

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DEPARTMENT OF PUBLIC WORKS / ENGINEERING DIVISION

BID DOCUMENTS PACKAGE

Contract No. 201102384

**TRAFFIC SIGNAL SYSTEM IMPROVEMENT
PROJECT - TSSIP1**

August 24, 2011



DENVER
THE MILE HIGH CITY

Department of Public Works
Engineering Division

Capital Projects Management – Dept. 506
Right-of-Way Services – Dept. 507
Policy and Planning – Dept. 509
Traffic Engineering Services – Dept. 508

201 West Colfax Avenue
Denver, CO 80202
www.Work4Denver.com

NOTICE OF APPARENT LOW BIDDER

Jacobs Investments, LLC dba Colorado Boring Co.
3813 Canal Dr.
Ft. Collins, CO 80524

The MANAGER OF PUBLIC WORKS has considered the Bids submitted on **September 23, 2011**, for work to be done and materials to be furnished in and for:

CONTRACT NO. 201102384 TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT-TSSIP1

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: **201-00001 to 700-00000 (49 [Forty Nine] Total Bid Items the total estimated cost thereof being: Five Hundred Eighty Eight Thousand Two Hundred Fifty Three Dollars and Fifty Cents (\$588,253.50).**

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 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;
- b. One original plus two copies of the 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 B1.12.2 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

PROJECT NO. 201102384

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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 10th day of October 2011.

CITY AND COUNTY OF DENVER

By



for: George Delaney
Manager of Public Works

GD/joa

cc: H. Woods (CAO), Gallagher (AUD), Schellinger (Treasury/Tax Compliance), DSBO Inbox, John LaSala, Merritt (PW-Aud), File.

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Engineering Division

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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.) Acknowledgment signature and attestation required.	<input checked="" type="checkbox"/>
BF-6 - BF 6.5	a.) Fill in individual bid item dollars and totals in Numerical figures only b.) Complete all blanks	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-7	a.) Write out bid total or bid totals in words and figures in the blank form space(s) provided	<input checked="" type="checkbox"/>
BF-8	a.) List all subcontractors who are performing work on this project	<input checked="" type="checkbox"/>
BF-9 – BF-10	a.) Fully complete List of Proposed Disadvantaged Business Enterprise Bidders, Subcontractors, Suppliers, Manufacturers, or Brokers – check appropriate boxes.	<input checked="" type="checkbox"/>
BF-11	a.) Complete all blanks b.) If Addenda have been issued, complete bottom section.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-12	a.) Complete appropriate sections - signature(s) required. b.) If corporation, then corporate seal required.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-13	a.) Fully complete Commitment to DBE Participation	<input checked="" type="checkbox"/>
BF-16	a.) If applicable, fully complete Joint Venture Affidavit	<input checked="" type="checkbox"/>
BF-17 – BF-18	a.) If applicable, fully complete Joint Venture Eligibility Form	<input checked="" type="checkbox"/>

BF-19	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 CE Number.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-20 - BF-23	a.) Per form Instructions, fully complete the Bidder/Contractor/Vendor/Proposer Disclosure form as required by IB-24.	<input checked="" type="checkbox"/>
BF-24- BF-28	Complete all DBE forms, including: a.) Contractors Performance Capability Statement b.) Anti-Collusion Affidavit c.) Assignment of Anti-Trust Claims d.) Underutilized DBE Bid Conditions Assurance	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Engineering Division

BID FORM AND SUBMITTAL PACKAGE ACKNOWLEDGMENT

CONTRACT NO. 201102384
FEDERAL AID PROJECT NO.: AQC M320-071 SA18144
TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

BIDDER: Jacobs Investments, LLC dba Colorado Boring Co.

ADDRESS: 3813 Canal Dr.
Ft. Collins, CO.
80524

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. 201102384, TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1, made available to the undersigned bidder pursuant to Notice of Invitation for Bids dated August 24, 2011.

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 Disadvantaged Business Enterprise(s)
Commitment to Disadvantaged Business Enterprise Participation
DBE Letter(s) of Intent
Joint Venture Affidavit (if applicable)
Joint Venture Eligibility Form (if applicable)
Bid Bond
Bidder / Contractor / Vendor / Proposer Disclosure Form

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:

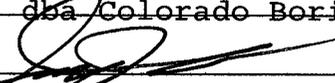
- Notice of Invitation for Bids
- Instructions to Bidders
- Addenda (as applicable)
- Equal Employment Opportunity Provisions (Appendix A and Appendix F)
- Contract Form
- General Contract Conditions
- Special Contract Conditions
- Performance and Payment Bond
- Notice to Apparent Low Bidder
- Notice 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
- Insurance Provision

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: Jacobs Investments, LLC
dba Colorado Boring Co.

By: 

Title: Manager

ATTEST:

By: 

[SEAL]

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Engineering Division

BID FORM

CONTRACT NO. 201102384
FEDERAL AID PROJECT NO. : AQC M320-071 SA18144

TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

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

BIDDER Jacobs Investments, LLC dba Colorado Boring Co.

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 **August 24, 2011**, to furnish all required materials, tools, appliances, equipment and plant; to perform all necessary labor and to undertake and complete: **CITY OF DENVER CONTRACT NO. 201102384, TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1** 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
Bid Bond
Addenda (as applicable)
DBE Documents
Equal Employment Opportunity Provisions
(Appendices A, B, E and F)
Bid Form
Commitment to DBE Participation
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
Contractors Performance Capability Statement
Anti-Collusion Affidavit
Assignment of Anti-Trust Claims
Underutilized DBE Bid Conditions Assurance
On-the-Job Training (where applicable)
Required Contract Provisions Federal Aid
Construction Contracts
Prevailing Wage Rate Schedule(s)
Technical Specifications
Contract Drawings
Accepted Shop Drawings
Certificate of Insurance

Item No.	Description and Price	Estimated Quantity	Estimated Cost
202-00848	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET at the unit price of \$ <u>200.⁰⁰</u> per EACH.	12 EA	\$ <u>2400.⁰⁰</u>
202-99999	REMOVAL OF TRAFFIC SIGNAL CABINET BASE at the unit price of \$ <u>200.⁰⁰</u> per EACH.	16 EA	\$ <u>3200.⁰⁰</u>
203-01597	POTHOLING at the unit price of \$ <u>100.⁰⁰</u> per EACH.	530 EA	\$ <u>53,000.⁰⁰</u>
203-01622	SWEEPING (WITH PICKUP BROOM) at the unit price of \$ <u>50.⁰⁰</u> per HOUR.	80 HR	\$ <u>4000.⁰⁰</u>
208-00002	EROSION LOG (12 INCH) at the unit price of \$ <u>1.⁰⁰</u> per LINEAR FOOT.	1,000 LF	\$ <u>1000.⁰⁰</u>
208-00034	GRAVEL BAG at the unit price of \$ <u>2.⁰⁰</u> per LINEAR FOOT.	600 LF	\$ <u>1200.⁰⁰</u>
208-00045	CONCRETE WASHOUT STRUCTURE at the unit price of \$ <u>200.⁰⁰</u> per EACH.	1 EA	\$ <u>200.⁰⁰</u>
208-00050	STORM DRAIN INLET PROTECTION at the unit price of \$ <u>20.⁰⁰</u> per EACH.	100 EA	\$ <u>2000.⁰⁰</u>
208-00103	REMOVAL AND DISPOSAL OF SEDIMENT (LABOR) at the unit price of \$ <u>75.⁰⁰</u> per HOUR.	80 HR	\$ <u>6000.⁰⁰</u>
208-00105	REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT) at the unit price of \$ <u>75.⁰⁰</u> per HOUR.	40 HR	\$ <u>3000.⁰⁰</u>
208-00205	EROSION CONTROL SUPERVISOR at the unit price of \$ <u>35.⁰⁰</u> per HOUR.	120 HR	\$ <u>4200.⁰⁰</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
210-00848	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET at the unit price of \$ <u>1000.⁰⁰</u> per EACH.	4 EA	\$ <u>4000.⁰⁰</u>
607-11525	FENCE (PLASTIC) at the unit price of \$ <u>2.⁰⁰</u> per LINEAR FOOT.	500 LF	\$ <u>1000.⁰⁰</u>
608-00000	CONCRETE SIDEWALK at the unit price of \$ <u>61.⁰⁰</u> per SQUARE YARD.	121 SY	\$ <u>7381.⁰⁰</u>
613-00306	3 INCH ELECTRICAL CONDUIT (BORED) at the unit price of \$ <u>8.⁰⁰</u> per LINEAR FOOT.	13,250 LF	\$ <u>106,000.⁰⁰</u>
613-01200	2 INCH ELECTRICAL CONDUIT (PLASTIC) at the unit price of \$ <u>10.⁰⁰</u> per LINEAR FOOT.	182 LF	\$ <u>1820.⁰⁰</u>
613-01300	3 INCH ELECTRICAL CONDUIT (PLASTIC) at the unit price of \$ <u>10.⁰⁰</u> per LINEAR FOOT.	726 LF	\$ <u>7260.⁰⁰</u>
613-00701	CONDUIT (PROOFING) at the unit price of \$ <u>50.⁰⁰</u> per HOUR.	260 HR	\$ <u>13000.⁰⁰</u>
613-04011	CONDUIT (REPAIR) at the unit price of \$ <u>40.⁰⁰</u> per EACH.	34 EA	\$ <u>1360.⁰⁰</u>
613-07000	PULL BOX (SPECIAL) at the unit price of \$ <u>415.⁰⁰</u> per EACH.	72 EA	\$ <u>29880.⁰⁰</u>
613-07101	PULL BOX (TYPE A) at the unit price of \$ <u>390.⁰⁰</u> per EACH.	49 EA	\$ <u>19,110.⁰⁰</u>
613-07104	PULL BOX (TRAFFIC) at the unit price of \$ <u>525.⁰⁰</u> per EACH.	50 EA	\$ <u>26,250.⁰⁰</u>
613-10000	WIRING at the unit price of \$ <u>4500.⁰⁰</u> per LUMP SUM.	1 LS	\$ <u>4500.⁰⁰</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
613-10011	FIBER OPTIC CABLE (REPAIR) at the unit price of \$ <u>30.⁰⁰</u> per EACH.	17 EA	\$ <u>510.⁰⁰</u>
614-03101	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS) at the unit price of \$ <u>850.⁰⁰</u> per EACH.	4 EA	\$ <u>3400.⁰⁰</u>
614-03102	CONCRETE FOOTING (UPS CABINET) at the unit price of \$ <u>385.⁰⁰</u> per EACH.	32 EA	\$ <u>12,320.⁰⁰</u>
614-75848	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY) at the unit price of \$ <u>850.⁰⁰</u> per EACH.	14 EA	\$ <u>11,900.⁰⁰</u>
614-86004	SPREAD SPECTRUM RADIO (INSTALL ONLY) at the unit price of \$ <u>1000.⁰⁰</u> per EACH.	4 EA	\$ <u>4000.⁰⁰</u>
614-86105	TELEMETRY (FIELD) at the unit price of \$ <u>200.⁰⁰</u> per EACH.	51 EA	\$ <u>10,200.⁰⁰</u>
614-87414	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND) at the unit price of \$ <u>4.50</u> per LINEAR FOOT.	1,785 LF	\$ <u>8032.⁵⁰</u>
614-87474	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND) at the unit price of \$ <u>3.¹⁰</u> per LINEAR FOOT.	15,500 LF	\$ <u>48,050.⁰⁰</u>
614-96801	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY) at the unit price of \$ <u>400.⁰⁰</u> per EACH.	50 EA	\$ <u>20,000.⁰⁰</u>
626-00000	MOBILIZATION at the unit price of \$ <u>58,000.⁰⁰</u> per LUMP SUM.	1 LS	\$ <u>58,000.⁰⁰</u>
630-00000	FLAGGING at the unit price of \$ <u>17.⁰⁰</u> per HOUR.	240 HR	\$ <u>4080.⁰⁰</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
630-00003	UNIFORMED TRAFFIC CONTROL at the unit price of \$ <u>45.⁰⁰</u> per HOUR.	160 HR	\$ <u>7200.⁰⁰</u>
630-00007	TRAFFIC CONTROL INSPECTION at the unit price of \$ <u>65.⁰⁰</u> per DAY.	48 DAY	\$ <u>3120.⁰⁰</u>
630-00012	TRAFFIC CONTROL MANAGEMENT at the unit price of \$ <u>450.⁰⁰</u> per DAY.	130 DAY	\$ <u>58,500.⁰⁰</u>
630-80341	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A) at the unit price of \$ <u>30.⁰⁰</u> per EACH.	8 EA	\$ <u>240.⁰⁰</u>
630-80342	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B) at the unit price of \$ <u>30.⁰⁰</u> per EACH.	8 EA	\$ <u>240.⁰⁰</u>
630-80358	ADVANCE WARNING FLASHING OR SEQ ARROW PANEL (C TYPE) at the unit price of \$ <u>2000.⁰⁰</u> per EACH.	2 EA	\$ <u>4000.⁰⁰</u>
630-80360	DRUM CHANNELIZING DEVICE at the unit price of \$ <u>20.⁰⁰</u> per EACH.	25 EA	\$ <u>500.⁰⁰</u>
630-80380	TRAFFIC CONE at the unit price of \$ <u>2.⁰⁰</u> per EACH.	200 EA	\$ <u>400.⁰⁰</u>
700-70010	F/A MINOR CONTRACT REVISIONS at the unit price of <u>\$20,000.00</u> per FORCE ACCT.	1 FA	\$ <u>20,000.00</u>
700-70011	F/A PARTNERING at the unit price of <u>\$2,000.00</u> per FORCE ACCT.	1 FA	\$ <u>2,000.00</u>
700-70016	F/A FUEL COST ADJUSTMENT at the unit price of <u>\$500.00</u> per FORCE ACCT.	1 FA	\$ <u>500.00</u>
700-70022	F/A OJT COLORADO TRAINING PROGRAM at the unit price of <u>\$300.00</u> per FORCE ACCT.	1 FA	\$ <u>300.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
700-70028	F/A ESB PROGRAM at the unit price of <u>\$5,000.00</u> per FORCE ACCT.	1 FA	<u>\$ 5,000.00</u>
700-70380	F/A EROSION CONTROL at the unit price of <u>\$2,000.00</u> per FORCE ACCT.	1 FA	<u>\$ 2,000.00</u>
700-70589	F/A ENVIRONMENTAL HEALTH & SAFETY MANAGEMENT at the unit price of <u>\$2,000.00</u> per FORCE ACCT.	1 FA	<u>\$ 2,000.00</u>

Total Bid Amount of:

Five Hundred Eighty Eight Thousand Two Hundred Fifty three
Dollars and fifty cents
Dollars (\$ 588,253.50)

[Total bid amount equals the sum of each estimated cost for item numbers 202-00848 through 700-70589 (Forty Nine [49]) Total Bid Items]

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 in the sum of the full amount of this bid, executed by a surety company acceptable to the Manager.

The Hartford Fire Ins. Co., a corporation of the State of CT., 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: na Name: na

Address: _____ Address: _____

If there are no such persons, firms, or corporations, please so state in the following space:

na

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
<u>Traffic Control</u>	<u>12.2%</u>	<u>Carnes Services,</u>
		<u>P.O. Box 1258</u>
		<u>Wellington, CO. 80549</u>
<u>Fiber Optics</u>	<u>8%</u>	<u>GE Construction</u>
		<u>P.O.Box 177</u>
		<u>Loveland, CO. 80539</u>
<u>Concrete</u>	<u>.5%</u>	<u>Holquin Constructio Co.</u>
		<u>2109 Buena Vista Dr.</u>
		<u>Greeley, CO. 80634</u>
<u>Signal Cab. & Radios</u>	<u>7%</u>	<u>GBJ Contractor</u>
		<u>3224 W. 150th Ct.</u>
		<u>Broomfield, CO. 80023</u>

(Copy this page if additional room is required.)

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
 Engineering Division



DENVER
 THE MILE HIGH CITY

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

Office of Economic Development
 Division of Small Business Opportunity
 Compliance Unit
 201 West Colfax Avenue, Dept. 907
 Denver, CO 80202
 Phone: 720-913-1999
 Fax : 720-913-1803
 DSBO@denvergov.org

City and County of Denver Contract No.: 201102384

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

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

MWBE or DBE 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"/> Subcontractor	<input type="checkbox"/> Supplier (√)	<input type="checkbox"/> Manufacturer (√)	<input type="checkbox"/> Broker (√)
---	---------------------------------------	---	-------------------------------------

Business Name: <u>CARNES SERVICES LLC</u>			
Address: <u>BOX 1258 WELWINGTON CO</u>	Type of Service: <u>TRAFFIC</u>		
Contact Person: <u>CONNIE CARNES</u>	Dollar Amount: \$: <u>12,000</u>	Percent of Project: <u>12.0</u>	
<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:

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 DBE(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 DBE "Letter of Intent" in five working days (5), on each of its DBE or DBE 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 words 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: 3813 Canal Dr.

City, State, Zip Code: Ft. Collins, CO. 80524

Telephone Number of Bidder: 970-494-1996 Fax No. 970-494-4449

Contact Name for this Project: Jon Jacobs/Lloyd Seaton

Social Security or Federal Employer ID Number of Bidder: 84-1325968

Name and location of the last work of this kind herein contemplated upon which the Bidder was engaged:

City of Denver Monacore

For information relative thereto, please refer to:

Name: Jon Jacobs

Title: Manager

Address: 3813 Canal Dr. Ft. Collins, CO. 80524

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

Addenda Number 1 Date 9.13.11

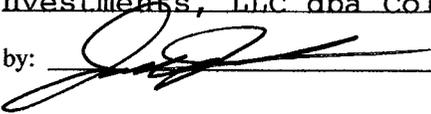
Addenda Number _____ Date _____

Addenda Number _____ Date _____

Dated this 22 day of SEPTEMBER, 20 11

Signature of Bidder:

If an Individual: _____ doing business
as _____.

If a Partnership: Jacobs Investments, LLC dba Colorado Boring Co.
by:  _____, General Partner.

If a Corporation: _____
a _____, Corporation,
by: _____, its President.

Attest:


Secretary (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)

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
 Engineering Division



DENVER
 THE MILE HIGH CITY

COMMITMENT TO DBE PARTICIPATION

Office of Economic Development
 Division of Small Business Opportunity
 Compliance Unit
 201 West Colfax Avenue, Dept. 907
 Denver, CO 80202
 Phone: 720-913-1999
 Fax: 720-913-1803
 DSBO@denvergov.org

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

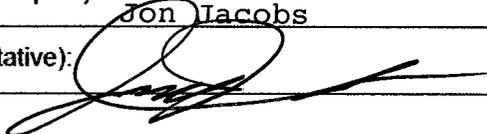
The Bidder/Proposer is committed to a minimum of 12.2 % DBE utilization on the project, and will submit Letters of Intent (LOI) for each subcontractor/subconsultant listed in the Bid Forms as follows:
Hard Bids: Five (5) business days after the bid opening
Request for Proposals: With the proposal when due

The Bidder/Proposer is unable to meet the project goal of _____% DBE, but is committed to a minimum of _____% DBE utilization on the project. The Bidder/Proposer understands that they must submit a detailed statement of their good faith effort in accordance with DRMC Section 28-62 and 28-67 of Ordinance 760 and must submit Letters of Intent for each DBE listed in the Bid Forms, within five (5) business days after the bid opening or at time proposal is submitted.

The Bidder/Proposer is a certified DBE 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): Jacobs Investments, LLC dba Colorado Boring Co.

Firm's Representative (Please print): Jon Jacobs

Signature (Firm's Representative): 

Title: Manager

Address: 3813 Canal Dr.

City: Ft. Collins

State: CO

Zip: 80524

Phone: 970-494-1996

Fax: 970-494-4449

Email: jon.cbc1@gmail.com

A copy of the DBE Certification must be attached.



DENVER
THE MILE HIGH CITY

JOINT VENTURE AFFIDAVIT

Office of Economic Development
Division of Small Business Opportunity
Compliance Unit
201 West Colfax Avenue, Dept. 907
Denver, CO 80202
Phone: 720-913-1999
Fax: 720-913-1803
DSBO@denvergov.org

The Undersigned swear 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: na

Print Name: _____ Title _____

Signature: _____ Date: _____

Notary Public

County of _____ State of _____ My Commission Expires: _____

Subscribed and sworn before me this _____ day of _____, 20____

Notary Signature: _____

Address: _____

Notary Seal

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 Signature: _____

Address: _____

Notary Seal

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 Signature: _____

Address: _____

Notary Seal



JOINT VENTURE ELIGIBILITY FORM

Office of Economic Development
 Division of Small Business Opportunity
 Compliance Unit
 201 West Colfax Avenue, Dept. 907
 Denver, CO 80202
 Phone: 720-913-1999
 Fax : 720-913-1803
 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, 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: <i>na</i>		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/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/M/W or DBE)	
Type of Work for which Certification was granted:			

General Information

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

JOINT VENTURE ELIGIBILITY FORM

General Information

Describe the SBE/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)

na

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

Describe the SBE/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/MBE/WBE or DBE joint venture participant:

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

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

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 SMWBE, non-SMWBE or joint venture:

	Non- SBE/MBE/WBE/DBE	SBE/MBE/WBE/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.

na

Who will they be employed by?

Are any of the proposed joint venture employees currently employees of any of the joint venture partners?

Yes
(✓)

No
(✓)

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

Attach 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

COLORADO DEPARTMENT OF TRANSPORTATION – Form 605
**CONTRACTORS PERFORMANCE CAPABILITY
STATEMENT**

Project #

TSSIP1

1. List names of partnerships or joint ventures none

List decreases in the contractors fiscal or workmanship qualifications compared to the last prequalification statement submitted to CDOT. (Attach additional sheets if necessary)

a. Key personnel changes none

b. Key equipment changes none

c. Fiscal capability changes (legal actions, etc.) none

d. Other changes that may affect the contractors ability to perform work none

I DECLARE UNDER PENALTY OF PERJURY IN THE SECOND DEGREE, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS, THAT THE STATEMENTS MADE ON THIS DOCUMENT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE

Contractor's firm or company name

Jacobs Investments, LLC

By

Date

Title

Manager

Date

9-22-2011

2nd Contractor's firm or company name (if joint venture)

By

Title

**COLORADO DEPARTMENT OF TRANSPORTATION
ANTI-COLLUSION AFFIDAVIT**

Project No.: TSSIP1
Location: City of Denver

I hereby attest that I am the person responsible within my firm for the final decision as to the price(s) and amount of this bid or, if not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his or her behalf and on behalf of my firm.

I further attest that:

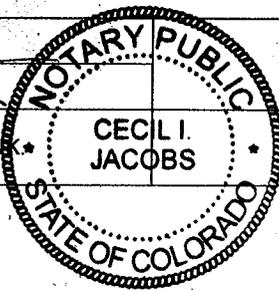
1. The price(s) and amount of this bid have been arrived at independently, without consultation, communication or agreement for the purpose or with the effect of restricting competition with any other firm or person who is a bidder or potential prime bidder.
- 2A. Neither the price(s) nor the amount of this bid have been disclosed to any other firm or person who is a bidder or potential prime bidder on this project, and will not be so disclosed prior to bid opening.
- 2B. Neither the prices nor the amount of the bid of any other firm or person who is a bidder or potential prime bidder on this project have been disclosed to me or my firm.
- 3A. No attempt has been made to solicit, cause or induce any firm or person who is a bidder or potential prime bidder to refrain from bidding on this project, or to submit a bid higher than the bid of this firm, or any intentionally high or non-competitive bid or other form of complementary bid.
- 3B. No agreement has been promised or solicited for any other firm or person who is a bidder or potential prime bidder on this project to submit an intentionally high, noncompetitive or other form of complementary bid on this project.
4. The bid of my firm is made in good faith and not pursuant to any consultation, communication, agreement or discussion with, or inducement or solicitation by or from any firm or person to submit any intentionally high, noncompetitive or other form of complimentary bid.
5. My firm has not offered or entered into a subcontract or agreement regarding the purchase or sale of materials or services from any firm or person, or offered, promised or paid cash or anything of value to any firm or person, whether in connection with this or any other project, in consideration for an agreement or promise by any firm or person to refrain from bidding or to submit any intentionally high, noncompetitive or other form of complementary bid or agreeing or promising to do so on this project.
6. My firm has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any firm or person, and has not been promised or paid cash or anything of value by any firm or person whether in connection with this or any other project, in consideration for my firm's submitting any intentionally high, noncompetitive or other form of complementary bid, or agreeing or promising to do so, on this project.
7. I have made a diligent inquiry of all members, officers, employees, and agents of my firm with responsibilities relating to the preparation, approval or submission of my firm's bid on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, or other conduct inconsistent with any of the statements and representations made in this affidavit.
8. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as a fraudulent concealment from the Colorado Department of Transportation, of the true facts relating to the submission of bids for this contract.

I DECLARE UNDER PENALTY OF PERJURY IN THE SECOND DEGREE, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS, THAT THE STATEMENTS MADE ON THIS DOCUMENT ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

Contractors firm or company name: <u>Jacobs Investments, LLC</u> <u>dba Colorado Boring Co.</u>	By: <u>[Signature]</u> Title: <u>Manager</u>	Date: <u>9-22-2011</u>
2 nd Contractors firm or company name: <u>na</u>	By: Title:	Date:

Sworn to before me this 22 day of Sept. 2011

Notary Public: [Signature]
 My commission expires: 10-10-2012



NOTE: THIS DOCUMENT MUST BE SIGNED IN INK.

**COLORADO DEPARTMENT OF TRANSPORTATION
ASSIGNMENT OF ANTITRUST CLAIMS**

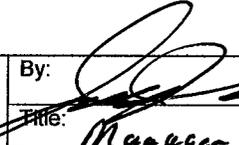
Project No.:

TSSIP2

Contractor and Colorado Department of Transportation (CDOT) recognize that in actual economic practice antitrust violations ultimately impact CDOT. Therefore, for good cause and as consideration for executing this contract and for receiving payments hereunder:

1. Contractor hereby irrevocably assigns to CDOT any and all claims it may now have or which may hereafter accrues to it under federal or state antitrust laws in connection with the particular project, goods or services purchased or acquired by CDOT pursuant to this contract.
2. Contractor hereby expressly agrees:
 - a. That, upon becoming aware that a third party has commenced a civil action asserting on Contractor's behalf an antitrust claim which has been assigned to CDOT hereunder, Contractor shall immediately advise in writing:
 - (1) Such third party that the antitrust claim has been assigned to CDOT, and
 - (2) CDOT that such civil action is pending and the date on which, in accordance with subparagraph a.(1) above, Contractor notified such third party that the antitrust claim had been assigned to CDOT.
 - b. To take no action which will in any way diminish the value of the claims or rights assigned or dedicated to CDOT hereunder; and
 - c. Promptly to pay over to CDOT its proper share of any payment under an antitrust claim brought on Contractor's behalf by any third party and which claim has been assigned to CDOT hereunder.
3. Further, Contractor agrees that in the event it hires one or more subcontractors to perform any of its duties under the contract, Contractor shall require that each such subcontractor:
 - a. Irrevocably assign to CDOT (as a third party beneficiary) any and all claims that such subcontractor may have or which may thereafter accrue to the subcontractor under federal or state antitrust laws in connection with any goods or services provided by the subcontractor in carrying out the subcontractor's obligations to Contractor;
 - b. Upon becoming aware that a third party has commenced a civil action on the subcontractor's behalf asserting an antitrust claim which has been assigned to CDOT hereunder, shall immediately advise in writing:
 - (1) Such third party that the antitrust claim has been assigned to CDOT, and
 - (2) Contractor and CDOT that such civil action is pending and the date on which, in accordance with subparagraph b.(1) above, the subcontractor notified such third party that the antitrust claim had been assigned to CDOT;
 - c. Take no action which will in any way diminish the value of the claims or rights assigned or dedicated to CDOT hereunder; and
 - d. Promptly pay over to CDOT its proper share of any payment under an antitrust claim brought on the subcontractor's behalf by any third party and which claim has been assigned or dedicated to CDOT pursuant hereto.

I, acting in my capacity as officer of a bidder (bidders if a joint venture) do agree to the above assignment of antitrust claims.

Contractors firm or company name: <i>Jawb Investments, LLC</i>	By: 	Date: <i>9-22-2011</i>
	Title: <i>Manager</i>	
2 ND Contractors firm or company name: <i>na</i>	By:	Date:
	Title:	

**COLORADO DEPARTMENT OF TRANSPORTATION
 BIDDERS LIST DATA and UNDERUTILIZED
 DBE (UDBE) BID CONDITIONS ASSURANCE**

Project #: TSSIP1
 Location: City of Denver

Prime Contractor Instructions: This form has two sections, both must be completed and submitted with your bid. Complete **Section I** to list *all* subcontract quotes received (non-DBE *and* DBE). Complete **Section II** to report only Underutilized DBE (UDBE) participation percentages which qualify under the contract goal specification for this project. **Please review CDOT Form #715 instructions before completing Section II.** Attach additional sheets as necessary.

POLICY
 It is the policy of the Colorado Department of Transportation that underutilized disadvantaged business enterprises have equal opportunity to participate on projects financed with federal, state or local entity funds. Consistent with 49 Code of Federal Regulations (CFR) Part 26.11, the Bidders List data provided by the Contractors will provide CDOT as accurate data as possible about the universe of DBE and non-DBE firms actively seeking work on its highway construction contracts, for use in setting overall DBE goals.

SECTION I: CDOT BIDDERS LIST INFORMATION (Non-DBEs and DBEs)

- 1) Are all subcontract bids (quotes) received by your firm for this project listed below? Yes No
- 2) *If No*, make certain any additional subcontract bidding information is submitted to the CDOT Business Programs Office before 4:00 pm on the day after bids are opened to ensure CDOT has the best data possible for setting future DBE goals (use the same table format as below):
 CDOT Business Programs Office
 4201 E. Arkansas Ave., Room 200
 Denver, Colorado 80222 FAX: 303-757-9019 EMAIL: eo@dot.state.co.us
- 3) The most recent CDOT Bidders List will be posted online at: www.dot.state.co.us/EEO/DBEProgramPage.htm

Name of firm submitting Bid/Quote	Certified DBE firm?		Work item(s) description	Firm being used?		
	Yes	No		Yes	No	Maybe
1. <u>GE Construction</u>		<input checked="" type="checkbox"/>	<u>Fiber Optics</u>	<input checked="" type="checkbox"/>		
2. <u>GJT Contractor</u>		<input checked="" type="checkbox"/>	<u>Signal Cab. & Radios</u>	<input checked="" type="checkbox"/>		
3. <u>Carnes Services</u>	<input checked="" type="checkbox"/>		<u>Traffic Control</u>	<input checked="" type="checkbox"/>		
4. <u>Holquin Const.</u>	<input checked="" type="checkbox"/>		<u>Concrete</u>			<input checked="" type="checkbox"/>
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						

Name of firm submitting Bid/Quote	Certified DBE firm?		Work item(s) description	Firm being used?		
	Yes	No		Yes	No	Maybe
15.						
16.						
17.						
18.						
19.						
20.						

SECTION II: UNDERUTILIZED DBE (UDBE) PARTICIPATION COMMITMENT

1) Total eligible Underutilized DBE (UDBE) percentage amount from Box A below: 12.20%

2) Will your company's Underutilized DBE (UDBE) participation commitment meet the contract goal? Yes No

3) List the UDBE firms, committed work items, and eligible UDBE percentage of your bid committed to each.

UDBE Firm name	Certification #	Committed work item(s)	% Commitment toward DBE Goal*
1. <u>CARNES SERVICES</u>	<u>5521</u>	<u>TRAFFIC MANAGEMENT</u>	<u>12.20%</u>
2.			. %
3.			. %
4.			. %
5.			. %

BOX A: TOTAL ELIGIBLE UDBE PERCENTAGE AMOUNT (Round to nearest hundredth) \rightarrow 12.20%

* Detailed instructions on how to calculate DBE commitment amounts are available on CDOT Form #715 and in the "Counting DBE Participation Toward Contract Goals and CDOT's annual DBE goal" section of the "DBE - Definitions and Requirements" in the *Standard Special Provisions*.

I understand that, if my company is determined to be the low bidder for the contract on this project, I must submit a completed CDOT Form #715 CERTIFICATION OF UNDERUTILIZED DBE PARTICIPATION for each firm listed in Section II of this form to the Transportation Department by 4:00 pm on the *third* work day after the day bids are opened. **The actual amounts submitted on each CDOT Form #715 must equal or exceed the DBE percentage commitments documented on this form.** In addition, if my company does not meet the DBE/UDBE goal for this project, I must submit a completed CDOT Form #718 DBE GOOD FAITH EFFORT DOCUMENTATION before 4:00 pm on the *day after* bids are opened. CDOT Form #715s submitted for firms not included on this form, OR for amounts exceeding those listed on this form, will be accepted but NOT counted as Good Faith Efforts. Only the efforts the contractor made *prior* to the bid opening will count as Good Faith Efforts.

I understand my obligation to abide by the Policy stated above Section I. I shall not discriminate on the basis of race, color, age, sex, national origin, or handicap in the bidding process or the performance of contracts.

I DECLARE UNDER PENALTY OF PERJURY IN THE SECOND DEGREE, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS, THAT THE STATEMENTS MADE IN THIS DOCUMENT ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

Company Name: <u>Jacobs Investments LLC dba Colorado Boring Co.</u>	Date: <u>9 / 22 / 2011</u>
Company Officer Signature: 	Title: <u>Manager</u>

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DEPARTMENT OF PUBLIC WORKS / ENGINEERING DIVISION

ADDENDUM NO. 1

Contract No. 201102384

**TRAFFIC SIGNAL SYSTEM IMPROVEMENT
PROJECT - TSSIP1**

August 24, 2011

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Engineering Division

CONTRACT NO. 201102384
PROJECT NAME: TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

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:

BID FORM PACKAGE

- Replace BF-6.2 with the attached BF-6.2

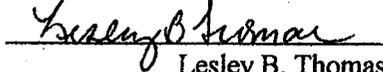
BID DOCUMENT PACKAGE

- Replace SQ-1 with the attached SQ-1
- Prevailing Wage Rates - Replace Prevailing Wages dated October 29, 2010 with Wages dated August 12, 2011.
- Prevailing Wage - Clarification of Traffic signal Installation/repair work

SPECS/DRAWINGS

- Replace "Revision of Section 613" Pages 17, 18 & 19 with the attached revised pages.
- On Sheet 5 of the plan set, the last sentence of note #6 should be replaced with: "It is estimated that up to 121 square yards of concrete replacement will be required for the project."
- On sheet 5 of the plan set, note # 25 should be replaced with: "Potholing shall be conducted to facilitate conduit installation. It is estimated that approximately 530 potholes will be required for the project."

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



Lesley B. Thomas
City Engineer
9.13.11

Date

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



Contractor

ADDENDUM NO. 1

DATE: 9-21-2011

Item No.	Description and Price	Estimated Quantity	Estimated Cost
210-00848	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET at the unit price of \$ _____ per EACH.	4 EA	\$ _____
607-11525	FENCE (PLASTIC) at the unit price of \$ _____ per LINEAR FOOT.	500 LF	\$ _____
608-00000	CONCRETE SIDEWALK at the unit price of \$ _____ per SQUARE YARD.	121 SY	\$ _____
613-00306	3 INCH ELECTRICAL CONDUIT (BORED) at the unit price of \$ _____ per LINEAR FOOT.	13,250 LF	\$ _____
613-01200	2 INCH ELECTRICAL CONDUIT (PLASTIC) at the unit price of \$ _____ per LINEAR FOOT.	182 LF	\$ _____
613-01300	3 INCH ELECTRICAL CONDUIT (PLASTIC) at the unit price of \$ _____ per LINEAR FOOT.	726 LF	\$ _____
613-00701	CONDUIT (PROOFING) at the unit price of \$ _____ per HOUR.	260 HR	\$ _____
613-04011	CONDUIT (REPAIR) at the unit price of \$ _____ per EACH.	34 EA	\$ _____
613-07000	PULL BOX (SPECIAL) at the unit price of \$ _____ per EACH.	72 EA	\$ _____
613-07101	PULL BOX (TYPE A) at the unit price of \$ _____ per EACH.	49 EA	\$ _____
613-07104	PULL BOX (TRAFFIC) at the unit price of \$ _____ per EACH.	50 EA	\$ _____
613-10000	WIRING at the unit price of \$ _____ per LUMP SUM.	1 LS	\$ _____



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

**CONTRACT NO. 201102384
TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT**

STATEMENT OF QUANTITIES

<u>Item No.</u>	<u>Description</u>	<u>Estimated Quantity</u>
202-00848	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	12 EA
202-99999	REMOVAL OF TRAFFIC SIGNAL CABINET BASE	16 EA
203-01597	POTHOLING	530 EA
203-01622	SWEEPING (WITH PICKUP BROOM)	80 HR
208-00002	EROSION LOG (12 INCH)	1,000 LF
208-00034	GRAVEL BAG	600 LF
208-00045	CONCRETE WASHOUT STRUCTURE	1 EA
208-00050	STORM DRAIN INLET PROTECTION	100 EA
208-00103	REMOVAL AND DISPOSAL OF SEDIMENT (LABOR)	80 HR
208-00105	REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT)	40 HR
208-00205	EROSION CONTROL SUPERVISOR	120 HR
210-00848	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	4 EA
607-11525	FENCE (PLASTIC)	500 LF
608-00000	CONCRETE SIDEWALK	121 SY
613-00306	3 INCH ELECTRICAL CONDUIT (BORED)	13,250 LF
613-01200	2 INCH ELECTRICAL CONDUIT (PLASTIC)	182 LF
613-01300	3 INCH ELECTRICAL CONDUIT (PLASTIC)	726 LF
613-00701	CONDUIT (PROOFING)	260 HR
613-04011	CONDUIT (REPAIR)	34 EA
613-07000	PULL BOX (SPECIAL)	72 EA
613-07101	PULL BOX (TYPE A)	49 EA
613-07104	PULL BOX (TRAFFIC)	50 EA
613-10000	WIRING	1 LS
613-10011	FIBER OPTIC CABLE (REPAIR)	17 EA
614-03101	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS)	4 EA
614-03102	CONCRETE FOOTING (UPS CABINET)	32 EA
614-75848	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	14 EA
614-86004	SPREAD SPECTRUM RADIO (INSTALL ONLY)	4 EA
614-86105	TELEMETRY (FIELD)	51 EA
614-87414	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	1,785 LF
614-87474	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	15,500 LF

August 12, 2011

**U.S. DEPT. OF LABOR,
DAVIS BACON MINIMUM WAGES, COLORADO
GENERAL DECISION NUMBERS CO20100014 AND CO20100015
HIGHWAY CONSTRUCTION**

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions, unless such use is first approved by the Standards and Specification Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on all federal-aid projects with contracts exceeding \$2000, except for non-ARRA projects on roadways classified as local roads or rural minor collectors, which are exempt. Projects on local roads, rural minor collectors, and enhancement projects funded with ARRA funds are not exempt.

U.S. DEPT. OF LABOR, DAVIS BACON MINIMUM WAGES, COLORADO
 GENERAL DECISION NUMBERS CO20100014 AND CO20100015, HIGHWAY CONSTRUCTION

DATE 08-12-11

Decision Nos. CO20100014 and CO20100015 dated March 12, 2010 supersedes Decision Nos. CO020080014 and CO020080015 dated February 08, 2008.	Modifications			ID
	MOD Number	Date	Page Number(s)	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.	1	05-07-10	1, 2	1
	2	06-04-10	1, 5	2
	3	08-06-10	1, 5	3
	4	10-08-10	1	4
	5	10-29-10	5	5
	6	07-15-11	1, 5	6
	7	07-29-11	1, 5	7
	8	08-12-11	1, 5	8

General Decision No. CO20100014 applies to the following counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo, and Weld counties.

General Decision No. CO20100014

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	ELECTRICIANS:			
1200	Electrical work \$150,000 or less (Pueblo county)	22.85	10.79	
1201	Electrical work over \$150,000 (Pueblo county)	27.00	10.91	
1202	Electricians (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Weld counties)	31.60	12.52	6
1203	Electricians (El Paso county)	28.55	14.46	8
1204	Electricians (Mesa county)	20.31	8.92	
1205	Traffic Signal Installer (Zone 1)	23.83	4.75 + 13.75%	
1206	Traffic Signal Installer (Zone 2)	26.83	4.75 + 13.75%	
	<u>Traffic Installer Zone Definitions</u> Zone 1 - Within a 35 mile radius measured from the addresses 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 Zone 2 - All work outside these areas.			
	POWER EQUIPMENT OPERATORS:			
1300	Asphalt Screed	23.67	9.22	
1301	Bituminous or Asphalt Spreader/Laydown Machine	23.67	9.22	
1302	Bulldozer	23.67	9.22	

General Decision No. CO20100014

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
POWER EQUIPMENT OPERATORS (cont.):				
Crane:				
1305	50 tons and under	23.82	9.22	
1306	51 to 90 tons	23.97	9.22	
1307	91 to 140 tons	24.12	9.22	
1308	141 tons and over	24.88	9.22	
Drill Operator:				
1309	William MF/Watson 2500 only	23.97	9.22	
Grader/Blade:				
1310	Rough	23.67	9.22	
1311	Finish	23.97	9.22	
Loader:				
1312	Barber Green, etc., 6 cubic yards and under	23.67	9.22	
1313	Over 6 cubic yards	23.82	9.22	
Mechanic and/or Welder (Includes heavy duty and combination mechanic and welder):				
1314	Mechanic and/or Welder	26.12	9.22	1
1315	Mechanic/Welder (Heavy duty)	23.97	9.22	
1316	Oiler	22.97	9.22	
Power Broom:				
1317	Under 70 HP	22.97	9.22	
1318	70 HP and over	23.67	9.22	
Roller (excluding dirt and soil compaction):				
1319	Self-propelled, rubber tires under 5 tons	23.32	9.22	
1320	Self-propelled, all types over 5 tons	23.67	9.22	
Scraper:				
1321	Single bowl under 40 cubic yards	23.82	9.22	
1322	Single bowl including pups 40 cubic yards and tandem bowls and over	23.97	9.22	
1323	Trackhoe	23.82	9.22	

General Decision No. CO20100014
The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
1400	Laborers: Asphalt Laborer/Raker, Common Laborer, and Concrete Laborer/Mason Tender	18.68	6.78	

General Decision No. CO20100014
The wage and fringe benefits listed below do not reflect collectively bargained rates.

1500	Bricklayers	15.55	2.85	
1600	Carpenters: Form Work (Excluding curbs and gutters)	16.54	3.90	
1601	All other work	16.61	3.88	
1700	Concrete Finishers/Cement Masons	16.05	3.00	
1900	Ironworkers: Reinforcing	16.69	5.45	
1901	Bridge Rail (Excludes guardrail)	18.22	6.01	
2001	Laborers: Fence Erector (Includes fencing on bridges)	13.02	3.20	
2002	Form Work (Curbs and gutters only)	11.85	3.45	
2003	Guardrail Erector (Excludes bridgerail)	12.89	3.20	
2004	Landscape and Irrigation Laborer	12.26	3.16	
2005	Pipelayer	13.55	2.41	
2006	Striping Laborer (Pre-form layout and removal of pavement markings)	12.62	3.21	
2007	Traffic Director/Flagger	9.55	3.05	
2008	Traffic and Sign Laborer (Sets up barricades and cones, and installs permanent signs)	12.43	3.22	
2100	PAINTERS Brush	16.94	2.10	
2101	Spray	16.99	2.87	
2200	POWER EQUIPMENT OPERATORS: Backhoes	16.54	4.24	
2201	Bobcat/Skid Loader	15.37	4.28	
2202	Concrete Pump Operator	16.52	4.30	

General Decision No. CO20100014

The wage and fringe benefits listed below do not reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
POWER EQUIPMENT OPERATORS (cont.):				
	Drill Operator:			
2203	All except William MF/Watson 2500	16.74	2.66	
2204	Forklift	15.91	4.09	
2205	Rotomill Operator	16.22	4.41	
2206	Post Driver/Punch Machine	16.07	4.41	
2207	Tractor	13.13	2.95	
2208	Compactor (Dirt and soil only)	16.70	3.30	
Groundman (Traffic signalization)				
2301	Class C	11.44	3.25	
Truck Drivers:				
2400	Floater-Semi Truck	14.86	3.08	
2401	Multipurpose Truck - Specialty & Hoisting	14.35	3.49	
2402	Truck Mechanic	16.91	3.01	
2403	Pickup Truck (Includes Pilot and Sign/Barricade Truck)	13.93	3.68	
2405	Single Axle Truck	14.24	3.77	
2406	Distributor Truck	15.80	5.27	
2407	Dump Truck:			
2408	14 cubic yards and under	14.93	5.27	
2409	15 to 29 cubic yards	15.27	5.27	
2410	30 to 79 cubic yards	15.80	5.27	
2411	80 cubic yards and over	16.45	5.27	
2412	Low Boy Truck	17.25	5.27	
2413	Water Truck	14.93	5.27	

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses [29 CFR 5.5(a)(1)(ii)].

END OF GENERAL DECISION NUMBER CO20100014.

General Decision No. CO20100015 applies to the following counties: Alamosa, Archuleta, Baca, Bent, Chaffee, Cheyenne, Clear Creek, Conejos, Costilla, Crowley, Custer, Delta, Dolores, Eagle, Elbert, Fremont, Garfield, Gilpin, Grand, Gunnison, Hinsdale, Huerfano, Jackson, Kiowa, Kit Carson, La Plata, Lake, Las Animas, Lincoln, Logan, Mineral, Moffat, Montezuma, Montrose, Morgan, Otero, Ouray, Park, Phillips, Pitkin, Prowers, Rio Blanco, Rio Grande, Routt, Saguache, San Juan, San Miguel, Sedgwick, Summit, Teller, Washington, and Yuma counties.

When work within a project is located in two or more counties, and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.

General Decision No. CO20100015

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	ELECTRICIANS: (Including traffic signal installation)			
3200	Electrical work \$150,000 or less (Alamosa, Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Las Animas, Mineral, Otero, Prowers, Rio Grande, and Saguache counties)	22.85	10.79	
3201	Electrical work over \$150,000 (Alamosa, Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Las Animas, Mineral, Otero, Prowers, Rio Grande, and Saguache counties)	27.00	10.91	
3202	Electricians (Clear Creek, Eagle, Gilpin, Grand, Jackson, Lake, Logan, Morgan, Phillips, Sedgwick, Summit, Washington, and Yuma counties)	31.60	12.52	6
3203	Electricians (Cheyenne, Elbert, Kit Carson, Lincoln, Park, and Teller counties)	28.55	14.46	8
3204	Electricians (Dolores, Garfield, Gunnison, Hinsdale, La Plata, Moffat, Montezuma, Ouray, Pitkin, Rio Blanco, Routt, San Juan, and San Miguel counties)	28.00	9.24	
3205	Electricians (Delta and Montrose counties)	21.31	8.92	
3206	Traffic Signal Installer (Zone 1)	23.83	4.75 + 13.75%	
3207	Traffic Signal Installer (Zone 2)	26.83	4.75 + 13.75%	
	<u>Traffic Installer Zone Definitions</u>			
	Zone 1 – Within a 35 mile radius measured from the addresses 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			
	Zone 2 - All work outside these areas.			

General Decision No. CO20100015
The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATORS:			
3300	Bituminous or Asphalt Spreader/Laydown Machine	23.67	9.22	
3301	Bulldozer	23.67	9.22	
	Crane:			
3302	50 tons and under	23.82	9.22	
3303	51 to 90 tons	23.97	9.22	
3304	91 to 140 tons	24.12	9.22	
3305	141 tons and over	24.88	9.22	
3306	Grade Checker	23.82	9.22	
	Loader:			
3307	Barber Green, etc., 6 cubic yards and under	23.67	9.22	
3308	Over 6 cubic yards	23.82	9.22	
	Roller (excluding dirt and soil compaction):			
3309	Self-propelled, rubber tires under 5 tons	23.32	9.22	
3310	Self-propelled, all types over 5 tons	23.67	9.22	
3311	Trackhoe	23.82	9.22	
3312	Oiler	22.97	9.22	
3313	Water Wagon	23.82	9.22	

General Decision No. CO20100015
The wage and fringe benefits listed below do not reflect collectively bargained rates.

	Carpenters:			
3600	Form Building and Setting (Excluding curbs and gutters)	15.92	5.38	
3601	All other work	16.30	3.71	
3700	Concrete Finishers/Cement Masons	15.55	2.85	
3800	Groundman (Traffic signalization)	11.57	3.50	
	Ironworkers:			
3900	Reinforcing	16.94	6.77	
3901	Bridge Rail (Excluding guardrail)	16.76	6.01	

General Decision No. CO20100015

The wage and fringe benefits listed below do not reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
Laborers:				
4000	Asphalt Laborer/Raker	12.40	2.92	
4001	Common	12.44	3.53	
4002	Concrete Laborer/Mason Tender	12.44	3.10	
4003	Striping-Paint Laborer (Pre-form layout and removal of pavement markings)	12.90	3.07	
4004	Traffic Director/Flagger	9.42	3.21	
4005	Traffic/Sign Laborer (Sets up barricades and cones, and installs permanent signs)	12.39	3.20	
4007	Guardrail (Excludes bridgerail)	12.78	3.31	
4008	Formwork (Curbs and gutters only)	12.92	4.54	
4009	Landscape Laborer (Including irrigation work)	12.21	3.16	
Painters:				
4100	Spray	17.54	3.52	
POWER EQUIPMENT OPERATORS:				
4200	Asphalt Plant	17.23	1.20	
4201	Asphalt Screed	16.21	3.76	
4202	Backhoe	16.42	4.42	
4203	Compactor (Dirt and soil only)	16.52	3.13	
4204	Grader/Blade	16.39	4.20	
4205	Mechanic and or Welder (Includes heavy duty and combination mechanic welder)	16.74	4.20	
4206	Post Driver/Punch Machine	16.07	4.41	
4207	Rotomill Operator	16.28	4.41	
4209	Scraper	17.62	3.16	

General Decision No. CO20100015

The wage and fringe benefits listed below do not reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	Truck Drivers:			
4400	Dump	14.15	3.83	
4401	Low Boy	15.07	4.56	
4402	Truck Mechanic	15.97	4.61	
4403	Multipurpose Truck-Specialty and Hoisting	14.60	3.49	
4404	Pickup (Including pilot car)	14.04	3.49	
4405	Water Truck	14.88	2.07	
4406	Distributor	15.80	5.27	

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses [29 CFR 5.5(a)(1)(ii)].

END OF GENERAL DECISION NUMBER CO20100015.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- ◆ an existing published wage determination
- ◆ a survey underlying a wage determination
- ◆ a Wage and Hour Division letter setting forth a position on a wage determination matter
- ◆ a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of construction wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

4.) All Decisions of the Administrative review board are final.

Traffic Signal Installation/repair work clarifications

Electricians: Make all electrical connections to the control box, run conduit to control box, and install fiber optic cable up to the control box.

Traffic Signal Installer: Install traffic light pole, signal (including bulb replacement), & control box. Make connections from control box to signal: fiber optic and electrical. Traffic Signal Installer levels pole tops and sets forms, rebar, and caisson for traffic signal poles.

Traffic Signal Installer – Groundsman: Laborers for Electricians and Traffic Signal Installers. Groundsman may handle a shovel (trenchwork), help stabilize the traffic signal for placement, & perform cleanup duties. Groundsman may fill potholes, grout signal poles and concrete around pole box.

**REVISION OF SECTION 613
TRAFFIC SIGNAL CABINET BASE (CONCRETE)**

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 complete installation of traffic signal cabinet base foundations.

Subsection 614.10 shall include the following:

At locations specified in the plans where an existing M1-Type cabinet is to be reset, and a new UPS, G-Type cabinet is to be installed, the cabinet footing or foundation shall be formed in concrete with approximate dimensions of 66" long by 24" wide by 24" high (see diagram on following page).

At locations specified in the plans where existing concrete footings are to be expanded to support a new UPS, G-Type cabinet, the footing or foundation shall be formed in concrete and matching the height of the existing footing. The approximate dimensions of the expanded footing shall be 30" long by 24" wide by about 24" high (see diagram on page 20).

Prior to starting foundation construction, the contractor shall obtain field verification of cabinet foundation location from the Engineer or Engineer's designee.

Cabinet base installation shall include all labor and materials to completely install a new M1 foundation for controller cabinets as specified in the plans. This is to include the concrete foundation, all conduit modification work, back-filling, and concrete repair.

Subsection 614.13 shall include the following:

The unit price for cabinet base installation shall include all labor and materials required to provide complete installation and the item, and repair surrounding surface.

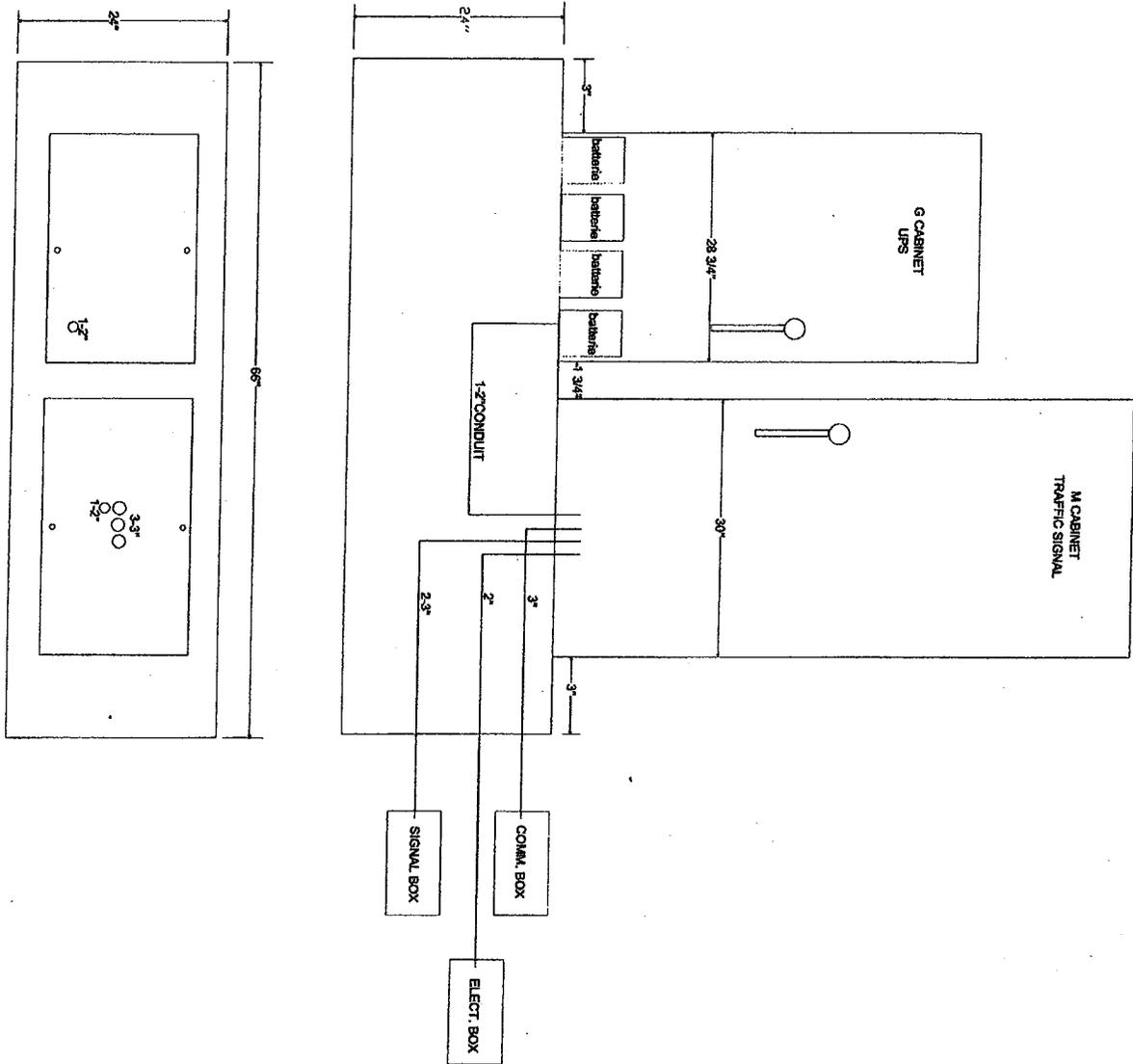
New cabinet bases that are used to support both M1 and G Type cabinets shall be paid for as Concrete Footing (Traffic Signal Controller Cabinets).

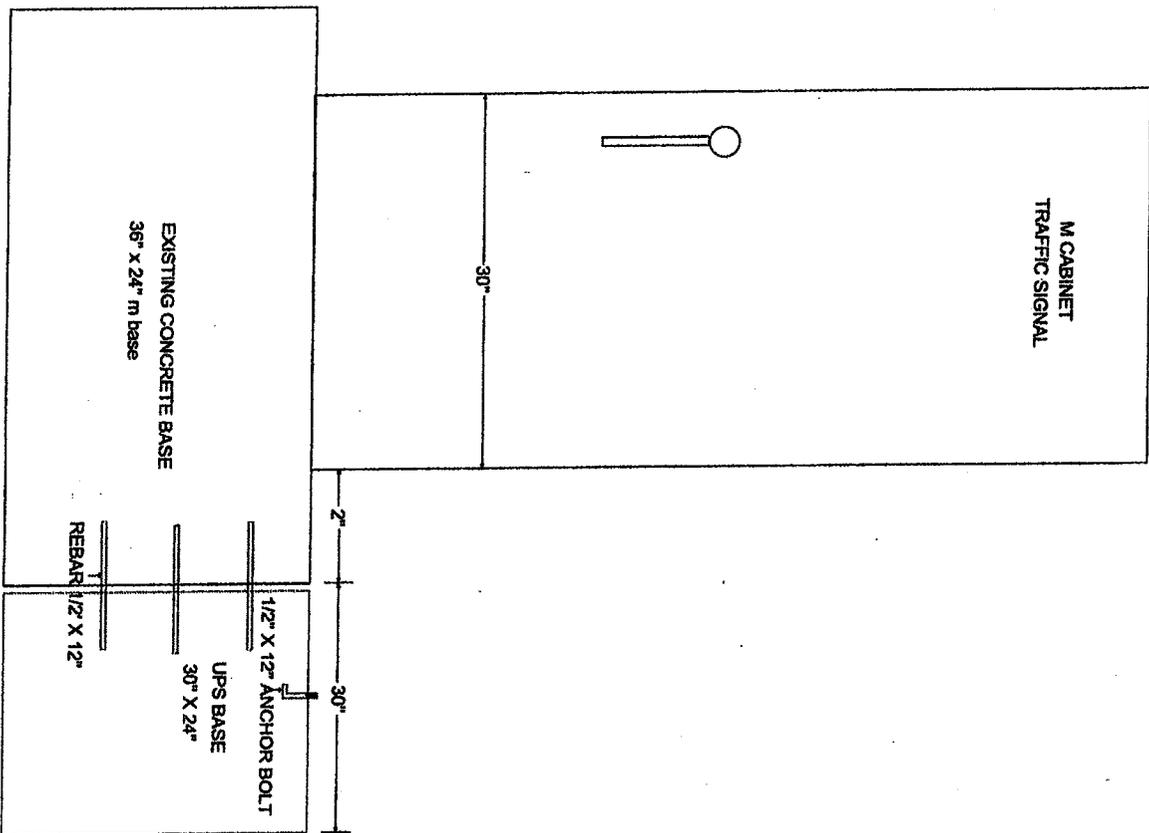
Expanded cabinets bases that are used to support just a G-Type (UPS) cabinet shall be paid for as Concrete Footing (UPS Cabinet).

Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Concrete Footing (Traffic Signal Controller Cabinets)	Each
Concrete Footing (UPS Cabinet)	Each





CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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

**CONTRACT NO. 201102384
TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT**

STATEMENT OF QUANTITIES

Item No.	Description	Estimated Quantity
202-00848	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	12 EA
202-99999	REMOVAL OF TRAFFIC SIGNAL CABINET BASE	16 EA
203-01597	POTHOLING	530 EA
203-01622	SWEEPING (WITH PICKUP BROOM)	80 HR
208-00002	EROSION LOG (12 INCH)	1,000 LF
208-00034	GRAVEL BAG	600 LF
208-00045	CONCRETE WASHOUT STRUCTURE	1 EA
208-00050	STORM DRAIN INLET PROTECTION	100 EA
208-00103	REMOVAL AND DISPOSAL OF SEDIMENT (LABOR)	80 HR
208-00105	REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT)	40 HR
208-00205	EROSION CONTROL SUPERVISOR	120 HR
210-00848	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	4 EA
607-11525	FENCE (PLASTIC)	500 LF
608-00000	CONCRETE SIDEWALK	121 SY
613-00306	3 INCH ELECTRICAL CONDUIT (BORED)	13,250 LF
613-01200	2 INCH ELECTRICAL CONDUIT (PLASTIC)	182 LF
613-01300	3 INCH ELECTRICAL CONDUIT (PLASTIC)	726 LF
613-00701	CONDUIT (PROOFING)	260 HR
613-04011	CONDUIT (REPAIR)	34 EA
613-07000	PULL BOX (SPECIAL)	72 EA
613-07101	PULL BOX (TYPE A)	49 EA
613-07104	PULL BOX (TRAFFIC)	50 EA
613-10000	WIRING	1 LS
613-10011	FIBER OPTIC CABLE (REPAIR)	17 EA
614-03101	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS)	4 EA
614-03102	CONCRETE FOOTING (UPS CABINET)	32 EA
614-75848	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	14 EA
614-86004	SPREAD SPECTRUM RADIO (INSTALL ONLY)	4 EA
614-86105	TELEMETRY (FIELD)	51 EA
614-87414	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	1,785 LF
614-87474	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	15,500 LF



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

**CONTRACT NO. 201102384
TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT**

STATEMENT OF QUANTITIES

Item No.	Description	Estimated Quantity
614-96801	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	50 EA
626-00000	MOBILIZATION	1 LS
630-00000	FLAGGING	240 HR
630-00003	UNIFORMED TRAFFIC CONTROL	160 HR
630-00007	TRAFFIC CONTROL INSPECTION	48 DAY
630-00012	TRAFFIC CONTROL MANAGEMENT	130 DAY
630-80341	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	8 EA
630-80342	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	8 EA
630-80358	ADVANCE WARNING FLASHING OR SEQ ARROW PANEL (C TYPE)	2 EA
630-80360	DRUM CHANNELIZING DEVICE	25 EA
630-80380	TRAFFIC CONE	200 EA
700-70010	F/A MINOR CONTRACT REVISIONS	1 FA
700-70011	F/A PARTNERING	1 FA
700-70016	F/A FUEL COST ADJUSTMENT	1 FA
700-70022	F/A OJT COLORADO TRAINING PROGRAM	1 FA
700-70028	F/A ESB PROGRAM	1 FA
700-70380	F/A EROSION CONTROL	1 FA
700-70589	F/A ENVIRONMENTAL HEALTH & SAFETY MANAGEMENT	1 FA

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

**NOTICE OF INVITATION FOR BIDS
FEDERAL AID PROJECT NO. AQC-M320-071, S.A. #18144
CITY OF DENVER CONTRACT NO. 201102384**

TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

**BID SCHEDULE:
11:00 AM, Local Time
SEPTEMBER 23, 2011**

Sealed bids will be received at the Office of Economic Development (OED) Reception Desk located on the 2nd floor at 201 West Colfax, Denver, CO 80202, beginning at 10:30 a.m., and no later than 11:00 a.m., on the bid date.

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 West Colfax Avenue, Department 614, Denver, Colorado 80202. All properly delivered bids will then be publicly opened and read aloud in Room 1.D.1 on the 1st floor at 201 West Colfax, Denver, Colorado 80202.

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

GENERAL STATEMENT OF WORK:

Traffic signal system improvements at 52 intersections. Improvements entail upgrading of traffic signal cabinets with Ethernet network infrastructure, mini-Fiber Optic hub, Spread-Spectrum radios and UPS (power system back-up). Traffic signal controllers will be upgraded to the Econolite ASC/3 type.

ESTIMATED CONSTRUCTION COST:

The estimated cost of construction for this project is between \$615,000.00 and \$750,000.00.

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 #1720627. 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 10:00 AM, local time, on **SEPTEMBER 06, 2011**. This meeting will take place in conference room 4.1.3 at 201 W. Colfax Ave., Denver, CO 80202.

DEADLINE TO SUBMIT QUESTIONS:September 14, 2011 by 3:00PM Local Time

PREQUALIFICATION REQUIREMENTS:

NONE

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION:

Federally-funded construction, reconstruction, remodeling, and professional design services contracts made and entered into by the City and County of Denver are subject to Federal Statutes and Regulations regarding Disadvantaged Business Enterprise participation and all Disadvantaged Business Enterprises Utilization.

The Director of the Division of Small Business Opportunity is authorized to establish project goals for expenditures on construction, reconstruction and remodeling and professional design services work let by the City and County of Denver. The specific goal for this project is:

12% Disadvantaged Business Enterprise (DBE)

The project goal must be met with certified participants as set forth in 49 CFR Part 26. For compliance with good faith effort requirements, as set forth in Part 26, the DBE solicitation level required for this project is 100% of the City and Denver's certified DBE's and 100% of the State of Colorado's Department of Transportation (CDOT's) certified DBE's.

The Director of the Division of Small Business Opportunity urges all participants in the construction, reconstruction, remodeling, and professional design services projects not to discriminate against women and minorities or any other persons and to assist in achieving these goals.

The CDOT Form 347, Certification of EEO Compliance, is no longer required to be submitted in the bid package. This form certified that the contractor/proposed subcontractors were in compliance with the Joint Reporting Committee EEO-1 form requirements. The EEO-1 Report must still be submitted to the Joint Reporting Committee if the contractors and subcontractors meet the eligibility requirements (29CFR 1602.7); CDOT will, however, no longer require certification. For additional information regarding these federal requirements, please refer to: <http://www.eeoc.gov/stats/jobpat/e1instruct.html>.

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.

Publication Dates: August 24, 25, 26, 2011

Published In: The Daily Journal

If applicable, a shortened version of this Notice of Invitation for Bids and the Statement of Quantities can be viewed on the City and County of Denver website at:

<http://www.denvergov.org/SearchBidAdvertisements/tabid/385460/Default.aspx>

**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Engineering 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, interlineation, 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 proper bid guarantee, satisfying all of the requirements specified herein and on the form provided herein shall render the bid non-responsive and may 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 on the 2nd floor at 201 W. Colfax Avenue, Denver, CO 80202.

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, responsible, 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 re-bid 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 bound sets of 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 non-responsive 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 sufficient copies of the Contract Documents by incorporating all of the documents submitted by the Apparent Low Bidder into executable copies of the Contract Documents made available pursuant to the Notice of Invitation for Bids. These copies will then be made available to the Apparent Low Bidder who shall thereafter properly sign all of the copies. 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 materials purchased prior to the issuance of the 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.

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 WAGE RATE REQUIREMENTS

In preparing any bid hereunder, the Contractor must comply with and should carefully consider 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.

At the time of the preparation of the Contract Documents, the then-current prevailing wage rates applicable to this Project shall be bound within the Contract Documents made available to potential bidders for the Project. If, more than ten (10) days prior to the actual date of bid opening, the Career Service Board determines that prevailing wages rates different from those bound in the Contract Documents are applicable to one or more of the various classes of laborers, mechanics and workers encompassed by this Project, such different prevailing wage rates shall be provided in an addendum. If different prevailing wage rates are determined by the Career Service Board ten (10) or less days prior to the actual date of bid opening, the City will determine on a case by case basis in its sole discretion whether such different prevailing wage rates are to be included in an addendum. In conjunction with such determination, the City may elect, in its sole discretion, to postpone the date of bid opening on the Project. In any event, the bidder will be held, at

the actual date of bid opening, to those prevailing wage rates incorporated into the Contract Documents and as modified by any such addenda.

These prevailing wage rates shall be considered the **minimum** City prevailing wage rates to be paid by all contractors or subcontractors for a period not to exceed one (1) year from the date of the Contract. Increases in prevailing wages subsequent to the date of the Contract for a period not to exceed one (1) year shall not be mandatory on either the contractor or subcontractors. Future increases in prevailing wages on contracts whose period of performance exceeds one (1) year shall be mandatory for the contractor and subcontractors only on the yearly anniversary date of the Contract. The **minimum** City prevailing wage rate for any such subsequent yearly period or portion thereof shall be the wage rates in effect on the yearly anniversary date of the contract which begins such subsequent period. In no event shall any increases in prevailing wages over the amounts thereof as stated in such Technical Specifications and addenda thereto result in any increased liability on the part of the City and the possibility and risk of any such increase is assumed by all contractors entering into any such contract with the City. Decreases in prevailing wages subsequent to the date of the contract for a period not to exceed one year (1) shall not be permitted. Decreases in prevailing wages on contracts whose period of performance exceeds one (1) year shall not be effective except on the yearly anniversary date of the contract.

IB-23 TAX REQUIREMENTS

General. Bidders are referred to the General Contract Condition 322, 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 is subject to such tax.

IB-24 DISCLOSURE OF PRINCIPALS

Pursuant to D.R.M.C. 20-69, any bid in excess of \$100,000.00 must be accompanied by a separate detachable page setting forth the following information:

- (1) The name of any officer, director, owner or principal of the business entity, including identity of any shareholder who owns or controls 5% or more of the business entity, and either 1) the names of his or her spouse, and children under eighteen years of age; or 2) a statement that he or she or his or her spouse, or children, if any, under the age of eighteen have or have not made a contribution, as defined in D.R.M.C. 15-32, or contribution in kind, as defined in D.R.M.C. 15-32, to any candidate, as defined in D.R.M.C. 15-32, during the last five years and identifying by name himself or herself or any spouse or child under the age of eighteen who has made such a contribution or contribution in-kind to a candidate.
- (2) The names of any subcontractors or suppliers whose share of the bid exceeds \$100,000.00 of the contract or formal bid amount.
- (3) The names of any unions with which the bidder has a collective bargaining agreement.

If the total bid amount is in excess of \$500,000.00, the information required in (1) above must be provided at the time of bid submittal. and the information required in (2) and (3) must be submitted in a

timely fashion prior to award. The list of subcontractors required by this instrument is different and separate from the bidding list required on BF-4.

If the total bid amount is less than \$500,000.00 but more than \$100,000.00, such information must be provided prior to award of the contract. Failure to provide the required information in a timely fashion shall render any bid to which D.R.M.C. 20-69 applies non-responsive.

While a bidder or supplier who has already disclosed such information need not provide such information with a second or subsequent bid or proposal unless such information has changed, it shall be the responsibility of each such bidder or proposer to verify that such information is still current as of the date of such subsequent bid or proposal and is in fact on file with the City Clerk.

A form which should be used for such disclosure is contained in the Special Conditions Section of the Contract Documents. The form is entitled: Bidder/Contractor/Vendor/Proposer Disclosure. Failure to provide or update the required information in a timely fashion shall render any bid to which D.R.M.C. 20-69 applies non-responsive.

IB-25 DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS

Department of Transportation (DOT) 49 CFR Part 26 ("Part 26") applies to this Project and will be incorporated into any agreement entered into by the City and contained in County of Denver Bid Documents. It is the policy of DOT and the City and County of Denver that DBEs to ensure non-discrimination in the award and administration of DOT-assisted contracts financed in whole or in part with Federal funds. Consequently, the Bidders must fully comply with the DBE requirements of Part 26 in bidding and performing hereunder.

The contractor, sub recipient or subcontractor shall not discriminate on the basis or race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deemed appropriate. Each contract signed by the contractor with a subcontractor must include this paragraph.

Part 26 provides for the adoption of a good faith goals program, to be administered by the Division of Small Business Opportunity (DSBO). As such, each bidder must comply with the terms and conditions of the Part 26 in making its bid and, if awarded the Contract, in performing all Work thereunder. A bidder's failure to comply with Part 26, any Rules or Regulations promulgated pursuant thereto, or any additional requirements contained herein may render a bid non-responsive and may constitute cause for rejection.

In order to comply with the bid requirements of Part 26, a Bidder shall either meet the established DBE Project goal or, in the alternative, demonstrate that the bidder has made sufficient good faith efforts to meet the goal. In preparing a bid to meet the established DBE Project goal, bidders should consider the following instructions relating to compliance with Part 26:

1. Under Part 26, the Director of the Division of Small Business Opportunity establishes a project goal for this project. 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 Disadvantage Business Enterprise Bidders, Sub-contractors, Suppliers, Manufacturers, or Brokers" the name, address, work description/supply, committed level of participation and other required information for each DBE of any tier which the bidder intends to use in performing the Work on this Project. Only DBEs identified and the levels of participation listed for each on this 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 in determining responsiveness.
3. All DBE firms listed on the Bid Form must be properly certified under guidelines of the Department of Transportation 49 CFR Part 26 by the City of Denver DSBO's Office or the State of Colorado Department of Transportation (CDOT's) Office in order to count towards

meeting the designated goals. Both DSBO and CDOT maintain a current listing of certified DBE firms. The DBE Directory is located at www.dot.state.co.us/app_ucp/. Bidders are encouraged to utilize these directories to assist them in locating DBEs for the work/supply required on the project. The most current directories must be utilized in preparing a bid. DBE certification does not, however, constitute a representation or warranty by the City as to the qualification of any listed firm.

4. In accordance with the requirements of Part 26, DSBO will evaluate each bid to determine the responsiveness of the bid to Part 26 requirements. In determining if a Bidder's committed levels of participation meet or exceed the stated DBE goal, DSBO will 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 DBE percentage goal established for the project to determine the exact dollar amounts of required DBE participation for the Project. These amounts will then be compared against the dollar amounts for the DBE firm(s) committed for participation by the Bidder. If the total dollar amount of participation listed meets or exceeds the established DBE dollar amount goal listed, then the DSBO will determine that goals have been met.
 - b. In addition, DSBO will determine the exact commitment percentage for each listed DBE firm by dividing the dollar amount listed for each firm by the total base bid dollar amount submitted by the bidder. These individual percentages, when totaled for all listed DBEs, will establish the total committed percentage level of DBE participation that the bidder must comply with during the life of the Contract. In all cases, the committed percentage level of DBE participation must equal or exceed the assigned DBE goal for the Project.
 - c. In providing the exact dollar amount of participation for each listed DBE firm 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 both dollar amounts and percentage for DSBO to determine that the bidder has met or exceeded the applicable DBE goal.
 - d. As previously mentioned compliance with the DBE 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 goals. However, should any designated alternate be selected by the City for inclusion in the Contract ultimately awarded, the DBE 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 DBE goal percentage based upon the total base bid, including all such items that he 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 DBE goal on the remaining reduced amount.
5. In accordance with Part 26 the City and County of Denver will require the total DBE participation commitment to be achieved in accordance with the following:

DBE bidders can count themselves for self-performance toward meeting the DBE goal, but only for the scope of work and at a percentage level they will be actually performing themselves.

DBE credit will be counted only for work actually performed by the DBEs own forces.

Work actually performed by DBEs is deemed to include the cost of materials and supplies purchased and equipment leased by the DBE from non-DBE sources. Work subcontracted can only count if the subcontractor is another DBE.

The entire fee or commission charged by a DBE, if reasonable and not excessive, will be counted.

Under Joint Ventures, the total value of distinct and clearly defined portions of the work of the contract that the DBE performs with its own workforce will be counted.

Each DBE must perform a "commercially useful function" to be counted toward the goal and at least 30% of the work must be performed by a DBE of the total cost of its contract for the DBE to be presumed to be performing a "commercially useful function".

Supplies or materials can be only counted for 60% of the total cost of the materials or supplies toward meeting the DBE goal and a DBE manufacture can count 100% of the cost of the materials or supplies toward the goal. Manufactures' representatives and packagers shall be counted in the same manner as brokers.

In utilizing the DBE participation of a Broker, only the bona fide fees and commissions earned by them for their performance of a commercially useful function will count toward meeting the project goals. The Bidder must separate the bona fide brokerage fees and 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.

6. On or before the fifth (5th) working day after bid opening, all of the Bidders are required to submit an executed "DBE Letter of Intent" for each DBE listed on the Bid Form as a subcontractor, supplier, manufacturer, or broker of any tier. Each Letter of Intent shall be submitted only for the DBEs listed at the time of bid opening, since this is the only participation that will be counted toward satisfaction of the project goals. A form for the DBE Letter of Intent is included with the Bid Form. The DBE 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 DBE and/or that its subcontractor(s) and supplier(s), manufacturer(s), and broker(s) will do so. Each DBE Letter of Intent shall be accompanied by either a copy of the City and County of Denver's (DSBO) DBE certification letter or the State of Colorado's (CDOT) DBE certification letter and DBE Work Codes Sheet for each proposed DBE firm 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.

In preparing a bid to demonstrate a good faith effort, Bidders should consider the following instructions relating to compliance with Part 26:

1. If any Bidder is unable to meet the designated project DBE goal at the time the bids are opened or elects to present a good faith effort in lieu of or in addition to attempting to satisfy the designated project goals, that Bidder shall submit on or before the fifth (5th) working day after the bid opening a detailed statement, with supporting documentation, setting forth its good faith efforts made prior to bid opening. The different kinds of efforts as well as the quantity and intensity of the efforts will be considered in determining whether the Bidder has made a good faith effort. A Bidder who fails to meet the project goal and cannot show, to the Director's satisfaction, that it made a good faith effort to meet the DBE goal shall be considered non-responsive.
2. For compliance with good faith effort requirements as set forth in Part 26, the DBE solicitation level required for this project is 100% of the City and County of Denver's certified DBE's and 100% of the State of Colorado's Colorado Department of Transportation (CDOT's) certified DBE's. Therefore, both DBE certified lists must be utilized in solicitation

effort in order to meet the good faith effort requirement. The statement of good faith efforts shall include a specific response to each of the following as further defined by rule or regulation. The Bidder must identify the portions of the project that it will self-perform and the Bidder must solicit **DBE** participation in every category in which it will not self perform. The required level of **DBE** participation is set forth in the Notice of Invitation for Bids, which is also contained within the project Contract documents. A Bidder may include any additional information the Bidder believes may be relevant. Failure of a Bidder to show good faith efforts as to any one of the following categories shall render its overall good faith showing insufficient and its bid non-responsive. Item (1) through (4) of the D.R.M.C. Section 28-208, Subsection (b) are set forth below:

- a. If pre-bid meetings are scheduled by the City at which DBEs may be informed of subcontracting opportunities under a proposed contract to be bid, attendance at such pre-bid meetings is not mandatory; however, bidders are responsible for the information provided at these meetings. The good faith effort statement must reflect the bidder's knowledge of the information provided at these meetings.
- b. Written verification of the placing of an advertisement soliciting bids from DBEs for three (3) consecutive days in general or construction-related publications approved by the Director. All such advertisements must expressly advertise a given project and expressly state that DBE participation on that project is being sought; other incidental references to the project or listing of the bidder as a plan holder are not sufficient. All such advertisements shall begin at least fifteen (15) days prior to bid opening. If the City publishes notice for bids on a project less than fifteen (15) days prior to bid opening, verification of advertisements for at least four (4) consecutive days shall be provided.
- c. Verification of efforts made by the Bidder to contact, by written notice, all certified DBEs who have the capability to perform the work of the contract, that their interest in the contract is being solicited, in sufficient time to allow the DBEs to participate effectively is required. The notice shall expressly describe the potential subcontracting, supplier or broker opportunities for all applicable certification categories for the particular project.
- d. Verification that, reasonably consistent with industry practice and the Bidder's past practices on similar projects, the Bidder analyzed the needs of the project in light of such industry practice and past practice, together with the goal of facilitating DBE participation on the project, and identified portions of the work to be performed by DBEs in order to achieve the project goal.
- d. For each DBE which contacted the Bidder or which the Bidder contacted or attempted to subcontract with, consistent with industry practice, a statement giving the reasons why the Bidder and the DBE did not succeed in reaching a subcontracting, supplier, manufacturer or broker agreement.
- e. Verification that the Bidder rejected DBEs because they did not submit the lowest bid or they were not qualified. Such verification shall include a verified statement of the amounts of all bids received from potential subcontractors, suppliers, manufacturers or brokers on the project and a verified statement that the Bidder rejected DBEs because they did not submit the lowest bid from among such bids or were not qualified.
- f. Verification that the Bidder made efforts to assist DBEs in obtaining bonds, if any are required.

In accordance with Part 26 the Bidder agrees that it is committed to meeting either the DBE participation goal or the DBE participation set forth in its statement of good faith efforts. This commitment must be expressly indicated on the "Commitment to Disadvantaged Business Enterprise Participation" form included with the Bid Form. This commitment includes the following understandings:

1. The Bidder understands it must maintain the committed DBE participation goal level throughout the life of the Contract and as required in 49 CFR Section 26.53 (f) (1) & (2) which states: A prime may not terminate for convenience a DBE subcontractor (or an approved substitute DBE firm) and then perform the work of the terminated subcontract with its own forces or those of an affiliate, without prior written consent. When a DBE subcontractor is terminated, or fails to complete its work on the contract for any reason, the prime contractor is required to make good faith efforts to find other DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal.
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 toward satisfying the DBE participation goal and other affirmative action efforts.
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, 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 the 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 a DBE at the time of Contract award, then such amendment, change order or other modification shall be contemporaneously submitted to the DSBO. 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 Bidder shall be subject to goals for DBEs equal to the original goal on the Contract which were included in the bid or showing of a good faith efforts.

Prime Contractor agree to pay each subcontractor under this prime contract for satisfactory performance on a contract no later than seven (7) days from the receipt of each payment the prime contractor receives from the City and County of Denver. The prime contractor agrees further to return retainage payments to each subcontractor within thirty (30) days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for a good cause following written approval of the City and County of Denver. This clause applies both to DBE and non-DBE subcontractors.

All Bidders are charged with knowledge of and are solely responsible for complying with each requirement of Part 26 in making a bid and, if awarded, in performing the Work described in the Contract Documents. 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 49 CFR Part 26, appropriate DOT Rules and Regulations, or contact the Project's designated DSBO representative at (720) 913-1700.

INSTRUCTIONS TO BIDDERS - All bidders must submit an DSBO "Bidder's List Data Form" for themselves, as well as any subcontractor/supplier/manufacture/manufacture representative/broker that contacted the bidder or that the bidder contacted who provided a bid or quote, regardless if the firm is a DBE or a non-DBE firm. DSBO is required by DOT 49 CFR Part 26 Regulations to create and maintain a bidders list on DOT-assisted projects. Therefore, bidders need to provide these completed forms at the time of bid as a part of their "Bid Form & Submittal Document".

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 DenverGov.com for information, both general and project specific. The Contract Administrator assigned to this project is Jo Ann Phillips, who can be reached via email at joann.phillips@denvergov.org.

IB-28 FEDERAL REQUIREMENTS

This project is funded, in whole or in part, by federal funding made available through the Federal Highway Administration ("FHWA") and administered by the Colorado Department of Transportation ("CDOT"). As such, each bidder must review and comply with certain bid requirements (the "Federal Forms") in formulating and submitting its bid for the Project, and, if awarded a contract pursuant to this bid, must comply with certain "Federal Requirements." The required Federal Forms are included in the Bid Package at pages BF-24 through BF-28. The Federal Requirements are attached to the Bid Document Package, pages at BDP-63 through BDP-79. The Contractor shall be presumed to have considered and completed all Federal Requirements and Forms as part of its bid and shall be presumed to have carefully considered and accounted for all costs of complying with the Federal Requirements in formulating and submitting a bid hereunder.

**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

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.

APPENDIX B

EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. 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 considerations for employment without regard to race, color, religion, sex, or national origin.
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. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.
5. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor 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 Government contracts or federally assisted construction contracts in accordance with procedure authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. 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 provision, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

NOTICES TO BE POSTED PER PARAGRAPH (1) AND (3) OF THE EEO CLAUSE

EQUAL EMPLOYMENT OPPORTUNITY IS THE LAW

**Discrimination is Prohibited by
the Civil Rights Act of 1964
and by Executive Order No. 11246**

Title VII of the Civil Rights Act of 1964

Administered by: The Equal Employment Opportunity Commission

Prohibits discrimination because of Race, Color, Religion, sex, or National Origin by Employers with 25 or more employees, by Labor Organizations with a hiring hall of 25 or more members, by Employment Agencies, and b Joint Labor-Management Committees for Apprenticeship or Training.

ANY PERSON who believes that he or she has been discriminated against SHOULD CONTACT:

The Equal Employment Opportunity Commission (EEOC)
2401 E Street, NW
Washington, D.C. 20506

Executive Order No. 11256

Administered by: The Office of Federal Contract Compliance Programs

Prohibits discrimination because of Race, Color, Religion, Sex, or National Origin, and requires affirmative action to ensure equality of opportunity in all aspects of employment, by all Federal Government Contractors and Subcontractors, and by Contractors Performing Work Under a Federal Assisted Construction Contract, regardless of the number of employees in either case.

ANY PERSON who believes that he or she has been discriminated against SHOULD CONTACT:

The Office of Federal Contract Compliance Programs
U. S. Department of Labor
Washington, D.C. 20210

APPENDIX E

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246, as amended)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area are as follows:

Timetables: Until Further Notice

Goals:

- (a) Minority Participation in Each Trade: 13.8 percent
- (b) Female Participation in Each Trade: 6.9 percent

These goals are applicable to all the contractor's construction work (whether or not it is Federal on Federally-assisted) performed in the covered area. If the contractor performs construction work in a geographic area located outside of the covered area, it shall apply the goal established for such geographic area where the work is actually performed. With regard to this second area, the contractor also is subject to the goal for both its Federally involved and non-Federally involved construction.

The contractor's compliance with the executive order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goal. The hours of minority employment and training must be substantially uniform throughout the length of the contract, and in each grade, and the contract shall make a good faith effort to employ minorities evenly on each of its projects. The transfer of minority employees or trainees from contractor to contractor or from project to project, for the sole purpose of meeting the contractor's goal, shall be a violation of the contract, the executive order, and the regulations in 41 CFR Part 60-4. Compliance with the goal will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director, OFCCP, within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employee identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographic area in which the contract is performed.
4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is the City and County of Denver, Colorado.

STANDARD FEDERAL ASSURANCES

NOTE: As used below the term "contractor" shall mean and include the "Party of the Second Part," and the term "sponsor" shall mean the "City".

During the term of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. Compliance with Regulations. The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

2. Nondiscrimination. The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, creed or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3. Solicitations for Subcontractors, Including Procurements of Materials and Equipment. In all solicitations either by competitive bidding or negotiations made by the contractor for work to be performed under a subcontract, including procurements or materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

4. Information and Reports. The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the sponsor, as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance. In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it may determine to be appropriate, including, but not limited to:

- a. Withholding of payments to the contractor under the contract until the contractor complies, and/or
- b. Cancellation, termination, or suspension of the contract, in whole or in part.

6. Incorporation of Provisions. The contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the sponsor or may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the sponsor to enter into such litigation to protect the interests of the sponsor and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (41 CFR 60-4.3)
(VERSION 2, 4/23/90)**

1. As used in these specifications:

- a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
- b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
- c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
- d. "Minority" includes:
 - (1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
 - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained

from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by

publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint

contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

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

Manager of Public Works
City and County of Denver

EQUAL OPPORTUNITY PROVISIONS (Cont'd)

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 Office of Contract Compliance. 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.

A. 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 Division of Small Business Opportunity 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.

B. 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.

C. 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
ENGINEERING DIVISION**

**FEDERAL AID PROJECT NO. AQC M320-071 SA18144
CITY OF DENVER CONTRACT NO. 201102384**

TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

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

Jacobs Investments, LLC dba Colorado Boring Co.
3813 Canal Dr.
Ft. Collins, CO 80524

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

WITNESSETH, Commencing on **August 24, 2011**, 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:

**FEDERAL AID PROJECT NO. AQC M320-071 SA18144
TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT – TSSIP1
CITY OF DENVER CONTRACT NO. 201102384**

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
Bid Bond
Addenda (as applicable)
DBE Documents
Equal Employment Opportunity Provisions (Appendices A, B, E and F)
Bid Form
Commitment to DBE Participation
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 **180 (One Hundred Eighty 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 202-00848 through 700-70589 (Forty Nine [49] Total Bid Items, the total estimated cost thereof being: Five Hundred Eighty Eight Thousand Two Hundred Fifty Three Dollars and Fifty Cents (\$588,253.50).** 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. DBE AND EQUAL OPPORTUNITY REQUIREMENTS

The Contractor agrees to comply with all requirements of the City's Equal Employment Opportunity program and the Federal Disadvantaged Business Enterprise Participation program as set out in Article III, Division 2, Chapter 28 of the Denver Revised Municipal Code, and any rules, regulations and guidelines set forth thereunder for such programs. This compliance shall include the obligation to maintain throughout the term of the contract that level of DBE participation upon which the Contract was initially awarded, unless otherwise authorized by the law or any rules, regulations or guidelines.

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 City 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. 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:

Vendor Name:

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 _____

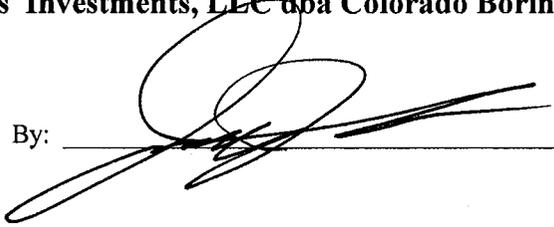
By _____



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: 201102384

Vendor Name: Jacobs Investments, LLC dba Colorado Boring Co.

By:  _____

Name: Jon Jacobs
(please print)

Title: Manager
(please print)

ATTEST: [if required]

By:  _____

Name: LLOYD SEATON
(please print)

Title: MANAGER
(please print)

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

Construction Contract General Conditions

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CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
ENGINEERING 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,
(The Index for which is bound herein and commonly referred to as the "Orange Book")
(1999 Edition)

Transportation Standards and Details for the Engineering Division

City and County of Denver Traffic Standard Drawings

Wastewater Management Division

– *Standard Detail Drawings*

– *Storm Drainage and Sanitary Sewer Construction Detail and Technical 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 2006 Series, City and County of Denver Amendments 2006)

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 for purchase at the Cashier, 2nd floor at 201 W. Colfax Ave., Denver, Colorado 80202. *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 CONSTRUCTION DOCUMENTS

The construction documents consist of Plans, Drawings and Technical Specifications as identified in the Index for Contract Drawings, the Index for Technical Specifications and any additional Plans attached hereto.

SC-3 ENGINEERING DIVISION / CITY ENGINEER

General Condition 206, TRANSPORTATION DIVISION, is modified as follows:

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 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 CITY DELEGATION OF AUTHORITY

With reference to General Contract Condition 109, DEPUTY MANAGER, General Contract Condition 206, ENGINEERING DIVISION and General Contract Condition 214, CITY’S CONTRACT ADMINISTRATION LINE OF AUTHORITY, the Manager hereby designates the City Engineer (the “Director”) 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 Director 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,

<u>Project Manager</u>		<u>Telephone</u>
City Project Manager		
John LaSala		(720) 913-4534
<u>Consultant</u>	<u>Name</u>	<u>Telephone</u>
Design Consultant	Consultant Contact	
Felsburg Holt & Ullevig	Larry Lang	(303) 721-1440

SC-5 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-6 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-7 PAYMENTS TO CONTRACTORS

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/City Engineer	Tam Nguyen	(720) 865-3156

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 such estimate of Work completed shall specifically identify those DBE Subcontractors or Suppliers that the Contractor is utilizing on the Project pursuant to the requirements of 49 C.F.R., Part 23.
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.

In accordance with General Contract condition 907, RELEASES AND CONTRACTORS CERTIFICATION OF PAYMENT, Applications for Payment must be accompanied by completed Partial or Final Claim Release Form, as appropriate, from EACH subcontractor and supplier, OR the Contractors' Certification of Payment Form. The forms, Final/Partial Release and Certificate of Payment (Subcontractor/Supplier) and the Contractor's Certification of Payment, either of which must be used are attached hereto.

SC-8 RESERVED

SC-9 CONSTRUCTION INSPECTION BY THE CITY

General Condition 1701, AUTHORITY OF INSPECTORS, is modified as follows:

1701.1 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 The Building Inspection Division 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-10 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-11 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-12 DEBARRED SUBCONTRACTORS PROHIBITED

The Contractor is prohibited from hiring any subcontractor that is currently debarred by the City in accordance with section 20-77 of the Denver Revised Municipal Code.

SC-13 TERMINOLOGY

Terminology used in Colorado Department of Transportation (CDOT) Standards and Specifications and City and County of Denver (CCD) Standards and Specifications may differ but shall be considered interchangeable where appropriate. Examples are Department of Public Works (CCD) and Department (CDOT), Project Manager (CCD) and Engineer (CDOT), Traffic Maintenance Plan (CCD) and Traffic Control Plan (CDOT).

SC-14 TECHNICAL SPECIFICATIONS

Section 106 of the CDOT Standard Specifications is hereby incorporated into this contract except where conflicts exist between Section 106 and the General Contract Conditions or Special Contract Conditions. Where conflicts exist, the General Contract Conditions or Special Contract Conditions shall govern.

SC-15 MODIFICATION TO GENERAL CONTRACT CONDITION 405

General Contract Condition 405 is hereby revised for this project as follows:

G.C. 405.2 shall include the following:

Shop Drawings shall be submitted in accordance with Section 105.02 of the CDOT Standard Specifications. Any work performed by the Contractor prior to receipt of approved shop drawings is at the sole risk of the Contractor.

SC-16 MODIFICATION TO GENERAL CONTRACT CONDITION 809

General Contract Condition 809 is hereby revised for this project as follows:

Add G.C. 809.3 as follows:

.3 Fossils may be uncovered during excavation for the project. The Colorado Department of Transportation will furnish a paleontologist to monitor project excavations. The Contractor shall notify the Engineer at least five working days prior to the start of excavation operations to allow for scheduling of the monitor. The paleontologist, Mr. Steve Wallace, can be contacted at (303) 757-9632.

If fossils are encountered, they will be evaluated and, if deemed important, removed prior to further excavation. When directed, the Contractor shall excavate the site in such manner as to preserve the fossils uncovered and shall remove them as directed by the Engineer.

SC-17 FEDERAL REQUIREMENTS

This Project is funded, in whole or in part, by federal funding made available through the Federal Highway Administration (“FHWA”) and administered by the Colorado Department of Transportation (“CDOT”). As such, performance under this contract is subject to certain “Federal Requirements” contained or referenced in Attachment A to this contract, attached hereto and incorporated herein by this reference. The Contractor shall thoroughly review and shall strictly comply with all Federal Requirements in performing its Work under this contract.

SC-18 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-19 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)

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 20: 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 stating "Should any of the above-described policies be canceled or non-renewed before the expiration date thereof, the issuing company shall send written notice to Denver Risk Management, 201 West Colfax Avenue, Dept. 1105, Denver, Colorado 80202. Such written 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." Additionally, Contractor shall provide written notice of cancellation, non-renewal and any reduction in coverage to the address above by certified mail, return receipt requested. 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, Auto Liability and Excess Liability/Umbrella, 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 policy 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, separation of insureds or cross liability provision; 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-21 DEFENSE AND INDEMNIFICATION

General Condition 1602, INDEMNIFICATION, is modified to read in full as follows:

DEFENSE AND INDEMNIFICATION

- (a) To the fullest extent permitted by law, the Contractor hereby agrees to defend, indemnify, and hold harmless City, its appointed and elected officials, agents and employees against all liabilities, claims, judgments, suits or demands for damages to persons or property arising out of, resulting from, or related to the work performed under this Contract that are due to the negligence or fault of the Contractor or the Contractor's agents, representatives, subcontractors, or suppliers ("Claims"). This indemnity shall be interpreted in the broadest possible manner consistent with the applicable law to indemnify the City.
- (b) Contractor's duty to defend and indemnify City shall arise at the time written notice of the Claim is first provided to City regardless of whether suit has been filed and even if Contractor is not named as a Defendant.
- (c) Contractor will defend any and all Claims which may be brought or threatened against City and will pay on behalf of City any expenses incurred by reason of such Claims including, but not limited to, court costs and attorney fees incurred in defending and investigating such Claims or seeking to enforce this indemnity obligation. Such payments on behalf of City shall be in addition to any other legal remedies available to City and shall not be considered City's exclusive remedy.

- (d) Insurance coverage requirements specified in this Contract shall in no way lessen or limit the liability of the Contractor under the terms of this indemnification obligation. The Contractor shall obtain, at its own expense, any additional insurance that it deems necessary for the City's protection.
- (e) This defense and indemnification obligation shall survive the expiration or termination of this Contract.

SC-22 GREENPRINT DENVER REQUIREMENTS

In accordance with the City and County of Denver Executive Order 123: Greenprint Denver Office and Sustainability Policy (dated October 27, 2007), and the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program, Contractor shall, wherever possible, recycle construction and demolition waste, and install building materials that contain recycled content. Non-hazardous solid waste that is eligible for reuse or recycling is not subject to the DADS disposal requirement defined in SC-10. The Contractor shall recycle and/or reuse construction and demolition waste and implement sustainable development practices on construction projects in compliance with any Project Requirements of the Better Denver Program Sustainability Form that are included in the Contract Documents.

At the Project Pre-Construction Meeting, the Contractor shall provide a written summary of how the Contractor intends to meet any applicable Project Requirement, and the type of documentation to be provided. The Contractor shall maintain and keep current documentation of the materials recycled or reused, organized in accordance with any applicable Closeout Form for Contractors provided in the Contract Documents for the duration of the Project. A copy of the completed Closeout Form, the quantity tabulation, and all supporting documentation for materials reused or recycled shall be delivered to the Project Manager as a submittal requirement of Final Acceptance.

SC-23 CITY AUDITOR AND MANAGER OF FINANCE

Section 211, City Auditor, of the General Contract Conditions, 1999 Edition, is amended to read in its entirety as follows:

211 CITY AUDITOR AND MANAGER OF FINANCE

The City Auditor, an independent elected official, reviews certified payrolls for compliance with prevailing wage requirements before payment is made to a Contractor. The City's Manager of Finance pays the Contractor for Work approved under the Contract.

SC-24 NO EMPLOYMENT OF ILLEGAL ALIENS TO PERFORM WORK UNDER THE AGREEMENT:

- a. This Agreement is subject to Division 5 of Article IV of Chapter 20 of the Denver Revised Municipal Code, and any amendments (the "Certification Ordinance").
- b. The Contractor certifies that:
 - (1) At the time of its execution of this Agreement, it does not knowingly employ or contract with an illegal alien who will perform work under this Agreement.
 - (2) It will participate in the E-Verify Program, as defined in § 8-17.5-101(3.7), C.R.S., to confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement.
- c. The Contractor also agrees and represents that:
 - (1) It shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.
 - (2) It shall not enter into a contract with a subconsultant or subcontractor that fails to certify to the Contractor that it shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.
 - (3) It has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement, through participation in the E-Verify Program.
 - (4) It is prohibited from using the E-Verify Program procedures to undertake pre-employment screening of job applicants while performing its obligations under the Agreement, and that otherwise requires the Contractor to comply with any and all federal requirements related to use of the E-Verify Program including, by way of example, all program requirements related to employee notification and preservation of employee rights.

- (5) If it obtains actual knowledge that a subconsultant or subcontractor performing work under the Agreement knowingly employs or contracts with an illegal alien, it will notify such subconsultant or subcontractor and the City within three (3) days. The Contractor will also then terminate such subconsultant or subcontractor if within three (3) days after such notice the subconsultant or subcontractor does not stop employing or contracting with the illegal alien, unless during such three-day period the subconsultant or subcontractor provides information to establish that the subconsultant or subcontractor has not knowingly employed or contracted with an illegal alien.
- (6) It will comply with any reasonable request made in the course of an investigation by the Colorado Department of Labor and Employment under authority of § 8-17.5-102(5), C.R.S., or the City Auditor, under authority of D.R.M.C. 20-90.3.

d. The Contractor is liable for any violations as provided in the Certification Ordinance. If Contractor violates any provision of this section or the Certification Ordinance, the City may terminate this Agreement for a breach of the Agreement. If the Agreement is so terminated, the Contractor shall be liable for actual and consequential damages to the City. Any such termination of a contract due to a violation of this section or the Certification Ordinance may also, at the discretion of the City, constitute grounds for disqualifying Contractor from submitting bids or proposals for future contracts with the City.

SC-24 Retainage

Section 908, Retainage, of the General Contract Conditions, 1999 Edition, is amended to read in its entirety as follows:

908.1 RETAINAGE

The City shall deduct and retain a total of five percent (5%) from the total amount of approved applications for payment, including Change Orders. The City may also deduct in addition to retainage as stated above, the additional amount(s) of any and all outstanding claims pursuant to CRS §38-26-107 from each approved application for payment.

REMAINDER OF PAGE LEFT INTENTIONALLY BLANK

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS

PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned Jacobs Investments, LLC dba Colorado Boring Co., 3813 Canal Dr., Ft. Collins, CO 80524, a corporation organized and existing under and by virtue of the laws of the State of Colorado, hereafter referred to as the "Contractor", and Hartford Fire Insurance Company, a corporation organized and existing under and by virtue of the laws of the State of Connecticut, 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 Five Hundred Eighty Eight Thousand Two Hundred Fifty Three Dollars and Fifty Cents (\$588,253.50), 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. 201102384, FEDERAL PROJECT NO: AQC M320-071 SA18144, TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1**, 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

17 day of OCTOBER, 2011.

Jacobs Investments, LLC dba Colorado Boring Co.
Contractor

Attest:

Quil Rocks
Secretary

By: [Signature] MEMBER
President

Hartford Fire Insurance Company
Surety

By: [Signature]
Attorney-In-Fact Alberto Paez

(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: [Signature]
Assistant City Attorney

APPROVED FOR THE CITY AND COUNTY OF DENVER

By: [Signature]
MAYOR

By: [Signature]
MANAGER OF PUBLIC WORKS

POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD

BOND, T-4

690 ASYLUM AVENUE

HARTFORD, CONNECTICUT 06115

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Code: 34-342944, 34-343684 & 34-343685

- Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
- Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, up to the amount of unlimited:

Thomas Sauer, Sharon A. Leonard, Alberto Paez
of
Littleton, CO

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by , and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on January 22, 2004 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Scott Sadowsky

Scott Sadowsky, Assistant Secretary

M. Ross Fisher

M. Ross Fisher, Assistant Vice President

STATE OF CONNECTICUT }
COUNTY OF HARTFORD } ss. Hartford

On this 3rd day of March, 2008, before me personally came M. Ross Fisher, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that he signed his name thereto by like authority.



CERTIFICATE

Scott E. Paseka

Scott E. Paseka
Notary Public

My Commission Expires October 31, 2012

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of
Signed and sealed at the City of Hartford.



Gary W. Stumper

Gary W. Stumper, Assistant Vice President



CERTIFICATE OF LIABILITY INSURANCE

OP ID: KH

DATE (MM/DD/YYYY)

10/13/11

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).

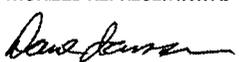
PRODUCER PFS Insurance Group - JT 4848 Thompson Pkwy, Ste 200 Johnstown, CO 80534 Tad Borrett		970-635-9400 970-635-9401	CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL ADDRESS: PRODUCER CUSTOMER ID #: COBOR-1	FAX (A/C, No):
INSURED Jacobs Investments, LLC Colorado Boring, LLC Northern Lights Leasing, LLC 3813 Canal Drive Fort Collins, CO 80524		INSURER(S) AFFORDING COVERAGE		NAIC # 524210
		INSURER A : Travelers Insurance		
		INSURER B : Pinnacol Assurance		
		INSURER C :		
		INSURER D :		
		INSURER E :		
		INSURER F :		

COVERAGES **CERTIFICATE NUMBER:** **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 CERTIFICATE 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 INSR	SUBR VWD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY			0075R25A	08/01/11	08/01/12	EACH OCCURRENCE \$ 1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Limited Pollution GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC			0075R25A	08/01/11	08/01/12	DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
A	AUTOMOBILE LIABILITY			0075R25A	08/01/11	08/01/12	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS						BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ \$
A	UMBRELLA LIAB			0075R25A	08/01/11	08/01/12	EACH OCCURRENCE \$ 5,000,000
	<input checked="" type="checkbox"/> EXCESS LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$ 10,000						AGGREGATE \$ 5,000,000 \$ \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			4021687	08/01/11	08/01/12	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input checked="" type="checkbox"/> OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	BLANKET WAIVER OF SUBROGA	08/01/11	08/01/12	E.L. EACH ACCIDENT \$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
A	Inland Marine			8137P008	08/01/11	08/01/12	Deductibl 1,000 Scheduled 936,500

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
RE:201102384 Traffic Signal System Improvement Project-TSSIP1
 The City and County of Denver, its elected and appointed officials, employees and volunteers are named as additional insured with regards to the commercial general liability policy and the business auto liability policy with Umbrella following form.

CERTIFICATE HOLDER CITYDEN City and County of Denver Department of Public Works 201 West Colfax, Dept 611 Denver, CO 80202	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 
--	--

NOTEPAD:

HOLDER CODE CITYDEN
INSURED'S NAME Jacobs Investments, LLC

COBOR-1
OP ID: KH

PAGE 2
DATE 10/13/11

The issuing Insurer will endeavor to mail 30 days written notice to the certificate holder, but failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents or representative. 10 days notice for non-payment



PFS Insurance Group

Performance and Payment Bond Surety Authorization

10/14/2011

Fax Number: 720-913-3183
Telephone Number: 720-913-3267

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

Re: Jacobs Investments LLC dba Colorado Boring Co.
3813 Canal Drive Fort Collins CO 80524

Contract No: 201102384
AQC M320-071 SA18144
Traffic Signal System Improvement Project – TSSIP1
Contract Amount: \$588,253.50
Performance and Payment Bond No: 34BCSZZ8535

Dear Assistant City Attorney,

The Performance and Payment Bonds covering the above captioned project were executed by this agency, through Hartford Fire Insurance Company, on October 14, 2011.

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 970-635-9400.

Thank you.

Sincerely,

Jill S. Rocks
Account Manager
Bond Department



Department of Public Works
Engineering Department

201 W. Colfax Avenue
Denver, CO 80202
www.denvergov.org/PublicWorks

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

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

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

RE: (Company name)

Contract No: **201102384**
Federal Project No. **AQC M320-071 SA18144**
Project Name: **TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1**
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
THE MILE HIGH CITY

Department of Public Works
Engineering Department

201 W. Colfax Avenue
Denver, CO 80202
www.denvergov.org/PublicWorks

NOTICE OF APPARENT LOW BIDDER
(SAMPLE)

Date

To:

Gentlemen:

The MANAGER OF PUBLIC WORKS has considered the Bids submitted on September 23, 2011 for work to be done and materials to be furnished in and for:

PROJECT No. 201102384 TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

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, Engineering Division, Project Management Office, 201 W. Colfax Ave., Dept 506, Denver, Colorado 80202, to receive the said Contract Documents, execute the same and return them to the Department of Public Works, Engineering Division, Project Management Office 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. One original plus four copies of the Power of Attorney relative to Performance and/or Payment Bond; and,
- b. One copy of listing of subcontractors showing items of work each sub-contractor will perform and the percent of total work.
- c. Accurate ACORD Certificate of Insurance

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. 201102384

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 _____
Manager of Public Works



Department of Public Works
Engineering Department

201 W. Colfax Avenue
Denver, CO 80202
www.denvergov.org/PublicWorks

Current Date

(S A M P L E)

Name
Company
Street
City/State/Zip

**FEDERAL AID PROJECT NO. AQC M320-071 SA18144
CITY OF DENVER CONTRACT NO. 201102384, TRAFFIC SIGNAL SYSTEM IMPROVEMENT
PROJECT - TSSIP1**

NOTICE TO PROCEED

In accordance with General Contract Condition 302 of the Standard Specifications for Construction, General Contract Conditions, 1999 Edition, you are hereby authorized and directed to proceed on **201102384 TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1** with the work of constructing contract number, as set forth in detail in the contract documents for the City and County of Denver.

With a contract time of 180 (One Hundred Eighty Days) 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 322.5, to the Project Manager as soon as possible. Failure to submit these certificates will delay processing of payment applications.

Very truly yours,

Lesley B. Thomas
City Engineer

By:



**DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION**

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

(CITY PROJECT NAME AND NUMBER)

(NAME OF CONTRACTOR)

(NAME OF SUBCONTRACTOR/SUPPLIER)

Date: _____, 20__.

Subcontract #: _____.

Subcontract Value: \$ _____.

Last Progress Payment: \$ _____.

Date: _____.

Total Paid to Date: \$ _____.

Date of Last Work: _____.

Check Applicable Box:
[] DBE

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 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) s.
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
Fax: 720-913-1803
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.

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/DBEs use the exact name listed in the DSBO Directory.

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

COMP-REF-031

Rev 032211 JG



DENVER
THE MILE HIGH CITY

Department of Public Works
Engineering Department

201 W. Colfax Avenue
Denver, CO 80202
www.denvergov.org/PublicWorks

Date

Name

Company

Street

City/State/Zip

(SAMPLE)

RE: Certificate of Contract Release for

FEDERAL AID PROJECT NO. **AQC M320-071 SA18144**

CITY OF DENVER CONTRACT NO. 201102384, TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

Certificate of Contract Release

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.



Contract No. 201102384
TSSIP1

BDP -62

August 24, 2011

Required Contract Provisions Federal-Aid Construction Contracts

- I. [General](#)
- II. [Nondiscrimination](#)
- III. [Nonsegregated Facilities](#)
- IV. [Payment of Predetermined Minimum Wage](#)
- V. [Statements and Payrolls](#)
- VI. [Record of Materials, Supplies, and Labor](#)
- VII. [Subletting or Assigning the Contract](#)
- VIII. [Safety: Accident Prevention](#)
- IX. [False Statements Concerning Highway Projects](#)
- X. [Implementation of Clean Air Act and Federal Water Pollution Control Act](#)
- XI. [Certification Regarding Debarment, Suspension Ineligibility, and Voluntary Exclusion](#)
- XII. [Certification Regarding Use of Contract Funds for Lobbying](#)

Attachments

- A. [Employment Preference for Appalachian Contracts \(included in Appalachian contracts only\)](#)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.
3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.
4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:
 - Section I, paragraph 2;
 - Section IV, paragraphs 1, 2, 3, 4, and 7;
 - Section V, paragraphs 1 and 2a through 2g.
5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.
6. **Selection of Labor:** During the performance of this contract, the contractor shall not:
 - a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
 - b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
 - a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.
 - b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: 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, preapprenticeship, and/or on-the-job training."
2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
 - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
 - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.
 - d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such

advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

- a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.
- b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
- c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

- a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
- b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

- c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
 - d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.
- 7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:
- a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
 - b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
 - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.
 - d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that 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 employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.
- 8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.
- a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
 - b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.
 - c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.
- 9. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three

years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

- a. The records kept by the contractor shall document the following:
 1. The number of minority and non-minority group members and women employed in each work classification on the project;
 2. The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
 3. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
 4. The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability
- b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).
- c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

- a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.
- b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
- c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

- a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.
- b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:
 1. the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
 2. the additional classification is utilized in the area by the construction industry;
 3. the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
 4. with respect to helpers, when such a classification prevails in the area in which the work is performed.
- c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and

Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

- d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary
- e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

- a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.
- b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

- a. Apprentices:
 - 1. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.
 - 2. The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the

classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

3. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.
4. In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

1. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.
2. The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
3. Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.
4. In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be

permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. **Helpers:**

1. Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under an approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on

account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

- a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.
- b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.
- c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.
- d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

1. that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;
 2. that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
 3. that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.
 - f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.
 - g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:
 - a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
 - b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
 - c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.
2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).
 - a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
 - b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
- d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this

clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

- j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
 - d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility
and Voluntary Exclusion--Lower Tier Covered Transactions:**

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

- 1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
 3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

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United States Department of Transportation - Federal Highway Administration – Infrastructure

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER[®]
THE MILE HIGH CITY

PREVAILING WAGE RATES

Contract No. 201102384

**TRAFFIC SIGNAL SYSTEM IMPROVEMENT
PROJECT - TSSIP1**

August 24, 2011

October 29, 2010

**U.S. DEPT. OF LABOR,
DAVIS BACON MINIMUM WAGES, COLORADO
GENERAL DECISION NUMBERS CO20100014 AND CO20100015
HIGHWAY CONSTRUCTION**

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions, unless such use is first approved by the Standards and Specification Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on all federal-aid projects with contracts exceeding \$2000, except for non-ARRA projects on roadways classified as local roads or rural minor collectors, which are exempt. Projects on local roads, rural minor collectors, and enhancement projects funded with ARRA funds are not exempt.

U.S. DEPT. OF LABOR, DAVIS BACON MINIMUM WAGES, COLORADO
 GENERAL DECISION NUMBERS CO20100014 AND CO20100015, HIGHWAY CONSTRUCTION

DATE 10-29-10

Decision Nos. CO20100014 and CO20100015 dated March 12, 2010 supersedes Decision Nos. CO020080014 and CO020080015 dated February 08, 2008.	Modifications			ID
	MOD Number	Date	Page Number(s)	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.	1	05-07-10	1, 2	1
	2	06-04-10	1, 5	2
	3	08-06-10	1, 5	3
	4	10-08-10	1	4
	5	10-29-10	5	5

General Decision No. CO20100014 applies to the following counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo, and Weld counties.

General Decision No. CO20100014
The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	ELECTRICIANS:			
1200	Electrical work \$150,000 or less (Pueblo county)	22.85	10.79	
1201	Electrical work over \$150,000 (Pueblo county)	27.00	10.91	
1202	Electricians (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Weld counties)	31.60	12.32	4
1203	Electricians (El Paso county)	28.80	13.10 + 3%	
1204	Electricians (Mesa county)	20.31	8.92	
1205	Traffic Signal Installer (Zone 1)	23.83	4.75 + 13.75%	
1206	Traffic Signal Installer (Zone 2)	26.83	4.75 + 13.75%	
	<u>Traffic Installer Zone Definitions</u> Zone 1 – Within a 35 mile radius measured from the addresses 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 Zone 2 - All work outside these areas.			
	POWER EQUIPMENT OPERATORS:			
1300	Asphalt Screed	23.67	9.22	
1301	Bituminous or Asphalt Spreader/Laydown Machine	23.67	9.22	
1302	Bulldozer	23.67	9.22	

General Decision No. CO20100014

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
POWER EQUIPMENT OPERATORS (cont.):				
Crane:				
1305	50 tons and under	23.82	9.22	
1306	51 to 90 tons	23.97	9.22	
1307	91 to 140 tons	24.12	9.22	
1308	141 tons and over	24.88	9.22	
Drill Operator:				
1309	William MF/Watson 2500 only	23.97	9.22	
Grader/Blade:				
1310	Rough	23.67	9.22	
1311	Finish	23.97	9.22	
Loader:				
1312	Barber Green, etc., 6 cubic yards and under	23.67	9.22	
1313	Over 6 cubic yards	23.82	9.22	
Mechanic and/or Welder (Includes heavy duty and combination mechanic and welder):				
1314	Mechanic and/or Welder	26.12	9.22	1
1315	Mechanic/Welder (Heavy duty)	23.97	9.22	
1316	Oiler	22.97	9.22	
Power Broom:				
1317	Under 70 HP	22.97	9.22	
1318	70 HP and over	23.67	9.22	
Roller (excluding dirt and soil compaction):				
1319	Self-propelled, rubber tires under 5 tons	23.32	9.22	
1320	Self-propelled, all types over 5 tons	23.67	9.22	
Scraper:				
1321	Single bowl under 40 cubic yards	23.82	9.22	
1322	Single bowl including pups 40 cubic yards and tandem bowls and over	23.97	9.22	
1323	Trackhoe	23.82	9.22	

General Decision No. CO20100014				
The wage and fringe benefits listed below reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
1400	Laborers: Asphalt Laborer/Raker, Common Laborer, and Concrete Laborer/Mason Tender	18.68	6.78	
General Decision No. CO20100014				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
1500	Bricklayers	15.55	2.85	
1600	Carpenters: Form Work (Excluding curbs and gutters)	16.54	3.90	
1601	All other work	16.61	3.88	
1700	Concrete Finishers/Cement Masons	16.05	3.00	
1900	Ironworkers: Reinforcing	16.69	5.45	
1901	Bridge Rail (Excludes guardrail)	18.22	6.01	
2001	Laborers: Fence Erector (Includes fencing on bridges)	13.02	3.20	
2002	Form Work (Curbs and gutters only)	11.85	3.45	
2003	Guardrail Erector (Excludes bridgerail)	12.89	3.20	
2004	Landscape and Irrigation Laborer	12.26	3.16	
2005	Pipelayer	13.55	2.41	
2006	Striping Laborer (Pre-form layout and removal of pavement markings)	12.62	3.21	
2007	Traffic Director/Flagger	9.55	3.05	
2008	Traffic and Sign Laborer (Sets up barricades and cones, and installs permanent signs)	12.43	3.22	
2100	PAINTERS Brush	16.94	2.10	
2101	Spray	16.99	2.87	
2200	POWER EQUIPMENT OPERATORS: Backhoes	16.54	4.24	
2201	Bobcat/Skid Loader	15.37	4.28	
2202	Concrete Pump Operator	16.52	4.30	

General Decision No. CO20100014				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
POWER EQUIPMENT OPERATORS (cont.):				
Drill Operator:				
2203	All except William MF/Watson 2500	16.74	2.66	
2204	Forklift	15.91	4.09	
2205	Rotomill Operator	16.22	4.41	
2206	Post Driver/Punch Machine	16.07	4.41	
2207	Tractor	13.13	2.95	
2208	Compactor (Dirt and soil only)	16.70	3.30	
Groundman (Traffic signalization)				
2301	Class C	11.44	3.25	
Truck Drivers:				
2400	Floater-Semi Truck	14.86	3.08	
2401	Multipurpose Truck – Specialty & Hoisting	14.35	3.49	
2402	Truck Mechanic	16.91	3.01	
2403	Pickup Truck (Includes Pilot and Sign/Barricade Truck)	13.93	3.68	
2405	Single Axle Truck	14.24	3.77	
2406	Distributor Truck	15.80	5.27	
2407	Dump Truck:			
2408	14 cubic yards and under	14.93	5.27	
2409	15 to 29 cubic yards	15.27	5.27	
2410	30 to 79 cubic yards	15.80	5.27	
2411	80 cubic yards and over	16.45	5.27	
2412	Low Boy Truck	17.25	5.27	
2413	Water Truck	14.93	5.27	

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses [29 CFR 5.5(a)(1)(ii)].

END OF GENERAL DECISION NUMBER CO20100014.

General Decision No. CO20100015 applies to the following counties: Alamosa, Archuleta, Baca, Bent, Chaffee, Cheyenne, Clear Creek, Conejos, Costilla, Crowley, Custer, Delta, Dolores, Eagle, Elbert, Fremont, Garfield, Gilpin, Grand, Gunnison, Hinsdale, Huerfano, Jackson, Kiowa, Kit Carson, La Plata, Lake, Las Animas, Lincoln, Logan, Mineral, Moffat, Montezuma, Montrose, Morgan, Otero, Ouray, Park, Phillips, Pitkin, Prowers, Rio Blanco, Rio Grande, Routt, Saguache, San Juan, San Miguel, Sedgwick, Summit, Teller, Washington, and Yuma counties.

When work within a project is located in two or more counties, and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.

General Decision No. CO20100015

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	ELECTRICIANS: (Including traffic signal installation)			
3200	Electrical work \$150,000 or less (Alamosa, Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Las Animas, Mineral, Otero, Prowers, Rio Grande, and Saguache counties)	22.85	10.79	
3201	Electrical work over \$150,000 (Alamosa, Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Las Animas, Mineral, Otero, Prowers, Rio Grande, and Saguache counties)	27.00	10.91	
3202	Electricians (Clear Creek, Eagle, Gilpin, Grand, Jackson, Lake, Logan, Morgan, Phillips, Sedgwick, Summit, Washington, and Yuma counties)	31.60	12.32	5
3203	Electricians (Cheyenne, Elbert, Kit Carson, Lincoln, Park, and Teller counties)	28.80	13.10+ 3%	
3204	Electricians (Dolores, Garfield, Gunnison, Hinsdale, La Plata, Moffat, Montezuma, Ouray, Pitkin, Rio Blanco, Routt, San Juan, and San Miguel counties)	28.00	9.24	
3205	Electricians (Delta and Montrose counties)	21.31	8.92	
3206	Traffic Signal Installer (Zone 1)	23.83	4.75 + 13.75%	
3207	Traffic Signal Installer (Zone 2)	26.83	4.75 + 13.75%	
	<u>Traffic Installer Zone Definitions</u> Zone 1 – Within a 35 mile radius measured from the addresses 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 Zone 2 - All work outside these areas.			

General Decision No. CO20100015				
The wage and fringe benefits listed below reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATORS:			
3300	Bituminous or Asphalt Spreader/Laydown Machine	23.67	9.22	
3301	Bulldozer	23.67	9.22	
	Crane:			
3302	50 tons and under	23.82	9.22	
3303	51 to 90 tons	23.97	9.22	
3304	91 to 140 tons	24.12	9.22	
3305	141 tons and over	24.88	9.22	
3306	Grade Checker	23.82	9.22	
	Loader:			
3307	Barber Green, etc., 6 cubic yards and under	23.67	9.22	
3308	Over 6 cubic yards	23.82	9.22	
	Roller (excluding dirt and soil compaction):			
3309	Self-propelled, rubber tires under 5 tons	23.32	9.22	
3310	Self-propelled, all types over 5 tons	23.67	9.22	
3311	Trackhoe	23.82	9.22	
3312	Oiler	22.97	9.22	
3313	Water Wagon	23.82	9.22	

General Decision No. CO20100015				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
	Carpenters:			
3600	Form Building and Setting (Excluding curbs and gutters)	15.92	5.38	
3601	All other work	16.30	3.71	
3700	Concrete Finishers/Cement Masons	15.55	2.85	
3800	Groundman (Traffic signalization)	11.57	3.50	
	Ironworkers:			
3900	Reinforcing	16.94	6.77	
3901	Bridge Rail (Excluding guardrail)	16.76	6.01	

General Decision No. CO20100015

The wage and fringe benefits listed below do not reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
Laborers:				
4000	Asphalt Laborer/Raker	12.40	2.92	
4001	Common	12.44	3.53	
4002	Concrete Laborer/Mason Tender	12.44	3.10	
4003	Striping-Paint Laborer (Pre-form layout and removal of pavement markings)	12.90	3.07	
4004	Traffic Director/Flagger	9.42	3.21	
4005	Traffic/Sign Laborer (Sets up barricades and cones, and installs permanent signs)	12.39	3.20	
4007	Guardrail (Excludes bridgerail)	12.78	3.31	
4008	Formwork (Curbs and gutters only)	12.92	4.54	
4009	Landscape Laborer (Including irrigation work)	12.21	3.16	
Painters:				
4100	Spray	17.54	3.52	
POWER EQUIPMENT OPERATORS:				
4200	Asphalt Plant	17.23	1.20	
4201	Asphalt Screed	16.21	3.76	
4202	Backhoe	16.42	4.42	
4203	Compactor (Dirt and soil only)	16.52	3.13	
4204	Grader/Blade	16.39	4.20	
4205	Mechanic and or Welder (Includes heavy duty and combination mechanic welder)	16.74	4.20	
4206	Post Driver/Punch Machine	16.07	4.41	
4207	Rotomill Operator	16.28	4.41	
4209	Scraper	17.62	3.16	

General Decision No. CO20100015

The wage and fringe benefits listed below do not reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	Truck Drivers:			
4400	Dump	14.15	3.83	
4401	Low Boy	15.07	4.56	
4402	Truck Mechanic	15.97	4.61	
4403	Multipurpose Truck-Specialty and Hoisting	14.60	3.49	
4404	Pickup (Including pilot car)	14.04	3.49	
4405	Water Truck	14.88	2.07	
4406	Distributor	15.80	5.27	

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses [29 CFR 5.5(a)(1)(ii)].

END OF GENERAL DECISION NUMBER CO20100015.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- ◆ an existing published wage determination
- ◆ a survey underlying a wage determination
- ◆ a Wage and Hour Division letter setting forth a position on a wage determination matter
- ◆ a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of construction wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

4.) All Decisions of the Administrative review board are final.

October 29, 2010

**U.S. DEPT. OF LABOR,
DAVIS BACON MINIMUM WAGES, COLORADO
GENERAL DECISION NUMBERS CO20100014 AND CO20100015
HIGHWAY CONSTRUCTION**

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions, unless such use is first approved by the Standards and Specification Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on all federal-aid projects with contracts exceeding \$2000, except for non-ARRA projects on roadways classified as local roads or rural minor collectors, which are exempt. Projects on local roads, rural minor collectors, and enhancement projects funded with ARRA funds are not exempt.

U.S. DEPT. OF LABOR, DAVIS BACON MINIMUM WAGES, COLORADO
 GENERAL DECISION NUMBERS CO20100014 AND CO20100015, HIGHWAY CONSTRUCTION

DATE 10-29-10

Decision Nos. CO20100014 and CO20100015 dated March 12, 2010 supersedes Decision Nos. CO020080014 and CO020080015 dated February 08, 2008.	Modifications			ID
	MOD Number	Date	Page Number(s)	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.	1	05-07-10	1, 2	1
	2	06-04-10	1, 5	2
	3	08-06-10	1, 5	3
	4	10-08-10	1	4
	5	10-29-10	5	5
General Decision No. CO20100014 applies to the following counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo, and Weld counties.				

General Decision No. CO20100014

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	ELECTRICIANS:			
1200	Electrical work \$150,000 or less (Pueblo county)	22.85	10.79	
1201	Electrical work over \$150,000 (Pueblo county)	27.00	10.91	
1202	Electricians (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Weld counties)	31.60	12.32	4
1203	Electricians (El Paso county)	28.80	13.10 + 3%	
1204	Electricians (Mesa county)	20.31	8.92	
1205	Traffic Signal Installer (Zone 1)	23.83	4.75 + 13.75%	
1206	Traffic Signal Installer (Zone 2)	26.83	4.75 + 13.75%	
	<u>Traffic Installer Zone Definitions</u> Zone 1 – Within a 35 mile radius measured from the addresses 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 Zone 2 - All work outside these areas.			
	POWER EQUIPMENT OPERATORS:			
1300	Asphalt Screed	23.67	9.22	
1301	Bituminous or Asphalt Spreader/Laydown Machine	23.67	9.22	
1302	Bulldozer	23.67	9.22	

General Decision No. CO20100014

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
POWER EQUIPMENT OPERATORS (cont.):				
Crane:				
1305	50 tons and under	23.82	9.22	
1306	51 to 90 tons	23.97	9.22	
1307	91 to 140 tons	24.12	9.22	
1308	141 tons and over	24.88	9.22	
Drill Operator:				
1309	William MF/Watson 2500 only	23.97	9.22	
Grader/Blade:				
1310	Rough	23.67	9.22	
1311	Finish	23.97	9.22	
Loader:				
1312	Barber Green, etc., 6 cubic yards and under	23.67	9.22	
1313	Over 6 cubic yards	23.82	9.22	
Mechanic and/or Welder (Includes heavy duty and combination mechanic and welder):				
1314	Mechanic and/or Welder	26.12	9.22	1
1315	Mechanic/Welder (Heavy duty)	23.97	9.22	
1316	Oiler	22.97	9.22	
Power Broom:				
1317	Under 70 HP	22.97	9.22	
1318	70 HP and over	23.67	9.22	
Roller (excluding dirt and soil compaction):				
1319	Self-propelled, rubber tires under 5 tons	23.32	9.22	
1320	Self-propelled, all types over 5 tons	23.67	9.22	
Scraper:				
1321	Single bowl under 40 cubic yards	23.82	9.22	
1322	Single bowl including pups 40 cubic yards and tandem bowls and over	23.97	9.22	
1323	Trackhoe	23.82	9.22	

General Decision No. CO20100014				
The wage and fringe benefits listed below reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
1400	Laborers: Asphalt Laborer/Raker, Common Laborer, and Concrete Laborer/Mason Tender	18.68	6.78	
General Decision No. CO20100014				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
1500	Bricklayers	15.55	2.85	
1600	Carpenters: Form Work (Excluding curbs and gutters)	16.54	3.90	
1601	All other work	16.61	3.88	
1700	Concrete Finishers/Cement Masons	16.05	3.00	
1900	Ironworkers: Reinforcing	16.69	5.45	
1901	Bridge Rail (Excludes guardrail)	18.22	6.01	
2001	Laborers: Fence Erector (Includes fencing on bridges)	13.02	3.20	
2002	Form Work (Curbs and gutters only)	11.85	3.45	
2003	Guardrail Erector (Excludes bridgerail)	12.89	3.20	
2004	Landscape and Irrigation Laborer	12.26	3.16	
2005	Pipelayer	13.55	2.41	
2006	Striping Laborer (Pre-form layout and removal of pavement markings)	12.62	3.21	
2007	Traffic Director/Flagger	9.55	3.05	
2008	Traffic and Sign Laborer (Sets up barricades and cones, and installs permanent signs)	12.43	3.22	
2100	PAINTERS Brush	16.94	2.10	
2101	Spray	16.99	2.87	
2200	POWER EQUIPMENT OPERATORS: Backhoes	16.54	4.24	
2201	Bobcat/Skid Loader	15.37	4.28	
2202	Concrete Pump Operator	16.52	4.30	

General Decision No. CO20100014				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
POWER EQUIPMENT OPERATORS (cont.):				
Drill Operator:				
2203	All except William MF/Watson 2500	16.74	2.66	
2204	Forklift	15.91	4.09	
2205	Rotomill Operator	16.22	4.41	
2206	Post Driver/Punch Machine	16.07	4.41	
2207	Tractor	13.13	2.95	
2208	Compactor (Dirt and soil only)	16.70	3.30	
Groundman (Traffic signalization)				
2301	Class C	11.44	3.25	
Truck Drivers:				
2400	Floats-Semi Truck	14.86	3.08	
2401	Multipurpose Truck – Specialty & Hoisting	14.35	3.49	
2402	Truck Mechanic	16.91	3.01	
2403	Pickup Truck (Includes Pilot and Sign/Barricade Truck)	13.93	3.68	
2405	Single Axle Truck	14.24	3.77	
2406	Distributor Truck	15.80	5.27	
2407	Dump Truck:			
2408	14 cubic yards and under	14.93	5.27	
2409	15 to 29 cubic yards	15.27	5.27	
2410	30 to 79 cubic yards	15.80	5.27	
2411	80 cubic yards and over	16.45	5.27	
2412	Low Boy Truck	17.25	5.27	
2413	Water Truck	14.93	5.27	

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses [29 CFR 5.5(a)(1)(ii)].

END OF GENERAL DECISION NUMBER CO20100014.

U.S. DEPT. OF LABOR, DAVIS BACON MINIMUM WAGES, COLORADO
 GENERAL DECISION NUMBERS CO20100014 AND CO20100015, HIGHWAY CONSTRUCTION

DATE 10-29-10

General Decision No. CO20100015 applies to the following counties: Alamosa, Archuleta, Baca, Bent, Chaffee, Cheyenne, Clear Creek, Conejos, Costilla, Crowley, Custer, Delta, Dolores, Eagle, Elbert, Fremont, Garfield, Gilpin, Grand, Gunnison, Hinsdale, Huerfano, Jackson, Kiowa, Kit Carson, La Plata, Lake, Las Animas, Lincoln, Logan, Mineral, Moffat, Montezuma, Montrose, Morgan, Otero, Ouray, Park, Phillips, Pitkin, Prowers, Rio Blanco, Rio Grande, Routt, Saguache, San Juan, San Miguel, Sedgwick, Summit, Teller, Washington, and Yuma counties.

When work within a project is located in two or more counties, and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.

General Decision No. CO20100015

The wage and fringe benefits listed below reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	ELECTRICIANS: (Including traffic signal installation)			
3200	Electrical work \$150,000 or less (Alamosa, Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Las Animas, Mineral, Otero, Prowers, Rio Grande, and Saguache counties)	22.85	10.79	
3201	Electrical work over \$150,000 (Alamosa, Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Las Animas, Mineral, Otero, Prowers, Rio Grande, and Saguache counties)	27.00	10.91	
3202	Electricians (Clear Creek, Eagle, Gilpin, Grand, Jackson, Lake, Logan, Morgan, Phillips, Sedgwick, Summit, Washington, and Yuma counties)	31.60	12.32	5
3203	Electricians (Cheyenne, Elbert, Kit Carson, Lincoln, Park, and Teller counties)	28.80	13.10+ 3%	
3204	Electricians (Dolores, Garfield, Gunnison, Hinsdale, La Plata, Moffat, Montezuma, Ouray, Pitkin, Rio Blanco, Routt, San Juan, and San Miguel counties)	28.00	9.24	
3205	Electricians (Delta and Montrose counties)	21.31	8.92	
3206	Traffic Signal Installer (Zone 1)	23.83	4.75 + 13.75%	
3207	Traffic Signal Installer (Zone 2)	26.83	4.75 + 13.75%	
	<u>Traffic Installer Zone Definitions</u>			
	Zone 1 – Within a 35 mile radius measured from the addresses 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 Zone 2 - All work outside these areas.			

General Decision No. CO20100015				
The wage and fringe benefits listed below reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
POWER EQUIPMENT OPERATORS:				
3300	Bituminous or Asphalt Spreader/Laydown Machine	23.67	9.22	
3301	Bulldozer	23.67	9.22	
Crane:				
3302	50 tons and under	23.82	9.22	
3303	51 to 90 tons	23.97	9.22	
3304	91 to 140 tons	24.12	9.22	
3305	141 tons and over	24.88	9.22	
3306	Grade Checker	23.82	9.22	
Loader:				
3307	Barber Green, etc., 6 cubic yards and under	23.67	9.22	
3308	Over 6 cubic yards	23.82	9.22	
Roller (excluding dirt and soil compaction):				
3309	Self-propelled, rubber tires under 5 tons	23.32	9.22	
3310	Self-propelled, all types over 5 tons	23.67	9.22	
3311	Trackhoe	23.82	9.22	
3312	Oiler	22.97	9.22	
3313	Water Wagon	23.82	9.22	
General Decision No. CO20100015				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Carpenters:				
3600	Form Building and Setting (Excluding curbs and gutters)	15.92	5.38	
3601	All other work	16.30	3.71	
3700	Concrete Finishers/Cement Masons	15.55	2.85	
3800	Groundman (Traffic signalization)	11.57	3.50	
Ironworkers:				
3900	Reinforcing	16.94	6.77	
3901	Bridge Rail (Excluding guardrail)	16.76	6.01	

General Decision No. CO20100015				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
Laborers:				
4000	Asphalt Laborer/Raker	12.40	2.92	
4001	Common	12.44	3.53	
4002	Concrete Laborer/Mason Tender	12.44	3.10	
4003	Striping-Paint Laborer (Pre-form layout and removal of pavement markings)	12.90	3.07	
4004	Traffic Director/Flagger	9.42	3.21	
4005	Traffic/Sign Laborer (Sets up barricades and cones, and installs permanent signs)	12.39	3.20	
4007	Guardrail (Excludes bridgerail)	12.78	3.31	
4008	Formwork (Curbs and gutters only)	12.92	4.54	
4009	Landscape Laborer (Including irrigation work)	12.21	3.16	
Painters:				
4100	Spray	17.54	3.52	
POWER EQUIPMENT OPERATORS:				
4200	Asphalt Plant	17.23	1.20	
4201	Asphalt Screed	16.21	3.76	
4202	Backhoe	16.42	4.42	
4203	Compactor (Dirt and soil only)	16.52	3.13	
4204	Grader/Blade	16.39	4.20	
4205	Mechanic and or Welder (Includes heavy duty and combination mechanic welder)	16.74	4.20	
4206	Post Driver/Punch Machine	16.07	4.41	
4207	Rotomill Operator	16.28	4.41	
4209	Scraper	17.62	3.16	

General Decision No. CO20100015

The wage and fringe benefits listed below do not reflect collectively bargained rates.

Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	Truck Drivers:			
4400	Dump	14.15	3.83	
4401	Low Boy	15.07	4.56	
4402	Truck Mechanic	15.97	4.61	
4403	Multipurpose Truck-Specialty and Hoisting	14.60	3.49	
4404	Pickup (Including pilot car)	14.04	3.49	
4405	Water Truck	14.88	2.07	
4406	Distributor	15.80	5.27	

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses [29 CFR 5.5(a)(1)(ii)].

END OF GENERAL DECISION NUMBER CO20100015.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- ◆ an existing published wage determination
- ◆ a survey underlying a wage determination
- ◆ a Wage and Hour Division letter setting forth a position on a wage determination matter
- ◆ a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of construction wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

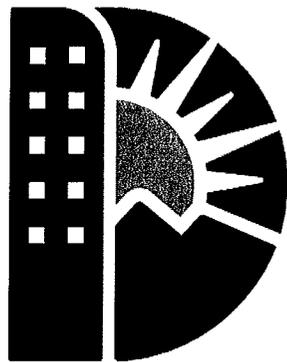
3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

4.) All Decisions of the Administrative review board are final.

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER[®]
THE MILE HIGH CITY

TECHNICAL SPECIFICATIONS

Contract No. 201102384

**TRAFFIC SIGNAL SYSTEM IMPROVEMENT
PROJECT - TSSIP1**

August 24, 2011

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Engineering Division – Traffic Engineering Services

TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT – TSSIP1

The 2011 Standard Specifications for Road and Bridge Construction 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

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CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Engineering Division – Traffic Engineering Services

TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT – TSSIPI

STANDARD SPECIAL PROVISIONS

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Revision of Section 106 – Certificates of Compliance and Certified Test Reports	(February 03, 2011)	1
Revision of Section 107 – Responsibility for Damage Claims, Insurance Types and Coverage Limits	(February 03, 2011)	1
Revision of Sections 107 and 208 – Water Quality Control, Under One Acre of Disturbance	(February 03, 2011)	3
Revision of Section 109 – Fuel Cost Adjustment	(February 03, 2011)	2
Revision of Section 109 – Measurement of Quantities	(February 03, 2011)	1
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Revision of Section 630 – Construction Zone Traffic Control	(February 03, 2011)	1
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**REVISION OF SECTION 107
PROTECTION OF EXISTING VEGETATION**

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.12 shall include the following:

The Contractor shall save all existing vegetation (including trees, shrubs, ground covers, grasses, wetlands & riparian) in this area, except for that vegetation, which must be removed to accommodate construction of the project, per the plans. Specific areas of vegetation to be protected shall be as directed by the Engineer and shall be protected by using orange construction fencing, wire fencing with metal posts or silt fence. Fencing for trees shall be installed at the drip line of the tree or as approved by the Engineer. Equipment shall not be installed or stockpile material within 15 feet of existing trees to remain.

The Contractor shall perform all the work in such a manner that the least environmental damage will result. All questionable areas or items shall be brought to the attention of the Engineer for approval prior to removal or any damaging activity.

The Contractor shall promptly report any vegetation damaged or scarred during construction to the Engineer for assessment of damages. Damaged or destroyed fenced vegetation, shall be replaced at the expense of the Contractor. Vegetation of replaceable size shall be replaced at the Contractor's expense. When trees, shrubs beyond replaceable size or wetlands have been damaged or destroyed, the Contractor shall be liable for the appraised value based upon the official current publications. For trees and shrubs use the International Society of Arboriculture, Guide for Plant Appraisals. The Contractor shall pay any fines or jail time should a wetland be damaged, at no cost to the project. The value of disturbed vegetation shall be calculated according to the following formula:

$$\text{(Vegetation size) x (Species) x (Location) x (Condition) x (Arborist or Wetland Specialist) = Vegetation value}$$

A consulting Arborist retained by the Department will determine the value of the trees and shrubs. A consulting Wetland Specialist shall determine the value of the wetland or wetland species. This value will be deducted from any money due to the Contractor.

The determination as to whether a plant is of replacement size or beyond will be made by the Department's Landscape Architect or Wetland Specialist.

If the construction fencing is knocked down or destroyed by the Contractor, the Engineer will suspend the work, wholly or in part, until the fence is repaired to the Engineer's satisfaction at the Contractor's expense. Time lost due to such suspension will not be considered a basis for adjustment of time charges, but will be charged as contract time.

No separate payment for the protection of existing vegetation shall be made. Protection of existing vegetation shall be included in the work.

**REVISION OF SECTION 202
REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET**

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

Subsection 202.01 shall include the following:

This work consists of the removal of existing traffic signal controllers, cabinets, all cabinet appurtenances and cabinet bases as described herein.

Subsection 202.02 shall include the following:

The removed cabinets and all appurtenances including controller(s) and all other equipment internal to the cabinet shall be delivered to the City & County of Denver maintenance yard at 5440 Roslyn Street, Denver. Existing cabinet and controller assemblies at the locations depicted in the plans shall be removed.

The removal of existing cabinet foundations shall be paid for as a separate item. Conduits and any existing interconnects shall be preserved for future use as described in the plans. If a new cabinet is not to be placed immediately on the foundation, the contractor is to take appropriate measures to protect existing conduits, lines, wires or cables from damage as necessary.

Times for delivery of removed items to the maintenance yard shall be coordinated with Denver Traffic Operations. Contact Chris Lillie at (720) 865-4066.

Subsection 202.11 shall include the following:

Removal of Traffic Signal Controller and Cabinet shall be measured by the number of locations and shall include physical removal of the cabinet and interior equipment; and delivery of indicated items to the City maintenance yard. Delivery of indicated items to the City & County of Denver maintenance yard shall be considered included in the unit price for this item and will not be paid separately.

Subsection 202.12 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Removal of Traffic Signal Controller and Cabinet	Each

**REVISION OF SECTION 202
REMOVAL OF TRAFFIC SIGNAL CABINET BASE**

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

Subsection 202.01 shall include the following:

This work consists of the removal of the existing traffic signal controller cabinet base (concrete foundation).

Subsection 202.02 shall include the following:

The cabinet foundations to be removed shall include the existing concrete or fiberglass foundation, any surrounding surface material, and conduit modifications necessary to completely remove the cabinet base. All debris is to be disposed of in accordance with applicable laws and regulations. Care is to be taken not to damage existing conductors, fibers or other cables in place to be reused upon installation of a new cabinet base. At locations where existing cabinet bases are to be removed, the foundation shall be replaced with a new traffic pull box and the existing conduit adjusted as necessary. Conduit modifications required to set a new pull box over the cabinet conduits are considered to be included in the work for this item and will not be paid separately. All surface materials such as concrete sidewalks shall be repaired in accordance with Denver Public Works Rules and Regulations.

Subsection 202.11 shall include the following:

Removal of Traffic Signal Cabinet Base will be paid for each location that requires the base to be removed. Work shall include physical removal and disposal of existing foundation and surface material, back-filling or repair of excavated foundation location, including any associated conduit modification work required at the location.

Subsection 202.12 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Removal of Traffic Signal Cabinet Base	Each

**REVISION OF SECTION 203
POTHOLING**

Section 203.12(e) of the Standard Specifications shall be modified to include the following:

All surface material disturbed by potholing shall be fully restored in kind, in accordance with the provisions of the *Transportation Standards and Details for the Engineering Division* (Denver Public Works, June 2010).

Subsection 203.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Potholing	Each

**REVISION OF SECTION 208
GRAVEL BAG**

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

Subsection 208.01 shall include the following:

This work consists of the installation of gravel bags at appropriate locations along the project corridor work zones.

Subsection 208.02 shall include the following:

(o) *Gravel Bag*. Gravel bags shall consist of aggregate filled fabric with the following dimensions:

Diameter	4 to 6 inches
Section Length	1 foot minimum

The sediment control device shall consist of a woven geotextile fabric with the following properties:

Grab tensile strength	90 lbs. min.	ASTM D 4632
Trapezoid Tear Strength	25 lbs. min.	ASTM D 4533
Mullen Burst	300 psi.	ASTM D 3786
Ultraviolet Resistance	70%	ASTM D 4355

Gravel bags shall be capable of remaining in place during a storm event. Aggregate contained in the gravel bags shall consist of gravel or crushed stone conforming to Table 703-7 for Class C.

Subsection 208.05 shall include the following:

(s) *Gravel Bag*. Gravel bags shall be placed on a stable surface, consisting of pavement, grass or aggregate. Gravel bags shall be placed to conform to the surface without gaps. Discharge water shall not cause erosion.

Subsection 208.07 shall include the following:

Gravel Bags will be measured by the linear foot of bags that are installed and accepted.

Subsection 208.08 shall include the following:

Pay Item	Pay Unit
Gravel Bag	Linear Foot

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.

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

**REVISION OF SECTION 208
STORM DRAIN INLET PROTECTION**

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

In subsection 208.05 (j) add the following:

Storm drainage inlet protection shall be placed at the nearest downstream inlet or any inlets immediately adjacent to any construction excavation or areas that require concrete work. The inlet protection shall be sewn geotextile fabric unit enclosing a porous structure in the form of a cylindrical tube placed in front of and extending beyond the inlet opening on both sides. The inlet protection shall be a Beaver Dam style.

Subsection 208.08 shall include the following:

Pay Item	Pay Unit
Storm Drain Inlet Protection	Each

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 213
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 212.08 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.

**REVISION OF SECTION 213
MULCHING/MULCH TACKIFIER**

Section 213 of the Standard Specifications is hereby revised for this project to include the following:

Delete last sentence of Subsection 213.03 b 1 and replace with the following:

Wood Cellulose Fiber Mulch	Tackifier
2250 kg/ha (2,000 lbs/acre)	220 kg/ha (200 lbs/acre)

Delete last sentence of Subsection 213.03 b 2 and replace with the following:

Powder	Fiber	Water
340 kg/ha	400 kg/ha	6500 l/ha
(300 lbs/acre)	(360 lbs/acres)	(700 gal/acre)

**REVISION OF SECTION 608
CONCRETE SIDEWALK**

Section 608 of the Standard Specifications shall be deleted in its entirety and replaced with the following:

608.01 DESCRIPTION

This work shall consist of the removal and replacement of concrete sidewalks and curb ramps in accordance with these specifications and in conformity with the approximate locations shown on the plans or as specified by the Engineer or Engineer's designee in the field.

608.02 MATERIALS

Concrete proportioning shall incorporate Class 2 Sulfate criteria of Section 601.04.

Materials shall meet the requirements specified in the following subsection: Joint Fillers 705.01

Concrete for sidewalks and curb ramps shall be Class "P," as specified in subsections 601.2 and 601.03, except that No. 67 coarse aggregate shall be used.

Any curb ramp concrete shall be integrally colored with pigment #1117 as manufactured by Davis Colors at the rate of 4 pounds per sack of cement, or of an equal color and intensity approved by the Engineer or Engineer's designee, and cured with a non-pigmented "clear" curing compound. The Engineer or Engineer's designee may adjust the color additive + or - one pound, if desired.

The color and pattern of any concrete replacement shall match the adjacent existing concrete.

The use of calcium chloride is prohibited.

608.03 CONSTRUCTION REQUIREMENTS

Concrete Sidewalks

- (a) *Excavation.* Excavation shall be made to the required depth and to a width that will permit the installation and bracing of the forms. The foundation shall be shaped and compacted to a firm even surface conforming to the section shown on the plans or as staked in the field. Where excavation to the finished grade elevation results in sub-grade of unsuitable soil, the Engineer or Engineer's designee may designate the unsuitable material to be removed and replaced with approved material. The removal of unsuitable material and backfill with Class 6 Aggregate Base Course, or other material approved by the Engineer or Engineer's designee, shall not be measured or paid for separately but included in the cost of sidewalk.
- (b) *Forms.* Forms shall be of wood, metal, or other suitable material, and shall extend for the full depth of the concrete. All forms shall be straight, free from warp and of sufficient strength to resist the pressure of the concrete without springing. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal. A satisfactory slip-form method may be used.
- (c) *Placing Concrete.* The foundation shall be thoroughly moistened immediately prior to the placing of the concrete. The proportioning, mixing and placing of the concrete shall be in accordance with the requirements for the class of concrete specified.

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**REVISION OF SECTION 608
CONCRETE SIDEWALK**

- (d) *Finishing.* Finishing shall occur only after the disappearance of bleed water. The addition of superficial water to the surface of concrete to assist in finishing operations will not be permitted. Sprinkling of pigment onto the fresh surface will not be permitted.

All outside edges of the slab and all joints shall be edged with a 6 mm ($\frac{1}{4}$ inch) radius edging tool.

- (e) *Joints.* Expansion joints, at intervals of not more than 150 m (500 feet), shall be filled with 13 mm ($\frac{1}{2}$ inch) thick full depth, preformed expansion joint filler. The sidewalk shall be divided into sections by dummy joints formed by a jointing tool or other acceptable means as directed. These dummy joints shall extend into the concrete for at least $\frac{1}{4}$ of the depth and shall be approximately 3 mm ($\frac{1}{8}$ inch) wide. Dummy joints shall be spaced at intervals approximately equal to the width of the sidewalk. Construction joints shall be formed around all appurtenances such as manholes, utility poles, etc., extending into and through the sidewalk. Preformed expansion joint filler 13 mm ($\frac{1}{2}$ inch) thick shall be installed in these joints. Expansion joint filler 13 mm ($\frac{1}{2}$ inch) thick or the thickness indicated shall be installed between new concrete and any fixed structure such as a building or bridge. This expansion joint material shall extend for the full depth for the contact surface.
- (f) *Curing.* Immediately upon completion of the finishing, sidewalks shall be moistened and kept moist for three days, or they shall be cured by the use of membrane forming curing compound. The method and details of curing shall be subject to the approval of the Engineer or Engineer's designee.

During the curing period all traffic, both pedestrian and vehicular, will be excluded. Vehicular traffic will be excluded for such additional time as the Engineer or Engineer's designee may direct.

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 the 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 or Engineer's designee, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

608.04 METHOD OF MEASUREMENT

Concrete sidewalks and curb ramps will be measured by the square yard of finished surface.

Saw cutting & removal of existing sidewalk panels, curb ramps, excavation to the proposed sub-grade elevation and backfilling will not be measured or paid for separately but shall be included in the concrete installation.

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**REVISION OF SECTION 608
CONCRETE SIDEWALK**

608.05 BASIS OF PAYMENT

The accepted quantities will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule. Sidewalk and Curb ramp replacement will both be paid for as Concrete Sidewalk.

Payment will be made under:

Pay Item	Pay Unit
Concrete Sidewalk	Square Yard

(Note: For purposes of measurement, the average thickness of concrete replacement shall be assumed to be 8 inches. The actual thickness of concrete required shall match the depth of the adjacent existing concrete, but shall be no less than 6 inches.)

**REVISION OF SECTION 613
ELECTRICAL CONDUIT - GENERAL**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Subsection 613.01 shall include the following:

This work includes furnishing and installing electrical conduit for use with and without fiber optic or other signal cables. All materials furnished, assembled, fabricated, or installed under this item shall be new, corrosion resistant and in strict accordance with the details, and these Special Provisions.

Subsection 613.07 shall include the following:

2 Inch and 3 Inch Electrical Conduit (Plastic) shall be installed in a common trench. 2 Inch and 3 Inch Electrical Conduit (Bored) shall be installed using directional boring technology. Open trenching will not be allowed except as identified in the plans or as directed by the Engineer or Engineer's designee.

All conduit 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 (mule tape) and each bore shall have a copper tracer wire of at least 12 gauge (multi-stranded). The pull tape shall have a minimum tensile strength of 1250 lbs. and be of a design and manufacture that prevents cutting or burning into the conduit during cable installation.

Plastic PVC conduit shall be certified by the manufacturer as meeting ANSI/UL 6 and 651. The manufacturer shall be ISO 9000 compliant.

If the contractor is unable to bore the conduit at the lengths shown on the plans from pull box to pull box, then a supplemental Pull Box (Special) shall be installed midway between the pull boxes shown on the plans. Splice couplings shall not be used to connect long conduit bores, unless approved by the Engineer or Engineer's designee. The installation of supplemental pull boxes shall be included in the cost of this item. Also included in the cost of this item are all landscape repairs, which will be required after excavation of conduit at pull box locations. Supplemental pull box locations shall be kept to a minimum and all locations shall be approved by the Engineer or Engineer's designee.

The couplings shall be fully compatible with Schedule 80 inner duct, and are self-locking, pressure tight to internal pressures above 200 psi when restrained or buried.

All conduit bends, including factory-installed bends, shall not have a bend radius less than six times the inside diameter of the conduit.

Any excavations required for the installation of conduit or cable shall be performed in such a manner as to avoid unnecessary damage to streets, sidewalks, curbs, landscaping, sprinkler systems and other existing structures or facilities. 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.

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**REVISION OF SECTION 613
ELECTRICAL CONDUIT - GENERAL**

All surface materials including sprinkler systems, landscaping, shrubs, sod grass, and native growth vegetation which is disturbed by excavation and back-filling operation shall be restored in kind, equal to or exceeding the original conditions. Landscape restoration shall be considered incidental to the conduit installation and will not be paid for separately.

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 water/air tight seals of at least 100 psi and shall cause no damage to the cable when installed.

At locations that require conduit to be installed above ground, such as connections to surface mounted pull boxes, Liquid-tight Flexible Metal Conduit (LFMC) shall be provided with appropriate fittings and connection hardware. Such conduit shall have a galvanized, high-tensile strength, flexible steel strip inner core (helically wound with sealing cord), and the outer core shall be a UV resistant, liquid-tight smooth PVC sheath that is "keyed" into the inner steel core.

At some locations (as illustrated on the Plans or in these specifications, or as directed by the Engineer or Engineer's designee), 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 shall be installed in accordance with the Plans, these Special Provisions, the Project Standards or as directed by the Engineer or Engineer's designee. 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. Potholing shall be paid for separately.

Replacement of irrigation systems and landscaping shall be considered incidental to the conduit installation and will not be paid for separately.

Subsection 613.12 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
3 Inch Electrical Conduit (Bored)	Linear Feet
2 Inch Electrical Conduit (Plastic)	Linear Feet
3 Inch Electrical Conduit (Plastic)	Linear Feet

**REVISION OF SECTION 613
COMMUNICATION CONDUIT (PROOFING AND REPAIR)**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

In Subsection 613.07, add the following after the 5th paragraph:

The Contractor shall be responsible for inspecting (proofing) all existing fiber optic communication conduits and cables that are located between each of the project intersections identified in the Construction plans. This work shall also include proofing any existing segments of traffic signal conduit where fiber optic cable exists or will be installed as part of this project.

Any inspected conduit and/or fiber optic cable that is found to be damaged in shall be repaired upon approval by the Engineer. Full replacement of conduit runs are not anticipated for this project and repairs should be limited to splicing new conduit to damaged segments only, or installation of pull boxes at the point of damage. If the full replacement of a conduit run is deemed necessary by the Contractor, then such work shall be pre-approved by the Engineer.

Subsection 613.11 shall include the following:

Conduit proofing will be measured by the total number of hours required for inspecting existing communication conduits and fiber optic cables.

Conduit repair will be measured by each spot location where damage has been discovered and conduit repair is required.

Fiber Optic Cable repair will be measured by the total number of field locations that require repair work to be conducted, and not by individual fiber strands.

Subsection 613.11 shall include the following:

Pay Item	Pay Unit
Conduit (Proofing)	Hour
Conduit (Repair)	Each
Fiber Optic Cable (Repair)	Each

The following items will not be measured any paid for separately, but shall be included in the work:

- (1) Additional pull boxes installed at the Contractor's option,
- (2) Saw cutting; trenching; excavation; backfill; jacking; drilling pits; underground electrical warning tape; removal of pavement; sidewalks, gutters, and curbs and their replacement in kind to match existing grade; and all other work necessary to complete conduit installation/repair.
- (3) Disconnection, splicing, re-termination, or any such re-wiring of fiber optic and/or conductor cables to facilitate conduit repairs.
- (4) Testing of existing fiber optic cable.

**REVISION OF SECTION 613
PULL BOX – GENERAL**

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Subsection 613.01 shall include the following:

At locations shown in the plans, the Contractor shall install one or more pull boxes of the size and type indicated in the following section. This work shall also include the removal and replacement of existing pull boxes at locations specified in the plans.

Subsection 613.02 shall include the following:

All traffic signal pull boxes, except surface mounted ones, shall be made of fiberglass reinforced polymer concrete and shall be designed to support a minimum service load of 15,000 pounds over a 10" x 10" square. Pull boxes shall be of the type specified in the plans. The pull box shall have a detachable cover that has a skid-resistant surface. Any boxes that are installed to house traffic signal cables shall have the words "TRAFFIC SIGNAL" physically impressed (not painted) on its top. The traffic pull boxes shall have minimum inside dimensions of 30.5" long by 17.5" wide by 24" deep. Electric pull boxes, or Pull Box (Type A), shall have the words "ELECTRIC" physically impressed on their top. The pull box shall have minimum inside dimensions of 23.25" long by 13.75" wide by 12" deep.

All traffic communication pull boxes shall have the words "TRAFFIC COMM" physically impressed (not painted) on its top. The interconnect pull boxes or Pull Box (Special) shall have minimum inside dimensions of 30.5" long by 17.5" wide by 24" deep. 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.

At some intersections, existing pull boxes and conduits may need to be modified to accommodate minimum bend requirements of interconnect cable and/or splice closures. At the direction of the Engineer or Engineer's designee, the Contractor shall remove existing pull boxes and replace with a pull box large enough to meet the interconnect manufacturer's recommended minimum bend radius or the splice closure requirements. Replacement of pull boxes to accommodate these requirements will be paid for as Pull Box (Special), Pull Box (Traffic) or Pull Box (Type A) as specified in the plans.

Pull Box (Surface Mounted) shall be aluminum NEMA type enclosures, and are intended for above ground applications only. Enclosures shall be watertight with a lockable door (Type 4 or better rating) with minimum dimensions of 20" long by 16" high by 8 inches deep. Connection between surface mounted pull boxes and nearest communication pull boxes shall be by means of Liquid-tight Flexible Metal Conduit (LFMC).

Subsection 613.10 shall include the following:

Pull Box (Special), Pull Box (Surface Mounted), Pull Box (Traffic) and Pull Box (Type A) 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. Pull Box – General shall be measured and paid on the basis of the number of pull boxes installed as specified in the plans.

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REVISION OF SECTION 613
PULL BOX – GENERAL

Subsection 613.11 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Pull Box (Special)	Each
Pull Box (Traffic)	Each
Pull Box (Type A)	Each

**REVISION OF SECTION 613
TRAFFIC SIGNAL CABINET BASE (CONCRETE)**

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 complete installation of traffic signal cabinet base foundations.

Subsection 614.10 shall include the following:

At locations specified in the plans where an existing M1-Type cabinet is to be reset, and a new UPS, G-Type cabinet is to be installed, the cabinet footing or foundation shall be formed in concrete with approximate dimensions of 60" long by 24" wide by 24" high (see diagram on following page).

At locations specified in the plans where existing concrete footings are to be expanded to support a new UPS, G-Type cabinet, the footing or foundation shall be formed in concrete and matching the height of the existing footing. The approximate dimensions of the expanded footing shall be 24" long by 24" wide by about 24" high (see diagram on page 20).

Prior to starting foundation construction, the contractor shall obtain field verification of cabinet foundation location from the Engineer or Engineer's designee.

Cabinet base installation shall include all labor and materials to completely install a new M1 foundation for controller cabinets as specified in the plans. This is to include the concrete foundation, all conduit modification work, back-filling, and concrete repair.

Subsection 614.13 shall include the following:

The unit price for cabinet base installation shall include all labor and materials required to provide complete installation and the item, and repair surrounding surface.

New cabinet bases that are used to support both M1 and G Type cabinets shall be paid for as Concrete Footing (Traffic Signal Controller Cabinets).

Expanded cabinets bases that are used to support just a G-Type (UPS) cabinet shall be paid for as Concrete Footing (UPS Cabinet).

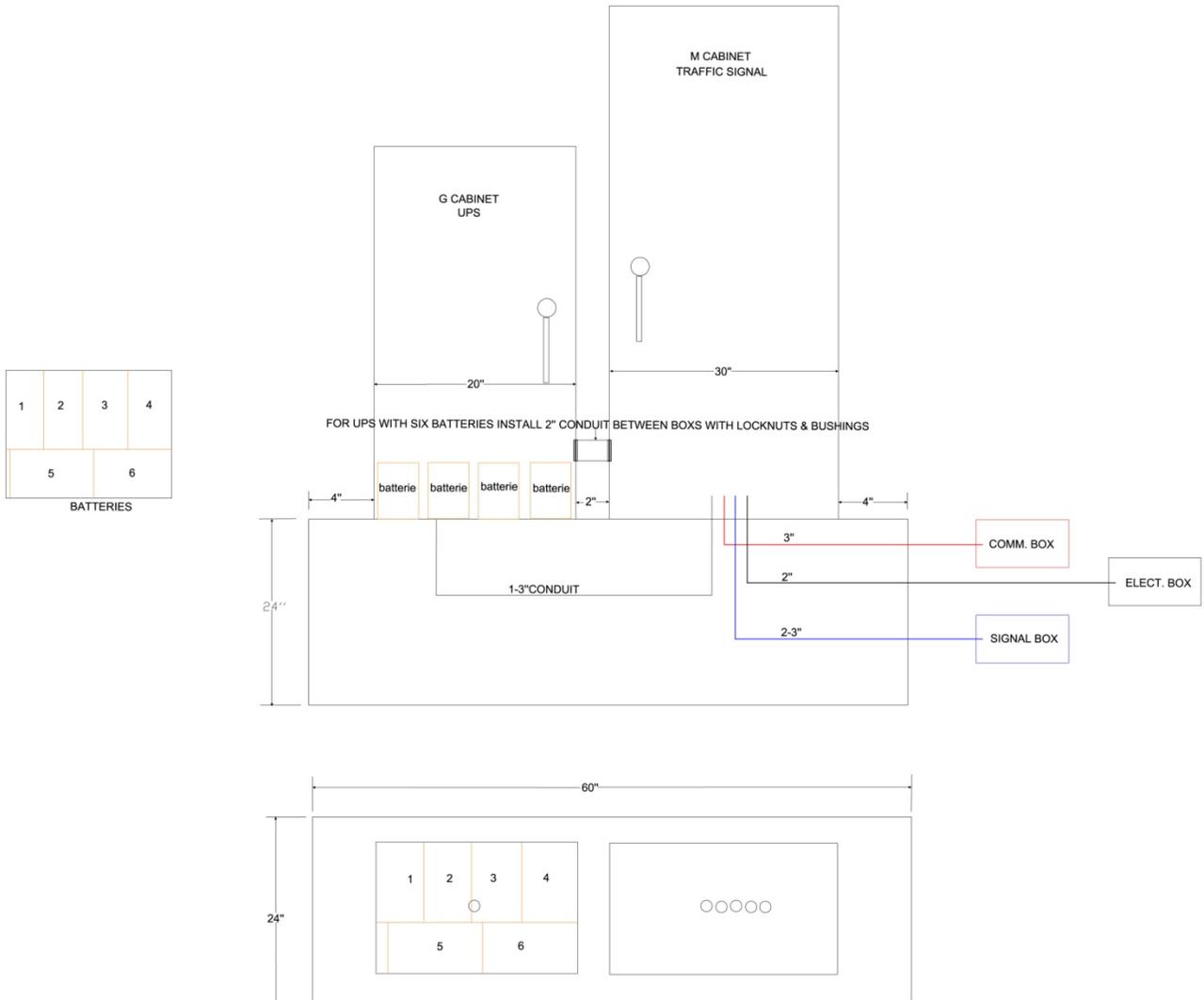
Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Concrete Footing (Traffic Signal Controller Cabinets)	Each
Concrete Footing (UPS Cabinet)	Each

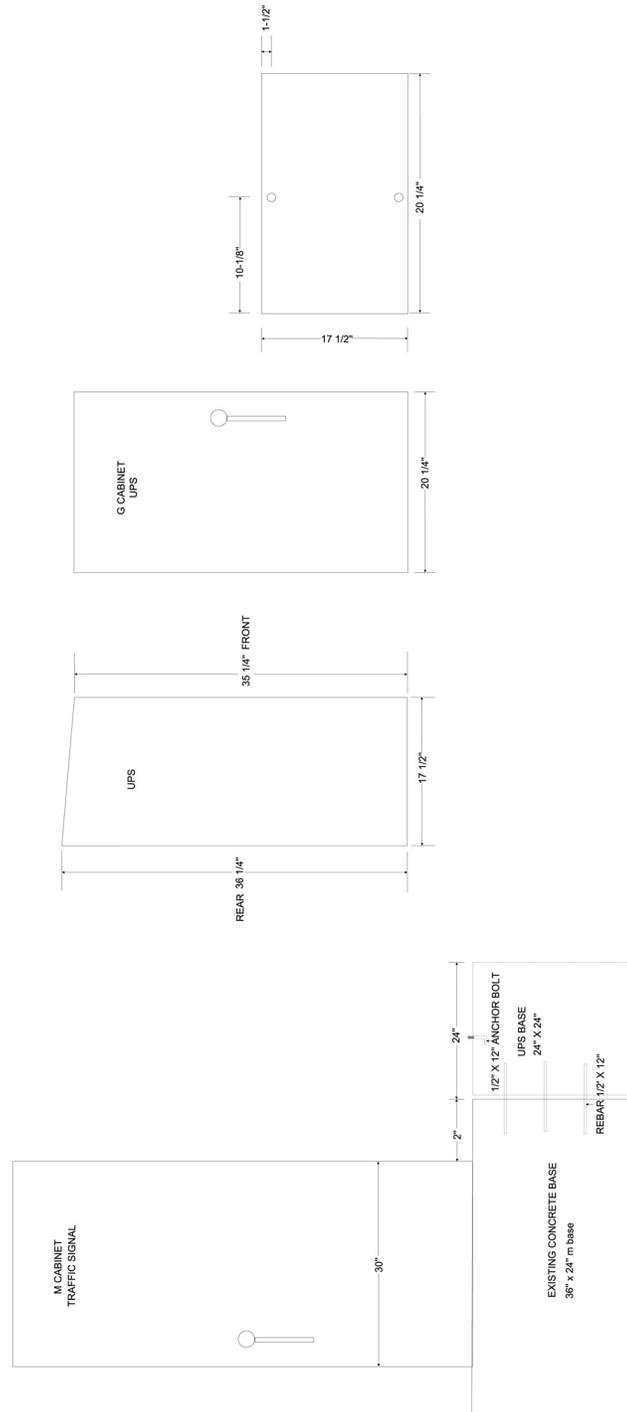
-2-
**REVISION OF SECTION 613
TRAFFIC SIGNAL CABINET BASE (CONCRETE)**

M1 and G Type Cabinet Base



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REVISION OF SECTION 613
TRAFFIC SIGNAL CABINET BASE (CONCRETE)

G-Type Cabinet on Expanded Base



**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 installing traffic signal controllers, cabinets and Quazite type bases that are furnished by the City & County of Denver.

Subsection 614.10 shall include the following:

All new cabinets for the project will be P and G Type for ASC/3 Signal Controllers and UPS hardware, respectively, which will be furnished to the contractor by the City & County of Denver. Each of these cabinets shall be installed on a City furnished, Quazite type base.

The Contractor shall pick-up each of the traffic signal controllers, cabinet assemblies and bases from the City and County of Denver Traffic Operations Center at 5440 Roslyn Street, Building E. The Contractor shall coordinate pick-up times with the Engineer or Engineer's designee.

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 installation of traffic signal controllers, cabinets and bases shall include all labor, materials and ancillary hardware, wiring and wiring re-connection (including Xcel Energy power feed) required to provide successful operation of the item. The work shall include any temporary cabinet resets and wiring to ensure continuous signal operations during construction.

Removal and disposal of existing cabinets shall be in accordance with the Project Special Provision for the referenced item.

Installation of City furnished, Quazite type cabinet foundations shall be included in the unit price for this item.

Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Traffic Signal Controller and Cabinet (Install Only)	Each

**REVISION OF SECTION 614
SPREAD SPRECTRUM / ETHERNET RADIO (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 installing spread spectrum / Ethernet radio assemblies to be furnished by the City & County of Denver. The assemblies will consist of the following equipment:

1. Spread Spectrum / Ethernet Radio Transceiver
2. Antenna

Subsection 614.13 shall include the following:

Spread Spectrum / Ethernet Radio will be measured by the number of “Complete Systems” installed at each location identified in the plans. The work shall include all material, equipment and labor needed to provide a fully operational signal communication system, including but not limited to cables, surge suppressors, mounting hardware, etc. All hardware shall meet or exceed the radio manufacturer’s specifications.

The Contractor shall pick-up each of the spread spectrum / Ethernet radio assemblies from the City and County of Denver Traffic Operations Center at 5440 Roslyn Street, Building E. The Contractor shall coordinate pick-up times with the Engineer or Engineer’s designee.

Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Spread Spectrum Radio (Install Only)	Each

**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 communication cable at each traffic signal controller cabinet location identified in the plans. The work also includes providing and installing all necessary telemetry equipment, including but not limited to optical splice closures, field patch panels, splice organizers, cables, pigtails/jumpers, labels and any interface units/cards.

This work also includes installation of City furnished fiber optic transceivers and/or Ethernet fiber switches.

At every cabinet or optical closure, only the fiber strands that are specified 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 coiled neatly in a splice organizer.

The same color-coded pairs of fibers and/or wires shall be used throughout the entire project unless specified 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: Fiber optic pigtail cables shall consist of Multi-Mode (MM) fiber strands 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. The length of fiber optic patch cord cables shall be suitably long to be connected between the interconnect patch panel and the communication equipment (optical transceivers, ethernet switches, etc). Patch cord couplings shall be compatible with termination points. Appropriate strain relief in the cabinet (through cable Velcro wraps) 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 ceramic ferrule connector shall be either LC or 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.

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**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: Cable from fiber optic transceiver 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) 865-3984 for coordination.

Optical Splice Closures: Coyote Runt, Coyote Pup and Coyote Express 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.

Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Telemetry (Field)	Each

**REVISION OF SECTION 614
FIBER OPTIC CABLE - GENERAL**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work provides for the installation of fiber optic communications cable to be installed in conduit or duct as specified in the plans. All labor and materials required to fan-out, terminate, splice or otherwise connect fiber optic cables at individual controller cabinets, will be paid separately under the Telemetry (Field) pay item. The contractor shall be required to demonstrate successful signal system communications to the Engineer or Engineer's designee as a requirement of acceptance of this item.

Subsection 614.10 shall include the following:

All fiber-optic interconnect cable shall be furnished by the Contractor, and installed, spliced (if required and only as approved by the Engineer or Engineer's designee), terminated, connected and tested by the Contractor. The number denoted prior to the "MM" designator identifies the number of multi-mode fibers (Strands) in the cable. The number denoted prior to the "SM" designator identifies the number of single-mode fibers (Strands) in the cable. The main backbone Fiber Optic Cable shall contain both multi-mode and single mode fibers as designated in the plans. The main cable shall be installed in continuous runs except where maximum pull lengths govern. Manufacturer's recommended limits for cable pull lengths shall not be exceeded.

Cable ends shall be stored in pull boxes or splice closures at locations indicated in the plans or as directed by the Engineer or Engineer's designee. Fibers to be spliced and/or connected in any manner shall be limited to those identified in the plans, and only in designated controller cabinets or splice closures. All other fibers shall be left uncut or sealed as appropriate in a manner recommended by the cable manufacturer.

Fiber optic cable shall be installed in a continuous run between all controller cabinets and splice closures as shown in the plans. Lateral cables shall be spliced only in splice closures and routed to the controllers as shown in the plans. **Under no conditions shall the fiber cable be cut out or spliced at intermediate points without the express written direction of the Engineer or Engineer's designee.**

Cable shall be installed in new conduit or existing conduit as specified in the plans. The Contractor shall be required to leave a minimum of 10 feet of cable slack in the equipment controller cabinet. The Contractor shall leave a minimum of 50 feet of cable slack in the communication pull box adjacent to the controller or shall leave a minimum of 50 feet of slack in all other communication pull boxes.

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**REVISION OF SECTION 614
FIBER OPTIC CABLE – GENERAL**

Cable Tags and Labels

Fiber optic cable shall be neatly coiled and clearly tagged and labeled at each communication pull box and at all locations where the fiber is exposed. Cable tags and Labels shall be as follows:

Materials: Metal or heavy plastic identification tags with cable type and number, copper pair or optic number assignments, and destination shall be provided on both ends of all cables (except station cables) and all splice cases. All cables shall be clearly labeled with cable number (City to determine scheme) and size at each end of the cable, when it enters or leaves a conduit and at 30-foot intervals when run in accessible areas such as tunnels, manholes, ceilings, etc.

Manufacturer: Tags shall be 3M, Panduit or an approved equivalent.

Controller cabinets to be connected under this project will connect directly to the appropriate controller as shown in the plans. This connection will be paid under Telemetry (Field).

General Requirements: The Contractor shall provide the Engineer or Engineer's designee with two copies of the cable manufacturer's cable specifications and installation instructions for fiber optic cable in conduit. All installation shall be in accordance with these practices except as otherwise directed by the Engineer or Engineer's designee.

Additional cable costs due to damage caused by the Contractor's neglect of recommended procedures shall be Contractor's responsibility. The main cable shall be installed in continuous runs except where cable type changes or where maximum pull lengths govern. The manufacturer's recommended limits for cable pull tensions shall not be exceeded. Cable ends shall be stored in controller cabinets or pull boxes immediately adjacent to cabinets or as directed by the Engineer or Engineer's designee.

Lateral and Branch cables shall be installed using appropriate strain relief in the cabinet (through cable ties) at a minimum of three locations.

All fiber optic cables to be installed shall be checked with an OTDR before and after installation. Documentation of fiber performance shall be provided to the Engineer or Engineer's designee within 30 days of test. All optical fibers shall be within the manufacturer's recommended tolerances. In addition, any other acceptance testing recommended by the manufacturer shall be provided. Data shall be supplied to the Engineer or Engineer's designee prior to completion of the project.

Fiber optic cable shall be transported to site using cable reel trailers. Care shall be taken at all times to avoid scraping, denting, twisting, or otherwise damaging the cable before, during and after installation. Damaged cable shall be replaced by the Contractor without additional compensation.

Cable shall be installed in conduit or duct in the field in accordance with the contract drawings. The conduit and duct ends shall have all rough edges smoothed to prevent scraping the cable. All existing or suspected dirt and debris within the conduit shall be cleaned with compressed air before installing cable. A manufacturer recommended lubricant shall be applied to the cable to reduce friction between

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**REVISION OF SECTION 614
FIBER OPTIC CABLE - GENERAL**

the cable and duct or conduit. Where fiber optic cables are to be installed in inner duct, the Contractor shall secure each section of the conduit to prevent it from being pulled without the cables.

A cable grip shall be attached to the cables so that no direct force is applied to the optical fiber. The cable grip shall have a ball-bearing swivel to prevent the cable from twisting during pulling. Cable rollers and feeders and winch cable blocks shall be used to guide the cable freely into the duct and at maintenance hole locations. Mechanical aids and pulling cable or ropes shall be used as required. **The maximum pulling tension as defined by the cable manufacturer shall not be exceeded.** The cable shall be taken up at intermediate pulling points with an intermediate cable take-up device as approved by the Engineer or Engineer's designee to prevent over-tension on the cable. Cable pulls shall be continuous and steady between pull points and shall not be interrupted until the entire run of cable has been pulled. Personnel equipped with two-way radios shall be stationed at each maintenance hole, cabinet, pedestal, communications box, and junction box through which the cable is to be pulled to observe and lubricate the cable. Intermediate splices between pull boxes shall not be allowed. The cable shall be securely fastened in place within pull boxes, pedestals, manholes and cabinets.

The contractor shall ensure cable length is sufficient to allow for connection between the communications equipment and the splice equipment and the splice enclosures including provision for slack, vertical runs, cable necessary for splicing, wastage and surplus cable to allow for the removal of the splice enclosure for any future splicing work.

Lateral and Branch Fiber Optic Cable: Lateral/Branch fiber optic cable shall be installed in new or existing conduit, or along existing span wire, as depicted in the plans. Cables shall be provided with appropriate strain relief in the cabinet, consisting of cable ties in at least three interior cabinet locations. Lateral and Branch fiber optic cable shall be clearly tagged and labeled as such at pull boxes and all other locations where it is exposed. At any location where the cable is brought into or out of a span wire pole, the Contractor shall install a new weather-head to accommodate the bending radius of the cable.

Subsection 614.13 shall include the following:

Fiber Optic Cable will be measured by the linear feet for the main (backbone), lateral and branch cables, and shall include all labor and materials required to install the main, lateral, branch, and start cables through conduits to all pull boxes, cabinets and closures specified in the plans. Installation of all internal field cabinet telemetry, splicing, fan-out and termination of the cable at individual controller cabinets is also paid separately under Telemetry (Field).

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**REVISION OF SECTION 614
FIBER OPTIC CABLE - GENERAL**

Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Fiber Optic Cable (Denver Hybrid 12 Strand)	Linear Feet
Fiber Optic Cable (Denver Hybrid 72 Strand)	Linear Feet

REVISION OF SECTION 614 LOOSE TUBE FIBER OPTIC CABLE

Section 614 of the Standard Specifications is hereby revised for this project as follows.

Notice:

Every effort has been made to ensure that the information contained in this specification is complete and accurate at the time of publication; however, information contained herein is subject to change.

Trademarks:

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1. SCOPE

This specification covers the general design requirements and performance standards for fiber optic cables intended primarily for use in the outside plant environment. The purpose of this document is to provide the essential requirements for All-Dielectric Single Jacket Loose Tube Fiber Optic cable to be used in the City of Denver networks.

The product requirements and features described in this specification are those considered useful for ensuring proper selection and manufacturing of fiber optic outside plant cables.

In this specification, all observed or calculated values are rounded off "to the nearest unit" in the last right hand place of figures used in expressing the limiting value. The round-off method of ASTM E 29 is used.

These cables should comply with industry standards such as Telcordia Technologies GR-20 (formerly Bellcore), Electronic Industries Association (EIA), Telecommunications Industry Association (TIA), International Telecommunications Union (ITU), International Electrotechnical Commission (IEC), and American Society for Testing and Materials (ASTM).

2. OPTICAL FIBER CHARACTERISTICS

High quality optical fibers should be made with pure silica-based glass to have very low loss for infrared wavelengths and to be used to carry large amounts of information for very long distances in optical communication systems.

Details of the optical fibers are not covered in this specification, but the proposed cable should contain AllWave® or TrueWave® fibers for Single-Mode applications, or Multimode fibers that comply with the specific fiber requirements supplied by the City of Denver and meets or exceeds these specifications.

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REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE

3. CABLE CORE CHARACTERISTICS

3.1 Color Code

The individual colors for fibers and buffer tubes in loose tube cable cores should comply with EIA/TIA-598 as given in the following table.

Table 1 – Fiber and Tube Color Code

Fiber or Tube No.	Color	Tube No.	Color
1	Blue (BL)	13	Blue-Dash (BL-DS)
2	Orange (OR)	14	Orange-Dash (OR-DS)
3	Green (GR)	15	Green-Dash (GR-DS)
4	Brown (BR)	16	Brown-Dash (BR-DS)
5	Slate (SL)	17	Slate-Dash (SL-DS)
6	White (WH)	18	White-Dash (WH-DS)
7	Red (RD)	19	Red-Dash (RD-DS)
8	Black (BK)	20	Black-Dash (BK-DS)
9	Yellow (YL)	21	Yellow-Dash (YL-DS)
10	Violet (VI)	22	Violet-Dash (VI-DS)
11	Rose (RS)	23	Rose-Dash (RS-DS)
12	Aqua (AQ)	24	Aqua-Dash (AQ-DS)

3.2 Central Strength Member

The central member functions as an anti-buckling element, and should be a glass/epoxy composite dielectric rod. A polyethylene overcoat may be applied to the central member to provide the proper spacing between buffer tubes during stranding.

3.3 Loose Tube Cable Buffer Tubes

Optical fibers are enclosed within buffer tubes that have a diameter several times larger than the diameter of the fibers. The optical fibers are loose within the buffer tubes allowing the fibers to move freely. The loose buffer tubes should have a 2.5 mm diameter, with a nominal wall thickness of 0.4 mm. For composite or hybrid cable designs (i.e. when both single-mode and multi-mode fibers are contained within the same cable), the single-mode fibers will be contained in the first buffer tubes. The multi-mode fibers will be contained in the sequenced buffer tubes following the multi-mode buffer tubes.

Table 2 – Buffer Tubes

Fiber Count	Buffer Tube OD (mm)	Fibers per Tube
1-288	2.5	12

The buffer tubes (and filler rods, if necessary) must be stranded in a reverse oscillation lay (ROL) technique around the central member to allow for easy mid-span access. The core of buffer tubes should be wrapped with two counter helically applied threads to bind together the cable core.

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**REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE**

3.4 Filler Rods

In order to create a round cable, filler rods of the same diameter as the buffer tubes may be used to fill empty positions. Filler rods are made out of HDPE and are natural in color.

3.5 Water Blocking System

Water blocking of the core outside and around the buffer tubes must be accomplished via “dry” elements. **In addition, water-blocking inside the buffer tubes must be accomplished via “dry” elements as well.**

These “dry” water blocking elements form a gel compound when in contact with water. The gel should effectively fill the interstices of the core and the inside of the tubes to prevent water penetration along the length of the cable.

Dry water blocking elements should be in the form of binders, tapes, or yarns depending on where they are being applied.

4. CABLE SHEATH CHARACTERISTICS

The sheaths described in this section are:

- All-Dielectric Single Jacket: one polyethylene jacket, no metallic elements (SJ)

4.1 Strength Elements

Sheath strength elements are applied over the cable core to provide the cable with the required tensile strength. These element are made of fiberglass (Aramid yarns may be used as well).

4.2 Outer Jacket

An outer polyethylene jacket is applied over the cable to provide overall mechanical protection. This jacket is made of MDPE (or HDPE upon request) and is usually black. If required, the jacket could have two co-extruded colored tracer stripes located 180 degrees apart to aid in cable identification. The jacket will be continuous, free from pinholes, splits, blisters, or other imperfections.

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**REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE**

4.3 Ripcords

For ease of jacket removal, one clearly identifiable polyester ripcord is provided under the outer jacket for SJ designs. SJ/SA designs shall have two under armor ripcords placed 180 degrees apart. DJ/SA designs shall have one ripcord under both the inner jacket and steel armor.

4.4 Cable Cross-Sections:

4.4.1 Single Jacket (SJ)



Figure 1 – Single Jacket

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REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE

Table 3 – Target Cable Outer Diameters

NUMBER OF FIBERS								
	2 - 60 (5 Pos.)	2 - 72 (6 Pos.)	73 - 96 (8 Pos.)	97 - 120 (10 Pos.)	121- 44 (12 Pos.)	145-216 (18 Pos.)	217-240 (20 Pos.)	241-288 (24 Pos.)
SHEATH TYPE	Cable OD in. (mm)	Cable OD in. (mm)	Cable OD in. (mm)	Cable OD in. (mm)	Cable OD in. (mm)	Cable OD in. (mm)	Cable OD in. (mm)	Cable OD in. (mm)
SJ	0.42 (10.6)	0.43 (11.0)	0.50 (12.8)	0.57 (14.4)	0.64 (16.2)	0.66 (16.7)	0.69 (17.4)	0.76 (19.2)

5. MECHANICAL, ENVIRONMENTAL AND ELECTRICAL REQUIREMENTS

These cables must meet the requirements of *Telcordia GR-20-CORE* with all testing performed based on *EIA/TIA-455* standards. The manufacturing company must provide proof of their quality control standards with *ISO 9001* and *TL9000* certifications. The cables should comply with the following temperature ranges:

Operation: -40°C to 70°C (-40°F to 158°F)
Installation: -30°C to 60°C (-22°F to 140°F)
Storage/Shipping: -40°C to 75°C (-40°F to 167°F)

5.1 Single-Mode Fibers

Per *Telcordia GR-20*, the magnitude of the attenuation change shall be less than or equal to 0.05 dB for 90% of the test fibers and less than or equal to 0.15 dB for the remaining 10% of test fibers. Cable aging allows for 0.10 dB/km average attenuation change with a magnitude of the maximum attenuation change for each individual fiber to be less than 0.25 dB/km. These attenuation values include a 0.05 dB allowance for measurement repeatability

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REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE

During mechanical and environmental testing evidence of cracking, splitting or other failure of the sheath components when examined under 5X magnification would result in failure of the proposed test requirements. In addition, no fiber shall lose optical continuity because of the test.

Table 4 – Testing for Single Mode Fibers

Cable Test	Test Method	Requirement
Tensile Loading and Bending	EIA/TIA-455-33 IEC 794-1-E1	90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss
Cyclic Flexing	TIA/EIA-455-104 IEC 794-1-E6	90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss
Cyclic Impact	EIA/TIA-455-25 IEC 794-1-E4	90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss
Compressive Loading	TIA/EIA-455-41 IEC 794-1-E3	90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss
Twist	TIA/EIA-455-85 IEC 794-1-E7	90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss
Low and High Temperature Bend	EIA/TIA-455-37 IEC 794-1-E11	90% < 0.05 dB Max. Added Loss 100% < 0.15 dB Max. Added Loss
External Freezing	EIA/TIA-455-98 IEC 794-1-F6	< 0.05 dB Mean Added Loss < 0.15 dB Max. Added Loss
Temperature Cycling	EIA/TIA-455-3 IEC 794-1-F1	<input type="checkbox"/> 0.05 dB/km Mean Added Loss <input type="checkbox"/> 0.15 dB/km Max Added Loss
Cable Aging	EIA/TIA-455-3 IEC 794-1-F1	<input type="checkbox"/> 0.10 dB/km Mean Added Loss <input type="checkbox"/> 0.25 dB/km Max Added Loss
Water Penetration	EIA/TIA-455-82 IEC 794-1-F5	No flow after 24 hours from one meter length of cable

5.2 Multimode Fibers

Per *Telcordia GR-20*, the allowable attenuation increase during the mechanical and environmental testing is 0.20 dB. Cable aging allows for the maximum attenuation change for each individual fiber to be less than 0.40 dB/km.

During mechanical and environmental testing evidence of cracking, splitting or other failure of the sheath components when examined under 5X magnification would result in failure of the proposed test requirements. In addition, no fiber shall lose optical continuity because of the test.

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REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE

Table 5 – Testing for Multi-Mode Fibers

Cable Test	Test Method	Requirement
Tensile Loading and Bending	EIA/TIA-455-33 IEC 794-1-E1	0.20 dB Max. Mean Added Loss
Cyclic Flexing	TIA/EIA-455-104 IEC 794-1-E6	0.20 dB Max. Mean Added Loss
Cyclic Impact	EIA/TIA-455-25 IEC 794-1-E4	0.40 dB Max. Mean Added Loss
Compressive Loading	TIA/EIA-455-41 IEC 794-1-E3	0.20 dB Max. Mean Added Loss
Twist	TIA/EIA-455-85 IEC 794-1-E7	0.20 dB Max. Mean Added Loss
Low and High Temperature Bend	EIA/TIA-455-37 IEC 794-1-E11	0.40 dB Max. Mean Added Loss
External Freezing	EIA/TIA-455-98 IEC 794-1-F6	0.20 dB Max. Mean Added Loss
Temperature Cycling	EIA/TIA-455-3 IEC 794-1-F1	<input type="checkbox"/> 0.5 dB/km Max Added Loss 80 % <input type="checkbox"/> 0.25 dB/km Added Loss
Cable Aging	EIA/TIA-455-3 IEC 794-1-F1	<input type="checkbox"/> 1.0 dB/km Max Added Loss 80 % <input type="checkbox"/> 0.5 dB/km Added Loss
Water Penetration	EIA/TIA-455-82 IEC 794-1-F5	No flow after one hour from one meter length of cable

Note:

The tensile rating for all of the cables described should be 2.7 kN (600 lbf), with a compression rating of at least 220 N/cm under GR-20 requirements.

6. CABLE MARKING

6.1 Printed Characters

For standard outer jackets, printed characters shall be indent printed with white characters for black jackets, black characters for non-black jackets, or as otherwise specified.

For standard striped outer jackets, printed characters shall be indent printed with white characters for red, green, orange, yellow, blue striped cables, light-blue characters for white striped cables, or as otherwise specified by the customer.

The characters shall be of proper height and space to produce good legibility. Character heights of 2 mm should facilitate adequate readability. An occasional illegible marking is permitted if there is a legible marking on either side.

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**REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE**

6.2 Markings

The cable shall be sequentially marked at one meter, or two-foot intervals depending on specific requirements issued by the City of Denver. The length marks shall not be reset to zero on any length of the cable. The actual length of cable shall be within +1, -0% of the marked length.

Each length of cable shall be marked with the following legend:

"(Manufacturer Name) OPTICAL CABLE, (Product Part Number), (Month and Year of Manufacture, [MM-YY]), (Fiber Count [XXX F], where XXX is the number of optical fibers in the cable), and (Manufacturers' Serial Number) "

6.3 Re-Markings

Only one remarking is permitted. If required, either of the following methods for remarking shall be used:

Method A: Completely remove the defective marking and remark the characters with the original color.

Method B: Leave the defective marking on the jacket and remark on a different portion of the cable jacket with yellow character print. The new number sequence shall differ from any other existing marking by at least 5000.

Any cable that contains two sets of markings shall be labeled to indicate the color and sequential numbers to be used. The labeling shall also be applied to the reel tag.

7. CABLE PACKAGING

7.1 Reels

The manufacturer shall supply the product using their standard reel sizes, methods, apparatus, and reel wood lagging, but stenciled according to these specifications. The specifications outlined here are guidelines on what is expected with respect to packaging.

Reels are assumed to be in good working condition, firm, and be able to support the product through shipping and final installation. Reels shall be clean, dry and free of excessive dirt. All reels shall be checked for high nails, stave fit and proper stenciling.

7.2 Reel Labels

Each wooden reel shall be permanently marked with the following information:

- "(Manufacturer's name)" (red paint)
- "OPTICAL CABLE" (black paint)
- An arrow and the wording "cable end" to indicate the position of the outside cable end. (red paint)
- An arrow and the wording "ROLL THIS WAY" to indicate the direction the reel should be rolled to prevent loosening of the cable. (black paint)
- Reel Number (red paint)

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**REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE**

Cable handling stickers/cards must be attached to both flanges of every reel. Each sticker must be stapled to the flange. See Figure 4 for illustrations of the stickers to be used.

7.3 Reel Lagging

7.3.1 Thermal Protection

Outer layers of the reel shall be covered with a protective wrap to limit the solar heating of the cable. This helps limit the cable surface temperature so that it will not exceed 10 C (18 F) above ambient temperature under maximum solar radiation according to Telcordia GR-20 requirements. All foil wrap shall be securely fastened to the cable by at least 2 pieces of strapping tape.

7.3.2 Composite & Wood Lagging

Reels shipping domestically shall be lagged with a suitable protective wrap (can be the same thermal protection wrap) and banded with steel straps. This wrap shall cover the cable from flange to flange and provided some mechanical protection to the outer layers of cable as well as weather resistance. Reels shipping for export shall be lagged with wooden boards nailed to each flange and banded with steel straps in addition to the protective wrap around the outer layers of cable.



Figure 4 – Reel Stickers

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**REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE**

7.4 Others

7.4.1 Cable Ends

Each end of the cable shall have end seals, either end caps or KELLEMS® pulling grips, in order to prevent moisture ingress into the cable during shipping, storage, or installation.

The top end of the cable shall be securely fastened to the inside of the reel flange to prevent the cable from becoming loose in transit or during handling. The bottom end, "test tail", shall be approximately three meters in length and easily accessible. The end shall be protected within a cable slot and be securely fastened to the outside of the reel flange with wire ties or walkout straps. Staples, nails or yarn attached to the reel during manufacturing shall be removed.

The cable slot can be partially protected to prevent the cable tail from moving outside this, however for export orders the cable slot must be completely sealed by either metallic protection rings, plywood covers, or other.

7.4.2 Cable Length Tolerance

Cables ordered to standard factory lengths shall have an actual length within -0% and +5% of the length ordered unless otherwise specified by the customer.

7.4.3 Certified Test Data

Each cable shall have certified test data securely fastened to the reel in a waterproof wrapping. The certified test data sheet shall include the following information:

- Cable Number
- Date
- Customer Name
- Ordered Length
- Customer Order Number
- Ship Length
- Customer Cable Code
- Customer Reel Number
- Customer's Attenuation Specification(s)
- Number of Fibers
- Cable Construction
- Fiber Transmission Data
- Bandwidth Data – only applies to Multi-Mode Fibers
- Authorized Signature

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**REVISION OF SECTION 614
LOOSE TUBE FIBER OPTIC CABLE**

7.4.4 Reel Tag

Each cable shall have a reel tag securely fastened to the reel in a waterproof wrapping. The Reel Tag (Cut Length Data Sheet) shall include the following information:

- Cable Number
- Date
- Customer Name
- Ordered Length
- Customer Order Number
- Ship Length
- Customer Cable Code
- Customer Reel Number
- Customer's Attenuation Specification(s)
- Number of Fibers
- Beginning and Ending Sequential Length Markings
- Gross Weight
- Net Weight
- Inspected By Signature

**REVISION OF SECTION 614
TEST FIBER OPTIC CABLE**

Section 614 of the Standard Specifications is hereby revised for this project as follows.

Subsection 614.08(p), Test Fiber Optic Cable, is hereby added to the Standard Specifications and shall include the following:

This work consists of testing fiber optic cable. Testing shall include both new cable and existing cable. The test procedures involve an OTDR test and an Optical Power Meter Test.

The guidelines for fiber optic cable testing include:

Test jumpers and patch cords must be of the same fiber core size and connector type as the cable system.

The light source and OTDR must operate with the range of 1310 ± 10 nm or 1550 ± 20 nm for testing in accordance with ANSI/EIA/TIA-526-7.

The power meter and the light source must be set to the same wavelength during testing.

The power meter must be calibrated and traceable to the National Institute of Standards and Technology (NIST).

All system connectors, adapters and jumpers must be cleaned as per manufacturer's instructions before measurements are taken.

MATERIALS

The following items are required to perform fiber optic cable tests:

- an OTDR;
- a test reel, if necessary;
- a light source at the appropriate wavelength;
- Optical Power Measurement Equipment; and
- Test Jumpers as specified below.
 - (a) CPR Test Jumper-1 and Test Jumper-2 shall be 1-5 meters long with connectors compatible with the light source and power meter and have the same fiber construction as the link segment being tested.

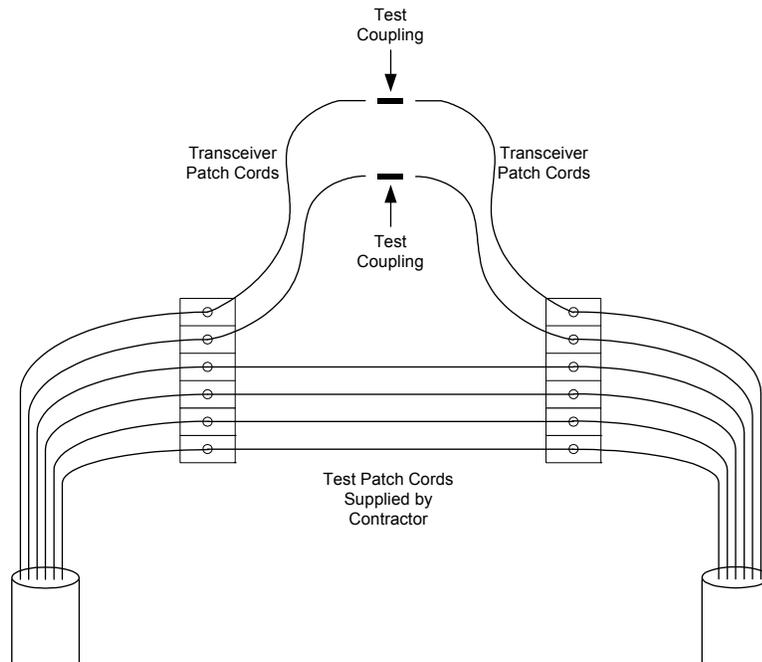
OPTICAL FIBER CABLE TESTING WITH O.T.D.R

The Contractor shall perform an OTDR test of all fibers in all tubes on the reel prior to installation of the fiber. The test results shall be supplied to the Engineer or Engineer's designee prior to installation of the cable.

If the fiber is specified as "Install Only", the Contractor shall test the fiber on the reel and provide the test results to the Engineer or Engineer's designee prior to accepting the cable. After installation, if there are unused portions of cable remaining on the reel, the Engineer or Engineer's designee may request the Contractor or other qualified technician to perform a reel test. The Contractor shall provide the Engineer or Engineer's designee the test results prior to delivering the cable to the Engineer or Engineer's designee. Any cable damaged while in the Contractor's possession shall be replaced at the Contractor's expense.

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REVISION OF SECTION 614
TEST FIBER OPTIC CABLE

All fiber testing shall be performed on all fibers in the completed end-to-end system. Testing shall consist of a bi-directional end-to-end OTDR trace performed per TIA/EIA-455-61. The system margin loss measurements shall be provided at 1310 and 1550nm. If the Plans require installation of a fiber optic patch panel, the Contractor shall supply patch cords to patch all terminated fibers through the panel for all fiber testing. If patch cords are specified in the Plans for final equipment installation, these patch cords shall be connected using a test coupling for the end-to-end test.



OTDR readings will be used to ensure proper installation and to troubleshoot faults. OTDR signature traces will be used for documentation and maintenance. An OTDR provides an indirect estimate of the loss of the cable plant, generally, more accurate or reliable values will be obtained by using an Optical Power Meter. For fibers that are identified in the Plans to be left non-terminated, an OTDR shall be used to test end-to-end attenuation.

Loss numbers for the installed link shall be calculated by taking the sum of the bi-directional measurements and dividing that sum by two.

The Contractor shall use an OTDR that is capable of storing traces electronically and shall save each final trace.

To ensure the traces identify the end points of the fiber under test and the fiber designation, the Contractor shall use a test reel, if required, to eliminate the “dead zone” at the start of the trace so that the start of the fiber under test can be identified on the trace. Indicate the length of the test reel for all test results.

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REVISION OF SECTION 614 TEST FIBER OPTIC CABLE

If the fiber designation is not indicated on the trace itself, the Contractor shall provide a cross-reference table between the stored trace file name and the fiber designation.

In compliance with EIA/TIA-455-61 "Measurement of Fiber or Cable Attenuation Using an OTDR" the Contractor shall record the following information during the test procedure:

- Names of personnel conducting the test.
- Type of test equipment used (manufacturer, model, serial number, calibration date).
- Date test is being performed.
- Optical source wavelength and spectral width.
- Fiber identification.
- End point locations.
- Launch conditions
- Method of calculation for the attenuation or attenuation coefficient.
- Acceptable link attenuation.

OPTIC FIBER CABLE TESTING WITH OPTICAL POWER METER

The Contractor shall conduct an Optical Power Meter Test for each fiber installed.

Fiber optic cable segments shall be tested in one direction at both the 1310 nm and 1550 nm wavelength.

In compliance with TIA/EIA-526-7 "Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant," the following information shall be recorded during the test procedure:

- Names of personnel conducting the test.
- Type of test equipment used (manufacturer, model, serial number, calibration date).
- Date test is being performed.
- Optical source wavelength and spectral width.
- Fiber identification.
- End point locations.
- Test direction.
- Reference power measurement (when not using a power meter with a Relative Power Measurement Mode).
- Measured attenuation of the link segment.
- Acceptable link attenuation.

The minor attenuation differences due to test direction are on par with the accuracy and repeatability of the test method. Lateral segments within a building are limited to 90 meters. Therefore, attenuation differences caused by wavelength are insignificant, and as a result, single wavelength testing is sufficient.

ACCEPTABLE ATTENUATION VALUES

Acceptable attenuation values shall be calculated for each fiber tested. These values represent the maximum acceptable test values.

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REVISION OF SECTION 614
TEST FIBER OPTIC CABLE

SM Fiber. The general attenuation equation for any SM link segment is as follows:

Acceptable Link Attn. = Cable Attn. + Connector Attn. + Splice Attn.

8.3 μm Single-mode Attenuation Coefficients:

Cable Attn.=Cable Length (km) x (0.34 dB/km@1310 nm or 0.25 dB/km@1550 nm)

Connection Attn. (ST or SC connectors)=(No. of Connections x 0.39 dB)+0.42 dB.

Connection Attn. (LC connectors)=(No. of Connections x 0.14 dB)+0.24 dB.

Splice Attn. (Mechanical or Fusion)=Splices x 0.30 dB.

TEST PROCEDURES

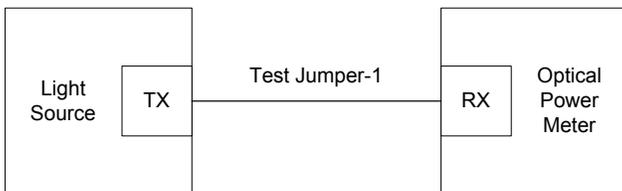
All fiber testing shall be performed on all fibers in the completed end-to-end system.

The Optical Power Meter fiber test shall be conducted as follows:

Clean the test jumper connectors and the test coupling per manufacturer's instructions.

Follow the test equipment manufacturer's initial adjustment instructions.

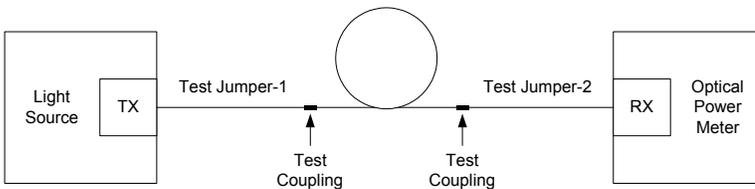
Connect Test Jumper-1 between the light source and the power meter. Avoid placing bends in the jumper that are less than 100 mm (4 inches) in diameter.



If the power meter has a Relative Power Measurement Mode, select it. If it does not, reduce the Reference Power Measurement (P_{ref}). If the meter can display power levels in dBm, select this unit of measurement to simplify subsequent calculations.

Disconnect Test Jumper-1 from the power meter. Do NOT disconnect the test jumper from the light source.

Attach Test Jumper-1 to one end of the cable plant to be measured and Test Jumper-2 to the other end.



Record the Power Measurement (P_{sum}). If the power meter is in Relative Power Measurement Mode, the meter reading represents the true value. If the meter does not have a Relative Power

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**REVISION OF SECTION 614
TEST FIBER OPTIC CABLE**

Measurement Mode, perform the following calculation:

If P_{sum} and P_{ref} are in the same logarithmic units (dBm, dBu, etc.):

$$CPR (dB) = P_{sum} - P_{ref}$$

If P_{sum} and P_{ref} are in watts:

$$CPR (dB) = 10 \times \log_{10} [P_{sum}/P_{ref}]$$

TEST ACCEPTANCE

The Contractor shall demonstrate that each Optical Power Test results in acceptable attenuation values.

The Contractor, solely at the Contractor's cost, shall remake any fusion splices that have test results exceeding acceptable attenuation values.

The Contractor, solely at the Contractor's cost, shall retest any fiber links that have been re-spliced.

The Contractor, solely at the Contractor's cost, shall bring any link not meeting the requirements of this specification into compliance.

SUBMITTALS

The Contractor shall submit test results documentation as both a hard copy and electronic copy.

After each reel test, the Contractor shall submit one hard copy of the OTDR trace for every fiber on the reel. After installation, the Contractor shall submit one hard copy of the OTDR trace for every spliced fiber. Hard copy traces shall be organized and bound in logical order in an 8 1/2" x 11" hard cover binder.

The Contractor shall submit, after approval of the hard copy traces, electronic copies of all traces and appropriate software to allow reading the traces. The Contractor shall submit one copy of the complete contract Plans, including additional drawings issued as part of any change orders, with any deviations clearly marked in color. Deviations to be noted and shall include but not be limited to the following:

- Fiber Splice location;
- Fiber Splice configuration; and
- Termination layout.

Subsection 614.13 shall include the following:

The complete end-to-end OTDR test on one fiber, including document submission, represents one OTDR test.

The complete end-to-end optical power meter test on one fiber, including document submission, represents one optical power meter test.

Subsection 614.14 shall include the following:

No separate measurement or payment will be made for fiber optic cable testing. All cable (system) testing shall be considered incidental to the Fiber Optic Cable (48 Strand) or (12 Strand) pay items.

**REVISION OF SECTION 630
UNIFORMED TRAFFIC CONTROL**

Section 630 of the Standard Specifications is hereby revised for this project as follows:

Subsection 630.09 shall include the following:

Uniformed Officers - The Contractor shall employ off-duty police officers to provide traffic control and traffic enforcement throughout the project as required by the Project Manager. Authorization must be made by the Project Manager in advance of working arrangements for Uniformed traffic Control. Arrangements for officers shall be made at least 2 weeks in advance by contacting the following police agency:

Denver Police Department (Recorder - Leave Message)
Phone Number: 720-640-3636

Subsection 630.14 shall include the following:

The quantity to be measured for Uniformed Traffic Control will be the total number of hours that Uniformed Traffic Control is actually used as authorized.

Subsection 630.15 shall include the following:

The accepted number of hours of Uniformed Traffic Control will be paid for at the contract unit price per hour.

Payment will be made under:

Pay Item	Pay Unit
Uniformed Traffic Control	Hour

**REVISION OF SECTION 630
TRAFFIC CONE**

Section 630 of the Standard Specifications is hereby revised for this project as follows:

In Subsection 630.05, revise the second paragraph as follows:

The reflectorized material shall be AP 1000 Polyester (Reflexite Corp.), 3M Type III, Transparent (Reflexite Corp.), or 2010 Vinyl Cone Collar (Reflexite Corp.). Any other material is not acceptable unless its brightness is equivalent or greater than the types named.

**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:

As required by, in descending order of precedence, the construction plans and project special provisions, the Traffic Barricade Manual published by the City & County of Denver, CDOT Standard Specifications, as augmented by the Colorado Department of Transportation M & S Standards, and the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD).

Subsection 630.02 through 630.08 shall be as provided in the City & County of Denver Traffic Barricade Manual, latest edition. Modifications to said manual are as follows:

Section III of the manual shall include:

Equipment:

The Contractor shall not have construction equipment or materials in the lanes open to traffic at any time, unless approved by the Project Manager.

The Contractor and subcontractors shall equip their construction vehicles with flashing amber lights. Flashing amber lights on vehicles and equipment shall be visible from all directions.

All personal/employee vehicle and construction equipment parking is prohibited when it conflicts with safety, access, or the flow of traffic.

Devices:

The Contractor shall install construction traffic control devices in locations where they do not block or impede other existing traffic control devices, or sidewalks for pedestrians, disabled persons, or bicyclists.

Steel drum channelizing devices shall not be used for traffic control.

Non-metallic drums or tubular markers may be substituted for vertical panel channelizing devices.

Traffic Control:

Traffic control through the construction area is the responsibility of the Contractor. Before starting construction, the Contractor shall submit, in writing, the proposed Method of Handling Traffic (MHT) for the initial phase of construction. When a different MHT is required for a subsequent construction phase, it must be **submitted two (2) weeks prior** to starting that phase. All proposed MHTs shall be approved, in writing, by the Engineer or Engineer's designee. No phase of construction shall start until an acceptable MHT has been **received and approved by the Engineer or Engineer's designee**. The proposed methods shall include, as a minimum, the following:

A detailed diagram that shows the location of all sign placements, including advance construction signs (if not previously approved) and speed limit signs; method, length and time duration for lane closures; purpose and location of flag persons.

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**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

A tabulation of all traffic control devices shown in the detailed diagram including, but not limited to: construction signs, vertical panel; vertical panel with light; barricades; cones, drum channelizing devices; concrete barrier (temporary); advance warning flashing or sequencing arrow panel. Certain traffic control devices may be used for more than one operation or phase. However, all devices required for any particular phase must be detailed and tabulated for each phase. Certain traffic control devices may be used for more than one phase of construction.

Number of flaggers and hours required.

Number of days a Traffic Control Supervisor is required.

Number of hours for Uniformed Traffic Control

Approval of the proposed MHT is intended to indicate those devices for which payment is to be made. Such approval 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.

Section VI.F of the manual shall include:

The Contractor shall, at the preconstruction conference, designate one of his employees, other than the Superintendent, to be responsible for traffic control management. This responsibility shall include management of the Contractor's signing and all other details covered by the Specifications which contribute to the convenience, safety, and orderly movement of traffic and to the comfort of the traveling public. The designated employee will have the Certification of the Traffic Control Supervisor as a Worksite Traffic Supervisor by the American Traffic Safety Services Association (ATSSA) in lieu of completion of the CDOT minimum training requirements.

Traffic control management shall be maintained and inspected on a 24-hour per day basis at no additional cost to the project. The Contractor shall make arrangements so that the Traffic Control Manager or his approved representative will be available on every working day, "on-call" at all times and available upon the Engineer or Engineer designee's request at other than normal working hours. The Traffic Control Manager shall have an up-to-date copy of part VI of the MUTCD, pertaining to traffic controls for street and highway construction, as well as the City and County of Denver Traffic Barricade manual, available at all times.

Section VI.F.2 of the manual, the third item shall read:

The flagger's STOP/SLOW sign paddle shall be 18 inches with letters 6 inches high.

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**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

Subsections 630.09 through 630.14 of the Standard Specifications shall apply, except as otherwise provided herein.

Subsection 630.09, second paragraph is hereby deleted and replaced with the following:

Traffic Control shall be provided as required by, in descending order of precedence, the construction plans and project special provisions, CDOT Standard Specifications, CDOT Standard Plans (M & S Standards) and the MUTCD.

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 Manager following approval of the Traffic Engineering Services Department.

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.

Subsection 630.09 (4) shall be revised to include the following:

Access to private driveways and businesses shall be maintained at all times during construction. The Contractor shall coordinate any driveway work with the property owner. Appropriate signage shall be provided alerting all motorists leaving driveways that enter a work zone as to which direction the through lane is traveling and what access restrictions exist, if any.

Subsection 630.09 (10) shall be added as follows:

General Work Restrictions:

The Contractor shall perform all the work on the roadway between the hours of 8:30 A.M. and 3:30 P.M. or as approved by the Project Manager. Weekend and nighttime work will be allowed with the prior written approval of the Project Manager.

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 3:00 PM to 6:30 PM Monday through Thursday; and after 2:00 PM on Fridays unless otherwise authorized by the Project Manager.

Work that interferes with traffic, 1) on any day of a 3 or 4 day holiday weekend; or 2) after 12:00 noon on the day preceding such holiday weekend, will only be permitted following review of a Contractor submitted request and approval by the Project Manager and the City of Denver Traffic Engineering Services Department:

The Contractor shall coordinate all of the work on the roadway during any special event with the City & County of Denver.

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**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

Subsection 630.09 (11) shall be added as follows:

Access:

Full traffic operations shall be maintained in each direction on all streets at all times, and on all surrounding streets at all times, via flagging if necessary for closures of less than one day, unless authorized by the Project Manager and the Traffic Engineering Services Department.

Contractor shall obtain all required access and construction permits from the City & County of Denver prior to initiating work along City right of way.

The Contractor shall maintain access to all roadways, side streets, walkways, alleyways, driveways, and hike/bike paths at all times unless otherwise approved by the Project Manager. The sole exception to this requirement is that the City will permit full closures of access to all alleyways, walkways, driveways, and hike/ bike paths DIRECTLY ADJACENT to an active work Phase for a maximum period of one (1) week. Should the Contractor wish to exercise this exception, a request for same shall be submitted to the Project Manager for review and approval including proposed method for Public notice per Section 632. If access restrictions are approved by the Project Manager, the Contractor shall coordinate with all tenants affected by alley and/or access closures two weeks prior to closure.

All proposed lane closures shall be subject to the approval of the Project Manager and Traffic Engineering Services Department. Requests for such lane closures shall be submitted with a Method of Handling Traffic 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 utilized in continuum for the duration of each working period. Contractor shall make all efforts to fashion his lane closure proposal to close no more than one lane at a given time.

Subsection 630.15 shall be revised to include the following:

When the contract includes Traffic Control pay items by the week:

Traffic channeling devices consisting of vertical panel or traffic cones will be measured by the unit/week. Concrete barriers will be measured by the linear foot/week. Advance warning flashing or sequencing arrow panels will be measured to the unit/week according to size. The flashing beacon (portable) will be measured as a unit/week complete in place. Sign panels will be paid for under the appropriate item unit/week.

A day shall be defined as the time from 12:00 midnight to 12:00 midnight. A week shall be defined as the time from Sunday at 12:00 midnight to the following Sunday at 12:00 midnight. The Traffic Control Manager shall keep a daily log of traffic control devices and personnel. The log shall list all devices and personnel deployed within the limits of construction for each day and shall be available for review by the Engineer or Engineer's designee by noon the following Monday to be eligible for payment for the previous week's work.

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**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

Construction traffic control devices, as determined by the approved MHT, will be paid for based upon the Traffic Control Manager's weekly submittal of daily logs. The number of traffic control devices paid per week shall be the maximum number of approved devices deployed on any one day during that week.

When the contract includes Traffic Control Management paid by the Day:

Traffic Control Management will include: Traffic Control Supervisor, all flagging, set-up and take-down of all traffic control devices and inspection of all traffic control devices.

TRAFFIC CONTROL PLAN – GENERAL

The key elements of the Contractor's method of handling traffic (MHT) are outlined in subsection 630.09.

The components of the TCP for this project are included in the following:

- (1) Subsection 104.04 and Section 630 of the Standard Specifications.
- (2) Standard Plan S-630-1, Traffic Controls for Highway Construction, and Standard Plan S-630-2.
- (3) Manual on Uniform Traffic Control Devices (MUTCD).
- (4) Denver Barricade Manual.

Traffic Control shall be provided as required by, in descending order of precedence, MUTCD, the plans and special provisions for this project, Denver Barricade Manual, Colorado Department of Transportation Standard Specifications, and Colorado Department of Transportation M & S Standards.

Special Traffic Control Plan requirements for this project are as follows:

During the construction of this project, traffic shall use the present traveled roadway at all times in each direction unless otherwise directed by the Engineer or Engineer's designee.

The Contractor shall not have construction equipment or materials in the lanes open to traffic at any time, unless approved by the Engineer or Engineer's designee.

All personal/employee vehicle and construction equipment parking is prohibited when it conflicts with safety, access or the flow of traffic.

The Contractor shall install construction traffic control devices in locations where they do not block or impede other existing traffic control devices, or sidewalks for pedestrians, disabled persons, or bicyclists.

The Contractor shall provide traffic control devices that are in good working order and clean condition.

The Contractor and subcontractors shall equip their construction vehicles with flashing amber lights. Flashing amber lights on vehicles and equipment shall be visible from all directions.

The Contractor shall maintain access to all roadways, side streets, walkways, alleyways, driveways, and pedestrian bike paths/hiking trails at all times unless otherwise approved by the Engineer or Engineer's designee.

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.

The Contractor shall perform all the work on the roadway between the hours of 8:30 am and 3:00 pm, or as approved by the Engineer or Engineer's designee. Weekend and nighttime work will be allowed with the prior written approval of the Engineer or Engineer's designee.

Work that interferes with traffic will not be permitted during any of the following times: 1.) on any day of a 3 or 4 day holiday weekend; or 2.) after 12:00 noon on the day preceding such holiday weekend.

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TRAFFIC CONTROL PLAN - GENERAL

The Contractor shall coordinate all of the work on the roadway during any special event with the Engineer or Engineer's designee.

All costs incidental to foregoing requirements shall be included in the original contract prices for the project and will not be measured and paid for separately.

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 3:00 pm to 6:30 pm Monday through Thursday; and after 2:00 PM on Fridays unless otherwise authorized by the Engineer or Engineer's designee.

Working within the right-of-way of an arterial road may be restricted to either night-only or weekend work times. The Contractor shall contact Construction Engineering, 303-446-3469 with a traffic control plan to begin a review of the proposed work scope, schedule and location.

Contractor shall obtain all required access and construction permits from the City & County of Denver prior to initiating work along City & County of Denver's right of way. The contractor shall coordinate all street occupancy, street cut or construction permits with DES Construction Engineering at least two weeks prior to the scheduled start of work. The closures of collector/arterial roads or intersections will require site-specific traffic control plans. All traffic control plans and construction schedules must be approved by the City Project Engineer prior to permit application.

All lane closures shall be subject to the approval of the Engineer or Engineer's designee. Requests for such lane closures shall be made at least 2 weeks in advance of the time the lane closure is to be implemented. Lane closures will not be allowed to remain unless utilized in continuum for the duration of each working period.

Contractor shall coordinate with all tenants affected by alley and/or access closures two weeks prior to closure.

Contractor may close no more than one lane at a given time.

Two-way traffic shall be maintained on all streets at all times, via flagging if necessary for closures of less than one day.

All construction vehicles shall remain on paved surfaces at all times.

Contact Lorraine Taylor at RTD (303) 299-6440 regarding impacts to bus stop access (pedestrian or vehicular) 48 hours in advance of such impact.

FORCE ACCOUNT ITEMS

DESCRIPTION

This special provision contains the City & County of Denver's estimate for force account items included in the Contract. Such estimated amounts will be included in the total bid to determine the project commitment amount and the amount of performance and payment bonds. Force Account work shall be performed as directed by the Engineer or Engineer's designee.

BASIS OF PAYMENT

Payment will be made in accordance with General Contract Condition Title 1104. Payment will constitute full compensation for all work necessary to complete the item.

Force account work valued at \$5,000 or less, that must be performed by a licensed journeyman in order to comply with federal, state, or local codes, may be paid for after receipt of an itemized statement endorsed by the Contractor.

<u>Force Account Item</u>	<u>Estimated Quantity</u>	<u>Amount</u>
F/A 01 Minor Contract Revisions	1	\$ 20,000.00
F/A 02 Partnering	1	2,000.00
F/A 03 Fuel Cost Adjustment	1	500.00
F/A 04 OJT Colorado Training Program	1	300.00
F/A 05 ESB Program	1	5,000.00
F/A 06 Erosion Control	1	2,000.00
F/A 07 Environmental Health & Safety Management	1	2,000.00

Item Details:

Force Account "Erosion Control" is to pay for any other erosion control items the ECS will need during the duration of this project. All items shall be pre-approved by the Engineer prior to installation or they will be at no cost to the project.

Force Account "Environmental Health & Safety Management" is for implementing procedures outlined in Section 250 of the CDOT Standard Specifications for Road and Bridge Construction, in the event that contaminated or suspect material is encountered during construction.

UTILITIES

Known utilities within the limits of this project include:

UTILITY	CONTACT/EMAIL	PHONE/FAX
CDOT Region 6 Traffic 2000 South Holly Street Denver, CO 80222	Jeff Lancaster jeffrey.lancaster@dot.state.co.us	303-757-9950
CDOT – ITS 425C Corporate Circle Golden, CO 80401	Jill Scott jill.k.scott@dot.state.co.us	303-512-5805
AT&T Cable Service (Comcast/TCI) 1617 S. Acoma Street Denver, CO 80223	Eric Carroll Eric_Carroll@cable.comcast.com	303-603-5256
Comcast Cable 1617 S. Acoma Street Denver, CO 80223	Leo Coats Leo_coats@cable.comcast.com	303-603-5065
Denver Water Department 1600 West 12 th Avenue Denver, CO 80254	Lou Vullo (Utilities) lou.vullo@denverwater.org	303-628-6671
Highline Canal (Denver Water) 1600 West 12 th Avenue Denver, CO 80254	John Walsh Russell Christenson, Dist. Foreman	303-740-9787 303-278-9605
Denver Parks & Recreation 4495 Jason Street Denver, CO 80211	Eugene R. Roybal eugen.roybal@denvergov.org	720-865-0364
Denver Traffic 5440 Rosyln Street, Bldg. E Denver, CO 80216	Same Gonzales Sam.gonzales@ci.denver.co.us Chris Lillie chris.lillie@ci.denver.co.us	720-865-4008 720-865-4066
Denver Wastewater Management 201 West Colfax Avenue, Dept 507 Denver, CO 80202	Walt Hime walt.hime@denvergov.org	720-865-3033
Denver Public Works (Bridge) 201 West Colfax Avenue Denver, CO 80202	Bill Melton City Bridge Inspector	720-913-4511
Metro Wastewater Reclamation District 6450 York Denver, CO 80229	Tammy Archuleta tarchuleta@mwrddst.co.us Bob Cwetna rcwetna@mwrddst.co.us	303-286-3175 303-286-3372
Qwest Local Network 9750 E. Costilla Avenue, Room 210 Englewood, CO 80112	Andy Devine Andy.devine@qwest.com Chuck Beasley Chuck.Beasley@qwest.com	303-792-6298 303-784-0367
Sprint 2721 W. Oxford Avenue, Suite 5 Englewood, CO 80237	Nick Muller nick.j.muller@sprint.com	303-789-4745

Xcel Energy – Transmission 550 15 th Street, Suite 200 Denver, CO 80202	Bill Brasch william.brasch@xcelenergy.com	303-571-7082
Xcel Energy-Street Lighting & Electric 1123 W. 3rd Avenue Denver, CO 80223	Bruce Burr bruce.burr@xcelenergy.com Ron Johnson Ron.H.Johnson@xcelenergy.com	303-571-3124 303-571-3169
Xcel Energy – Gas Operations 1123 West 3 rd Avenue Denver, CO 80223	Michelle O’Nan Michell.T.Onan@xcelenergy.com	303-571-3358
XO Communications 317 Inverness Way South Englewood, CO 80112	Steve Valdez steve.g.valdez@xo.com	303-539-1022

The work described in these plans and specifications will require full cooperation between the Contractor and the utility owners in accordance with subsection 105.10 in conducting their respective operations, to complete the utility work with minimum delay to the project.

PART 1 - CONTRACTOR SHALL PERFORM THE WORK LISTED BELOW:

Coordinate project construction with the performance by the utility owner of each utility work element listed in Part 2 below. Perform preparatory work specified in Part 2 for each utility work element. Provide an accurate construction schedule that includes all utility work elements to the owner of each impacted utility. Provide each utility owner with periodic updates to the schedule. Conduct necessary utility coordination meetings, and provide other necessary accommodations as directed by the Engineer. Notify each utility owner in writing, with a copy to the Engineer, prior to the time each utility work element is to be performed by the utility owner. Provide the notice the number of days specified in Part 2 immediately prior to the time the utility work must be begun to meet the project schedule.

Provide traffic control, as directed by the Engineer, for any utility work by the utility owner expected to be coordinated with construction. However, traffic control for utility work outside of typical project work hours shall be the responsibility of the utility owner.

Perform each utility work element for every utility owner listed here in Part 1. Notify each utility owner in advance of any work being done by the Contractor to its facility, so that the utility owner can coordinate its inspections for final acceptance of the work with the Engineer.

ALL UTILITY OWNERS

Prior to excavating, the Contractor shall positively locate all potential conflicts with existing underground utilities and proposed construction, as determined by the Contractor according to proposed methods and schedule of construction. The Contractor shall modify construction plans to avoid existing underground facilities as needed, and as approved by the Engineer. Please note that UNCC marks only its members’ facilities – Other facilities, such as ditches and drainage pipes may exist, and it is the Contractor’s responsibility to investigate, locate and avoid such facilities.

-3-
UTILITIES

PART 2 - UTILITY OWNERS SHALL PERFORM THE WORK LISTED BELOW:

Although the CDOT Contractor shall provide traffic control for utility work expected to be coordinated with construction, traffic control for utility work outside of typical project work hours shall be the responsibility of the utility owner. The utility owner shall prepare and submit to the Denver Engineer a Method of Handling Traffic for utility work to be performed outside typical project work hours. The utility owner shall obtain acceptance of the Method of Handling traffic from the Denver Engineer prior to beginning the utility work to be performed outside typical project work hours.

Proposed Utility work for this project:

NO UTILITY WORK IS EXPECTED

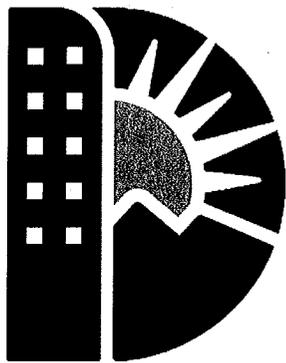
GENERAL:

The Contractor shall comply with Article 1.5 of Title 9, CRS ("Excavation Requirements") when excavating or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least two (2) business days, not including the actual day of notice, prior to commencing such operations. The Contractor shall contact the Utility Notification Center of Colorado (UNCC) at phone number **811**, to have locations of UNCC registered lines marked by member companies. All other underground facilities shall be located by contacting the respective owner. Utility service laterals shall also be located prior to beginning excavation or grading.

All costs incidental to the foregoing requirements will not be paid for separately but shall be included in the work.

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER[®]
THE MILE HIGH CITY

DEPARTMENT OF PUBLICWORKS / ENGINEERING DIVISION

Drawings

Contract No. 201102384

**TRAFFIC SIGNAL SYSTEM IMPROVEMENT
PROJECT - TSSIP1**

August 24, 2011

CITY & COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

PLANS OF PROPOSED
 FEDERAL AID PROJECT NO. AQC M320-071
 CDOT SUBACCOUNT NO. SA 18144
 DENVER PILAR #2011-0218

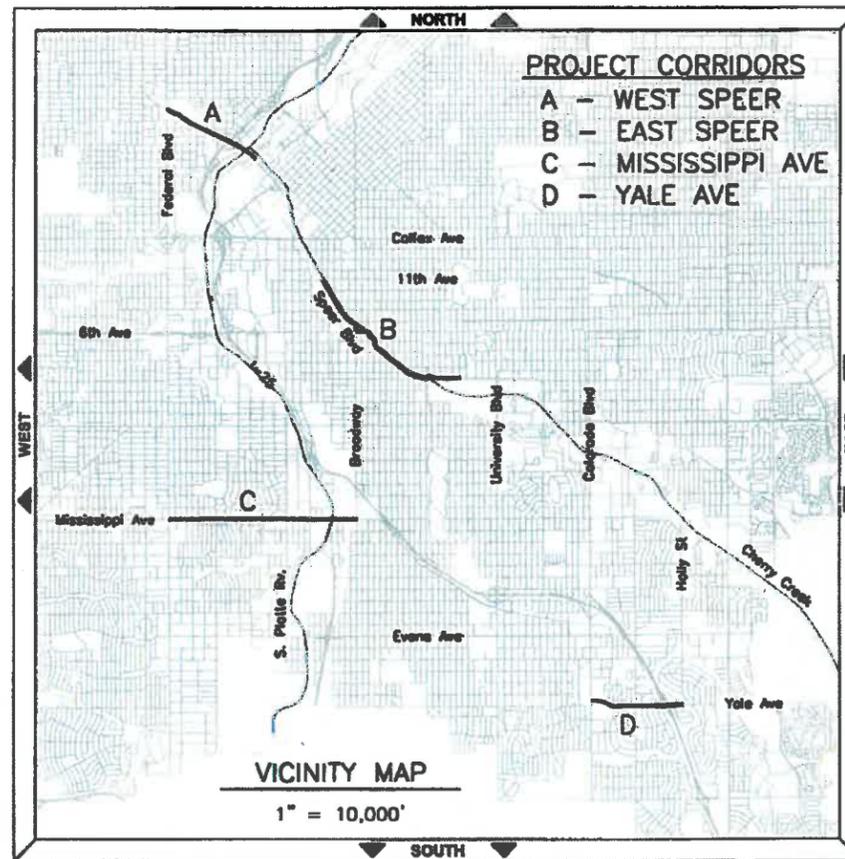
TRAFFIC SIGNAL SYSTEM IMPROVEMENT PROJECT - TSSIP1

SCALE OF ORIGINAL DRAWINGS

ON PLAN 1" = 60'

INDEX OF SHEETS

SUMMARY OF PROJECT CORRIDORS	
LOCATIONS	Modified Signal Controllers
A) SPEER BLVD - WEST (Federal Blvd to Elitch Cr)	7
B) SPEER BLVD - EAST (11th Ave to University Blvd)	29
C) MISSISSIPPI AVE (Federal Blvd to Broadway)	10
D) YALE AVE (Colorado Blvd to Holly St)	7
TOTAL	53



Sheet/Subset	Description
1 T-1	TITLE SHEET
2 SP-1	STANDARD PLANS LIST
3-4 SQ-1 to 2	SUMMARY OF APPROXIMATE QUANTITIES
5-6 GN-1 to 2	GENERAL NOTES
7 E-1	STORMWATER MANAGEMENT CONSTRUCTION PLAN
8-11 OV-1 to 4	PROJECT OVERVIEW PLAN AND MAP KEY
12-13 D-1 to 2	INTERSECTION DETAILS - TYPICAL TRAFFIC SIGNAL CONDUIT CONNECTIONS
14-19 T-1 to 6	SPEER BLVD (WEST) - INTERCONNECT CONDUIT PLAN
20-35 T-7 to 22	SPEER BLVD (EAST) - INTERCONNECT CONDUIT PLAN
36-47 T-23 to 34	MISSISSIPPI AVENUE - INTERCONNECT CONDUIT PLAN
48-54 T-35 to 41	YALE AVENUE - INTERCONNECT CONDUIT PLAN
55 CTC-1	SCHEDULE OF TRAFFIC CONTROL DEVICES
56-59 W-1 to 4	FIBER OPTIC WIRING PLAN

DENVER 2003 TRAFFIC STANDARD DRAWINGS

- 16.1 GENERAL NOTES
- 16.2 LEGEND KEY NOTES
- 16.7 CONDUIT DETAILS
- 16.8 PULL BOXES
- 16.14 FOUNDATION DETAILS

Signature Block

<i>[Signature]</i>	7-26-11
Manager of Public Works	
<i>[Signature]</i>	7-26-11
City Engineer	
<i>[Signature]</i>	7/25/11
Director of Engineering	
<i>[Signature]</i>	7/25/2011
City Traffic Engineer	
<i>[Signature]</i>	7/25/11
Small Business Opportunity Division	

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Last Modification Date:	4/15/11 Initials: larry			Revised:		Detailer:	LCL		SA 18144
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Acad Version 2007	Scale: NA Units: English								

ISSUE DATE: APRIL 6, 2011



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PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	S STANDARD TITLE	PAGE NUMBER
<input checked="" type="checkbox"/>		M-100-1 STANDARD SYMBOLS (3 SHEETS).....	1-3	<input type="checkbox"/>		M-607-1 WIRE FENCES AND GATES (3 SHEETS).....	84-86	S-612-1	<input type="checkbox"/>	DELINEATOR INSTALLATIONS (6 SHEETS) (REVISED, JULY 01, 2010)...	131-135
<input type="checkbox"/>		M-203-1 APPROACH ROADS.....	4	<input type="checkbox"/>		M-607-2 CHAIN LINK FENCE (3 SHEETS).....	87-89	<input type="checkbox"/>	S-614-1	GROUND SIGN PLACEMENT (2 SHEETS).....	136-137
<input type="checkbox"/>		M-203-2 DITCH TYPES.....	5	<input type="checkbox"/>		M-607-3 BARRIER FENCE.....	90	<input type="checkbox"/>	S-614-2	CLASS I SIGNS.....	138
<input type="checkbox"/>		M-203-11 SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS).....	6-8	<input type="checkbox"/>		M-607-4 DEER FENCE AND GATES (2 SHEETS).....	91-92	<input type="checkbox"/>	S-614-3	CLASS II SIGNS.....	139
<input type="checkbox"/>		M-203-12 SUPERELEVATION STREETS (2 SHEETS).....	9-10	<input type="checkbox"/>		M-607-10 PICKET SNOW FENCE.....	93	S-614-4	<input type="checkbox"/>	BREAK-AWAY SIGN SUPPORT DETAILS.....	140-142
<input type="checkbox"/>		M-206-1 EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS).....	11-12	<input type="checkbox"/>		M-607-15 ROAD CLOSURE GATE (9 SHEETS).....	94-102	<input type="checkbox"/>	S-614-5	FOR GROUND SIGNS (2 SHEETS).....	143-144
<input type="checkbox"/>		M-206-2 EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS).....	13-14	<input type="checkbox"/>		M-608-1 CURB RAMPS (4 SHEETS).....	103-106	<input type="checkbox"/>	S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS.....	145-146
		M-208-1 <input checked="" type="checkbox"/> TEMPORARY EROSION CONTROL (12 SHEETS) (REVISED ON AUGUST 26, 2010).....	15-21	<input type="checkbox"/>		M-609-1 <input type="checkbox"/> CURBS, GUTTERS, AND SIDEWALKS (3 4 SHEETS) (REVISED ON JULY 09, 2009).....	107-109	S-614-8	<input type="checkbox"/>	TUBULAR STEEL SIGN SUPPORT DETAILS (5 SHEETS) (REVISED ON SEPT. 01, 2010).....	147-151
<input type="checkbox"/>		M-210-1 MAILBOX SUPPORTS (2 SHEETS).....	22-23	<input type="checkbox"/>		M-611-1 CATTLE GUARD (2 SHEETS).....	110-111	<input type="checkbox"/>	S-614-10	MARKER ASSEMBLY INSTALLATIONS.....	152
<input type="checkbox"/>		M-214-1 PLANTING DETAILS.....	24	<input type="checkbox"/>		M-613-1 ROADWAY LIGHTING (4 SHEETS).....	112-115	S-614-11	<input type="checkbox"/>	MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS (NEW, JUNE 22, 2009).....	
		M-412-1 <input type="checkbox"/> CONCRETE PAVEMENT JOINTS (5 SHEETS) (REVISED ON DEC. 08, 2010).....	25-29	<input type="checkbox"/>		M-614-1 RUMBLE STRIPS (3 SHEETS).....	116-118	<input type="checkbox"/>	S-614-12	STRUCTURE NUMBER INSTALLATION.....	153
<input type="checkbox"/>		M-510-1 STRUCTURAL PLATE PIPE H-20 LOADING.....	30	<input type="checkbox"/>		M-614-2 SAND BARREL ARRAYS (2 SHEETS).....	119-120	<input type="checkbox"/>	S-614-14	FLASHING BEACON AND SIGN INSTALLATIONS (3 SHEETS).....	154-156
<input type="checkbox"/>		M-601-1 SINGLE CONCRETE BOX CULVERT (2 SHEETS).....	31-32	<input type="checkbox"/>		M-615-1 EMBANKMENT PROTECTOR TYPE 3.....	121	<input type="checkbox"/>	S-614-20	TYPICAL POLE MOUNT SIGN INSTALLATIONS.....	157
<input type="checkbox"/>		M-601-2 DOUBLE CONCRETE BOX CULVERT (2 SHEETS).....	33-34	<input type="checkbox"/>		M-615-2 EMBANKMENT PROTECTOR TYPE 5.....	122	<input type="checkbox"/>	S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS.....	158
<input type="checkbox"/>		M-601-3 TRIPLE CONCRETE BOX CULVERT (2 SHEETS).....	35-36	<input type="checkbox"/>		M-616-1 INVERTED SIPHON.....	123	<input type="checkbox"/>	S-614-22	TYPICAL MULTI-SIGN INSTALLATIONS.....	159
<input type="checkbox"/>		M-601-10 HEADWALL FOR PIPES.....	37	<input type="checkbox"/>		M-620-1 FIELD LABORATORY CLASS 1.....	124	<input type="checkbox"/>	S-614-40A	TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS.....	160-166
<input type="checkbox"/>		M-601-11 TYPE "S" SADDLE HEADWALLS FOR PIPE.....	38	<input type="checkbox"/>		M-620-2 FIELD LABORATORY CLASS 2.....	125			ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS.....	167-171
<input type="checkbox"/>		M-601-12 HEADWALLS AND PIPE OUTLET PAVING.....	39	<input type="checkbox"/>		M-620-11 FIELD OFFICE CLASS 1.....	126	<input type="checkbox"/>	S-614-50	MONOTUBE OVERHEAD SIGNS (14 SHEETS).....	172-185
<input type="checkbox"/>		M-601-20 WINGWALLS FOR PIPE OR BOX CULVERTS.....	40	<input type="checkbox"/>		M-620-12 FIELD OFFICE CLASS 2.....	127	<input type="checkbox"/>	S-627-1	PAVEMENT MARKINGS (5 SHEETS) (REVISED ON OCTOBER 01, 2010).....	186-190
		M-603-1 <input type="checkbox"/> METAL PIPE (4 SHEETS) (REVISED ON FEBRUARY 25, 2010).....	41-42	<input type="checkbox"/>		M-629-1 SURVEY MONUMENTS (2 SHEETS).....	128-129	S-630-1	<input checked="" type="checkbox"/>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (REVISED ON FEB. 24, 2011) (12 19 SHEETS).....	191-202
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		M-603-3 <input type="checkbox"/> PRECAST CONCRETE BOX CULVERT (REVISED ON JULY 09, 2009).....	44					<input type="checkbox"/>	S-630-3	FLASHING BEACON (PORTABLE) DETAILS.....	204
		M-603-4 <input type="checkbox"/> CORRUGATED POLYETHYLENE PIPE (AASHTO M294) (REV. ON FEB. 25, 2010).....						S-630-4	<input type="checkbox"/>	STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS (NEW MARCH 22, 2010).....	
		M-603-5 <input type="checkbox"/> POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304) (NEW ON FEB. 25, 2010).....									
<input type="checkbox"/>		M-603-10 CONCRETE AND METAL END SECTIONS (2 SHEETS).....	45-46								
<input type="checkbox"/>		M-604-10 INLET, TYPE C.....	47								
<input type="checkbox"/>		M-604-11 INLET, TYPE D.....	48								
<input type="checkbox"/>		M-604-12 CURB INLET TYPE R (2 SHEETS).....	49-50								
<input type="checkbox"/>		M-604-13 CONCRETE INLET TYPE 13.....	51								
<input type="checkbox"/>		M-604-20 MANHOLES (3 SHEETS).....	52-54								
<input type="checkbox"/>		M-604-25 VANE GRATE INLET (5 SHEETS).....	55-59								
		M-605-1 <input type="checkbox"/> SUBSURFACE DRAINS (REVISED ON JULY 09, 2009).....	60								
		M-606-1 <input type="checkbox"/> GUARDRAIL TYPE 3 W-BEAM (17 SHEETS) (REVISED ON AUG. 11, 2010).....	61-76								
<input type="checkbox"/>		M-606-13 GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS).....	77-80								
<input type="checkbox"/>		M-606-14 PRECAST TYPE 7 CONCRETE BARRIER (3 SHEETS).....	81-83								

THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

COLORADO
 DEPARTMENT OF TRANSPORTATION
 STANDARD PLANS LIST
 M&S STANDARDS
 July 04, 2006
 Revised on February 24, 2011

Computer File Information		Index of Revisions		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176	 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832	As Constructed		DENVER TSSIP-1 STANDARD PLANS LIST		Project No./Code	
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Last Modification Date:	4/14/11 Initials: larry	<input type="checkbox"/>				Revised:		Detailer: LCL		SA 18144	
Full Path:	J:\10127-02\CADD\Sheets	<input type="checkbox"/>				Void:		Sheet Subset: Standard Plans		Subset Sheets: SP-1 of 1	
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Acad Version 2007	Scale: Units: English	<input type="checkbox"/>									

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Index			Contract Item No.	Contract Item	Unit	Roadway												Project Totals		
Book	Page	Sheet				Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	
			202-00848	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	12													12	
			202-99999	REMOVAL OF TRAFFIC SIGNAL CABINET BASE	EACH	16													16	
			203-01597	POTHOLING	EACH	530													530	
			203-01622	SWEEPING (WITH PICKUP BROOM)	HOUR	80													80	
			208-00002	EROSION LOG (12 INCH)	LF	1000													1000	
			208-00034	GRAVEL BAG	LF	600													600	
			208-00045	CONCRETE WASHOUT STRUCTURE	EACH	1													1	
			208-00050	STORM DRAIN INLET PROTECTION	EACH	100													100	
			208-00103	REMOVAL AND DISPOSAL OF SEDIMENT (LABOR)	HOUR	80													80	
			208-00105	REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT)	HOUR	40													40	
			208-00205	EROSION CONTROL SUPERVISOR	HOUR	120													120	
			210-00848	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	4													4	
			607-11525	FENCE (PLASTIC)	LF	500													500	
			608-00000	CONCRETE SIDEWALK	SY	121													121	
			613-00306	3 INCH ELECTRICAL CONDUIT (BORED)	LF	13250													13250	
			613-01200	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	182													182	
			613-01300	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	726													726	
			613-00701	CONDUIT (PROOFING)	HOUR	260													260	
			613-04011	CONDUIT (REPAIR)	EACH	34													34	
			613-07000	PULL BOX (SPECIAL)	EACH	72													72	
			613-07101	PULL BOX (TYPE A)	EACH	49													49	
			613-07104	PULL BOX (TRAFFIC)	EACH	50													50	
			613-10000	WIRING	LS	1													1	
			613-10011	FIBER OPTIC CABLE (REPAIR)	EACH	17													17	
			614-03101	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS)	EACH	4													4	
			614-03102	CONCRETE FOOTING (UPS CABINET)	EACH	32													32	
			614-75848	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	14													14	
			614-86004	SPREAD SPECTRUM RADIO (INSTALL ONLY)	EACH	4													4	
			614-86105	TELEMETRY (FIELD)	EACH	51													51	
			614-87414	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	1785													1785	

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Creation Date:	2/9/11 Initials: LCL
Last Modification Date:	4/15/11 Initials: larry
Full Path:	J:\10127-02\CADD\Sheets
Drawing File Name:	M10127SAQ01.dwg
Acad Version 2007	Scale: NA Units: English

Index of Revisions	
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As Constructed
No Revisions:
Revised:
Void:

DENVER TSSIP-1 SUMMARY OF APPROXIMATE QUANTITIES	
Designer:	LCL
Detailer:	LCL
Sheet Subset:	Quantities

Project No./Code	
AQC M320-071	
SA 18144	
Sheet Number	3

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Index			Contract Item No.	Contract Item	Unit	Roadway												Project Totals	
Book	Page	Sheet				Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.
			614-87474	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	15500												15500	
			614-96801	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	50												50	
			626-00000	MOBILIZATION	LS	1												1	
			630-00000	FLAGGING	HOURL	240												240	
			630-00003	UNIFORMED TRAFFIC CONTROL	HOURL	160												160	
			630-00007	TRAFFIC CONTROL INSPECTION	DAY	48												48	
			630-00012	TRAFFIC CONTROL MANAGEMENT	DAY	130												130	
			630-80341	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	EACH	8												8	
			630-80342	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	EACH	8												8	
			630-80358	ADVANCE WARNING FLASHING OR SEQ ARROW PANEL (C TYPE)	EACH	2												2	
			630-80360	DRUM CHANNELIZING DEVICE	EACH	25												25	
			630-80380	TRAFFIC CONE	EACH	200												200	
			700-70010	F/A MINOR CONTRACT REVISIONS	FA	1												1	
			700-70011	F/A PARTNERING	FA	1												1	
			700-70016	F/A FUEL COST ADJUSTMENT	FA	1												1	
			700-70022	F/A OJT COLORADO TRAINING PROGRAM	FA	1												1	
			700-70028	F/A ESB PROGRAM	FA	1												1	
			700-70380	F/A EROSION CONTROL	FA	1												1	
			700-70589	F/A ENVIRONMENTAL HEALTH & SAFETY MANAGEMENT	FA	1												1	

Computer File Information				Index of Revisions				 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SUMMARY OF APPROXIMATE QUANTITIES				Project No./Code AQC M320-071 SA 18144	
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GENERAL NOTES

1. THESE GENERAL NOTES PERTAIN TO THE CONSTRUCTION OF THE TSSIP-1 SIGNAL SYSTEM IMPROVEMENT PROJECT. THIS PROJECT IS CLASSIFIED AS NON-SIGNIFICANT. FOR SPECIFIC DETAILS OF THE PROPOSED CONDUIT WORK, FIBER OPTIC CABLING AND CONTROLLER CABINET CONNECTIONS, REFER TO THE CORRESPONDING SECTIONS OF THESE PLANS AND THE PROJECT SPECIAL PROVISIONS.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2011 EDITION); CDOT "STANDARD PLANS" (JULY 2006); DENVER TRAFFIC STANDARD DRAWINGS (2003); AND DENVER PUBLIC WORKS TRANSPORTATION STANDARDS AND DETAILS FOR THE ENGINEERING DIVISION (JUNE 2010). ALL WORK SHALL ALSO BE IN ACCORDANCE WITH LATEST EDITION OF "THE NATIONAL ELECTRICAL SAFETY CODE"; "THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (2009 EDITION); AND ANY OTHER LOCAL ORDINANCES AND REGULATIONS WHICH APPLY.
3. THE CONTRACTOR SHALL NOT DISTURB EXISTING STREET PAVEMENT, CURBS, GUTTERS OR SIDEWALKS UNLESS AUTHORIZED TO DO SO BY THE DESIGNATED PROJECT ENGINEER. ANY PAVEMENT, CURB, CUTTER OR SIDEWALK THAT IS TO REMAIN IN PLACE AND IS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. ANY SUCH WORK SHALL MEET THE CITY AND COUNTY OF DENVER PUBLIC WORKS "RULES AND REGULATIONS FOR THE CONSTRUCTION OF CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, STREET PAVING AND OTHER PUBLIC RIGHT-OF-WAY IMPROVEMENTS" (REFER TO THE PROJECT SPECIAL PROVISIONS "REVISION OF SECTION 613 ELECTRICAL CONDUIT-GENERAL").
4. THE LOCATION AND EXTENT OF ANY PAVEMENT OR CONCRETE REMOVAL SHALL BE PRE-APPROVED BY THE CITY & COUNTY OF DENVER PROJECT ENGINEER. TRENCHING OF CONDUIT ACROSS ANY SIDEWALKS, CURB RAMPS OR STREETS WILL NOT BE ALLOWED (SEE GENERAL NOTE 6).
5. THE LOCATION OF ALL PULL BOXES AND CONDUIT SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER, PRIOR TO INSTALLATION. IN GENERAL, THE LOCATION OF PULL BOXES SHALL BE CHOSEN TO MINIMIZE OR AVOID ANY NECESSARY SIDEWALK REPLACEMENT. PULL BOXES SHALL NOT BE INSTALLED WITHIN CURB RAMPS. LOCATION OF ALL BORING PITS SHALL ALSO BE PRE-APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
6. ANY SIDEWALK OR CURB RAMP AREAS THAT WILL BE DISTURBED BY CONSTRUCTION ACTIVITY (OR THAT ARE DAMAGED IN ANY MANNER) WILL REQUIRE THE ASSOCIATED PANEL(S) OR RAMP TO BE COMPLETELY REPLACED, REGARDLESS OF THE AGE OF THE EXISTING CONCRETE. SIDEWALK OR RAMP AREAS IMPACTED BY CONSTRUCTION SHALL BE SAWCUT ALONG EXISTING JOINT LINES ONLY, AND THE ENTIRE AREA REMOVED, HAULED AWAY AND REPLACED WITH NEW CONCRETE TO CURRENT CCD AND ADA STANDARDS. SAWCUT AND REMOVAL OF CONCRETE WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCIDENTAL TO THE COST OF THE NEW SIDEWALK OR RAMP INSTALLATION. CONCRETE SIDEWALK SHALL BE REPLACED TO MATCH THE EXISTING SIDEWALK DEPTH, BUT SHALL BE NO LESS THAN 6 INCHES DEEP. SIDEWALK AND RAMP REPLACEMENT WILL BE MEASURED IN SQUARE YARDS AND SHALL ONLY BE PAID FOR AS ITEM 608 "CONCRETE SIDEWALK". IT IS ESTIMATED THAT UP TO 100 SQUARE YARDS OF CONCRETE REPLACEMENT WILL BE REQUIRED FOR THE PROJECT.
7. TO PROVIDE ADEQUATE SULFATE RESISTANCE IN ALL CONCRETE SUPPLIED, SEVERITY OF POTENTIAL EXPOSURE SHALL BE CLASS 2 FOR THIS PROJECT. THE CONTRACTOR MAY, AT THEIR OWN EXPENSE, HAVE A CERTIFIED LABORATORY TEST THE SUBGRADE AS PER THE 2009 FIELD MATERIALS MANUAL. TESTING SHALL BE AT THE SAME SCHEDULE AND FREQUENCY AS REQUIRED FOR A PRELIMINARY SOIL SURVEY. THE CONTRACTOR MAY THEN PROPOSE A DIFFERENT CLASS OF EXPOSURE FOR THE PROJECT BASED ON THOSE TEST RESULTS.
8. A TEMPORARY CONCRETE WASHOUT STRUCTURE SHALL BE USED FOR ANY NEEDED CONCRETE WORK FOR THE PROJECT, AND SHALL BE PAID FOR AS 208 CONCRETE WASHOUT STRUCTURE. THE LOCATION OF CONCRETE WASHOUT(S) SHALL BE APPROVED BY THE ENGINEER.
9. BACKFILL AND COMPACTION OF EXCAVATED AREAS WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCIDENTAL TO THE ASSOCIATED WORK. THE CONTRACTOR SHALL COMPACT BACKFILL BELOW SIDEWALKS, CURB AND GUTTER, CURB RAMPS, MEDIANS OR STREETS PER NOTE #3. THE CONTRACTOR SHALL COMPACT BACKFILL FOR PLANTED AREAS OR AROUND CONTROLLER FOUNDATIONS TO A FIRM, NON-YIELDING OR BETTER THAN EXISTING CONDITION IN MAXIMUM 12 INCH COMPACTED LAYERS BEFORE PROCEEDING TO THE NEXT LAYER.
10. THE LIMITED ENVIRONMENTAL SITE ASSESSMENT DATED FEBRUARY 2011, BY THE CITY & COUNTY OF DENVER DEPT. OF ENVIRONMENTAL HEALTH, SHOWS THAT THERE IS A CHANCE OF CONTAMINATION BEING PRESENT IN SOME OF THE PROJECT AREAS. THIS IS DUE TO THE PRESENCE OF HISTORICAL LANDFILLS. SEE THE SITE ASSESSMENT FOR FURTHER INFORMATION. SINCE NO GROUNDWATER WILL BE ENCOUNTERED, AND MINIMAL SOIL DISTURBANCE INVOLVED, THE POSSIBILITY OF ENCOUNTERING CONTAMINATION DURING THE WORK IS VERY LOW. THE CONTRACTOR SHALL COMPLY WITH THE MESA, THE PROJECT GENERAL NOTES, AND THE PROJECT SPECIAL PROVISIONS REGARDING THE POTENTIAL EXCAVATION OF LANDFILL MATERIAL OR ANY OTHER CONTAMINATED SOIL AND/OR GROUNDWATER.
11. IF CONTAMINATED OR SUSPECT MATERIAL IS ENCOUNTERED DURING CONSTRUCTION EXCAVATION, WORK SHALL STOP IMMEDIATELY AND THE CITY & COUNTY OF DENVER SHALL BE CONTACTED. THE PROCEDURES OUTLINED IN SECTION 250 "ENVIRONMENTAL HEALTH AND SAFETY MANAGEMENT" OF THE CDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION, SHALL BE FOLLOWED. LISA FARRELL OF DENVER ENVIRONMENTAL QUALITY SHALL BE CONTACTED AT 720-865-5439.
12. THE CONTRACTOR SHALL FURNISH THE PROJECT ENGINEER WITH A DIGITAL PHOTO LOG OF ALL PLANNED AREAS OF DISTURBANCE BEFORE BEGINNING CONSTRUCTION WORK, AND THIS WORK SHALL BE INCIDENTAL TO THE PROJECT. THE CONTRACTOR SHALL REPLACE ANY DAMAGED LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION, INCLUDING TOPSOIL, GRASS, IRRIGATION COMPONENTS, TREES, SHRUBS, GROUND COVERS AND MULCH. ANY SOD REPLACEMENT SHALL MATCH EXISTING. NATIVE SEEDING, PER SECTION 212 OF THE CDOT "STANDARD SPECIFICATIONS" SHALL ALSO BE APPLIED AS APPLICABLE TO THE LOCATION. THE COST FOR LANDSCAPE REPAIR OR REPLACEMENT WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCIDENTAL TO THE PROJECT.
13. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER OR OWNER'S DESIGNATED REPRESENTATIVE, AT LEAST 5 WORKING DAYS IN ADVANCE OF STARTING WORK IN ANY SPECIFIC AREA, TO ALLOW THE OWNER OR OWNER'S REP TO MARK AND IDENTIFY ANY EXISTING IRRIGATION SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING ANY AND ALL IRRIGATION SYSTEM COMPONENTS, REGARDLESS OF WHETHER THEY ARE PROPERLY LOCATED. LANDSCAPED AREAS SHALL NOT BE WITHOUT IRRIGATION SERVICE DURING THE GROWING SEASONS. IF ANY IRRIGATION SERVICE IS INTERRUPTED FOR MORE THAN 3 DAYS DURING THE GROWING SEASONS, THE CONTRACTOR SHALL BE REQUIRED TO WATER AFFECTED AREAS AND MAY BE HELD RESPONSIBLE FOR REPLACING LANDSCAPING IN THE AFFECTED AREA AT NO ADDITIONAL COST TO THE PROJECT. LANDSCAPE RESTORATION SHALL BE CONSIDERED COMPLETE WHENEVER THE LANDSCAPING AND IRRIGATION SYSTEMS ARE RESTORED TO THEIR ORIGINAL CONDITION, AND THEY HAVE BEEN INSPECTED AND APPROVED BY THE APPROPRIATE OWNER OR OWNER'S REPRESENTATIVE. REPLACEMENT OF ANY IRRIGATION AND/OR LANDSCAPING IS INCIDENTAL TO THE CONDUIT INSTALLATION AS STATED IN THE PROJECT SPECIAL PROVISIONS FOR ELECTRICAL CONDUIT - GENERAL.
14. NO CONSTRUCTION RELATED VEHICLES SHALL BE PARKED IN THE TRAVEL LANES OF ANY STREET WITHOUT APPROPRIATE CONSTRUCTION TRAFFIC CONTROL DEVICES.
15. FOR ANY WORK IMPACTING DENVER STREETS, THE CONTRACTOR SHALL OBTAIN A CITY OF DENVER STREET OCCUPANCY PERMIT. FOR EACH PHASE OF CONSTRUCTION AND PRIOR TO ANY PROPOSED STREET OR LANE CLOSURES, THE CONTRACTOR SHALL SUBMIT AN APPLICABLE METHOD OF HANDLING TRAFFIC PLAN TO THE CITY AND COUNTY OF DENVER, PERMIT DESK, 2000 W. 3RD AVENUE, 303-446-3759.
16. THE CONTRACTOR SHALL NOTIFY RTD (303-299-6440) OF ANY CONSTRUCTION ACTIVITY THAT WILL IMPACT BUS STOP ACCESSIBILITY A MINIMUM OF 48 HOURS IN ADVANCE OF SUCH WORK.
17. THE CONTRACTOR SHALL OBTAIN A CITY OF DENVER DEPARTMENT OF PARKS AND RECREATION PERMIT FOR ANY WORK ADJACENT TO A CITY DESIGNATED PARK. JIM TENORIO SHALL BE CONTACTED AT 720-810-1539.
18. EXISTING VEGETATION PROTECTION SPECIFICATIONS HAVE BEEN INCLUDED WITH THIS PROJECT. WHERE WORK MUST BE DONE WITHIN DRIPLINES OF PRW TREES, OR WHERE EXISTING CONDITIONS MAY INVOLVE DAMAGING PRW TREE ROOTS, DENVER FORESTRY SHALL BE CONTACTED PRIOR TO WORK BEGINNING AT SUCH LOCATIONS FOR A PRE-CONSTRUCTION DISCUSSION.
19. ANY PERMIT FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE INCIDENTAL TO THE PROJECT.
20. ALL CONDUIT SHALL BE INSTALLED A MINIMUM OF 30 INCHES BELOW GRADE BY DIRECTIONAL BORING METHODS EXCEPT AS NECESSARY TO LINK ADJACENT PULL BOXES, OR TO AVOID UTILITIES AND OTHER APPURTENANCES, OR TO MAINTAIN MINIMUM DEPTHS BELOW CREEKS, CANALS, DITCHES OR DETENTION AREAS.
21. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE PROJECT SPECIAL PROVISIONS CONCERNING UTILITIES.
22. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING, BORING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST TWO (2) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT PHONE NO. 811 OR 1-800-922-1987, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION, BORING OR GRADING.
23. THE CONTRACTOR SHALL BE RESPONSIBLE, AT NO ADDITIONAL COST TO THE PROJECT, FOR REPAIRING OR REPLACING ANY DAMAGED UTILITIES AS A RESULT OF THEIR CONSTRUCTION ACTIVITY. ANY DAMAGE TO STORM OR SANITARY SEWER SYSTEMS WILL REQUIRE REPAIR AND UPGRADING TO CURRENT CITY & COUNTY OF DENVER STANDARDS.
24. IT IS SUGGESTED THAT THE CONTRACTOR INITIATE A REQUEST TO XCEL ENERGY FOR ANY CONSTRUCTION RELATED TEMPORARY ELECTRICAL POWER SOURCES AS SOON AS POSSIBLE. THE REQUEST IS TO BE PROCESSED THROUGH XCEL ENERGY-BUILDER'S CALL LINE AT 1-800-628-2121.
25. POTHOLING SHALL BE CONDUCTED TO FACILITATE CONDUIT INSTALLATION. IT IS ESTIMATED THAT APPROXIMATELY 270 POTHOLES WILL BE REQUIRED FOR THE PROJECT.
26. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.
27. ACCESS TO ALL BICYCLE AND PEDESTRIAN TRAILS SHALL BE MAINTAINED AT ALL TIMES, OR AN APPROVED DETOUR ROUTE SHALL BE ESTABLISHED WITH APPROPRIATE SIGNING.
28. IF ANY BURIED CULTURAL RESOURCES ARE ENCOUNTERED DURING EXCAVATIONS ON THIS PROJECT, WORK SHALL STOP AND DAN JEPSON, CDOT ARCHAEOLOGIST, SHALL BE CONTACTED AT 303-757-9631.
29. IF ANY BURIED PALEONTOLOGICAL RESOURCES ARE ENCOUNTERED DURING EXCAVATIONS ON THIS PROJECT, WORK SHALL STOP AND STEVE WALLACE, CDOT PALEONTOLOGIST, SHALL BE CONTACTED AT 303-757-9631.

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GENERAL NOTES (Continued from Plan GN-1)

30. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK. REFER TO THE STORMWATER MANAGEMENT PLAN, STANDARD SPECIFICATIONS AND PROJECT RELATED SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING EROSION CONTROL REQUIREMENTS FOR THIS PROJECT, INCLUDING QUANTITIES.
31. ALL EROSION/SEDIMENT CONTROL AND STORMWATER RESPONSIBILITIES STATED IN THE STORMWATER MANAGEMENT PLAN AND PROJECT SPECIFICATIONS SHALL BE FOLLOWED OR AMENDED.
32. ALL EROSION/SEDIMENT BMPs SHALL BE PLACED AS NEEDED ACCORDING TO THE CONSTRUCTION PHASING, AND AS APPROVED BY THE ENGINEER.
33. EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED ONCE THE DISTURBANCE IN THE AREA HAS BEEN COMPLETED AND THE AREA IS STABILIZED. REMOVAL OF SUCH CONTROLS SHALL BE INCIDENTAL TO THE PROJECT.
34. INLET PROTECTION SHALL BE MOBILE AND IS REQUIRED UNTIL ALL DISTURBANCES ADJACENT TO OR UPSTREAM OF INLETS HAVE BEEN COMPLETED AND STABILIZED. MOBILIZATION OF INLET PROTECTION SHALL BE INCLUDED IN THE COST OF THE BMP. BMP MUST REMAIN UNDAMAGED IN ORDER TO BE RE-USED.
35. ANY AND ALL CONSTRUCTION RELATED DIRT PILES SHALL BE REMOVED, PROTECTED OR PUT BACK IN PLACE AT THE END OF EACH WORK DAY.

EXISTING COMMUNICATION CONDUIT PROOFING AND REPAIR

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROOFING ALL EXISTING COMMUNICATION CONDUITS AND FIBER OPTIC CABLES BETWEEN INTERSECTIONS WITHIN THE PROJECT LIMITS. PROOFING SHALL ALSO INCLUDE ANY EXISTING SEGMENTS OF TRAFFIC CONDUIT WHERE FIBER OPTIC CABLE EXISTS OR WILL BE INSTALLED AS PART OF THIS PROJECT. IT IS ESTIMATED THAT 260 HOURS OF CONDUIT PROOFING FOR A 3-MAN LABOR CREW WILL BE REQUIRED FOR THIS PROJECT.
2. ANY DAMAGED CONDUITS OR FIBER OPTIC CABLE ENCOUNTERED AS PART OF THE CONDUIT PROOFING SHALL BE REPAIRED AS SPECIFIED IN THE PROJECT SPECIAL PROVISIONS. IT IS ESTIMATED THAT UP 34 LOCATIONS WILL REQUIRE CONDUIT REPAIR, AND UP TO 17 LOCATIONS WILL REQUIRE FIBER OPTIC CABLE REPAIR.

GENERAL FIBER NOTES (Refer to Wiring Plans W-1 to W-4)

1. UNLESS NOTED OTHERWISE, THE MAIN (BACKBONE) FIBER OPTIC CABLE SHALL BE A HYBRID TYPE 72 STRAND CABLE WITH 48 SINGLE-MODE AND 24 MULTI-MODE FIBERS. PAYMENT FOR THE BACKBONE CABLE SHALL BE MADE AS "FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)".
2. ALL LATERAL AND BRANCH FIBER OPTIC CABLES SHALL BE A HYBRID TYPE 12 STRAND CABLE WITH 6 SINGLE-MODE AND 6 MULTI-MODE FIBERS. PAYMENT SHALL BE MADE AS "FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)".
3. THE MULTI-MODE FIBERS SHALL BE LOCATED IN THE LAST TUBES OF THE FIBER CABLE AND THE SINGLE-MODE FIBERS SHALL BE LOCATED IN THE FIRST TUBES OF THE FIBER CABLE.
4. FIBER OPTIC CABLE DENOTED AS "MM1" OR "MM2" IN THE WIRING PLANS REFERS TO THE FIRST AND SECOND MULTI-MODE FIBER STRANDS, RESPECTIVELY.
5. ALL EXTERNAL FIBER CONNECTIONS WILL TYPICALLY BE CONNECTED TO "REAR OF PANEL" AND ALL INTERNAL CONNECTIONS WILL TYPICALLY BE CONNECTED TO "FRONT OF PANEL".
6. ALL ETHERNET SWITCHES (FIBER OPTIC TRANSCEIVERS) WILL BE FURNISHED AND INSTALLED BY THE CITY AND COUNTY OF DENVER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE FIBER OPTIC CABLE CONNECTIONS TO EACH FIBER SWITCH WITHIN EACH CABINET. WIRING OF FIBER SWITCHES SHALL BE PAID FOR AS "TELEMETRY (FIELD)".
7. ANY AND ALL UNUSED MULTI-MODE AND SINGLE-MODE FIBERS SHALL REMAIN UNCUT AND FULLY INTACT.
8. EXTRA FIBER OPTIC CABLE "SLACK" SHALL BE PROVIDED AS FOLLOWS:
 - A) 10 FEET OF LATERAL CABLE IN EACH CONTROLLER CABINET.
 - B) 50 FEET OF LATERAL CABLE IN EACH PULL BOX WITH AN OPTICAL SPLICE CLOSURE.
 - C) 50 FEET OF MAIN OR LATERAL CABLE IN EACH TRAFFIC COMMUNICATION PULL BOX (SPECIAL).
9. FIBER OPTIC CABLE SHALL BE NEATLY COILED AND CLEARLY TAGGED AND LABELED AT EACH COMMUNICATION PULL BOX AND AT ALL LOCATIONS WHERE THE FIBER IS EXPOSED. REFER TO THE PROJECT SPECIAL PROVISIONS UNDER "FIBER OPTIC CABLE - GENERAL".
10. A MULTI-STRANDED TRACE/LOCATE WIRE (12 AWG INSULATED) SHALL BE INSTALLED WITH THE FIBER OPTIC CABLE IN ALL NEW CONDUIT RUNS AND IN ANY EXISTING CONDUIT RUNS WHERE A TRACE WIRE IS NOT ALREADY PRESENT. THE INSTALLATION OF A TRACE WIRE WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCIDENTAL TO THE COST OF THE FIBER OPTIC CABLE.

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CONSTRUCTION ACTIVITIES STORMWATER MANAGEMENT PLAN - (NON-PERMIT PROJECT)

A CASDP WILL NOT BE REQUIRED FOR THIS PROJECT, HOWEVER, THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL ENSURE THAT ALL POTENTIAL POLLUTANTS GENERATED DURING DEMOLITION OR CONSTRUCTION WORK ASSOCIATED WITH THIS PROJECT, BE PREVENTED FROM DISCHARGE TO STORMWATER CONVEYANCE SYSTEMS IN THE VICINITY OF THIS PROJECT SITE.

1. THE 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 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.

2. 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 STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AND COUNTY OF DENVER AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT. ALL REMOVALS SHALL BE CONDUCTED IN A TIMELY MANNER.

3. THE 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.)

4. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL IMPLEMENT THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPS) ON SITE DURING CONSTRUCTION:

I. 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.

II. 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.

III. 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).

VI. 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. VII. 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.

VIII. 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 19S TRAINING VIDED 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 VIDED 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.

IX. 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.

X. 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.

XI. 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.

XII. 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).

PAY ITEM	DESCRIPTION	UNIT	QUANTITY
203	BLADING	HR	120*
203	SWEEPING (WITH PICKUP BROOM)	HR	80
208	EROSION LOG (12-INCH)	LF	1000**
208	SILT FENCE	LF	500*
208	GRAVEL BAGS	LF	600
208	CONCRETE WASHOUT STRUCTURE	EA	1
208	STORM DRAIN INLET PROTECTION	EA	100**
208	SEDIMENT REMOVAL AND DISPOSAL (LABOR)	HR	80
208	SEDIMENT REMOVAL AND DISPOSAL (EQUIPMENT)	HR	40
208	EROSION CONTROL SUPERVISOR	HR	120
607	FENCE (PLASTIC)	LF	500***
700	EROSION CONTROL	F/A	1

- * FOR INFORMATION ONLY. SHALL BE PAID FOR AS 208 SEDIMENT REMOVAL AND DISPOSAL (EQUIPMENT).
- ** QUANTITY INCREASED 20% TO ACCOUNT FOR UNFORESEEN CONDITIONS AND COMPLIANCE WITH SECTION 208.04 OR REPLACEMENT.
- *** SHALL BE PLACED AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR ENGINEER.

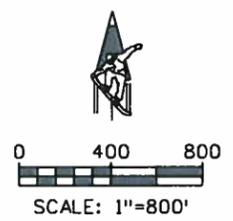
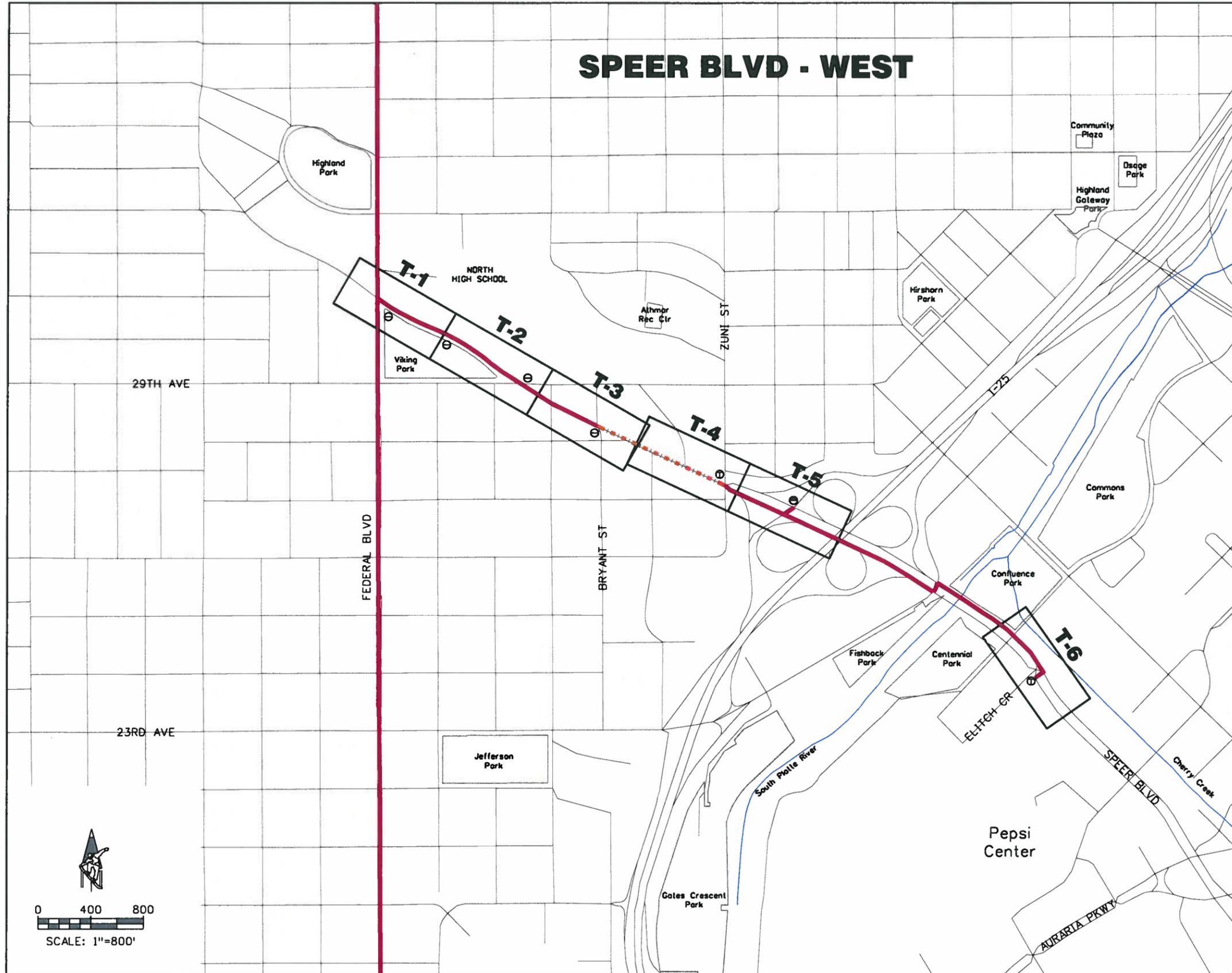
1. BMP CLEANING AND MAINTENANCE SHALL BE PAID FOR AS 208 SEDIMENT REMOVAL AND DISPOSAL (EQUIPMENT) (HR) AND SEDIMENT REMOVAL AND DISPOSAL (LABOR) (HR).
2. STOCKPILED TOPSOIL AND TOPSOIL SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
3. SEE INTERCONNECT PLANS FOR ADDITIONAL INFORMATION.

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Computer File Information		Index of Revisions		 <p>Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176</p>	 <p>6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832</p>	As Constructed		DENVER TSSIP-1 SWMP CONSTRUCTION PLAN		Project No./Code	
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Last Modification Date:	4/4/11 Initials: larry	<input type="checkbox"/>				Revised:	Designer: CDT	Structure Numbers		SA 18144	
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Acad Version 2007	Scale: Units: English	<input type="checkbox"/>									

SPEER BLVD - WEST

SYMBOL	WORK DESCRIPTION
●	REMOVE EXISTING TRAFFIC SIGNAL CONTROLLER, CABINET AND BASE, INSTALL NEW QUAZITE TYPE CABINET BASE (CITY FURNISHED), INSTALL NEW P + G CABINETS, ASC/3 CONTROLLER & UPS (CITY FURNISHED), INSTALL TELEMETRY (FIELD) - ETHERNET MODEM
⊙	INSTALL NEW CONCRETE BASE FOR MI AND UPS/G TYPE CABINETS, RESET EXISTING ASC/2 CONTROLLER AND MI TYPE CABINET, INSTALL CITY FURNISHED UPS AND G TYPE CABINET, INSTALL TELEMETRY (FIELD).
⊖	EXISTING ASC/2 CONTROLLER, MI CABINET AND BASE TO REMAIN IN PLACE, INSTALL UPS AND G CABINET (CITY FURNISHED) ON EXPANDED CONCRETE BASE, INSTALL TELEMETRY (FIELD). - ETHERNET MODEM & INTERFACE CARD
⊕	EXISTING CONTROLLER, CABINET AND BASE TO REMAIN IN PLACE, INSTALL TELEMETRY (FIELD) - CONNECT ETHERNET MODEM & INTERFACE CARD
○	EXISTING TRAFFIC SIGNAL, NO CHANGES REQUIRED (FOR INFORMATION ONLY).
▽	INSTALL OPTICAL SPLICE CLOSURE IN EXISTING OR NEW TRAFFIC COMMUNICATION PULL BOX.
—●—●—●—●—	FURNISH AND INSTALL NEW FIBER OPTIC CABLE - WITHIN NEW CONDUIT
—●—●—●—●—	FURNISH AND INSTALL NEW FIBER OPTIC CABLE - WITHIN EXISTING CONDUIT
—●—●—●—●—	EXISTING CONDUIT AND FIBER OPTIC CABLE
—●—●—●—●—	(R) - ETHERNET RADIO (SPREAD SPECTRUM)



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Last Modification Date:	4/14/11 Initials: larry
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Drawing File Name:	M10127POV01.dwg
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Index of Revisions	

DENVER
THE MILE HIGH CITY
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6300 South Syracuse Way
Suite 600
Centennial, CO 80111
(303) 721-1440
Fax (303) 721-0832

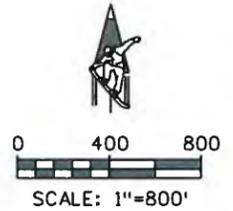
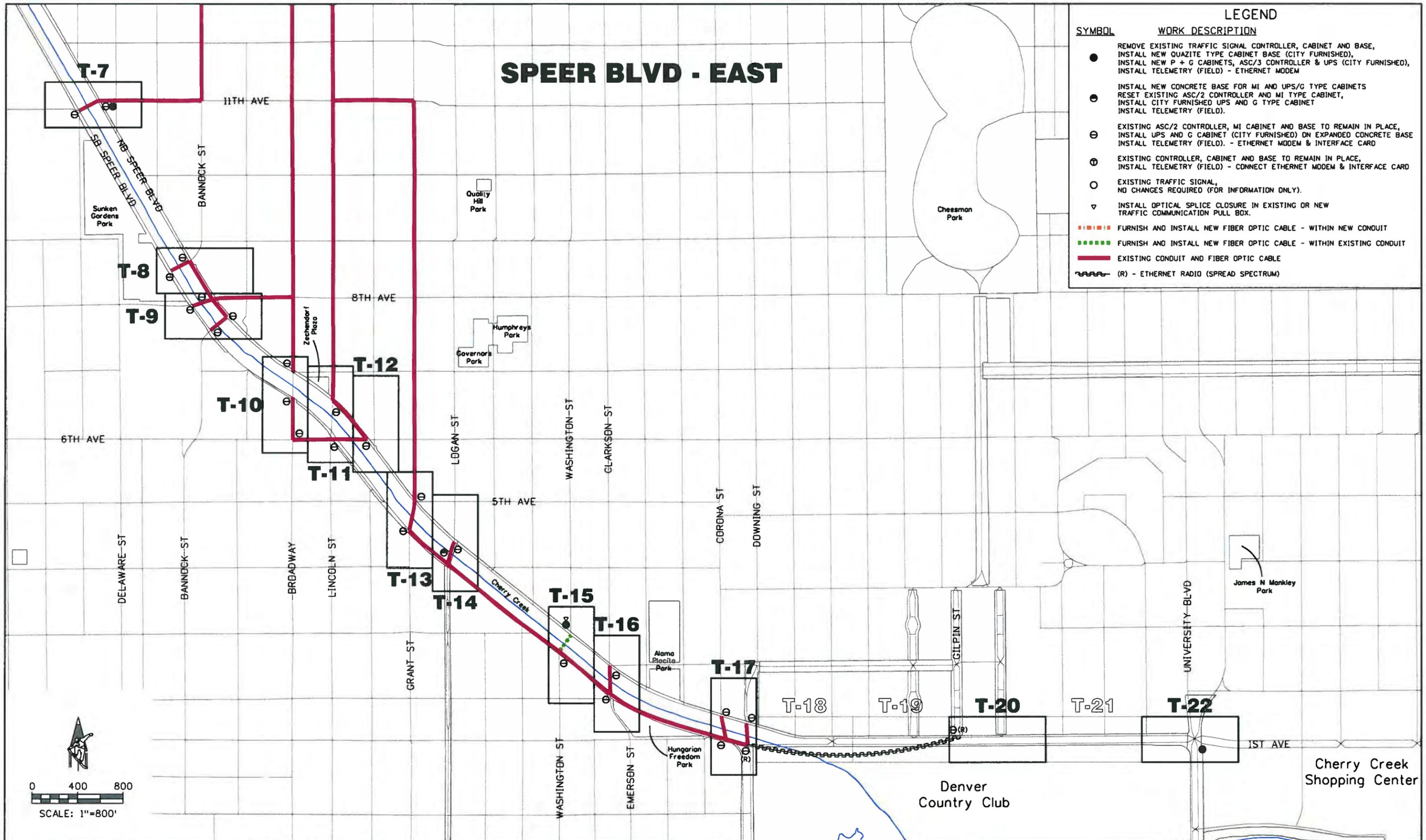
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Detailer:	LCL
Structure Numbers	
Sheet Subset: Overview Map	Subset Sheets: DV-1 of 4

Project No./Code
AQC M320-071
SA 18144
Sheet Number 8

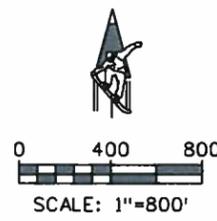
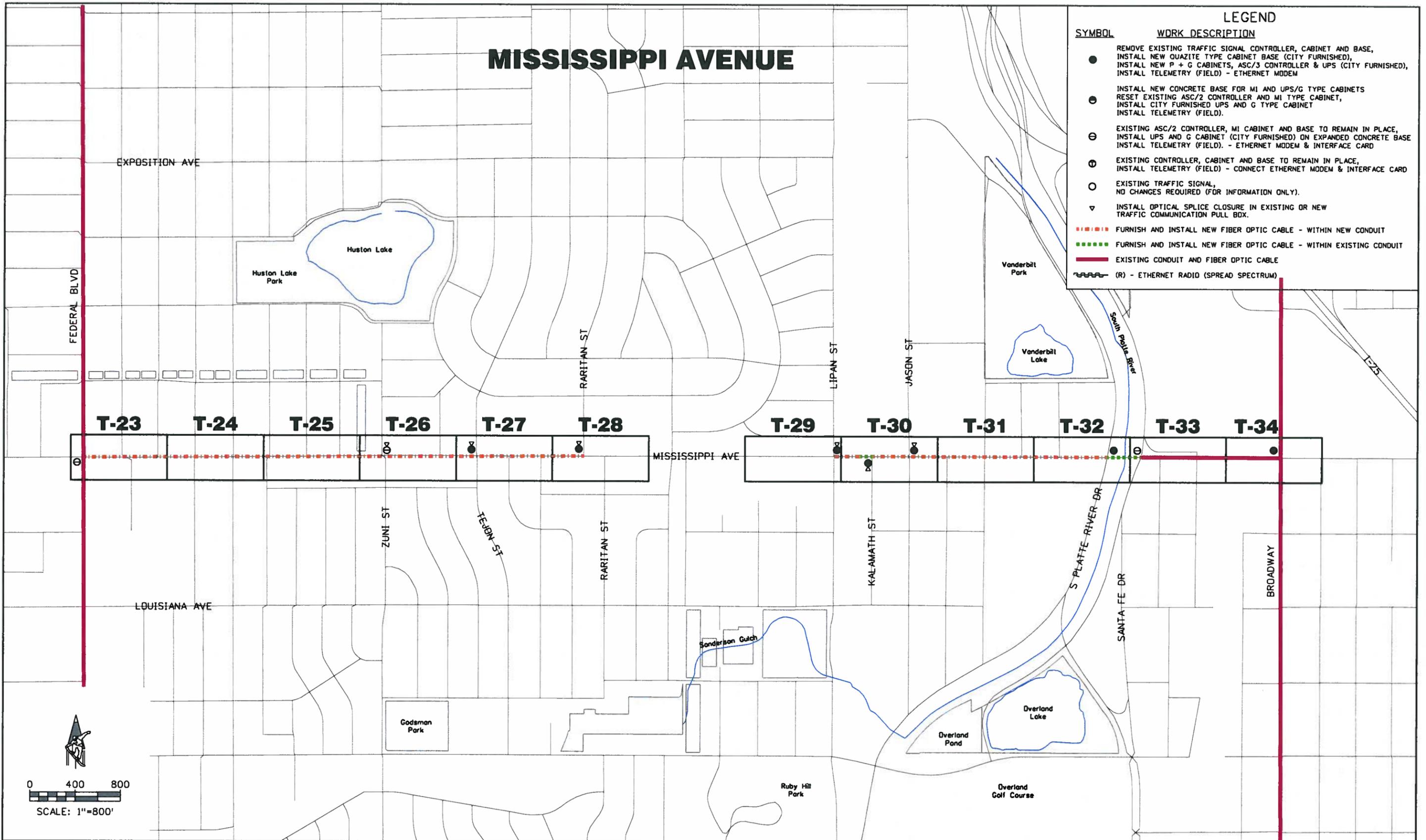
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ISSUE DATE: APRIL 6, 2011											

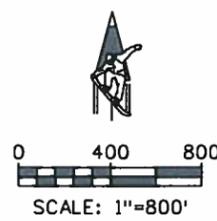
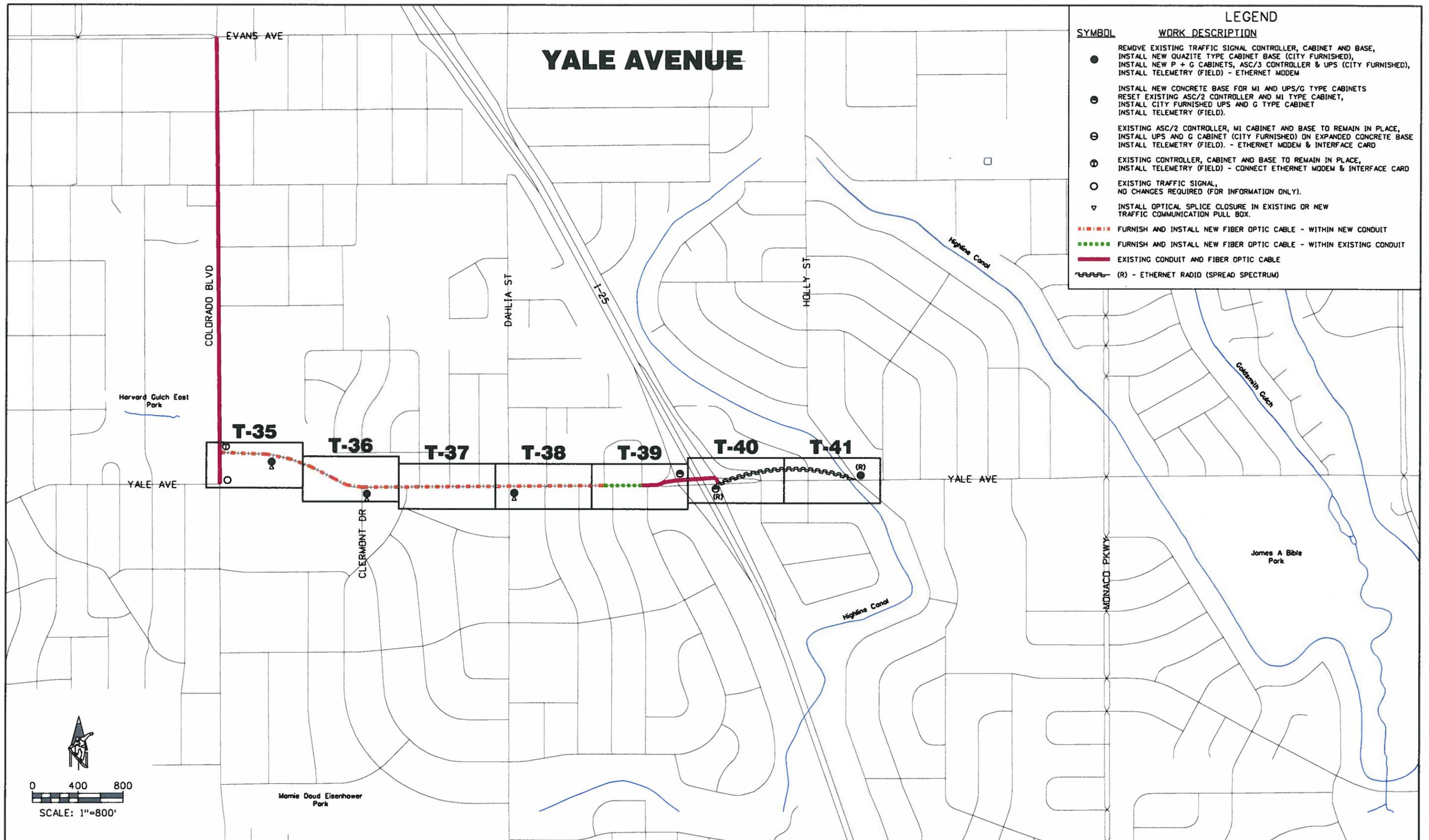
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ISSUE DATE: APRIL 6, 2011

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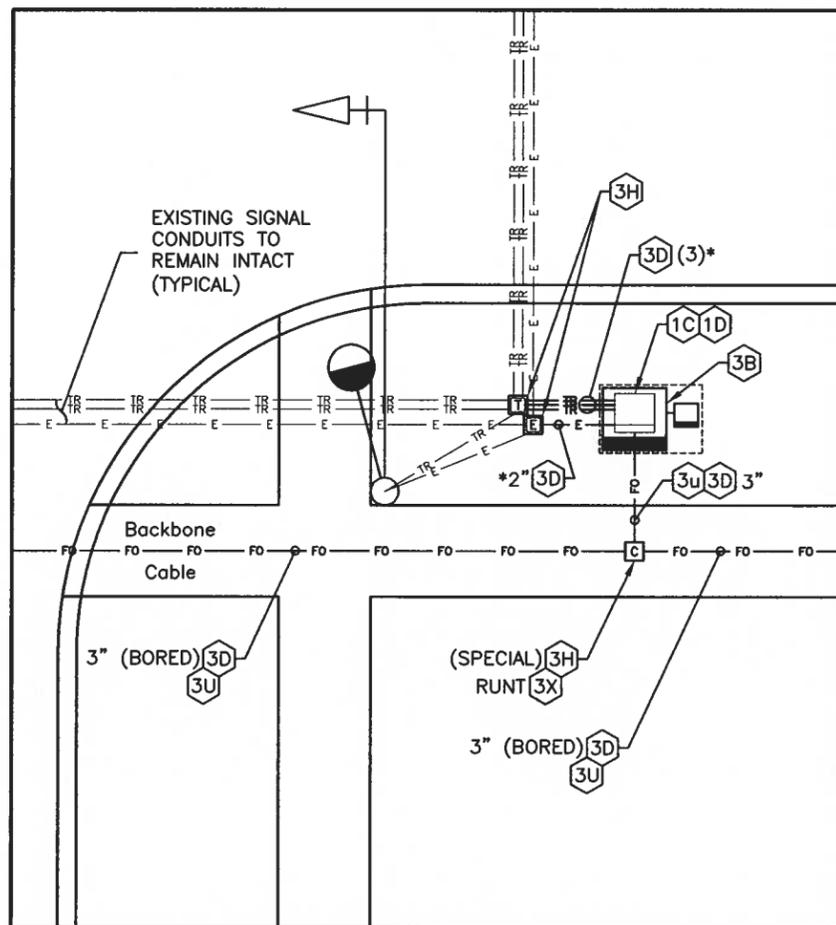
Know what's below.
Call before you dig.

NOTES:

1. THE INTERSECTION DETAILS SHOWN BELOW ARE TYPICAL REPRESENTATIONS ONLY. ACTUAL PULL BOX, CONDUIT AND CABINET LOCATIONS WILL VARY AT EACH INTERSECTION.
- * 2. EXISTING TRAFFIC SIGNAL CONTROLLER CABINET CONDUITS AND/OR ASSOCIATED PULL BOXES SHALL BE REPLACED ONLY AS NECESSARY, PER THE DIRECTION OF THE ENGINEER.
3. REFER TO DETAIL 1 FOR ANY LOCATIONS THAT REQUIRE NEW FIBER OPTIC CABLE AND CONDUIT. OTHERWISE, EXISTING FIBER OPTIC CABLE AND CONDUIT TO REMAIN INTACT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING EITHER A FULL CONCRETE CABINET BASE PER INTERSECTION DETAIL 2, OR JUST AN EXPANDED CONCRETE BASE PER INTERSECTION DETAIL 3.
5. ALL NEW CABINETS, PULL BOXES AND CONDUIT SHALL BE PLACED WITHIN EXISTING CITY RIGHT OF WAY.
6. INSTALLATION OF A COMPLETE (CITY FURNISHED) UPS SYSTEM AT EACH LOCATION SPECIFIED IN THE PLANS, INCLUDING A G-TYPE CABINET, SHALL BE PAID FOR AS UNINTERRUPTED POWER SUPPLY (INSTALL ONLY).

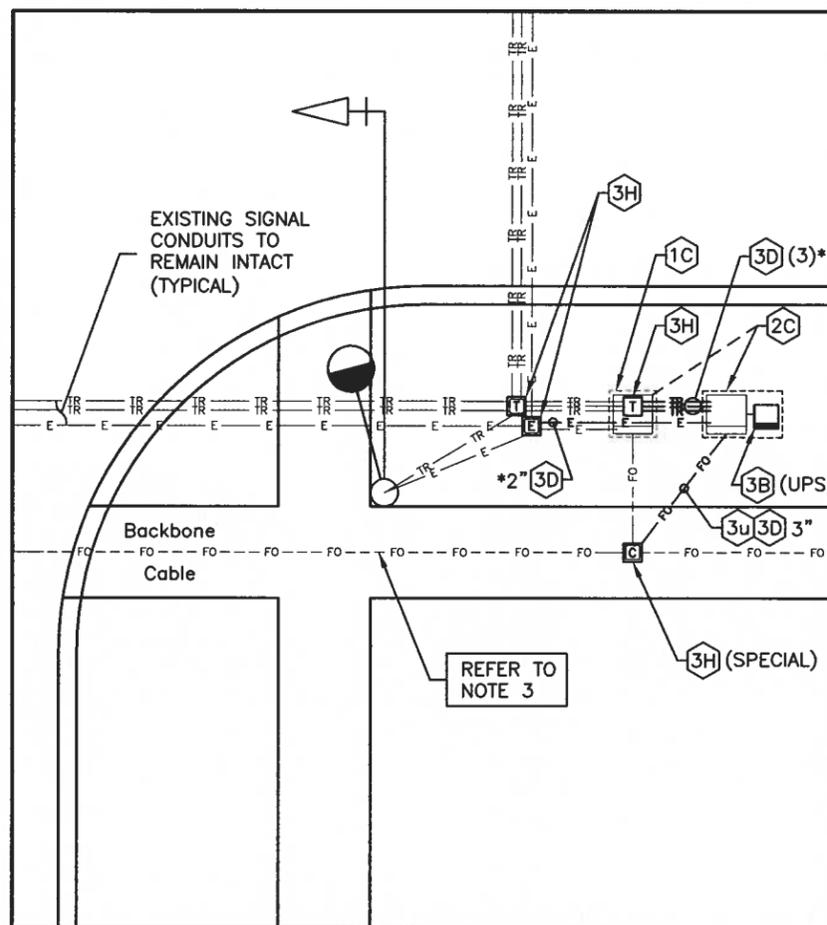
LEGEND

- 1C REMOVE TRAFFIC SIGNAL BASE
- 1D REMOVE TRAFFIC SIGNAL CONTROLLER AND CABINET
- 2C RESET EXISTING TRAFFIC SIGNAL CONTROLLER AND CABINET. MOUNT ON NEW CONCRETE BASE - SEE NOTE 4
- 3B INSTALL CITY FURNISHED ASC3 TYPE TRAFFIC SIGNAL CONTROLLER, P-TYPE CABINET, UPS & G-TYPE CABINET AND QUAZITE TYPE BASE
- 3B(UPS) INSTALL CITY FURNISHED UPS & G-TYPE CABINET ON NEW CONCRETE BASE - SEE NOTE 4
- 3D INSTALL SPECIFIED SIZE OF PVC CONDUIT
- 3D (3) INSTALL 3 PVC CONDUITS (2-3" AND 1-2")
- 3H INSTALL NEW PULL BOX OR REPLACE EXISTING, AS NECESSARY
- 3U INSTALL BACKBONE FIBER OPTIC CABLE
- 3u INSTALL LATERAL FIBER OPTIC CABLE
- 3X INSTALL SPECIFIED FIBER OPTIC ENCLOSURE



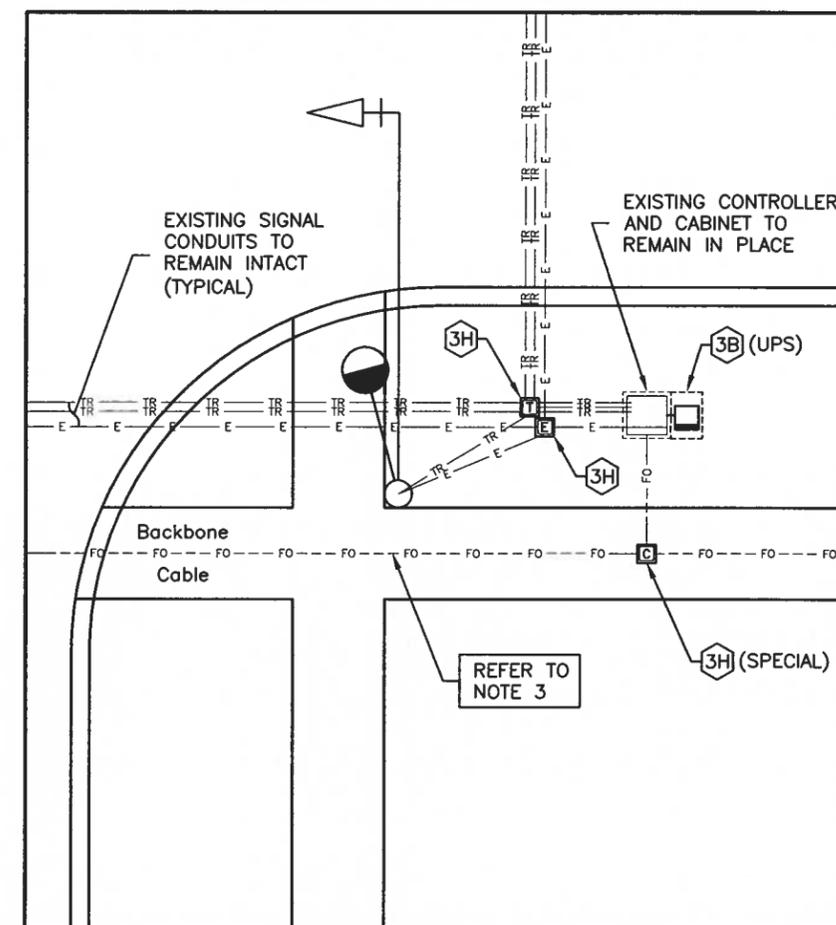
TYPICAL INTERSECTION DETAIL 1

REMOVE EXISTING TRAFFIC SIGNAL CONTROLLER, CABINET AND BASE.
 INSTALL CITY FURNISHED QUAZITE TYPE BASE.
 INSTALL CITY FURNISHED ASC/3 CONTROLLER, UPS AND P & G TYPE CABINETS.
 REPLACE EXISTING CONDUIT AND/OR PULL BOXES (SEE NOTE 2).



TYPICAL INTERSECTION DETAIL 2

INSTALL NEW CONCRETE BASE FOR M1 AND G TYPE CABINETS
 RESET EXISTING TRAFFIC SIGNAL CONTROLLER AND CABINET ONTO NEW CONCRETE BASE.
 INSTALL CITY FURNISHED UPS AND G-TYPE CABINET ON NEW CONCRETE BASE
 REPLACE EXISTING PULL BOXES (SEE NOTE 2).



TYPICAL INTERSECTION DETAIL 3

EXISTING TRAFFIC SIGNAL CONTROLLER, CABINET AND BASE TO REMAIN IN PLACE.
 INSTALL CITY FURNISHED UPS & G-TYPE CABINET ON EXPANDED CONCRETE BASE.
 REPLACE EXISTING PULL BOXES (SEE NOTE 2).

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Last Modification Date:	4/14/11 Initials: larry
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Acad Version 2007	Scale: 1"=60' Units: English

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As Constructed
No Revisions:
Revised:
Void:

DENVER TSSIP-1 TYPICAL TRAFFIC SIGNAL CONDUIT CONNECTION DETAILS	
Designer:	LCL
Detailer:	RSA
Sheet Subset:	TRAFFIC
Structure Numbers	
Subset Sheets:	D-1 of 2

Project No./Code
AQC M320-071
SA 18144
Sheet Number 12



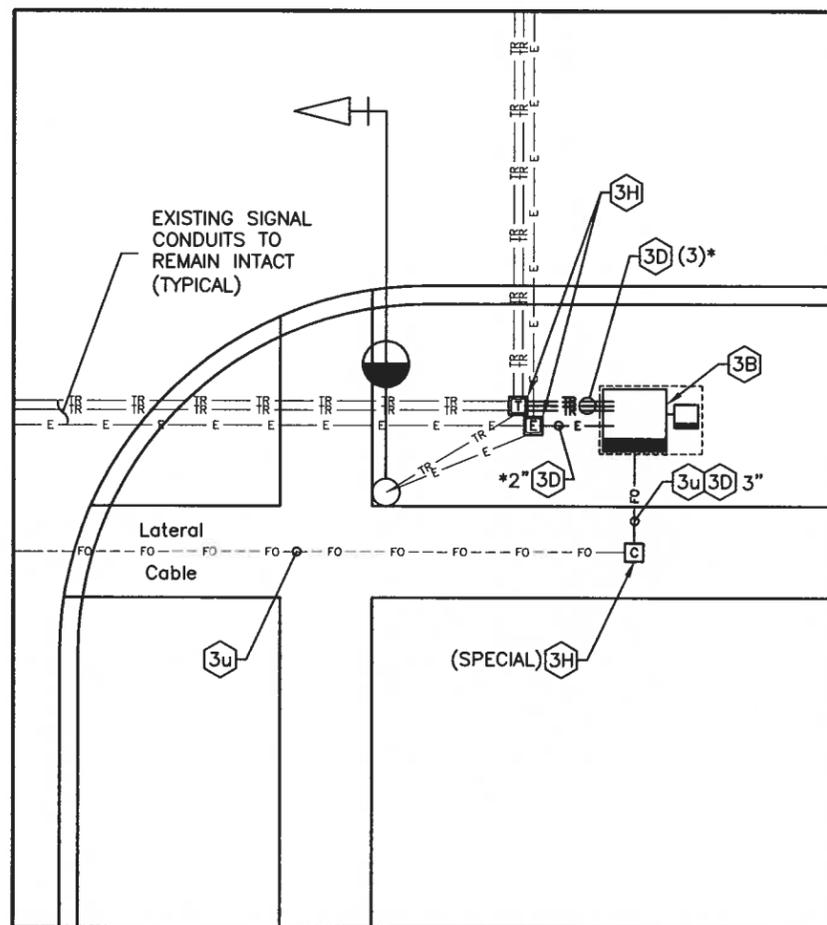
Know what's below.
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NOTES:

1. THE INTERSECTION DETAILS SHOWN BELOW ARE TYPICAL REPRESENTATIONS ONLY. ACTUAL PULL BOX, CONDUIT AND CABINET LOCATIONS WILL VARY AT EACH INTERSECTION.
- * 2. EXISTING TRAFFIC SIGNAL CONTROLLER CABINET CONDUITS AND/OR ASSOCIATED PULL BOXES SHALL BE REPLACED ONLY AS NECESSARY, PER THE DIRECTION OF THE ENGINEER.
3. REFER TO DETAIL 1 FOR ANY LOCATIONS THAT REQUIRE NEW FIBER OPTIC CABLE AND CONDUIT. OTHERWISE, EXISTING FIBER OPTIC CABLE AND CONDUIT TO REMAIN INTACT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING EITHER A FULL CONCRETE CABINET BASE PER INTERSECTION DETAIL 2, OR JUST AN EXPANDED CONCRETE BASE PER INTERSECTION DETAIL 3.
5. ALL NEW CABINETS, PULL BOXES AND CONDUIT SHALL BE PLACED WITHIN EXISTING CITY RIGHT OF WAY.
6. INSTALLATION OF A COMPLETE (CITY FURNISHED) UPS SYSTEM AT EACH LOCATION SPECIFIED IN THE PLANS, INCLUDING A G-TYPE CABINET, SHALL BE PAID FOR AS UNINTERRUPTED POWER SUPPLY (INSTALL ONLY).
7. RE-WIRING OF EXISTING TRAFFIC SIGNALS ASSOCIATED WITH INTERSECTION DETAIL 4 SHALL BE PAID FOR AS WIRING, LUMP SUM.

LEGEND

- 1C REMOVE TRAFFIC SIGNAL BASE
- 1D REMOVE TRAFFIC SIGNAL CONTROLLER AND CABINET
- 2C RESET EXISTING TRAFFIC SIGNAL CONTROLLER AND CABINET. MOUNT ON NEW CONCRETE BASE - SEE NOTE 4
- 3B INSTALL CITY FURNISHED ASC3 TYPE TRAFFIC SIGNAL CONTROLLER, P-TYPE CABINET, UPS & G-TYPE CABINET AND QUAZITE TYPE BASE
- 3B(UPS) INSTALL CITY FURNISHED UPS & G-TYPE CABINET ON NEW CONCRETE BASE - SEE NOTE 4
- 3D INSTALL SPECIFIED SIZE OF PVC CONDUIT
- 3D (3) INSTALL 3 PVC CONDUITS (2-3" AND 1-2")
- 3H INSTALL NEW PULL BOX OR REPLACE EXISTING, AS NECESSARY
- 3U INSTALL BACKBONE FIBER OPTIC CABLE
- 3u INSTALL LATERAL FIBER OPTIC CABLE
- 3X INSTALL SPECIFIED FIBER OPTIC ENCLOSURE



TYPICAL INTERSECTION DETAIL 4 (Plans T-15 & T-32)

INSTALL CITY FURNISHED QUAZITE TYPE BASE.
 INSTALL CITY FURNISHED ASC/3 CONTROLLER, UPS AND P & G TYPE CABINETS.
 REPLACE EXISTING CONDUIT AND/OR PULL BOXES (SEE NOTE 2).
 REWIRE EXISTING TRAFFIC SIGNAL AND CONNECT TO NEW CONTROLLER CABINET (SEE NOTE 7).

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Computer File Information		Index of Revisions		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176	 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832	As Constructed		DENVER TSSIP-1 TYPICAL TRAFFIC SIGNAL CONDUIT CONNECTION DETAILS		Project No./Code			
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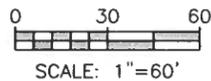
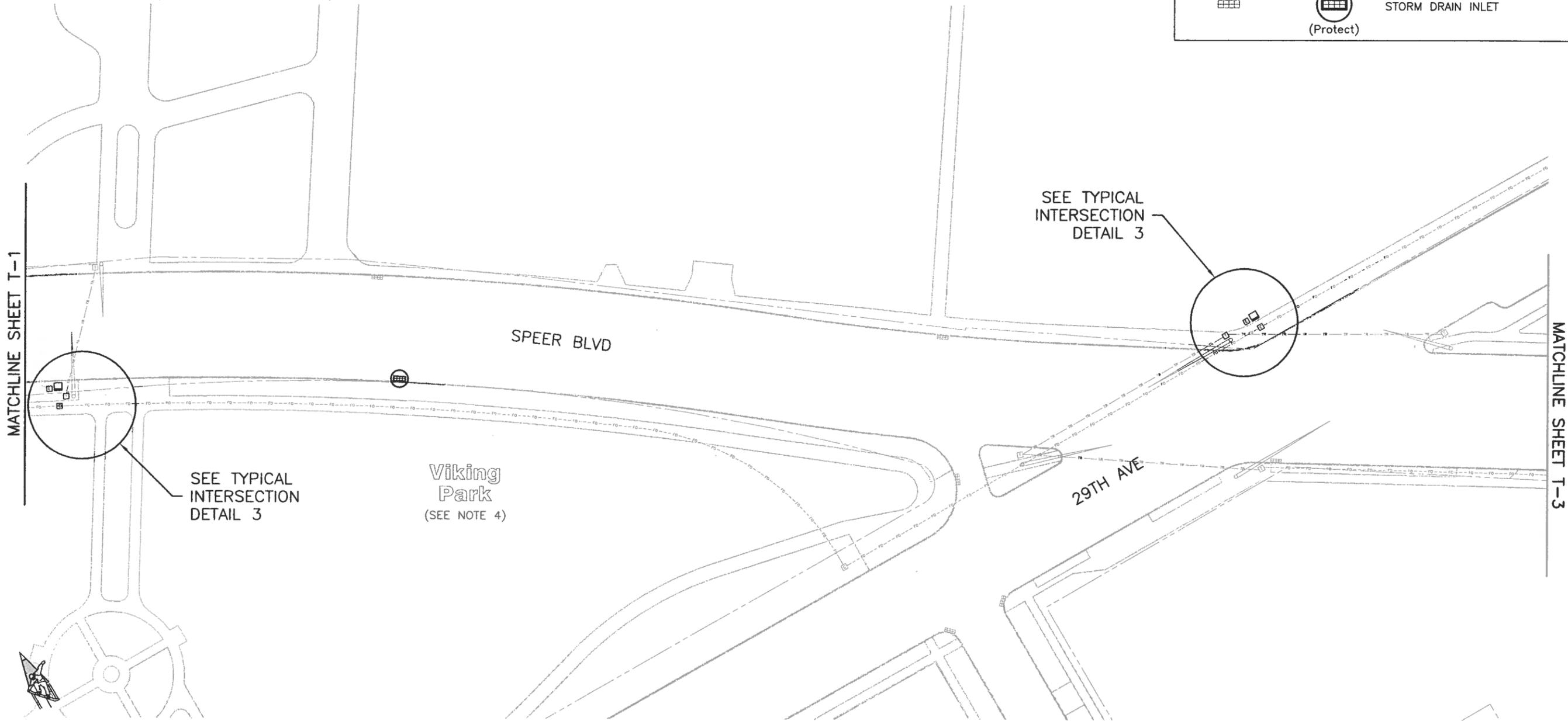
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	2	--
-	614	TELEMETRY (FIELD)	EACH	2	--
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING		PROPOSED		ITEM DESCRIPTION
				TRAFFIC SIGNAL CONTROLLER & CABINET
				TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
				COMMUNICATION PULL BOX (SPECIAL)
				CONDUIT (SIGNAL COMMUNICATION)
				CONDUIT (TRAFFIC SIGNAL)
				RIGHT OF WAY (Approximate)
				TRAFFIC SIGNAL POLE WITH MAST ARM
				PEDESTAL POLE / SPAN WIRE POLE
				STORM DRAIN INLET
				(Protect)

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-2

Computer File Information	
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Last Modification Date:	3/30/11 Initials: larry
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6300 South Syracuse Way
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(303) 721-1440
Fax (303) 721-0832

As Constructed
No Revisions:
Revised:
Void:

DENVER TSSIP-1 SPEER BLVD - WEST INTERCONNECT CONDUIT PLAN	
Designer:	LCL/CMB
Detailer:	BDW
Sheet Subset:	Conduit

Project No./Code
AQC M320-071
SA 18144
Sheet Number 15

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ISSUE DATE: APRIL 6, 2011

KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	365	
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	
-	614	TELEMETRY (FIELD)	EACH	1	
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	415	MAIN CABLE
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

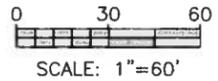
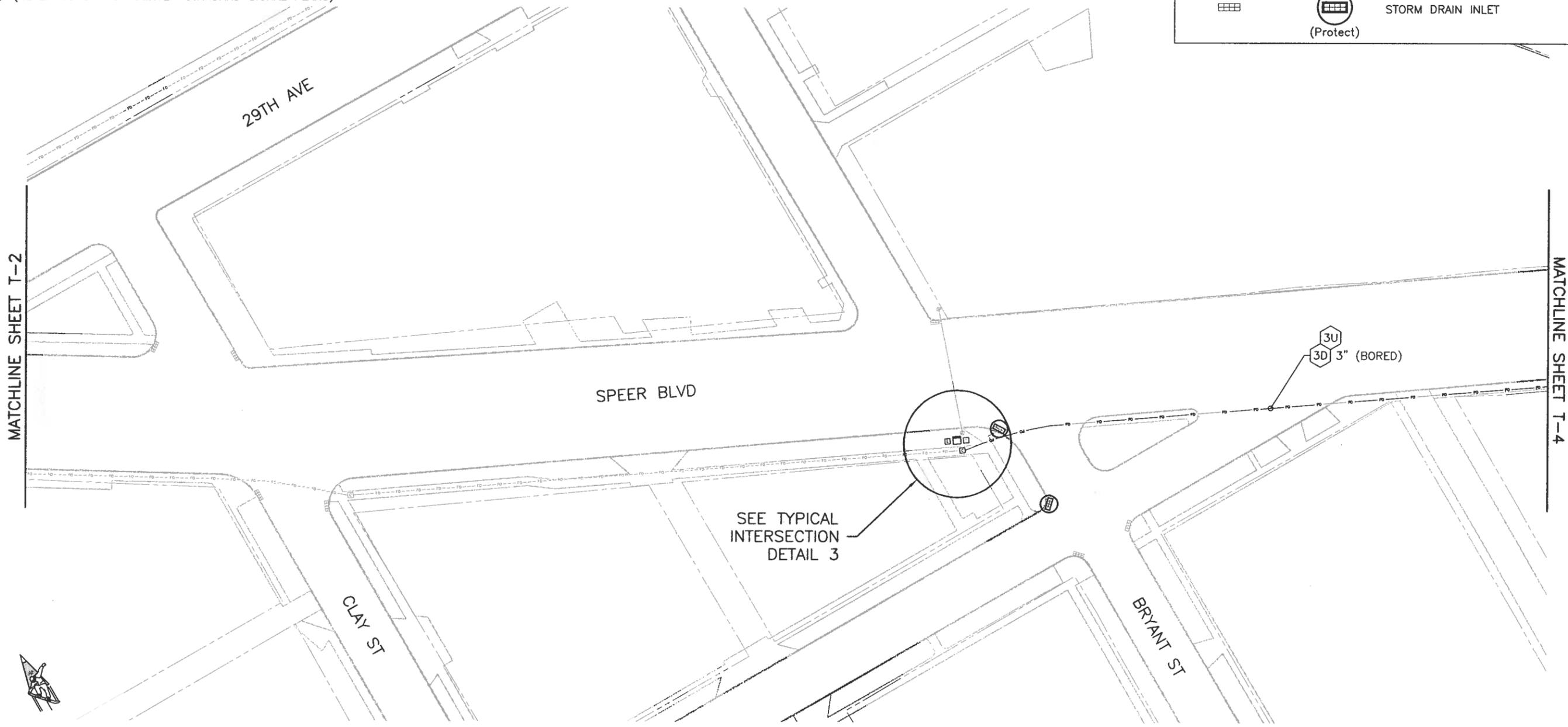
NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
		(Protect)	STORM DRAIN INLET

ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-3

Computer File Information Creation Date: 1/19/11 Initials: BDW Last Modification Date: 3/30/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF03.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - WEST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 16	

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	800	
3H	613	PULL BOX (SPECIAL)	EACH	3	REPLACE COMM BOX
-	614	TELEMETRY (FIELD)	EACH	1	
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	900	MAIN CABLE

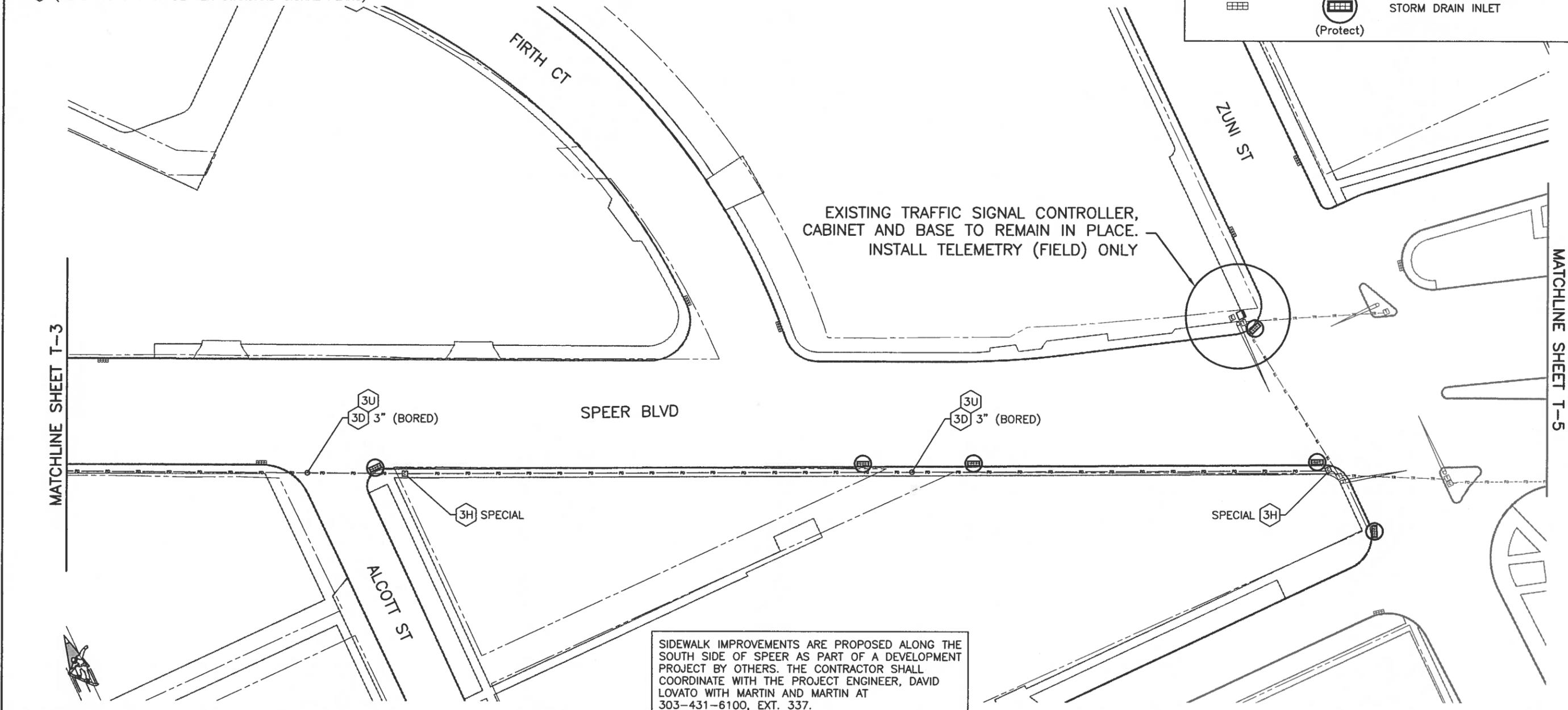
NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



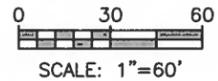
EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
	(Protect)	

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)

EXISTING TRAFFIC SIGNAL CONTROLLER, CABINET AND BASE TO REMAIN IN PLACE. INSTALL TELEMETRY (FIELD) ONLY



SIDEWALK IMPROVEMENTS ARE PROPOSED ALONG THE SOUTH SIDE OF SPEER AS PART OF A DEVELOPMENT PROJECT BY OTHERS. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER, DAVID LOVATO WITH MARTIN AND MARTIN AT 303-431-6100, EXT. 337.



T-4

Computer File Information Creation Date: 1/19/11 Initials: BDW Last Modification Date: 4/14/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF04.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>											 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - WEST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 17	

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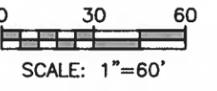
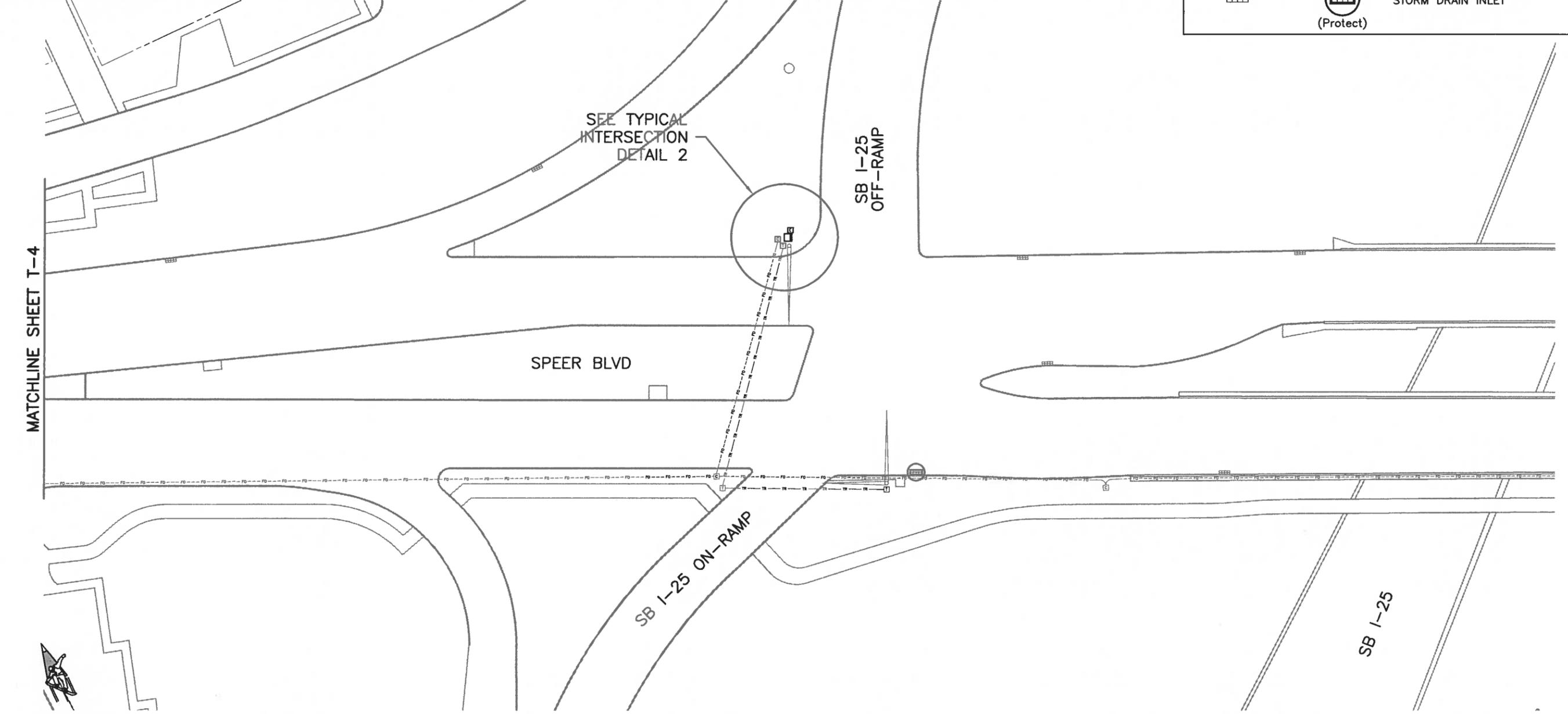
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	-
2C	210	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	ASC/2 AND M1 CABINET
3D	613	2 INCH ELECTRICAL CONDUIT (TRENCHED)	LF	10	-
3D	613	3 INCH ELECTRICAL CONDUIT (TRENCHED)	LF	40	-
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS)	EACH	1	M1 AND G TYPE
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
	(Protect)	

ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-5

Computer File Information	
Creation Date:	1/19/11 Initials: BDW
Last Modification Date:	4/14/11 Initials: larry
Full Path:	J:\10127-02\CADD\Sheets
Drawing File Name:	T10127TRAF05.dwg
Acad Version 2007	Scale: 1:60 Units: English

Index of Revisions	

Department of Public Works
Traffic Engineering Services, Dept. 508
201 West Colfax Avenue
Denver, CO 80202
(720) 865-3176

6300 South Syracuse Way
Suite 600
Centennial, CO 80111
(303) 721-1440
Fax (303) 721-0832

As Constructed
No Revisions:
Revised:
Void:

DENVER TSSIP-1 SPEER BLVD - WEST INTERCONNECT CONDUIT PLAN		
Designer:	LCL/CMB	Structure Numbers
Detailer:	BDW	Structure Numbers
Sheet Subset:	Conduit	Subset Sheets: T-5 of 41

Project No./Code	AQC M320-071
SA 18144	
Sheet Number	18

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	3	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	3	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	3	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	2	-
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
-	614	TELEMETRY (FIELD)	EACH	3	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	3	INCLUDES G-TYPE CABINET

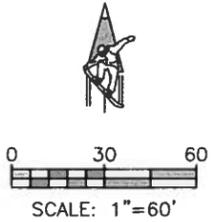
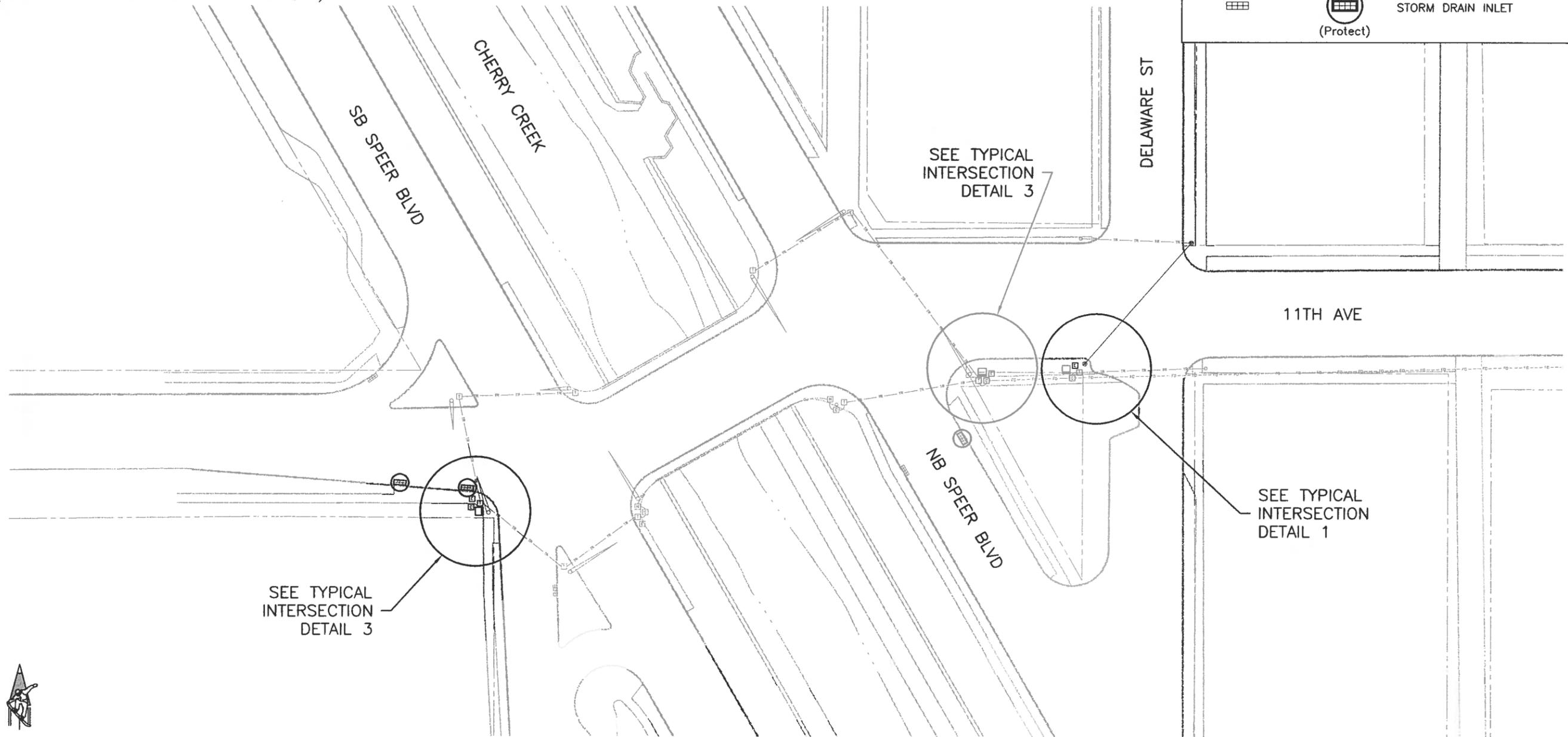
NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
	(Protect)	

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-7

Computer File Information Creation Date: 1/19/11 Initials: BDW Last Modification Date: 3/24/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF07.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 20	
								Structure Numbers: - Subset Sheets: T-7 of 41																					

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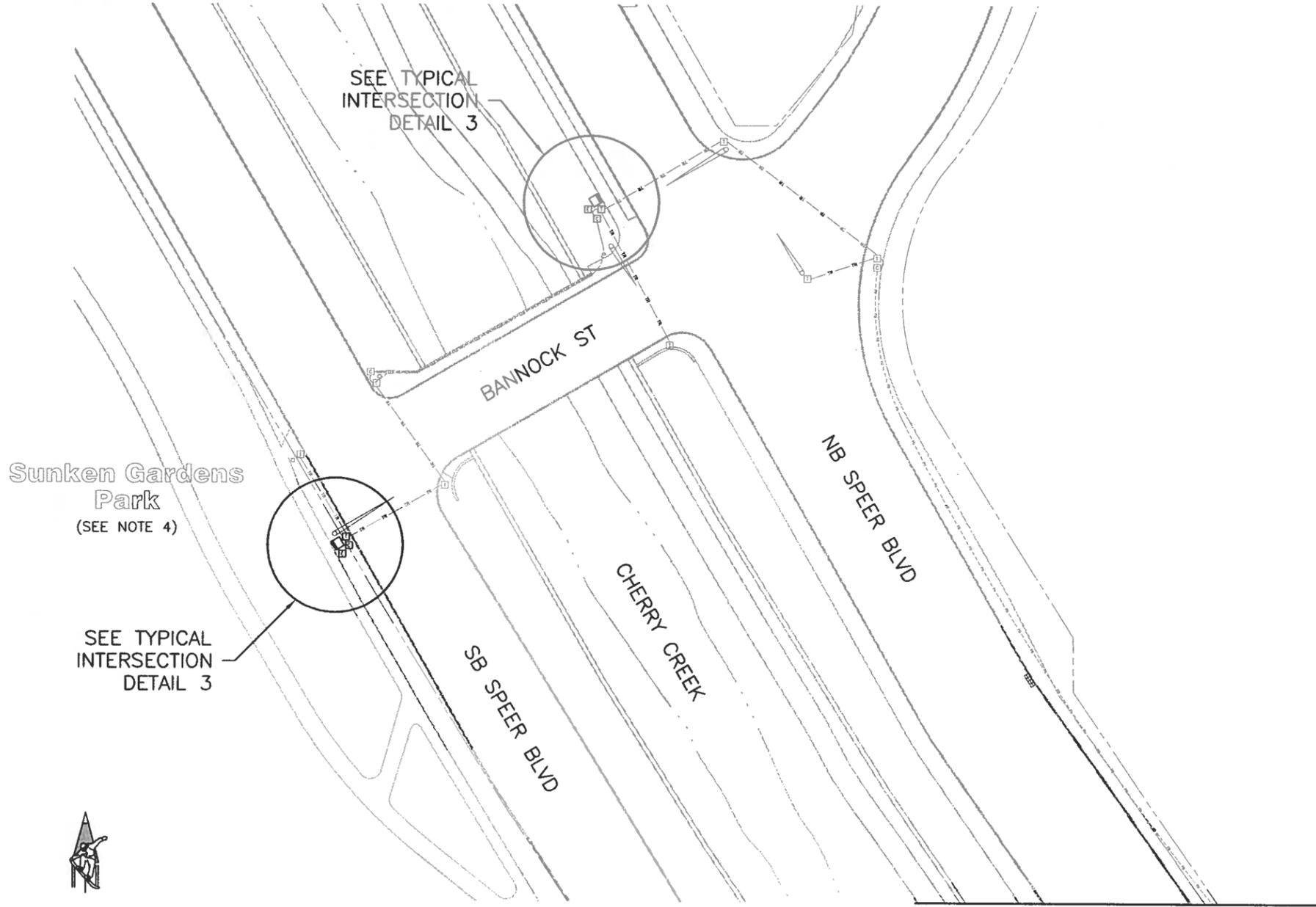
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	2	-
-	614	TELEMETRY (FIELD)	EACH	2	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING		PROPOSED		ITEM DESCRIPTION
				TRAFFIC SIGNAL CONTROLLER & CABINET
				TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
				COMMUNICATION PULL BOX (SPECIAL)
				CONDUIT (SIGNAL COMMUNICATION)
				CONDUIT (TRAFFIC SIGNAL)
				RIGHT OF WAY (Approximate)
				TRAFFIC SIGNAL POLE WITH MAST ARM
				PEDESTAL POLE / SPAN WIRE POLE
				STORM DRAIN INLET
			(Protect)	

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



MATCHLINE SHEET T-9

T-8

Computer File Information		Index of Revisions		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176	 FELSBURG HOLT & ULLEVIG 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832	As Constructed		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN		Project No./Code	
Creation Date:	1/19/11 Initials: BDW					No Revisions:				AQC M320-071	
Last Modification Date:	3/24/11 Initials: larry			Revised:		Designer:	LCL/CMB	Structure	-	SA 18144	
Full Path:	J:\10127-02\CADD\Sheets			Void:		Detailer:	BDW	Numbers	-	Sheet Number	
Drawing File Name:	T10127TRAF08.dwg					Sheet Subset:	Conduit	Subset Sheets:	T-8 of 41	21	
Acad Version 2007	Scale: 1:60 Units: English										

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	4	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	4	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	4	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	4	-
-	614	TELEMETRY (FIELD)	EACH	4	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	4	INCLUDES G-TYPE CABINET

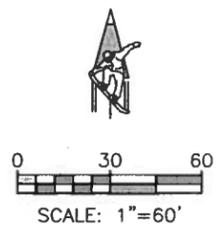
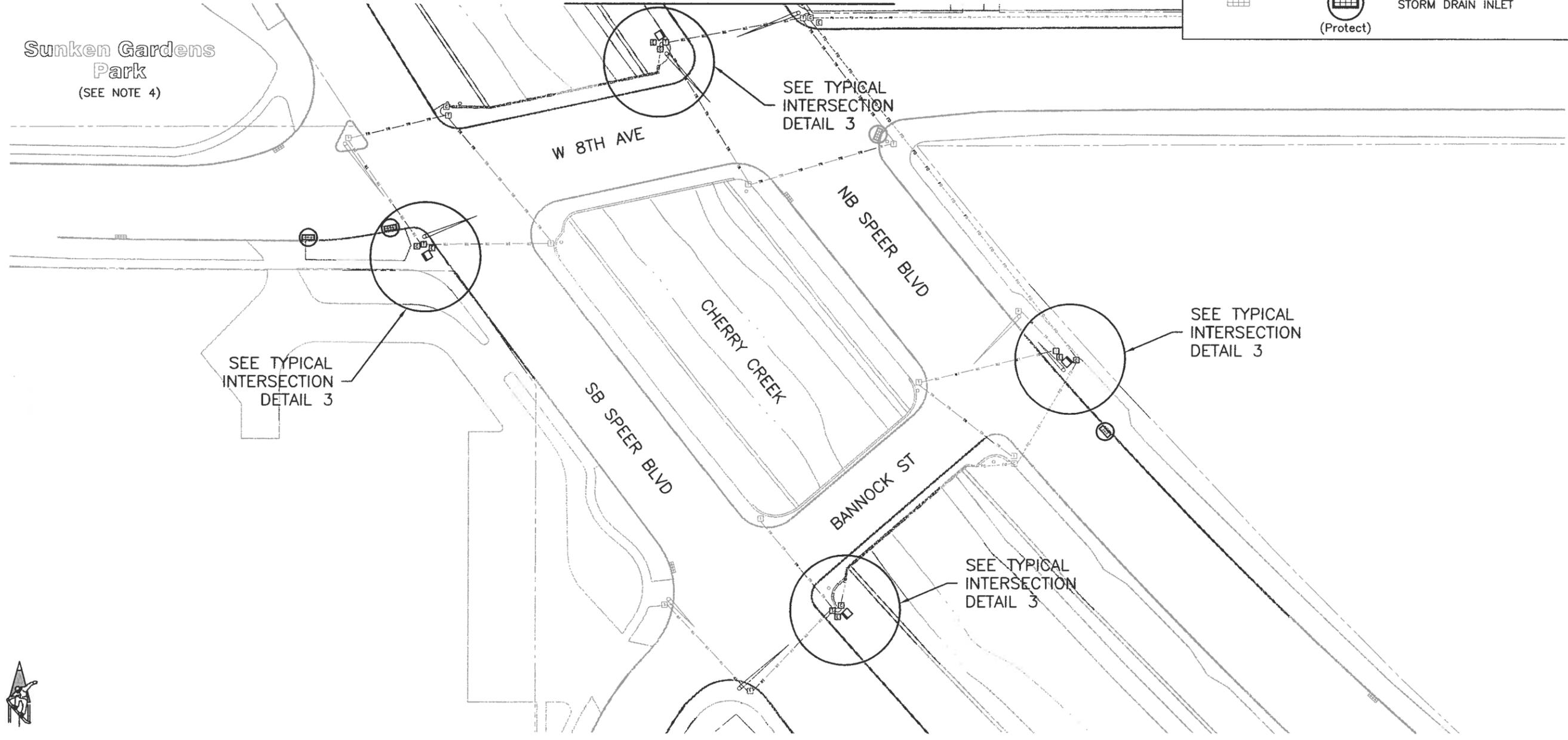
NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
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EXISTING		PROPOSED		ITEM DESCRIPTION
[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC SIGNAL CONTROLLER & CABINET
[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
[Symbol]	[Symbol]	[Symbol]	[Symbol]	COMMUNICATION PULL BOX (SPECIAL)
---	---	---	---	CONDUIT (SIGNAL COMMUNICATION)
---	---	---	---	CONDUIT (TRAFFIC SIGNAL)
---	---	---	---	RIGHT OF WAY (Approximate)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC SIGNAL POLE WITH MAST ARM
[Symbol]	[Symbol]	[Symbol]	[Symbol]	PEDESTAL POLE / SPAN WIRE POLE
[Symbol]	[Symbol]	[Symbol]	[Symbol]	STORM DRAIN INLET

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)

MATCHLINE SHEET T-8



T-9

Computer File Information Creation Date: 1/19/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets\T10127TRAF09.dwg Drawing File Name: T10127TRAF09.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																		Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 22	

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ISSUE DATE: APRIL 6, 2011

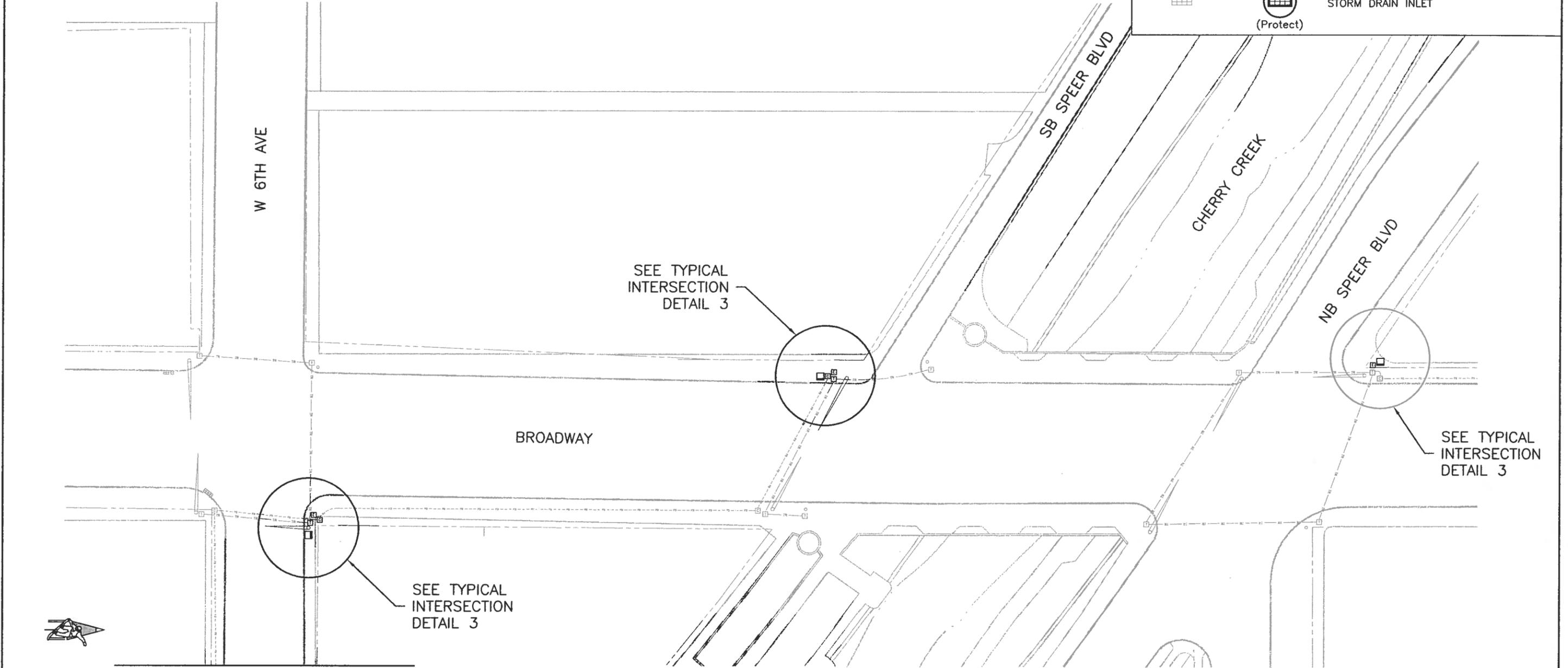
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	3	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	3	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	3	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	3	-
-	614	TELEMETRY (FIELD)	EACH	3	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	3	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-10

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 3/22/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF10.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 23	

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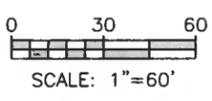
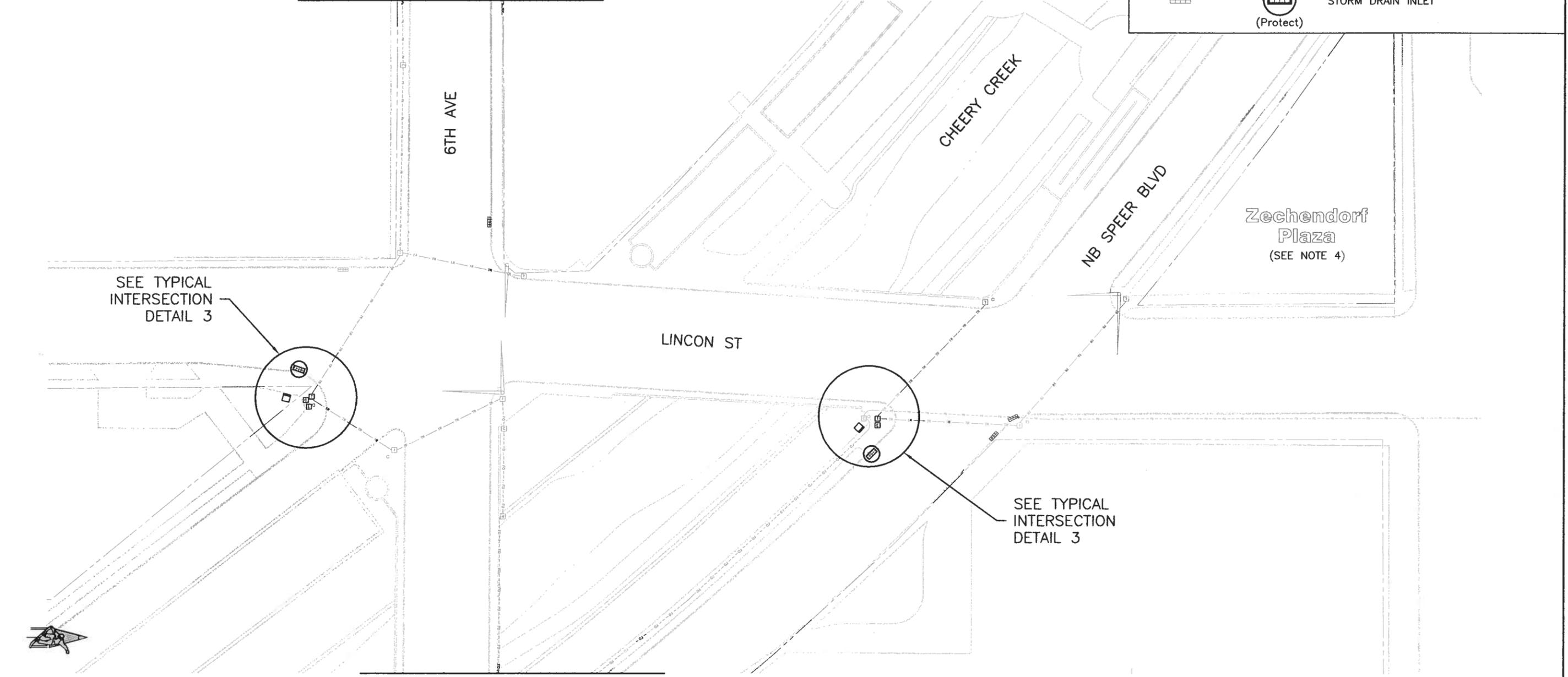
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	2	-
-	614	TELEMETRY (FIELD)	EACH	2	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
			(Protect)

ITEM REFERENCE KEY (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS) MATCHLINE SHEET T-10



MATCHLINE SHEET T-12

T-11

Computer File Information	
Creation Date:	1/21/11 Initials: BDW
Last Modification Date:	3/22/11 Initials: larry
Full Path:	J:\10127-02\CADD\Sheets
Drawing File Name:	T10127TRAF11.dwg
Acad Version 2007 Scale:	1:60 Units: English

Index of Revisions	

Department of Public Works
Traffic Engineering Services, Dept. 508
201 West Colfax Avenue
Denver, CO 80202
(720) 865-3176

6300 South Syracuse Way
Suite 600
Centennial, CO 80111
(303) 721-1440
Fax (303) 771-0832

As Constructed
No Revisions:
Revised:
Void:

DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN			
Designer:	LCL/CMB	Structure Numbers	-
Detailer:	BDW	Subset Sheets:	T-11 of 41
Sheet Subset:	Conduit		

Project No./Code	
AQC M320-071	SA 18144
Sheet Number	24

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	-
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

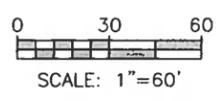
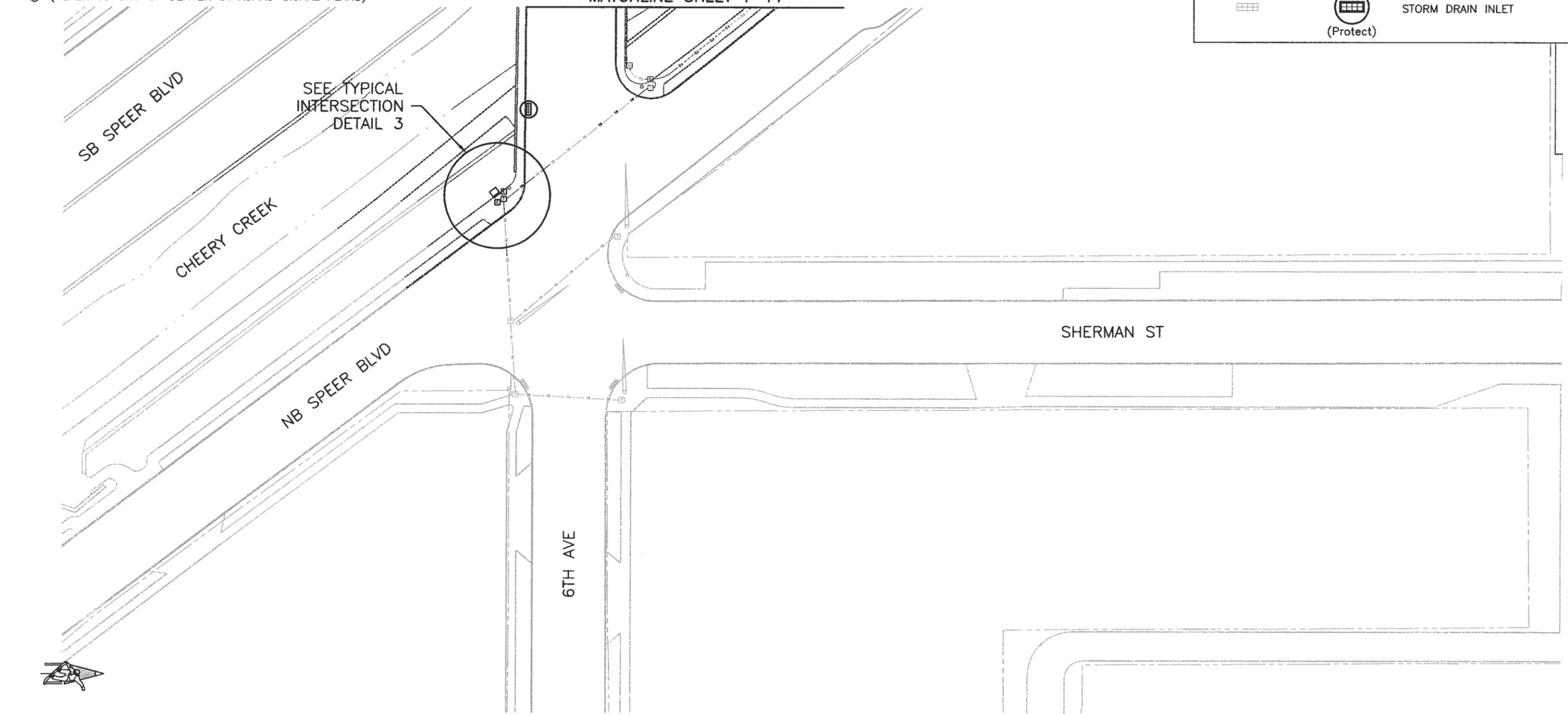
NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
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EXISTING		PROPOSED		LEGEND	ITEM DESCRIPTION
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC SIGNAL CONTROLLER & CABINET
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	COMMUNICATION PULL BOX (SPECIAL)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	CONDUIT (SIGNAL COMMUNICATION)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	CONDUIT (TRAFFIC SIGNAL)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	RIGHT OF WAY (Approximate)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC SIGNAL POLE WITH MAST ARM
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	PEDESTAL POLE / SPAN WIRE POLE
[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	STORM DRAIN INLET

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)

MATCHLINE SHEET T-11



T-12

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF12.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit Structure Numbers: - Subset Sheets: T-12 of 41		Project No./Code AQC M320-071 SA 18144 Sheet Number 25	

ISSUE DATE: APRIL 6, 2011

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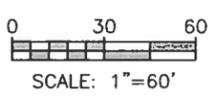
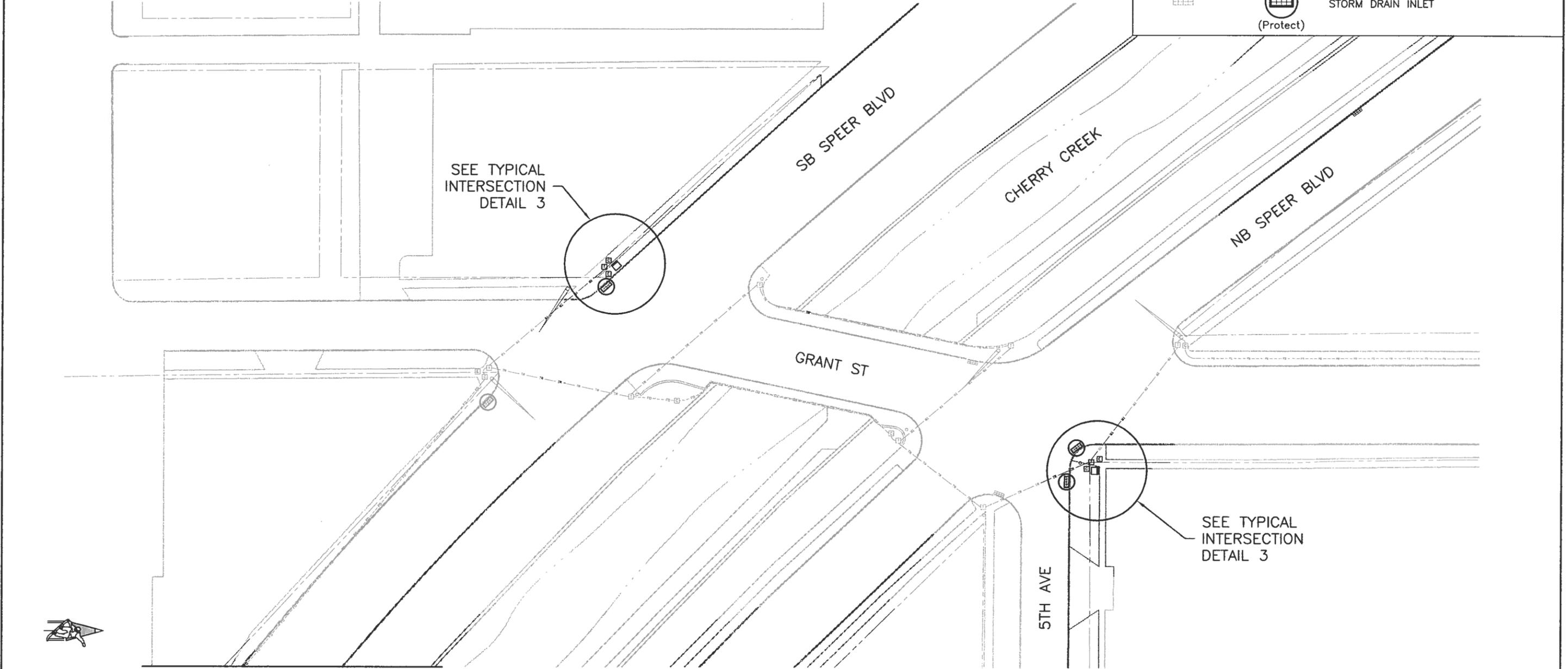
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	2	-
-	614	TELEMETRY (FIELD)	EACH	2	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
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EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



MATCHLINE SHEET T-14

T-13

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 3/22/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF13.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 26	
Structure Numbers: - Subset Sheets: T-13 of 41																									

ISSUE DATE: APRIL 6, 2011

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	-
2C	210	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	ASC/2 AND M1 CABINET
3D	613	2 INCH ELECTRICAL CONDUIT (TRENCHED)	LF	10	-
3D	613	3 INCH ELECTRICAL CONDUIT (TRENCHED)	LF	40	-
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS)	EACH	1	M1 AND G TYPE
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	M1 AND G TYPE
-	614	TELEMETRY (FIELD)	EACH	2	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

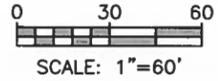
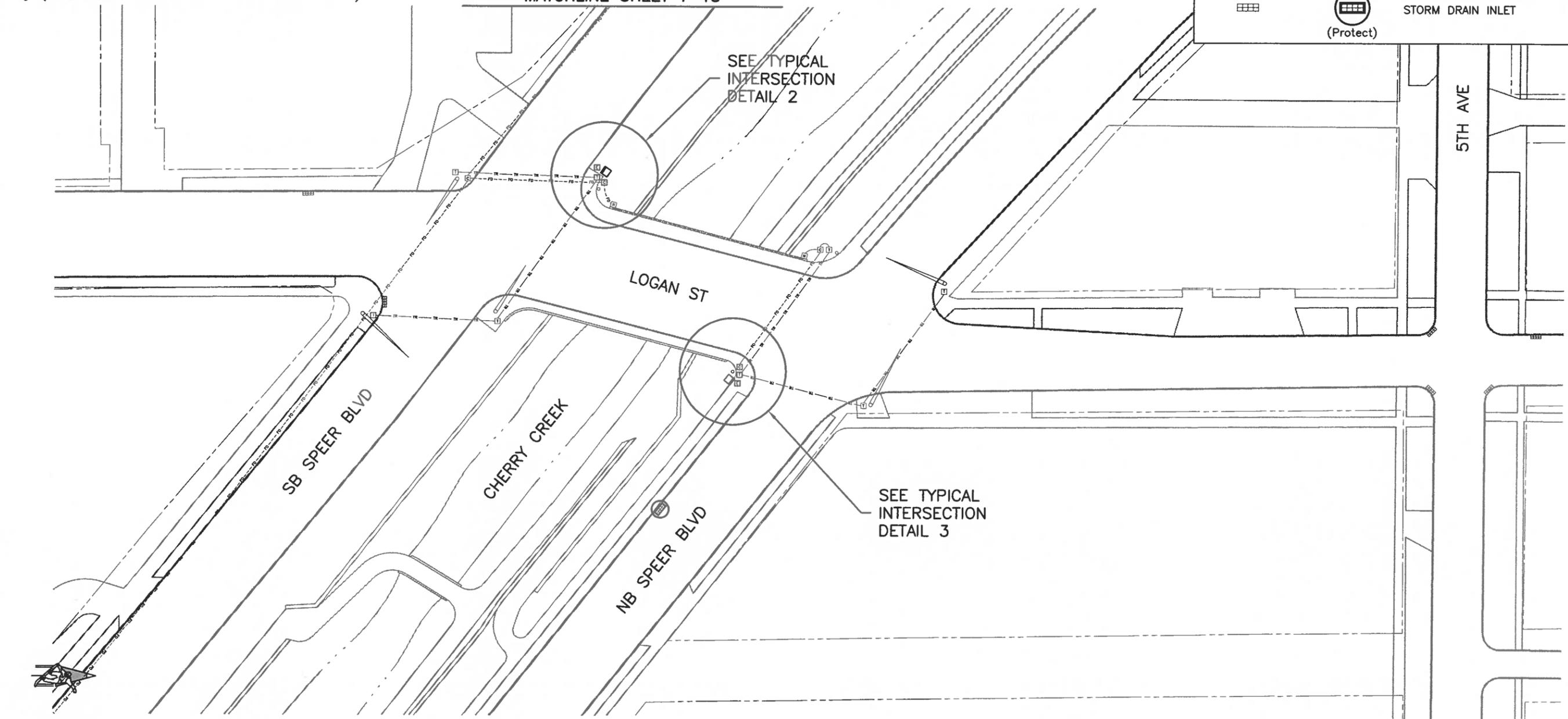
NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING		PROPOSED		ITEM DESCRIPTION
[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC SIGNAL CONTROLLER & CABINET
[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
[Symbol]	[Symbol]	[Symbol]	[Symbol]	COMMUNICATION PULL BOX (SPECIAL)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	CONDUIT (SIGNAL COMMUNICATION)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	CONDUIT (TRAFFIC SIGNAL)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	RIGHT OF WAY (Approximate)
[Symbol]	[Symbol]	[Symbol]	[Symbol]	TRAFFIC SIGNAL POLE WITH MAST ARM
[Symbol]	[Symbol]	[Symbol]	[Symbol]	PEDESTAL POLE / SPAN WIRE POLE
[Symbol]	[Symbol]	[Symbol]	[Symbol]	STORM DRAIN INLET

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)

MATCHLINE SHEET T-13



T-14

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 4/14/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF14.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 27	

ISSUE DATE: APRIL 6, 2011

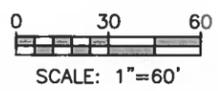
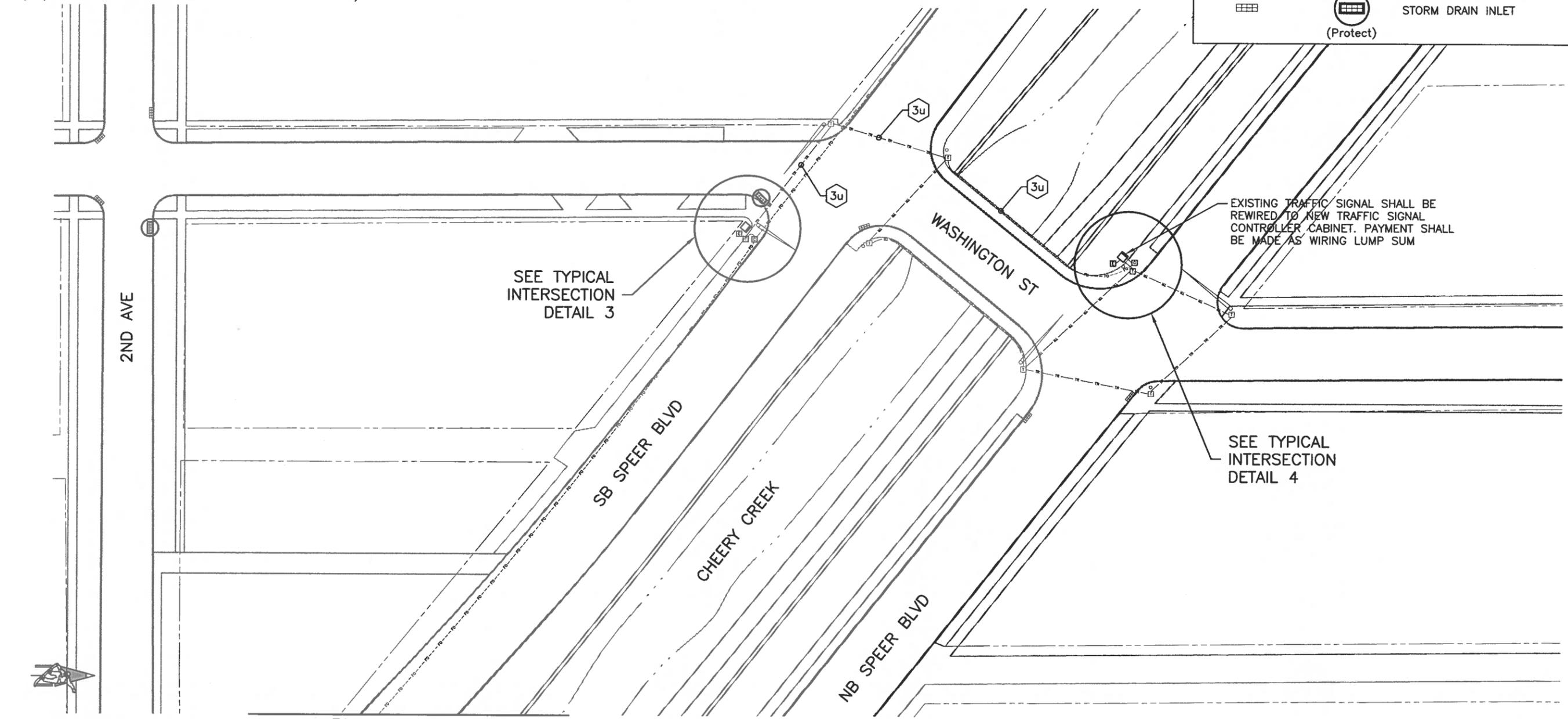
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
-	613	WIRING	LS	0.5	REWIRING TRAFFIC SIGNAL
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	-
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
-	614	TELEMETRY (FIELD)	EACH	2	-
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	390	LATERAL CABLE
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
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EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



MATCHLINE SHEET T-16

T-15

Computer File Information Creation Date: 1/21/11 Initials: BDW Last Modification Date: 4/14/11 Initials: Larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF15.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Structure Numbers: - Sheet Subset: Conduit Subset Sheets: T-15 of 41		Project No./Code AQC M320-071 SA 18144 Sheet Number 28	

ISSUE DATE: APRIL 6, 2011

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	2	-
-	614	TELEMETRY (FIELD)	EACH	2	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

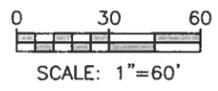
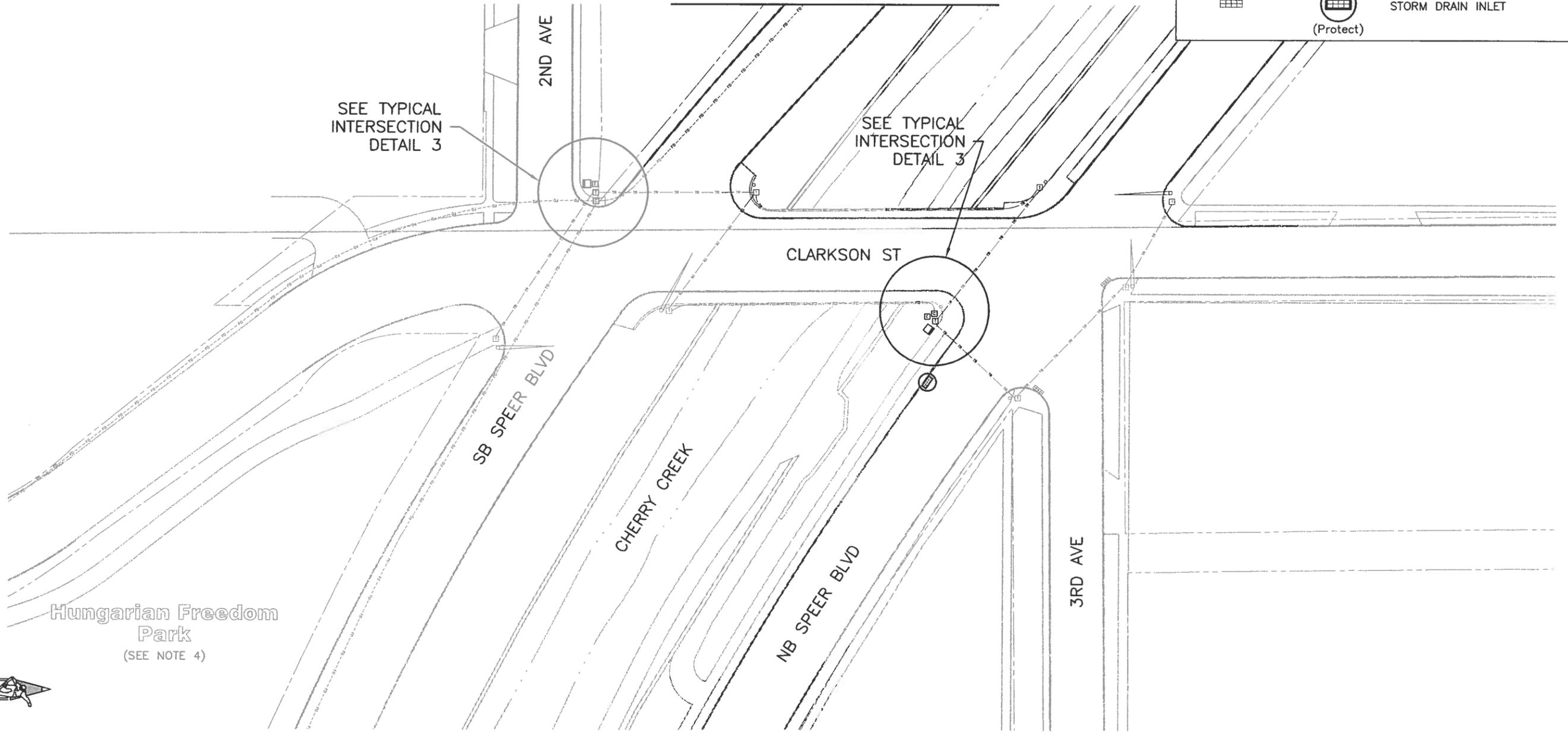
NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
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EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)

MATCHLINE SHEET T-15



T-16

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 3/24/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF16.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN		Project No./Code AQC M320-071 SA 18144 Sheet Number 29	
ISSUE DATE: APRIL 6, 2011								Designer: LCL/CMB Structure: - Detailer: BDW Numbers: - Sheet Subset: Conduit Subset Sheets: T-16 of 41																	

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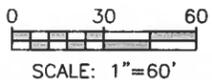
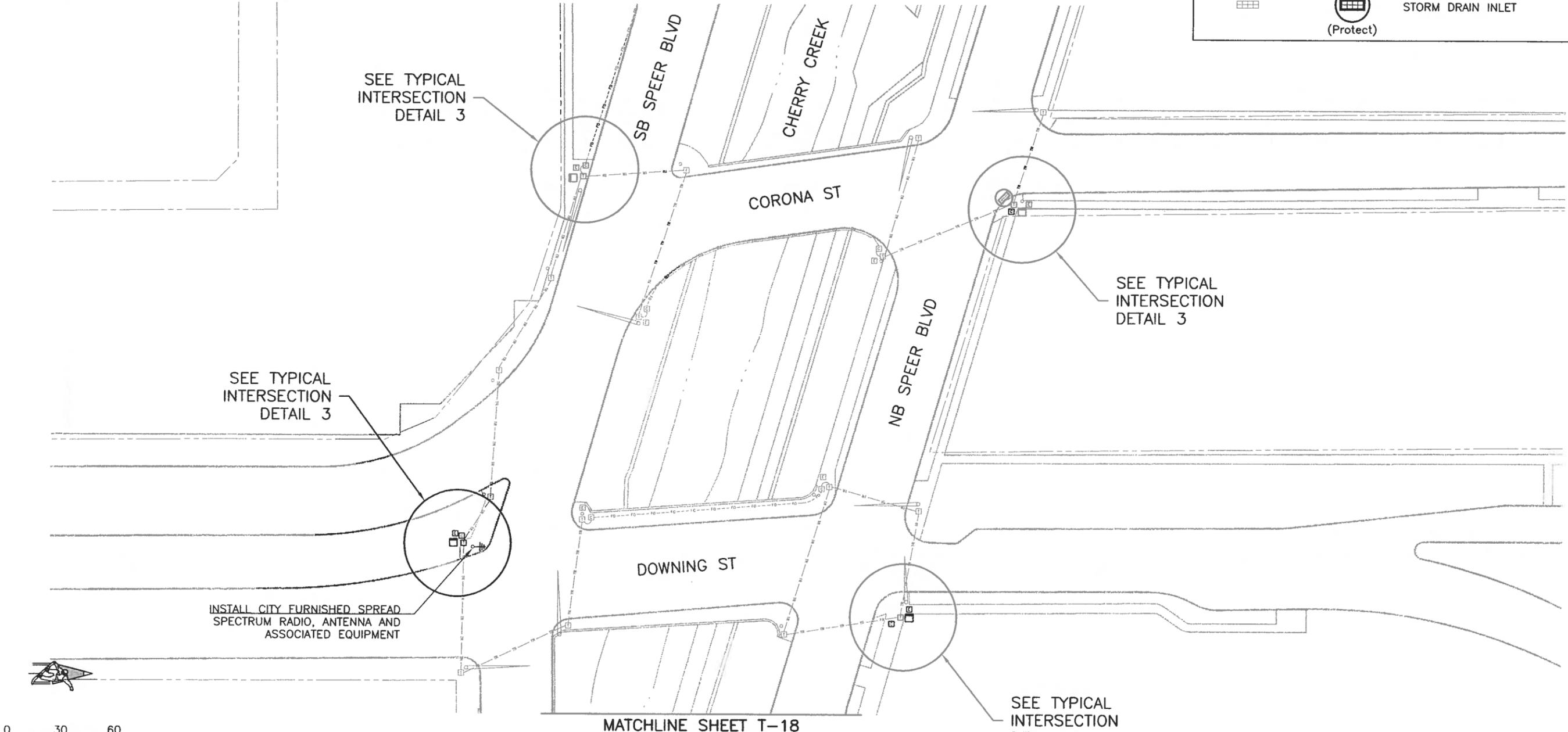
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	4	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	4	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	4	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	4	
-	614	SPREAD SPECTRUM RADIO (INSTALL ONLY)	EACH	1	
-	614	TELEMETRY (FIELD)	EACH	4	
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	4	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
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EXISTING	PROPOSED	ITEM DESCRIPTION
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		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-17

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 3/28/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF17.dwg Acad Version 2007 Scale: 1:60 Units: English ISSUE DATE: APRIL 6, 2011		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>											 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN			Project No./Code AQC M320-071 SA 18144 Sheet Number 30	
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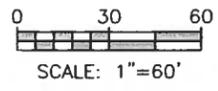
FRANKLIN ST

1ST AVE

Denver
Country Club

MATCHLINE SHEET T-18

MATCHLINE SHEET T-20



T-19

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF19.dwg Acad Version 2009 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Public Works Dept. - Transportation Division 1081 9th Avenue Greeley, CO 80631 (970) 350-9881		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 www.fhucng.com		As Constructed No Revisions: Revised: Void:		GREELEY FO COMM PROJECT SPEER BLVD – EAST INTERCONNECT CONDUIT PLAN				Project No./Code AQC M570-041 17781 Sheet Number 32	
						Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Structure Numbers: - Subset Sheets: T-19 of 41																			

KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	-
-	614	SPREAD SPECTRUM RADIO (INSTALL ONLY)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

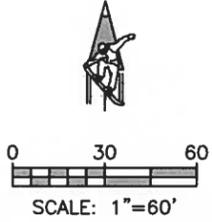
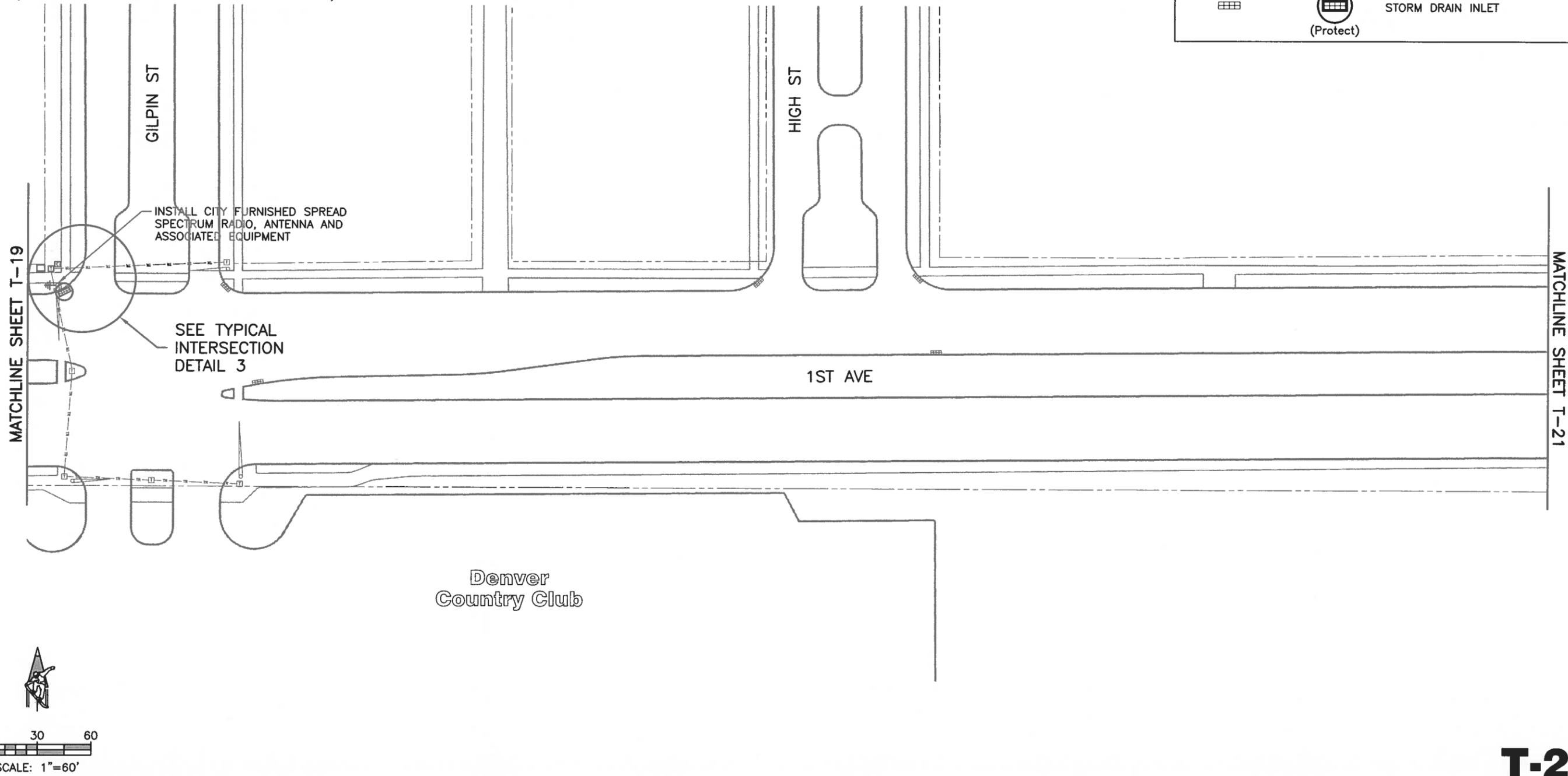
NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING		PROPOSED		ITEM DESCRIPTION
				TRAFFIC SIGNAL CONTROLLER & CABINET
				TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
				COMMUNICATION PULL BOX (SPECIAL)
				CONDUIT (SIGNAL COMMUNICATION)
				CONDUIT (TRAFFIC SIGNAL)
				RIGHT OF WAY (Approximate)
				TRAFFIC SIGNAL POLE WITH MAST ARM
				PEDESTAL POLE / SPAN WIRE POLE
				STORM DRAIN INLET
				(Protect)

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-20

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 4/14/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF20.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		FELSBURG HOLT & ULLEVIG 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 33	

ISSUE DATE: APRIL 6, 2011

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J:\10127-02\CADD\Sheets\T10127TRAF22.dwg, 4/14/2011 10:02:19 AM, larry

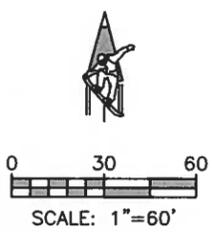
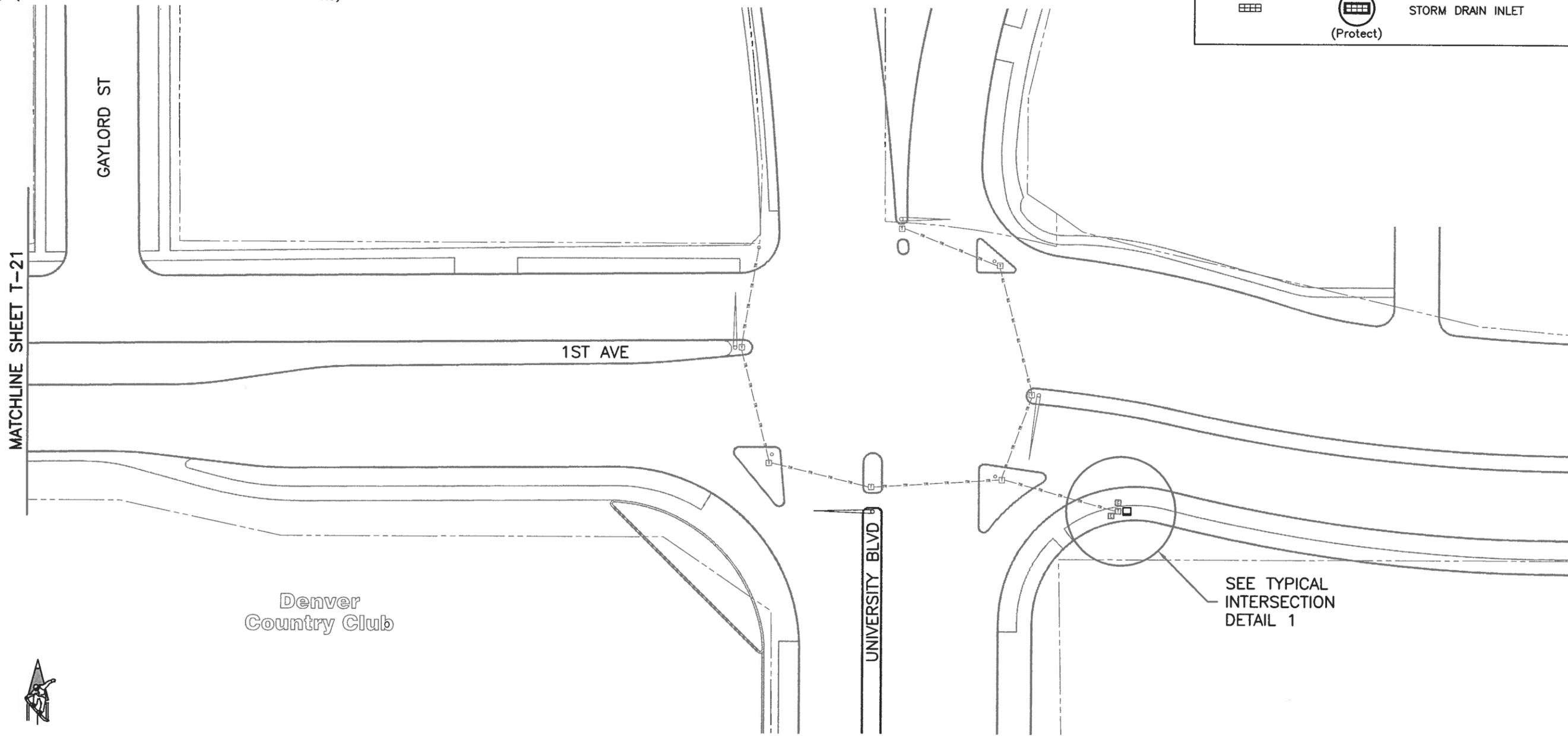
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
-	614	TELEMETRY (FIELD)	EACH	1	
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
	(Protect)	

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



SEE TYPICAL INTERSECTION DETAIL 1

T-22

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 4/14/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF22.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 SPEER BLVD - EAST INTERCONNECT CONDUIT PLAN			Project No./Code AQC M320-071 SA 18144 Sheet Number 35	
						Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Structure Numbers: - Subset Sheets: T-22 of 41														

ISSUE DATE: APRIL 6, 2011

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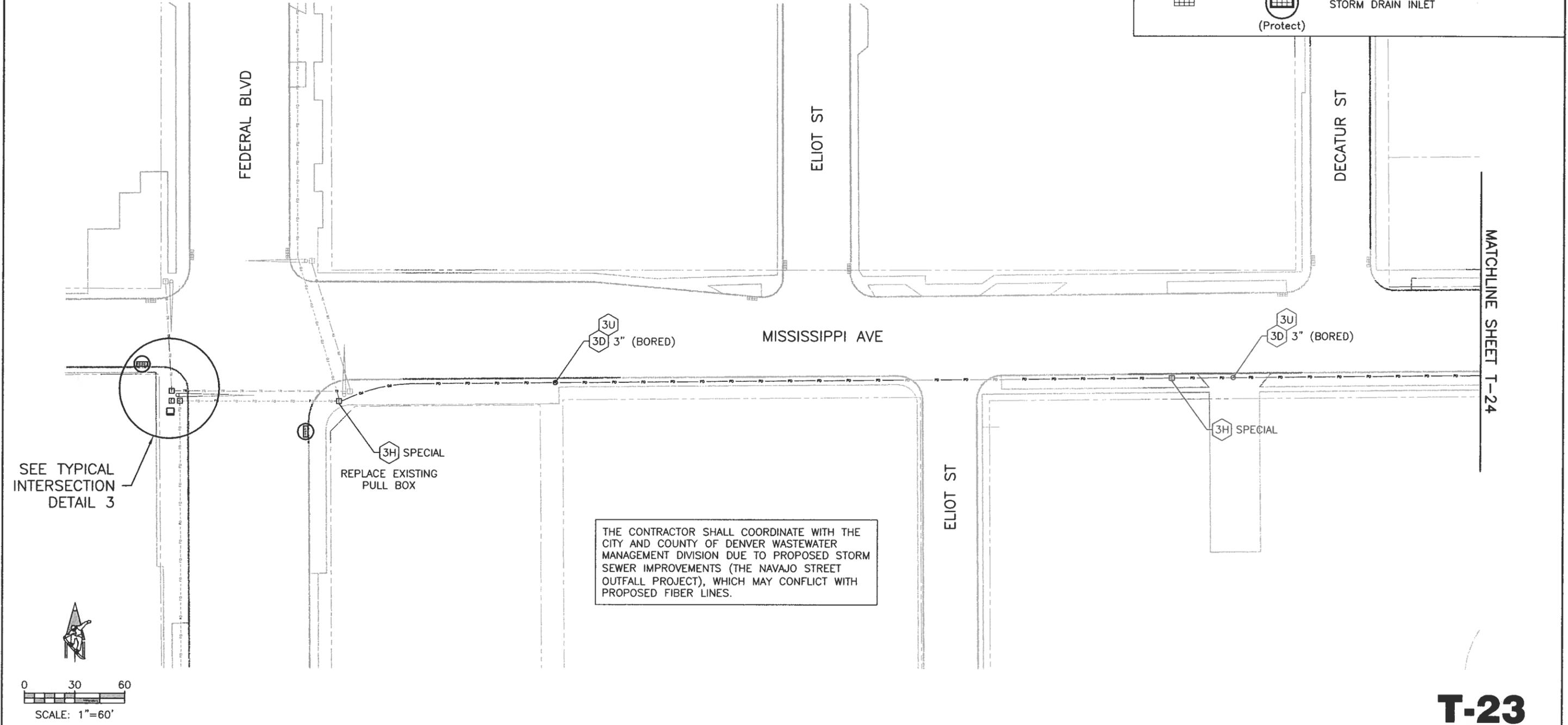
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	755	-
3H	613	PULL BOX (SPECIAL)	EACH	3	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	-
-	614	TELEMETRY (FIELD)	EACH	1	-
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	905	MAIN CABLE
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.

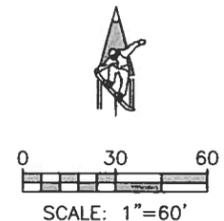


EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
	(Protect)		

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



THE CONTRACTOR SHALL COORDINATE WITH THE CITY AND COUNTY OF DENVER WASTEWATER MANAGEMENT DIVISION DUE TO PROPOSED STORM SEWER IMPROVEMENTS (THE NAVAJO STREET OUTFALL PROJECT), WHICH MAY CONFLICT WITH PROPOSED FIBER LINES.



T-23

Computer File Information Creation Date: 1/24/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF23.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>											 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 36	
Structure Numbers: - Subset Sheets: T-23 of 41																						

ISSUE DATE: APRIL 6, 2011

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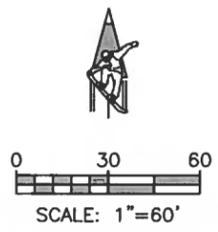
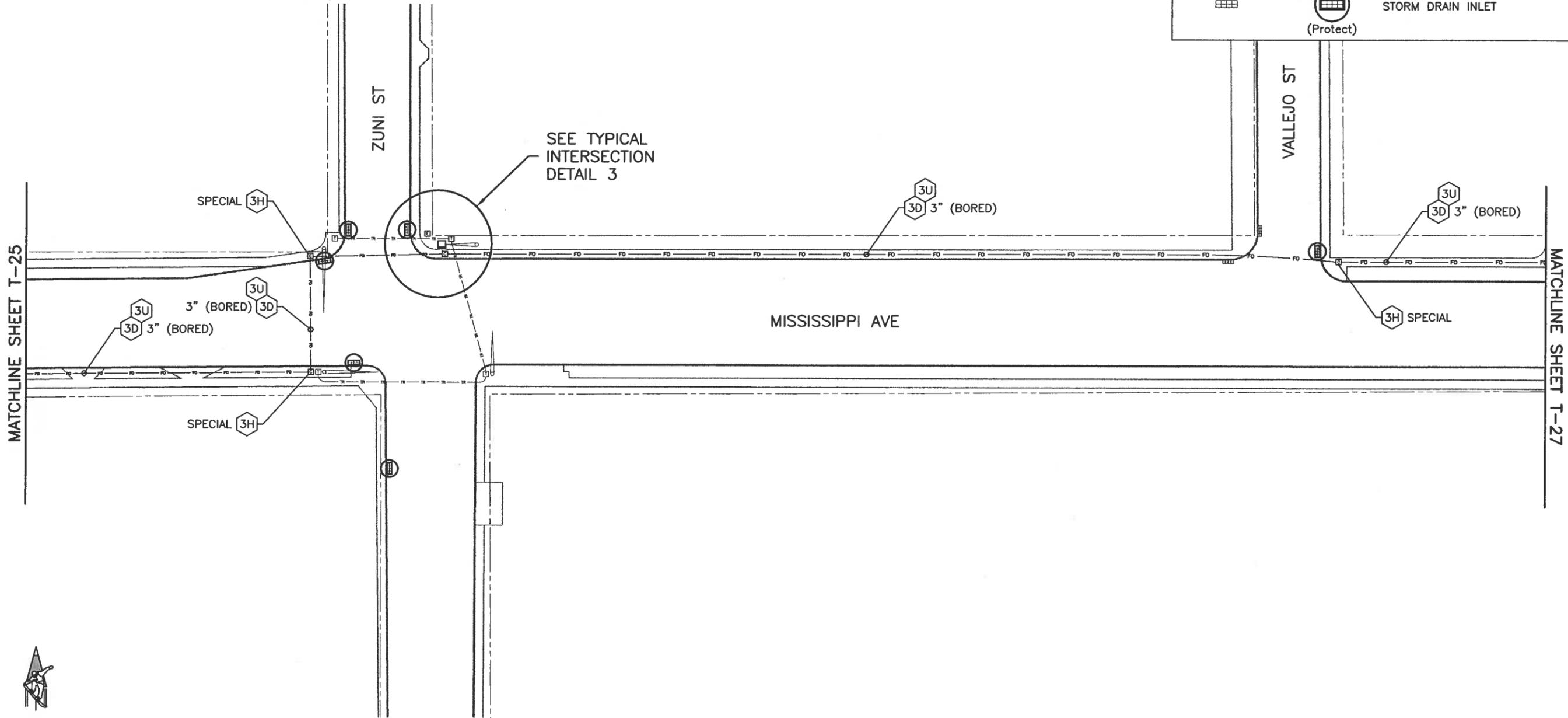
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	1005	-
3H	613	PULL BOX (SPECIAL)	EACH	4	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	-
-	614	TELEMETRY (FIELD)	EACH	1	-
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	1205	MAIN CABLE
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
			(Protect)

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-26

Computer File Information Creation Date: 1/25/11 Initials: BDW Last Modification Date: 4/14/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF26.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN		Project No./Code AQC M320-071 SA 18144 Sheet Number 39	
Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit Subset Sheets: T-26 of 41																					

ISSUE DATE: APRIL 6, 2011

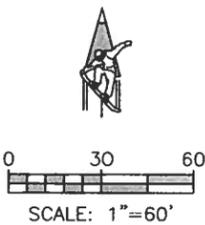
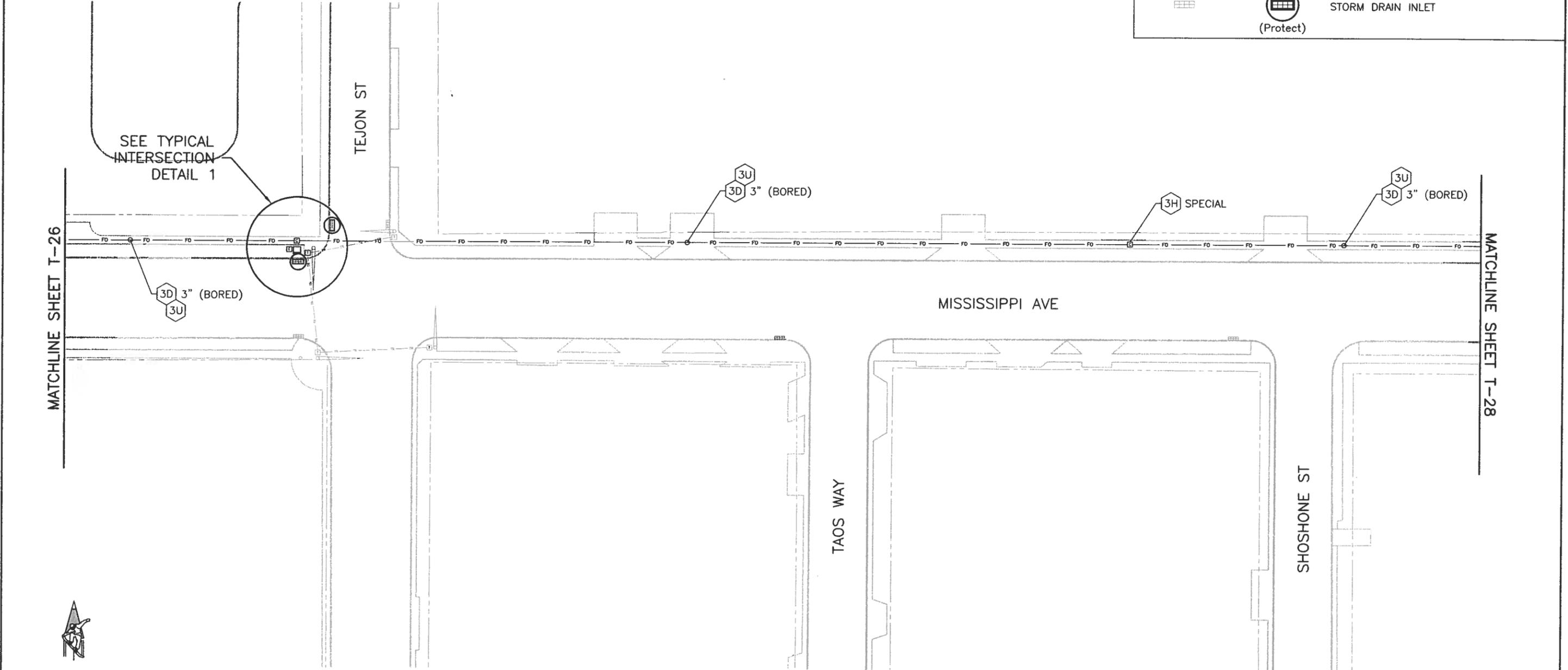
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	935	-
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	1035	MAIN CABLE
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-27

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF27.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>											 Department of Public Works Traffic Engineering Services, Dept. 50X 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit Structure Numbers: - Subset Sheets: T-27 of 41		Project No./Code AQC M320-071 SA 18144 Sheet Number 40	

ISSUE DATE: APRIL 6, 2011

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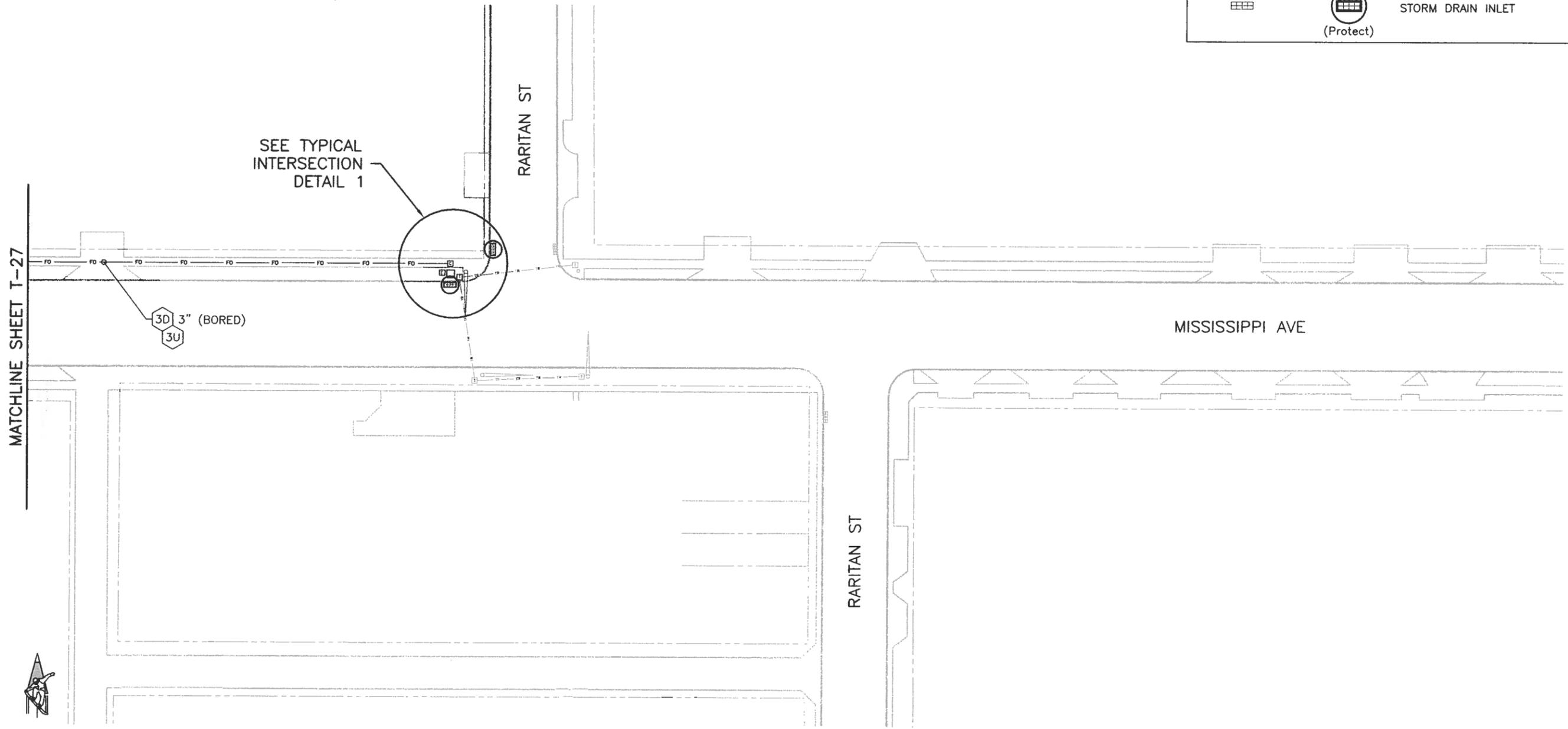
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	260	-
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	310	MAIN CABLE
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
			(Protect)

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-28

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF28.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 50R 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit Structure Numbers: - Subset Sheets: T-28 of 41		Project No./Code AQC M320-071 SA 18144 Sheet Number 41	

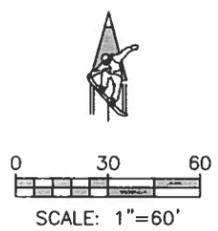
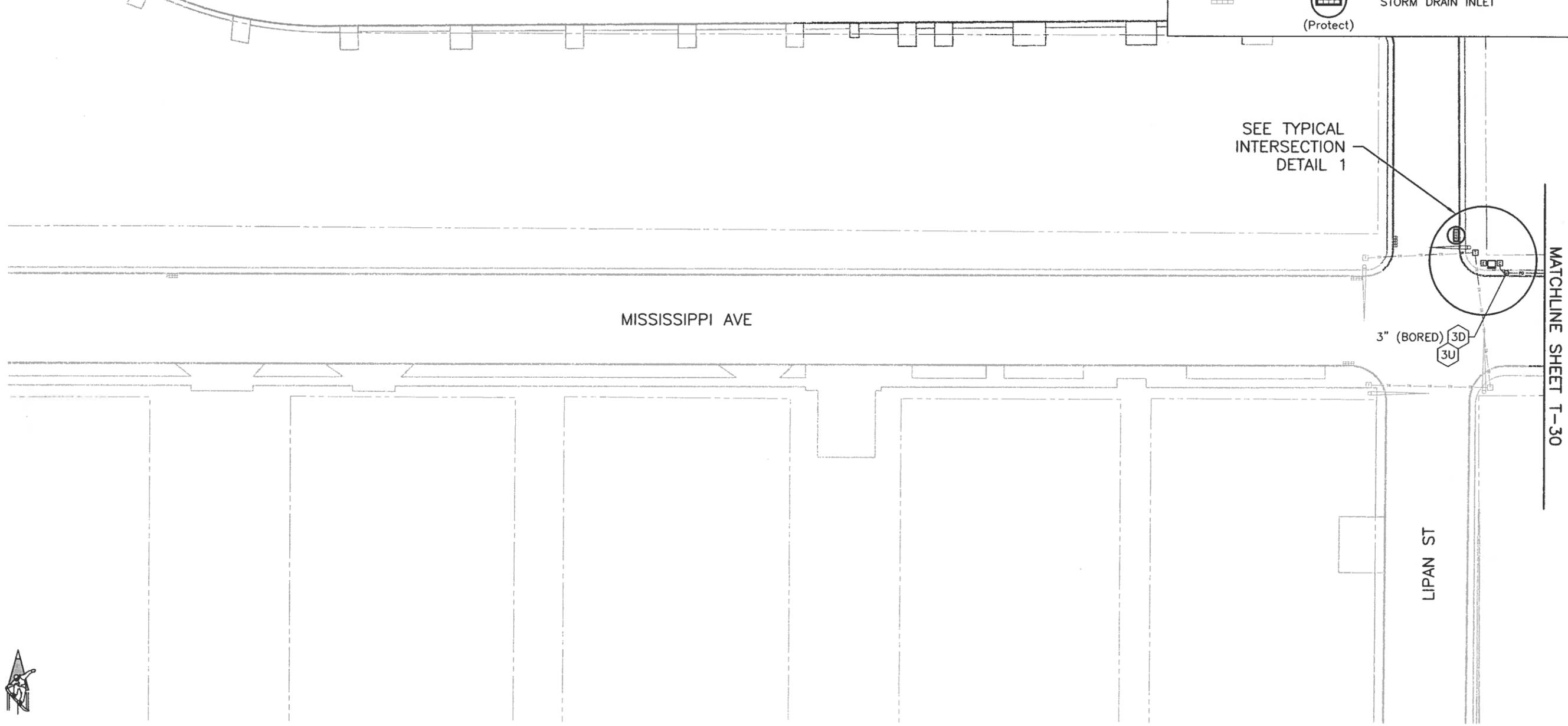
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	35	-
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	85	MAIN CABLE
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
			(Protect)

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-29

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF29.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Subset Sheets: T-29 of 41 Sheet Number 42	

ISSUE DATE: APRIL 6, 2011

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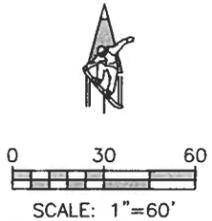
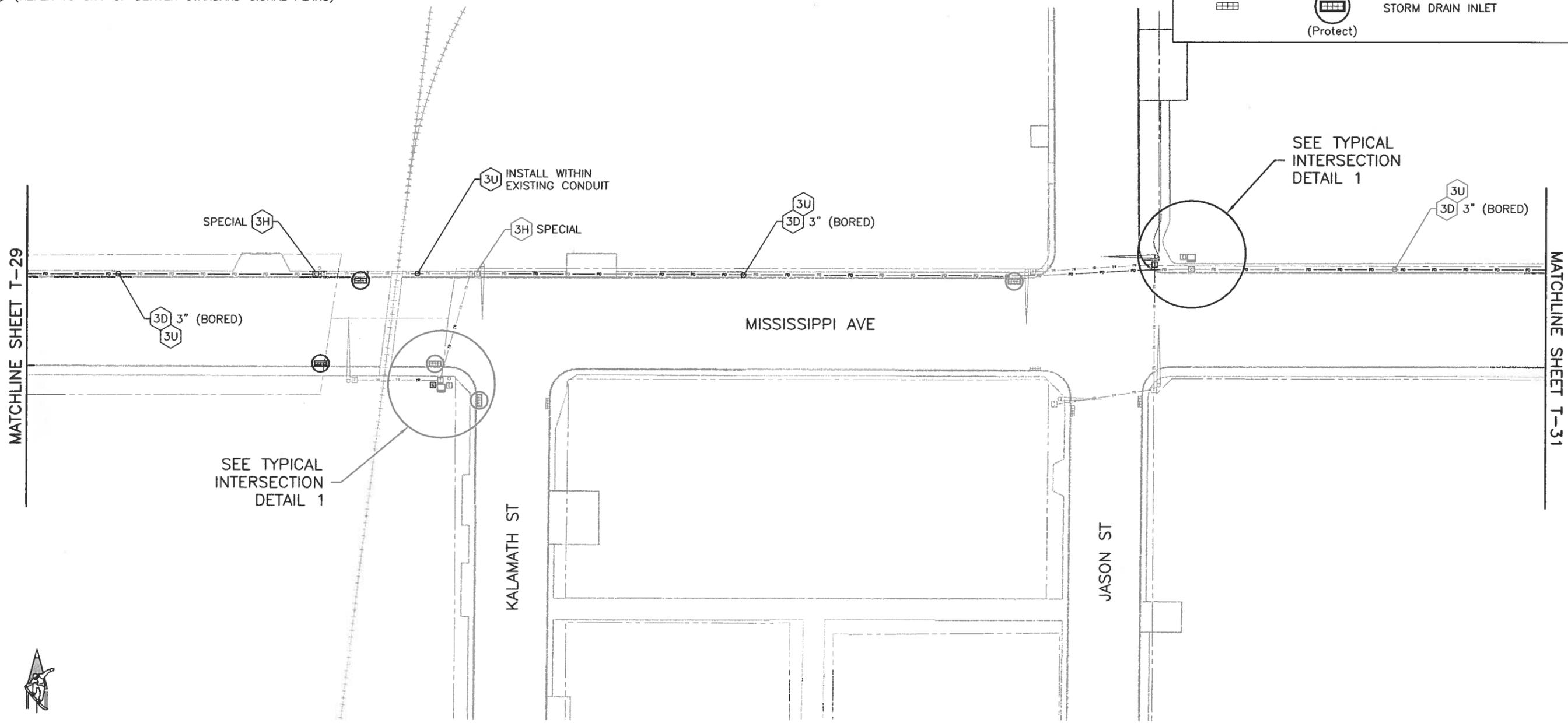
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	2	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	2	REPLACE W/ QUAZITE BASE
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	860	-
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	20	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	80	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	4	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	2	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	2	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	2	INCLUDES QUAZITE BASE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	170	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	1085	MAIN CABLE
-	614	TELEMETRY (FIELD)	EACH	2	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	2	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
		(Protect)

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-30

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF30.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN			Project No./Code AQC M320-071 SA 18144 Sheet Number 43	
						Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Structure Numbers: - Subset Sheets: T-30 of 41																						

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ISSUE DATE: APRIL 6, 2011

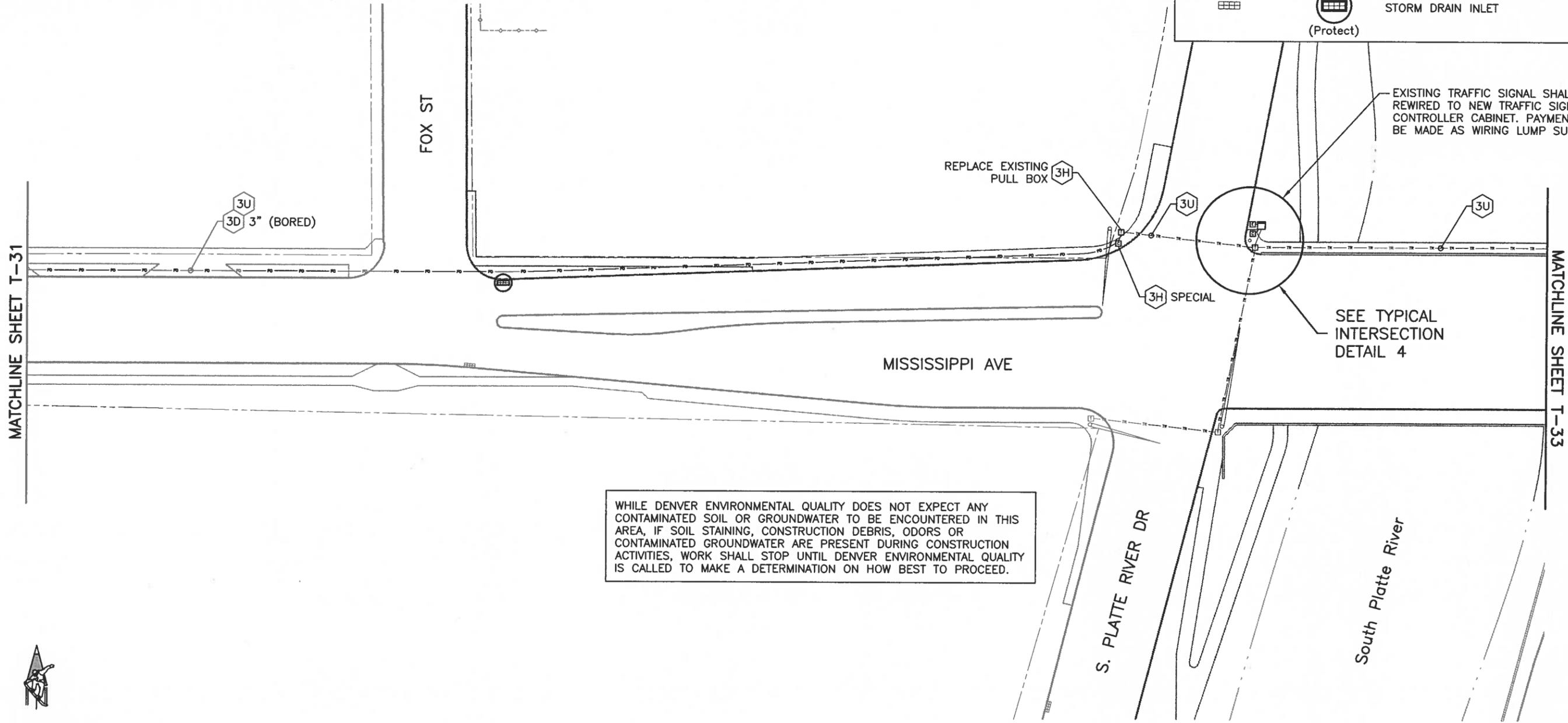
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	935	-
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	2	COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	-
-	613	WIRING	LS	0.5	REWIRING TRAFFIC SIGNAL
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
-	614	TELEMETRY (FIELD)	EACH	1	-
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	985	MAIN CABLE
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.

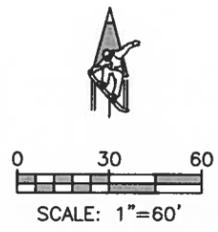


EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



WHILE DENVER ENVIRONMENTAL QUALITY DOES NOT EXPECT ANY CONTAMINATED SOIL OR GROUNDWATER TO BE ENCOUNTERED IN THIS AREA, IF SOIL STAINING, CONSTRUCTION DEBRIS, ODORS OR CONTAMINATED GROUNDWATER ARE PRESENT DURING CONSTRUCTION ACTIVITIES, WORK SHALL STOP UNTIL DENVER ENVIRONMENTAL QUALITY IS CALLED TO MAKE A DETERMINATION ON HOW BEST TO PROCEED.



T-32

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 4/15/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF32.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 45	

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	LATERAL CABLE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	120	MAIN CABLE
-	614	TELEMETRY (FIELD)	EACH	1	
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

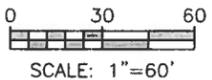
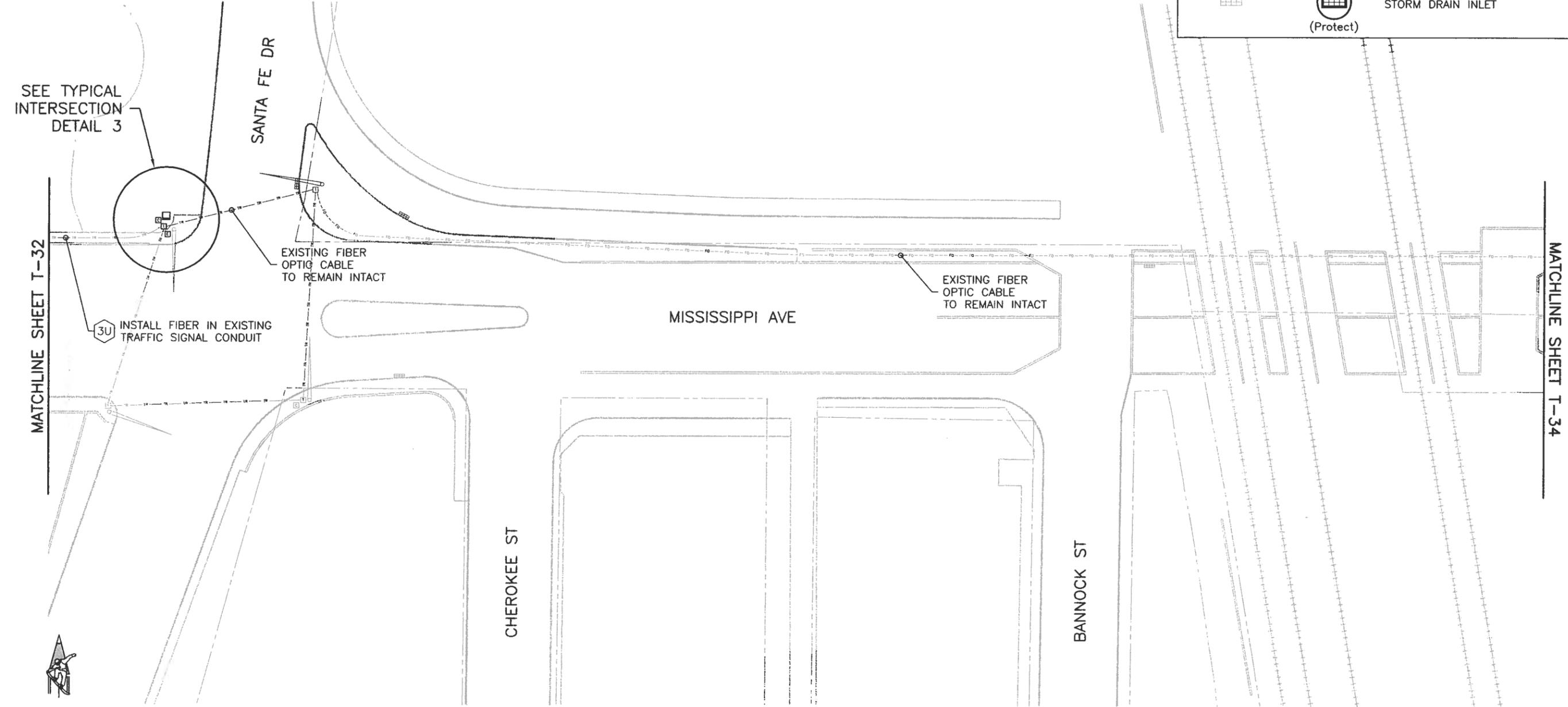
NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
			(Protect)

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-33

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 3/24/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF33.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 FELSBERG HOLT & ULLEVIG 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 46	
Structure Numbers: - Subset Sheets: T-33 of 41																									

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ISSUE DATE: APRIL 6, 2011

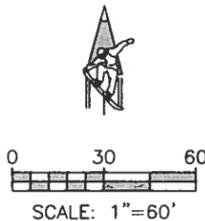
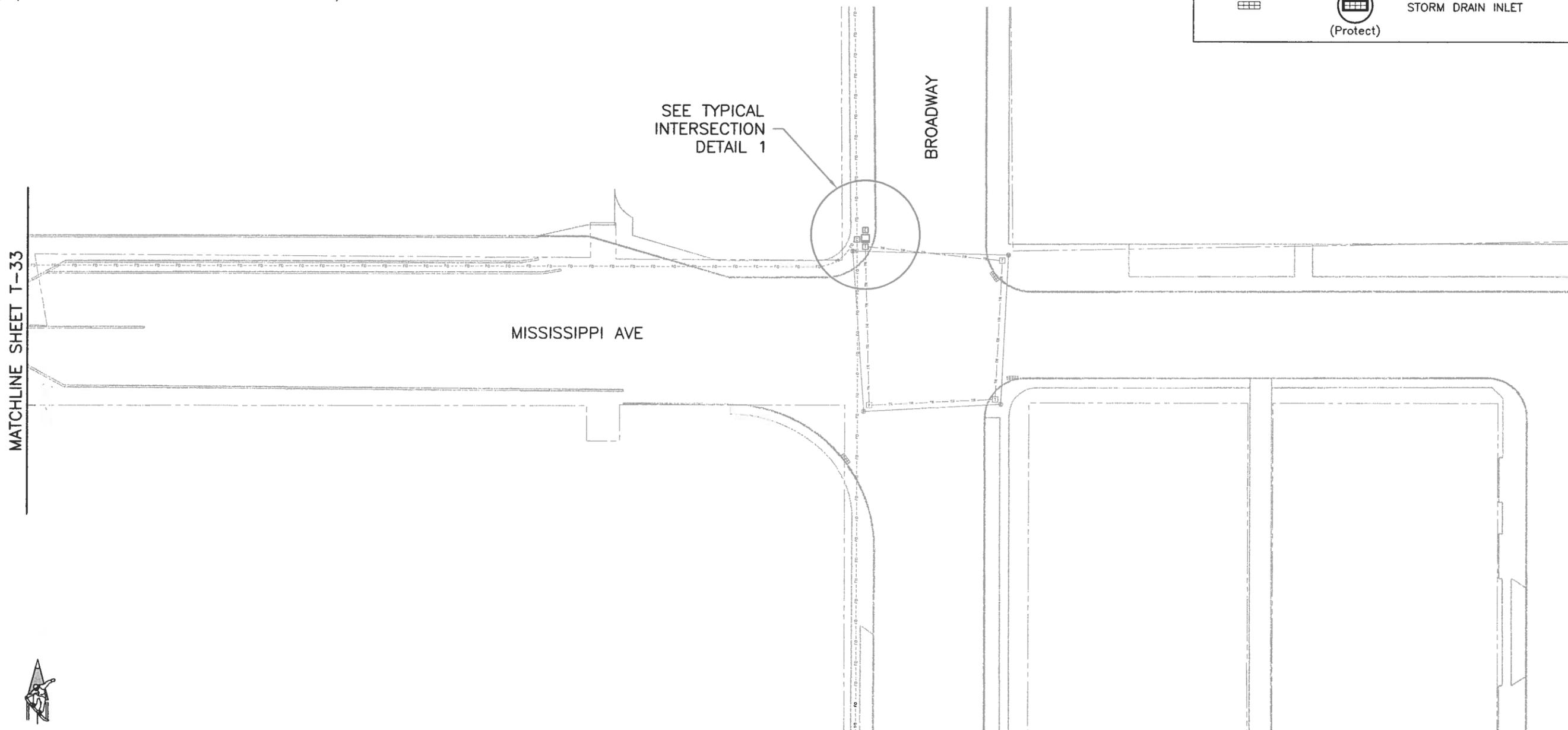
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING		PROPOSED		ITEM DESCRIPTION
				TRAFFIC SIGNAL CONTROLLER & CABINET
				TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
				COMMUNICATION PULL BOX (SPECIAL)
				CONDUIT (SIGNAL COMMUNICATION)
				CONDUIT (TRAFFIC SIGNAL)
				RIGHT OF WAY (Approximate)
				TRAFFIC SIGNAL POLE WITH MAST ARM
				PEDESTAL POLE / SPAN WIRE POLE
				STORM DRAIN INLET
				(Protect)

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-34

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 3/31/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF34.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 MISSISSIPPI AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Subset Sheets: T-34 of 41 Sheet Number 47	

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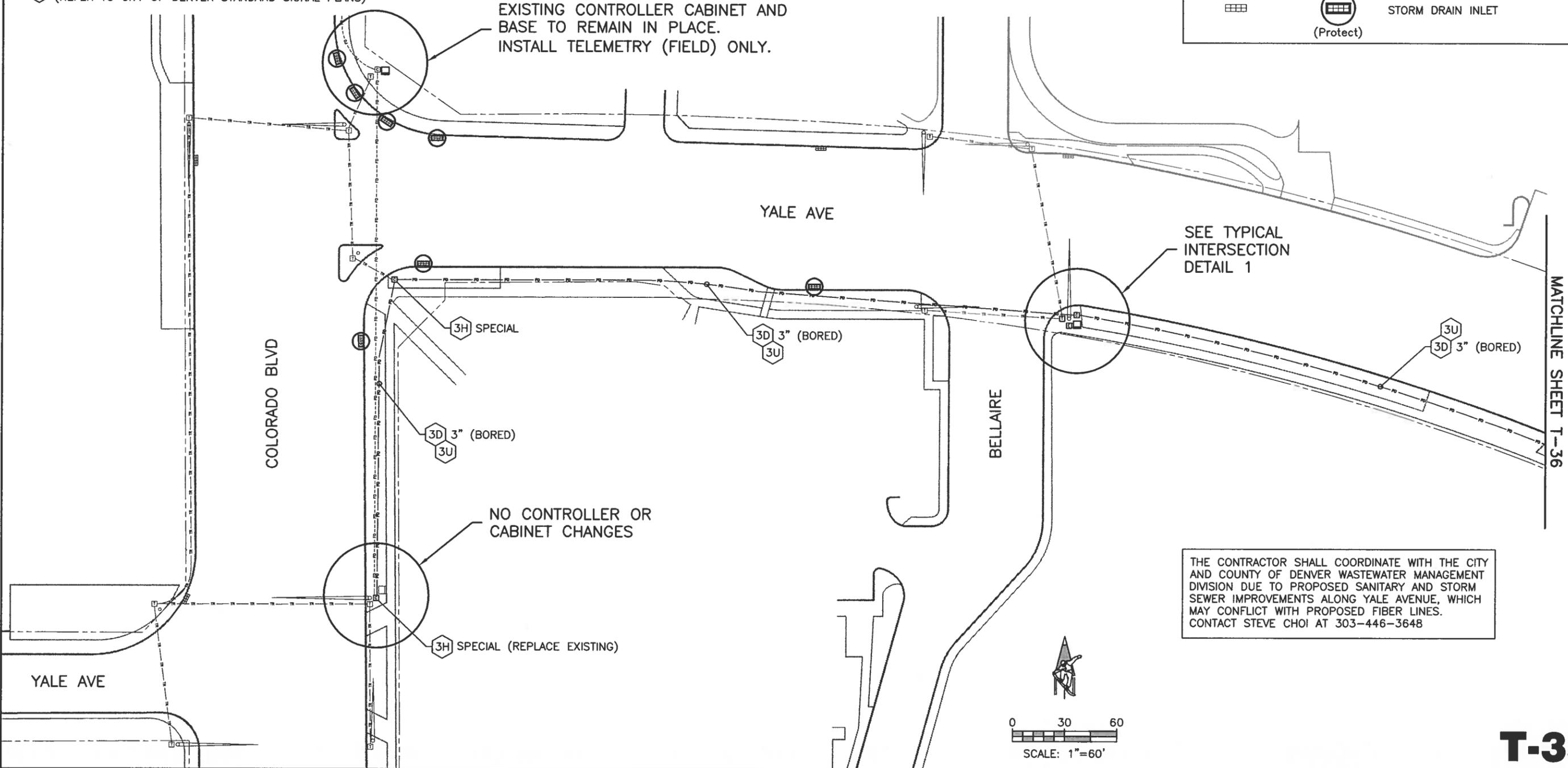
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	—
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	950	—
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	3	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
3B	614	CONCRETE FOOTING (UPS CABINET)	EACH	1	—
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	—
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	1100	—
—	614	TELEMETRY (FIELD)	EACH	2	—
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.

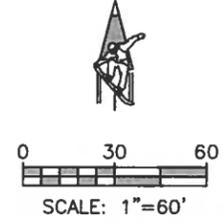


EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
		(Protect)

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



THE CONTRACTOR SHALL COORDINATE WITH THE CITY AND COUNTY OF DENVER WASTEWATER MANAGEMENT DIVISION DUE TO PROPOSED SANITARY AND STORM SEWER IMPROVEMENTS ALONG YALE AVENUE, WHICH MAY CONFLICT WITH PROPOSED FIBER LINES. CONTACT STEVE CHOI AT 303-446-3648



T-35

Computer File Information	
Creation Date:	1/26/11 Initials: BDW
Last Modification Date:	4/14/11 Initials: larry
Full Path:	J:\10127-02\CADD\Sheets
Drawing File Name:	T10127TRAF35.dwg
Acad Version 2007	Scale: 1:60 Units: English

Index of Revisions	

As Constructed
No Revisions:
Revised:
Void:

DENVER TSSIP-1 YALE AVENUE INTERCONNECT CONDUIT PLAN		
Designer:	LCL/CMB	Structure
Detailer:	BDW	Numbers
Sheet Subset:	Conduit	Subset Sheets: T-35 of 41

Project No./Code	
AQC M320-071	SA 18144
Sheet Number	48

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ISSUE DATE: APRIL 6, 2011

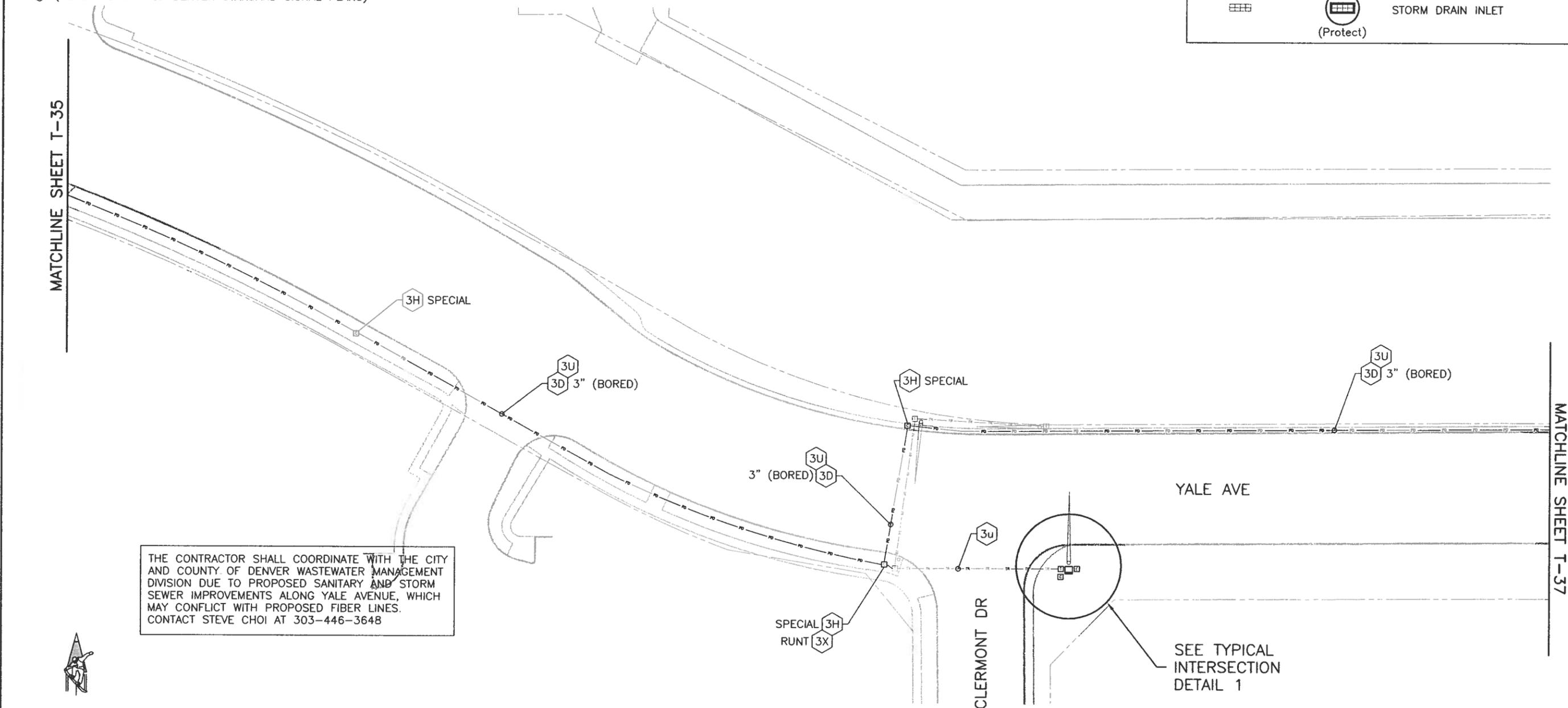
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	1085	-
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	4	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	195	-
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	1285	-
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.

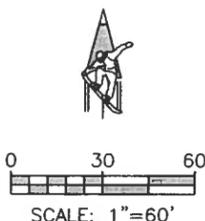


EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
		(Protect)

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



THE CONTRACTOR SHALL COORDINATE WITH THE CITY AND COUNTY OF DENVER WASTEWATER MANAGEMENT DIVISION DUE TO PROPOSED SANITARY AND STORM SEWER IMPROVEMENTS ALONG YALE AVENUE, WHICH MAY CONFLICT WITH PROPOSED FIBER LINES. CONTACT STEVE CHOI AT 303-446-3648



T-36

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 4/1/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF36.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>											Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 YALE AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 49	
Sheet Subset: Conduit Structure Numbers: - Subset Sheets: T-36 of 41																						

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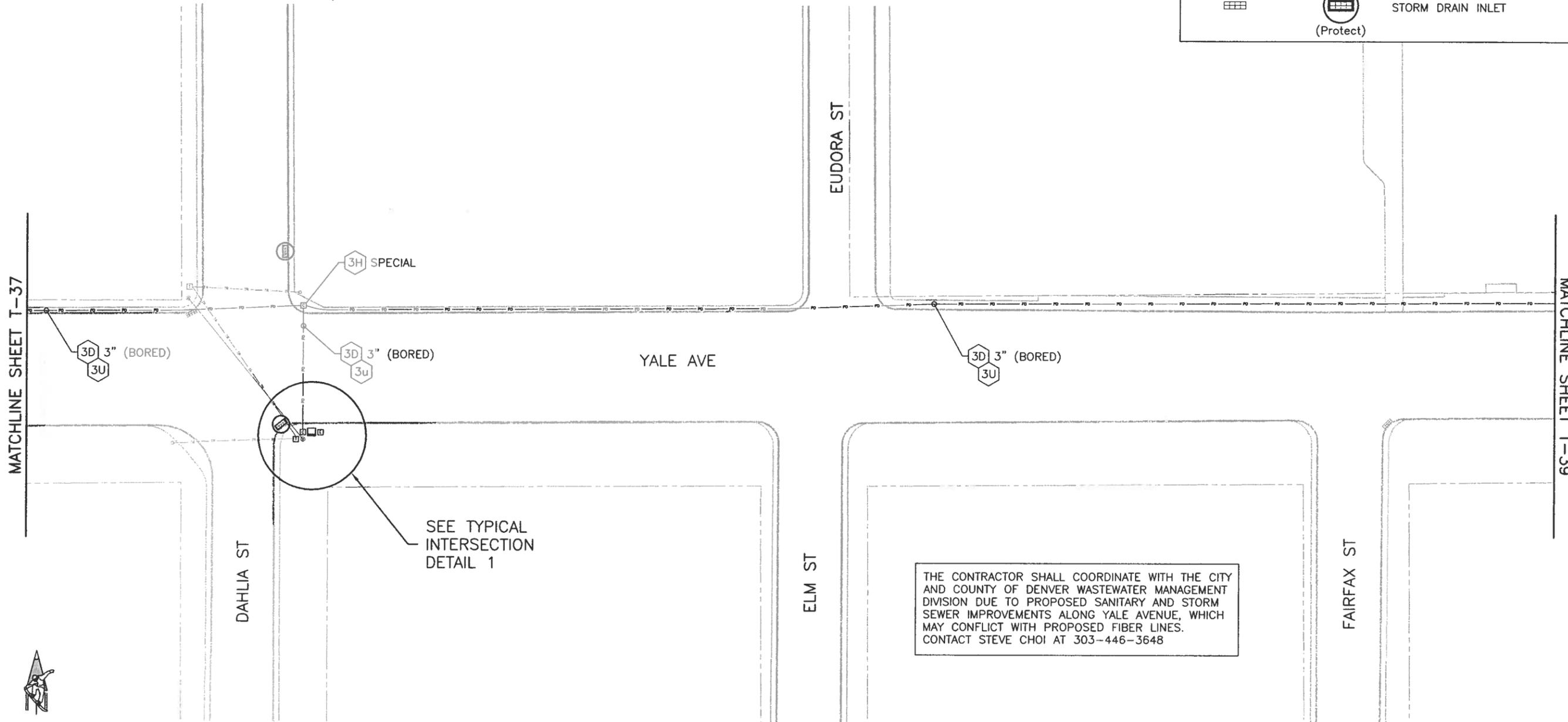
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	1015	-
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	2	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
3u	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	160	-
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	1040	-
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.

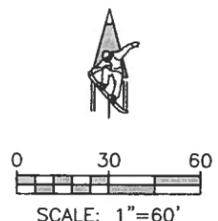


EXISTING	PROPOSED	ITEM DESCRIPTION
		TRAFFIC SIGNAL CONTROLLER & CABINET
		TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
		COMMUNICATION PULL BOX (SPECIAL)
		CONDUIT (SIGNAL COMMUNICATION)
		CONDUIT (TRAFFIC SIGNAL)
		RIGHT OF WAY (Approximate)
		TRAFFIC SIGNAL POLE WITH MAST ARM
		PEDESTAL POLE / SPAN WIRE POLE
		STORM DRAIN INLET
		(Protect)

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



THE CONTRACTOR SHALL COORDINATE WITH THE CITY AND COUNTY OF DENVER WASTEWATER MANAGEMENT DIVISION DUE TO PROPOSED SANITARY AND STORM SEWER IMPROVEMENTS ALONG YALE AVENUE, WHICH MAY CONFLICT WITH PROPOSED FIBER LINES. CONTACT STEVE CHOI AT 303-446-3648



T-38

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 4/1/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF38.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 YALE AVENUE INTERCONNECT CONDUIT PLAN Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Project No./Code AQC M320-071 SA 18144 Sheet Number 51	
ISSUE DATE: APRIL 6, 2011						Subset Sheets: T-38 of 41																			

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KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	-
2C	210	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	ASC/2 AND M1 CABINET
3D	613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	505	-
3D	613	2 INCH ELECTRICAL CONDUIT (TRENCHED)	LF	10	-
3D	613	3 INCH ELECTRICAL CONDUIT (TRENCHED)	LF	40	-
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS)	EACH	1	M1 AND G TYPE
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 12 STRAND)	LF	85	-
3U	614	FIBER OPTIC CABLE (DENVER HYBRID 72 STRAND)	LF	1000	-
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

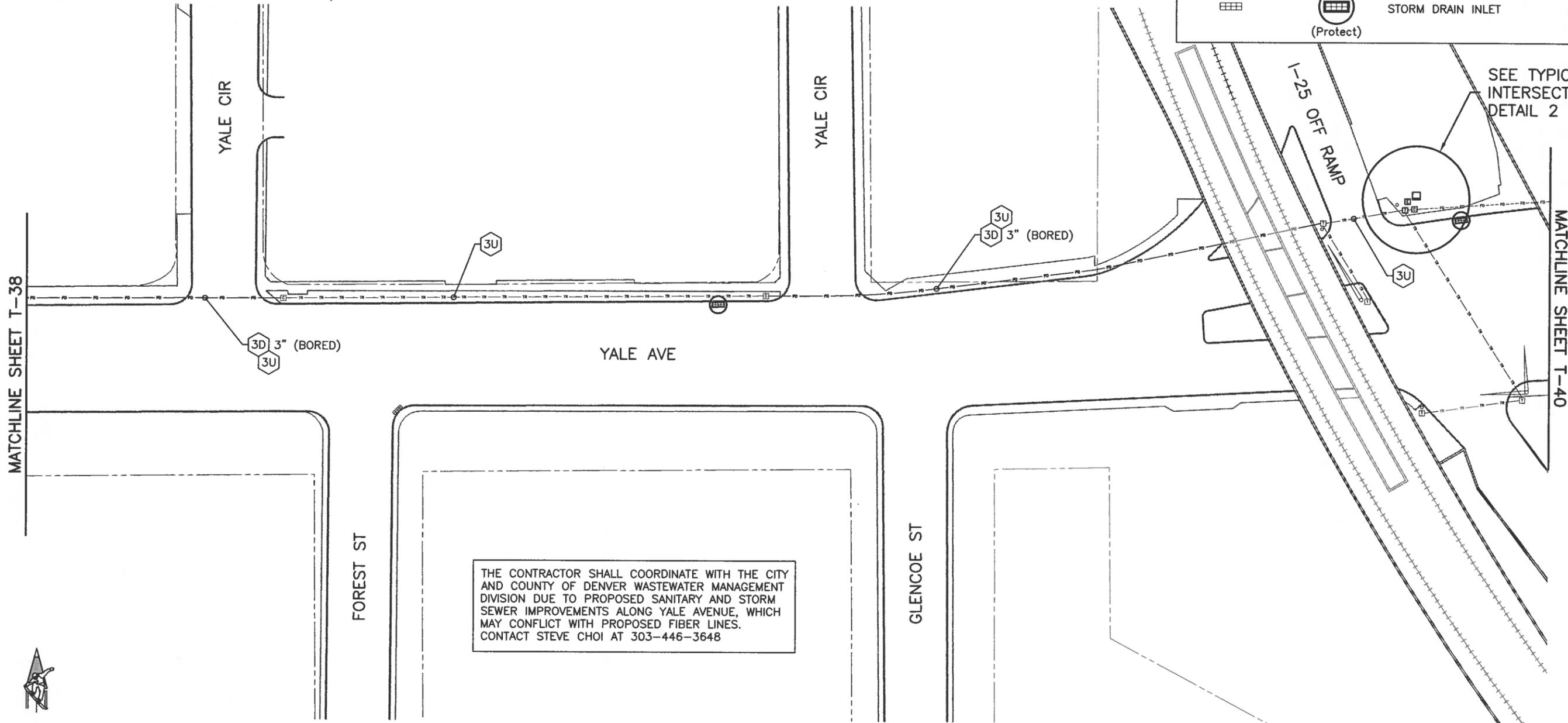
NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.

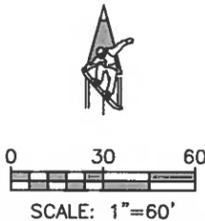


EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
		(Protect)	

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



THE CONTRACTOR SHALL COORDINATE WITH THE CITY AND COUNTY OF DENVER WASTEWATER MANAGEMENT DIVISION DUE TO PROPOSED SANITARY AND STORM SEWER IMPROVEMENTS ALONG YALE AVENUE, WHICH MAY CONFLICT WITH PROPOSED FIBER LINES. CONTACT STEVE CHOI AT 303-446-3648



T-39

Computer File Information		Index of Revisions		As Constructed		DENVER TSSIP-1 YALE AVENUE INTERCONNECT CONDUIT PLAN		Project No./Code			
Creation Date:	1/26/11 Initials: BDW			No Revisions:		Designer:	LCL/CMB	Structure	-	Project No./Code	AQC M320-071
Last Modification Date:	4/14/11 Initials: larry			Revised:		Detailer:	BDW	Numbers	-	SA	18144
Full Path:	J:\10127-02\CADD\Sheets			Void:		Sheet Subset:	Conduit	Subset Sheets:	T-39 of 41	Sheet Number	52
Drawing File Name:	T10127TRAF39.dwg										
Acad Version 2007	Scale: 1:60 Units: English										



KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	-
2C	210	RESET TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	ASC/2 AND M1 CABINET
3D	613	2 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	10	TRENCHED
3D	613	3 INCH ELECTRICAL CONDUIT (PLASTIC)	LF	40	TRENCHED
3H	613	PULL BOX (SPECIAL)	EACH	1	REPLACE COMM BOX
3H	613	PULL BOX (TYPE A)	EACH	1	REPLACE ELECTRICAL BOX
3H	613	PULL BOX (TRAFFIC)	EACH	1	REPLACE TRAFFIC BOX
3B	614	CONCRETE FOOTING (SIGNAL CONTROLLER CABINETS)	EACH	1	-
-	614	SPREAD SPECTRUM RADIO (INSTALL ONLY)	EACH	1	-
-	614	TELEMETRY (FIELD)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

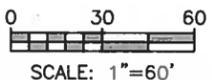
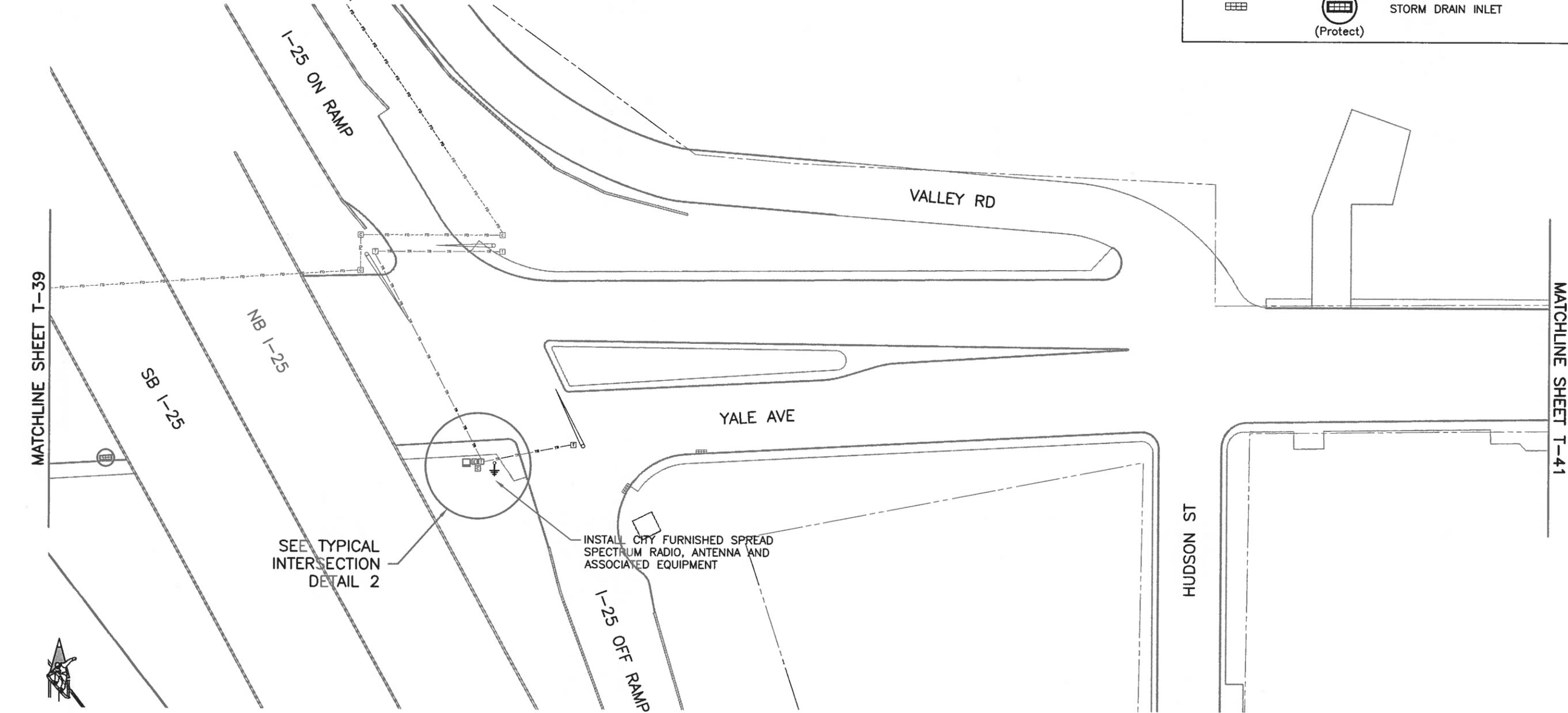
NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
			(Protect)

XX ITEM REFERENCE KEY
(REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)



T-40

Computer File Information Creation Date: 1/26/11 Initials: BDW Last Modification Date: 4/14/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127TRAF40.dwg Acad Version 2007 Scale: 1:60 Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										DENVER THE MILE HIGH CITY Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		FELSBURG HOLT & ULLEVIG 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 YALE AVENUE INTERCONNECT CONDUIT PLAN			Project No./Code AQC M320-071 SA 18144 Sheet Number 53	
Designer: LCL/CMB Detailer: BDW Sheet Subset: Conduit		Structure: - Numbers: -		Subset Sheets: T-40 of 41																		

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ISSUE DATE: APRIL 6, 2011

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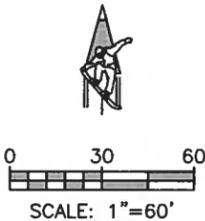
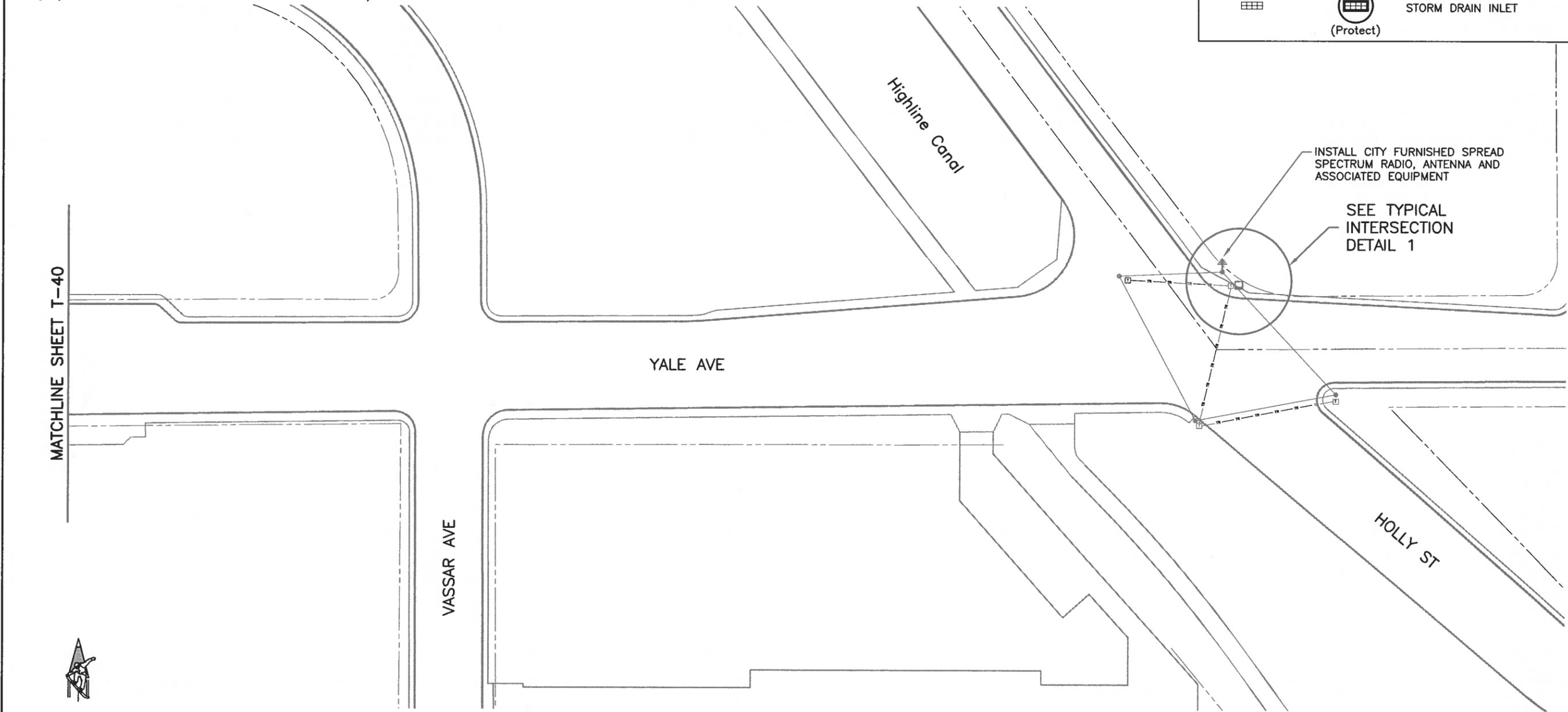
KEY	ITEM	DESCRIPTION	UNIT	QTY	DETAILS
1D	202	REMOVAL OF TRAFFIC SIGNAL CONTROLLER AND CABINET	EACH	1	-
1C	202	REMOVAL OF TRAFFIC SIGNAL BASE	EACH	1	REPLACE W/ QUAZITE BASE
3B	614	TRAFFIC SIGNAL CONTROLLER AND CABINET (INSTALL ONLY)	EACH	1	INCLUDES QUAZITE BASE
-	614	SPREAD SPECTRUM RADIO (INSTALL ONLY)	EACH	1	-
UPS	614	UNINTERRUPTED POWER SUPPLY (INSTALL ONLY)	EACH	1	INCLUDES G-TYPE CABINET

NOTES:
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PRESERVING ALL UTILITIES PRIOR TO CONSTRUCTION.
 2. ACTUAL LOCATIONS OF PROPOSED CABINETS, PULL BOXES AND CONDUITS SHALL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
 3. ALL APPROPRIATE EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION WORK.
 4. THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT OR VEHICLES ARE STAGED OR PARKED NEAR ANY WETLANDS, DRAINAGE AREAS OR WATERWAYS; NOR WITHIN PARK LANDS OR PARKWAYS. THE CONTRACTOR SHALL ALSO NOT ALLOW ANY DEBRIS OR CONSTRUCTION MATERIAL TO FALL WITHIN THESE AREAS.



EXISTING	PROPOSED	LEGEND	ITEM DESCRIPTION
			TRAFFIC SIGNAL CONTROLLER & CABINET
			TRAFFIC OR ELECTRIC (TYPE A) PULL BOX
			COMMUNICATION PULL BOX (SPECIAL)
			CONDUIT (SIGNAL COMMUNICATION)
			CONDUIT (TRAFFIC SIGNAL)
			RIGHT OF WAY (Approximate)
			TRAFFIC SIGNAL POLE WITH MAST ARM
			PEDESTAL POLE / SPAN WIRE POLE
			STORM DRAIN INLET
			(Protect)

XX ITEM REFERENCE KEY
 (REFER TO CITY OF DENVER STANDARD SIGNAL PLANS)

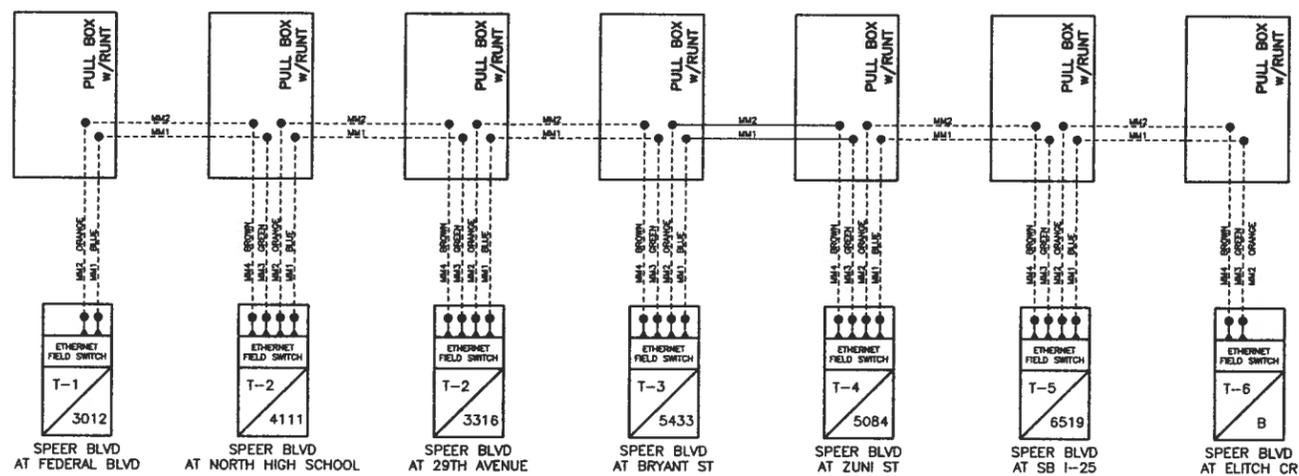


T-41

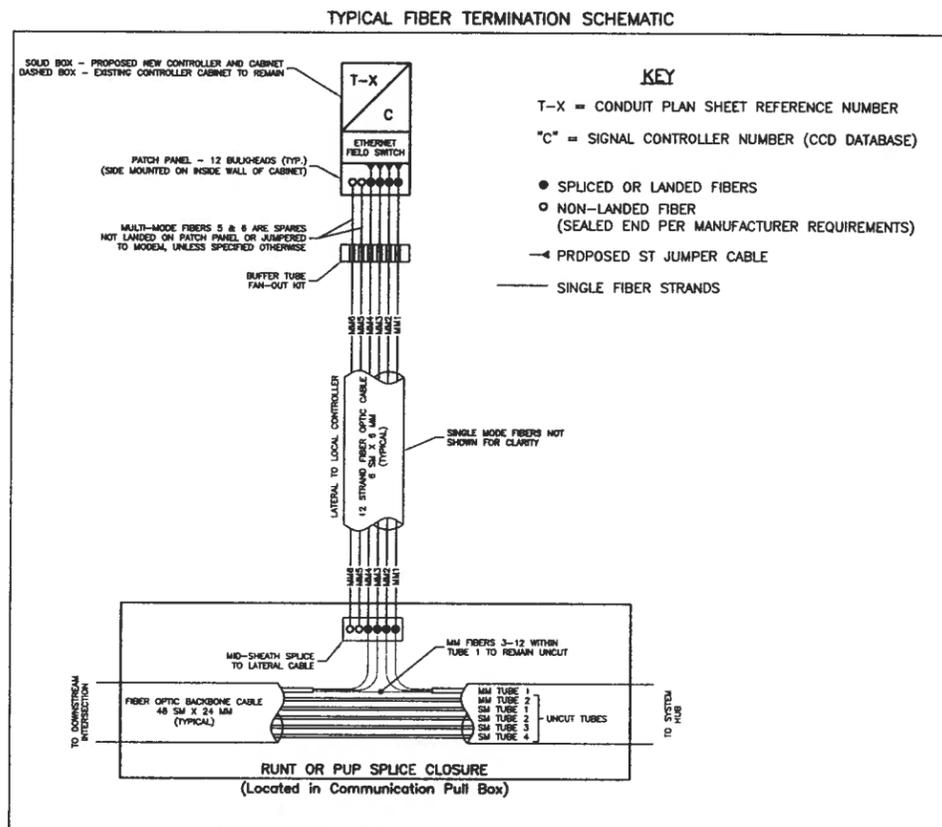
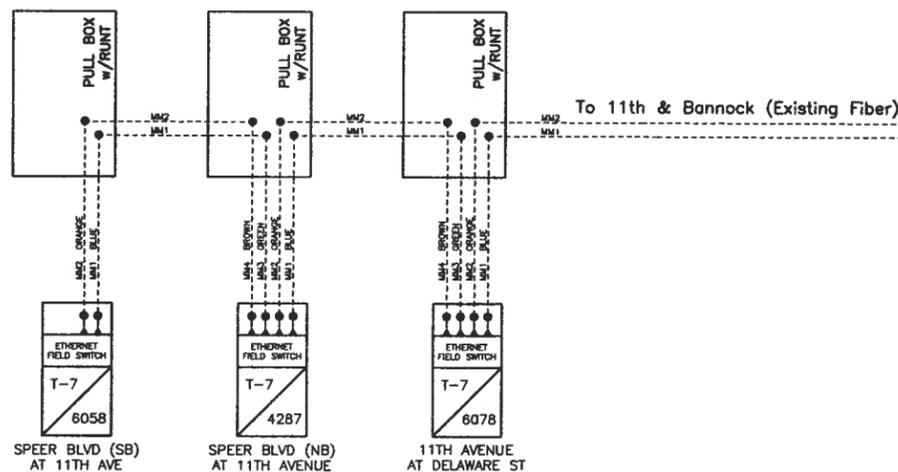
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Creation Date:	1/26/11 Initials: BDW			No Revisions:		Designer:	LCL/CMB	Structure		Project No./Code	AQC M320-071
Last Modification Date:	4/14/11 Initials: larry			Revised:		Detailer:	BDW	Numbers		SA 18144	
Full Path:	J:\10127-02\CADD\Sheets			Void:		Sheet Subset:	Conduit	Subset Sheets:	T-41 of 41	Sheet Number	54
Drawing File Name:	T10127TRAF41.dwg										
Acad Version 2007	Scale: 1:60 Units: English										

ISSUE DATE: APRIL 6, 2011

SPEER BLVD (Federal to Elitch Cr)



SPEER BLVD (at 11th Avenue)



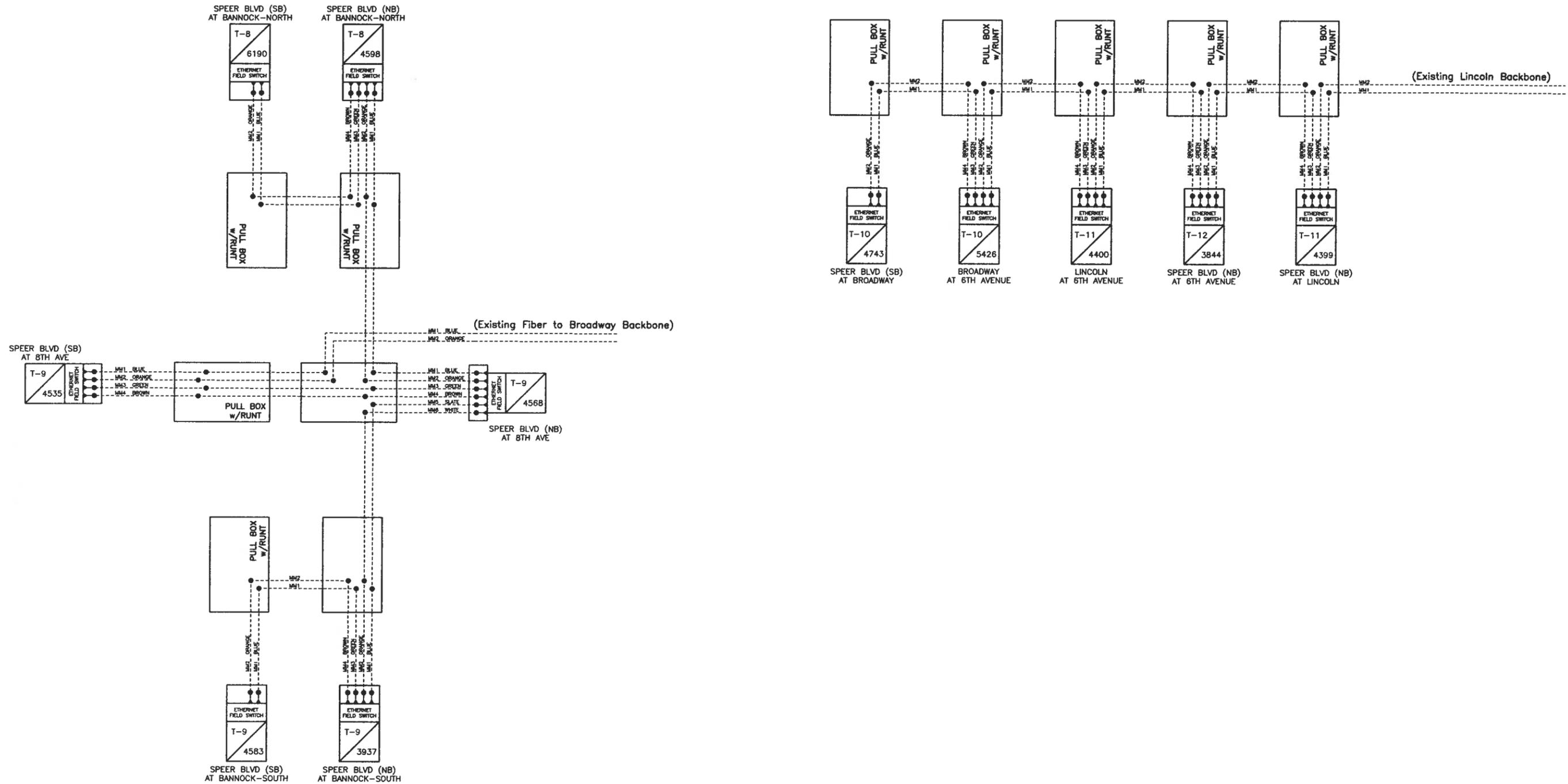
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W-01

Computer File Information Creation Date: 2/17/11 Initials: LCL Last Modification Date: 2/18/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127WIR01.dwg Acad Version 2007 Scale: NA Units: English		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																		 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 FIBER OPTIC WIRING PLAN GENERAL CONNECTION DETAILS Designer: LCL Detailer: LCL Sheet Subset: Wiring		Project No./Code AQC M320-071 SA 18144 Sheet Number 56	
ISSUE DATE: APRIL 6, 2011								Structure Numbers Subset Sheets: W-01 of 4		Sheet Number 56																			

SPEER BLVD (8th Ave/Bannock)

SPEER BLVD (Broadway/6th Ave/Lincoln)

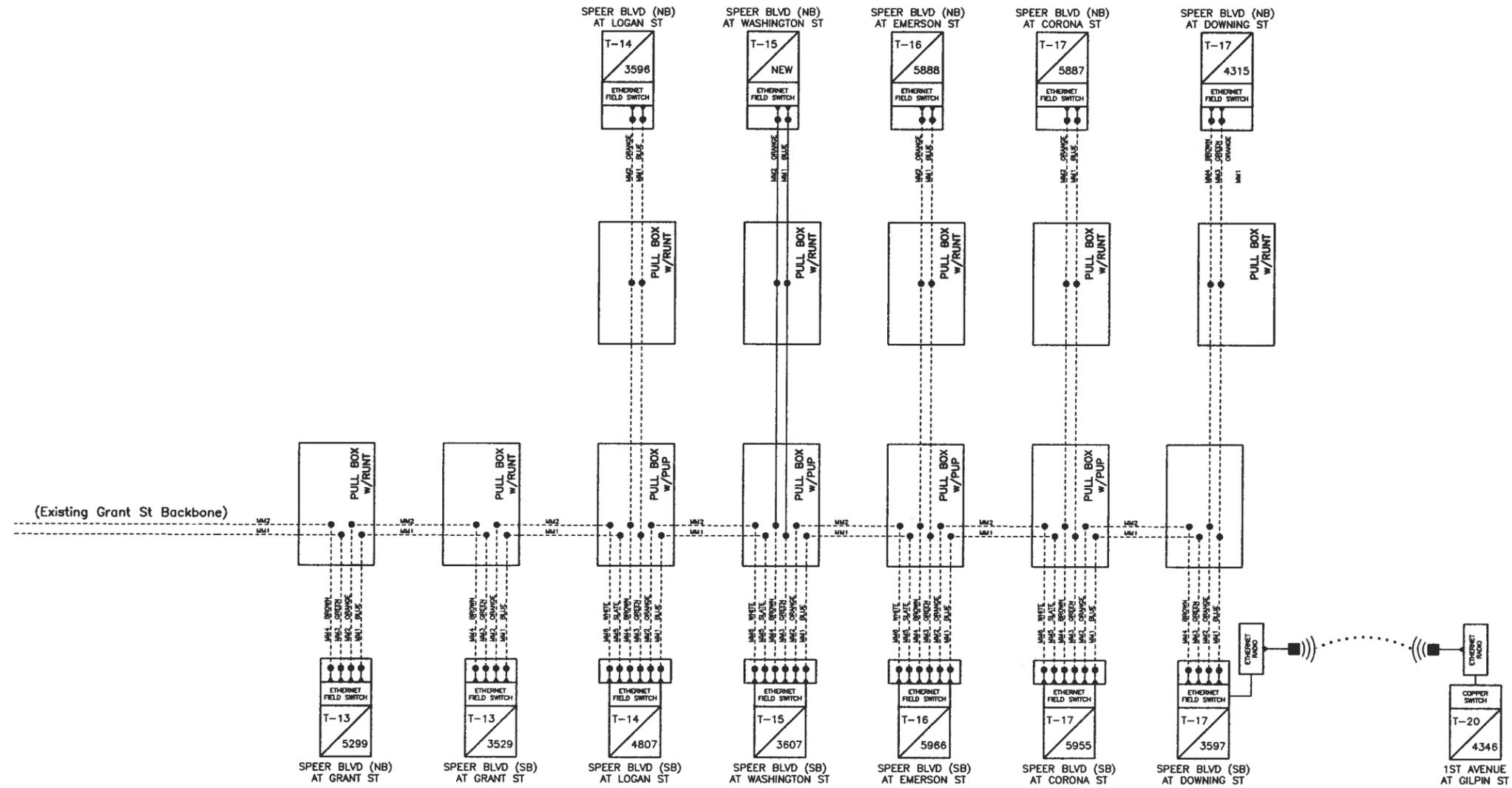


W-02

Computer File Information Creation Date: 2/17/11 Initials: LCL Last Modification Date: 2/18/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127WIR02.dwg Acad Version 2007 Scale: NA Units: English		Index of Revisions <table border="1"> <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> </table>														 Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 FIBER OPTIC WIRING PLAN GENERAL CONNECTION DETAILS Designer: LCL Detailer: LCL Sheet Subset: Wiring		Project No./Code AQC M320-071 SA 18144 Sheet Number 57	

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SPEER BLVD (Grant to Gilpin)



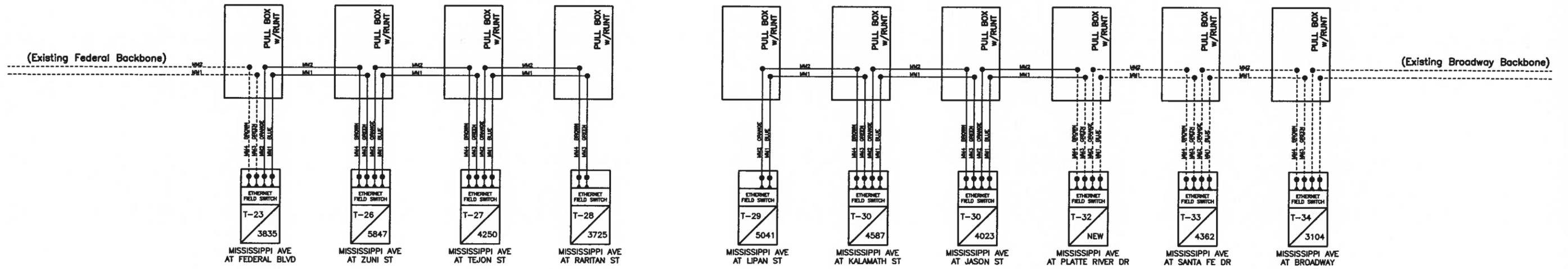
W-03

Computer File Information		Index of Revisions		DENVER <small>THE MILE HIGH CITY</small> Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176	FELSBURG HOLT & ULLEVIG 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832	As Constructed		DENVER TSSIP-1 FIBER OPTIC WIRING PLAN GENERAL CONNECTION DETAILS		Project No./Code	
Creation Date:	2/18/11 Initials: LCL					No Revisions:				AQC M320-071	
Last Modification Date:	2/18/11 Initials: Larry					Revised:				SA 18144	
Full Path:	J:\10127-02\CADD\Sheets					Void:				Sheet Number	
Drawing File Name:	T10127WIR03.dwg									58	
Acad Version 2007	Scale: NA Units: English					Sheet Subset: Wiring		Subset Sheets: W-03 of 4			

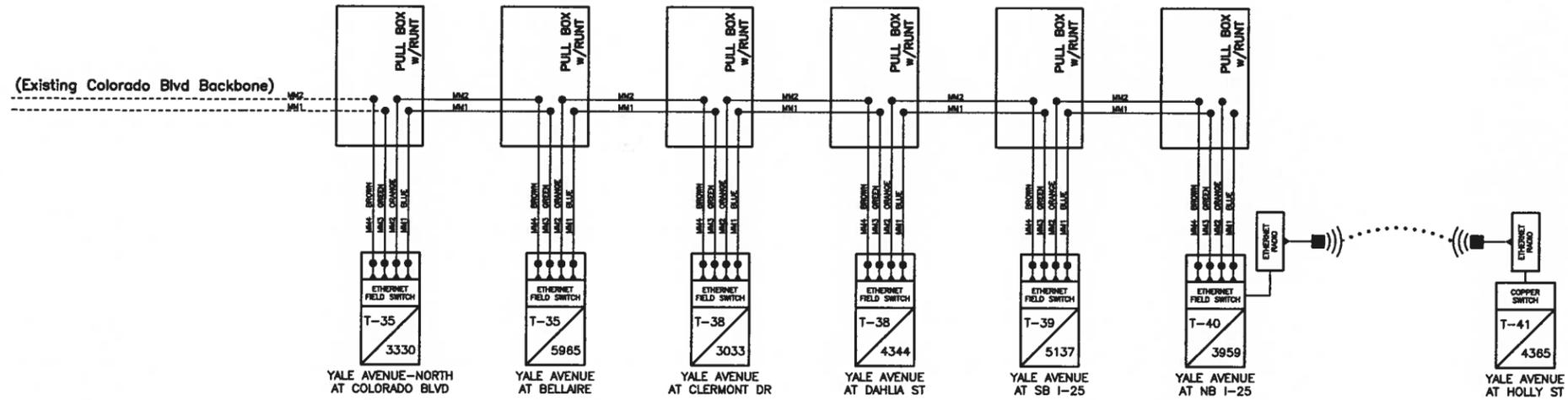
ISSUE DATE: APRIL 6, 2011

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MISSISSIPPI AVENUE



YALE AVENUE



W-04

Computer File Information Creation Date: 2/18/11 Initials: LCL Last Modification Date: 4/14/11 Initials: larry Full Path: J:\10127-02\CADD\Sheets Drawing File Name: T10127WIR04.dwg Acad Version 2007 Scale: NA Units: English		Index of Revisions <table border="1"> <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> </table>														 DENVER THE MILE HIGH CITY Department of Public Works Traffic Engineering Services, Dept. 508 201 West Colfax Avenue Denver, CO 80202 (720) 865-3176		 FELSBURG HOLT & ULLEVIG 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440 Fax (303) 721-0832		As Constructed No Revisions: Revised: Void:		DENVER TSSIP-1 FIBER OPTIC WIRING PLAN GENERAL CONNECTION DETAILS Designer: LCL Structure Detailer: LCL Numbers Sheet Subset: Wiring Subset Sheets: W-04 of 4		Project No./Code AQC M320-071 SA 18144 Sheet Number 59	

ISSUE DATE: APRIL 6, 2011

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GENERAL NOTES

GENERAL

- 1. Item No refers to the appropriate section of the Standard Specifications for Road and Bridge construction - Colorado Department of Transportation 1999.
- 2. Electric Utility to remove all poles with existing street lighting attached. The Contractor shall remove all other signal equipment including Signal Poles, Mast Arms, Span Wire Poles, Pedestal Poles, Signal Heads, Span Wire, Push Buttons, Pull Boxes, Controller Cabinets and all foundations as shown on the plans. Contractor shall repair all sidewalk and other concrete after removal of Controllers and poles, as directed and approved by the Engineer.
- 3. All salvaged signal equipment removed remains the property of City & County of Denver and must be delivered to Traffic Operations at 5440 Roslyn Street. (720-865-4000)

HARDWARE

- 4. All Signal Heads shall be constructed of die cast aluminum and painted dark olive green in conformance with Federal Specification 14056.
- 5. All hardware including spacers, elbows, pole plates and plumbizers shall be painted dark olive green in conformance with Federal Specification 14056.
- 6. Light Emitting Diode* (LED) signal lenses shall be installed in all Red, Yellow, Green, and Don't Walk signal sections.

POLES

- 7. Precise location of the pole or pedestal shall be determined in the field by the engineer.

CONSTRUCTION

- 8. Conduit runs shown as (3D) (3) to be two 3 inch schedule 40 PVC for traffic and one 2 inch schedule 40 PVC for electric utility. Schedule 40 PVC will constitute the minimum required conduit thickness. Two pull boxes to be installed at locations shown as (3H) (2). Designate on lid "TRAFFIC" for signal cables and "ELECTRIC" for electric utility cables by physically embossing, not painting.
- 9. Pull box lids for communication conduits (3H) special shall be designated "TRAFFIC COMM" by physically embossing, not painting.
- 10. Install water valve pull box (3F) and 2 inch conduit for loop intercept where shown. See Std Dwg No T6.6
- 11. All holes in steel poles to be drilled or sawed. Installing holes by burning with a torch is not approved.
- 12. The bottom of all span wire mounted signal heads shall be on the same horizontal plane and have a minimum clearance of 16'-6" and a maximum clearance of 19'-0" above the pavement surface, unless otherwise specified.
- 13. Existing signal faces shall remain visible and illuminated until new signals are turned on. Blocking of existing face by new face will require new face to be temporarily wired for illumination.

WIRING

- 14. All traffic signal wire connectors shall be of the Buchanan Compression type with copper nonferrous connectors and Ideal wrap-caps or approved equal unless terminal strip is placed.
- 15. Three (3) spare conductors shall be provided to each pull box and to the end of each mast arm.
- 16. All solderless connectors shall be used.
- 17. Bare wire in Opticom cable shall be shrink tubed on both ends for total insulation.

SIGNING

- 18. Overhead Street Name Sign to be furnished and installed on each mast arm as noted on Std Dwg No 16.16. Sign to be bolted on 18 inch Telspar extension (painted green to match arm - Federal Specification 14056) which connects to mast arm by use of adaptor screwed into coupling.
- 19. Contractor shall not remove any regulatory traffic signs unless otherwise specified on plans. City & County of Denver, Transportation Division to be notified 48 hours prior to any signing changes at 720-865-3150
- 20. All pertinent Sign and Pavement marking must be in place at the time a Traffic Signal change is made, such as new Signal turn on, and or changes made to existing Signal operation.

Approved 7/19/03

DATE: 4/28/03

CITY & COUNTY OF DENVER

PUBLIC WORKS

STD DWG NO

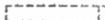
GENERAL NOTES

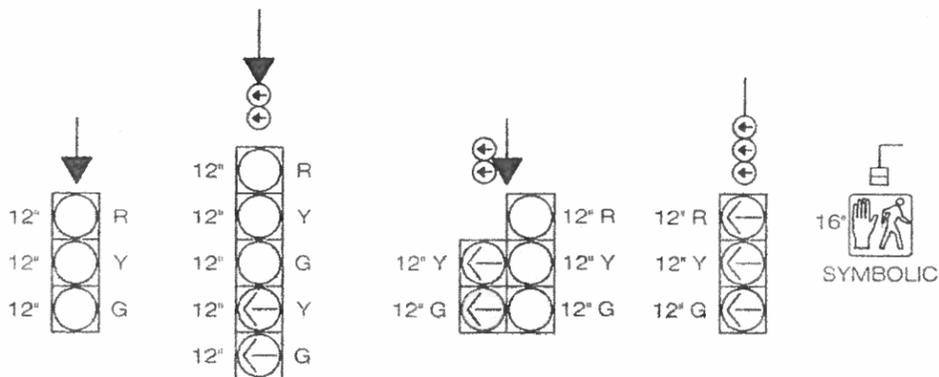


16.1

01/16/03 09:00 AM
DENVER PUBLIC WORKS
DENVER, COLORADO

LEGEND

-  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
-  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)
-  Curb Drain
-  Fire Hydrant
-  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



KEY NOTES

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

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
-  3U Install Interconnect (Size & Type as Shown)

Approved 7/19/03

DATE: 04/28/03

CITY & COUNTY OF DENVER

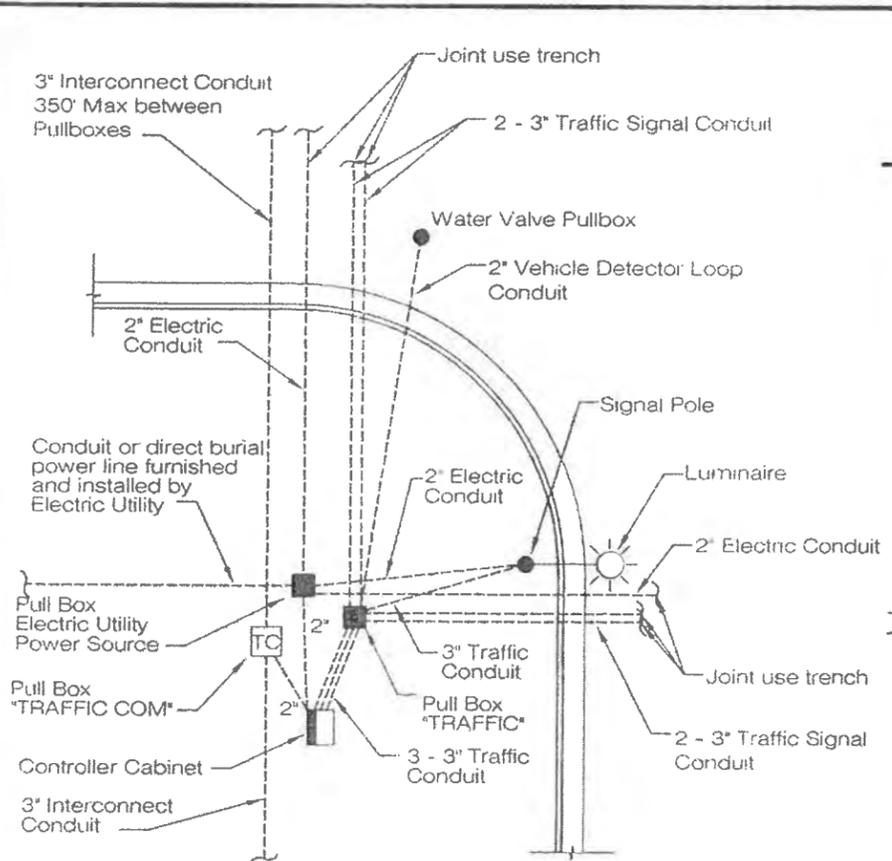
PUBLIC WORKS

STD DWG NO

LEGEND/KEY NOTES



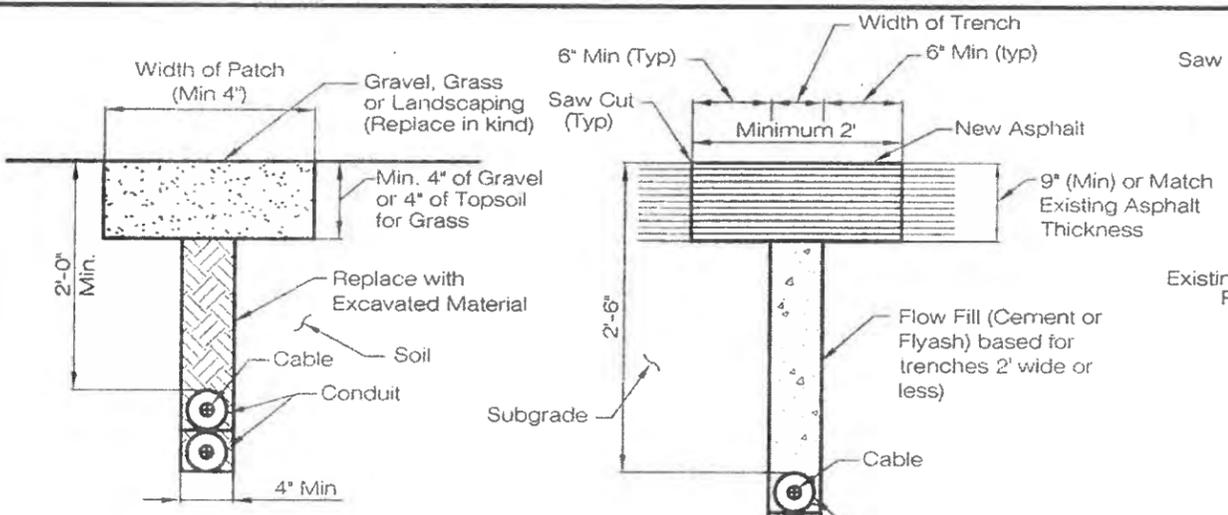
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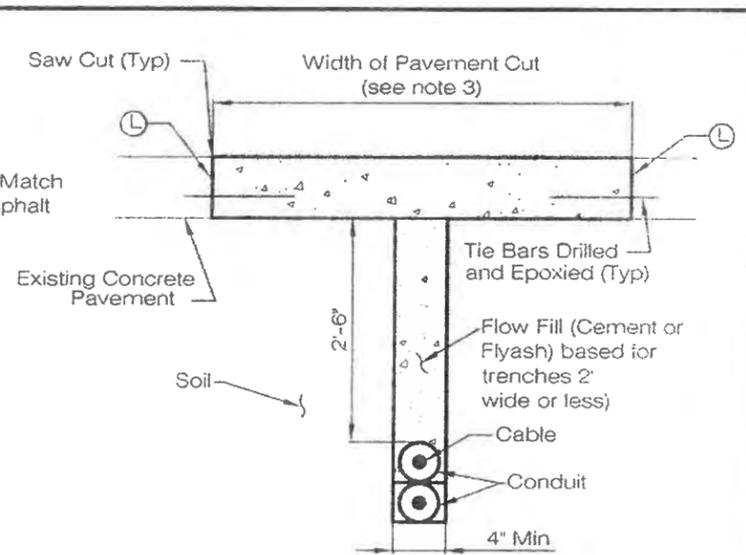
POWER SOURCE DETAILS

NOTES:

1. See CDOT Standards M-613-1 and S-614-10(c).
2. For street light luminaires on span wire installations - Two (2) Number 12 AGW copper TW insulated building wires shall be installed by the contractor from the end of the luminaire arm, through the pole, along the span wire cable to the signal pole nearest the controller cabinet, thru the pole with approximately 5 feet of extra wiring coiled in the pull box at the base of the pole.
3. For street light luminaires on mast arm installation - Two (2) Number 12 AGW copper TW insulated building wires shall be installed by the contractor from the end of the luminaire arm, through the pole with approximately 5 feet of extra wiring coiled in the pull box at the base of pole. The contractor shall also install #4 Aluminum Triplex from the pull box at the base of the signal pole nearest the controller cabinet through conduit network to the pull boxes at other signal poles with luminaires.
4. All wiring for luminaires shall be included in work and not paid for separately.
5. Splices of luminaire wiring shall be done by electric utility at the power source.
6. Wiring for street light luminaires shall be tagged per standard specifications.
7. All poles shall be grounded in accordance with National Electrical Code (NEC).
8. All HDPE conduits shall be joined with the appropriate HDPE couplings.
9. All Electrical Systems shall be properly grounded in accordance with the Specifications. A 5/8" x 8" Copper ground rod shall be installed in all pull boxes. Controller Cabinets shall be grounded to nearest Traffic Signal pull box.
10. All Conduits and Poles shall be bonded with #10 Copper wire and contain a pull string locate wire. Interconnect conduits shall have installed a single #14 insulated conductor and mule tape.



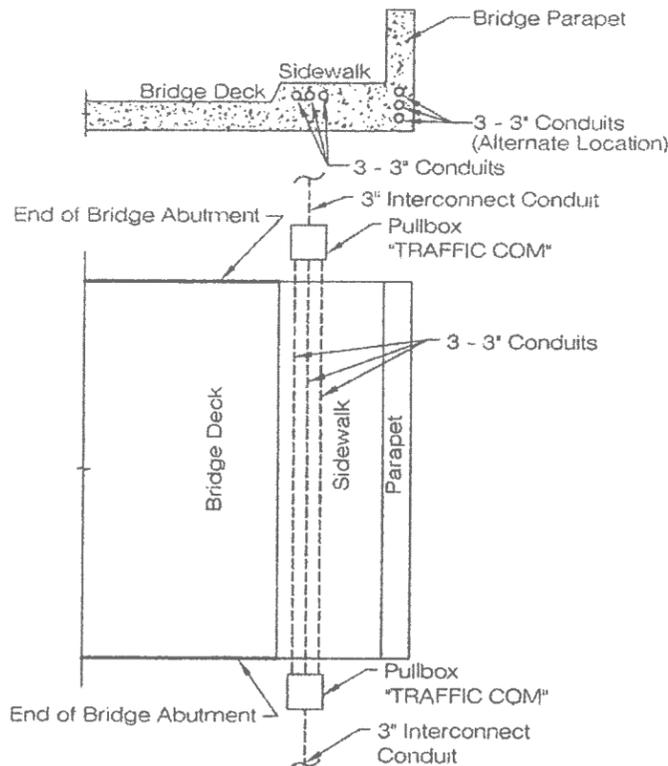
TRENCH PATCH (GRAVEL OR LANDSCAPED)
TRENCH PATCH (ASPHALT)
TRENCH PATCH (ASPHALT/MISC MATERIALS)



TRENCH PATCH (CONCRETE)

NOTES:

1. Wherever possible conduit or cable shall be installed by boring, driving or any other acceptable means under concrete units and open cutting shall be used only under special circumstances and only after approval by the city.
2. This detail applies to all concrete streets, alleys, sidewalks, curbs, gutters and driveways.
3. Limits of concrete pavement removal:
 - a. For concrete pavement less than 3 years old, entire panel shall be removed.
 - b. For pavement older than 3 years, the following applies:
 - one removal limit shall follow an existing joint, when possible.
 - if neither limit of removal follows an existing line, the limits of removal shall be 4' from an existing joint, or the removal shall be extended to the existing joint.
 - the minimum width of pavement removal shall be 4'.
4. A construction joint shall be used to tie the concrete patch to existing concrete on all sides except where limits match an existing transverse construction joint. Tie bars shall be eliminated at transverse contraction joints.
5. The limits of concrete patching shall be perpendicular or parallel to the centerline of the street. Skewed trenches are not permitted.
6. (L) Refer to CCD Std Dwg No 11.2 for details.



INTERCONNECT CONDUIT PLACEMENT ON BRIDGE

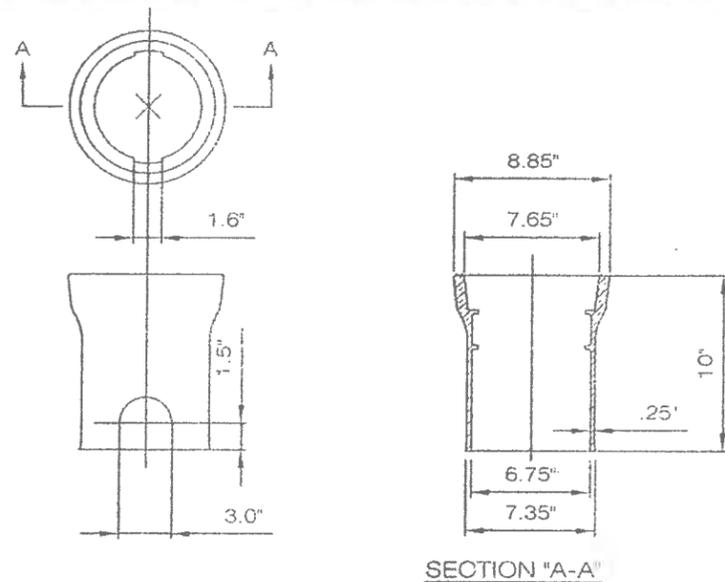
NOTE:

Pullboxes shall be placed as close as practical to the ends of the bridge and be flush with sidewalk or finished grade surface.

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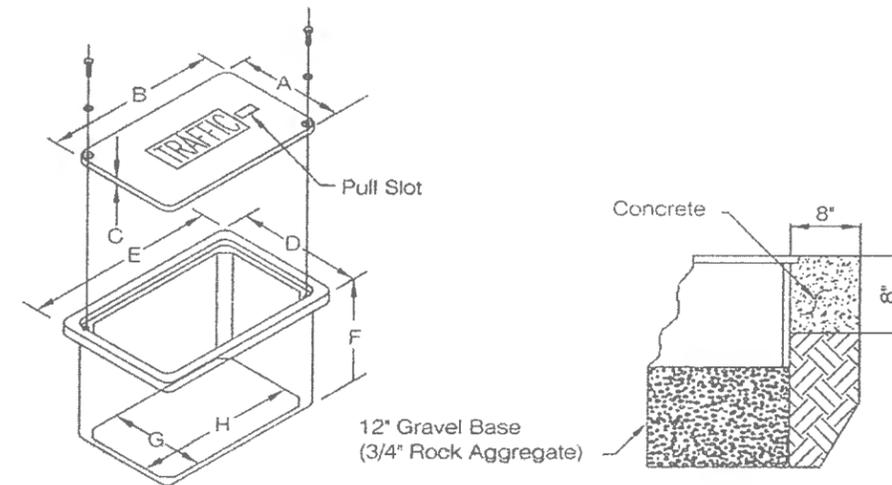
CITY & COUNTY OF DENVER	PUBLIC WORKS	STD DWG NO
CONDUIT DETAILS	DENVER	16.7



WATER VALVE PULL BOX



WATER VALVE PULL BOX LID

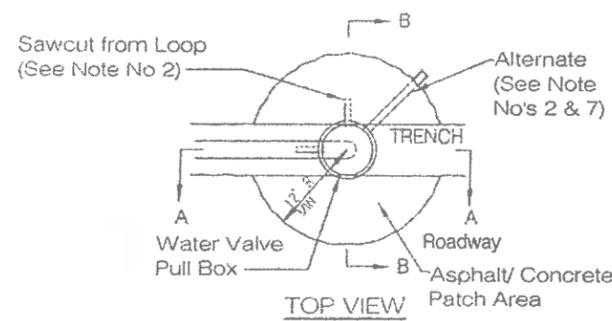


Fiberglass reinforced polymer concrete designed for incidental vehicular traffic (15,000 lbs on a 10' x 10' area)

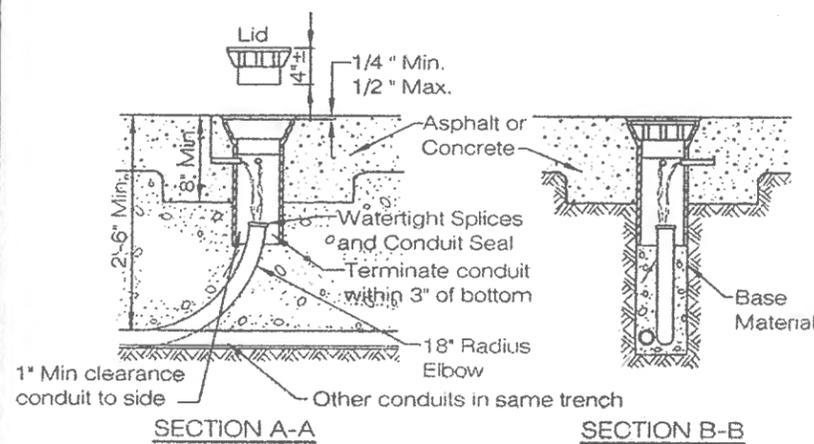
PRECAST PULL BOX

WATER VALVE PULL BOX NOTES:

- Water Valve Pull box shall be a water valve stem type pull box made of Aluminum. The pull box itself shall have capability of accepting riser rings for future overlays. The lid shall be cast iron or steel and have the word "TRAFFIC" printed on it.
- Pull boxes shall have 3/4" to 1" diameter holes drilled or torched 3", from top to accept a loop detector wire flexible vinyl or polyethylene tubing. The number of holes shall be as per plans or as directed by the Engineer.
- Care shall be taken during back fill compaction to prevent collapse of the tubes.
- A minimum 2 feet of slack is to be provided on both feed and loop wires so that all testing and splicing can be done outside the pull box.
- Pull box is to be located in an area of the street not heavily traveled, if possible, and a minimum of 12" from the concrete gutter pan.
- If hot asphalt is not available, a concrete ring (12" minimum radius and 8" minimum depth) may be used at the direction of the Engineer.



TOP VIEW



WATER VALVE PULL BOX FOR LOOP DETECTOR WIRE

DESCRIPTION	DIMENSIONS (IN.)								COMMENTS
	A	B	C	D	E	F	G	H	
TYPE A	13-3/4"	23-1/4"	2"	15-1/2"	25"	12"	10-1/4"	19-1/4"	
TYPE B	13-3/4"	23-1/4"	2"	15-1/2"	25"	21-13/16"	10-1/4"	19-1/4"	2-TYPE A STACKED
TYPE C	17-1/2"	30-1/2"	2"	19-1/4"	32-1/4"	12"	13-1/2"	26-1/2"	
TYPE D	17-1/2"	30-1/2"	2"	19-1/4"	32-1/4"	24"	13-1/2"	26-1/2"	
TYPE E	13-3/4"	23-1/4"	2"	15-1/2"	25"	18"	10-1/4"	19-1/4"	

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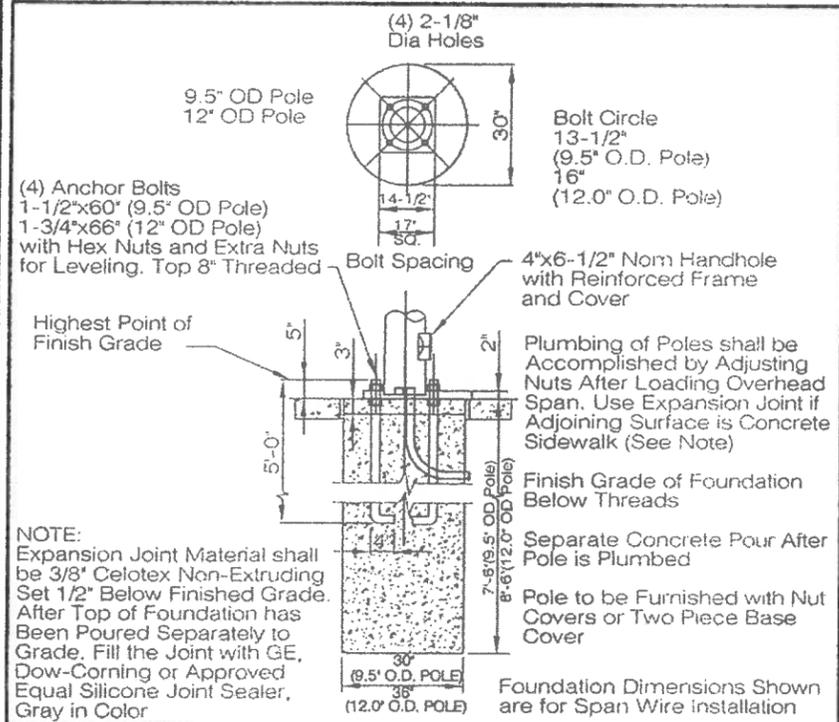
PUBLIC WORKS

STD DWG NO

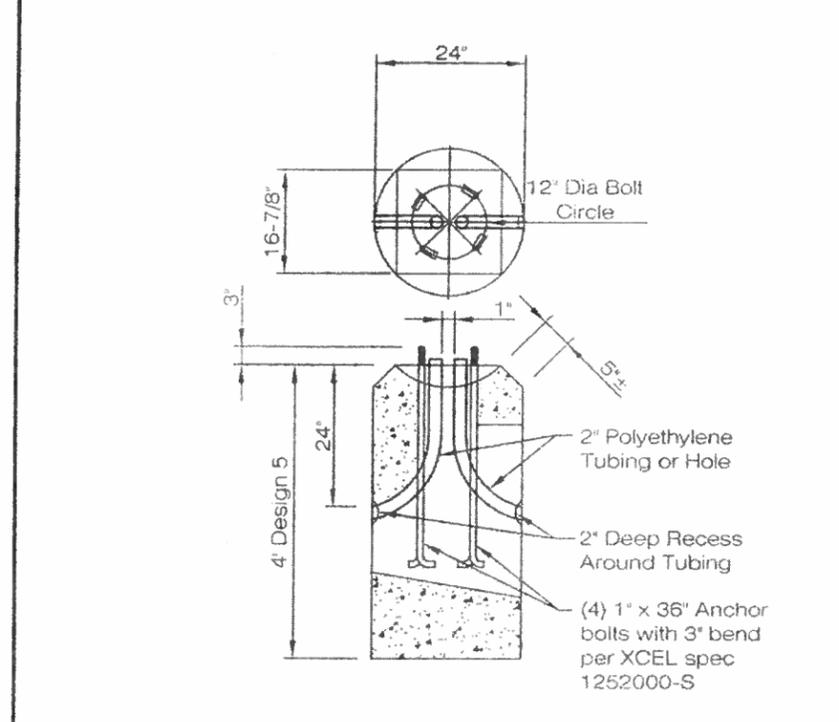
PULL BOXES



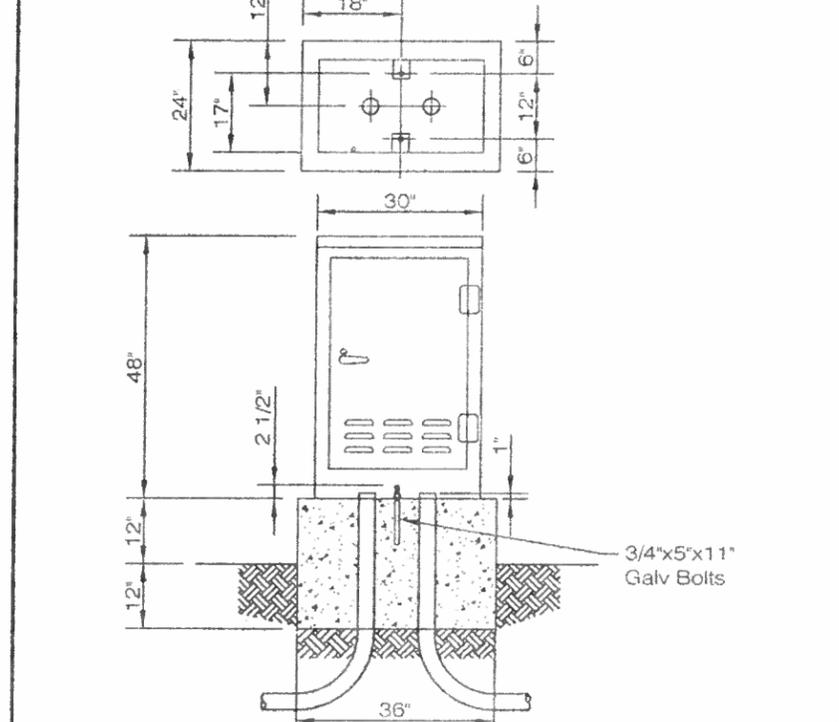
16.8



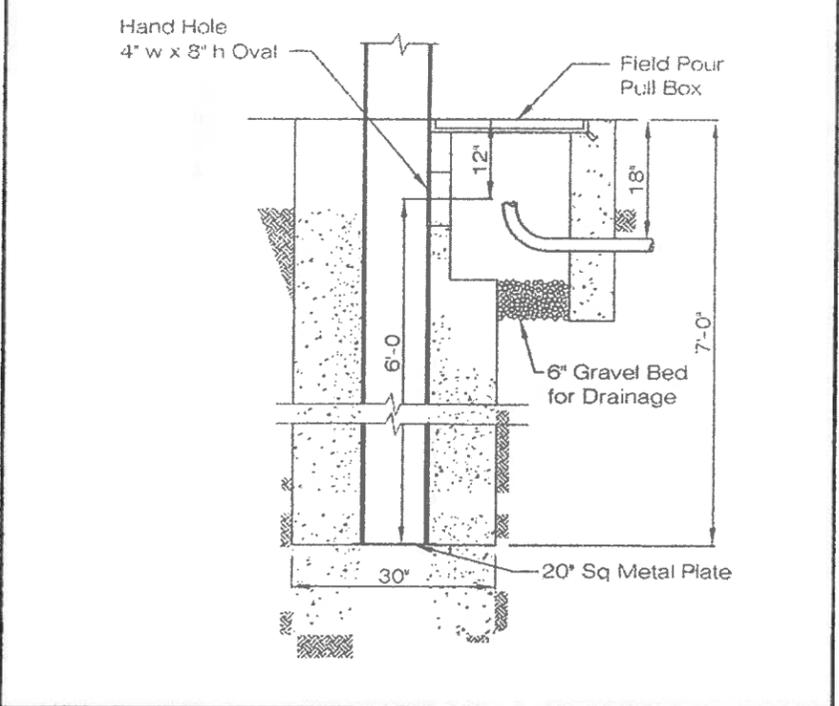
DETAIL 12 CONCRETE FOUNDATION FOR ANCHOR BASE STEEL POLE



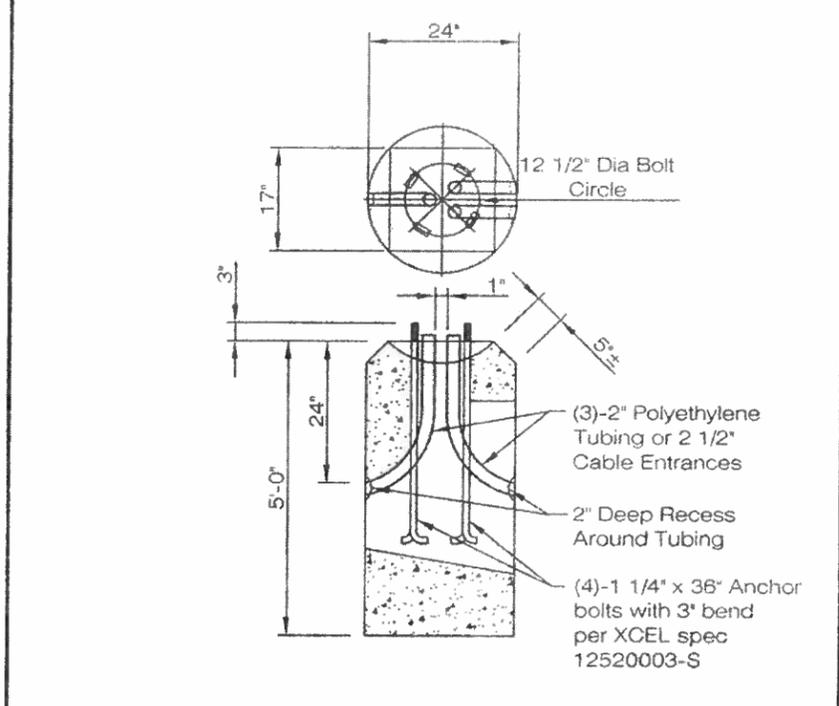
DETAIL 14 STREET LIGHT FOUNDATION - PRECAST CONCRETE DESIGN 5



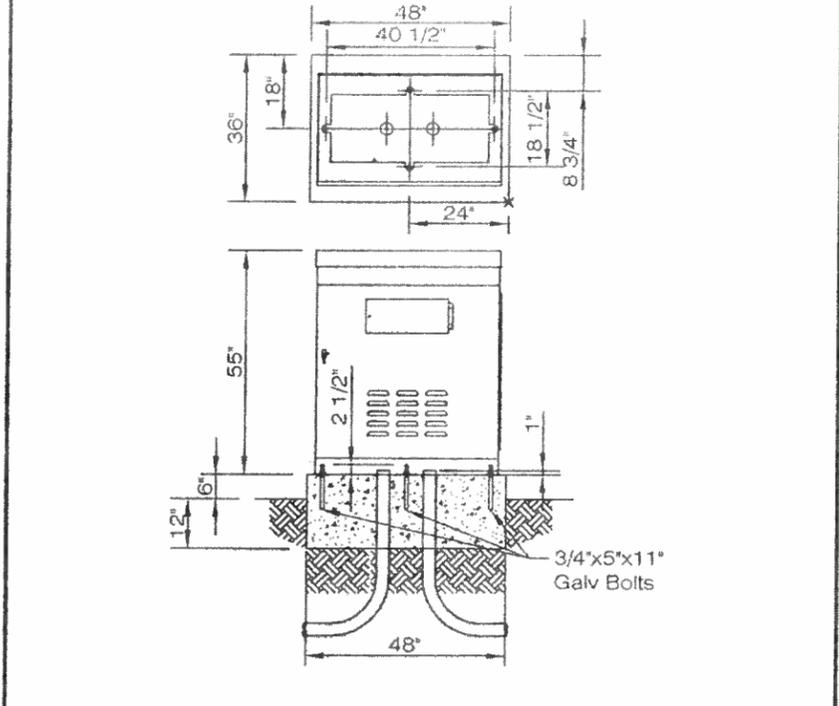
DETAIL 16 FOUNDATION - BASE MOUNT MI CABINET



DETAIL 13 CONCRETE FOUNDATION FOR IMBEDDED STEEL POLE



DETAIL 15 PRECAST STREET LIGHT FOUNDATION WITH POLE MOUNTED TRAFFIC SIGNAL HEADS (NO MAST ARM)



DETAIL 17 FOUNDATION - BASE MOUNT P CABINET

Approved
7/19/03
DATE: 4/28/03

DENVER, COLORADO
PARSONS BRINCKERHOFF
GLADE & DOUGLASS, INC.