establishment that has singular access off of the roadways, unless otherwise approved in writing by the property owner.
18. No work that interferes with traffic will be allowed on holidays or any day of a three-day or four-day weekend that includes a holiday. Holidays on which this restriction applies consist of those holidays recognized by the State of Colorado as listed in subsection 101.36
19. All lane closures shall be subject to the approval of the Engineer. Request for each closure shall be made at least 24 hours in advance of the time the lane closure is to be implemented. Lane closures will not be allowed to remain unless being utilized in continuum for the intended purpose for which they were set up.
20. During no-working hours, the roadways shall be restored to a safe travel conditions for the free flow of traffic. Any maintenance required restoring the roadways to this condition, including the pavement patching and grading, shall be done prior to opening the areas to traffic or completing work for the day.
21. The Contractor shall clean the roadway of all construction debris before opening it to traffic.
22. All flagging stations used at night shall be illuminated with floodlights. Street, highway lights and "high mast lighting" may be used for flagging station illumination when approved by the Engineer. Floodlights shall be located and directed so as not to interfere with the sight of any motorists, and the cost to be included in the work.
23. Prior to removal and resetting of any sign the Contractor and Engineer shall prepare an inventory. Any signs damaged due to the Contractor's operations shall be replaced in kind or repaired by the Contractor at no additional cost to the project.
24. Unless noted otherwise, all costs incidental to the foregoing requirements shall be included in the original contract prices for the project, including any additional traffic control items required for haul routes into the project.

Subsection 630.10 (10) shall be added as follows:

Number of hours for uniformed traffic control shall be tabulated for submittal.

Subsection 630.10 (11) shall be added as follows:

Contractor shall obtain all required access and construction permits from the City & County of Denver prior to initiating work along City right of way.

All lane closures require an arrow board to be installed.

All streets that will be reduced in the number of travel lanes should have variable message boards installed for a minimum of 3 days after the striping change to inform drivers of the lane reduction.

**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

Subsection 630.14 shall include the following:

The flagger's STOP/SLOW sign paddle shall be 18 inches with letters six inches high.

Subsection 630.15 is hereby deleted and replaced with the following:

The Contractor shall furnish all other personnel – including flaggers, traffic control inspector, and traffic control supervisor - and other materials necessary to perform the Construction Zone Traffic Control as required and these quantities will not be measured but will be included in the cost of Construction Traffic Control.

Temporary pavement markings for traffic control will not be measured and paid for separately, but shall be included in the work.

Subsection 630.16 is hereby deleted and replaced with the following:

All costs incidental to maintenance of access will not be paid for separately, but shall be included in the work.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project.

Payment will be made under:

Pay Item

Construction Traffic Control

Pay Unit

LS

End Revision of Section 630 Construction Zone Traffic Control

**DENVER (ONLY) NOISE ORDINANCE – PERMIT
VARIANCE APPLICATION TEMPLATE**

Date

Subject: **Request for Variance to Noise Ordinance**

[location where work is to be performed]

Dear Ms. VanDerLoop,

- Name of company/organization seeking the variance
- What is being proposed, where it will occur, expected duration of project
- Brief history regarding proposed project
- Description of the community in the vicinity of the proposed project area

6 (a) Type and Timing of Claim:

- Specific description of proposed project (figures are helpful)
- Why does work need to be conducted at night? (CDOT can provide details to contractor)
- Are there limiting factors preventing this work from being conducted during the day? (CDOT can provide details to contractor)
- Requested variance duration; start and end dates
- Proposed work hours
- Types/categories of equipment being used for the project (if known, a detailed list should be provided as an appendix)
- Is this variance request contingent on other regulatory approvals/permits? (construction, demo, remediation)

6 (b) Date of Payment:

- [The Company's] date of payment is the date shown of this letter/request.

6 (c) Objections to Manager's Determinations:

- Specific items applicant may be in disagreement with concerning Department's recommendations or requirements

6 (d) (1) Hardship if Variance is Not Granted:

- Public safety concerns (CDOT can provide details to contractor)
- Logistical concerns
- Time constraints with a detailed explanation as to why they are necessary
- Cost considerations (specifics desirable)
- Document and evaluate possible alternatives

6 (d) (2) No Adverse Affects to Public Health:

- List expected noise levels to be generated (1) at the site where work is being performed, and (2) at the nearest sensitive receptor (CDOT can provide details to contractor from Roadway Construction Noise Model)
- Detail existing ambient sound levels (L90, Leq, Lmax) for the same areas (at least 1 night of pre-work monitoring; 9 p.m. to 7 a.m.; two nights (one weekday, one weekend) if work will occur on weekdays and weekends)
- How do the proposed levels compare with existing EPA or other guidance? (CDOT can

**DENVER (ONLY) NOISE ORDINANCE – PERMIT
VARIANCE APPLICATION TEMPLATE**

- provide details to contractor)
- Are there adverse health effects other than noise to be concerned with as a result of the proposed work? (CDOT can provide details to contractor)

6(d) (3) Maintain Harmony with the Spirit and Purpose of the Ordinance:

(CDOT can provide details to contractor for sec 6(d) (3))

- Is the scope of work considerate of present and future community concerns?
- How does the scope of work seek to minimize impacts to the community?
- Have noise mitigation techniques been included and/or considered?
- Has a noise monitoring plan been considered or proposed?
- How will community outreach be conducted prior to the start of work?
- Has a community response plan been developed to deal with any future complaints? (contact name and number of on-site representative)

6 (e) Project Location and Haul Routes:

- Figures are preferable (CDOT can provide details to contractor)

6 (f) Petitioner Information

[Company Name and Address]

[Contact Person/Project Manager info]

6 (g) Petitioner's Signature

Sincerely,

[Name and Title]

Note: In addition to this template, CDOT can provide an example of a previously written (City and County of Denver) variance application at the contractor's request.

The following field work summary of requirements will be the sole responsibility of the contractor for maintaining compliance with the Denver (only) Permit Variance agreements once granted by the Department of Environmental Health.

- 1) **Construction Activity Allowable Noise Levels:** Unless the accommodations described in below are provided, construction noise levels shall not exceed:
 - a. an hourly Leq of 75 dBA, or 5 dBA greater than an ambient hourly Leq measuring more than 75 dBa, or
 - b. an Lmax of 86 dBA during the hours of 9:00 p.m. to 7:00 a.m. (Nighttime Hours)

**DENVER (ONLY) NOISE ORDINANCE – PERMIT
VARIANCE APPLICATION TEMPLATE**

- 2) **Hotel accommodations within eligibility zones:** (Contractor) shall make hotel accommodations available for persons residing within eligibility zones where Nighttime construction noise levels exceed allowable noise levels. The eligibility zone shall be determined by a sound study conducted by the (contractor) and approved by DEH prior to a seven-day notification period. During nighttime construction, (contractor) shall conduct noise monitoring to verify the sound study results and shall expand and may restrict the eligibility zone to the areas where the actual noise levels exceed an hourly Leq of 75 dB(A) or an Lmax of 86 dB(A). (Contractor) shall consider any special circumstances brought to their attention regarding individuals in the eligibility zone who cannot utilize hotel vouchers and who may be at risk during this period of time, e.g., residents of 24-hour health care facilities. (Contractor) shall make their best effort to accommodate the needs of such individuals during Construction Activity.
- 3) **Notifications:** Not less than seven days prior to commencement of construction during Nighttime Hours, (contractor) shall notify individual households located within a 1000 foot radius of the construction, as well as representatives of each affected Registered Neighborhood Organizations. Notice shall be in writing or by direct personal contact from (contractor) representative, and shall include the expected start time, expected duration, character of work activity planned, names and telephone numbers of available contact persons (for additional information or questions), contact numbers for complaints, and any other relevant parameters or programs. Households within the eligibility zone shall receive notice regarding their eligibility for hotel vouchers at the same time or earlier.
- 4) **Mitigation Requirements/Activity Restraints:** When construction is conducted during Nighttime Hours and such activity emits noise levels that exceed ambient noise levels at residential properties, (contractor) shall utilize best reasonable management practices to mitigate construction noise impacts to the adjacent property owners. Best reasonable management practices include the following:
- a. Using reasonable best efforts to complete the construction as quickly as possible.
 - b. Minimizing nighttime construction duration near residential areas whenever possible.
 - c. Re-routing of truck traffic away from residential streets when possible.
 - d. Conducting truck loading, unloading and hauling operations so that noise levels are kept to a minimum
 - e. Configuring equipment on the site to minimize back-up alarm noise, where practical and feasible (for example, by using circular movement of trucks).
 - f. Shielding jackhammers, saws, and pavement breakers through use of an existing sound barrier wall or temporary barrier where practicable
 - g. Maintaining all equipment to meet manufacturer's specifications.
 - h. Informing employees, contractors and subcontractors performing construction of the general requirements of this variance and exercising best efforts to ensure that such employees, contractors and subcontractors follow best management practices in mitigating construction noise.

**DENVER (ONLY) NOISE ORDINANCE – PERMIT
VARIANCE APPLICATION TEMPLATE**

- 5) **Monitoring:** (Contractor) shall perform monitoring sufficient to demonstrate compliance with the requirements of the noise variance and to demonstrate to the community the noise levels that are present.
- a. Noise measurements shall be collected using ANSI guidelines for community noise monitoring
 - i. Manufacturer’s specifications for appropriate meter use shall be followed.
 - ii. All noise measurements shall be made using the A-weighted scale (dB(A)) and a slow response. Fast response measurements may be used to measure impact noise levels.
 - iii. Noise measurements shall be made at the nearest residential property line, unless physically impractical.
 - b. All nighttime construction activity shall be initially monitored. Monitoring shall include spot measurements, as appropriate and hourly Leq. Monitoring shall be required for the following activity groups, but not be limited to:
 - i. Joint Repair
 - ii. Milling Operations
 - iii. Rubble load-out
 - iv. Paving operations
 - c. Monitoring shall meet the following requirements:
 - i. Each construction activity shall be monitored a minimum of two days for Lmax and hourly Leq levels to establish an activity baseline for each activity when initially undertaken, and to establish the expected worst case situation (outside lane).
 - ii. Noise monitoring shall be provided in response to all noise complaints.
 - iii. All noise monitoring data and documentation shall be provided to DEH at least weekly when applicable, and such data shall be available to the public from DEH. DEH and their designated representatives may inspect collected data more frequently.
 - d. The following documentation, in a manner and form mutually agreed upon by CDOT, (contractor) and DEH, shall be provided for noise monitoring that is conducted:
 - i. Manufacturer names, model numbers, and serial numbers of each SLM and acoustical calibrator used.
 - ii. Software manufacturer, program and version.
 - iii. Dates of annual certified calibration of SLM, microphone and acoustical calibrator.
 - iv. Pre- and post- monitoring calibration data for the Sound Level Meter.
 - v. Date and specific location (address if appropriate) of monitoring.
 - vi. Start time and end time of monitoring
 - vii. Ambient weather conditions including temperature, relative humidity, wind speed and cloud cover.
 - viii. Signature of technician collecting the data
 - ix. List of each hourly Leq for the monitoring period, with associated Lmax levels.

**DENVER (ONLY) NOISE ORDINANCE – PERMIT
VARIANCE APPLICATION TEMPLATE**

- x. All measurements associated with any unusual noise events that occurred, cause of such event if known, correction of such event (if any), and adjusted and unadjusted measurements.
- 6) **Complaint Notification and Response:** (Contractor) shall ensure that methods are available to receive, address, and respond to concerns raised by people in the community, through:
- a. Assuring that a field representative is available to respond to complaints regarding construction noise levels and provide monitoring. The field representative shall be empowered to shut down construction activity, authorize correction or remediation of sources of excess noise, and authorize resumption of construction activity as necessary to maintain compliance with allowable noise levels.
 - b. Providing telephone access to a field representative during hours of project activities to receive complaints or comments from the public for the duration of the project. All complaints immediately shall be recorded, investigated and addressed as appropriate by the field representative and reported to DEH in a manner mutually agreed by DEH, CDOT and (contractor). A response, in a reasonable form requested by the caller, summarizing the investigation and any corrective actions taken by CDOT and (contractor) shall be provided to the caller. Written copies of complaints received and responses by (contractor) shall be provided weekly to DEH and CDOT.

All application requirements and chapter 36 ordinance requirements regarding night time construction noise activities must be coordinated by the contractor with the City/County Denver. The contractor is fully responsible for the timely submittal of the variance application and fulfilling the requirements set forth by the City/County of Denver to allow construction activities during p.m. hours under the granted variance.

CITY AND COUNTY OF DENVER
STATE OF COLORADO



Department of Public Works

Drawings

Contract No: 201734986



MILL LEVY 7A

TRAFFIC SIGNAL UPGRADE

May 22, 2017

CITY AND COUNTY OF DENVER

DEPARTMENT OF PUBLIC WORKS - TRANSPORTATION & MOBILITY

MILL LEVY 7A TRAFFIC SIGNALS

CITY MASTER PROJECT #:

2016-PROJMSTR-0000085

CCD PRO TRACKING #:

PWTES 2016-001

INDEX OF SHEETS

Sheet No. - Sheet Title

1 - TITLE SHEET

NOTES

2,3,4 - GENERAL NOTES (1),(2),(3)

5 - CITY AND COUNTY OF DENVER STANDARDS

6 - TRAFFIC LEGEND AND KEY NOTES

SUMMARY OF APPROXIMATE QUANTITIES

7,8,9 - SUMMARY OF APPROXIMATE QUANTITIES SHEET 01, 02, 03

SURVEY CONTROL

10 - SURVEY CONTROL DIAGRAM

REMOVAL PLAN

11 - BROADWAY & ALAMEDA AVE

12 - MONACO ST PKWY & ALAMEDA AVE

13 - MONACO ST PKWY & MARTIN LUTHER KING JR BLVD

14 - E 47TH AVE & PEORIA ST

CIVIL PLAN AND DETAILS

15 - BROADWAY & ALAMEDA AVE

16 - BROADWAY & ALAMEDA AVE (DETAILS)

17 - MONACO ST PKWY & ALAMEDA AVE

18 - MONACO ST PKWY & ALAMEDA AVE (NORTH)

19 - MONACO ST PKWY & ALAMEDA AVE (SOUTH)

20 - MONACO ST PKWY & MLK JR BLVD

21 - MONACO ST PKWY & MLK JR BLVD (WEST)

22 - MONACO ST PKWY & MLK JR BLVD (EAST)

23 - MONACO ST PKWY & MLK JR BLVD (MEDIANS)

24 - E 47TH AVE & PEORIA ST

25 - E 47TH AVE & PEORIA ST (NORTH)

26 - E 47TH AVE & PEORIA ST (SOUTH EAST)

27 - E 47TH AVE & PEORIA ST SW (DETAILS & PROFILE)

TRAFFIC SIGNAL PLAN

28 - BROADWAY & ALAMEDA AVE

29 - MONACO ST PKWY & ALAMEDA AVE

30 - MONACO ST PKWY & MARTIN LUTHER KING JR BLVD

31 - E 47TH AVE & PEORIA ST

32 - BROADWAY & ALAMEDA AVE

33 - MONACO ST PKWY & ALAMEDA AVE

34 - MONACO ST PKWY & MLK JR BLVD

35 - E 47TH AVE & PEORIA ST

SIGNAGE AND STRIPING

36 - BROADWAY & ALAMEDA AVE

37 - MONACO ST PKWY & ALAMEDA AVE

38 - MONACO ST PKWY & MLK JR BLVD

39 - E 47TH AVE & PEORIA ST

CITY AND COUNTY OF DENVER DEPARTMENT OF PUBLIC WORKS

APPROVED BY:

Keely B. Jurnea
EXECUTIVE DIRECTOR OF PUBLIC WORKS

5.9.17
DATE

Keely B. Jurnea
CITY ENGINEER

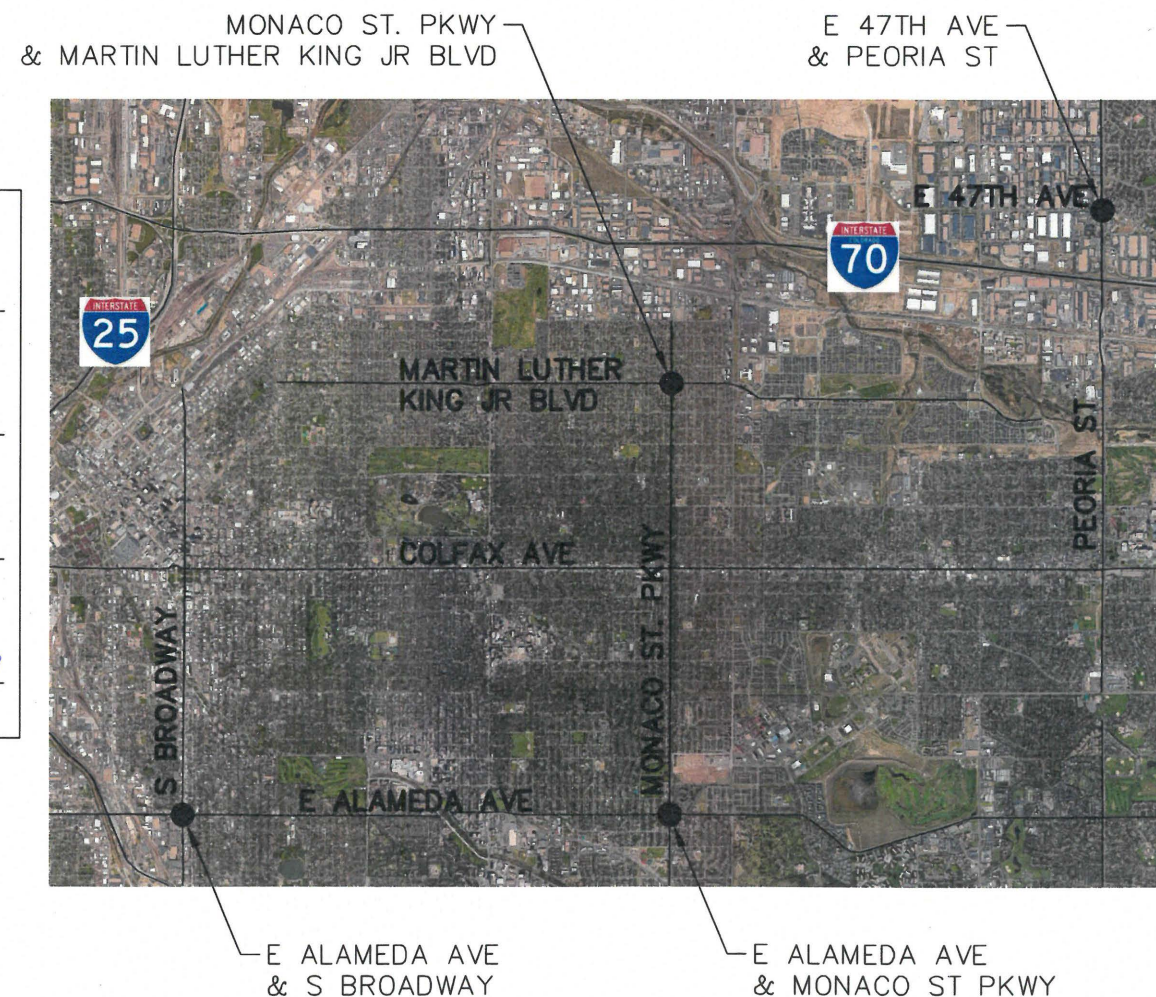
5.9.17
DATE

David Hunter
DIRECTOR OF ENGINEERING CAPITAL PROJECTS

5/8/17
DATE

Neil R. Linder
CITY TRAFFIC ENGINEER

5/5/2017
DATE



Know what's below.
Call before you dig.

Print Date: March 17, 2017

Drawing File Name: 349008CV.DWG

Horiz. Scale: N/A

Vert. Scale: N/A

Kimley»Horn
KIMLEY-HORN AND ASSOCIATES, INC.
4582 SOUTH ULSTER STREET,
SUITE 1500
DENVER, COLORADO 80237
(303) 228-2300

Sheet Revisions

Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		



DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
DENVER, CO 80202
Phone: (720) 913-4501
Fax: (720) 913-4544

As Constructed

No Revisions:

Revised:

Void:

MILL LEVY 7A TRAFFIC SIGNALS
TITLE SHEET

Designer: CEH

Detailer: BJD

Sheet Subset: TITLE

Subset Sheet: 1 of 1

Project No./Code

PZ03798_425

Sheet Number 1

K:\DEN_PublicSector\096349008 Mill Levy 7A Traffic Signals\CADD\Sheets\349008CV.dwg Date: 3/17/2017 5:18 PM
THIS DOCUMENT IS THE PROPERTY OF KIMLEY-HORN AND ASSOCIATES, INC. IT IS TO BE USED ONLY FOR THE PROJECT, LOCATION, AND LIMITS FOR WHICH IT WAS PREPARED. NO PART OF THIS DOCUMENT SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC.

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008NT.dwg Davis, Benjamin 3/17/2017 5:19 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

SURVEYING NOTES:

1. PRIOR TO BEGINNING WORK ON THE PROJECT, THE CONTRACTOR'S SURVEYOR SHALL PERFORM A SURVEY TO VERIFY ALL SURVEY CONTROL POINTS, CITY OF DENVER RANGE POINTS, SECTION CORNERS, AND BENCHMARKS AS SHOWN ON THE SURVEY CONTROL DIAGRAM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL LAND SURVEY MONUMENTS DISRUPTED BY CONSTRUCTION ACTIVITIES OR BY NEGLIGENCE ON THE PART OF THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO FOLLOW COLORADO STATE LAW REGARDING SURVEY MONUMENTS. THE CONTRACTOR SHALL RETAIN A COLORADO LICENSED PROFESSIONAL LAND SURVEYOR TO RESET ANY AFFECTED SURVEY MONUMENTS. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK UNLESS SPECIFIED OTHERWISE IN SECTION 629.

FOR FURTHER INFORMATION CONTACT:

ATTN: PUBLIC WORKS – SURVEY DEPARTMENT
 CITY SURVEYOR
 201 W. COLFAX AVE.
 DENVER, CO 80202
 720-865-3121

2. AFTER COMPLETION OF THE PAVING OPERATIONS, THE CONTRACTOR SHALL UPGRADE TEMPORARY RANGE POINTS WITH PERMANENT RANGE POINT MONUMENTS. MONUMENTS SHALL MEET CURRENT CITY AND COUNTY OF DENVER STANDARDS. SEE SECTION 629 OF THE SPECIAL PROVISIONS FOR MORE INFORMATION.
3. A SURVEY SHALL BE DEPOSITED WITH THE CITY AND COUNTY OF DENVER PER STATE STATUTE. CITY MONUMENT RECORDS SHALL BE PREPARED FOR ALL RANGE POINTS WITHIN THE PROJECT AND DEPOSITED WITH THE CITY SURVEYOR.
4. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS, OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT AND/OR BOUNDARY MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE C.R.S. SECTION 18-4-508.
5. ALL STATIONS AND OFFSETS SHOWN ON THE PLANS ARE TO THE CONTROL LINES UNLESS OTHERWISE NOTED. THE USE OF CONTROL MONUMENTS FOR CONSTRUCTION STAKING OTHER THAN THOSE SHOWN ON THE PLANS OR APPROVED BY THE PW DEPT IS PROHIBITED, AND USE OF SUCH MONUMENTS IS AT THE CONTRACTOR'S SOLE RISK.
6. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR

GENERAL NOTES:

1. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET, OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
3. THE CONTRACTOR SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY ROW AT THE CLOSE OF DAILY OPERATIONS. THE TRAFFIC CONTROL PLAN (TCP) MUST INCLUDE PROTECTIVE MEASURES WHERE MATERIALS AND EQUIPMENT MAY BE STORED IN THE ROW, BUT ENSURE FIVE FEET OF PEDESTRIAN CLEARANCE ON SIDEWALKS. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL IN THE CLEAR ZONE OF THE TRAVELED WAY.
4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PROJECT PERMITS ASSOCIATED WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.

5. IF ANY OF THE CONTRACTOR'S OPERATIONS DESTROY OR DAMAGE ANY PROPERTY, PUBLIC OR PRIVATE, THE CONTRACTOR SHALL PROMPTLY REPAIR OR REPLACE SUCH PROPERTY, TO THE SATISFACTION OF THE PROJECT MANAGER, BEFORE THE CITY WILL ACCEPT OR PAY FOR THE WORK PERFORMED UNDER THE CONTRACT. IF THE CONTRACTOR FAILS TO REPAIR OR REPLACE SUCH PROPERTY, THE CITY, AT THE SOLE DISCRETION OF THE MANAGER, MAY UNDERTAKE SUCH REPAIR OR REPLACEMENT AND DEDUCT THE COST OF THE SAME FROM AMOUNTS PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, IN AN AUTOCAD COMPATIBLE FORMAT, TO THE CITY. THE PRODUCTION OF THESE DOCUMENTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
7. ALL WORK SHALL CONFORM TO CURRENT CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE LATEST EDITION OF THE CITY STANDARDS SPECIFICATIONS, OR HALT CONSTRUCTION UNTIL THE CONFLICT IS RESOLVED.
8. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL STORM DRAIN INLETS, LATERALS, MAINS AND OTHER STORM RUNOFF APPURTENANCES WITHIN THE PROJECT LIMITS SHALL BE CLEARED OF SEDIMENT AND DEBRIS IN ACCORDANCE WITH DENVER WASTEWATER MANAGEMENT DIVISION STANDARDS. AFTER CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ANY SEDIMENT OR DEBRIS FROM THE STORM SEWER SYSTEM AT NO COST TO THE CITY.
9. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY ROW SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.
10. NO WORK SHALL BE PERMITTED ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR AUTHORIZATION OR UNLESS OTHERWISE SPECIFIED. THE CITY MAY RESTRICT WORK IN THE ROW DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.
11. NO CLEATED OR TRACKED EQUIPMENT MAY WORK IN OR MOVE OVER PAVED SURFACES WITHOUT MATS.
12. WHERE ROW FENCES MUST BE REMOVED OR CUT TO FACILITATE CONSTRUCTION, APPROVAL MUUST FIRST BE GIVEN BY THE CITY. EXISTING ROW/FENCE LINE MUST BE ESTABLISHED BY GOOD SURVEY PRACTICES. FENCES WILL BE REPLACED IN KIND ACCORDING TO CITY FENCING STANDARDS.
13. PROTECTION AND REPLACEMENT OF STREET IMPROVEMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THESE IMPROVEMENTS ARE FULLY COMPLETED AND ACCEPTED BY THE CITY.

PROJECT PLANS, SPECIFICATIONS AND PERMITS

1. ALL MATERIAL, EQUIPMENT, INSTALLATION AND CONSTRUCTION WITHIN THE ROW SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARD REFERENCES AS APPLICABLE:
 - A. CITY AND COUNTY OF DENVER, STANDARDS AND DETAILS FOR ENGINEERING DIVISION
 - B. STORM DRAINAGE AND SANITARY SEWER CONSTRUCTION DETAIL AND TECHNICAL SPECIFICATIONS
 - C. DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR CONSTRUCTION GENERAL CONTRACT CONDITIONS
 - D. WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS
 - E. TRAFFIC STANDARD DRAWINGS AND TRAFFIC ENGINEERING SERVICES PROJECT SPECIALS
 - F. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD



- G. FEDERAL HIGHWAY ADMINISTRATION (FHWA), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO
 - H. AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE
2. THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, ONE COPY OF THE APPROVED PLANS, ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND COPIES OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.
 3. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER IMMEDIATELY.

UTILITIES

1. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. RESPONSIBILITIES FOR THE RELOCATION OF UTILITY LINES ARE AS NOTED IN THE PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL COOPERATE WITH COMPANIES TRYING TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE CITY AND ITS ENGINEERS HARMLESS FOR DAMAGES ARISING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES. DAMAGED UTILITES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.
3. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST OR REPLACE ANY UTILITIES THAT ARE IMPACTED BY CONSTRUCTION AND ARE DESIGNED TO REMAIN WITHIN THE PROJECT LIMITS.
4. LOCATIONS FOR POTHOLING SHALL BE AS APPROVED BY THE PROJECT MANAGER.

REMOVALS, EXISTING ITEMS, SAWCUTTING

1. ALL ITEMS TO BE REMOVED AND NOT RESET SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
2. SIGNS AND / OR SIGNAL EQUIPMENT DESIGNATED AS REMOVAL ITEMS SHALL BE CAREFULLY REMOVED AND DELIVERED BY THE CONTRACTOR TO THE CITY YARD AT 5440 ROSLYN STREET, BUILDING E. ANY MATERIAL DESIGNATED FOR SALVAGE THAT IS DAMAGED AFTER REMOVAL SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. NO SEPARATE PAYMENT SHALL BE MADE FOR LOADING, HAULING, UNLOADING, OR PLACING SALVAGED MATERIALS IN THE CITY YARD.
3. WHERE IT IS REQUIRED TO REMOVE EXISTING CONCRETE OR ASPHALT, CUTTING SHALL BE DONE TO A NEAT WORK LINE TO FULL DEPTH USING A SAW, CUTTING WHEEL, OR OTHER METHOD APPROVED BY THE PROJECT MANAGER. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

Print Date: March 17, 2017		Sheet Revisions			 DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 Phone: (720) 913-4501 Fax: (720) 913-4544	As Constructed		MILL LEVY 7A TRAFFIC SIGNALS GENERAL NOTES		Project No./Code	
Drawing File Name: 349008NT.DWG		Date:	Comments:	Init.		No Revisions:			PZ03798_425		
Horiz. Scale: N/A Vert. Scale: N/A					Revised:			Designer:	CEH		
 KIMLEY-HORN AND ASSOCIATES, INC. 4582 SOUTH ULSTER STREET, SUITE 1500 DENVER, COLORADO 80237 (303) 228-2300		(R-X)			Void:			Detailer:	BJD		
		(R-X)			Sheet Subset:	NOTES	Subset Sheet:	1 of 5	Sheet Number 2		

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008NT.dwg Davis, Benjamin 3/17/2017 5:19 PM
 THIS DOCUMENT, TOGETHER WITH THE COMMENTS AND REVISIONS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

REMOVALS, EXISTING ITEMS, SAWCUTTING (CONTINUED)

4. REMOVAL OF EXISTING CURB AND GUTTER, SIDEWALK, DRIVEWAYS, CURB CUTS, AND OTHER CONCRETE ITEMS THAT ARE ATTACHED OR ADJACENT TO OTHER CONCRETE ITEMS SHALL BE REMOVED TO THE NEAREST JOINT, AS NEEDED TO AVOID DAMAGING THE REMAINING CONCRETE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ADJACENT SIDEWALK DURING CURB AND GUTTER REMOVAL AND SHALL REPLACE DAMAGED SECTIONS AT NO ADDITIONAL COST TO THE PROJECT.
5. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST, OR REPLACE ANY UTILITIES, LANDSCAPING, SPRINKLER SYSTEMS, SIGNS, SIDEWALKS, ETC. THAT ARE IMPACTED BY CONSTRUCTION AND ARE NOT DESIGNATED TO BE REMOVED.
6. THE CONTRACTOR SHALL USE AGGREGATE BASE COURSE OR ASPHALT MILLINGS TO FILL AREA LEFT BY REMOVAL OF DRIVEWAY OR CURB RAMP PRIOR TO PLACEMENT OF NEW SIDEWALK, DRIVEWAY OR CURB RAMP.

PAVEMENT

1. A TACK COAT IS REQUIRED PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS OF ASPHALT PAVEMENT.
2. WHERE NEW CONSTRUCTION IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE TO CREATE A CLEAN CONSTRUCTION JOINT.
3. PATCH ASPHALT PAVEMENT AS NECESSARY TO JOIN NEW GUTTERS WITH EXISTING PAVEMENT.
4. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.
5. HMA PATCHING SHALL BE PLACED AT 9" DEPTH OR MATCH THE DEPTH OF THE SURROUNDING EXISTING PAVEMENT, WHICHEVER IS GREATER. THE THICKNESS OF SUBSEQUENT PAVEMENT LIFTS MUST BE EQUAL TO OR GREATER THAN THE LIFT DIRECTLY ABOVE. ASPHALT PATCHING SHALL FOLLOW CCD STANDARD DRAWINGS 12.0 THROUGH 12.4. ASPHALT PAVING SHALL FOLLOW CCD STANDARD DRAWINGS 12.5A THROUGH 12.6. CCD STANDARDS ARE AVAILABLE ON THE CCD WEBSITE.

EARTHWORK AND EXCAVATIONS

1. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTION. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE EXPENSE OF THE CONTRACTOR.
2. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. COST FOR DUST PALLIATIVE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
3. THE DEPTH OF RECONDITIONING AND FOR THE BASES OF CUTS AND FILLS SHALL BE 6 INCHES. THE PROJECT SPECIFIED MOISTURE DENSITY CONTROL SHALL BE APPLIED FOR THE SPECIFIED DEPTH. THE EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.
4. MOISTURE DENSITY CONTROL SHALL BE APPLIED FULL DEPTH FOR ALL EMBANKMENTS.
5. DURING EACH PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL SHAPE TO DRAIN AND COMPACT THE WORK AREA TO A UNIFORM CROSS-SECTION. ELIMINATE ALL RUTS AND LOW SPOTS THAT COULD HOLD WATER. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO ADDITIONAL COST TO THE CITY.
6. ALL WORK SHALL BE PROPERLY BACKFILLED PRIOR TO THE END OF THE WORKDAY. NO OPEN HOLES ARE ALLOWED OVERNIGHT.

7. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
8. MATERIAL REMOVED FROM ANY PORTION OF THE ROADWAY PRISM MUST BE REPLACED IN LIKE KIND WITH EQUAL OR BETTER COMPACTION. NO SEGREGATION OF MATERIALS WILL BE PERMITTED.

CONCRETE

1. IF CONCRETE REPLACEMENT IS NECESSARY, THE ENTIRE AFFECTED SLAB OR PANEL MUST BE REPLACED.
2. THE CONTRACTOR SHALL SELECT AND USE A BOXOUT AT CATCH BASINS, MANHOLES, AND OTHER ROADWAY APPURTENANCES OF SIMILAR AND LARGER SIZE. SEE CCD STD DWG NO. 11.5.
3. SIDEWALK SHALL BE CLASS P CONCRETE. THE USE OF 3/4" (#67) TOP SIZE AGGREGATE IS ALLOWED.
4. BENDER BOARDS (TWO INCH MINIMUM THICKNESS) SHALL BE USED ON ALL CURVES OF LESS THAN 75 FOOT RADIUS.
5. CURB AND GUTTER ANGLE BREAKS SHALL BE SMOOTHED WITH A 2 FT RADIUS UNLESS OTHERWISE SHOWN ON THE PLANS.
6. PROVIDE A 2 FT CURB AND GUTTER TRANSITION AT EACH END OF INLETS.
7. THE CONTRACTOR SHALL INSTALL 1/2 IN EXPANSION JOINT MATERIAL BETWEEN THE CURB, CURB AND GUTTER AND THE SIDEWALK, AND AROUND INLET STRUCTURES OR BLOCKOUTS OR AS DIRECTED BY THE PROJECT MANAGER.
8. CURB RAMPS SHALL BE CONSTRUCTED USING TRUNCATED DOMES AS SHOWN IN THE CITY AND COUNTY OF DENVER STANDARD DETAILS. TRUNCATED DOMES SHALL NOT BE PAID SEPARATELY, BUT INCLUDED IN THE COST OF THE CONCRETE CURB RAMP.
9. TRANSPORTATION STANDARDS AND DETAILS SECTION 11 SHALL BE FOLLOWED, INCLUDING USING TIE BARS AND DOWEL BARS WHEN REPLACING STREET PANELS OR MEDIAN PANELS IN CONCRETE STREETS.

TRAFFIC

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND PERSONNEL. A TRAFFIC CONTROL PLAN (TCP) IS SUBJECT TO CITY APPROVAL PRIOR TO COMMENCING WORK ON ROADWAY ROW. A COPY OF APPROVED TCPS MUST BE AVAILABLE ON SITE DURING WORK. TRAFFIC CONTROL IS TO BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). REQUESTS FOR PW-ROW OCCUPANCY PERMITS MUST BE SUBMITTED THROUGH THE CITY PM, AND THEN PROCESSED BY OTHERS, SO ALLOW AT LEAST 5 BUSINESS DAYS BEFORE PERMIT IS NEEDED FOR SIDEWALK OR LANE CLOSURES.
2. ALL PAVEMENT MARKINGS MUST BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
3. COORDINATE ALL TRAFFIC SIGNAL EQUIPMENT RELOCATIONS WITH PUBLIC WORKS TRANSPORTATION & MOBILITY.

LANDSCAPING

1. THE CONTRACTOR SHALL NOT SPRAY, CUT OR TRIM TREES OR OTHER LANDSCAPING WITHIN THE ROW UNLESS SUCH WORK IS OTHERWISE SPECIFIED IN THIS PERMIT OR CLEARLY INDICATED ON THE APPROVED PLANS.
2. SEEDING, SODDING AND PLANTING IN THE ROW SHALL BE AS SPECIFIED OR OTHERWISE APPROVED BY THE CITY. CONSTRUCTION, MAINTENANCE AND WATERING REQUIREMENTS SHALL CONFORM TO CITY STANDARD SPECIFICATIONS.
3. UNLESS STREETScape HAS BEEN APPROVED, THE CONTRACTOR SHALL LANDSCAPE ALL ROW WITH SOD AND TREES. ALL LANDSCAPING WITHIN THE ROW SHALL BE IN CONFORMANCE WITH THE LATEST STREETScape DESIGN MANUAL. NO LOOSE MATERIAL (I.E. ROCK, BARK, GRAVEL, ETC.) SHALL BE ALLOWED. DECORATIVE CONCRETE OR LOW GROWING PLANT



MATERIAL MAY BE ALLOWED ONLY WITH THE SPECIFIC APPROVAL OF THE CITY. TREES SHALL BE PRE-APPROVED BY THE DEPARTMENT OF PARKS AND RECREATION, FORESTRY OFFICE, AND SHALL BE A MINIMUM OF 20- FEET FROM PROPERTY CORNERS AT INTERSECTIONS, 25- FEET FROM STREET LIGHTS AND 10- FEET FROM EDGE OF DRIVEWAYS.

DRAINAGE

1. ALL SEWER PIPES SHALL BE INSTALLED WITH CLASS B BEDDING AS A MINIMUM.
2. SANITARY SEWER PIPES SHALL BE PVC AND CONFORM TO: ASTM D3034 SDR 35 FOR SIZES 8 INCHES TO 15 INCHES IN DIAMETER (SOLID WALL), ASTM F789 FOR 18 INCHES (SOLID WALL), ASTM F679 FOR SIZES 18 TO 36 INCHES (SOLID WALL), ASTM F949 FOR SIZES 8 TO 36 INCHES (PVC PROFILE WALL), ASTM F794 FOR SIZES 8 TO 48 INCHES (PROFILE WALL), OR ASTM F1803 FOR SIZES 18 TO 60 INCHES (CLOSED PROFILE GRAVITY PIPE).
3. THE CONTRACTOR PERFORMING WORK ON ANY PUBLIC OR PRIVATE STORM SEWER FACILITY OR APPURTENANCE MUST BE PROPERLY TRADE LICENSED AS A COMPANY AND HAVE A LICENSED PLUMBER OR CERTIFIED JOURNEYMAN DRAINLAYER ON SITE DURING THE WORK.
4. ACCESS MUST BE MAINTAINED FOR ALL SEWER MANHOLES DURING CONSTRUCTION. MINIMUM ACCESS TO EACH MANHOLE IS A 20 FOOT WIDE LANE FROM THE NEAREST PUBLIC RIGHT OF WAY, CENTERED AT THE MANHOLE INCLUDING A 10 FOOT RADIUS AROUND THE MANHOLE AND 22.0 FEET OF VERTICAL CLEARANCE.
5. ALL DROP STRUCTURES SHALL BE INSPECTED BY CCD MAINLINE INSPECTIONS. THE CONTRACTOR MUST CALL MAINLINE INSPECTIONS @ (303)446-3722, A MINIMUM OF 24 HOURS PRIOR TO THE PRECONSTRUCTION MEETING AND PRIOR STARTING ANY WORK.

FORESTRY NOTES:

1. PER CITY CODE, ALL TREE REMOVALS IN DENVER LIMITS MUST BE PERFORMED BY PROPERTY OWNER OR A TREE CONTRACTOR LICENSED BY DENVER FORESTRY (INCLUDING TREES IN ROW'S AND ON PRIVATE PROPERTY). FOR A CURRENT LIST OF LICENSED CONTRACTORS, VISIT WWW.DENVERGOV.ORG/FORESTRY.
 - A. FOR FORESTRY-APPROVED TREE REMOVALS IN PUBLIC RIGHT(S) OF WAY: A TREE REMOVAL PERMIT ISSUED BY THE OFFICE OF THE CITY FORESTER IS REQUIRED PRIOR TO REMOVAL. IN ORDER TO OBTAIN FREE REMOVAL PERMIT, CONTACT FORESTRY (FORESTRY@DENVERGOV.ORG) WITH NAME OF LICENSED CONTRACTOR OR PROPERTY OWNER PERFORMING REMOVAL. INCLUDE D-LOG NUMBER (2016-PROJMSTR-0000085) WHEN REQUESTING REMOVAL PERMIT.
 - B. FOR TREES ON PRIVATE PROPERTY: A FORESTRY-ISSUED TREE REMOVAL PERMIT IS NOT REQUIRED PRIOR TO REMOVAL. HOWEVER, PER CITY CODE, ALL TREE REMOVALS IN DENVER MUST BE PERFORMED BY PROPERTY OWNER OR A TREE CONTRACTOR LICENSED BY THE OFFICE OF THE CITY FORESTER.
2. A FORESTRY-ISSUED TREE PLANTING PERMIT IS REQUIRED FOR ALL TREES TO BE PLANTED IN PUBLIC RIGHTS OF WAY. CONTACT FORESTRY (FORESTRY@DENVERGOV.ORG) WITH NAME OF CONTRACTOR OR PROPERTY OWNER PERFORMING PLANTING. INCLUDE D-LOG NUMBER (2016-PROJMSTR-0000085) WHEN REQUESTING PERMIT. PLANTING PERMITS MUST BE OBTAINED PRIOR TO INSTALLATION.
3. EXISTING TREES TO BE PRESERVED IN PUBLIC RIGHT OF WAY SHALL BE PROTECTED PER FORESTRY STANDARDS & PRACTICES. TREE PROTECTION SHALL BE INSTALLED PRIOR TO ISSUE OF DEMOLITION PERMIT, APPROVED BY FORESTRY, AND SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION. NO CONSTRUCTION ACTIVITIES OR STORAGE OF MATERIALS SHALL TAKE PLACE WITHIN TREE PROTECTION ZONES WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OFFICE OF THE CITY FORESTER.

Print Date: March 17, 2017		Sheet Revisions			 DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 Phone: (720) 913-4501 Fax: (720) 913-4544	As Constructed		MILL LEVY 7A TRAFFIC SIGNALS GENERAL NOTES (2)		Project No./Code	
Drawing File Name: 349008NT.DWG		Date:	Comments:	Init.		No Revisions:			PZ03798_425		
Horiz. Scale: N/A Vert. Scale: N/A					Revised:	Designer: CEH					
 <small>KIMLEY-HORN AND ASSOCIATES, INC. 4582 SOUTH ULSTER STREET, SUITE 1500 DENVER, COLORADO 80237 (303) 228-2300</small>		(R-X)			Void:	Detailer: BJD					
		(R-X)			Sheet Subset: NOTES		Subset Sheet: 2 of 5		Sheet Number 3		

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008NT.dwg Davis, Benjamin 3/17/2017 5:19 PM
 THIS DOCUMENT, TOGETHER WITH THE COMMENTS AND EXISTING PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE EXPRESS PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND IMPROVED RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

EROSION CONTROL

THE PERMITTEE SHALL ENSURE THAT ALL POTENTIAL POLLUTANTS GENERATED DURING DEMOLITION OR CONSTRUCTION WORK ASSOCIATED WITH THIS PERMIT, BE PREVENTED FROM DISCHARGE TO STORMWATER CONVEYANCE SYSTEMS IN THE VICINITY OF THIS PROJECT SITE.

THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING, OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, RECEIVING WATERS, WATERWAYS, WETLANDS, AND OR OTHER PUBLIC OR PRIVATE PROPERTIES, RESULTING FROM WORK DONE AS PART OF THIS PROJECT.

THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR, ACCUMULATE IN THE FLOWLINES, STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AND COUNTY OF DENVER AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PERMIT. ALL REMOVALS SHALL BE CONDUCTED IN A TIMELY MANNER.

THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT ON PUBLIC RIGHTS OF WAY. (SEC.49-552;REVISED MUNICIPAL CODE)

THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES IS PROHIBITED. STEEL FENCE POSTS MAY BE USED ON A CASE BY CASE BASIS AND REQUIRES APPROVAL FROM THE CITY AND COUNTY OF DENVER SWMP REVIEWER OR THE STORMWATER ENFORCEMENT INVESTIGATOR PRIOR TO INSTALLATION.

THE PERMITTEE SHALL IMPLEMENT THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPS) ON SITE DURING CONSTRUCTION:

1. VEHICLE TRACKING CONTROL: THIS BMP IS REQUIRED AT ALL ACCESS POINTS FOR INGRESS/EGRESS FROM OFF-SITE IMPERVIOUS SURFACES TO A CONSTRUCTION SITE THAT ARE USED BY VEHICULAR TRAFFIC OR CONSTRUCTION EQUIPMENT.
2. INLET PROTECTION: THIS BMP IS REQUIRED ON ALL EXISTING OR PROPOSED STORM SEWER INLETS IN THE VICINITY OF THE CONSTRUCTION SITE THAT MAY RECEIVE SITE RUNOFF. THE BMP MUST BE APPROPRIATE TO THE TYPE OF STORM INLET AND APPROPRIATE FOR THE GROUND SURFACE AT THE INLET.
3. INTERIM SITE STABILIZATION: THIS BMP IS REQUIRED TO PROVIDE A MEASURE FOR PREVENTING THE DISCHARGE OF SEDIMENT FROM CONSTRUCTION SITES WHERE OVERLOT GRADING OR OTHER SITE DISTURBANCE HAS OCCURRED. THIS BMP IS PARTICULARLY NECESSARY ON SITES WHERE CONSTRUCTION ACTIVITIES/DISTURBANCE WILL BE LIMITED TO SMALL AREAS OF THE PROJECT SITE. ACCEPTABLE BMPS INCLUDE:
 - A) PRESERVING EXISTING VEGETATION
 - B) SEEDING AND PLANTING
 - C) MULCHING
 - D) MULCHING AND SEEDING
 - E) TEMPORARY/PERMANENT RE-VEGETATION OPERATIONS
 - F) CHEMICAL SOIL STABILIZER APPLICATION (REQUIRES WMD APPROVAL)
4. WASTE MANAGEMENT/CONTAINMENT: THIS BMP REQUIRES THAT ALL CONSTRUCTION WASTES, FUELS, LUBRICANTS, CHEMICAL WASTES, TRASH, SANITARY WASTES, CONTAMINATED SOILS OR DEBRIS SHALL BE CONTAINED ON SITE, PROTECTED FROM CONTACT WITH PRECIPITATION OR SURFACE RUNOFF, PERIODICALLY REMOVED FROM THE CONSTRUCTION SITE, AND PROPERLY DISPOSED OF.



5. SPILL PREVENTION /CONTAINMENT: THIS BMP DEFINES THE MEASURES PROPOSED FOR PREVENTING, CONTROLLING, OR CONTAINING SPILLS OF FUEL, LUBRICANTS, OR OTHER POLLUTANTS; AND PROTECTING POTENTIAL POLLUTANTS FROM CONTACT WITH PRECIPITATION OR RUNOFF.
6. CHUTE WASHOUT CONTAINMENT: WATER USED IN THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES SHALL BE DISCHARGED INTO A PREDEFINED, BERMED CONTAINMENT AREA ON THE JOB SITE. THE REQUIRED CONTAINMENT AREA IS TO BE BERMED SO THAT WASH WATER IS TOTALLY CONTAINED. WASH WATER DISCHARGED INTO THE CONTAINMENT AREA SHALL BE ALLOWED TO INFILTRATE OR EVAPORATE. DRIED CEMENT WASTE IS REMOVED FROM THE CONTAINMENT AREA AND PROPERLY DISPOSED OF.
- A) SHOULD A PREDEFINED BERMED CONTAINMENT AREA NOT BE AVAILABLE DUE TO THE PROJECT SIZE, OR LACK OF AN AREA WITH A SUITABLE GROUND SURFACE FOR ESTABLISHING A CONTAINMENT AREA, PROPER DISPOSAL OF READY MIX WASHOUT AND RINSE OFF WATER AT THE JOB SITE SHALL CONFORM TO THE APPROVED TECHNIQUES AND PRACTICES IDENTIFIED IN THE COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT'S TRAINING VIDEO ENTITLED "BUILDING FOR A CLEANER ENVIRONMENT, READY MIX WASHOUT TRAINING", AND ITS ACCOMPANYING MANUAL ENTITLED, "READY MIX WASHOUT GUIDEBOOK, VEHICLE AND EQUIPMENT WASHOUT AT CONSTRUCTION SITES."
- B) THE DIRECT OR INDIRECT DISCHARGE OF WATER CONTAINING WASTE CEMENT TO THE STORM SEWER SYSTEM IS PROHIBITED (SEC.56-102A, C; REVISED MUNICIPAL CODE, CITY AND COUNTY OF DENVER).
- C) INFORMATION ABOUT, OR COPIES OF THE VIDEO AND TRAINING MANUAL ARE AVAILABLE FROM THE WATER QUALITY CONTROL DIVISION, COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT, 4300 CHERRY CREEK DRIVE SOUTH, DENVER, COLORADO 80222-1530, (303) 692-3555.
7. STREET SWEEPING: THIS BMP REQUIRES THAT PAVED SURFACES WHICH ARE ADJACENT TO CONSTRUCTION SITES BE SWEEPED IN A TIMELY MANNER WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ON TO THEM. EITHER SWEEPING BY HAND OR USE OF STREET SWEEPERS IS ACCEPTABLE. STREET SWEEPERS USING WATER WHILE SWEEPING IS PREFERRED IN ORDER TO MINIMIZE DUST. FLUSHING OFF PAVED SURFACES WITH WATER IS PROHIBITED.
8. PERIMETER CONTROL: THIS BMP REQUIRES THAT A CONSTRUCTION SITE INSTALL A PERIMETER CONTROL MEASURE ALONG THE EDGE OF THE CONSTRUCTION SITE, TO PREVENT, OR FILTER THE DISCHARGE OF SURFACE RUNOFF FROM THE CONSTRUCTION SITE. THE TYPE OF PERIMETER CONTROL USED SHALL BE DETERMINED BASED ON SITE CONDITIONS AND LOCATION. MAINTENANCE AND REPAIR OF THE CONTROL MEASURE SHALL OCCUR AS NEEDED, IN A TIMELY MANNER.
9. STOCK PILES: SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE PROTECTED FROM WIND AND WATER EROSION WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. STABILIZATION OF STOCKPILES LOCATED WITHIN 100 FEET OF RECEIVING WATERS, OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING STOCKPILE CONSTRUCTION. STABILIZATION AND PROTECTION OF THE STOCKPILE MAY BE ACCOMPLISHED BY ANY OF THE FOLLOWING: MULCHING, TEMPORARY/PERMANENT REVEGETATION OPERATIONS, CHEMICAL SOIL STABILIZER APPLICATION (REQUIRES DENVER PUBLIC WORKS APPROVAL), OR EROSION CONTROL MATTING/GEOTEXTILES. IF STOCKPILES ARE LOCATED WITHIN 100 FEET OF RECEIVING WATERS, A DRAINAGEWAY OR THE SITE PERIMETER, ADDITIONAL SEDIMENT CONTROLS SHALL BE REQUIRED.
10. SAW CUTTING OPERATIONS: "THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING, OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS OR AS NEEDED THROUGHOUT THE WORK DAY. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE

STORM SEWER SYSTEM IS PROHIBITED."(SEC.56-102A, C; REVISED MUNICIPAL CODE, CITY AND COUNTY OF DENVER)

11. STRUCTURAL CONTROLS: DEVELOPMENT SITES THAT ARE REQUIRED TO PROVIDE DETENTION AND WATER QUALITY ENHANCEMENT FACILITIES FOR STORM RUNOFF NEED TO INSTALL THE DETENTION FACILITIES EARLY IN THE CONSTRUCTION BUILD-OUT OF THE SITE. PROJECTS THAT ARE USING UNDERGROUND DETENTION ARE REQUIRED TO INSTALL A PRETREATMENT STRUCTURE OR SEDIMENTATION BASINS AS A MEANS OF TREATING POTENTIALLY POLLUTED STORM WATER PRIOR TO ENTERING THE DETENTION STRUCTURE. USE OF THESE STRUCTURES IS REQUIRED FOR ENTRAPPING SEDIMENT AND CONSTRUCTION DEBRIS DURING THE ACTIVE CONSTRUCTION PHASE OF THE PROJECT. THE NARRATIVE SECTION OF THE MANAGEMENT PLAN IS ALSO REQUIRED TO ADDRESS OPERATION AND MAINTENANCE OF THE STRUCTURAL CONTROLS BEING USED AS AN ACTIVE CONSTRUCTION BMP.

ENVIRONMENTAL

1. CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE AND TO PREVENT THE VISIBLE DISCHARGE OF FUGITIVE PARTICULATE EMISSIONS BEYOND THE PROPERTY ON WHICH THE EMISSIONS ORIGINATE. THE MEASURES TAKEN MUST BE EFFECTIVE IN THE CONTROL OF FUGITIVE PARTICULATE EMISSIONS AT ALL TIMES ON THE SITE, INCLUDING PERIODS OF INACTIVITY SUCH AS EVENINGS, WEEKENDS, AND HOLIDAYS AS WELL AS ANY OTHER PERIOD OF INACTIVITY.
2. IF UNKNOWN/UNIDENTIFIED UNDERGROUND STORAGE TANKS, DRUMS, ODOROUS SOIL, STAINED SOIL, ASBESTOS-CEMENT PIPE, TRANSITE, BUILDING DEBRIS OR WASTE MATERIALS ARE ENCOUNTERED DURING THE PROJECT, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA OF THE DISCOVERY UNTIL DENVER ENVIRONMENTAL HEALTH (DEH) MAKES A DETERMINATION OF HOW TO PROCEED. CONTRACTOR SHALL IMMEDIATELY NOTIFY DEH OF THE DISCOVERY VIA THE PHONE NUMBER 720-460-1706.
3. ANY FILL MATERIAL OR SOILS TO BE MOVED TO AND PLACED ON CCD-OWNED PROPERTY OR PLACED ON REAL PROPERTY TO BE TRANSFERRED TO THE CCD MUST BE FREE OF KNOWN CONTAMINATION (OBSERVED OR PREVIOUSLY DOCUMENTED) AND BE ACCEPTABLE FOR UNRESTRICTED RESIDENTIAL USE. CONTACT DAVE ERICKSON, DENVER ENVIRONMENTAL HEALTH (720-865-5433) FOR CLARIFICATION, IF NEEDED, REGARDING THIS CCD REQUIREMENT.
4. THE CONTRACTOR SHALL DIRECT NON-RECYCLABLE, NON-HAZARDOUS WASTES FROM CCD-OWNED OR CONTROLLED PROPERTY OR FACILITIES TO THE DENVER ARAPAHOE DISPOSAL SITE (DADS) LANDFILL FOR DISPOSAL, FOLLOWING THE REQUIREMENT AND PROCEDURAL GUIDANCE OUTLINED IN CCD EXECUTIVE ORDER 115.
5. NOISE CONTROL. EXEMPTED HOURS FOR CONSTRUCTION IN THE CITY AND COUNTY OF DENVER ARE FROM 7 A.M. TO 9 P.M. MONDAY THROUGH FRIDAY AND 8 A.M. TO 5 P.M. ON SATURDAYS AND SUNDAYS PER SECTIONS 36-6.(B)(7) AND 36-7.(5)A., B. AND C. OF THE DENVER NOISE ORDINANCE, CHAPTER 36 NOISE CONTROL, DENVER REVISED MUNICIPAL CODE (DRMC). IF THERE IS AN ANTICIPATED NEED TO WORK OUTSIDE OF THE EXEMPTED HOURS FOR CONSTRUCTION: 1) THE CONTRACTOR WILL NEED TO MAKE A REQUEST FOR A NIGHTTIME NOISE VARIANCE AS ALLOWED FOR IN SECTION 36-7.(5)C. OF THE DRMC AND 2) THE VARIANCE PROCESS NEEDS TO BE STARTED A MINIMUM OF TWO TO THREE MONTHS PRIOR TO THE DESIRED START DATE OF ANY WORK NEEDING TO OCCUR OUTSIDE OF EXEMPTED HOURS. ANY NOISE VARIANCE QUESTIONS SHOULD BE DIRECTED TO PAUL RIEDESEL, DEPARTMENT OF ENVIRONMENTAL HEALTH, DENVER COMMUNITY NOISE PROGRAM, (PHONE 720-865-5410; FAX 720-865-5532) A MINIMUM OF THREE MONTHS PRIOR TO THE START OF THE PROJECT.

Print Date: March 17, 2017		Sheet Revisions			 DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 Phone: (720) 913-4501 Fax: (720) 913-4544	As Constructed		MILL LEVY 7A TRAFFIC SIGNALS GENERAL NOTES (3)		Project No./Code	
Drawing File Name: 349008NT.DWG		Date:	Comments:	Init.		No Revisions:			PZ03798_425		
Horiz. Scale: N/A Vert. Scale: N/A					Revised:	Designer: CEH					
 <small>KIMLEY-HORN AND ASSOCIATES, INC. 4582 SOUTH ULSTER STREET, SUITE 1500 DENVER, COLORADO 80237 (303) 228-2300</small>		(R-X)			Void:	Detailer: BJD					
		(R-X)			Sheet Subset: NOTES	Subset Sheet: 3 of 5				Sheet Number 4	

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008NT.dwg Davis, Benjamin 3/17/2017 5:19 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

TRANSPORTATION ENGINEERING STANDARD DRAWINGS

NO.	TITLE
<input checked="" type="checkbox"/> 5.0	INDEX OF STANDARD SHEETS
<input checked="" type="checkbox"/> 5.1	LEGEND
<input checked="" type="checkbox"/> 5.2a,b	CURB & GUTTER AND SIDEWALK
<input checked="" type="checkbox"/> 5.3a,b	TYPICAL CURB SECTIONS
<input checked="" type="checkbox"/> 5.4	CURB & GUTTER AND SIDEWALK JOINT DETAILS
<input type="checkbox"/> 5.5	CONCRETE GUTTER OVERLAY
<input type="checkbox"/> 6.0	STANDARD RESIDENTIAL CURB CUT
<input type="checkbox"/> 6.1	STANDARD COMMERCIAL & MULTIFAMILY CURB CUT
<input type="checkbox"/> 6.2	CURB CUT CROSS-SECTIONS
<input type="checkbox"/> 6.3	CORNER CLEARANCES & MINIMUM DISTANCES BETWEEN ACCESS POINTS
<input checked="" type="checkbox"/> 7.0a,b,c	CURB RAMP NOTES & TYPICAL SECTIONS
<input checked="" type="checkbox"/> 7.1	CURB RAMP TYPE 1
<input checked="" type="checkbox"/> 7.2	CURB RAMP TYPE 2
<input checked="" type="checkbox"/> 7.3	CURB RAMP TYPE 3
<input checked="" type="checkbox"/> 7.4	CURB RAMP TYPE 4
<input type="checkbox"/> 7.5	DOWNTOWN SIGNALIZED CORNER BLENDED TRANSITION
<input checked="" type="checkbox"/> 7.6a,b	CURB RAMP TRUNCATED DOMES
<input type="checkbox"/> 7.7	TYPICAL SIDEWALK TRANSITION TO DIRECTIONAL CURB RAMP
<input checked="" type="checkbox"/> 7.8	SIGNAL EQUIPMENT CLEAR ZONE
<input type="checkbox"/> 8.0	INTERSECTION VALLEY GUTTER
<input type="checkbox"/> 9.0	SIDEWALK CHASE DRAIN AND TREAD PLATE
<input type="checkbox"/> 9.1a,b	TYPICAL CONCRETE BUS PULLOUT AND BUS PAD
<input type="checkbox"/> 10.0	TYPICAL ALLEY LAYOUT
<input type="checkbox"/> 10.1	ALLEY CUT (WITH ATTACHED SIDEWALK)
<input type="checkbox"/> 10.2a	ALLEY CUT (WITH DETACHED SIDEWALK)
<input type="checkbox"/> 10.2b	ALLEY CUT (WITH DETACHED SIDEWALK) HISTORIC DISTRICT
<input type="checkbox"/> 10.3	TYPICAL ALLEY CROSS-SECTION
<input type="checkbox"/> 10.4	ALLEY CURB HEAD
<input checked="" type="checkbox"/> 11.0	TYPICAL CONCRETE PAVEMENT JOINT LAYOUT
<input checked="" type="checkbox"/> 11.1a,b	GENERAL NOTES FOR CONCRETE PAVEMENT AND PAVEMENT JOINTS
<input checked="" type="checkbox"/> 11.2a,b	CONCRETE EXPANSION AND SAWED TRANSVERSE CONTRACTION PAVEMENT JOINTS
<input checked="" type="checkbox"/> 11.3	CONCRETE PAVEMENT JOINT SEALANT
<input checked="" type="checkbox"/> 11.4	CONCRETE PAVEMENT MISCELLANEOUS DETAILS
<input checked="" type="checkbox"/> 11.5a	CONCRETE PAVEMENT JOINTING AT NEW MANHOLES AND ALL INLETS
<input checked="" type="checkbox"/> 11.5b	CONCRETE PAVEMENT JOINTING AT EXISTING MANHOLES
<input checked="" type="checkbox"/> 12.0	ASPHALT PATCH
<input checked="" type="checkbox"/> 12.1	TRENCH PATCH (ASPHALT/MISC. MATERIALS)
<input checked="" type="checkbox"/> 12.2	TRENCH PATCH (CONCRETE)
<input checked="" type="checkbox"/> 12.3	TRENCH PATCH (CONCRETE)
<input checked="" type="checkbox"/> 12.3b	CONCRETE PANEL REPLACEMENT AT TRENCH OR STREET
<input checked="" type="checkbox"/> 12.4	TRENCH MATERIAL REQUIREMENTS
<input type="checkbox"/> 12.5a	TYPICAL ASPHALT DETAIL
<input type="checkbox"/> 12.5b	TYPICAL ASPHALT DETAIL LIFT THICKNESS CRITERIA
<input type="checkbox"/> 12.6	TYPICAL ASPHALT DETAIL LIFT MIX DESIGN CRITERIA
<input type="checkbox"/> 13.0	TREE GRATE
<input type="checkbox"/> 14.0	STANDARD CUL-DE-SAC

WASTEWATER STANDARD DETAILS

NO.	TITLE
<input type="checkbox"/> S-301.1	TRENCHING AND BEDDING – PART I
<input type="checkbox"/> S-301.2	TRENCHING AND BEDDING – PART II
<input type="checkbox"/> S-350	ENCASEMENT OF SANITARY SEWERS
<input type="checkbox"/> S-401	SHIPLAP JOINTS/TYPE R JOINTS
<input type="checkbox"/> S-450	INLET CONNECTIONS AND PIPELINE CLOSURES
<input type="checkbox"/> S-501.1	PRECAST MANHOLE BARRELS AND TOP SECTIONS
<input type="checkbox"/> S-502	MANHOLE BASE CONSTRUCTION – TYPE A/C
<input type="checkbox"/> S-503	TYPE B MANHOLE
<input type="checkbox"/> S-504.1	TYPE P MANHOLE
<input type="checkbox"/> S-504.2	TYPE P MANHOLE BASE SECTIONS
<input type="checkbox"/> S-520	TYPICAL MANHOLE BASE CHANNELIZATION
<input type="checkbox"/> S-530	MANHOLE OUTSIDE DROP
<input type="checkbox"/> S-550	WATERSTOP GASKET
<input checked="" type="checkbox"/> S-616.1	SINGLE NO. 16 INLET
<input type="checkbox"/> S-616.2	DOUBLE NO. 16 INLET
<input type="checkbox"/> S-616.3	TRIPLE NO. 16 INLET
<input type="checkbox"/> S-606V	SINGLE, DOUBLE, TRIPLE VALLEY INLET
<input type="checkbox"/> S-620.1	NO. 14 INLET (SHEET 1)
<input type="checkbox"/> S-620.2	NO. 14 INLET (SHEET 2)
<input checked="" type="checkbox"/> S-701	24" DIAMETER RING & COVER
<input checked="" type="checkbox"/> S-716	GRATE & FRAME, ADJUSTABLE CURB BOX
<input type="checkbox"/> S-750	MANHOLE STEPS

TRAFFIC SIGNAL, SIGN AND MARKING STANDARDS

NO.	TITLE
<input checked="" type="checkbox"/> 16.1.1	TRAFFIC SIGNAL NOTES
<input checked="" type="checkbox"/> 16.1.2	LEGEND/KEY NOTES
<input type="checkbox"/> 16.1.3	SPAN WIRE SIGNAL DESIGN
<input checked="" type="checkbox"/> 16.1.4	MOUNTING HARDWARE
<input type="checkbox"/> 16.1.5	LOOP DETECTION
<input type="checkbox"/> 16.1.6	CONDUIT DETAILS
<input checked="" type="checkbox"/> 16.1.7	PULL BOXES
<input checked="" type="checkbox"/> 16.1.8	SIGNAL POLE FOUNDATION
<input checked="" type="checkbox"/> 16.1.9	MAST ARM POLE LOADS
<input checked="" type="checkbox"/> 16.1.10	MOUNTING DETAILS
<input checked="" type="checkbox"/> 16.1.11	TABLE DATA
<input checked="" type="checkbox"/> 16.1.12	LUMINAIRE DETAILS
<input checked="" type="checkbox"/> 16.1.13	PEDESTAL POLE DETAILS
<input checked="" type="checkbox"/> 16.1.14	POLE FOUNDATION DETAILS
<input checked="" type="checkbox"/> 16.1.15	FOUNDATION FOR XCEL FACILITIES
<input checked="" type="checkbox"/> 16.1.16	"P" CABINET BASE
<input checked="" type="checkbox"/> 16.1.17	"P" CABINET & BASE
<input checked="" type="checkbox"/> 16.1.18	"M" CABINET BASE
<input type="checkbox"/> 16.1.19	METER PEDESTAL CABINET DETAILS
<input type="checkbox"/> 16.1.20	METER PEDESTAL CABINET FOUNDATION AND BASE
<input type="checkbox"/> 16.1.21	FLASHING BEACON DETAILS
<input type="checkbox"/> 16.1.22	DRIVER'S FEEDBACK SIGN DETAILS
<input type="checkbox"/> 16.1.23	FLASHING BEACON & SIGN SHEET 1
<input type="checkbox"/> 16.1.24	FLASHING BEACON & SIGN SHEET 2
<input checked="" type="checkbox"/> 16.2.1	CROSSWALK LAYOUT DETAILS
<input checked="" type="checkbox"/> 16.2.2	PAVEMENT MARKING DETAILS SHEET 1
<input checked="" type="checkbox"/> 16.2.3	PAVEMENT MARKING DETAILS SHEET 2
<input type="checkbox"/> 16.2.4	BIKE LANE TYPICAL MARKING DETAILS
<input type="checkbox"/> 16.2.5	CENTRAL BUSINESS DISTRICT PAVEMENT MARKING DETAILS
<input checked="" type="checkbox"/> 16.2.6	SINGLE SIGN POST MOUNTING DETAILS
<input type="checkbox"/> 16.2.7	MULTIPLE SIGN POST MOUNTING DETAILS
<input type="checkbox"/> 16.2.8	ONE-WAY SIGN PLACEMENT DETAILS
<input type="checkbox"/> 16.2.9	TRAFFIC SIGN UTILITY POLE MOUNTING DETAILS
<input type="checkbox"/> 16.2.10	GROUND MOUNT STREET NAME SIGN INSTALLATION DETAIL
<input type="checkbox"/> 16.2.11	GROUND MOUNT STREET NAME SIGN DETAIL
<input checked="" type="checkbox"/> 16.2.13	OVERHEAD STREET NAME SIGNS
<input type="checkbox"/> 16.2.14	PARKING METER POST INSTALLATION
<input type="checkbox"/> 16.2.15	BARRICADE DETAILS

**CITY AND COUNTY OF DENVER
STANDARD DRAWINGS**

NOTES:

THE MOST CURRENT CITY AND COUNTY OF DENVER STANDARDS AND DETAILS SHALL BE USED FOR THE DESIGN AND CONSTRUCTION OF THIS PROJECT.


THE STANDARD DRAWINGS/DETAILS INDICATED HEREON BY A MARKED BOX() SHALL BE USED TO CONSTRUCT THIS PROJECT.

Print Date: March 17, 2017
 Drawing File Name: 349008NT.DWG
 Horiz. Scale: N/A Vert. Scale: N/A



KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

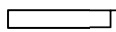
















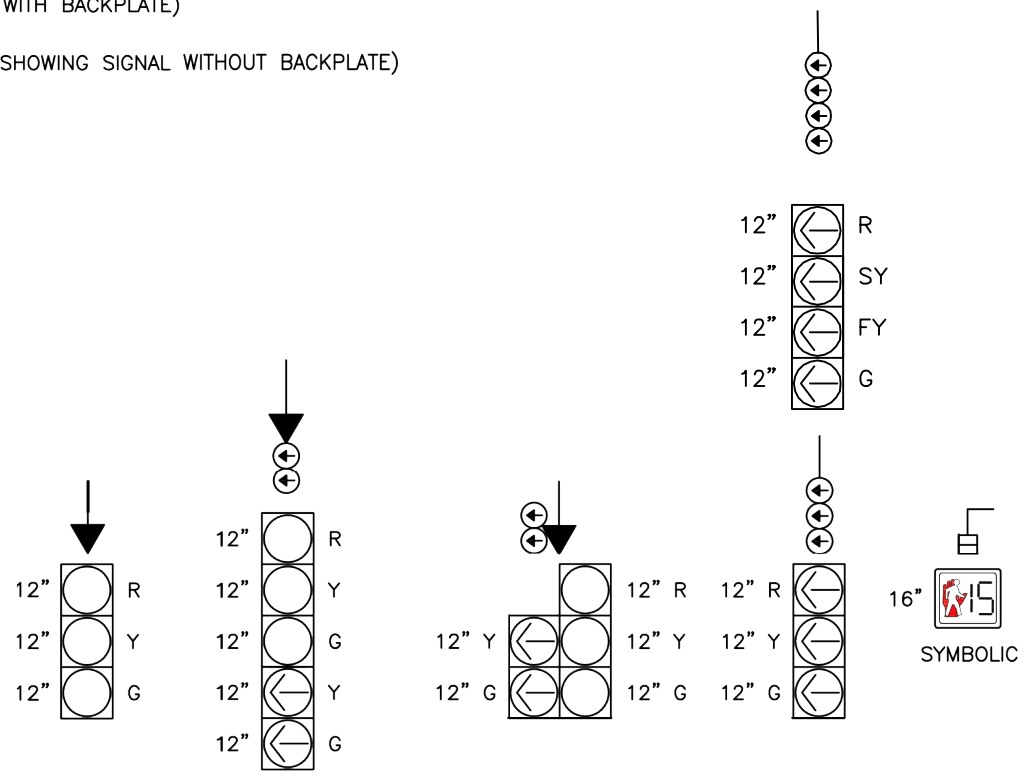
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed	MILL LEVY 7A TRAFFIC SIGNALS CITY AND COUNTY OF DENVER STANDARDS		Project No./Code PZ03798_425
	No Revisions:	Designer: CEH	
Revised:		Detailer: BJD	
Void:		Sheet Subset: NOTES	Subset Sheet: 4 of 5 Sheet Number 5

ELECTRICAL SERVICE LEGEND

KEY NOTES

- CONTROLLER CABINET—EXISTING
- CONTROLLER CABINET—NEW (DARKENED PORTION INDICATES DOOR SIDE OF CABINET)
- PULL BOX—EXISTING
- PULL BOX—NEW
- ⊗ WATER VALVE PULL BOX
-  LOOP DETECTOR (LENGTH AS SPECIFIED)
- POLE—EXISTING
- POLE OR PEDESTAL—NEW
- OPTICOM
- ← DOWN GUY
- UNDERGROUND CONDUIT—EXISTING
- UNDERGROUND CONDUIT—NEW
- LUMINAIRE
-  PEDESTRIAN PUSH BUTTON, LEFT OR RIGHT ARROW. "WAIT FOR WALK SIGNAL"
-  MAST ARM (LENGTH AS SPECIFIED, SHOWING SIGNAL WITH BACKPLATE)
-  SPAN-WIRE MOUNTED (SHOWING SIGNAL WITH BACKPLATE)
-  PEDESTAL OR SIDE BRACKET MOUNTED (SHOWING SIGNAL WITHOUT BACKPLATE)
-  VIDEO DETECTION CAMERA
-  RADIO ANTENNA
-  MICROWAVE DETECTOR
-  POLE MOUNTED SIGN
-  SPAN WIRE MOUNTED SIGN
-  MAST ARM MOUNTED SIGN
-  CLOSED CIRCUIT TELEVISION CAMERA
-  BLANK OUT SIGN
-  VARIABLE MESSAGE SIGN
-  ELECTRIC METER



REMOVALS

- 1A REMOVE SIGNAL HEAD
- 1B REMOVE SIGNAL POLE
- 1D REMOVE SIGNAL CABINET, CONTROLLER, PULL BOXES & WATER VALVE PULL BOXES
- 1E REMOVE MAST ARM
- 1F REMOVE SPAN WIRE, CABLE AND ALL ATTACHED SIGNAL HEADS AND EQUIPMENT
- 1G REMOVE PUSH BUTTON
- 1H ELECTRIC UTILITY COMPANY TO REMOVE EXISTING POLE, LIGHT AND FOUNDATION



RESETS

- 2A RESET SIGNAL HEAD
- 2B RESET SIGNAL POLE
- 2C RESET SIGNAL CONTROLLER, CABINET AND ASSOCIATED EQUIPMENT
- 2D RESET PUSH BUTTON
- 2G RESET SPAN WIRE
- 2H RESET SPAN WIRE AND ALL ATTACHED SIGNAL EQUIPMENT
- 2J RESET DETECTOR
- 2K ELECTRIC UTILITY COMPANY TO RESET EXISTING POLE

INSTALLATIONS


- 3A INSTALL SIGNAL HEAD OR HEADS
- 3B INSTALL SIGNAL CABINET, CONTROLLER AND ASSOCIATED EQUIPMENT
- 3C INSTALL PUSH BUTTON
- 3D INSTALL CONDUIT
- 3D (3) INSTALL THREE CONDUITS (TWO 3-INCH CONDUITS AND ONE 2-INCH CONDUIT)
- 3E INSTALL SIGNAL POLE
- 3F INSTALL MAST ARM - (LENGTH AS SHOWN)
- 3G INSTALL SPAN WIRE
- 3H (SPECIAL) INSTALL PULL BOX MARKED "TRAFFIC COMM" ON LID
- 3H (2) INSTALL TWO PULL BOXES ONE MARKED "TRAFFIC" ONE MARKED "ELECTRIC" ON LIDS
- 3J INSTALL DETECTOR
- 3K ELECTRIC UTILITY COMPANY TO INSTALL SIGNAL POLE
- 3L ELECTRIC UTILITY COMPANY TO INSTALL POWER FEED. CONTRACTOR TO EXTEND TO CONTROLLER
- 3M ELECTRIC UTILITY COMPANY TO INSTALL LUMINAIRE
- 3N INSTALL LUMINAIRE
- 3P INSTALL WATER VALVE PULL BOX
- 3Q NO CHANGE
- 3S INSTALL STREET LIGHT STANDARD
- 3T INSTALL OPTICOM BY CONTRACTOR
- 3U INSTALL INTERCONNECT (SIZE & TYPE AS SHOWN)
- 3V INSTALL VIDEO DETECTION CAMERA BY CONTRACTOR
- 3W INSTALL ELECTRIC METER

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008NT.dwg Davis, Benjamin 3/17/2017 5:20 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.


Print Date: March 17, 2017 Drawing File Name: 349008NT.DWG Horiz. Scale: N/A Vert. Scale: N/A  KIMLEY-HORN AND ASSOCIATES, INC. 4582 SOUTH ULSTER STREET, SUITE 1500 DENVER, COLORADO 80237 (303) 228-2300	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th style="width: 15%;">Date:</th> <th style="width: 65%;">Comments:</th> <th style="width: 20%;">Init.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Sheet Revisions			Date:	Comments:	Init.													 DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 Phone: (720) 913-4501 Fax: (720) 913-4544	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">As Constructed</th> <th colspan="2" style="width: 40%;">MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC LEGEND AND KEY NOTES</th> <th style="width: 30%;">Project No./Code</th> </tr> </thead> <tbody> <tr> <td>No Revisions:</td> <td colspan="2"></td> <td>PZ03798_425</td> </tr> <tr> <td>Revised:</td> <td>Designer: CEH</td> <td></td> <td></td> </tr> <tr> <td>Void:</td> <td>Detailer: BJD</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Sheet Subset: NOTES</td> <td>Subset Sheet: 5 of 5</td> <td>Sheet Number 6</td> </tr> </tbody> </table>	As Constructed	MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC LEGEND AND KEY NOTES		Project No./Code	No Revisions:			PZ03798_425	Revised:	Designer: CEH			Void:	Detailer: BJD				Sheet Subset: NOTES	Subset Sheet: 5 of 5	Sheet Number 6
Sheet Revisions																																									
Date:	Comments:	Init.																																							
As Constructed	MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC LEGEND AND KEY NOTES		Project No./Code																																						
No Revisions:			PZ03798_425																																						
Revised:	Designer: CEH																																								
Void:	Detailer: BJD																																								
	Sheet Subset: NOTES	Subset Sheet: 5 of 5	Sheet Number 6																																						

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008SAQ.dwg Davis, Benjamin 3/29/2017 8:52 AM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND UNWARRANTED RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	BROADWAY & ALAMEDA		MONACO & ALAMEDA		MONACO & MLK		47TH & PEORIA		PROJECT TOTALS		NOTES
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	
202-01	REMOVAL OF CURB AND GUTTER	LF			167		11		275			453	
202-02	REMOVAL OF SIDEWALK	SF	1920		1846		543		1999			6308	
202-03	REMOVAL OF CONCRETE PAVEMENT	SF	1223				3479		25			4727	
202-04	REMOVAL OF ASPHALT PAVEMENT	SF			939		99		3155			4193	
202-05	REMOVAL OF CONCRETE CURB RAMP	SF	444		774		963		989			3170	
202-06	REMOVAL OF EXISTING GROUND SIGN	EA			4				1			5	
202-07	REMOVAL OF BOLLARD	EA	2									2	
202-08	RESET SURVEY MONUMENT	EA	2				1					3	
202-09	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	LS	0.25		0.25		0.25		0.25			1	
202-13	RESET GARBAGE BIN	EA	1									1	
203-01	POTHOLING	EA	13		20		18		24			75	
208-01	ROCK SOCK	EA	30		45		48		30			153	
208-02	SWEEPING (SEDIMENT REMOVAL)	HOUR	10		10		10		10			40	
208-03	INLET PROTECTION	EA	2		1		2		2			7	
208-04	CONCRETE WASHOUT STRUCTURE	EA	1		1		1		1			4	
208-05	TEMPORARY CONSTRUCTION SITE FENCE	LF	440		744		1172		793			3149	
210-01	MODIFY INLET	EA	1				2					3	
212-01	SOD	SF			100		326		100			526	
212-02	SEEDING	SF			200							200	
212-03	LANDSCAPE RESTORATION	SF	50		50		50		50			200	
403-01	HOT MIX ASPHALT (PATCHING)	TON			30		9		27			66	
403-02	HOT MIX ASPHALT (PG 64-22) (100)	TON			46				250			296	
412-01	CONCRETE PAVEMENT	SF	846				2124					2970	
503-01	DRILLED CAISSON (24 INCH)	LF					10					10	

Print Date: March 29, 2017
 Drawing File Name: 349008SAQ.DWG
 Horiz. Scale: N/A Vert. Scale: N/A

 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.


 DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544


As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS
 SUMMARY OF APPROXIMATE QUANTITIES
 SAQ SHEET 01
 Designer: CEH
 Detailer: BJD
 Sheet Subset: SAQ Subset Sheet: 1 of 3


Project No./Code
 PZ03798_425
 Sheet Number 7

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008SAQ.dwg Davis, Benjamin 3/29/2017 8:52 AM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	BROADWAY & ALAMEDA		MONACO & ALAMEDA		MONACO & MLK		47TH & PEORIA		PROJECT TOTALS		NOTES
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	
503-02	VACUUMED CAISSON (24 INCH)	LF	5									5	
503-03	DRILLED CAISSON (36 INCH)	LF			36		67		26			129	
503-04	VACUUMED CAISSON (36 INCH)	LF	52				36		18			106	
503-05	DRILLED CAISSON (48 INCH)	LF			17							17	
503-06	VACUUMED CAISSON (48 INCH)	LF			17				17			34	
508-01	AGGREGATE (6 INCH DEPTH) (WITH GEOTEXTILE BARRIER)	SF							185			185	
608-01	CONCRETE SIDEWALK (6 INCH)	SF	1521		864		984		1958			5327	
608-02	CONCRETE CURB RAMP	SF	567		810		981		639			2997	
608-03	CONCRETE CURB AND GUTTER	LF	185		224		439		279			1127	
608-04	CONCRETE MEDIAN COVER (4 INCH)	SF	234		1107		702		216			2259	
613-01	2 INCH ELECTRICAL CONDUIT	LF	290		372		516		284			1462	
613-02	3 INCH ELECTRICAL CONDUIT	LF	594		724		1032		633			2983	
613-03	PULL BOX (SPECIAL)	EA	1		1		1		1			4	
613-04	ELECTRICAL METER PEDESTAL AND BASE	EA	1		1		1		1			4	
614-01	10' PEDESTAL POLE	EA	1				3		3			7	
614-02	15' PEDESTAL POLE	EA	1									1	
614-02	OVERHEAD SIGN PANEL	SF	32		19		21		49			121	
614-03	SIGN PANEL (CLASS 1)	SF			31							31	
614-04	STEEL SIGN POST (2X2 INCH TUBING)	LF			40							40	
614-05	PEDESTRIAN SIGNAL FACE (16) (COUNTDOWN)	EA	8		8		12		8			36	
614-06	TRAFFIC SIGNAL FACE (12-12-12)	EA	13		21		13		14			61	
614-07	TRAFFIC SIGNAL FACE (12-12-12) (PROGRAMABLE)	EA					6					6	
614-08	TRAFFIC SIGNAL FACE (12-12-12-12)	EA	3		4		2		8			17	
614-09	TRAFFIC SIGNAL FACE (12-12-12-12) (PROGRAMABLE)	EA					2					2	

Print Date: March 29, 2017
 Drawing File Name: 349008SAQ.DWG
 Horiz. Scale: N/A Vert. Scale: N/A

 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		


 DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS
 SUMMARY OF APPROXIMATE QUANTITIES
 SAQ SHEET 02
 Designer: CEH
 Detailer: BJD
 Sheet Subset: SAQ Subset Sheet: 2 of 3

Project No./Code
 PZ03798_425
 Sheet Number 8


K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008SAQ.dwg Davis, Benjamin 3/29/2017 8:52 AM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	BROADWAY & ALAMEDA		MONACO & ALAMEDA		MONACO & MLK		47TH & PEORIA		PROJECT TOTALS		NOTES
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	
614-10	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EA	1		1		1		1			4	
614-11	PEDESTRIAN PUSH BUTTON AND INSTRUCTION SIGN	EA	5		4		10		6			25	
614-12	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-35 MAST ARM) (INSTALL ONLY)	EA					1					1	
614-13	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-40 MAST ARM) (INSTALL ONLY)	EA	2						2			4	
614-14	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-45 MAST ARM) (INSTALL ONLY)	EA	1				1					2	
614-15	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-50 MAST ARM) (INSTALL ONLY)	EA			2		3					5	
614-16	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-55 MAST ARM) (INSTALL ONLY)	EA	1				1		1			3	
614-17	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-60 MAST ARM) (INSTALL ONLY)	EA							1			1	
614-18	TRAFFIC SIGNAL-LIGHT POLE STEEL (1-70 MAST ARM) (INSTALL ONLY)	EA			2							2	
614-19	TRAFFIC SIGNAL-LIGHT POLE STEEL (2-40 MAST ARM) (INSTALL ONLY)	EA	1									1	
614-20	LUMINAIRE (5300 LED)	EA	3		4		6		4			17	
614-21	STREET LIGHT STANDARD (INSTALL ONLY)	EA	1				2					3	
614-22	FLIR INTERSECTION DETECTION SYSTEM (CAMERA)	EA			4		4		4			12	
614-23	AUTOSCOPE VISION INTERSECTION DETECTION SYSTEM (CAMERA)	EA	4									4	
614-24	TRAFFIC SIGNAL WIRING	LS	0.25		0.25		0.25		0.25			1	
614-25	TELEMETRY (FIELD)	EA	1		1		1		1			4	
614-26	FURNISH AND INSTALL EMERGENCY VEHICLE PRIORITY CONTROL SYSTEM (OPTICOM)	EA	3		4		4		4			15	
614-27	RESET BIKE SIGNAL	EA	2									2	
623-01	RESET PTZ CAMERA (BY CONTRACTOR)	EA	1		1		1		1			4	
623-01	SPRINKLER SYSTEM - IRRIGATION RECONSTRUCTION	LF	40		40		40		40			160	
623-02	SPRINKLER SYSTEM - NEW SPRINKLER HEAD	EA	2		2		2		2			8	
623-03	SPRINKLER SYSTEM - ADJUST SPRINKLER HEAD	EA	2		2		2		2			8	
625-01	CONSTRUCTION SURVEYING	LS	0.25		0.25		0.25		0.25			1	
626-01	MOBILIZATION	LS	0.25		0.25		0.25		0.25			1	
627-01	EPOXY PAVEMENT MARKING	GAL			4							4	
627-02	PREFORMED THERMOPLASTIC PAVEMENT MARKING	SF	982		1387		1012		1037			4418	
630-01	CONSTRUCTION TRAFFIC CONTROL	LS	0.25		0.25		0.25		0.25			1	
630-02	UNIFORMED TRAFFIC CONTROL	HR	8		8		8		8			32	

Print Date: March 29, 2017
 Drawing File Name: 349008SAQ.DWG
 Horiz. Scale: N/A Vert. Scale: N/A

 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

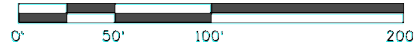
Sheet Revisions		
Date:	Comments:	Init.



DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed		MILL LEVY 7A TRAFFIC SIGNALS SUMMARY OF APPROXIMATE QUANTITIES SAQ SHEET 03		Project No./Code
No Revisions:	Revised:	Designer: CEH	Detailer: BJD	PZ03798_425
Void:	Sheet Subset: SAQ	Subset Sheet: 3 of 3		Sheet Number 9

PROJECT CONTROL DIAGRAM CCD INTERSECTIONS



NOTES

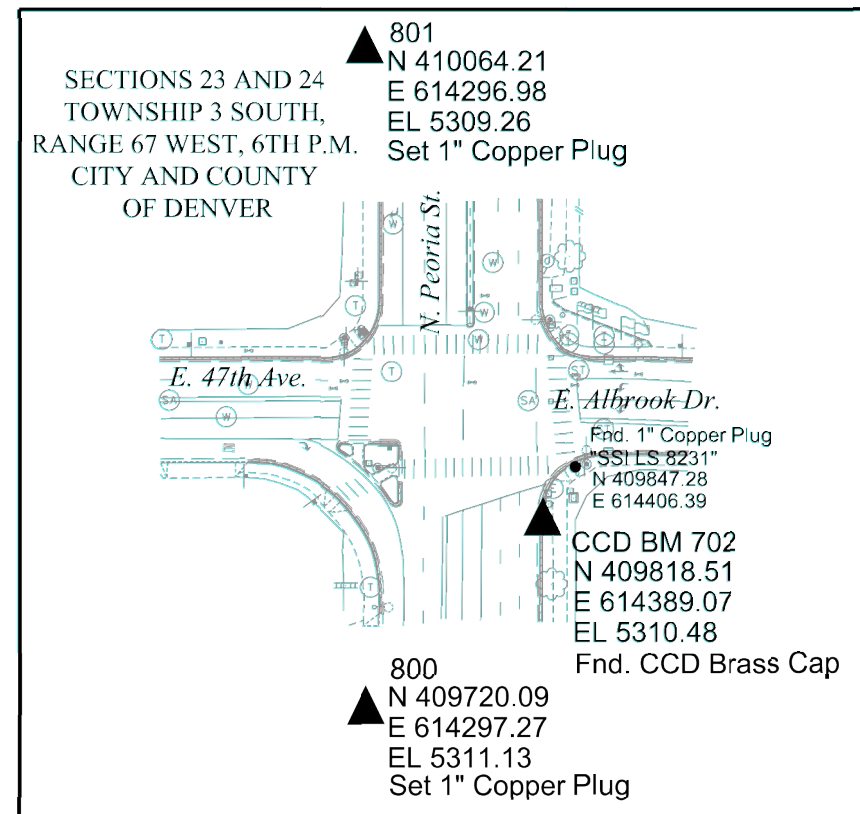
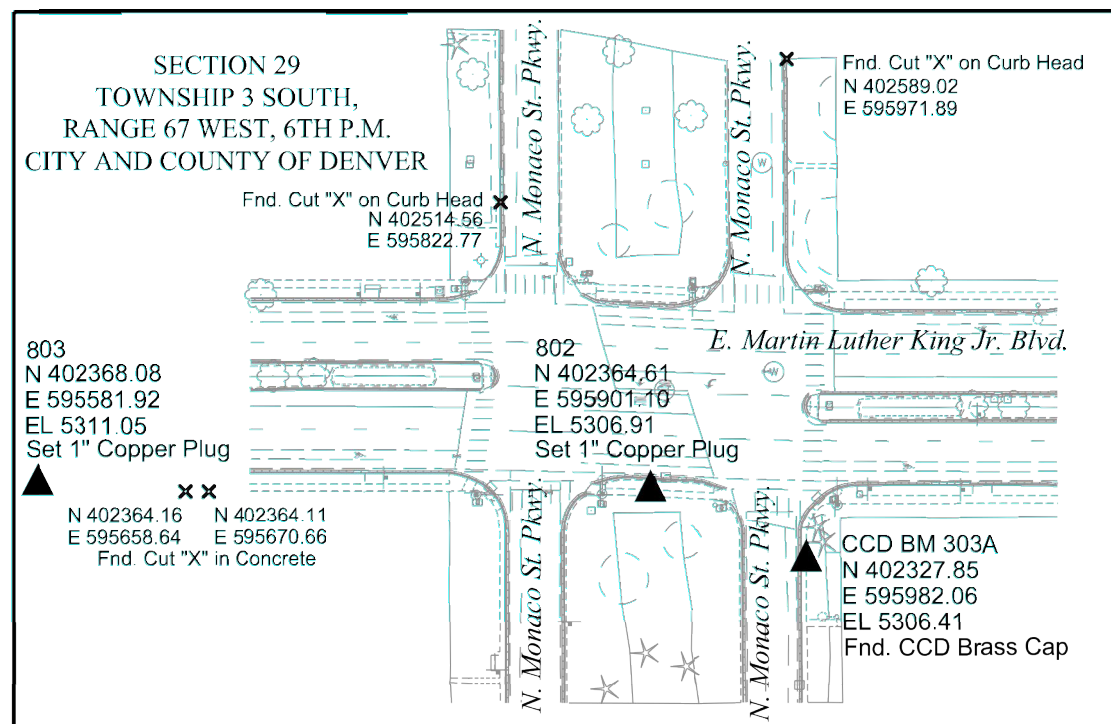
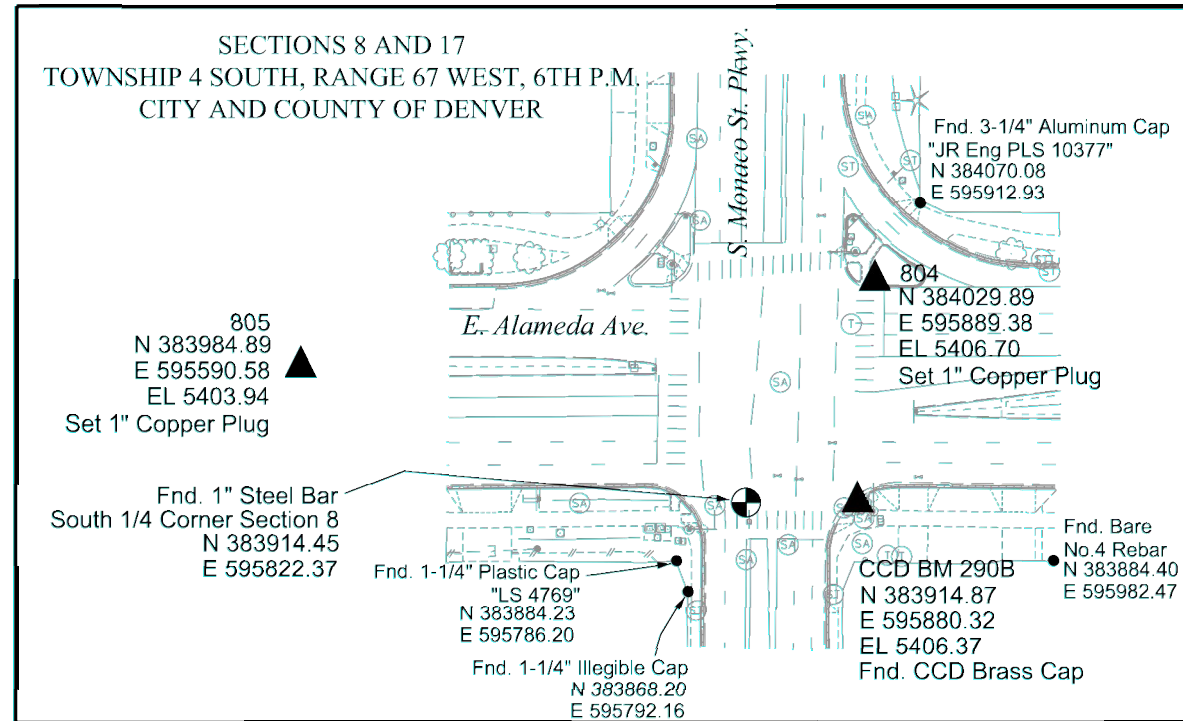
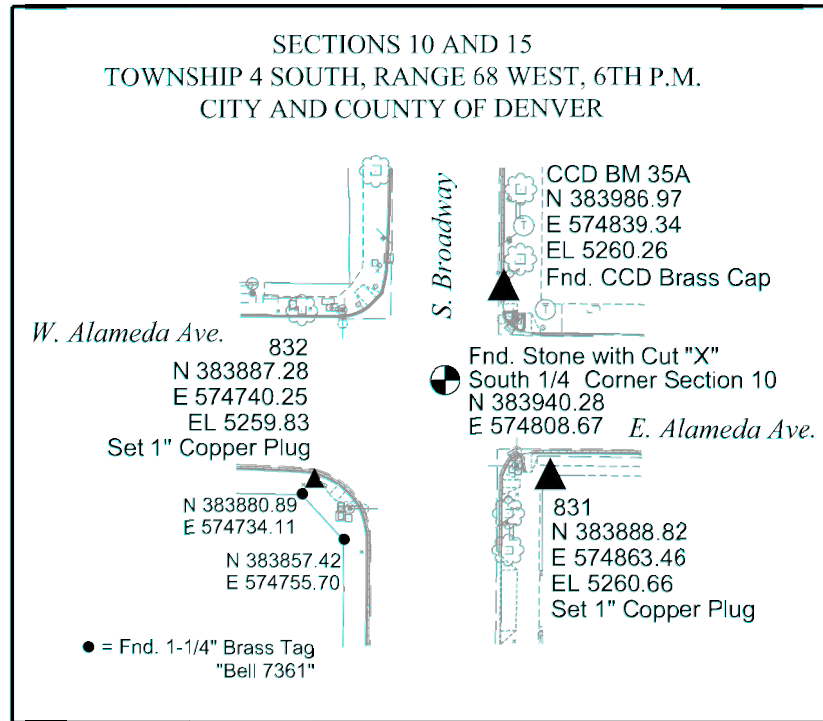
1. This Project Control Diagram is not a boundary survey of the adjoining property.
2. PROJECT BENCHMARK: Elevations are based on published (NAVD 88) City and County of Denver Benchmarks, shown hereon.
3. UNITS: Project coordinates and elevations shown hereon are U.S. Survey Feet.
4. According to Colorado State law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

COORDINATE DATUM: Project coordinates are based on the following City and County of Denver Mapping Projection:

Project Mapping Projection
 Projection: User-Defined Transverse Mercator
 Zone: CCD_Local
 Central Point False Northing = 400,000.00
 Central Point False Easting = 600,000.00
 Latitude of Origin = N39° 45' 19.00000"
 Central Meridian = W104° 53' 53.00000"
 Zone Width = 6° 0' 00.0"
 Scale Factor at Origin = 1.00025403000
 Units are US Survey Feet

I, Richard D. Muntean, a Licensed Professional Surveyor in the State of Colorado do hereby state that the survey represented by this map was made under my supervision and that this map and the notes shown hereon accurately represent said survey to the best of my knowledge, information and belief.

RICHARD D. MUNTEAN, PLS No. 38189
 For and on behalf of 105 West, Inc.



K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008V_Control.dwg Davis, Benjamin 3/17/2017 5:20 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND APPROVED RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

Print Date: March 17, 2017
 Drawing File Name: PCD_Base.dgn
 Horiz. Scale: 1" = 100' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

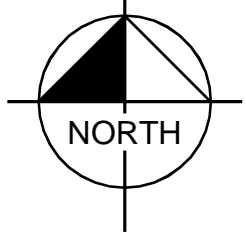
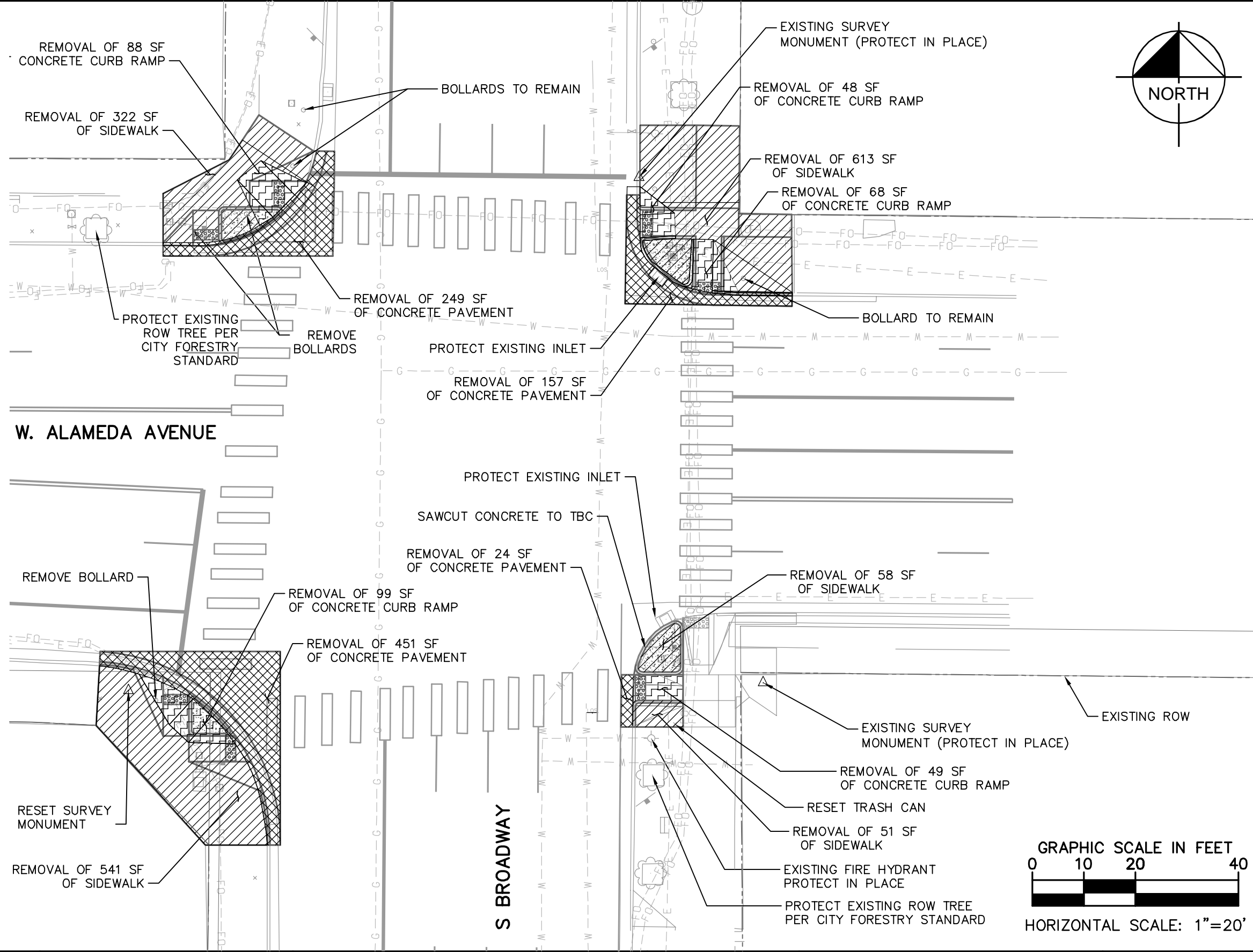
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A PACKAGE PROJECT CONTROL DIAGRAM CCD INTERSECTIONS	
Designer:	
Detailer:	
Sheet Subset: SURVEY	Subset Sheet: 1 of 1

Project No./Code
PZ03798_425
Sheet Number 10

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008DM.dwg Davis, Benjamin 3/17/2017 5:21 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

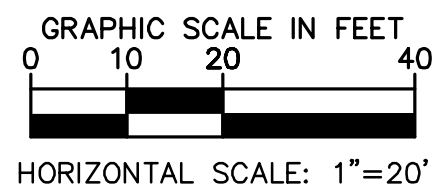


NOTE:

1. EXISTING TREES TO BE PRESERVED IN PUBLIC ROW SHALL BE PROTECTED PER FORESTRY STANDARDS AND PRACTICES. TREE PROTECTION SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION. NO CONSTRUCTION ACTIVITIES OR STORAGE OF MATERIALS (INCLUDING SOIL) SHALL TAKE PLACE WITHIN TREE PROTECTION ZONES WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OFFICE OF THE CITY FORESTER.
2. REMOVE ALL CONCRETE TO THE NEAREST JOINT AND VERIFY WITH CITY AND COUNTY OF DENVER PRIOR TO REMOVAL.

LEGEND:

- REMOVAL OF CONCRETE CURB RAMP
- REMOVAL OF SIDEWALK
- REMOVAL OF CONCRETE PAVEMENT
- REMOVAL OF ASPHALT PAVEMENT
- REMOVAL OF CURB AND GUTTER



Print Date: March 17, 2017
 Drawing File Name: 349008DM.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

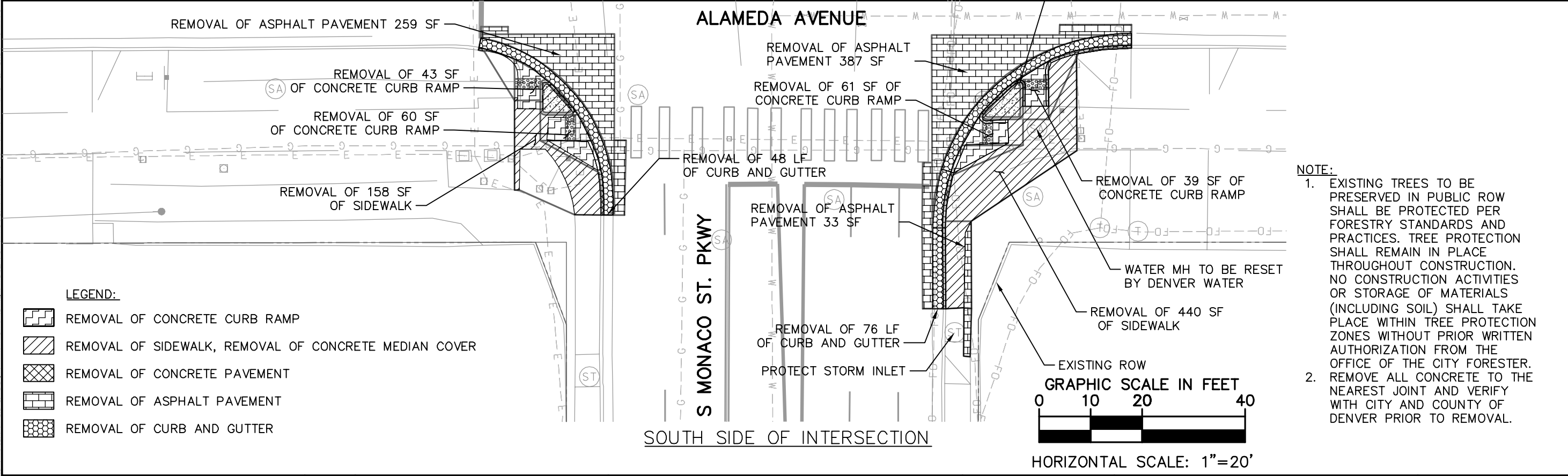
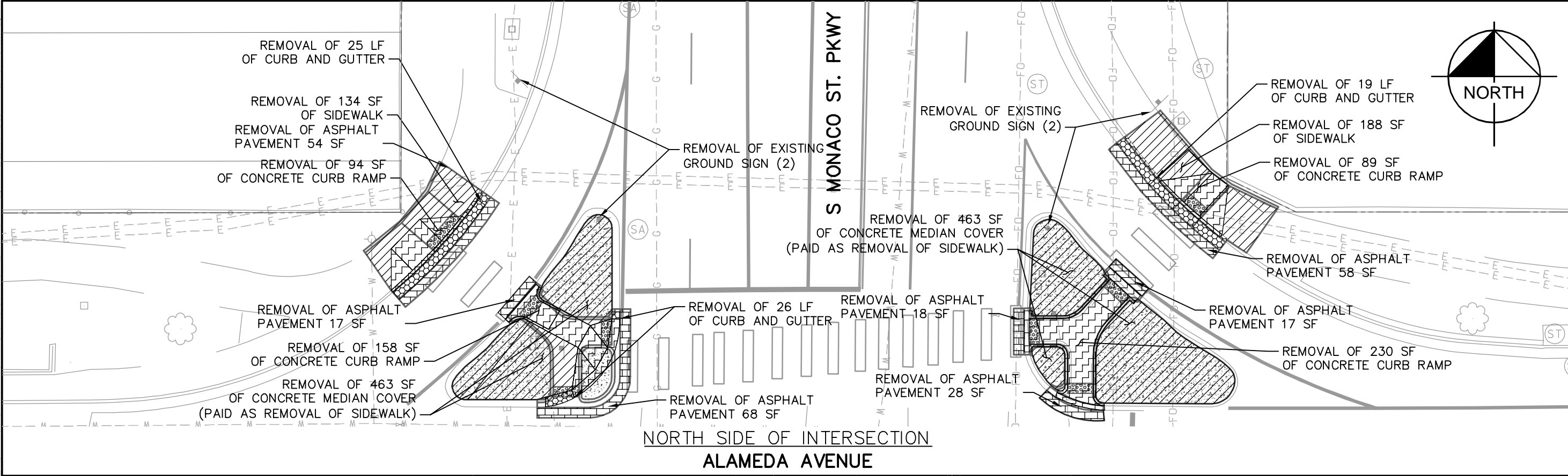
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS REMOVAL PLAN BROADWAY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset: REMOVALS	Subset Sheet: 1 of 4

Project No./Code
PZ03798_425
Sheet Number 11

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008DM.dwg Davis, Benjamin 3/17/2017 5:21 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REVIEW OF AND MODIFIED RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



LEGEND:

	REMOVAL OF CONCRETE CURB RAMP
	REMOVAL OF SIDEWALK, REMOVAL OF CONCRETE MEDIAN COVER
	REMOVAL OF CONCRETE PAVEMENT
	REMOVAL OF ASPHALT PAVEMENT
	REMOVAL OF CURB AND GUTTER

Print Date: March 17, 2017
 Drawing File Name: 349008DM.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

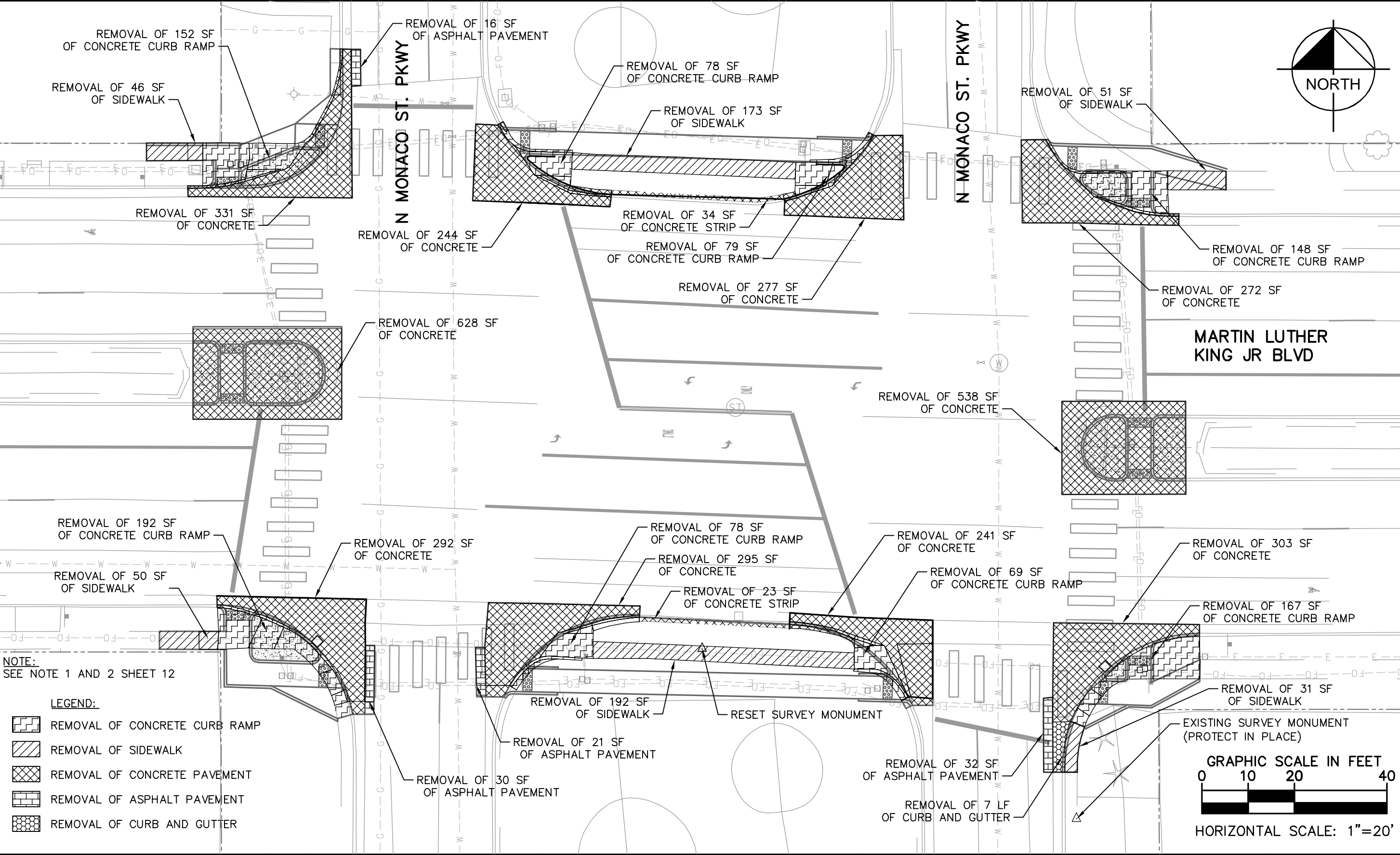
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

DENVER
 THE MILE HIGH CITY

As Constructed	MILL LEVY 7A TRAFFIC SIGNALS REMOVAL PLAN MONACO ST PKWY & ALAMEDA AVE	
No Revisions:	Designer: CEH	
Revised:	Detailer: BJD	
Void:	Sheet Subset: REMOVALS	Subset Sheet: 2 of 4

Project No./Code
PZ03798_425
Sheet Number 12

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008DM.dwg, Davis, Benjamin 3/17/2017 5:21 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



NOTE:
SEE NOTE 1 AND 2 SHEET 12

- LEGEND:**
- REMOVAL OF CONCRETE CURB RAMP
 - REMOVAL OF SIDEWALK
 - REMOVAL OF CONCRETE PAVEMENT
 - REMOVAL OF ASPHALT PAVEMENT
 - REMOVAL OF CURB AND GUTTER

Print Date: March 17, 2017
 Drawing File Name: 349008DM.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

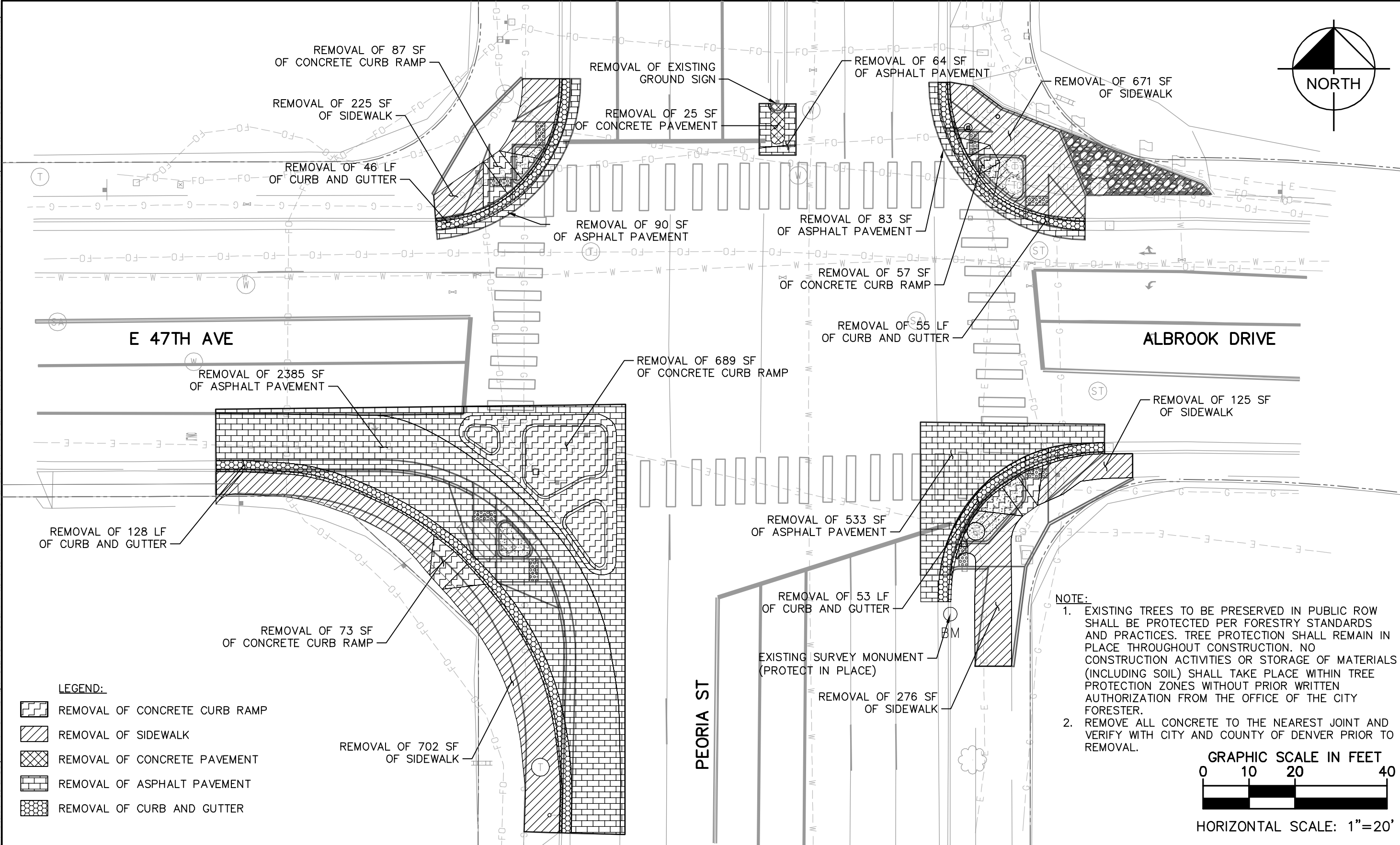
DENVER
 THE MILE HIGH CITY

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS REMOVAL PLAN MONACO ST PKWY & MLK JR BLVD	
Designer:	CEH
Detailer:	BJD
Sheet Subset:REMOVALS	Subset Sheet: 3 of 4

Project No./Code
PZ03798_425
Sheet Number 13

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008DM.dwg Davis, Benjamin 3/17/2017 5:21 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017
 Drawing File Name: 349008DM.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

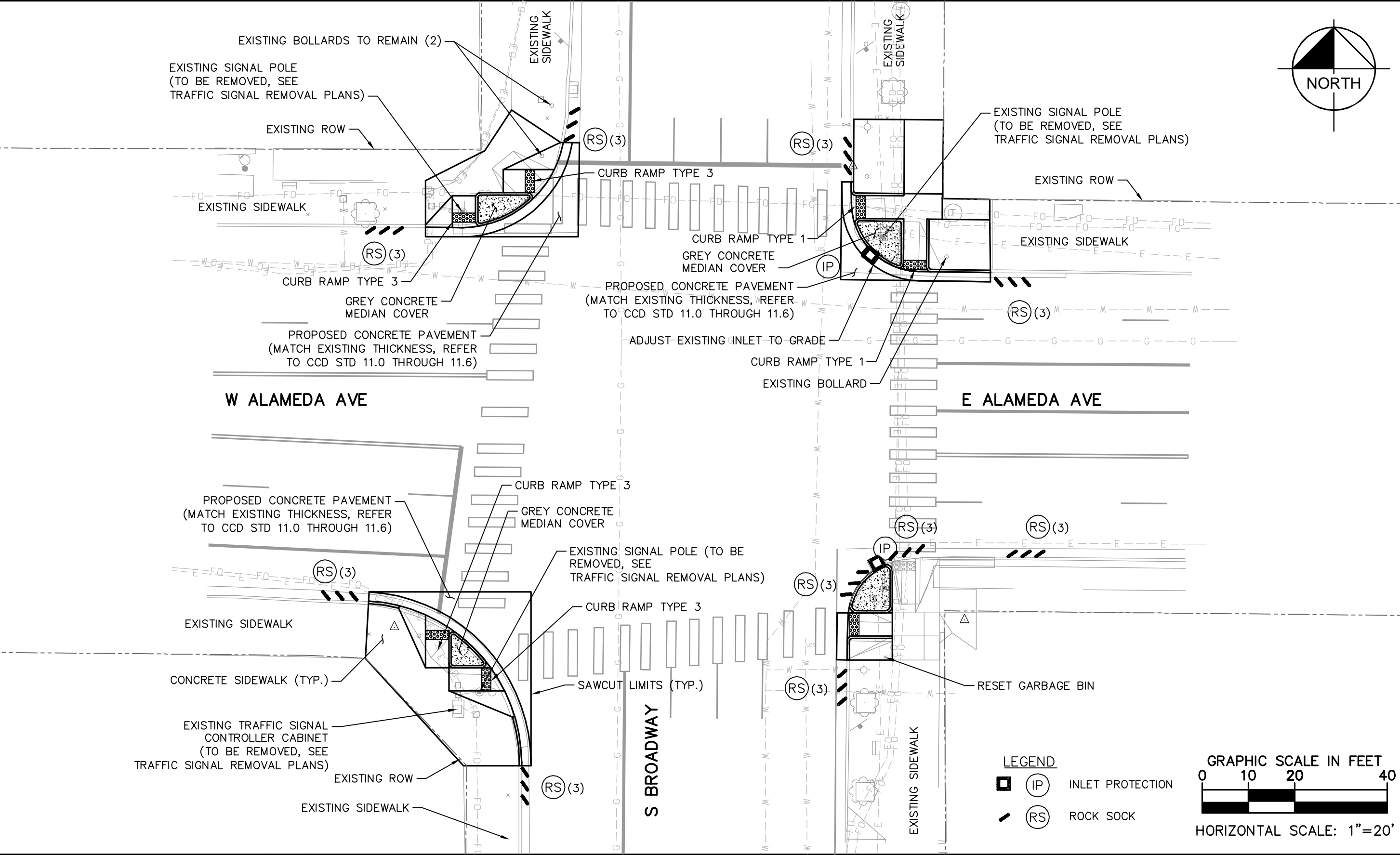
DENVER
 THE MILE HIGH CITY

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS REMOVAL PLAN E 47TH AVE & PEORIA ST	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	REMOVALS
Subset Sheet:	4 of 4

Project No./Code
PZ03798_425
Sheet Number 14

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:22 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED, REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017	
Drawing File Name: 349008GZ.DWG	
Horiz. Scale: 1"=20'	Vert. Scale: N/A
Kimley»Horn	
<small> KIMLEY-HORN AND ASSOCIATES, INC. 4582 SOUTH ULSTER STREET, SUITE 1500 DENVER, COLORADO 80227 (303) 228-2300 </small>	

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

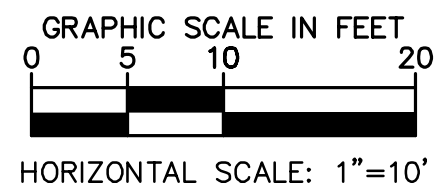
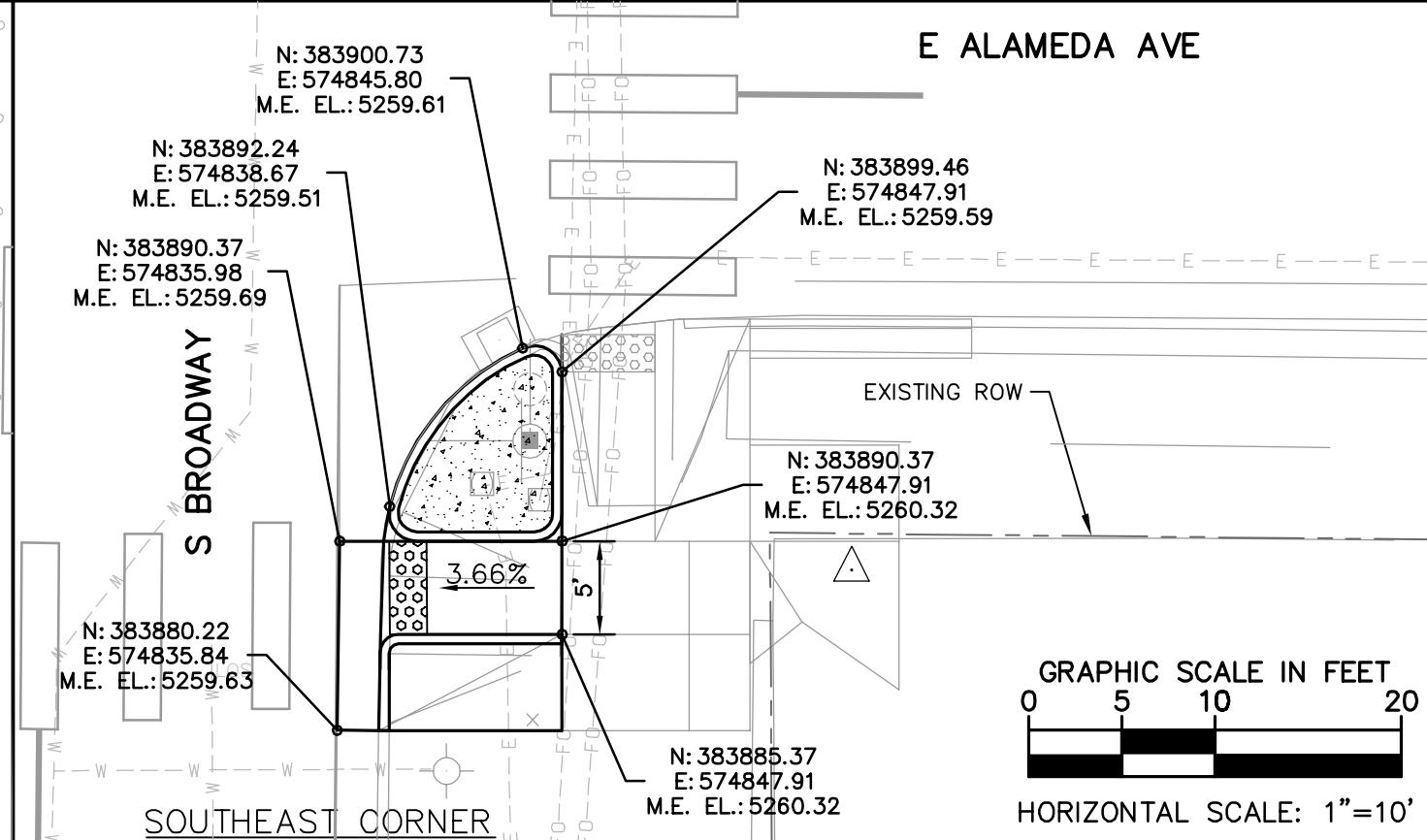
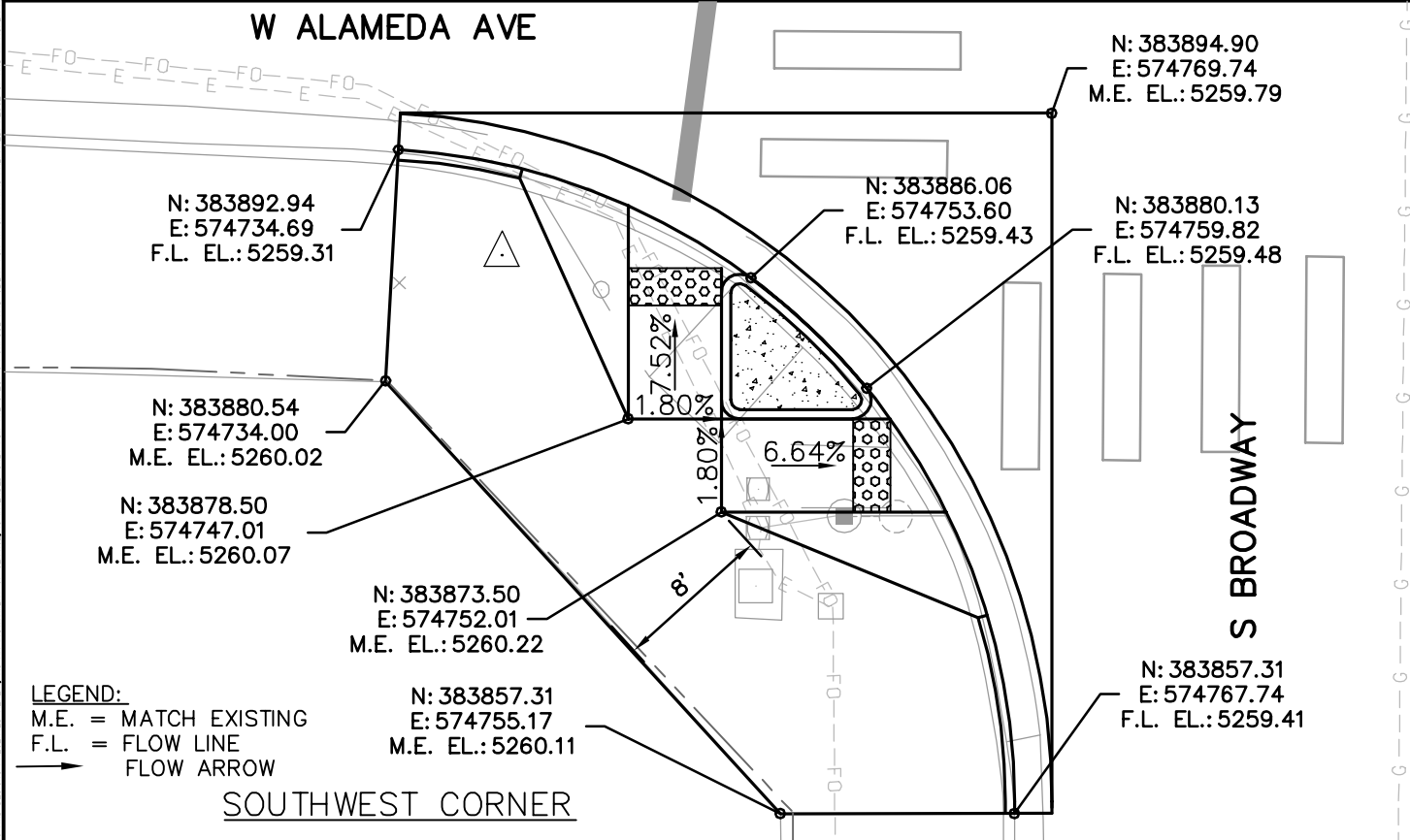
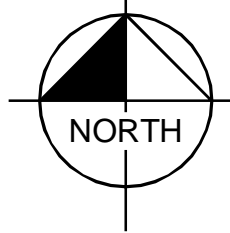
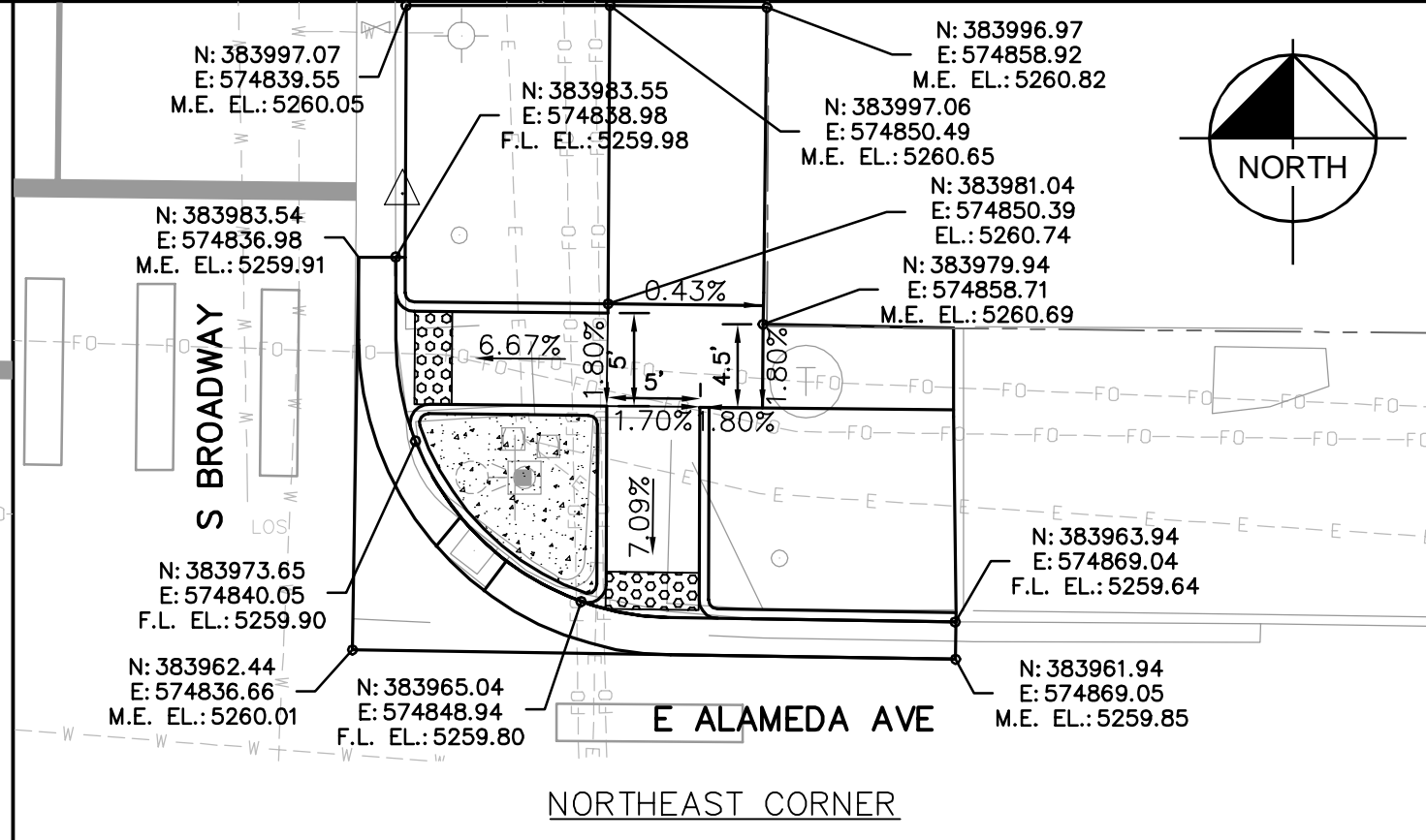
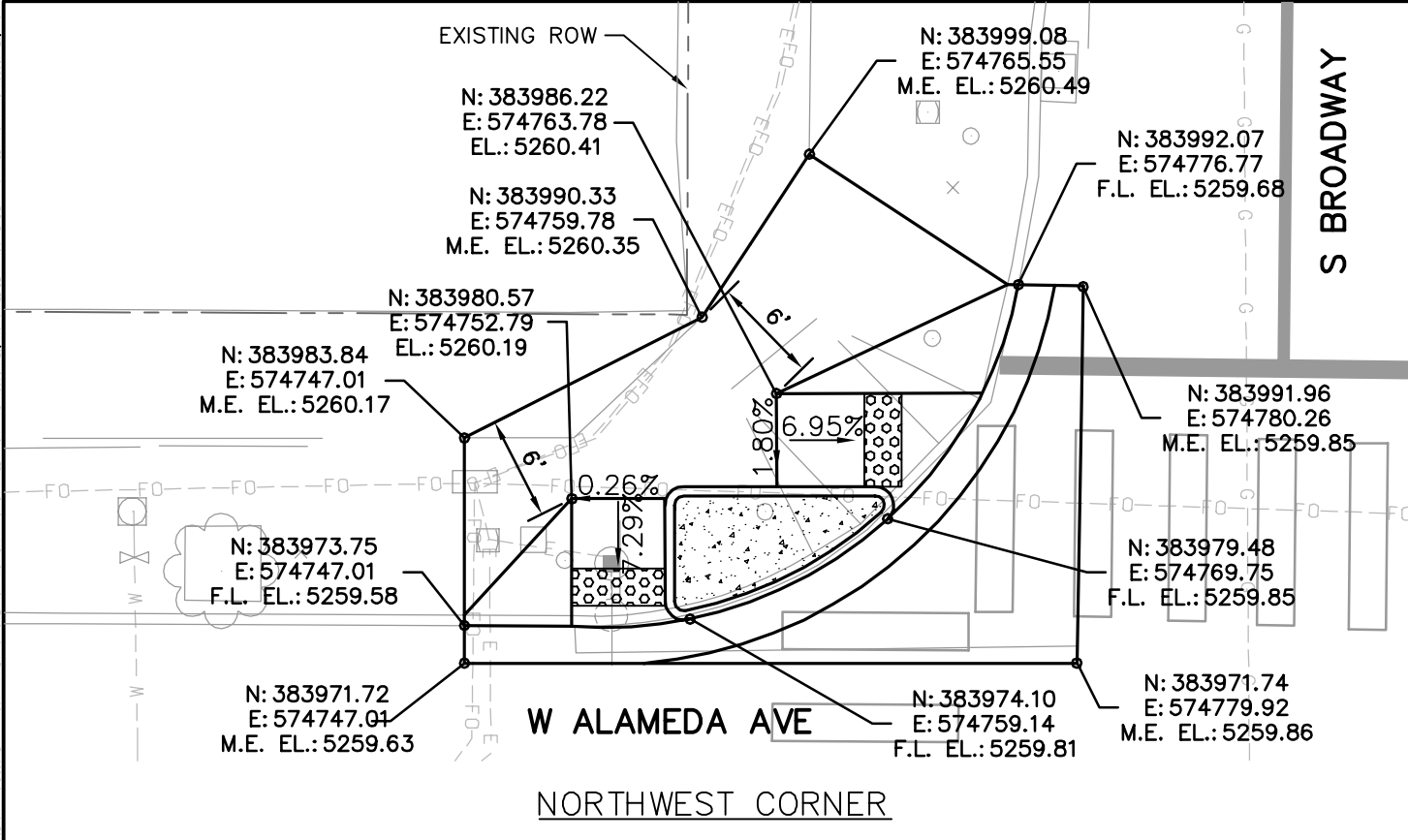
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS BROADWAY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset: GRADING	Subset Sheet: 1 of 13

Project No./Code
PZ03798_425
Sheet Number 15

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:22 PM
 This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=10' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 482 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

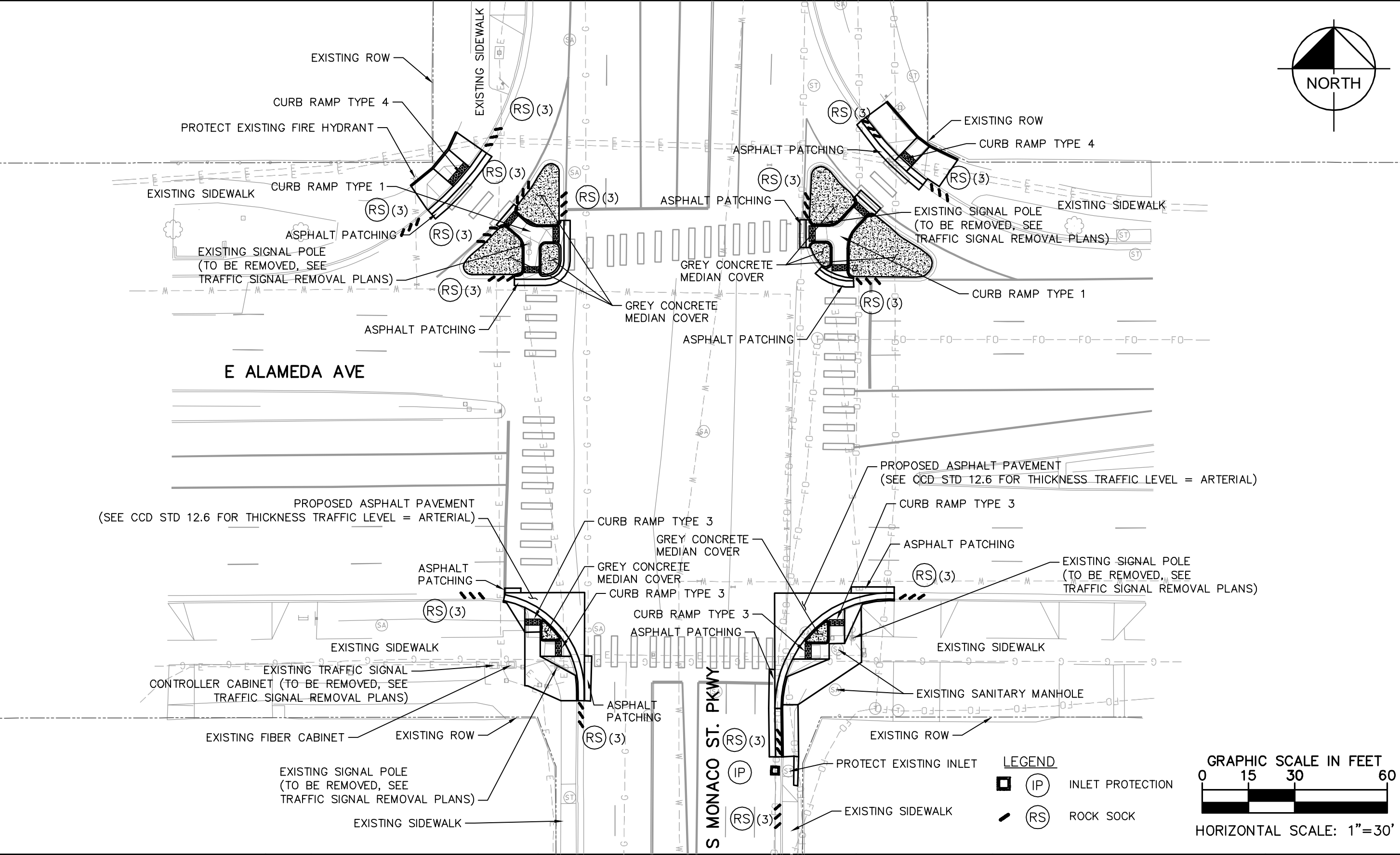
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS BROADWAY & ALAMEDA AVE (DETAILS)	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	2 of 13

Project No./Code	PZ03798_425
Sheet Number	16

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:22 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED, REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017

Drawing File Name: 349008GZ.DWG

Horiz. Scale: 1"=30' Vert. Scale: N/A

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
4582 SOUTH ULSTER STREET,
SUITE 1500
DENVER, COLORADO 80227
(303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
DENVER, CO 80202
Phone: (720) 913-4501
Fax: (720) 913-4544

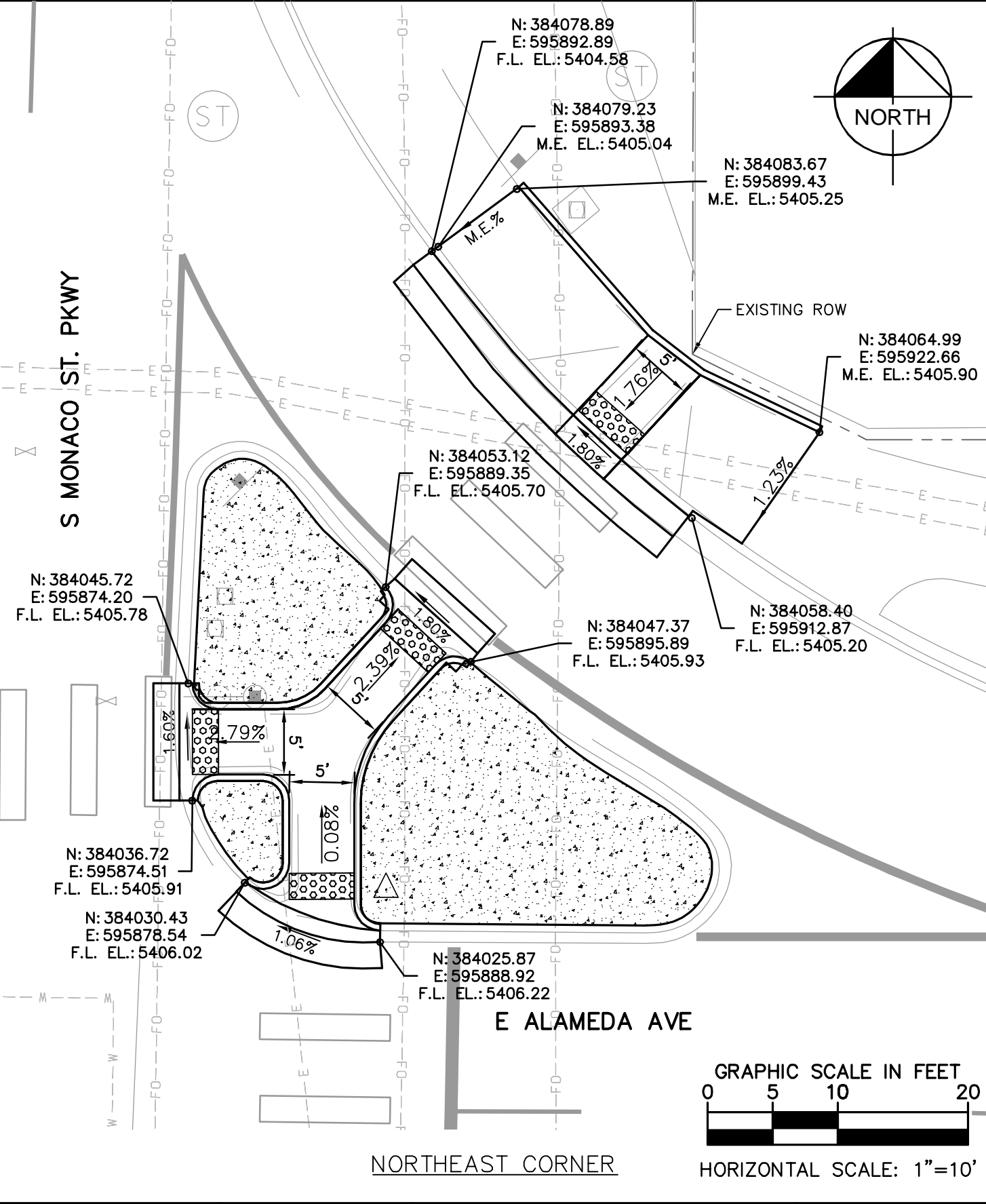
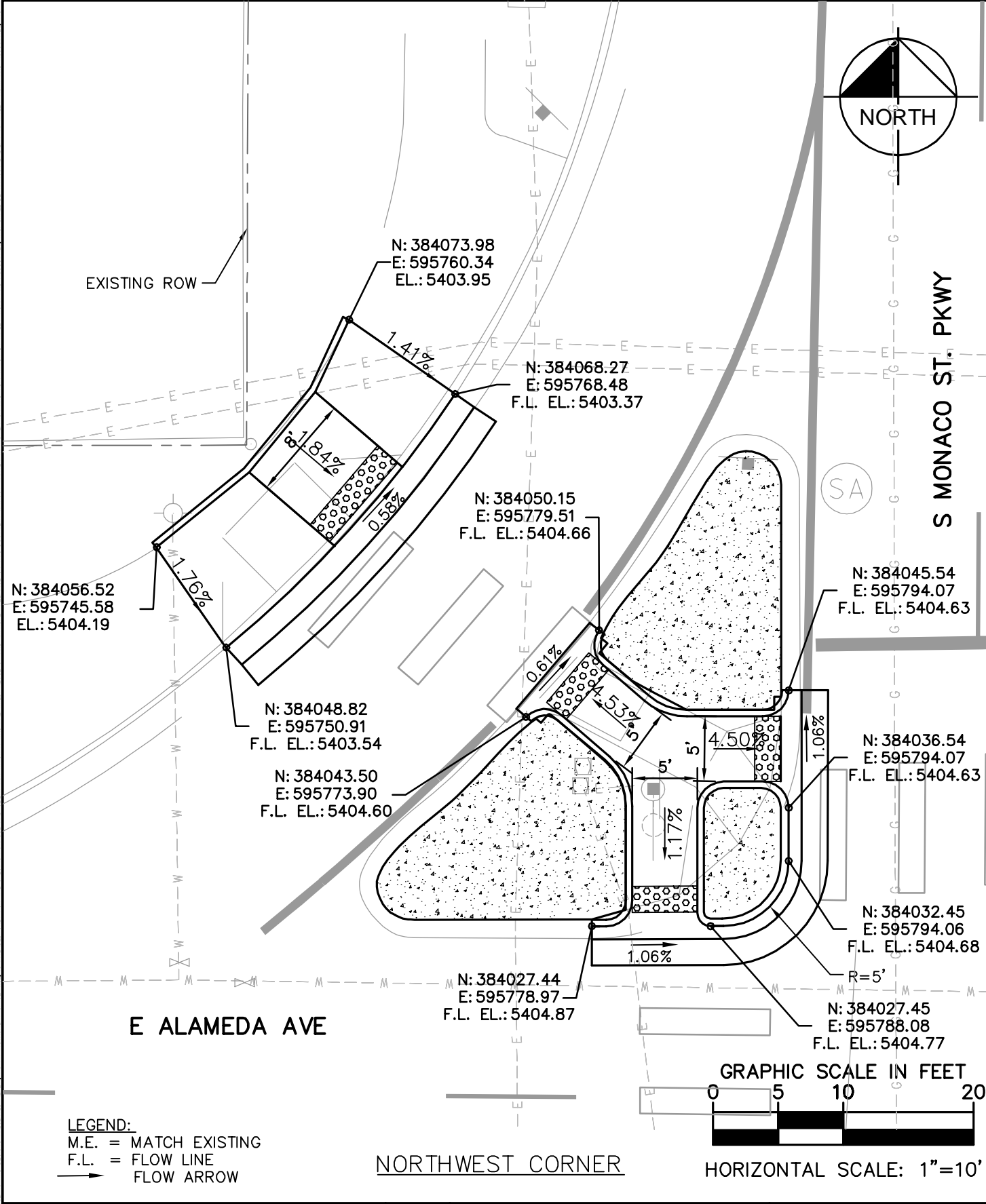
DENVER
THE MILE HIGH CITY

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS MONACO ST PKWY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	3 of 13

Project No./Code
PZ03798_425
Sheet Number 17

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:22 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, AS AN INSTRUMENT OF SERVICE, IS ATTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



LEGEND:
 M.E. = MATCH EXISTING
 F.L. = FLOW LINE
 → FLOW ARROW

NORTHWEST CORNER

GRAPHIC SCALE IN FEET
 0 5 10 20
 HORIZONTAL SCALE: 1"=10'

NORTHEAST CORNER

GRAPHIC SCALE IN FEET
 0 5 10 20
 HORIZONTAL SCALE: 1"=10'

Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=10' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80227
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

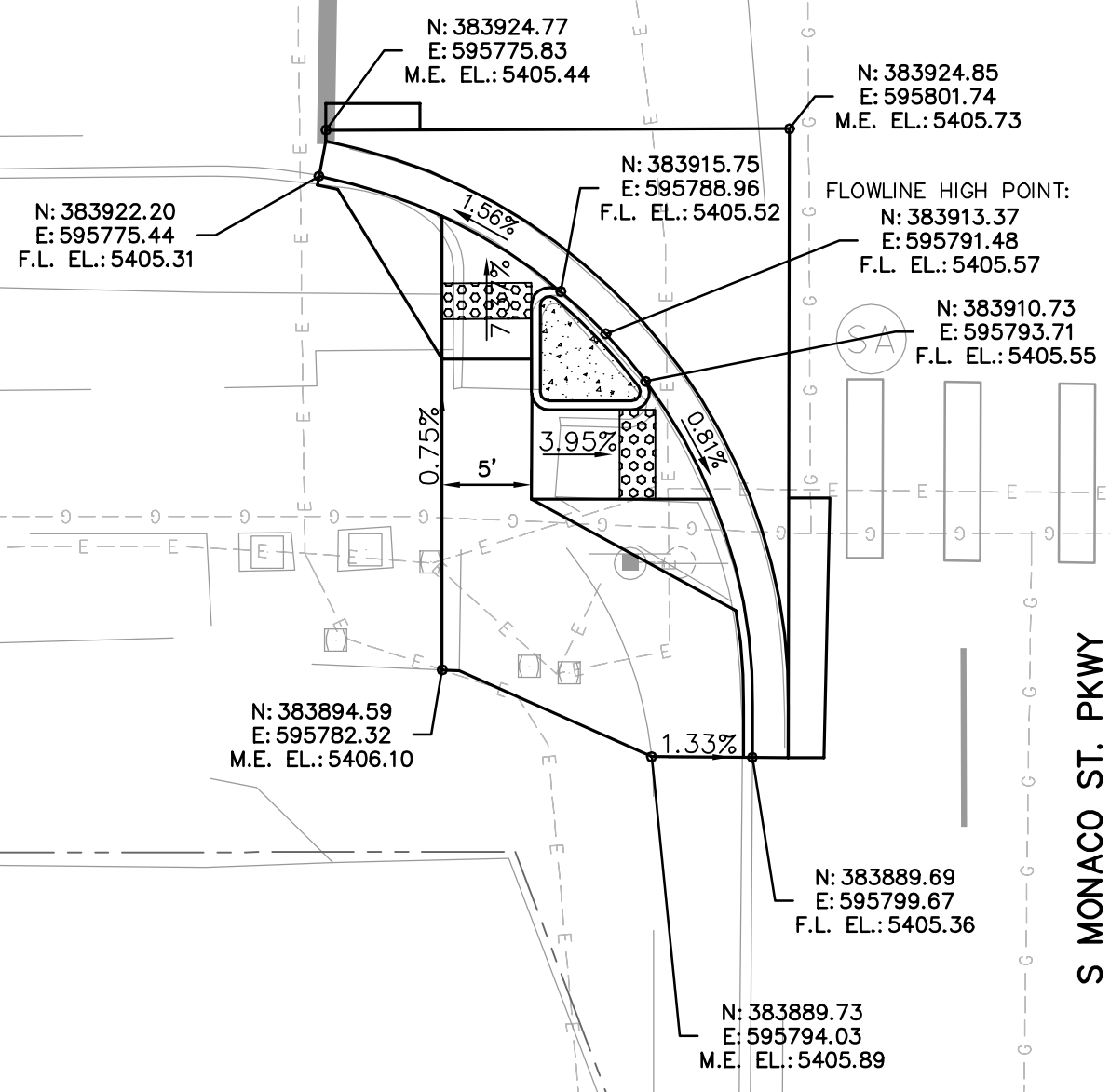
As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS	
MONACO ST PKWY & ALAMEDA AVE (NORTH)	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	4 of 13

Project No./Code
PZ03798_425
Sheet Number 18

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

E ALAMEDA AVE

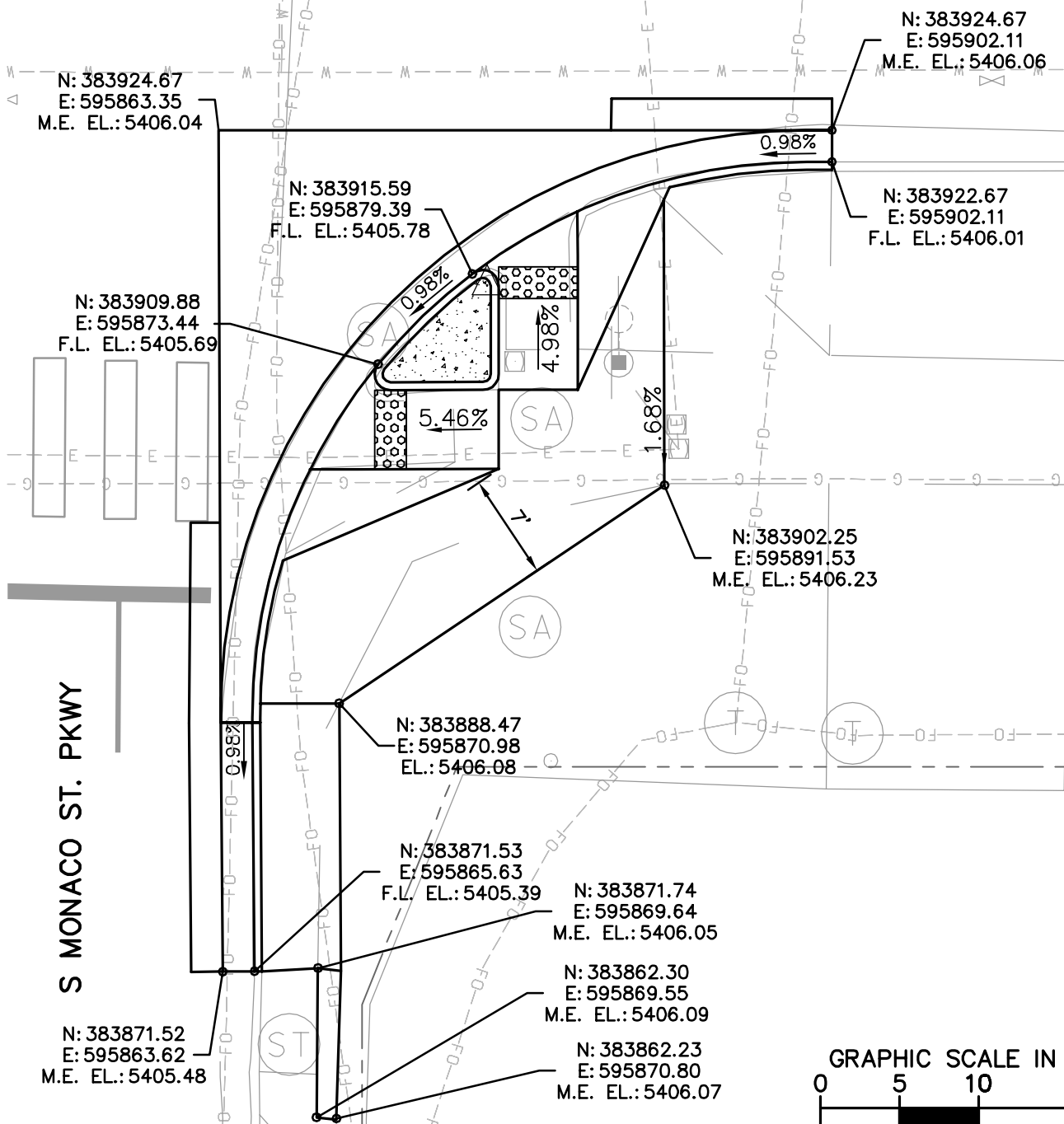
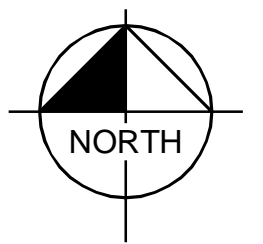


SOUTHWEST CORNER

S MONACO ST. PKWY

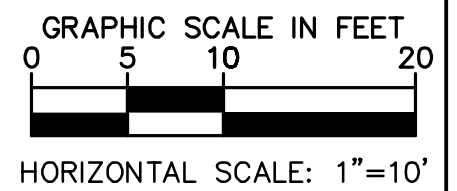
LEGEND:
 M.E. = MATCH EXISTING
 F.L. = FLOW LINE
 → FLOW ARROW

E ALAMEDA AVE



SOUTHEAST CORNER

S MONACO ST. PKWY



Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=10' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

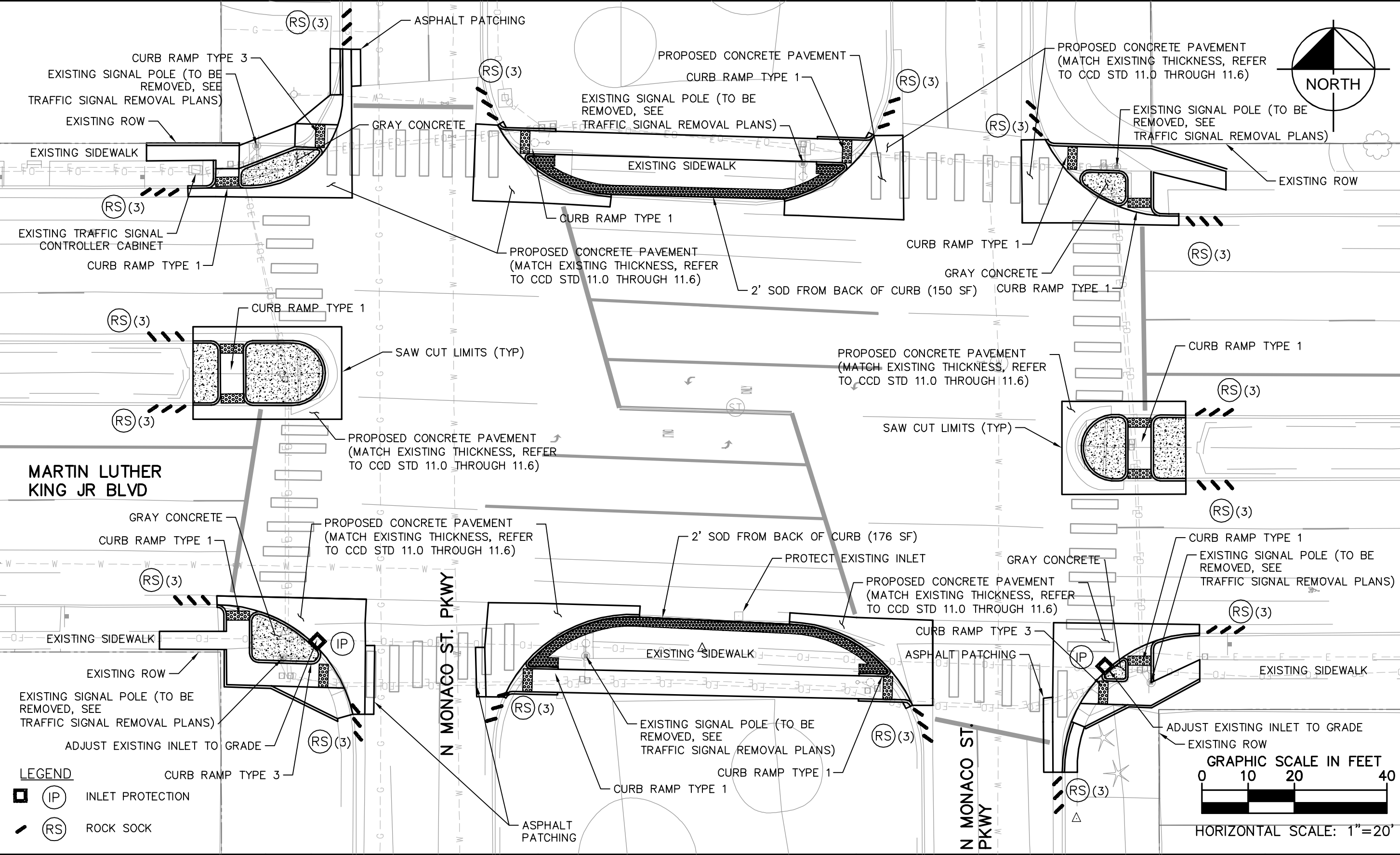
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS	
MONACO ST PKWY & ALAMEDA AVE (SOUTH)	
Designer:	CEH
Detailer:	BUD
Sheet Subset:	GRADING
Subset Sheet:	5 of 13

Project No./Code
PZ03798_425
Sheet Number 19

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED, AND DOES NOT CONSTITUTE A CONTRACT. THE USER SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

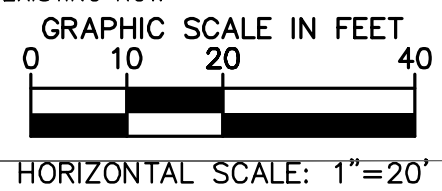


MARTIN LUTHER KING JR BLVD

N MONACO ST. PKWY

N MONACO ST. PKWY

- LEGEND**
- IP INLET PROTECTION
 - RS ROCK SOCK



Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

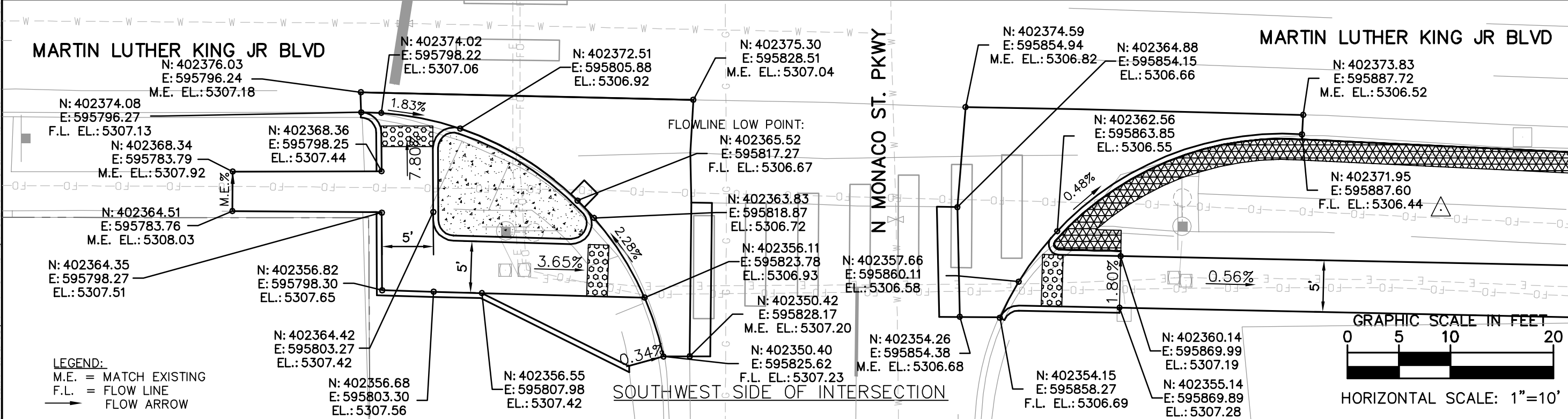
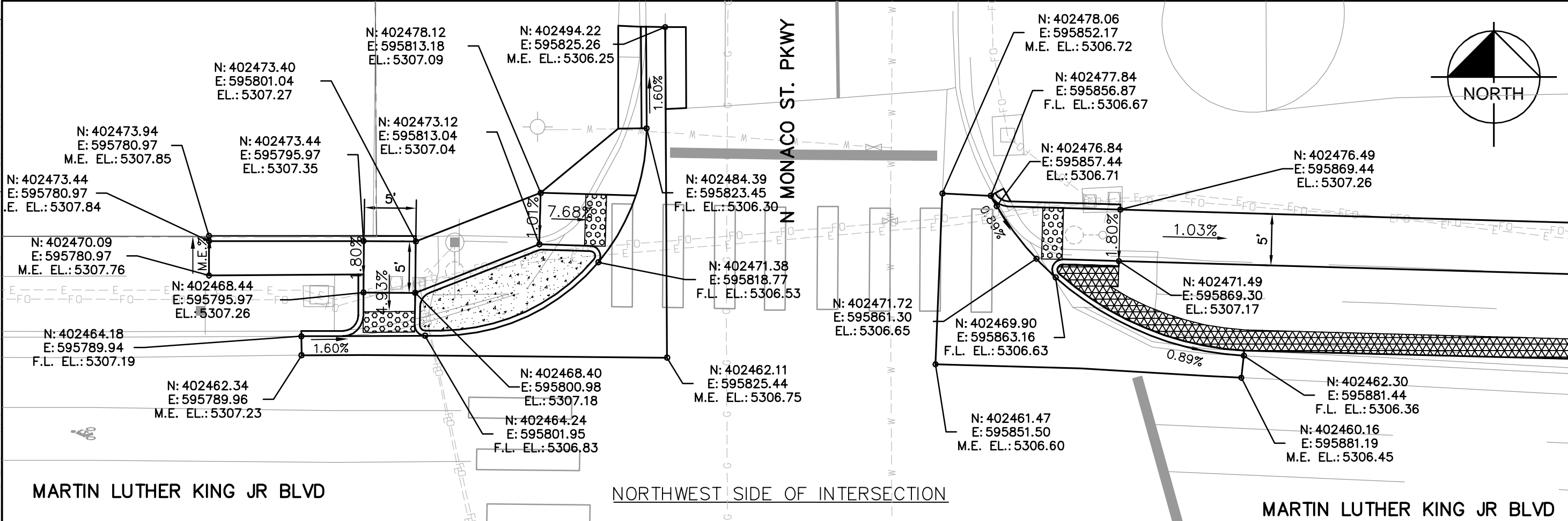
DENVER
THE MILE HIGH CITY

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS MONACO ST PKWY & MLK JR BLVD	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	6 of 13

Project No./Code
PZ03798_425
Sheet Number 20

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg, Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



LEGEND:
 M.E. = MATCH EXISTING
 F.L. = FLOW LINE
 → FLOW ARROW

Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=10' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

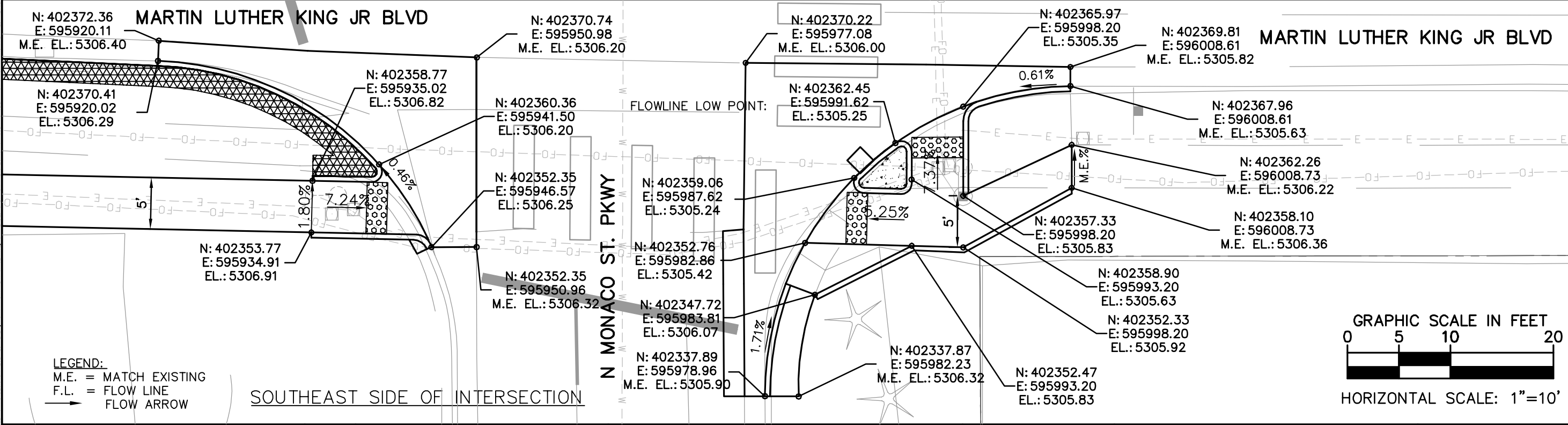
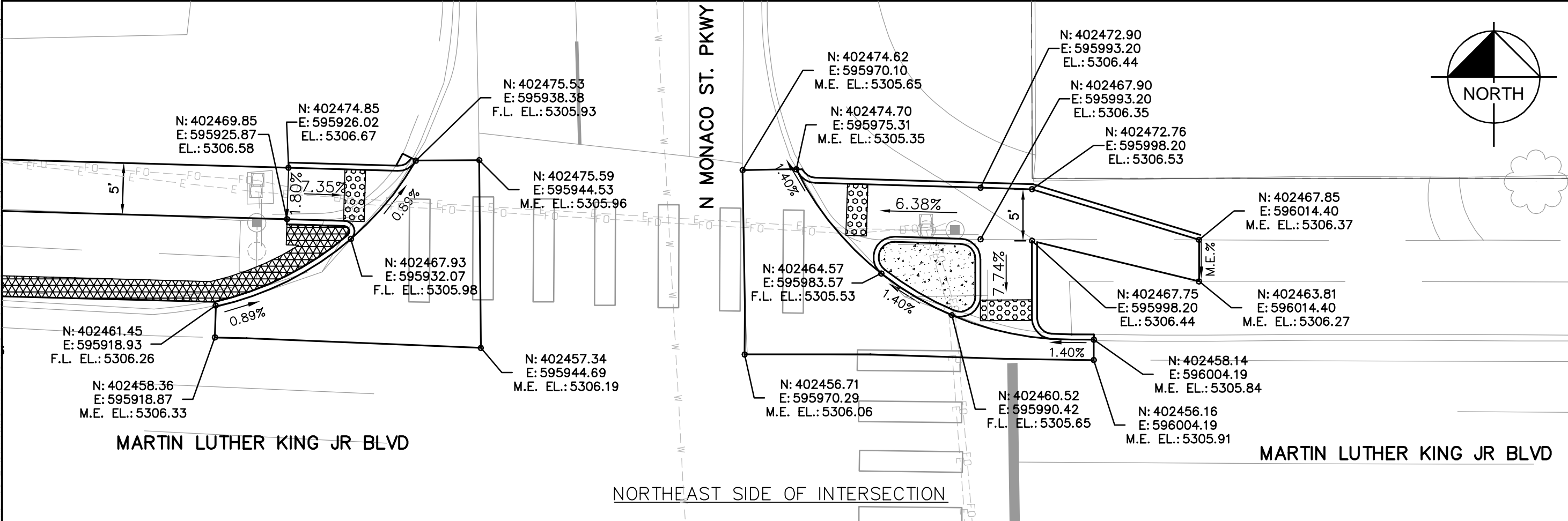
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS MONACO ST PKWY & MLK JR BLVD (WEST)	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	7 of 13

Project No./Code
PZ03798_425
Sheet Number 21

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg, Davis, Benjamin, 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=10' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

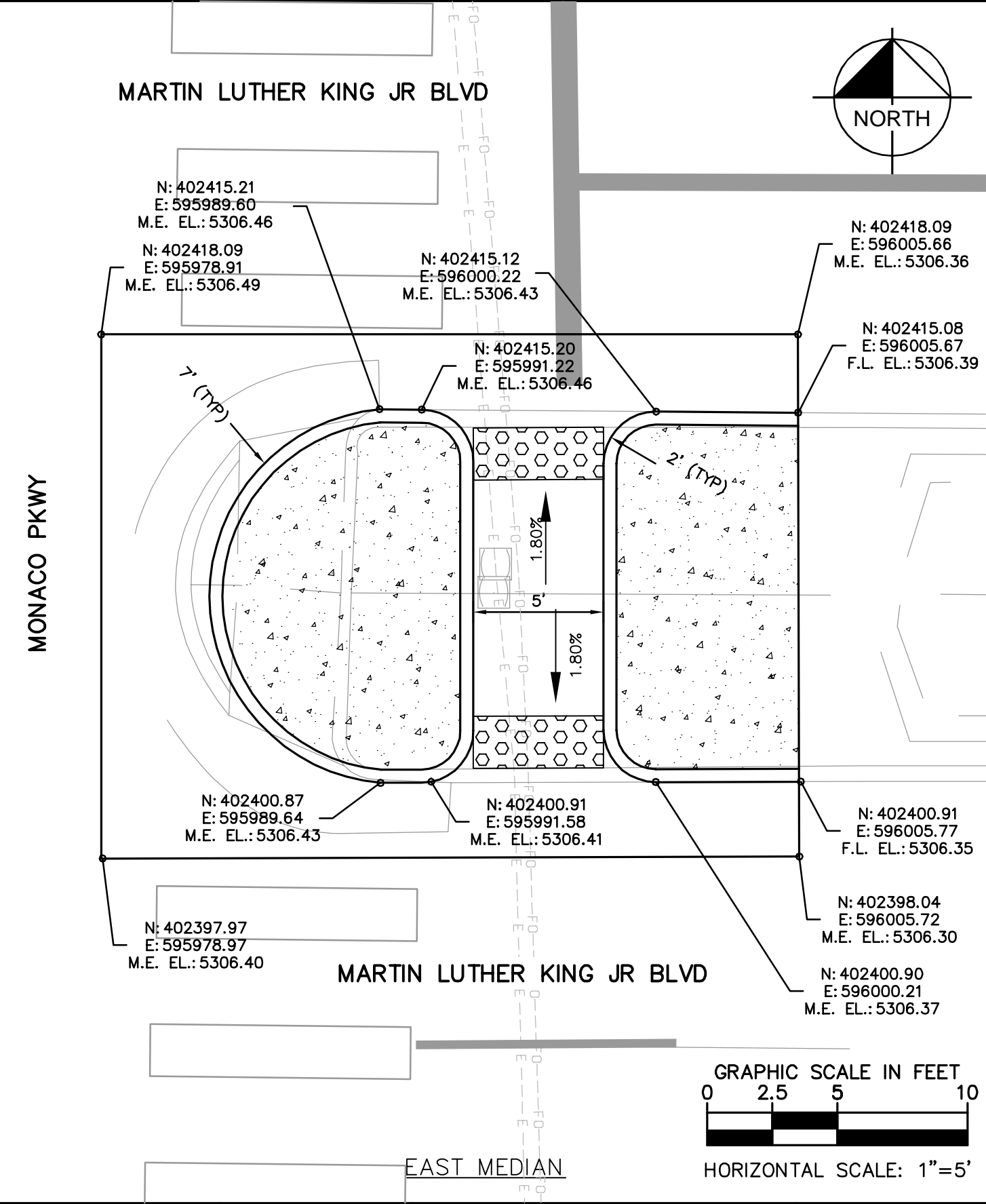
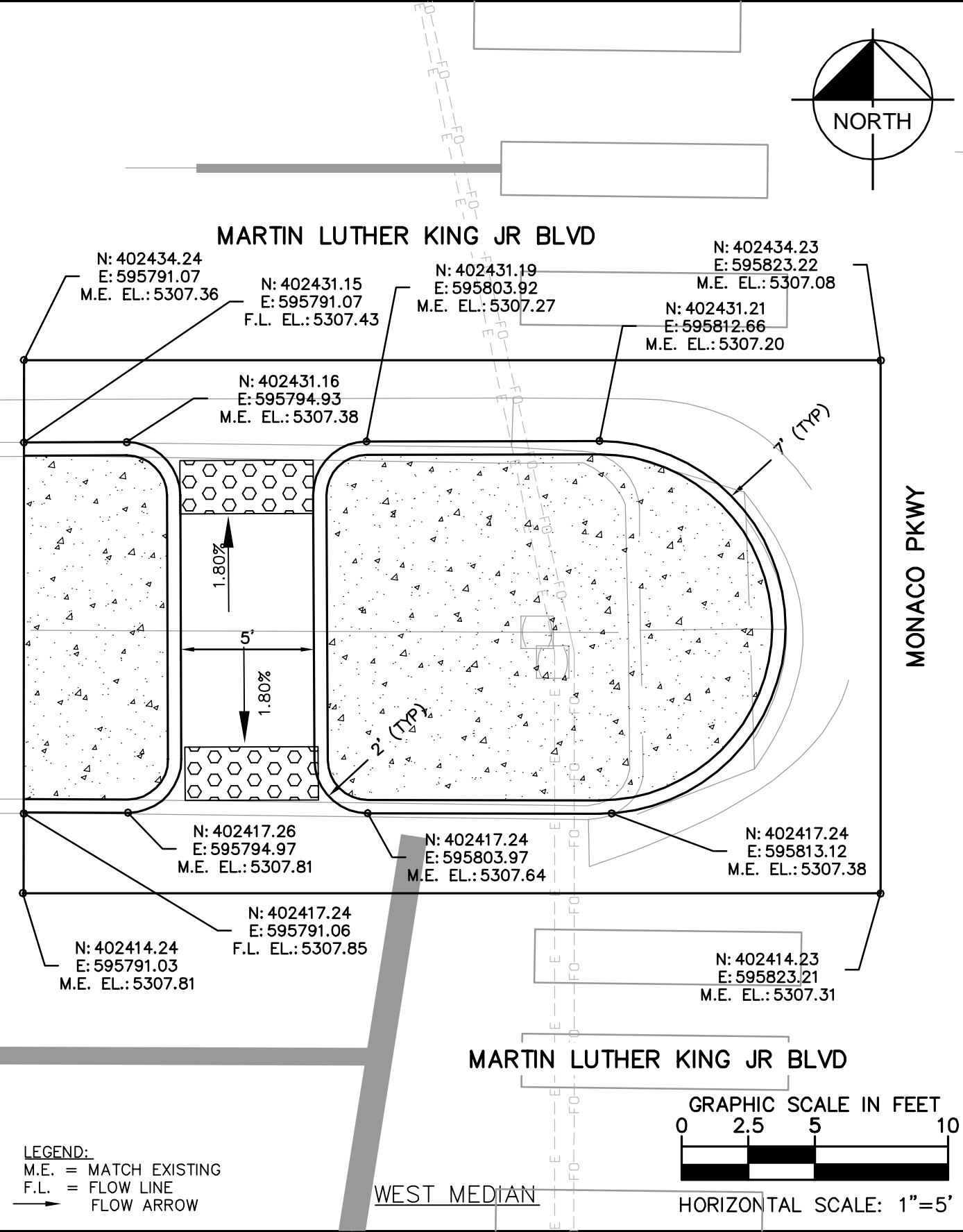
DENVER
 THE MILE HIGH CITY

As Constructed
No Revisions:
Revised:
Void:

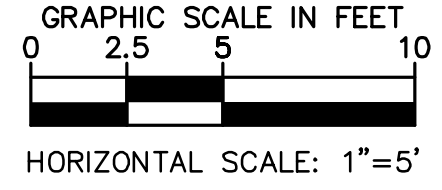
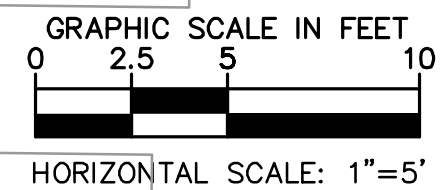
MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS MONACO ST PKWY & MLK JR BLVD (EAST)	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	8 of 13

Project No./Code
PZ03798_425
Sheet Number 22

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



LEGEND:
 M.E. = MATCH EXISTING
 F.L. = FLOW LINE
 → FLOW ARROW



Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=5' Vert. Scale: N/A
Kimley»Horn
KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

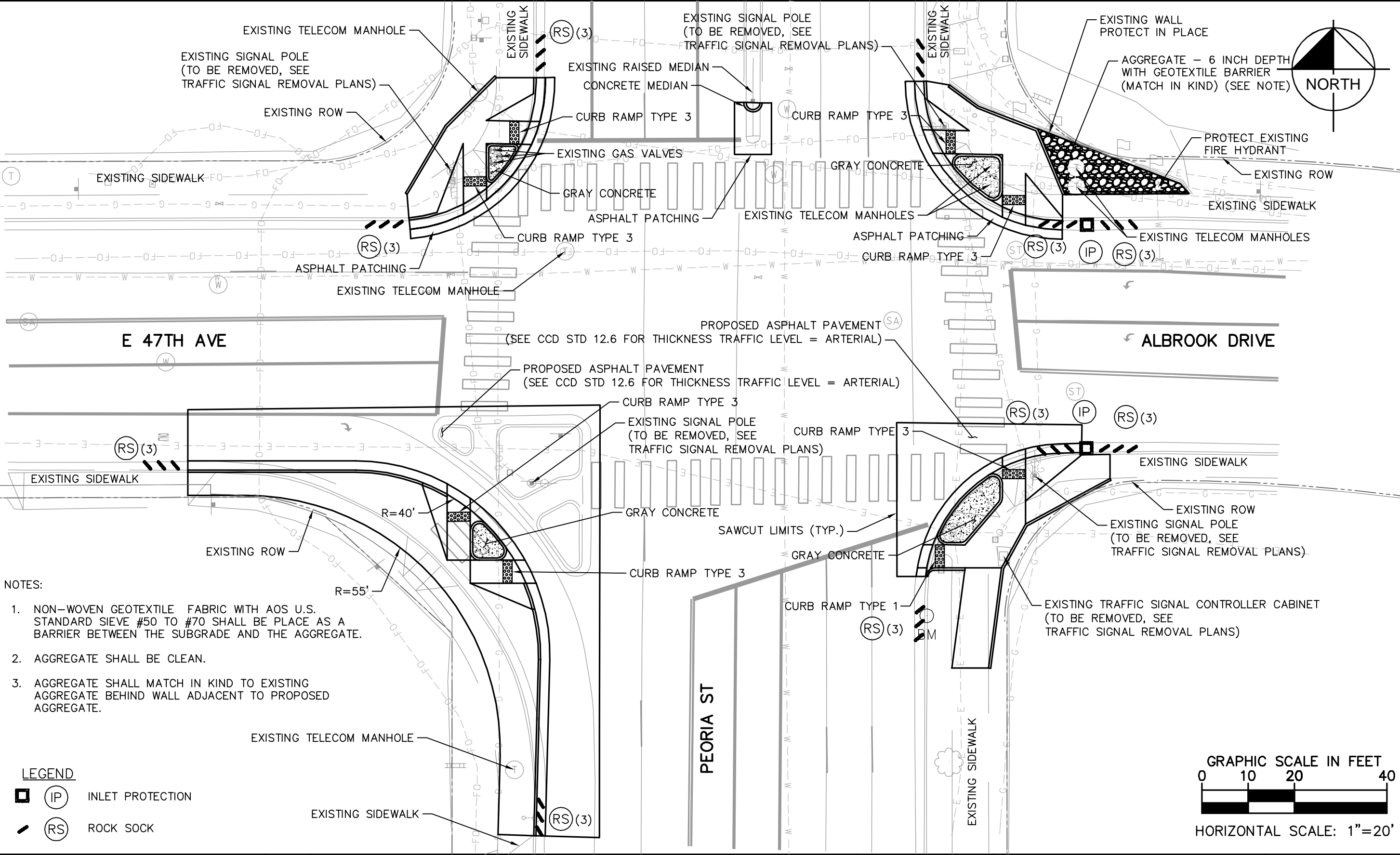
Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed	MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS	
No Revisions:	MONACO ST PKWY & MLK JR BLVD (MEDIANS)	
Revised:	Designer: CEH	
Void:	Detailer: BJD	
	Sheet Subset: GRADING	Subset Sheet: 9 of 13



Project No./Code
 PZ03798_425
 Sheet Number 23

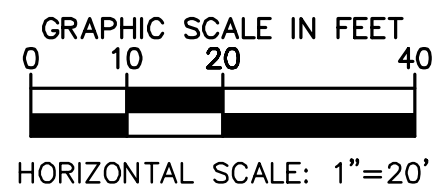
K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



- NOTES:**
- NON-WOVEN GEOTEXTILE FABRIC WITH AOS U.S. STANDARD SIEVE #50 TO #70 SHALL BE PLACE AS A BARRIER BETWEEN THE SUBGRADE AND THE AGGREGATE.
 - AGGREGATE SHALL BE CLEAN.
 - AGGREGATE SHALL MATCH IN KIND TO EXISTING AGGREGATE BEHIND WALL ADJACENT TO PROPOSED AGGREGATE.





LEGEND

	IP	INLET PROTECTION
	RS	ROCK SOCK




Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
		
		
		
		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

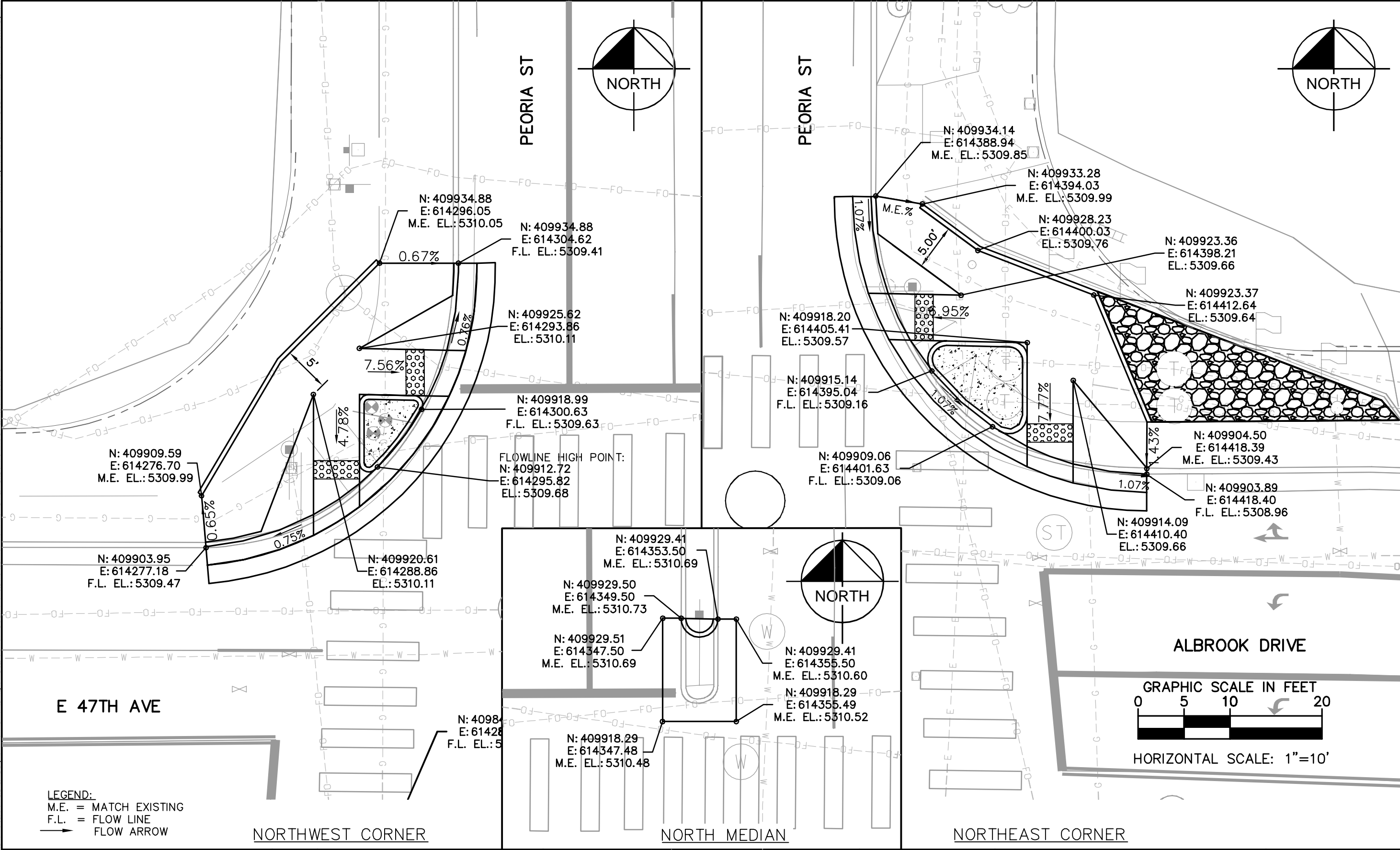


As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS E 47TH AVE & PEORIA ST	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	10 of 13


Project No./Code
PZ03798_425
Sheet Number
24

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=10' Vert. Scale: N/A
Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		


DENVER
 THE MILE HIGH CITY
 DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

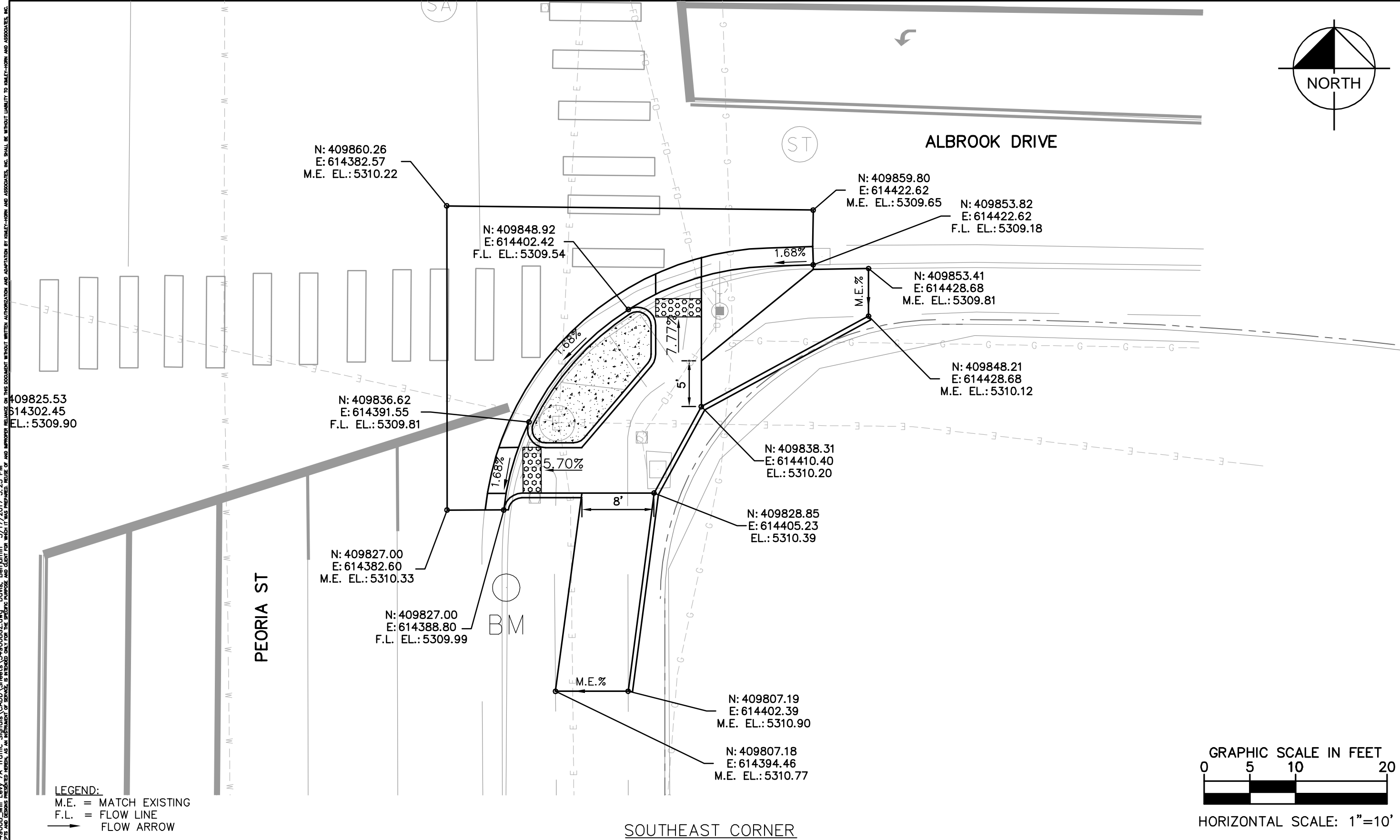
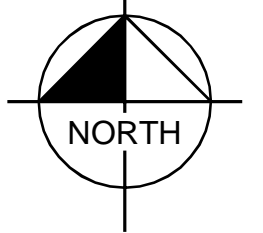
As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS
 CIVIL PLAN AND DETAILS
 E 47TH AVE & PEORIA ST (NORTH)

Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	11 of 13

Project No./Code	PZ03798_425
Sheet Number	25

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



SOUTHEAST CORNER

Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: 1"=10' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

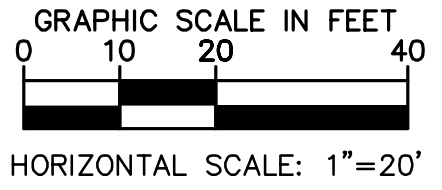
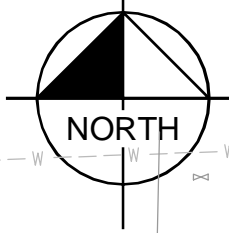
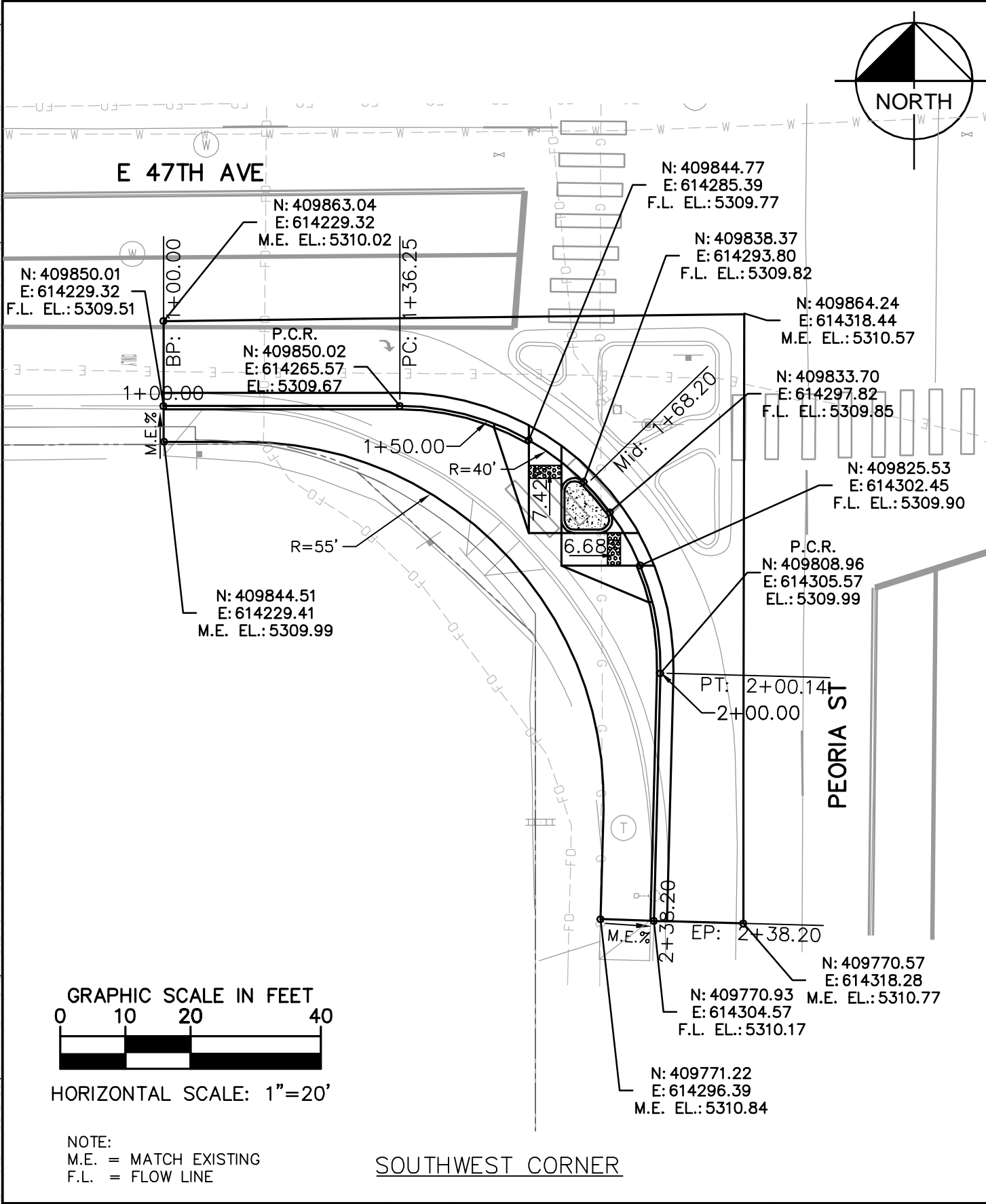
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS CIVIL PLAN AND DETAILS E 47TH AVE & PEORIA ST (SOUTH EAST)	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	GRADING
Subset Sheet:	12 of 13

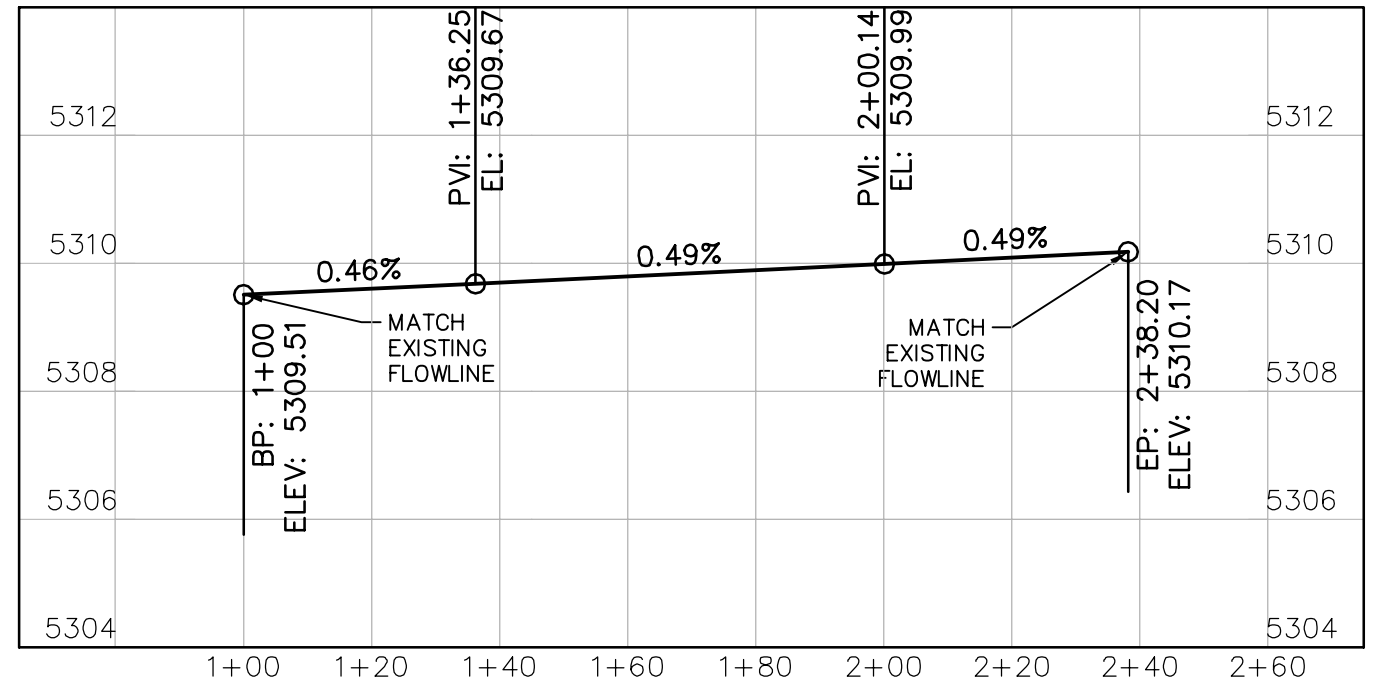
Project No./Code
PZ03798_425
Sheet Number 26

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008GZ.dwg Davis, Benjamin 3/17/2017 5:23 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

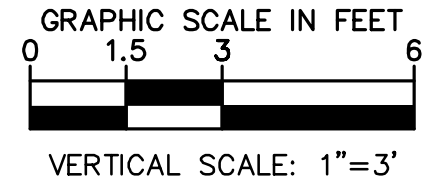
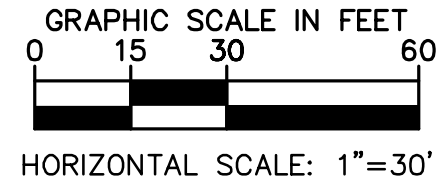


NOTE:
 M.E. = MATCH EXISTING
 F.L. = FLOW LINE

SOUTHWEST CORNER



47TH AND PEORIA SOUTHWEST CORNER FLOW LINE PROFILE



Print Date: March 17, 2017
 Drawing File Name: 349008GZ.DWG
 Horiz. Scale: VARIES Vert. Scale: 1"=3'

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS
 CIVIL PLAN AND DETAILS
 E 47TH AVE & PEORIA ST SW (DTLS & PROF)

Designer: CEH
 Detailer: BJD

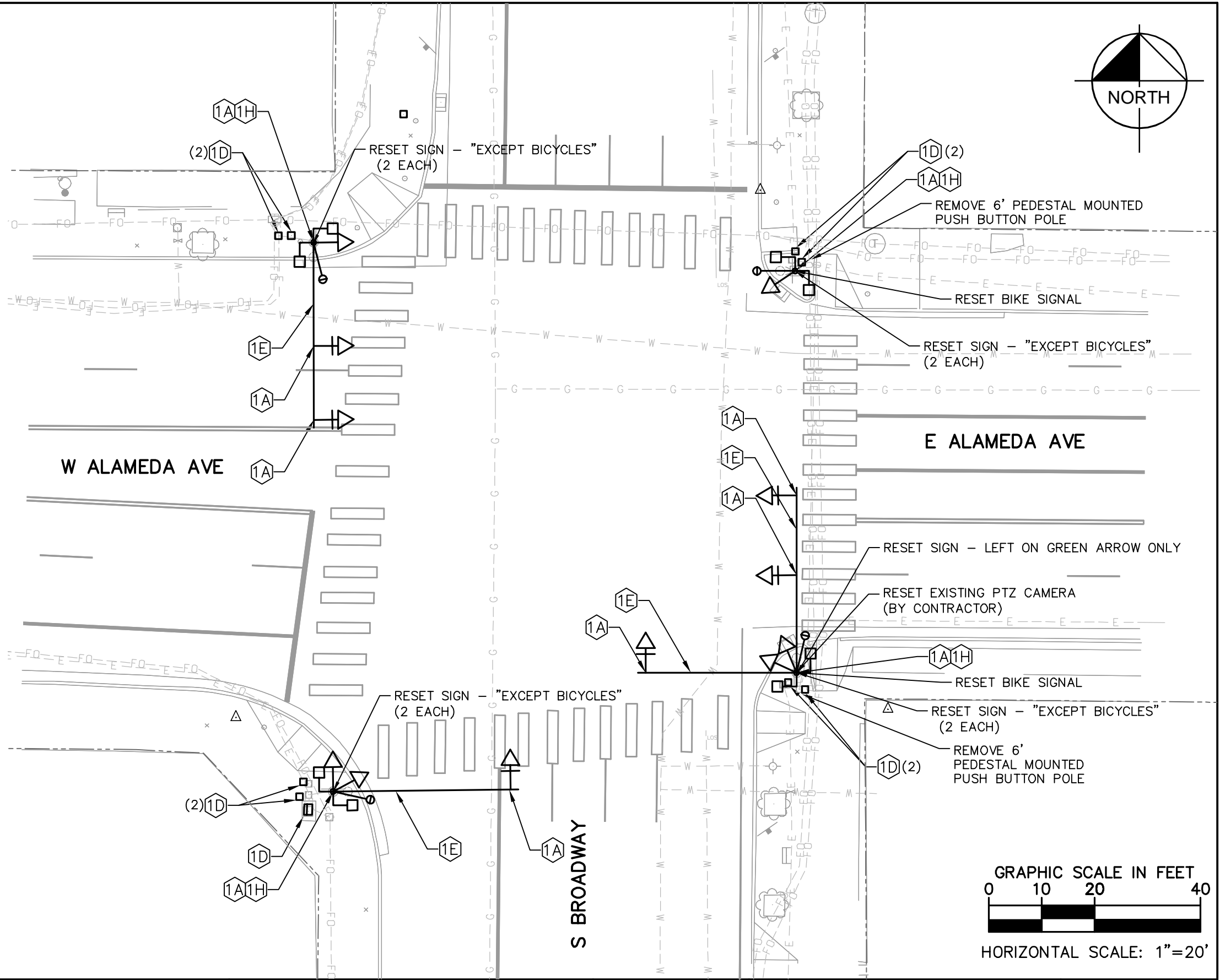
Sheet Subset: GRADING Subset Sheet: 13 of 13

Project No./Code
 PZ03798_425

Sheet Number 27

REMOVAL NOTES:

1. EXISTING CABINET BASE SHALL BE REMOVED. EXISTING TRAFFIC SIGNAL POLE AND PEDESTAL FOUNDATIONS SHALL BE REMOVED BY THE CONTRACTOR TO A MINIMUM OF 1' BELOW FINISH GRADE.
2. EXISTING TRAFFIC SIGNAL CONDUIT SHALL BE ABANDONED. EXISTING COMMUNICATIONS CONDUIT AND PULL BOXES SHALL BE MAINTAINED AS APPLICABLE.
3. ALL REMOVED EQUIPMENT DESIGNATED FOR SALVAGE, NOT INCLUDING LUMINAIRES, LUMINAIRE ARMS AND TRAFFIC SIGNAL-LIGHT POLES SHALL BE DELIVERED TO DENVER TRAFFIC OPERATIONS (5440 ROSLYN STREET, DENVER).
4. LUMINAIRES, LUMINAIRE ARMS, AND TRAFFIC SIGNAL-LIGHT POLES SHALL BE REMOVED BY XCEL ENERGY. CONTRACTOR SHALL COORDINATE AS MAY BE REQUIRED WITH XCEL ENERGY TO SCHEDULE ACTIVITIES AND FACILITATE TIMELY REMOVAL OF POLES.
5. REMOVAL OF TRAFFIC SIGNAL EQUIPMENT SHALL BE PAID ON A PER INTERSECTION BASIS (EACH) AND SHALL INCLUDE PHYSICAL DISCONNECTION, DISASSEMBLY AND REMOVAL OF THE INCLUDED ITEMS: DISPOSAL OF NON-SALVAGEABLE MATERIAL INCLUDING REMOVED FOUNDATION; BACK FILL OF EXCAVATED REMOVAL AREAS; AND SURFACE RESTORATION OF AREAS DISTURBED BY THE REMOVAL ACTIVITIES. DELIVERY OF SALVAGED ITEMS TO THE CITY MAINTENANCE YARD SHALL BE INCLUDED IN THE LUMP SUM PRICE AND WILL NOT BE MEASURED AND PAID FOR SEPARATELY.
6. CONTRACTOR SHALL RESET EQUIPMENT (OPTICOM, EMERGENCY VEHICLE DETECTOR) FROM EXISTING TO NEW POLE AND PROVIDE ALL REQUIRED WIRING AND MOUNTING HARDWARE TO ACCOMPLISH RESTORED OPERATION. CCD WILL RESET THE PTZ CAMERA.



K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS-EXISTING.dwg, Davis, Benjamin, 3/17/2017 5:24 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE. IT IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. NO OTHER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

Print Date: March 17, 2017
 Drawing File Name: 349008TS-EXISTING.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80227
 (303) 228-2300

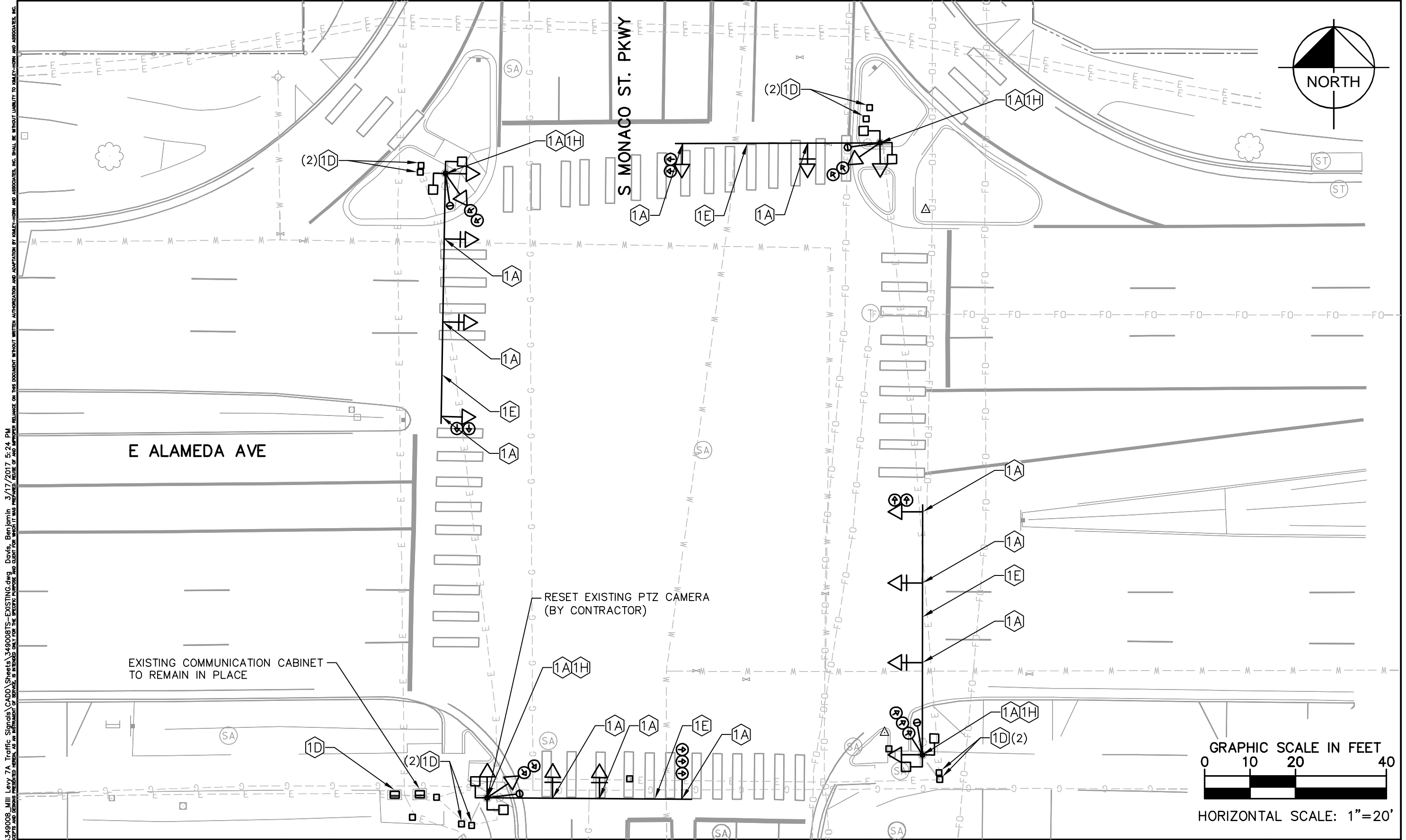
Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC SIGNAL PLAN BROADWAY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	TRAFFIC
Subset Sheet:	1 of 8

Project No./Code	PZ03798_425
Sheet Number	28



K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS-EXISTING.dwg Davis, Benjamin 3/17/2017 5:24 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

Print Date: March 17, 2017
 Drawing File Name: 349008TS-EXISTING.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A
Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

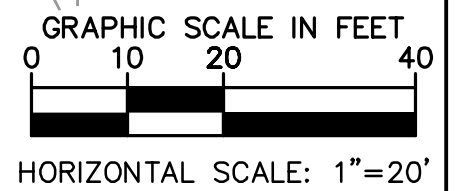
Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

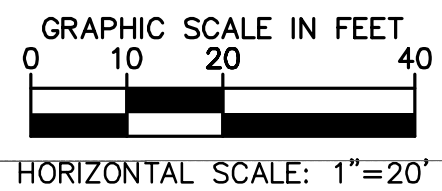
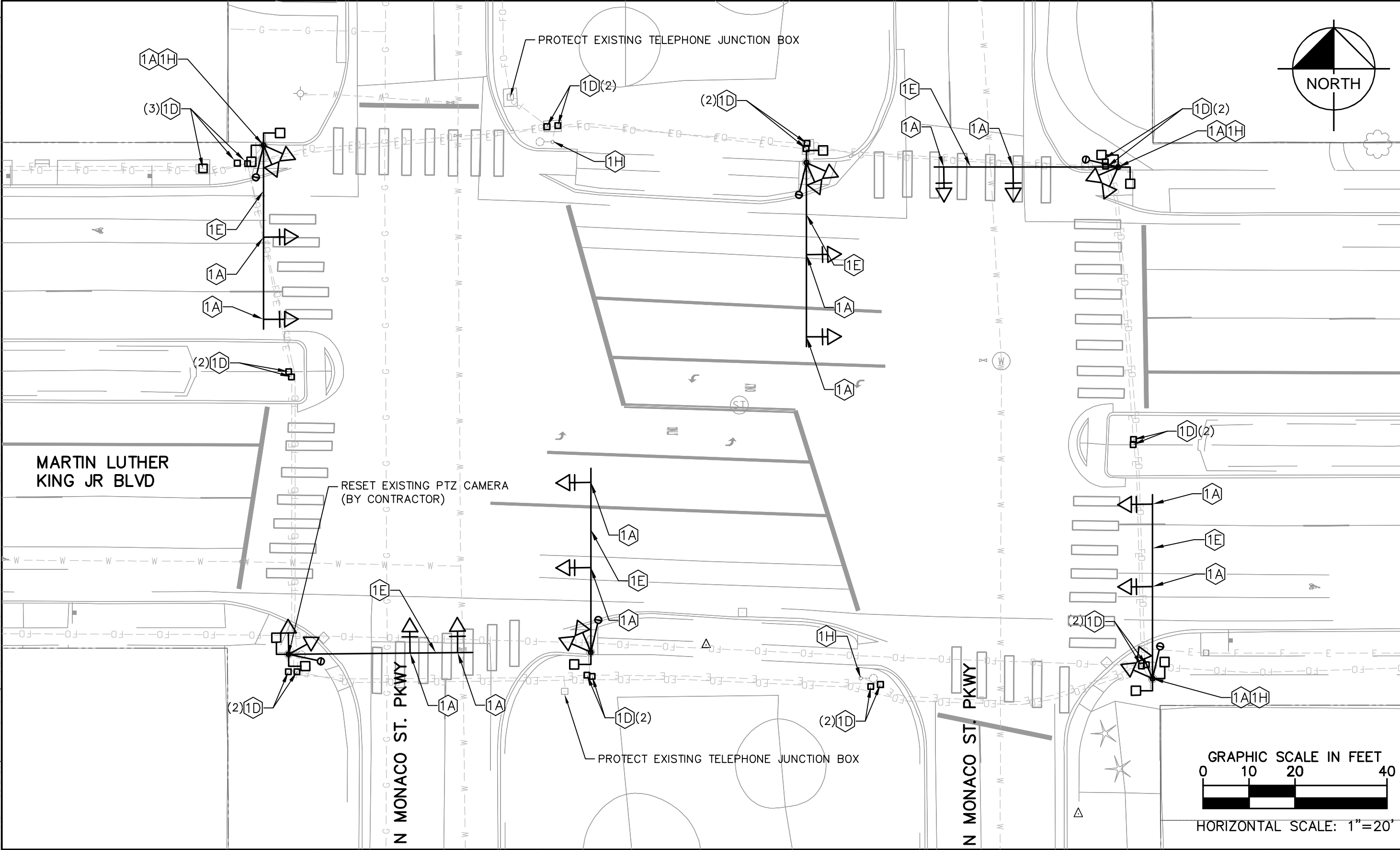
As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS	
TRAFFIC SIGNAL PLAN	
MONACO ST PKWY & ALAMEDA AVE	
Designer: CEH	
Detailer: BJD	
Sheet Subset: TRAFFIC	Subset Sheet: 2 of 8

Project No./Code
PZ03798_425
Sheet Number 29



K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS-EXISTING.dwg Davis, Benjamin 3/17/2017 5:24 PM
 This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017
 Drawing File Name: 349008TS-EXISTING.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS

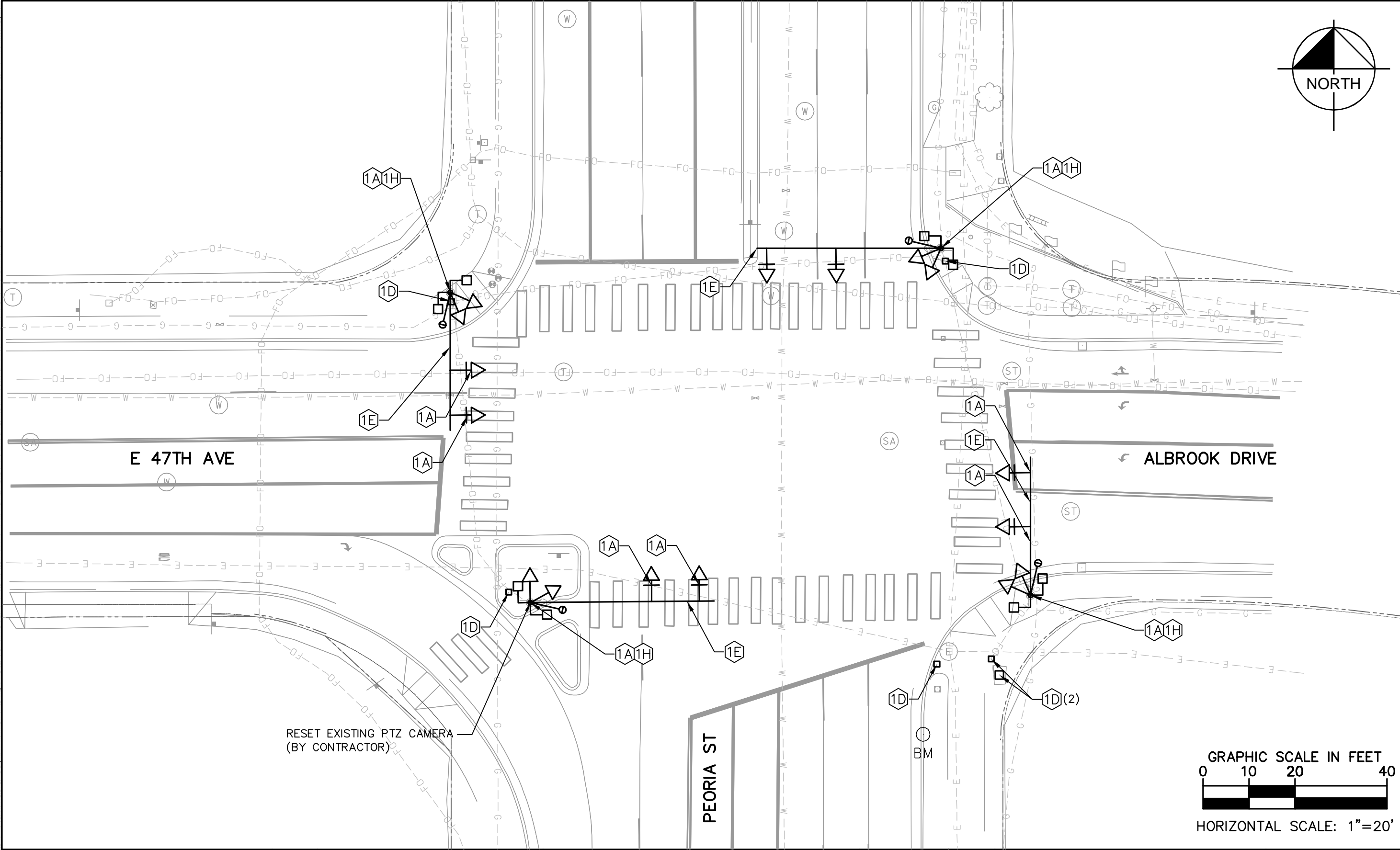
201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC SIGNAL PLAN MONACO ST PKWY & MLK JR BLVD	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	TRAFFIC
Subset Sheet:	3 of 8

Project No./Code	PZ03798_425
Sheet Number	30

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS-EXISTING.dwg Davis, Benjamin 3/17/2017 5:24 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED, AND NO OTHER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Print Date: March 17, 2017
 Drawing File Name: 349008TS-EXISTING.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC SIGNAL PLAN E 47TH AVE & PEORIA ST	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	TRAFFIC
Subset Sheet:	4 of 8

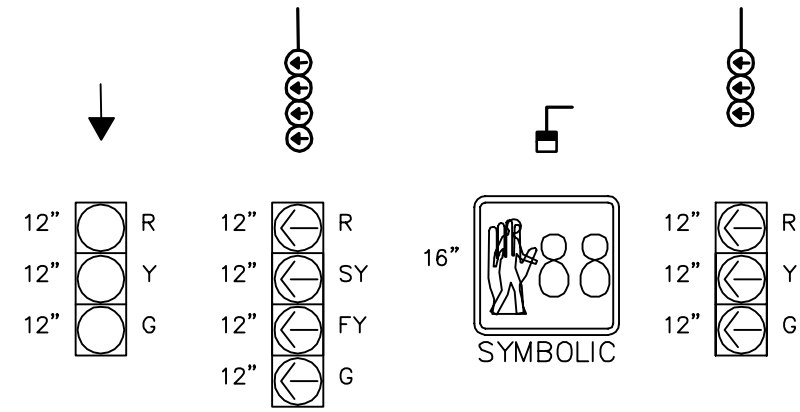
Project No./Code
PZ03798_425
Sheet Number 31



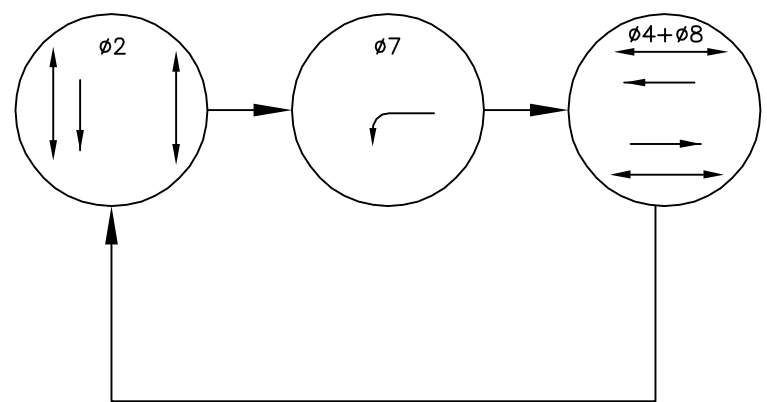
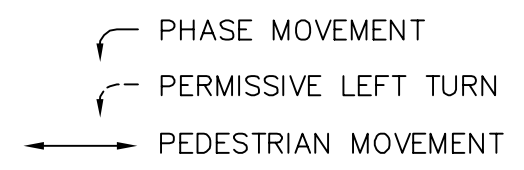
KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS.dwg, Davis, Benjamin, 3/17/2017 5:24 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

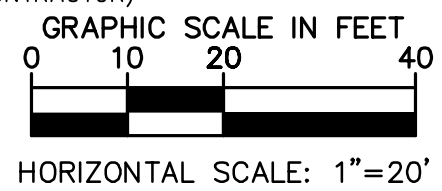
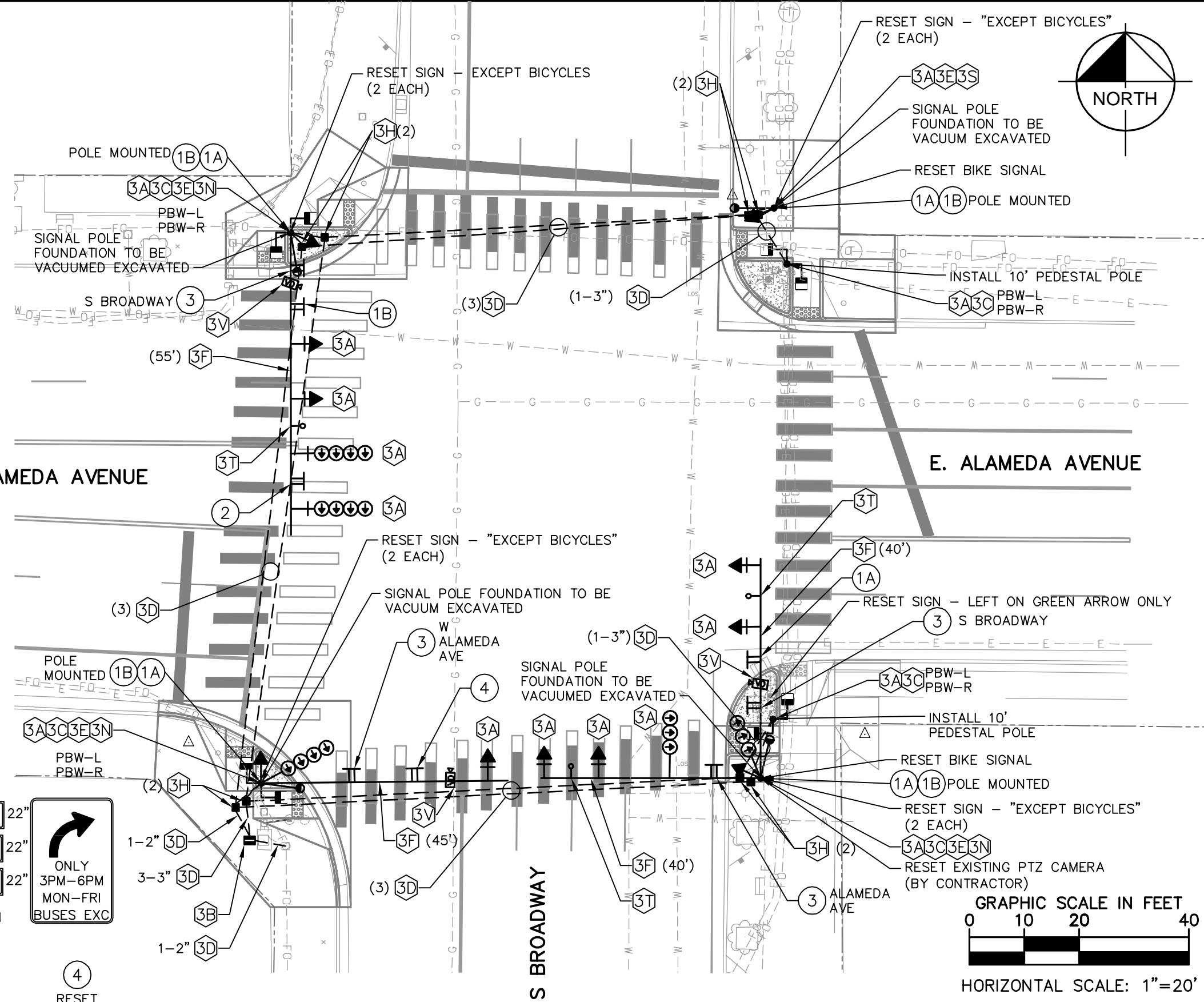
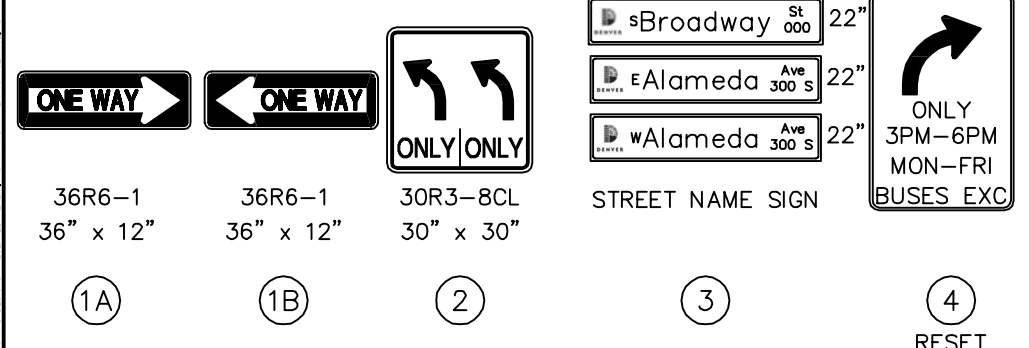
PROPOSED SIGNAL HEADS



**PROPOSED PHASE DIAGRAM
8 PHASE CONTROLLER**



OVERHEAD SIGN LEGEND



Print Date: March 17, 2017
 Drawing File Name: 349008TS.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80227
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

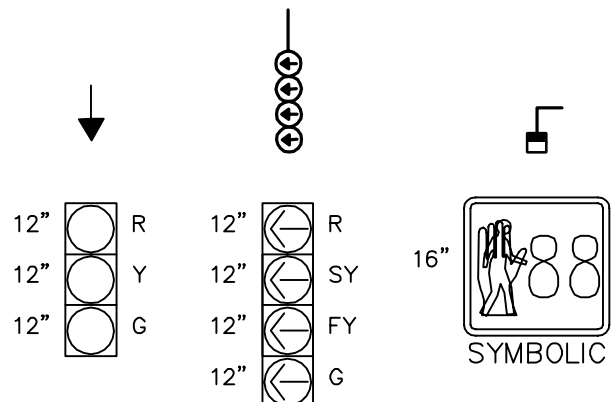
As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC SIGNAL PLAN BROADWAY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	TRAFFIC
Subset Sheet:	5 of 8

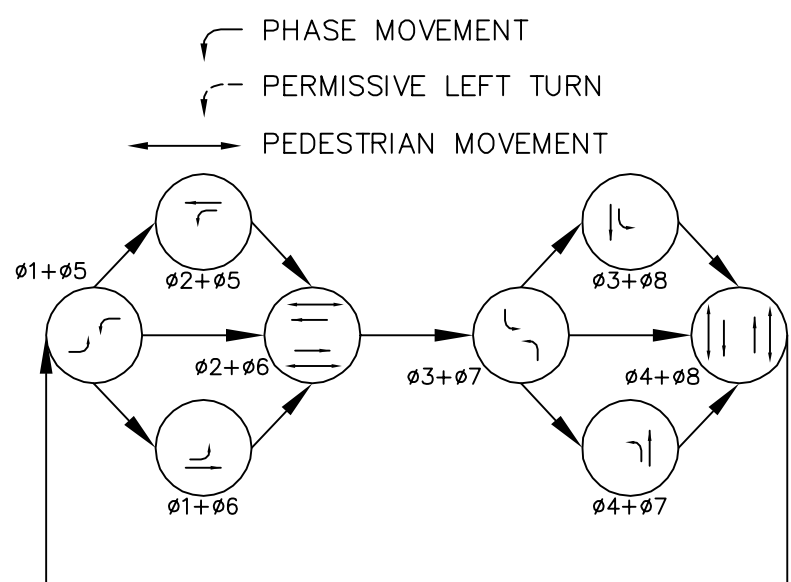
Project No./Code	PZ03798_425
Sheet Number	32

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS.dwg Davis, Benjamin 3/17/2017 5:24 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. NO OTHER REUSE OR ADAPTATION OF THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

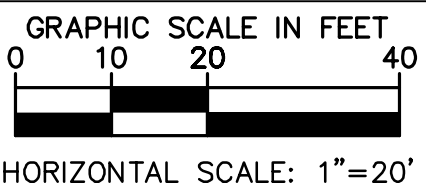
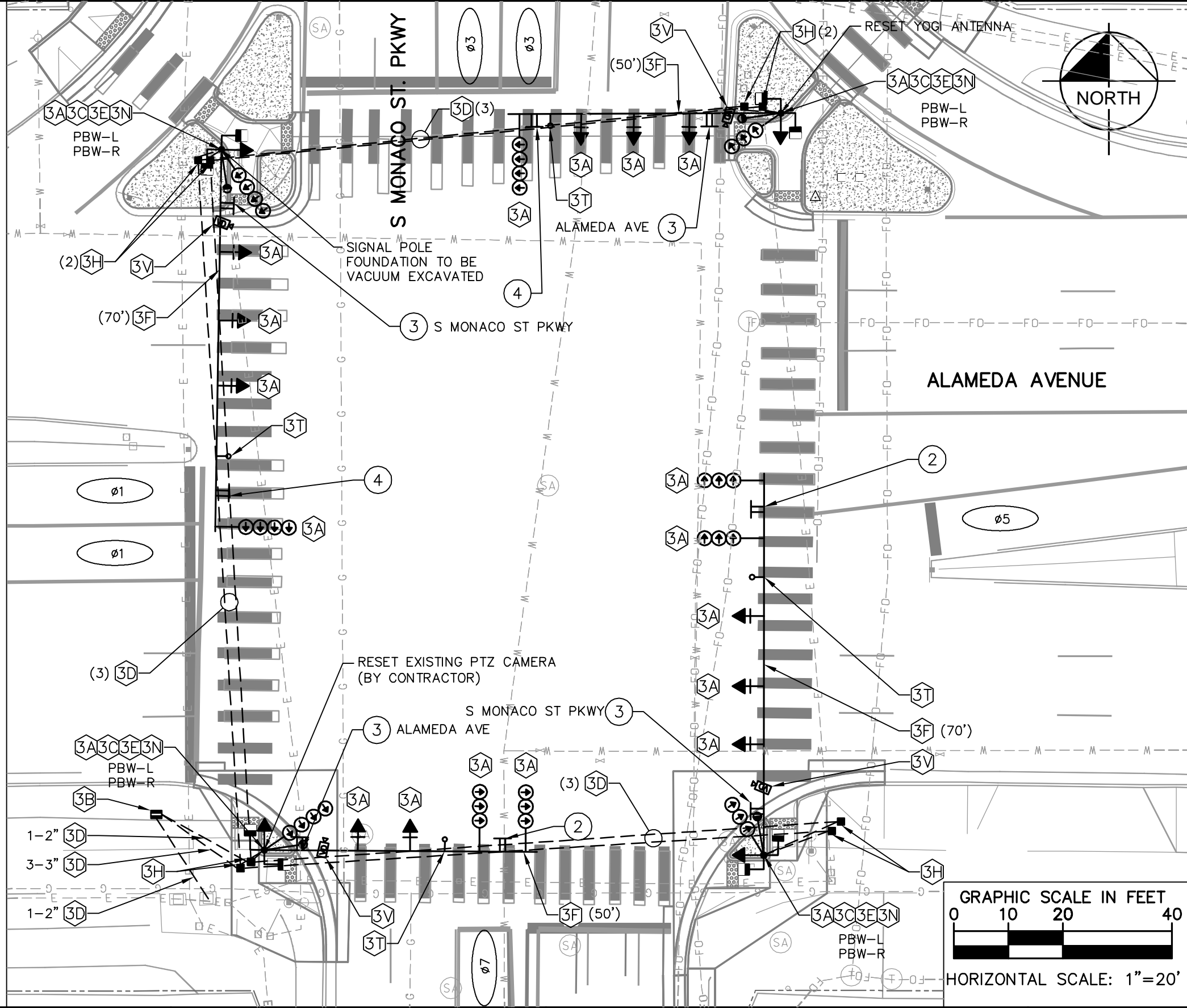
PROPOSED SIGNAL HEADS



PROPOSED PHASE DIAGRAM
8 PHASE CONTROLLER



OVERHEAD SIGN LEGEND



Print Date: March 17, 2017
 Drawing File Name: 349008TS.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

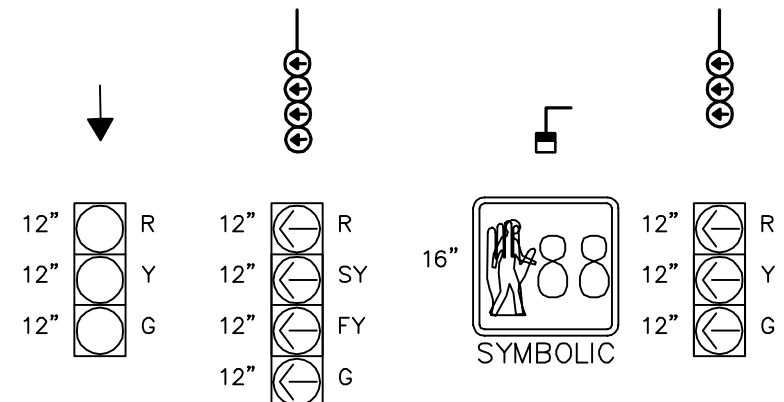
As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC SIGNAL PLAN MONACO ST PKWY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	TRAFFIC
Subset Sheet:	6 of 8

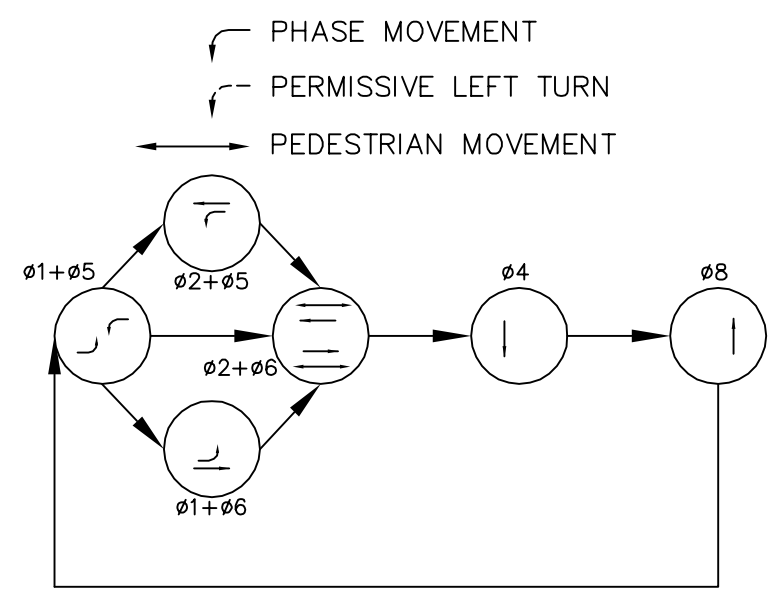
Project No./Code
PZ03798_425
Sheet Number 33

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS.dwg, Davis, Benjamin, 3/17/2017 5:25 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

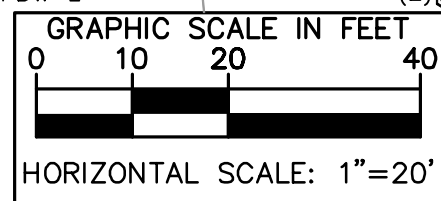
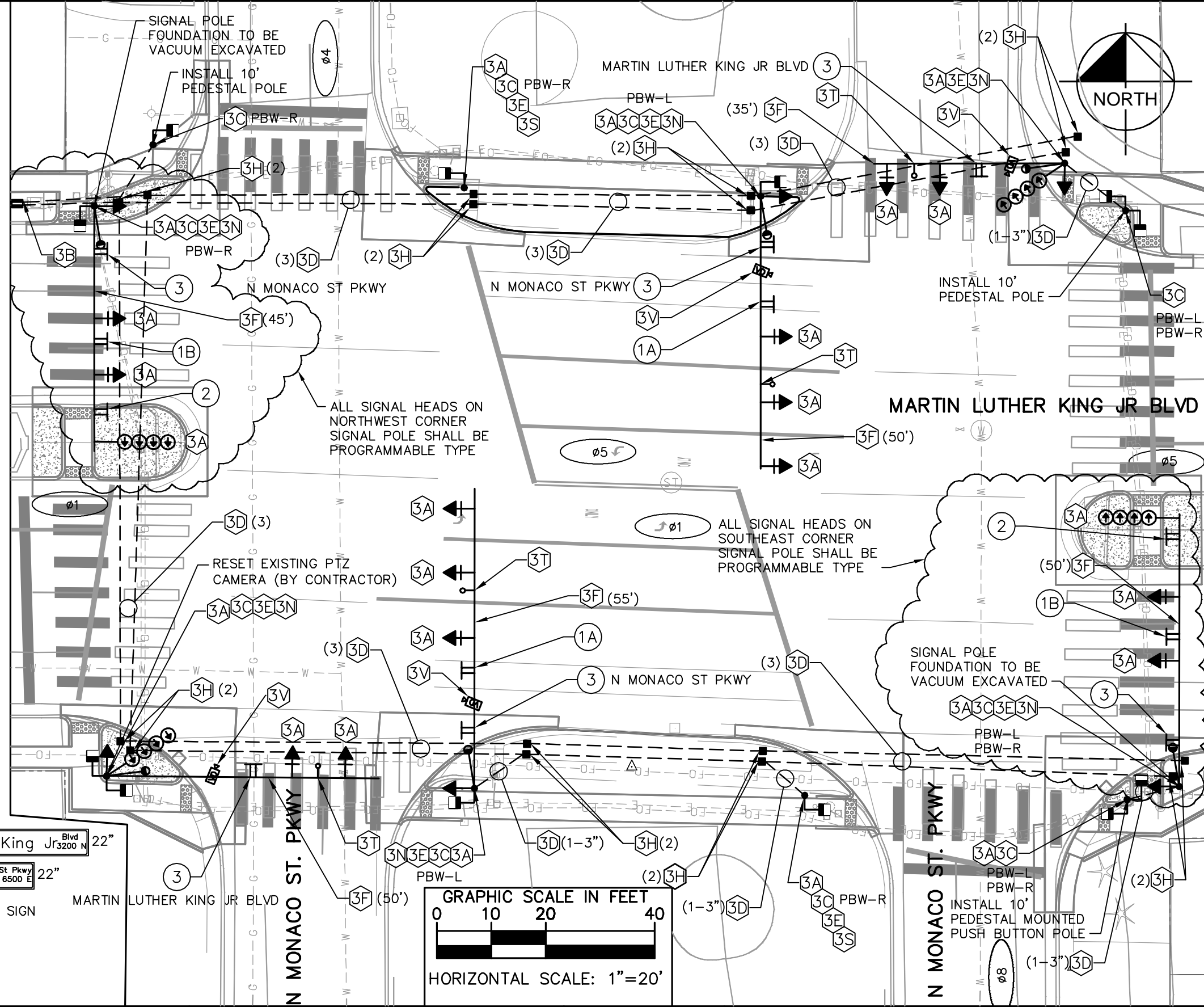
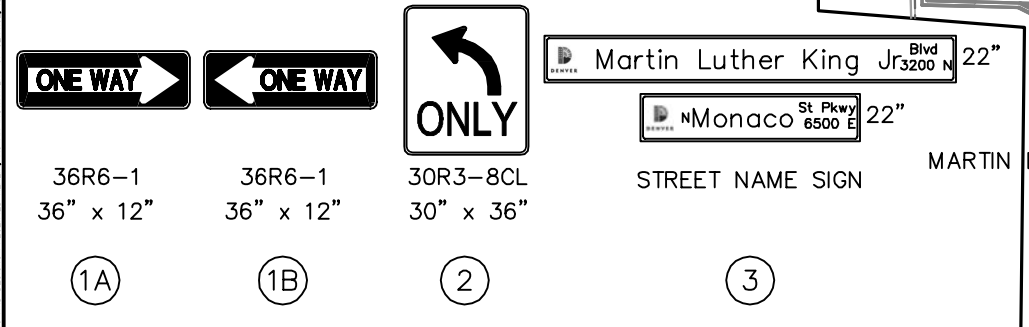
PROPOSED SIGNAL HEADS



**PROPOSED PHASE DIAGRAM
8 PHASE CONTROLLER**



OVERHEAD SIGN LEGEND



Print Date: March 17, 2017
 Drawing File Name: 349008TS.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A
Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

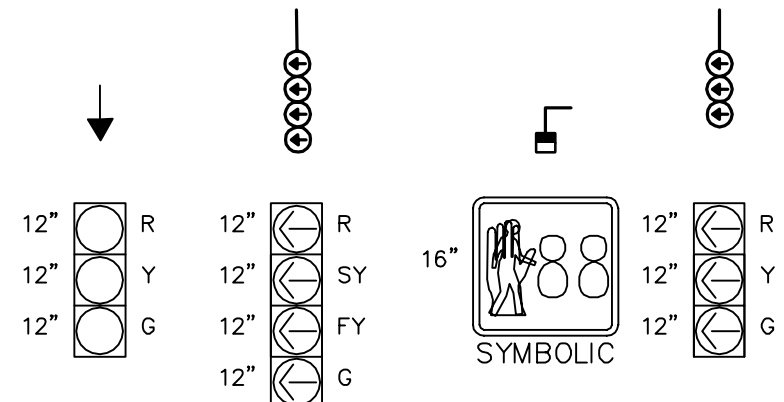
As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC SIGNAL PLAN MONACO ST PKWY & MLK JR BLVD	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	TRAFFIC
Subset Sheet:	7 of 8

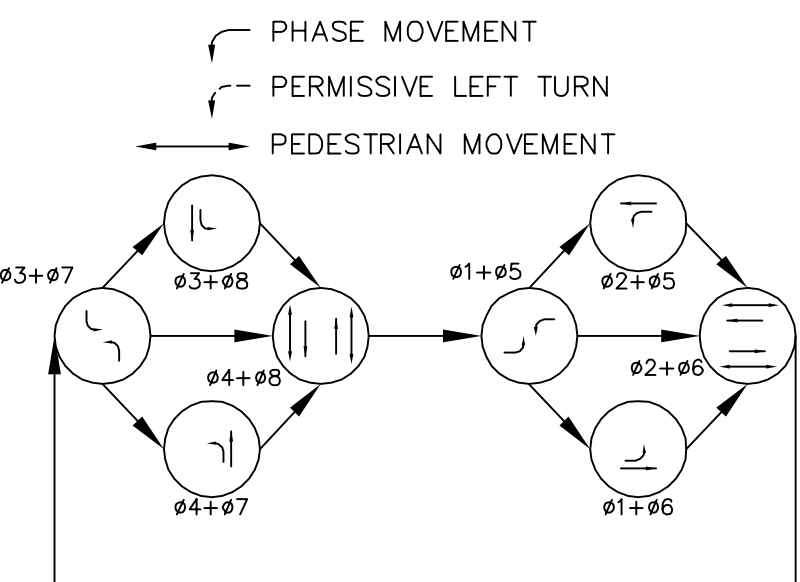
Project No./Code	PZ03798_425
Sheet Number	34

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008TS.dwg Davis, Benjamin 3/17/2017 5:25 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

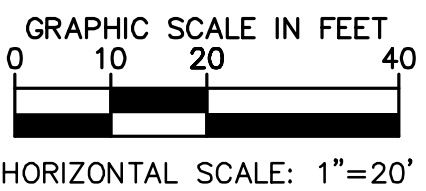
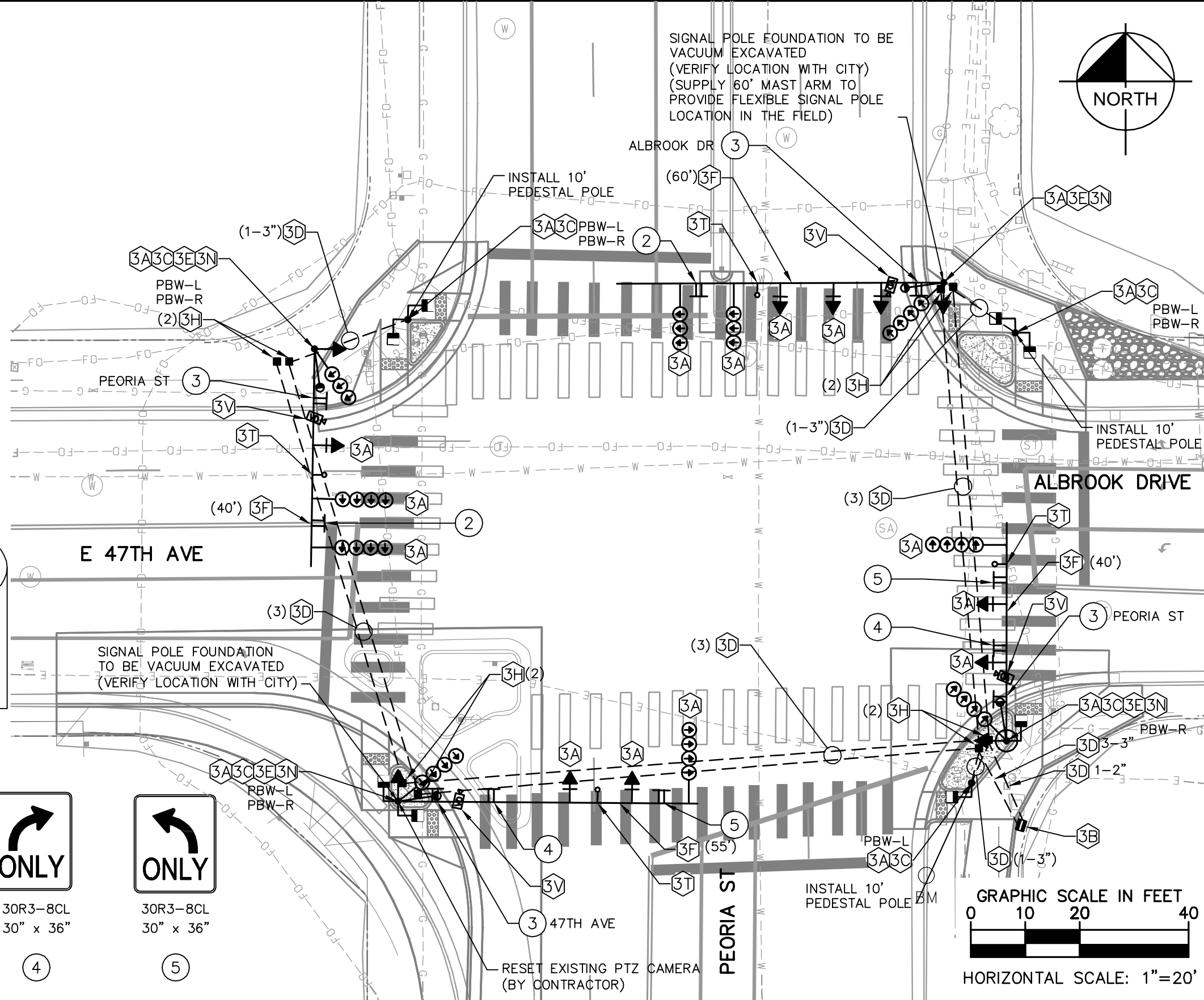
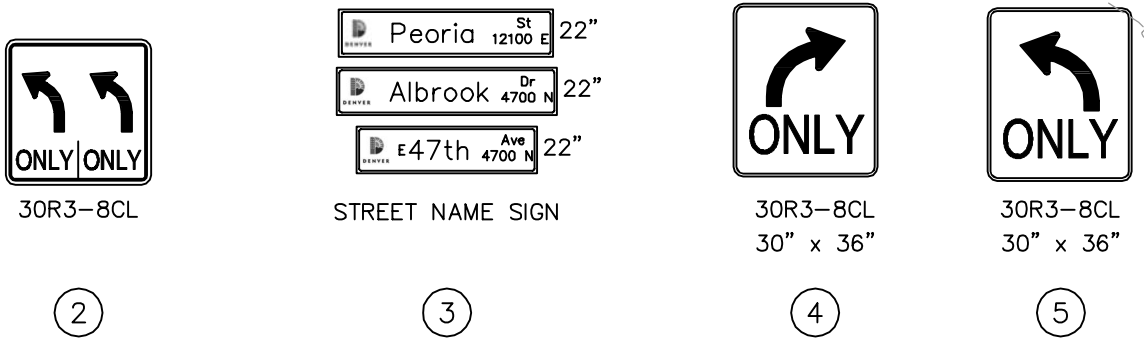
PROPOSED SIGNAL HEADS



**PROPOSED PHASE DIAGRAM
8 PHASE CONTROLLER**



OVERHEAD SIGN LEGEND



Print Date: March 17, 2017
 Drawing File Name: 349008TS.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A
Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

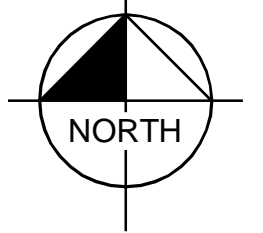
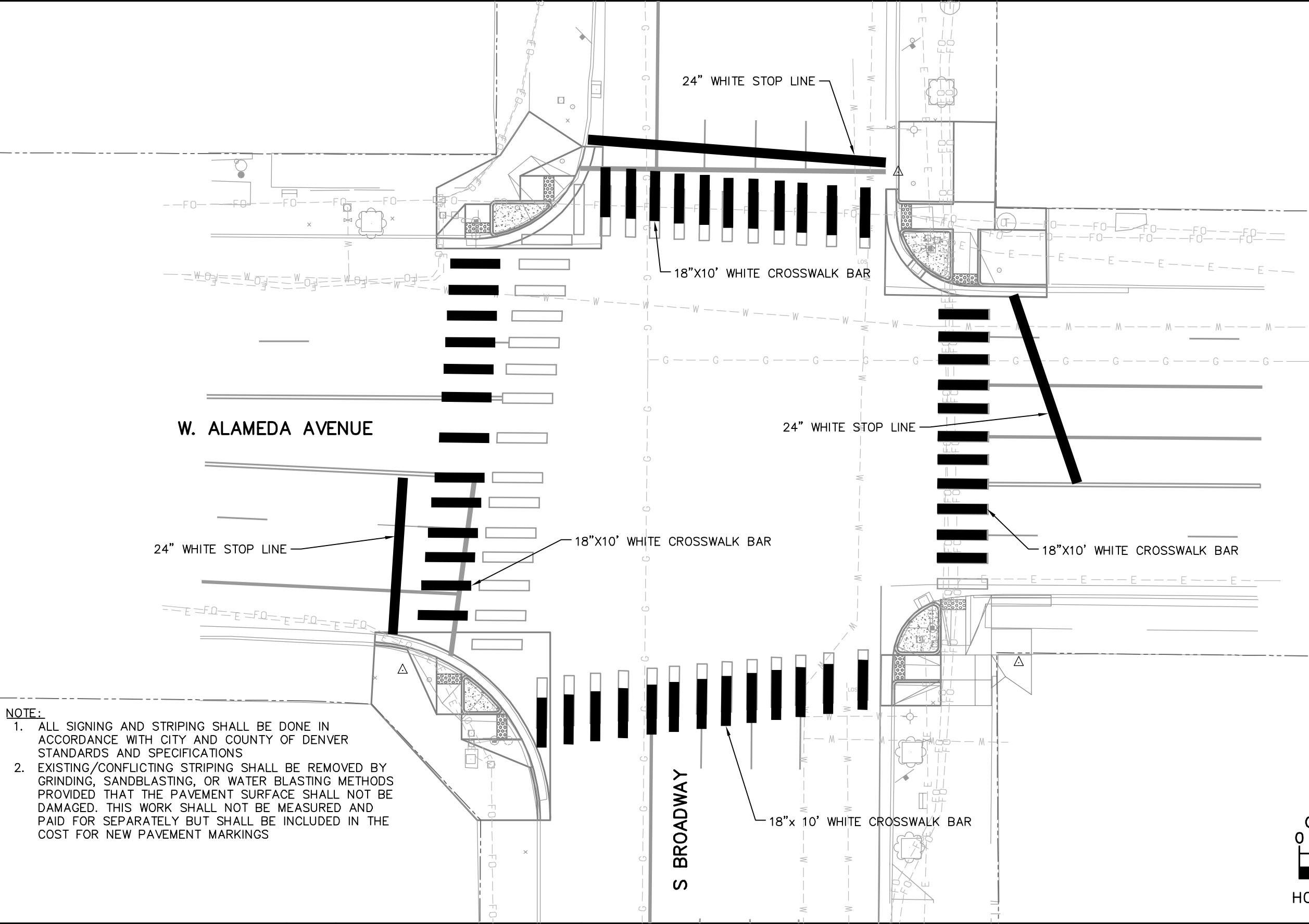
DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed	
No Revisions:	
Revised:	
Void:	

MILL LEVY 7A TRAFFIC SIGNALS TRAFFIC SIGNAL PLAN E 47TH AVE & PEORIA ST	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	TRAFFIC
Subset Sheet:	8 of 8

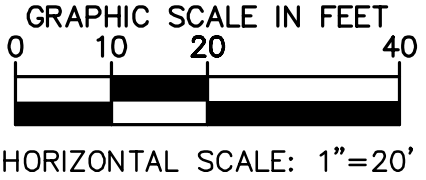
Project No./Code	PZ03798_425
Sheet Number	35

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008SN.dwg Davis, Benjamin 3/17/2017 5:25 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED, REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



NOTE:

1. ALL SIGNING AND STRIPING SHALL BE DONE IN ACCORDANCE WITH CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS
2. EXISTING/CONFLICTING STRIPING SHALL BE REMOVED BY GRINDING, SANDBLASTING, OR WATER BLASTING METHODS PROVIDED THAT THE PAVEMENT SURFACE SHALL NOT BE DAMAGED. THIS WORK SHALL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST FOR NEW PAVEMENT MARKINGS



Print Date: March 17, 2017
 Drawing File Name: 349008SN.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS

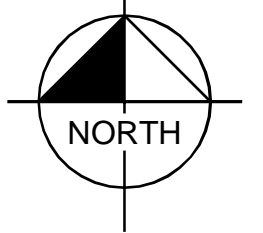
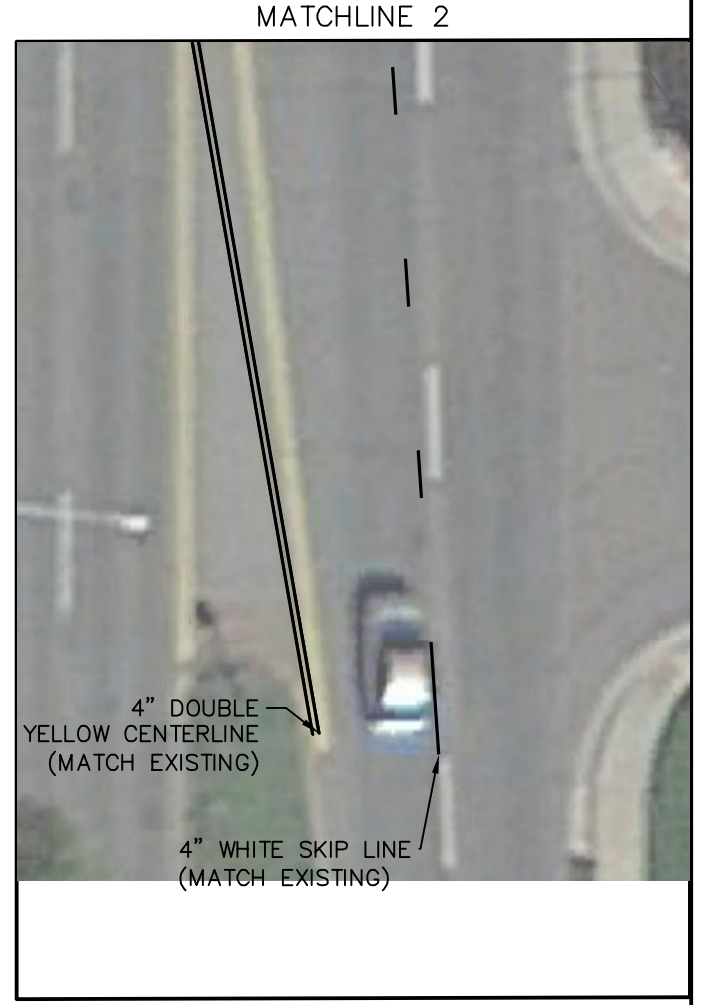
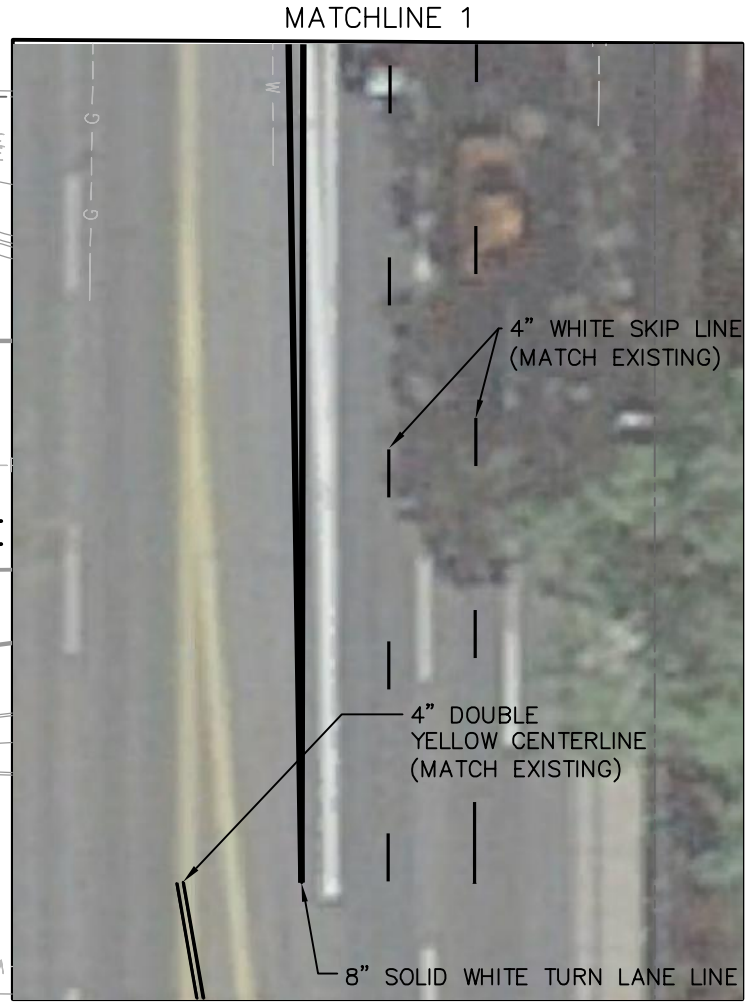
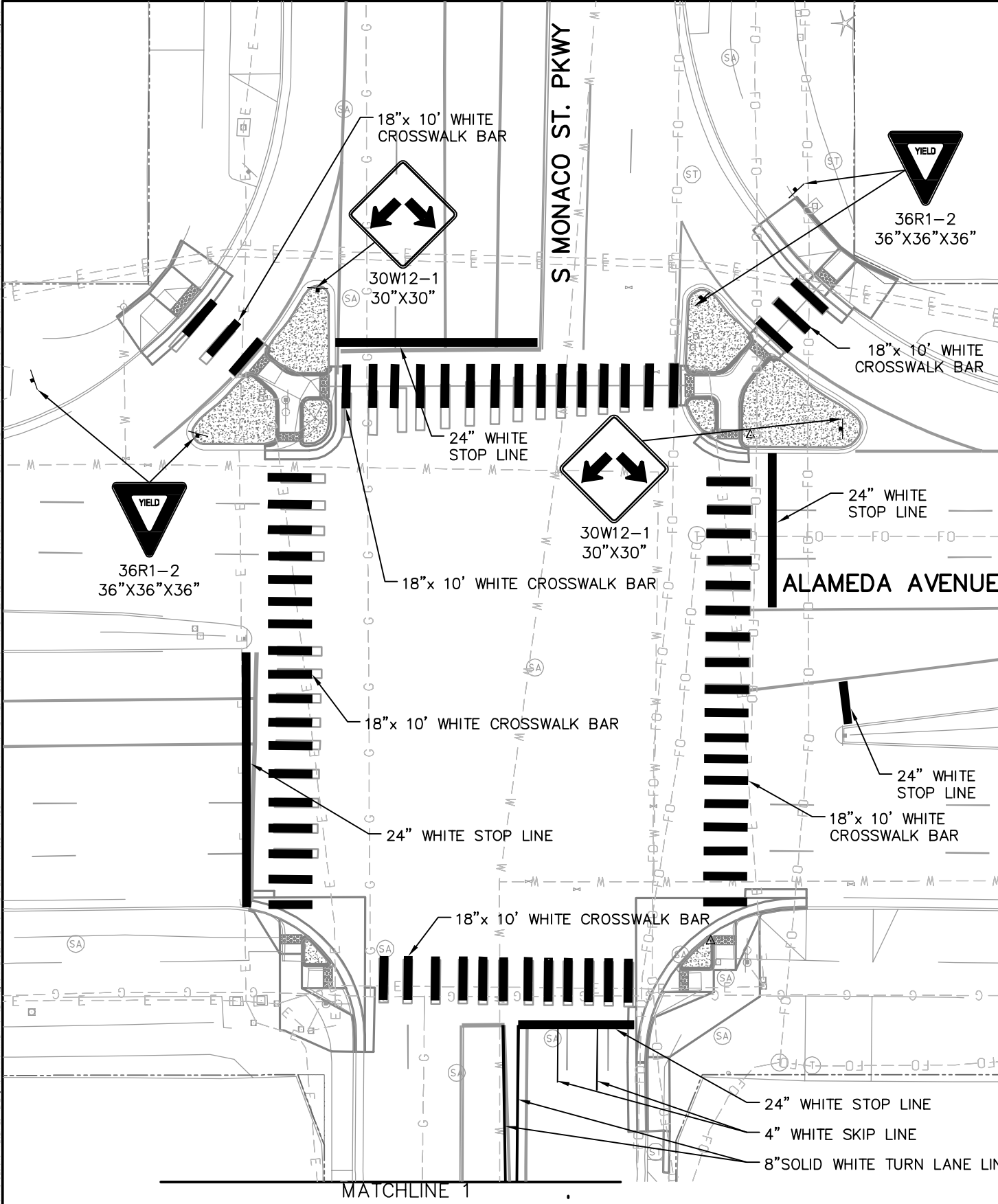
201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed	
No Revisions:	
Revised:	
Void:	

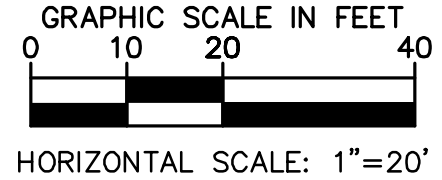
MILL LEVY 7A TRAFFIC SIGNALS SIGNAGE AND STRIPING BROADWAY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	S&S
Subset Sheet:	1 of 4

Project No./Code	PZ03798_425
Sheet Number	36

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008SN.dwg Davis, Benjamin 3/17/2017 5:25 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



- NOTE:**
1. ALL SIGNING AND STRIPING SHALL BE DONE IN ACCORDANCE WITH CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS
 2. EXISTING/CONFLICTING STRIPING SHALL BE REMOVED BY GRINDING, SANDBLASTING, OR WATER BLASTING METHODS PROVIDED THAT THE PAVEMENT SURFACE SHALL NOT BE DAMAGED. THIS WORK SHALL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST FOR NEW PAVEMENT MARKINGS



Print Date: March 17, 2017
 Drawing File Name: 349008SN.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

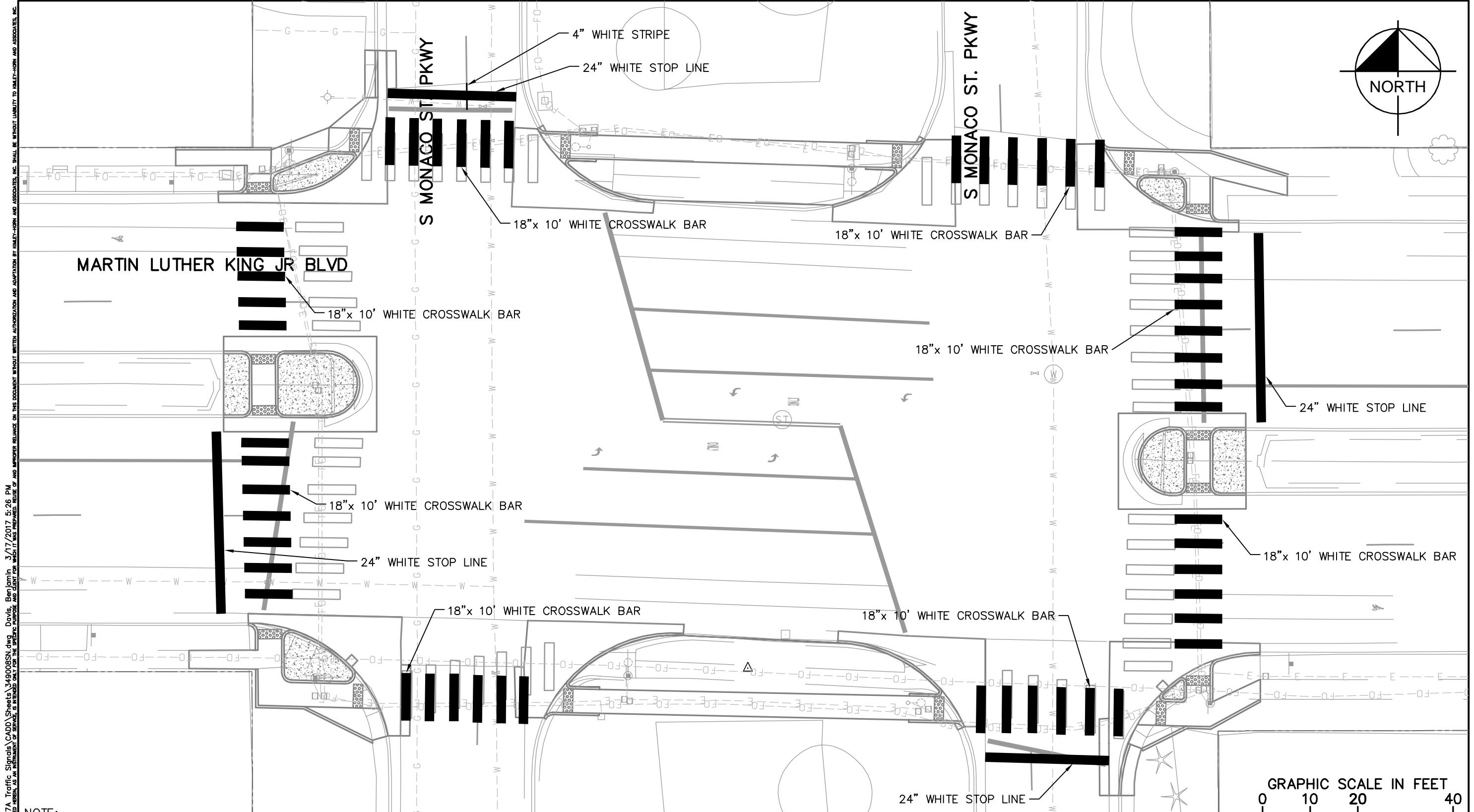
Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS SIGNAGE AND STRIPING MONACO ST PKWY & ALAMEDA AVE	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	S&S
Subset Sheet:	2 of 4

Project No./Code
PZ03798_425
Sheet Number 37



NOTE:

1. ALL SIGNING AND STRIPING SHALL BE DONE IN ACCORDANCE WITH CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS
2. EXISTING/CONFLICTING STRIPING SHALL BE REMOVED BY GRINDING, SANDBLASTING, OR WATER BLASTING METHODS PROVIDED THAT THE PAVEMENT SURFACE SHALL NOT BE DAMAGED. THIS WORK SHALL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST FOR NEW PAVEMENT MARKINGS

Print Date: March 17, 2017
 Drawing File Name: 349008SN.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

Kimley»Horn
 KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80227
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.
(R-X)		
(R-X)		
(R-X)		
(R-X)		

DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

DENVER
 THE MILE HIGH CITY

As Constructed	
No Revisions:	
Revised:	
Void:	

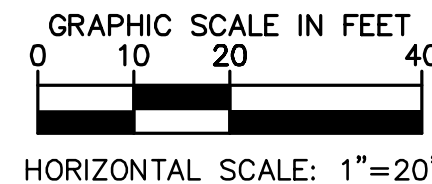
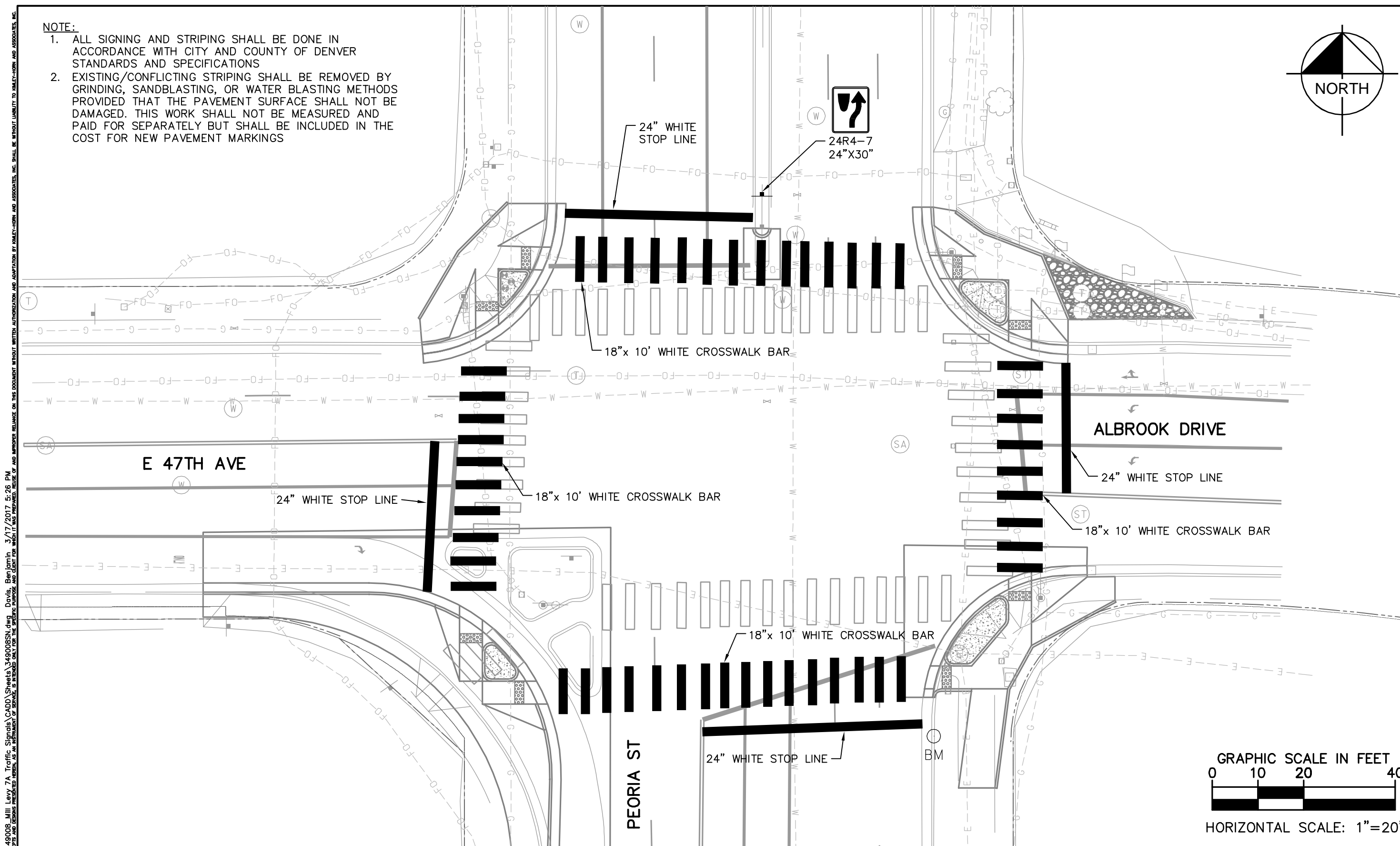
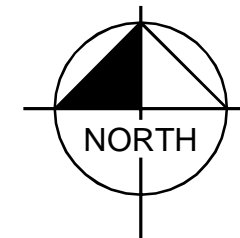
MILL LEVY 7A TRAFFIC SIGNALS SIGNAGE AND STRIPING MONACO ST PKWY & MLK JR BLVD	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	S&S
Subset Sheet:	3 of 4

Project No./Code	PZ03798_425
Sheet Number	38

K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008SN.dwg Davis, Benjamin 3/17/2017 5:26 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THE DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NOTE:

1. ALL SIGNING AND STRIPING SHALL BE DONE IN ACCORDANCE WITH CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS
2. EXISTING/CONFLICTING STRIPING SHALL BE REMOVED BY GRINDING, SANDBLASTING, OR WATER BLASTING METHODS PROVIDED THAT THE PAVEMENT SURFACE SHALL NOT BE DAMAGED. THIS WORK SHALL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST FOR NEW PAVEMENT MARKINGS



K:\DEN_PublicSector\096349008_Mill Levy 7A Traffic Signals\CADD\Sheets\349008SN.dwg Davis, Benjamin 3/17/2017 5:26 PM
 THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED, AND DOES NOT CONSTITUTE A WARRANTY OR ASSURANCE OF ANY KIND. THE USER SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

Print Date: March 17, 2017
 Drawing File Name: 349008SN.DWG
 Horiz. Scale: 1"=20' Vert. Scale: N/A

KIMLEY-HORN AND ASSOCIATES, INC.
 4582 SOUTH ULSTER STREET,
 SUITE 1500
 DENVER, COLORADO 80237
 (303) 228-2300

Sheet Revisions		
Date:	Comments:	Init.

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 Phone: (720) 913-4501
 Fax: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

MILL LEVY 7A TRAFFIC SIGNALS SIGNAGE AND STRIPING E 47TH AVE & PEORIA ST	
Designer:	CEH
Detailer:	BJD
Sheet Subset:	S&S
Subset Sheet:	4 of 4

Project No./Code
PZ03798_425
Sheet Number
39