

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER

**TRANSPORTATION &
INFRASTRUCTURE**

**DEPARTMENT OF TRANSPORTATION &
INFRASTRUCTURE**

Contract Documents

Contract Number: 202053748



Highline Canal Crossing at Holly St. and Iliff Ave.

March 3, 2020



NOTICE TO APPARENT LOW BIDDER

**TECHNOLOGY CONSTRUCTORS, INC.
5636 KENDALL CT., UNIT A
ARVADA CO 80002**

The EXECUTIVE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE has considered the Bids submitted on **April 30, 2020**, for work to be done and materials to be furnished in and for:

CONTRACT – 202053748 / Highline Canal Crossing at Holly St. and Iliff Ave.

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: **Schedule A (bid item numbers 201 through 630 (42 bid items)) plus Schedule B (bid items 109 through 630 (31 bid items)) for a total of (73 bid items)** the total estimated cost thereof being: **Six Hundred Fifty-Eight Thousand Three Hundred Forty-Five Dollars and No Cents (\$658,345.00)**.

It will be necessary for you to appear forthwith at the office of the Department of Transportation and Infrastructure, 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 Transportation and Infrastructure, Contract Administration within the time limit set forth in the Bid Package Documents.

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

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

All construction Contracts made and entered into by the City and County of Denver are subject to Affirmative Action and Equal Opportunity Rules and Regulations, as adopted by the Manager of the Department of Transportation and Infrastructure, 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).

City and County of Denver Department of Transportation & Infrastructure
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/doti
p. 720.865.8630 | f. 720.865.8795



NOTICE TO APPARENT LOW BIDDER

CONTRACT NO. **202053748**

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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 4th day of June 2020.

CITY AND COUNTY OF DENVER

By: 
for Eulois Cleckley
Executive Director of the
Department of Transportation and Infrastructure

cc: (CAO), Treasury (taxaudadmin@denvergov.org), (PM), Prevailing Wage (prevailingwage@denvergov.org), File

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER

**TRANSPORTATION &
INFRASTRUCTURE**

**DEPARTMENT OF TRANSPORTATION &
INFRASTRUCTURE**

Bid Form Package

Contract Number: 202053748



Highline Canal Crossing at Holly St. and Iliff Ave.

March 3, 2020

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

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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.) Legal name, address, Acknowledgment signature and attestation (if required.)	<input type="checkbox"/>
BF-6+	a.) Fill in individual bid item dollars and totals in Numerical figures only	<input type="checkbox"/>
	b.) Complete all blanks	<input type="checkbox"/>
	c.) Legal name required	<input type="checkbox"/>
BF-7	a.) Write out bid total or bid totals in words and figures in the blank form space(s) provided	<input type="checkbox"/>
	b.) Calculate Textura® Construction Payment Management System Fee from chart on pg. BF-3 and write fee in the space provided	<input type="checkbox"/>
BF-8	a.) List all subcontractors who are performing work on this project	<input type="checkbox"/>
BF-9 – BF-10	a.) Fully complete List of Proposed Minority/Women Business Enterprise Bidders, Subcontractors, Suppliers, Manufacturers, or Brokers – check appropriate boxes.	<input type="checkbox"/>
BF-11	a.) Complete all blanks	<input type="checkbox"/>
	b.) If Addenda have been issued, complete bottom section.	<input type="checkbox"/>
BF-12	a.) Complete appropriate sections - signature(s) required.	<input type="checkbox"/>
	b.) If corporation, then corporate seal required.	<input type="checkbox"/>
BF-13	a.) Fully complete Commitment to Participation	<input type="checkbox"/>
BF-16	a.) If applicable, fully complete Joint Venture Affidavit (Submit 10 days prior to Bid Opening date)	<input type="checkbox"/>
BF-17 – BF-19	a.) If applicable, fully complete Joint Venture Eligibility Form (Submit 10 days prior to Bid Opening date)	<input type="checkbox"/>
BF-20	a.) Fill in all Bid Bond blanks and <u>mail original to 201 W. Colfax Ave. Ste. 614, Denver CO 80202 Attn: Contract Administration to be considered responsive.</u>	<input type="checkbox"/>
	b.) Signatures required	<input type="checkbox"/>
	c.) Corporate Seal if required	<input type="checkbox"/>
	d.) Dated	<input type="checkbox"/>
	e.) Attach Surety Agents Power of Attorney	<input type="checkbox"/>
	or Certified or cashier's check made out to the Manager of Revenue referencing Bidder's Company and Contract Number.	<input type="checkbox"/>
BF-21- BF-24	a.) Each bidder, as a condition of responsiveness to this solicitation, shall <u>complete and return</u> the "Diversity and Inclusiveness in City Solicitations Information Request Form" with their Bid.	<input type="checkbox"/>

Textura® Construction Payment Management System (“Textura”)

Bidder recognizes and agrees that it shall be required to use the Textura® Construction Payment Management System (“Textura”) for this Project to request payment from the City and to pay subcontractors. All certified subcontractors or suppliers who are listed for participation towards any assigned program goal must be paid via Textura. All fees associated with Textura are to be paid by the bidder for billings for work performed. Bidders are required, when preparing a bid, to enter the price of Textura on the line provided for the service. The fee is all inclusive of all subcontractor, project and subscription fees associated with Textura. The bidder will calculate the fee based on their total bid (not including any alternates, if applicable) and the table below, and then include it on the line item provided in the bid form labeled **“Textura® Construction Payment Management System Fee”**. This expense becomes part of the contract and billable to the City. All costs including, but not limited to, costs associated with training, entering data, and/or utilizing Textura other than the Textura Construction Payment Management System Fee are overhead and shall not be reimbursed by the City. Bidder will be responsible for any tax on the Textura fee. As with other taxes, the City will not reimburse bidder for this cost and therefore this cost should be included in bidder’s bid. Textura will invoice the awarded bidder directly.

Project Value	Project Fee (GC + Sub Usage)
\$100,000 – 249,999.99	\$780
\$250,000 - \$499,999.99	\$1,625
\$500,000 - \$999,999.99	\$3,250
\$1,000,000 - \$2,999,999.99	\$5,850
\$3,000,000 - \$4,999,999.99	\$9,100
\$5,000,000 - \$9,999,999.99	\$12,220
\$10,000,000 - \$19,999,999.99	\$20,345
\$20,000,000 - \$49,999,999.99	\$32,500
\$50,000,000 - \$99,999,999.99	\$48,750
\$100,000,000 - \$199,999,999.99	\$69,095
\$200,000,000 - \$299,999,999.99	\$85,345
\$300,000,000 - \$399,999,999.99	\$109,720
\$400,000,000 - \$499,999,999.99	\$142,220
\$500,000,000 - \$999,999,999.99	\$162,500
\$1,000,000,000 - \$1,999,999,999.99	\$345,345
\$2,000,000,000 - \$4,999,999,999.99	\$650,000
\$5,000,000,000 - \$9,999,999,999.99	\$1,015,625
\$10,000,000,000 or greater	\$1,503,125

For more information:

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

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**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE
BID FORM AND SUBMITTAL PACKAGE ACKNOWLEDGMENT**

CONTRACT NO. 202053748

HIGHLINE CANAL CROSSING AT HOLLY ST. AND ILIFF AVE.

BIDDER: TECHNOLOGY CONSTRUCTORS, INC.
(Legal Name per Colorado Secretary of State)

ADDRESS: 5636 KENFALL CT., UNIT A
ARVADA, CO 80002

CONTACT PERSON FOR ALL MATTERS RELATING TO THIS DOCUMENT

NAME: ED CALLEJO **TITLE:** PROJECT MANAGER
EMAIL: ED.TC@COMCAST.NET **PHONE NUMBER:** (303) 431-2961

AUTHORIZED ELECTRONIC SIGNATORY

NAME: ED CALLEJO
EMAIL: ED.TC@COMCAST.NET

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. 202053748 - Highline Canal Crossing at Holly St. and Iliff Ave.**, made available to the undersigned bidder pursuant to Notice of Invitation for Bids dated March 3, 2020.

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 Transportation and Infrastructure and that this Record Set is available for examination by the undersigned bidder.

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

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

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

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

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

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

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

BIDDER: TECHNOLOGY
CONSTRUCTORS, INC.

ATTEST:

Name: RICHARD LEE

By: ED CALLEJO

By: [Signature]

Title: PRESIDENT

[SEAL]

CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE

BID FORM

CONTRACT NO. 202053748

HIGHLINE CANAL CROSSING AT HOLLY ST. AND ILIFF AVE.

BIDDER: TECHNOLOGY CONSTRUCTORS, INC.
(Legal Name per Colorado Secretary of State)

TO: The Manager of the Department of Transportation and Infrastructure
City and County of Denver
c/o Contract Administration
201 West Colfax, Dept. 614
Denver, Colorado 80202

The Undersigned Bidder, having examined the plans, technical specifications, and remainder of the proposed Contract Documents as designated and enumerated in the General and Special Contract Conditions and any and all addenda thereto; having investigated the location of and conditions affecting the proposed Work; and being acquainted with and fully understanding the extent and character of the Work covered by this bid, and all factors and conditions affecting or which may be affected by Work, HEREBY SUBMITS THIS BID, pursuant to an advertisement of a Notice of Invitation for Bids as published on **March 3, 2020**, to furnish all required materials, tools, appliances, equipment and plant; to perform all necessary labor and to undertake and complete: **Contract No. 202053748 - Highline Canal Crossing at Holly St. and Iliff Ave.**, in Denver, Colorado, in full accordance with and conformity to the Plans, Technical Specifications, and Contract Documents hereto attached or by reference made a part hereof, at and for the following price(s) set forth on this Bid Form.

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

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

Schedule A

Item No.	Description and Price	Estimated Quantity	Estimated Cost
201	Clearing and Grubbing At the unit price of \$ <u>2,020.00</u> per lump sum	1 LS	\$ <u>2,020.00</u>
202	Removal of Structures and Obstructions At the unit price of \$ <u>1,600.00</u> per lump sum	1 LS	\$ <u>1,600.00</u>
202	Removal of Sidewalk At the unit price of \$ <u>13.00</u> per square foot	26 SF	\$ <u>338.00</u>
202	Removal of Curb and Gutter At the unit price of \$ <u>12.00</u> per linear foot	119 LF	\$ <u>1,428.00</u>
202	Removal of Concrete Curb Ramp At the unit price of \$ <u>4.00</u> per square foot	45 SF	\$ <u>180.00</u>
202	Removal of Concrete Pavement At the unit price of \$ <u>49.00</u> per square yard	22 SY	\$ <u>1,078.00</u>
202	Removal of Asphalt Mat At the unit price of \$ <u>30.00</u> per square yard	470 SY	\$ <u>14,100.00</u>
202	Removal of Asphalt Mat (planing) At the unit price of \$ <u>24.00</u> per square yard	43 SY	\$ <u>1,032.00</u>
203	Unclassified Excavation (complete in place) At the unit price of \$ <u>104.00</u> per cubic yard	165 CY	\$ <u>17,160.00</u>
203	Blading At the unit price of \$ <u>112.00</u> per hour	4 HOUR	\$ <u>448.00</u>
203	Dozing At the unit price of \$ <u>112.00</u> per hour	4 HOUR	\$ <u>448.00</u>

Schedule A

Item No.	Description and Price	Estimated Quantity	Estimated Cost
203	Combination Loader At the unit price of \$ <u>94.00</u> per hour	4 HOUR	\$ <u>376.00</u>
203	Potholing At the unit price of \$ <u>300.00</u> per each	6 EA	\$ <u>1,800.00</u>
208	Rock Sock At the unit price of \$ <u>11.00</u> per linear foot	60 lf	\$ <u>660.00</u>
208	Pre-Fabricated Concrete Washout Structure At the unit price of \$ <u>845.00</u> per each	1 EA	\$ <u>845.00</u>
208	Pre-Fabricated Vehicle Tracking Pad At the unit price of \$ <u>2,040.00</u> per each	2 EA	\$ <u>4,080.00</u>
208	Sweeping (sediment removal) At the unit price of \$ <u>56.00</u> per hour	16 HOUR	\$ <u>896.00</u>
208	Removal of Trash At the unit price of \$ <u>34.00</u> per hour	8 HOUR	\$ <u>272.00</u>
210	Reset Ground Sign At the unit price of \$ <u>360.00</u> per each	4 EA	\$ <u>1,440.00</u>
212	Seeding (native) At the unit price of \$ <u>2,640.00</u> per acre	0.2 ACRE	\$ <u>528.00</u>
213	Mulching (weed free) At the unit price of \$ <u>5,880.00</u> per acre	0.2 ACRE	\$ <u>1,176.00</u>
213	Mulch Tackifier At the unit price of \$ <u>29.00</u> per pound	40 LB	\$ <u>1,160.00</u>

Schedule A

Item No.	Description and Price	Estimated Quantity	Estimated Cost
403	Hot Mix Asphalt (patching) At the unit price of \$ <u>227.00</u> per ton	49 TON	\$ <u>11,123.00</u>
403	Hot Mnix Asphalt (grading s) (75) (pg 64-22) At the unit price of \$ <u>223.00</u> per ton	10 TON	\$ <u>2,230.00</u>
403	Hot Mnix Asphalt (grading sx) (75) (pg 64-22) At the unit price of \$ <u>204.00</u> per ton	13 TON	\$ <u>2,652.00</u>
411	Emulsified Asphalt (slow setting) At the unit price of \$ <u>44.00</u> per gallon	74 GAL	\$ <u>3,256.00</u>
412	Concrete Pavement (8 inch) At the unit price of \$ <u>112.00</u> per square yard	116 SY	\$ <u>12,992.00</u>
607	Construction Fence At the unit price of \$ <u>3.60</u> per linear foot	200 LF	\$ <u>720.00</u>
608	Concrete Curb Rmp At the unit price of \$ <u>265.00</u> per square yard	73 SY	\$ <u>19,345.00</u>
609	Curb & Gutter At the unit price of \$ <u>31.00</u> per linear foot	112 LF	\$ <u>3,472.00</u>
609	Monolithic Median Curb Nose At the unit price of \$ <u>20.00</u> per square foot	114 SF	\$ <u>2,280.00</u>
610	Median Cover Material (concrete) At the unit price of \$ <u>14.00</u> per square foot	463 SF	\$ <u>6,482.00</u>

Schedule A

Item No.	Description and Price	Estimated Quantity	Estimated Cost
614	Sign Panel (class 1) At the unit price of \$ <u>30.00</u> per square foot	44 SF	\$ <u>1,320.00</u>
614	Steel Sign Post (2x2 inch tubing) At the unit price of \$ <u>24.00</u> per linear foot	37 LF	\$ <u>888.00</u>
620	Sanitary Facility At the unit price of \$ <u>750.00</u> per each	1 EA	\$ <u>750.00</u>
625	Construction Surveying At the unit price of \$ <u>4,900.00</u> per lump sum	1 LS	\$ <u>4,900.00</u>
626	Mobilization At the unit price of \$ <u>18,190.00</u> per lump sum	1 LS	\$ <u>18,190.00</u>
627	Epoxy Pavement Marking At the unit price of \$ <u>660.00</u> per gallon	4 GAL	\$ <u>2,640.00</u>
627	Preformed Thermoplastic Pavement Marking (xwalk-stop line) At the unit price of \$ <u>24.00</u> per square foot	180 SF	\$ <u>4,320.00</u>
628	Construction As-Built At the unit price of \$ <u>1,800.00</u> per lump sum	1 LS	\$ <u>1,800.00</u>
629	Adjust Monument Box At the unit price of \$ <u>420.00</u> per each	1 EA	\$ <u>420.00</u>
630	Construction Traffic Control At the unit price of \$ <u>27,550.00</u> per lump sum	1 LS	\$ <u>27,550.00</u>
Forty-Two (42) Total Bid Items for Schedule A Subtotal for Schedule A:			\$ <u>180,395.00</u>

Schedule B

Item No.	Description and Price	Estimated Quantity	Estimated Cost
201	Clearing and Grubbing at the unit price of \$ <u>9,960.00</u> per lump sum	1 LS	\$ <u>9,960.00</u>
202	Removal of Sidewalk at the unit price of \$ <u>110.00</u> per square yard	17 SY	\$ <u>1,870.00</u>
202	Removal of Curb and Gutter at the unit price of \$ <u>22.00</u> per linear foot	32 LF	\$ <u>704.00</u>
202	Removal of Asphalt Mat at the unit price of \$ <u>87.00</u> per square yard	51 SY	\$ <u>4,437.00</u>
202	Removal of Asphalt Mat (Planing) (Special) at the unit price of \$ <u>70.00</u> per square yard	239 SY	\$ <u>16,730.00</u>
202	Removal of Portions of Present Structure (Class 2) at the unit price of \$ <u>1,160.00</u> per square yard	19 SY	\$ <u>22,040.00</u>
202	Removal of Portions of Present Structure (Class 3) at the unit price of \$ <u>2,880.00</u> per square yard	2 SY	\$ <u>5,760.00</u>
202	Removal of Portions of Present Structure at the unit price of \$ <u>2,200.00</u> per cubic yard	15 CY	\$ <u>33,000.00</u>
202	Sandblasting Reinforcing Steel at the unit price of \$ <u>480.00</u> per square yard	47 SY	\$ <u>22,560.00</u>
202	Sandblasting at the unit price of \$ <u>49.20</u> per square foot	780 SF	\$ <u>38,376.00</u>
204	Jacking and Shoring at the unit price of \$ <u>27,252.00</u> per lump sum	1 LS	\$ <u>27,252.00</u>

Schedule B

Item No.	Description and Price	Estimated Quantity	Estimated Cost
206	Structure Excavation at the unit price of \$ <u>139.00</u> per cubic yard	21 CY	\$ <u>2,919.00</u>
250	Environmental Health and Safety Management at the unit price of \$ <u>4,200.00</u> per lump sum	1 LS	\$ <u>4,200.00</u>
250	Health and Safety Officer at the unit price of \$ <u>126.00</u> per hour	8 HOUR	\$ <u>1,008.00</u>
250	Monitoring Technician at the unit price of \$ <u>102.00</u> per hour	8 HOUR	\$ <u>816.00</u>
304	Aggregate Base Course (Class 6) at the unit price of \$ <u>71.00</u> per ton	34 TON	\$ <u>2,414.00</u>
403	Hot Mix Asphalt (Patching) (Asphalt) at the unit price of \$ <u>228.00</u> per ton	47 TON	\$ <u>10,716.00</u>
403	Hot Mix Asphalt (Grading SX) (75) (PG 64-22) at the unit price of \$ <u>216.00</u> per ton	36 TON	\$ <u>7,776.00</u>
509	Painting Existing Structure at the unit price of \$ <u>34,086.00</u> per lump sum	1 LS	\$ <u>34,086.00</u>
512	Bearing Device at the unit price of \$ <u>804.00</u> per each	6 EACH	\$ <u>4,824.00</u>
515	Waterproofing (Membrane) at the unit price of \$ <u>39.00</u> per square yard	194 SY	\$ <u>7,566.00</u>
601	Concrete Class D (Bridge) at the unit price of \$ <u>1,150.00</u> per cubic yard	24 CY	\$ <u>27,600.00</u>

Schedule B

Item No.	Description and Price	Estimated Quantity	Estimated Cost
601	Concrete Class DR at the unit price of \$ <u>6,120.00</u> per cubic yard	2 CY	\$ <u>12,240.00</u>
601	Galvanic Anodes at the unit price of \$ <u>154.00</u> per each	102 EACH	\$ <u>15,708.00</u>
602	Reinforcing Steel at the unit price of \$ <u>2.50</u> per pound	9,232 LB	\$ <u>23,080.00</u>
608	Concrete Sidewalk at the unit price of \$ <u>132.00</u> per square yard	24 SY	\$ <u>3,168.00</u>
609	Curb and Gutter at the unit price of \$ <u>54.00</u> per linear foot	35 LF	\$ <u>1,890.00</u>
625	Construction Surveying at the unit price of \$ <u>3,500.00</u> per lump sum	1 LS	\$ <u>3,500.00</u>
626	Mobilization at the unit price of \$ <u>50,000.00</u> per lump sum	1 LS	\$ <u>50,000.00</u>
630	Construction Traffic Control at the unit price of \$ <u>71,000.00</u> per lump sum	1 LS	\$ <u>71,000.00</u>
109	Allowance - Erosion Control at the unit price of \$ <u>7,500.00</u> per allowance	1 ALLOWANCE	\$ <u>7,500.00</u>
Thirty-One (31) Total Bid Items for Schedule B Subtotal for Schedule B:			\$ <u>474,700.00</u>

Schedule A – Bid Items Subtotal (201 through 630 (42 bid items)) \$ 180,395⁰⁰

Schedule B – Bid Items Subtotal (109 through 630 (31 bid items)) \$ 474,700⁰⁰

Bid Items Total Amount – Schedule A plus Schedule B (73 bid items, which includes 1 Allowance Account Item) \$ 655,095⁰⁰

Textura ® Fee from table on Page BF-3 (based on Bid Items Total Amount) \$ 3,250⁰⁰

Bid Items Total Amount plus Textura® Fee equals Total Bid Amount \$ 658,345⁰⁰

Total Bid Amount:
SIX HUNDRED FIFTY EIGHT THOUSAND THREE HUNDRED
FORTY FIVE AND ⁰⁰/₁₀₀
 Dollars (\$ 658,345⁰⁰)

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

The EMPLOYERS MUTUAL CASUALTY COMPANY, a corporation of the State of LOWA, 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 FIVE PERCENT (5%) OF THE TOTAL AMOUNT BID. 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: N/A Name: _____
 Address: _____ Address: _____

If there are no such persons, firms, or corporations, please so state in the following space:
NO SUCH PERSONS, FIRMS, OR CORPORATIONS

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>BRIDGE, DECK, SHOULDER</u>	<u>12.9</u>	<u>RESTORATION CORPORATION</u> <u>3870 PLATTE AVE, SEVENIA, CO 80135</u>
<u>PAINTING</u>	<u>8.2</u>	<u>QUALITY LININGS & PAINTING, INC.</u> <u>8250 E. 40TH AVE, DENVER, CO 80207</u>
<u>WATERPROOFING</u>	<u>0.9</u>	<u>MAPLE, 444 SANTA FE DR.,</u> <u>DENVER, CO 80204</u>
<u>PAVING</u>	<u>5.0</u>	<u>CHARNAL PAVING, INC.</u> <u>1701 E. 114TH TR, WASHINGTON CO 80235</u>
<u>PAVEMENT MARKING</u>	<u>2.0</u>	<u>AMERICAN SIGNIFY CO, 6829 S.</u> <u>RAWSON CIR, CENTENNIAL, CO 80112</u>
<u>TRUCKING</u>	<u>1.9</u>	<u>J.P. MEYER TRUCKING & CONSTRUCTION</u> <u>2199 TALL GRASS TRAIL, GOLDEN, CO 80403</u>

(Copy this page if additional room is required.)



DENVER
OFFICE OF ECONOMIC
DEVELOPMENT

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

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

City & County of Denver Contract No.: 202053748

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

Prime Bidder

Business Name: TECHNOLOGY CONSTRUCTORS, INC.
Address: 5636 KENDALL CT, UNIT A
ARVAD, CO 80002
Contact Person: ED CALLEJO
Type of Service: RENOVALS, CONCRETE,
TRAFFIC CONTROL
Dollar Amount: \$ 333,345⁰⁰
Percent of Project: 50.1

Certified MWBE Prime Bidder

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

Subcontractors, Suppliers Manufacturers or Brokers (check one box)

Subcontractor (✓) Supplier (✓) Manufacturer (✓) Broker (✓)
Business Name: QUALITY LININGS & PAINTING, INC.
Address: 8850 E. 40TH AVE.
DENVER, CO 80207
Contact Person: PAT HANEY
Type of Service: PAINTING
Dollar Amount: \$ 54,229⁰⁰
Percent of Project: 8.2

Subcontractor (✓) Supplier (✓) Manufacturer (✓) Broker (✓)
Business Name: NEW
Address: 499 SANTA FE DR.
DENVER, CO 80204
Contact Person: HELEN MADDEN-WEISS
Type of Service: WATERPROOFING
Dollar Amount: \$ 6,123⁰⁰
Percent of Project: 0.9

Subcontractor (✓) Supplier (✓) Manufacturer (✓) Broker (✓)
Business Name: CHACON PAVING, INC.
Address: 1701 E. 114TH PL.
NORTHBEND, CO 80235
Contact Person: JOSE CHACON
Type of Service: PAVING
Dollar Amount: \$ 32,820¹⁵
Percent of Project: 5.0

Rev 031816JE

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:		AMERICAN STRIPING CO.					
Address:		6829 S. DAWSON CIR CENTENNIAL, CO 80112			Type of Service: PAVEMENT MARKINGS		
Contact Person:		TONY CICCIO		Dollar Amount: \$:		12,850 ⁰⁰	Percent of Project: 2.0
<input checked="" type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:		J.P MEYER TRUCKING & CONSTRUCTION, INC.					
Address:		21999 TALL CEDAR TRAIL RS GOLDEN, CO 80403			Type of Service: TRUCKING		
Contact Person:		JEAN MEYER		Dollar Amount: \$:		12,500 ⁰⁰	Percent of Project: 1.9
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (✓)	<input type="checkbox"/>	Supplier (✓)	<input type="checkbox"/>	Manufacturer (✓)	<input type="checkbox"/>	Broker (✓)

Rev 031816JE

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

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

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

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

Business Address of Bidder: 5636 KENDALL CT, UNIT A

City, State, Zip Code: ARVADA, CO 80002

Telephone Number of Bidder: (303) 431-2761

Fax No. (303) 431-0091

Social Security or Federal Employer ID Number of Bidder: 84-0804451

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

COLFAX AVE. IMPROVEMENTS AT LITAN ST. - PHASE 2

For information relative thereto, please refer to:

Name: JOHN LA SALA

Title: SENIOR ENGINEER

Address: 201 W. COLFAX AVE., DEPT 506, DENVER, CO 80202

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

Addenda Number 1 Date 3/13/20

Addenda Number 2 Date 3/26/20

Addenda Number 3 Date 4/2/20

~~Addenda Number~~ 4 ~~DATE~~ 4/21/20

Dated this 30TH day of APRIL, 2020.

Signature of Bidder:

If an Individual: _____ doing business
as _____.

If a Partnership: _____
by: _____ General Partner.

If a Corporation: TECHNOLOGY CONSTRUCTORS, INC.
a COLORADO Corporation,
by: [Signature], its President.

Attest:
[Signature]
Secretary (Corporate Seal)
EDWARD R. CALLEJO

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

Firm: _____
Corporation (), Partnership () or () Limited Liability Company

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

Firm: _____
Corporation (), Partnership () or () Limited Liability Company

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

Firm: _____
Corporation (), Partnership () or () Limited Liability Company

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



DENVER
OFFICE OF ECONOMIC
DEVELOPMENT

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

COMMITMENT TO MWBE PARTICIPATION

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

The Bidder/Proposer is committed to the minimum 18 % **MWBE** utilization on the project, and will submit Letters of Intent (LOI) for each subcontractor/subconsultant listed in the Bid Forms as follows:
Hard Bids: Three (3) business days after the bid opening.
Request for Proposals/Qualifications: With the proposal when due.
Compliance Plans: With each task/work order

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

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

Bidder/Proposer (Name of Firm): TECHNOLOGY CONSTRUCTORS, INC.

Firm's Representative (Please print): ED CALLEJO

Signature (Firm's Representative):

Title: PROJECT MANAGER

Address: 5636 KENDALL CT., UNIT A

City: ARVADA

State: CO

Zip: 80002

Phone: (303) 431-2961

Fax: (303) 431-0091

Email: ED.TCJ@COMCAST.NET

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



Office of Economic Development
 Division of Small Business Opportunity
 Compliance Unit
 201 West Colfax Ave., Dept. 207
 Denver, CO 80202
 Phone: 720-913-1090

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

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

Contract No.: 202053748		Project Name: Highline Canal Crossing at Holly St. and Iliff Ave.	
A. The Following Section is To Be Completed by the Bidder/Consultant This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE			
Name of Bidder/Consultant: Technology Constructors, Inc.		Self-Performing: <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone: (303) 431-2961
Contact Person: Ed Callejo	Email: ed.fc@comcast.net	Fax: (303) 431-0091	
Address: 5636 Kendall Cr., Unit A	City: Arvada	State: CO	Zip: 80007
B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, or any Tier This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant			
Name of Certified Firm: QUALITY LININGS & PAINTING, INC.		Phone: 303-307-1318	
Contact Person: PAT HANEY	Email: PATRICK.A.OLIVER@CORN	Fax: 303-307-1302	
Address: 8250 E. 40 TH AVE.	City: DENVER	State: CO	Zip: 80207
Please check the designation which applies to the certified firm:		M/WBE <input type="checkbox"/>	SBE <input checked="" type="checkbox"/>
		EBE <input type="checkbox"/>	DBE <input type="checkbox"/>
Indirect Utilization: If this M/WBE, SBE, EBE or DBE is not a direct first tier subcontractor/subconsultant, supplier or broker to the Bidder/Consultant, please indicate the name of the subcontractor/subconsultant, supplier or broker which is utilizing the participation of this firm.			
A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached			
Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. On unit price bids only, identify which bid line items the M/WBE/SBE/EBE/DBE's scope of work or supply corresponds to. 202 SANDBLASTING, 509 PAINTING EXISTING STRUCTURE			
<input checked="" type="checkbox"/>	Subcontractor/Subconsultant (%)	<input type="checkbox"/>	Supplier (%)
<input type="checkbox"/>		<input type="checkbox"/>	Broker (%)
Bidder intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The cost of the work and percentage of the total subcontractor M/WBE, SBE, EBE or DBE bid amount is:			
\$ 54,229.00		8.2 %	
Consultant intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The percentage of the work of the total subconsultant M/WBE, SBE, EBE or DBE will perform is: %			
If the fee amount of the work to be performed is requested, the fee amount, is: \$			
Bidder/Consultant's Signature:		Date: 5/1/20	
Title: PROJECT MANAGER			
M/WBE, SBE, EBE or DBE Self-Performing Firm's Signature:		Date: 5/1/20	
Title: V.P.			
If the above named Bidder/Consultant is not determined to be the successful Bidder/Consultant, this Letter of Intent shall be null and void.			



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

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

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

Contract No.: 202053748 Project Name: Highline Canal Crossing at Holly St. and Iliff Ave.

A. The Following Section is To Be Completed by the Bidder/Consultant
 This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE

Name of Bidder/Consultant: Technology Constructors, Inc. Self-Performing: Yes No Phone: (303)431-2961
 Contact Person: Ed Callejo Email: ed.tci@comcast.net Fax: (303)431-0091
 Address: 5636 Kendall Ct., Unit A City: Arvada State: CO Zip: 80002

B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, at any Tier
 This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant

Name of Certified Firm: XTW Contracting Inc Phone: 303-571-5995
 Contact Person: HELEN MADSEN-WES Email: HELEN@XTWContracting.com Fax: 315715999
 Address: 44 Santa Fe Drive City: Denver State: CO Zip: 80204

Please check the designation which applies to the certified firm.

M/WBE (✓)	<input checked="" type="checkbox"/>	SBE (✓)	<input checked="" type="checkbox"/>	EBE (✓)	<input type="checkbox"/>	DBE (✓)	<input checked="" type="checkbox"/>
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Indirect Utilization: If this M/WBE, SBE, EBE or DBE is not a direct first tier subcontractor/subconsultant, supplier or broker to the Bidder/Consultant, please indicate the name of the subcontractor/subconsultant, supplier or broker which is utilizing the participation of this firm:

A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached

Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. On unit price bids only. identify which bid line items the M/WBE/SBE/EBE/DBEs scope of work or supply corresponds to.
S/S WATERPROOFING (MEMBRANE)

Subcontractor/Subconsultant (✓) Supplier (✓) Broker (✓)

Bidder intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The cost of the work and percentage of the total subcontractor M/WBE, SBE, EBE or DBE bid amount is:

\$ 6123.00 0.9 %

Consultant intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The percentage of the work of the total sub consultant M/WBE, SBE, EBE or DBE will perform is: %

If the fee amount of the work to be performed is requested, the fee amount, is: \$

Bidder/Consultant's Signature: [Signature] Date: 5/1/20

Title: PROJECT MANAGER

M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: [Signature] Date: 5/1/2020

Title: President

If the above named Bidder/Consultant is not determined to be the successful Bidder/Consultant, this Letter of Intent shall be null and void.



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

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

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

Contract No.: 202053748 Project Name: Highline Canal Crossing at Holly St. and Iliff Ave.

A. The Following Section Is To Be Completed by the Bidder/Consultant
 This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE

Name of Bidder/Consultant: Technology Constructors, Inc.	Self-Performing: <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone: (303) 431-2961
Contact Person: Ed Callejo	Email: ed.tci@comcast.net	Fax: (303) 431-0091
Address: 5636 Kendall Ct., Unit A	City: Arvada	State: CO Zip: 80002

B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, at any Tier
 This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant

Name of Certified Firm: CHACON PAVING, INC	Phone: 303-450-0616
Contact Person: JOSE CHACON	Fax: 303-255-2459
Address: 1701 E. 114 TH PL.	City: NORTHGLENN State: CO Zip: 80233

Please check the designation which applies to the certified firm.	M/WBE (✓)	SBE (✓)	EBE (✓)	DBE (✓)
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Indirect Utilization: If this M/WBE, SBE, EBE or DBE is not a direct first tier subcontractor/subconsultant, supplier or broker to the Bidder/ Consultant, please indicate the name of the subcontractor/subconsultant, supplier or broker which is utilizing the participation of this firm:

A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached

Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. On unit price bids only, identify which bid line items the M/WBE/SBE/EBE/DBEs scope of work or supply corresponds to.
 403 HMA (PATCHING), 403 HMA (CR S), 403 HMA (CR SK), 411 EMULSIFIED ASPHALT (SS)

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

Bidder intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The cost of the work and percentage of the total subcontractor M/WBE, SBE, EBE or DBE bid amount is:

\$ 32,820.15 5.0 %

Consultant intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The percentage of the work of the total sub consultant M/WBE, SBE, EBE or DBE will perform is: %

If the fee amount of the work to be performed is requested, the fee amount is: \$

Bidder/Consultant's Signature: Date: 5/1/20

Title: PROJECT MANAGER

M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: Date:

Title:

If the above named Bidder/Consultant is not determined to be the successful Bidder/Consultant, this Letter of Intent shall be null and void.



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

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

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

Contract No.: 202053748		Project Name: Highline Canal Crossing at Holly St. and Iliff Ave.	
A. The Following Section is To Be Completed by the Bidder/Consultant This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE			
Name of Bidder/Consultant: Technology Constructors, Inc.		Self-Performing: <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone: (303)431-2961
Contact Person: Ed Callejo	Email: ed.tci@comcast.net		Fax: (303)431-0091
Address: 5636 Kendall Ct., Unit A	City: Arvada	State: CO	Zip: 80002
B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, at any Tier This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant			
Name of Certified Firm: AMERICAN STRIPING COMPANY		Phone: 303-495-5950	
Contact Person: TONY CICCIO	Email: TONY@AMERICANSTRIPING.COM		Fax:
Address: 6829 S. DAWSON DR.	City: CENTENNIAL	State: CO	Zip: 80112
Please check the designation which applies to the certified firm.	M/WBE (✓)	SBE (✓)	EBE (✓) DBE (✓)
Indirect Utilization: If this M/WBE, SBE, EBE or DBE is not a direct first tier subcontractor/subconsultant, supplier or broker to the Bidder/ Consultant, please indicate the name of the subcontractor/subconsultant, supplier or broker which is utilizing the participation of this firm:			
A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached			
Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. On unit price bids only, identify which bid line items the M/WBE/SBE/EBE/DBEs scope of work or supply corresponds to. G27 EPOXY PAVT. MRE, G27 PREPORN THREMD.			
<input checked="" type="checkbox"/> Subcontractor/Subconsultant (✓)	<input type="checkbox"/> Supplier (✓)	<input type="checkbox"/> Broker (✓)	
Bidder intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The cost of the work and percentage of the total subcontractor M/WBE, SBE, EBE or DBE bid amount is:			
\$ 12,850.00		2.0 %	
Consultant intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The percentage of the work of the total sub consultant M/WBE, SBE, EBE or DBE will perform is: %			
If the fee amount of the work to be performed is requested, the fee amount, is: \$			
Bidder/Consultant's Signature:		Date:	
Title:		Date: 5.1.20	
M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: A. Ciccio		Date: 5.1.20	
Title: Estimator			
If the above named Bidder/Consultant is not determined to be the successful Bidder/Consultant, this Letter of Intent shall be null and void.			



DENVER
OFFICE OF ECONOMIC
DEVELOPMENT

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

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

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

Contract No.: 202053748		Project Name: Highline Canal Crossing at Holly St. and Iliff Ave.	
A. The Following Section is To Be Completed by the Bidder/Consultant This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE			
Name of Bidder/Consultant: Technology Constructors, Inc.		Self-Performing: <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone: (303) 431-2961
Contact Person: Ed Callejo	Email: ed@tci.comcast.net	Fax: (303) 431-0091	
Address: 5636 Kendall Cr., Unit A	City: Arvada	State: CO	Zip: 80002
B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, at any Tier This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant			
Name of Certified Firm: J.T. MEYER TRUCKING & CONSTRUCTION, INC.		Phone: 303-426-0966	
Contact Person: JEAN MEYER	Email: JEANMEYER@WILDBLUE.NET	Fax: 303-412-0661	
Address:	City:	State:	Zip:
Please check the designation which applies to the certified firm.	M/WBE (✓)	SBE (✓)	EBE (✓)
Indirect Utilization: If this M/WBE, SBE, EBE or DBE is not a direct first tier subcontractor/subconsultant, supplier or broker to the Bidder/Consultant, please indicate the name of the subcontractor/subconsultant, supplier or broker which is utilizing the participation of this firm:			
A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached			
Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. On unit price bids only, identify which bid line items the M/WBE/SBE/EBE/DBE's scope of work or supply corresponds to. 202 REMOVALS (SIDEWALK, CURB/GUTTER, CURB RAMP, CONC. PAVT., ASPH. PAVT.), 203 UNCLASSIFIED EXCAVATION - TRUCKING			
<input checked="" type="checkbox"/> Subcontractor/Subconsultant (✓)	<input type="checkbox"/> Supplier (✓)	<input type="checkbox"/> Broker (✓)	
Bidder intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The cost of the work and percentage of the total subcontractor M/WBE, SBE, EBE or DBE bid amount is:			
\$ 12,500 ⁰⁰		1.9 %	
Consultant intends to utilize the aforementioned M/WBE, SBE, EBE or DBE for the Work/Supply described above. The percentage of the work of the total sub consultant M/WBE, SBE, EBE or DBE will perform is: %			
If the fee amount of the work to be performed is requested, the fee amount, is: \$			
Bidder/Consultant's Signature:		Date: 5/1/20	
Title: PROJECT MANAGER			
M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature:		Date: 5-1-20	
Title:			
If the above named Bidder/Consultant is not determined to be the successful Bidder/Consultant, this Letter of Intent shall be null and void.			

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

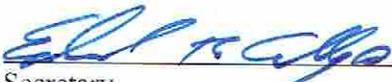
THAT Technology Constructors, Inc., as Principal, and Employers Mutual Casualty Company, a corporation organized and existing under and by virtue of the laws of the State of IA, and authorized to do business within the State of Colorado, as Surety, are held and firmly bound unto the City and County of Denver, Colorado, as Obligee, in full and just sum of Five Percent of Amount Bid Dollars, (\$ 5%), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents:

WHEREAS, the said Principal is herewith submitting its bid, dated April 30th, 2020, for the construction of: **Contract No. 202053748 - Highline Canal Crossing at Holly St. and Iliff Ave.**, as set forth in detail in the Contract Documents for the City and County of Denver, Colorado, and said Obligee has required as a condition for receiving said bid that the Principal deposit specified bid security in the amount of not less than five percent (5%) of the amount of said bid, as it relates to work to be performed for the City, conditioned that in event of failure of the Principal to execute the Contract, for such construction and furnish required Performance and Payment Bond if the contract is offered him that said sum be paid immediately to the Obligee as liquidated damages, and not as a penalty, for the Principal's failure to perform.

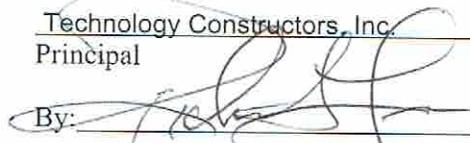
The condition of this obligation is such that if the aforesaid Principal shall, within the period specified therefore, on the prescribed form presented to him for signature, enter into a written contract with the Obligee in accordance with his bid as accepted and give Performance and Payment Bond with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

Signed, sealed and delivered this 22nd day of April, 2020.

ATTEST


Secretary
EDWARD R. CALLEJO

Technology Constructors, Inc.
Principal

By: 
Title: PRESIDENT

Employers Mutual Casualty Company
Surety

By: 
Sarah Brown, Attorney-In-Fact

[SEAL]

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

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, that:

- 1. Employers Mutual Casualty Company, an Iowa Corporation
- 2. EMCASCO Insurance Company, an Iowa Corporation
- 3. Union Insurance Company of Providence, an Iowa Corporation
- 4. Illinois EMCASCO Insurance Company, an Iowa Corporation
- 5. Dakota Fire Insurance Company, a North Dakota Corporation
- 6. EMC Property & Casualty Company, an Iowa Corporation

hereinafter referred to severally as "Company" and collectively as "Companies", each does, by these presents, make, constitute and appoint:

Sarah Brown

its true and lawful attorney-in-fact, with full power and authority conferred to sign, seal, and execute the Surety Bond:

Any and All Bonds

and to bind each Company thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of each such Company, and all of the acts of said attorney pursuant to the authority hereby given are hereby ratified and confirmed.

The authority hereby granted shall expire April 1st, 2021, unless sooner revoked.

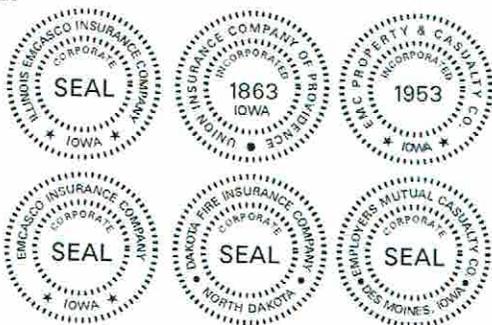
AUTHORITY FOR POWER OF ATTORNEY

This Power-of-Attorney is made and executed pursuant to and by the authority of the following resolution of the Boards of Directors of each of the Companies at the first regularly scheduled meeting of each company duly called and held in 1999:

RESOLVED: The President and Chief Executive Officer, any Vice President, the Treasurer and the Secretary of Employers Mutual Casualty Company shall have power and authority to (1) appoint attorneys-in-fact and authorize them to execute on behalf of each Company and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof; and (2) to remove any such attorney-in-fact at any time and revoke the power and authority given to him or her. Attorneys-in-fact shall have power and authority, subject to the terms and limitations of the power-of-attorney issued to them, to execute and deliver on behalf of the Company, and to attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and any such instrument executed by any such attorney-in-fact shall be fully and in all respects binding upon the Company. Certification as to the validity of any power-of-attorney authorized herein made by an officer of Employers Mutual Casualty Company shall be fully and in all respects binding upon this Company. The facsimile or mechanically reproduced signature of such officer, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power-of-attorney of the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS THEREOF, the Companies have caused these presents to be signed for each by their officers as shown, and the Corporate seals to be hereto affixed this 1st day of July, 2018.

Seals



Bruce G. Kelley, CEO, Chairman of Companies 2, 3, 4, 5 & 6; President of Companies 1, 2 & 6; Treasurer of Companies 1, 2, 3, 4 & 6

Todd Strother
Vice President

On this 1st day of July, 2018 before me a Notary Public in and for the State of Iowa, personally appeared Bruce G. Kelley and Todd Strother, who, being by me duly sworn, did say that they are, and are known to me to be the CEO, Chairman, President and Treasurer, and/or Vice President, respectively, of each of the Companies above; that the seals affixed to this instrument are the seals of said corporations; that said instrument was signed and sealed on behalf of each of the Companies by authority of their respective Boards of Directors; and that the said Bruce G. Kelley and Todd Strother, as such officers, acknowledged the execution of said instrument to be their voluntary act and deed, and the voluntary act and deed of each of the Companies.

My Commission Expires October 10, 2022.


Notary Public in and for the State of Iowa

CERTIFICATE

I, James D. Clough, Vice President of the Companies, do hereby certify that the foregoing resolution of the Boards of Directors by each of the Companies, and this Power of Attorney issued pursuant thereto on 1st day of July, 2018, are true and correct and are still in full force and effect.

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 22nd day of April, 2020.

Vice President



Diversity and Inclusiveness* in City Solicitations Information Request Form

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

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

Business Email Address * TECCONSTC@HOTMAIL.COM

Enter Email Address of City and County of Denver contact person facilitating this solicitation * pw.procurement@denvergov.org

Project Name * HIGHLINE CANAL CROSSING AT HOLLY ST. AND I4

Solicitation No. (Check Below if Not Applicable) * 202053748

Check Here if Solicitation No. is N/A

Name of Your Company * TECHNOLOGY CONSTRUCTORS, INC.

What Industry is Your Business? *

- | | | |
|---|---|---|
| <input type="checkbox"/> Technology | <input type="checkbox"/> Financial | <input type="checkbox"/> Manufacturing |
| <input checked="" type="checkbox"/> Construction, Landscape, Maintenance Services | <input type="checkbox"/> Goods/Services | <input type="checkbox"/> Wholesale/Retail Trade |
| <input type="checkbox"/> Professional | <input type="checkbox"/> Transportation/Hauling | <input type="checkbox"/> Other |

Address * 5636 KENDALL CT, UNIT A

City * ARVADA **State** CO **Zip Code *** 80002

Business Phone Number * (303) 431-2961

Business Facsimile Number (303) 431-0091

1. How many employees does your company employ? *

- 1-10
- 11-50
- 51-100
- Over 100

1.1 How many of your employees are:

Number of Full Time: * 6 **Number of Part Time: *** 9

2. Do you have a Diversity and Inclusiveness Program? *

- Yes
- No

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

If **Yes**, does it address:

2.1. Employment and retention? *

- Yes
- No

2.2. Procurement and supply chain activities? *

- Yes
- No

2.3. Customer Service? *

- Yes
- No

3. Provide a detailed narrative of your company's diversity and inclusiveness principles and programs. This may include, for example, (i) diversity and inclusiveness employee training programs, equal opportunity policies, and the budget amount spent on an annual basis for workplace diversity; or (ii) diversity and inclusiveness training and information to improve customer service. (If Not Applicable, please type N/A below) *

EEO POLICIES

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

- Yes
- No

If you answered Yes to Question 4, how does your company regularly communicate its diversity and inclusiveness policies to employees? (Select all that apply) *

- Employee Training
- Pamphlets
- Public EEO Postings
- Other:

5. How often do you provide training and diversity and inclusiveness principles? *

- Monthly
- Quarterly
- Annually
- N/A
- Other:

5.1 What percentage of the total number of employees generally participate? *

- 0-25%
- 26-50%
- 51-75%
- 76-100%
- N/A

6. State how you achieve diversity and inclusiveness in supply and procurement activities. This may include, for example, narratives of training programs, equal opportunity policies, diversity or inclusiveness partnership programs, mentoring and outreach programs, and the amount and description of budget spent on an annual basis for procurement and supplier diversity and inclusiveness. (If Not Applicable, please type N/A below) *

EEO POLICIES

7. Do you have a diversity and inclusiveness committee? *

- Yes
- No

7.1 If Yes, how often does it meet? *

- Monthly
- Quarterly
- Annually
- Other:

7.2. If you responded that you do not have a diversity and inclusiveness committee, describe any plans your company may have to establish such a committee. (If Not Applicable, please type N/A below) *

N/A

8. Do you have a budget for diversity and inclusiveness efforts? *

Yes No

9. Does your company integrate diversity and inclusion competencies into executive/manager performance evaluation plans? *

Yes No

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

NONE

11. Would you like information detailing how to implement a Diversity and Inclusiveness program? *

Yes No

If yes, please email XO101@denvergov.org.

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



Signature of Person Completing Form *

Date

EDWARD T. CALLEJO

Printed Name of Person Completing Form

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

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

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

**CONTRACT NO: 202053748
PROJECT NAME: Highline Canal Crossing at Holly St. and Iliff Ave.**

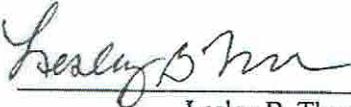
ADDENDUM NO. 1 TO CONTRACT DOCUMENTS

Interested firms are hereby notified that the Pre-bid Meeting for the above project has been postponed until Tuesday, March 31, 2020 and will take place in room 4.I.5. 201 W. Colfax Ave., Denver, CO 80202, at 10:00 a.m.

Thus, the Question Deadline date for the above project has been postponed. Questions will need to be submitted, no later than, 10:00 a.m. on Tuesday, April 7, 2020.

Thus, the Bid Opening date for the above project has been postponed until Thursday, April 30, 2020. Sealed bids will be received in Room 6.G.7, 201 W. Colfax Ave., Denver, CO 80202, beginning at 10:30 a.m., no later than 11:00 a.m., on bid day. All properly delivered bids will then be publicly opened and read aloud. Bids submitted prior to 10:30 a.m. on the specified bid opening date/time shall be presented at the Office of Contract Administration, 201 W. Colfax Ave. Department 614, Denver, CO 80202.

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



Lesley B. Thomas
City Engineer
3/13/2020

Date

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

TECHNOLOGY CONSTRUCTORS, INC.


Contractor
3/13/20

Date

ADDENDUM NO. 1

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

CONTRACT NO: 202053748 PROJECT NAME: Highline Canal Crossing at Holly St. and Iiff Ave.
--

ADDENDUM NO. 2 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:

I. ADVERTISEMENT AND INSTRUCTIONS TO BIDDERS:

Interested firms are hereby notified that the Pre-bid Meeting for the above project has been postponed until Thursday, April 2nd, 2020 and will be held as a virtual meeting at 9:00 a.m. This is an optional meeting and will be a phone-in meeting only. To access the meeting, use the call-in line at (720) 388-6219, and then use the Conference ID when prompted. The Conference ID is 396 682 061#.

Bids for this project will ONLY be received and accepted via the online electronic bid service through www.QuestCDN.com. Bids must be submitted via QuestCDN no later than 11:00 a.m., Thursday, April 30, 2020. To access the electronic bid form, download the file 202053704 BF.pdf and click the online bidding button at the top of advertisement. Prospective bidders must be on the plan holders list through QuestCDN for bids to be accepted. Bidders will be charged a fee of \$30.00 to submit a bid electronically.

II. BID FORM:

Page BF-2 is modified as follows:

The original bid bond must be received by mail within 7 calendar days of bid opening date to be considered part of a responsive bid. Mail original to 201 W. Colfax Ave. Ste. 614, Denver CO 80202 Attn: Contract Administration.

BF-20	<p>Fill in all Bid Bond blanks. <u>The original bid bond must be received by mail within 7 calendar days of bid opening date to be considered part of a responsive bid. Mail original to 201 W. Colfax Ave. Ste. 614, Denver CO 80202 Attn: Contract Administration</u></p> <p>Signatures required</p> <p>a.) Corporate Seal if required (shade so visible)</p> <p>b.) Dated</p> <p>e.) Attach Surety Agents Power of Attorney or Certified or cashier's check made out to the Manager of Revenue referencing Bidder's Company and Contract Number.</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
-------	---	--

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

Lesley B. Thomas
Lesley B. Thomas
City Engineer

3/26/2020
Date

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

TECHNOLOGY CONSTRUCTORS, INC.
[Signature]
Contractor

ADDENDUM NO. 2

3/26/20
Date

CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE

CONTRACT NO: 202053748
PROJECT NAME: Highline Canal Crossing at Holly St. and Iliff Ave.

ADDENDUM NO. 3 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:

Interested firms are hereby notified that the Question Deadline date for the above project has been extended. Questions will need to be submitted, no later than, 10:00 am. on Thursday, April 16, 2020.

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



Lesley B. Thomas
City Engineer
April 2, 2020

Date

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

TECHNOLOGY CONSTRUCTORS, INC.


Contractor
4/2/20

Date

ADDENDUM NO. 3

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

CONTRACT NO: 202053748 PROJECT NAME: Highline Canal Crossing at Holly St. and Iliff Ave.

ADDENDUM NO. 4 TO CONTRACT DOCUMENTS

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

QUESTIONS AND ANSWERS:

Q1. What are the contractor's public information requirements?

A1. **The City and County of Denver Bridge Group holly Project Manager (Kevin Lee Rens) will complete 3 public information tasks: 1) Place Variable message board on site 10 days prior to construction mobilization notifying community of upcoming work, 2) work with CCD public information personnel (Nancy Kuhn) to post project specifics on social media and internet, and 3) Notify council district.**

Q2. Is the paint on the girders lead based?

A2. **Please see the attached Asbestos and Lead-Based Paint Assessment Report (dated January 15, 2019) prepared by Pinyon Environmental, Inc. for Ground Engineering Consultants, Inc.**

Q3. Specification page PSP-56, Painting Existing Structure, states payment will be by the SF however bid item 509 on bid sheet BF-6.6 is 1 LS. Please Clarify.

A3. **The pay unit is Lump Sum.**

Q4. See drawing #13, SCH. B: Are the existing steel diaphragms on the south abutment to be sandblasted and painted?

A4. **The diaphragms at the south abutment will not require sandblasting and painting.**

Q5. Please provide a copy of the Environmental Report prepared by Pinyon Environmental, Inc. - See Sheet 13, Sch. B, Note 6

A5. **Attached.**

Q6. Does the highline canal still carry irrigation water? If so, what are the dates and can it be stopped?

A6. **From Denver water "irrigation season" is to run from April 1 through November 1. However, that being said, it has been a long time since we have been able to push water as far as Monaco. The High Line does take on a number of stormwater inputs, also, so that means that the canal can get a fair amount of water flowing in it during storm and snowmelt events in the local area. "**

Q7. On Sheet PSP 36, Erosion Control, There is an implication there should be a unit pay item for ECS. Can a Bid Item be added?

A7. **The Erosion Control Supervisor (ECS) effort shall not be paid for separately but shall be included in the work per the specifications and notes on sheet G02.**

Q8. See PSP-56, PCCP: Is fast track concrete (Class E) anticipated?

A8. **Class E concrete is not anticipated.**

Q9. Can the asphalt planing of the bridge deck be completed in one mobilization, with traffic allowed to drive on the milled deck?

A9. **Traffic may utilize the milled deck surface so long as no damage is done to the deck during the milling process and no existing deck damage is uncovered and exposed to traffic. If either of those occurs no**

traffic may travel over the damaged portions until the contractor has repaired the damaged portion(s) of the deck to the satisfaction of the Engineer.

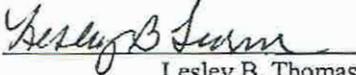
Q10. See Page PSP-35, Sch B, Contractor's Experience Requirements: Can the "...completed in the last three years..." be eliminated if the contractor can demonstrate previous experience with current personnel?

A10. The requirement may be waived so long as the contractor has personnel on staff who can demonstrate the experience. In addition, Section 204 of the specifications has been amended to require that the bridge jacking and shoring plan be signed and sealed by a Colorado registered professional engineer. An updated Section 204 is attached to this addendum.

Q11. Is the depth of existing asphalt on the bridge deck known?

A11. The available inspection report shows an asphalt thickness of 4". The actual thickness may vary.

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


Lesley B. Thomas
City Engineer
4.21.2020
Date

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

TECHNOLOGY CONSTRUCTORS, INC.

Contractor
4/21/20
Date

ADDENDUM NO. 4

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER

**TRANSPORTATION &
INFRASTRUCTURE**

**DEPARTMENT OF TRANSPORTATION &
INFRASTRUCTURE**

Bid Documents Package

Contract Number: 202053748



Highline Canal Crossing at Holly St. and Iliff Ave.

March 3, 2020

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

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Certificate of Contract Release (Sample)	BDP-58

Prevailing Wage Rate Schedule 7 pages
Technical Specifications (Schedule A) 96 pages
Technical Specifications (Schedule B)..... 84 pages
Contract Drawings (Schedule A) 34 pages
Contract Drawings (Schedule B) 19 pages

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DENVER
THE MILE HIGH CITY

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

STATEMENT OF QUANTITIES – SCHEDULE A

Item No.	Description	Estimated	Quantity
201	Clearing and Grubbing	1	LS
202	Removal of Structures and Obstructions	1	LS
202	Removal of Sidewalk	26	SF
202	Removal of Curb and Gutter	119	LF
202	Removal of Concrete Curb Ramp	45	SF
202	Removal of Concrete Pavement	22	SY
202	Removal of Asphalt Mat	470	SY
202	Removal of Asphalt Mat (planing)	43	SY
203	Unclassified Excavation (complete in place)	165	CY
203	Blading	4	HOUR
203	Dozing	4	HOUR
203	Combination Loader	4	HOUR
203	Potholing	6	EA
208	Rock Sock	60	LF
208	Pre-fabricated Concrete Washout Structure	1	EA
208	Pre-fabricated Vehicle Tracking Pad	2	EA
208	Sweeping (sediment removal)	16	HOUR
208	Removal of Trash	8	HOUR
210	Reset Ground Sign	4	EA



DENVER
THE MILE HIGH CITY

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

STATEMENT OF QUANTITIES – SCHEDULE A

Item No.	Description	Estimated	Quantity
212	Seeding (native)	0.2	ACRE
213	Mulching (weed free)	0.2	ACRE
213	Mulch tackifier	40	LB
403	Hot Mix Asphalt (patching)	49	TON
403	Hot Mix Asphalt (grading s) (75) (pg 64-22)	10	TON
403	Hot Mix Asphalt (grading sx) (75) (pg 64-22)	13	TON
411	Emulsified Asphalt (slow setting)	74	GAL
412	Concrete Pavement (8 inch)	116	SY
607	Construction Fence	200	LF
608	Concrete Curb Ramp	73	SY
609	Curb & Gutter	112	LF
609	Monolithic Median Curb Nose	114	SF
610	Median Cover Material (concrete)	463	SF
614	Sign Panel (class 1)	44	SF
614	Steel Sign Post (2x2 inch tubing)	37	LF
620	Sanitary Facility	1	EA
625	Construction Surveying	1	LS
626	Mobilization	1	LS
627	Epoxy Pavement Marking	4	GAL



DENVER
THE MILE HIGH CITY

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

STATEMENT OF QUANTITIES – SCHEDULE A

Item No.	Description	Estimated	Quantity
627	Preformed Thermoplastic Pavement Marking (xwalk-stop line)	180	SF
628	Construction As-Builts	1	LS
629	Adjust Monument Box	1	EA
630	Construction Traffic Control	1	LS

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DENVER
THE MILE HIGH CITY

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

STATEMENT OF QUANTITIES – SCHEDULE B

Item No.	Description	Estimated	Quantity
201	Clearing and Grubbing	1	LS
202	Removal of Sidewalk	17	SY
202	Removal of Curb and Gutter	32	LF
202	Removal of Asphalt Mat	51	SY
202	Removal of Asphalt Mat (Planing) (Special)	239	SY
202	Removal of Portions of Present Structure (Class 2)	19	SY
202	Removal of Portions of Present Structure (Class 3)	2	SY
202	Removal of Portions of Present Structure	15	CY
202	Sandblasting Reinforcing Steel	47	SY
202	Sandblasting	780	SF
204	Jacking and Shoring	1	LS
206	Structure Excavation	21	CY
250	Environmental Health and Safety Management	1	LS
250	Health and Safety Officer	8	HOUR
250	Monitoring Technician	8	HOUR
304	Aggregate Base Course (Class 6)	34	TON
403	Hot Mix Asphalt (Patching) (Asphalt)	47	TON
403	Hot Mix Asphalt (Grading SX) (75) (PG 64-22)	36	TON
509	Painting Existing Structure	1	LS



DENVER
THE MILE HIGH CITY

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

STATEMENT OF QUANTITIES – SCHEDULE B

Item No.	Description	Estimated	Quantity
512	Bearing Device	6	EACH
515	Waterproofing (Membrane)	194	SY
601	Concrete Class D (Bridge)	24	CY
601	Concrete Class DR	2	CY
601	Galvanic Anodes	102	EACH
602	Reinforcing Steel	9,232	LB
608	Concrete Sidewalk	24	SY
609	Curb and Gutter	35	LF
625	Construction Surveying	1	LS
626	Mobilization	1	LS
630	Construction Traffic Control	1	LS
109	Allowance – Erosion Control	1 A/A	\$7,500.00

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CITY AND COUNTY OF DENVER

**NOTICE OF INVITATION FOR BIDS
FOR CONTRACT NO. 202053748**

HIGHLINE CANAL CROSSING AT HOLLY ST. AND ILIFF AVE.

**BID SCHEDULE:
11:00 a.m., Local Time
April 16, 2020**

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

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

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

GENERAL STATEMENT OF WORK:

Rehabilitation of Holly Bridge support Bearings and Deck (D-10-HC-170) and Median Reconstruction.

ESTIMATED CONSTRUCTION COST:

The estimated cost of construction for this project is between \$385,000.00 and \$470,000.00.

TEXTURA CONSTRUCTION PAYMENT MANAGEMENT:

Bidders are required, when preparing a bid, to agree it shall use the Textura® Construction Payment Management System ("Textura") to request payment from the City and to pay subcontractors. All certified subcontractors or suppliers who are listed for participation towards any assigned program goal must be paid via Textura. All fees associated with Textura are to be paid by the awarded Contractor. Bidders shall use the pricing scale provided in Instructions to Bidders to price the Textura service appropriately. For details on the company and service, contact the Textura® Corporation at 866-TEXTURA or www.texturacorp.com.

DOCUMENTS AND BID INFORMATION AVAILABLE:

Contract Documents complete with Technical Specifications and, if applicable, construction drawings will be available on the first day of publication at: www.work4denver.com. To download digital Contract Documents at a cost of \$15 per download, reference eBid Document Number #6577841. Contact QuestCDN at 952-233-1632 or info@questcdn.com for assistance.

PRE-BID MEETING:

A pre-bid meeting will be held for this Project at 10:00 a.m., local time, on March 17, 2020. This meeting will take place at: WEBB Building, 201 W. Colfax Ave., 4th Floor Conference Room 4.I.5, Denver, Colorado 80202.

DEADLINE TO SUBMIT QUESTIONS: March 24, 2020 by 10:00 a.m. local time.

MINORITY/WOMEN BUSINESS ENTERPRISE PARTICIPATION:

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

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

18% Minority/Women Business Enterprise (M/WBE) Participation

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

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

MISCELLANEOUS:

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

City contracts are subject to payment of City Minimum Wage established pursuant to Section 20-82 through 20-84 D.R.M.C.

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

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

Publication Dates: March 3, 4, 5, 2020
Published In: The Daily Journal

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CITY AND COUNTY OF DENVER 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 City (if prequalification is required for this project), in arrears to the City upon debt or contract, or which are defaulters (as surety or otherwise) upon any obligation to the City.

IB-6 INFORMAL AND UNBALANCED BIDS

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

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

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

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

IB-7 ONLY ONE BID ACCEPTED

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

IB-8 BID GUARANTEE

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

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

Following award and execution of the Contract by the Apparent Low Bidder, or earlier in the sole discretion of the City, bid guarantees of all but the Apparent Low Bidder will be returned. When the Apparent Low Bidder executes the Contract and delivers to the City satisfactory performance and payment bonds, required insurance documentation, and has satisfied all conditions precedent to contract execution by the City, and after approval, if any, by the Council of the City of the proposed Contract with the Apparent Low Bidder, the bid guarantee of the Apparent Low Bidder shall be returned. Such return shall be made within one

hundred twenty (120) days from date bids are opened unless otherwise specified in the Special Contract Conditions.

IB-9 SITE INSPECTION AND INVESTIGATIONS

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

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

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

IB-10 INCONSISTENCIES

Any seeming inconsistencies or ambiguities between different provisions of the Contract Documents or any point which the bidder believes requires a decision or interpretation by the City must be inquired into by the bidder by addressing a formal written communication to the Manager of the Department of Transportation and Infrastructure and sending or delivering it to the office 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 the Department of Transportation and Infrastructure. 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 THE BID FORMS.

IB-12 CONTRACTOR'S BULLETIN BOARD

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

IB-13 PRE-BID MEETING

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

IB-14 ADDENDA

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

IB-15 BID OPENING

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

IB-16 EVALUATION OF BIDS AND BASIS OF BID SELECTION

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

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

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

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

IB-17 NOTICE TO APPARENT LOW BIDDER

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

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

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

IB-18 EXECUTION OF CONTRACT

The process of executing a contract requires action by both the apparent low bidder and the City. After it notifies the Apparent Low Bidder, the City will prepare the Contract Documents by incorporating all of the documents submitted by the Apparent Low Bidder into one or more executable copies. Upon notification that contracts documents are ready for execution the Apparent Low Bidder shall execute the contract documents. At this time, the successful bidder shall also provide certain supplemental documents for incorporation into the Contract Documents. These supplemental documents shall include: the properly executed Certificate of Insurance Forms evidencing the apparent low bidder's satisfactory compliance with the insurance requirements set forth in the Contract Documents; a properly executed Payment and Performance Bond Form and appropriate Power of Attorney evidencing the Apparent Low Bidder's satisfactory compliance with the bonding requirements set forth in the Contract Documents; and documentation of compliance with any other conditions precedent to execution of the Contract by the City set forth in the Contract Documents. The insurance and bond forms contained in the Contract Special Conditions Section of the Contract Documents must be used in satisfying these supplemental document requirements.

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

IB-19 BONDING REQUIREMENTS

In accordance with the provisions of General Contract Conditions, Title 15, PERFORMANCE AND PAYMENT BONDS, the minimum bonding requirements for this Contract are set forth in the form **CITY AND COUNTY OF DENVER PERFORMANCE AND PAYMENT BOND** contained in the Special Conditions Section of the Contract Documents. Upon receipt of Notice to Apparent Low Bidder, the apparent low bidder must cause this form bond to be purchased, executed and furnished, along with

appropriate Powers of Attorney and a surety authorization letter (in form similar to the one attached), to the City in accordance with the instructions contained herein.

IB-20 INSURANCE REQUIREMENTS

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

IB-21 PERMITS AND LICENSES

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

IB-22 PREVAILING WAGE REQUIREMENTS

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

Date bid or request for qualifications/proposals was advertised: March 3, 2020.

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

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

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

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

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

IB-23 PAYMENT OF CITY MINIMUM WAGE

Contractor shall comply with, and agrees to be bound by, all requirements, conditions, and City determinations regarding the City’s Minimum Wage Ordinance, Sections 20-82 through 20-84 D.R.M.C, including, but not limited to, the requirement that every covered worker shall be paid no less than the City Minimum Wage in accordance with the foregoing D.R.M.C. Sections.

Instances in which a worker is covered by both Prevailing Wage rate requirements and City Minimum Wage rate requirements, Contractor shall pay every covered worker the greater of the two.

The services being requested in this solicitation may involve services that are covered pursuant to Division 3.75 of Article IV of Chapter 20 of the Denver Revised Municipal Code (“D.R.M.C.”), which is designed to address the issue of wage equity and cost of living affordability in the City & County of Denver. Contractor agrees that any contract with the City shall include a requirement that Contractor will comply with the provisions of D.R.M.C. §§20-82 through 20-84, including, but not limited to, paying all covered workers no less than the City Minimum Wage for all covered services rendered in connection with the Contract. Additionally, Contractor agrees that the contract shall require compliance with all current and future federal and state laws and City ordinances.

IB-24 TAX REQUIREMENTS

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

Sales and Use Tax. The City of Denver imposes consumer use tax on all construction and building materials used on any construction project located in Denver. Denver does not exempt governmental or charitable projects.

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 include Denver sales/use tax, Occupational Privilege taxes, and 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 \$500 or more working in Denver during a calendar month, is subject to the payment of the Employee Occupational Privilege Tax. The Contractor and any subcontractor must pay the Business Occupational Privilege Tax for each of its employees who are subject to such tax.

IB-25 DIVERSITY AND INCLUSIVENESS IN CITY SOLICITATIONS

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

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

managers, or business partners in order to describe diversity and inclusiveness measures. Rather, the City simply seeks a description of the contractor's current practices, if any.

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

IB-26 MINORITY/WOMEN BUSINESS ENTERPRISE (M/WBE) REQUIREMENTS

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

Meeting Established Goal

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

1. Under the M/WBE Ordinance, the Director of DSBO ("Director") is directed to establish project goals for expenditures on construction, reconstruction, and remodeling work performed for the City and County of Denver. The specific goal for this project is stated in the Notice of Invitation for Bids bound herein.
2. In preparing its bid, each bidder shall list on the Bid Form pages entitled "List of Proposed MWBE Bidders, Subcontractors, Suppliers, Manufacturers, Manufacturers' Representatives or Brokers" the name, address, work description/supply, committed level of participation and other required information for each M/WBE of any tier which the bidder intends to use in performing the work on this Project. **Only the M/WBEs identified and the precise levels of participation listed for each on the Bid Form page, at the time of bid opening, will be considered in determining whether the bidder has met the designated participation goal. Additional, revised or corrected participation submitted after bid opening will not be considered.** M/WBE bidders may count self-performance or joint venture activity in meeting the M/WBE project goal, but only for the scope of work performed as a commercially useful function and at a percentage level the M/WBE will be performing itself.
3. Any agreement between a bidder or proposer and an MBE or WBE in which the bidder or proposer requires that the MBE or WBE not provide subcontracting quotations to other bidders or proposers is prohibited and shall render a bidder's bid or proposer's proposal nonresponsive. D.R.M.C. 28-63(f).

4. If a bidder/proposer is participating in a joint venture with a certified M/WBE firm, complete the Joint Venture Eligibility Form and Joint Venture Affidavit contained in this bid document/RFP. Submit the aforementioned forms with the firm's Joint Venture Agreement, to the DSBO Director, **at least 10 working days prior to the proposal submittal**. The Joint Venture must be approved prior to the bid opening or proposal submittal by the DSBO Director. Approval by the DSBO Director includes determining the amount the Joint Venture will count towards meeting the project goal.
5. All M/WBEs listed on the Bid Form must be properly certified by the City on or before the date bids are opened in order to count towards meeting the designated goal. DSBO maintains an M/WBE Directory ("Directory"), which is a current listing of M/WBEs that have been certified by the City. A copy of the DSBO Directory is located at DSBO web site at <https://www.denvergov.org/dsbo>. Bidders are encouraged to use the Directory to assist in locating M/WBEs for the work and supplies required on the Project. Bidders are reminded that changes may be made to the Directory at any time in accordance with the City's M/WBE Ordinance and procedures established to administer this program and a current copy of the Directory must always be used in preparing a bid. M/WBE certification or listing in the Directory is not a representation or warranty by the City as to the qualifications of any listed M/WBE.
6. In accordance with the provisions of the M/WBE Ordinance, DSBO will evaluate each bid to determine the responsiveness of the bid to the requirements of the M/WBE Ordinance. In determining whether a bidder's committed level of participation meets or exceeds the stated M/WBE goal, DSBO shall base its calculation of applicable amounts and percentages on the total base bid amount, not including any listed alternates, of each bid as follows:
 - a. The bid information provided by the agency will be used to determine the total base bid amount of each bid. Each bidder's total base bid amount will be multiplied by the M/WBE percentage established for the project to determine the exact dollar amount of required M/WBE participation for the Project. This amount will then be compared against the exact dollar amounts for the M/WBE committed for participation by the bidder. If the total dollar amount of participation listed meets or exceeds the established M/WBE dollar amount goal listed, then DSBO will determine that the goal has been met.
 - b. In addition, DSBO will determine the exact commitment percentage for each listed M/WBE by dividing the dollar amount listed for each M/WBE by the total base bid dollar amount submitted by the bidder. These individual percentages, when totaled for all listed M/WBE, will establish the total committed percentage level of M/WBE participation that the bidder must comply with during the life of the contract. In all cases, the committed percentage level of M/WBE participation must equal or exceed the assigned M/WBE goal for the Project.
 - c. In providing the exact dollar amount of participation for each listed M/WBE, a bidder should take care never to round up in determining whether or not the total of these amounts meets or exceeds the established percentage goal. The goal must be met or exceeded by dollar amounts and percentages in order for DSBO to determine that the bidder has met or exceeded the applicable M/WBE goal.
 - d. As previously mentioned, compliance with the M/WBE goal will be determined on the base bid alone. If a bid contains alternates, participation contained in any alternate will not count towards satisfaction of the Project goal. However, should any designated alternate be selected by the City for inclusion in the contract ultimately awarded, the M/WBE goal percentage level submitted at bid time, on the base bid, will also apply to the selected alternates and must be maintained for the life of the contract on the total contract amount, including any alternate work. Thus, even though such participation will not be considered in evaluating bids, bidders are urged to consider participation in preparing bids for designated alternates.

- e. On projects where force account or allowance bid items have been included, bidders must meet the M/WBE goal percentage based upon the total base bid, including all such items that are submitted to the City. However, when a force account or allowance is designated by the City to be either performed or purchased from a specific company, the bidder may back out the dollar amount of the force account or allowance from the total base bid and meet the M/WBE goal on the remaining reduced amount.
 - f. On bids which, at the time of bid opening, are equal to or exceed Five Million Dollars (\$5,000,000.00), including any alternates which may be selected, only sixty percent (60%) of the value of the commercially useful function performed by M/WBE suppliers shall count toward satisfaction of the Project goal. On Projects under Five Million (\$5,000,000.00) the value of the commercially useful function of M/WBE supplier(s) will count at a one hundred percent (100%) level. Manufacturer's representatives and packagers shall be counted in the same manner as brokers.
 - g. In utilizing the M/WBE participation of a Broker only the bona fide commissions earned by such Broker for its performance of a commercially useful function will count toward meeting the Project goals. The bidder must separate the bona fide brokerage commissions from the actual cost of the supplies or materials provided to determine the actual dollar amount of participation that can be counted towards meeting the goal.
7. On or before the third (3rd) working day after bid opening, all of the Bidders are required to submit an executed "Letter of Intent" for each M/WBE listed on the Bid Form as a joint venture member, subcontractor, supplier, manufacturer, manufacturers' representative or broker of any tier. **An MBE or WBE Prime Bidder needs to submit a Letter of Intent for itself for self-performed work**, and must identify their level of participation on the designated M/WBE participation page bound herein. A Letter of Intent shall be submitted only for the M/WBEs listed at the time of bid opening, since this is the only participation that will be counted toward satisfaction of the project goal. A form for the M/WBE Letter of Intent is included with the Bid Form. The M/WBE Letter of Intent is a written communication from the Bidder to the City evidencing an understanding that the Bidder has or will enter into a contractual relationship with the M/WBE or that its subcontractor(s) and supplier(s), manufacturer(s), manufacturers' representative(s) and broker(s) will do so. Each M/WBE Letter of Intent shall be accompanied by a copy of the City and County of Denver's M/WBE certification letter for each proposed M/WBE identified at bid time. Bidders are urged to carefully review these Letters before submission to the City to ensure that they are properly completed and executed by the appropriate parties.

Good Faith Effort

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

1. If the bidder or proposer has not fully met the project goal as provided in section 28-60, then it shall demonstrate that it has made good faith efforts to meet such goal. The bidder or proposer shall furnish to the director, within three (3) working days after bid opening by the City or on or before the time of the final project-specific proposal submitted to and authorized by the City pursuant to a competitive selection process, or bid selection by a private owner, a detailed statement of its good faith efforts to meet the project goal set by the director. This statement shall address each of the items in subsection (b) and any additional criteria that the director may establish by rule or regulation consistent with the purposes of this division 3. Good faith efforts must be demonstrated to be meaningful and not merely for formalistic compliance with this Division 3. The scope and intensity of the efforts will be considered in determining whether the bidder or proposer has achieved a good faith effort.

2. The statement of good faith efforts shall include a specific response and verification with respect to each of the following good faith effort categories, which may be further defined by rule or regulation. A bidder or proposer may include any additional information it believes may be relevant. Failure of a bidder or proposer to show good faith efforts as to any one (1) of the following categories shall render its overall good faith effort showing insufficient and its bid or proposal non-responsive:
 - a. If prebid or preselection meetings are scheduled by the City at which MBEs and WBEs may be informed of subcontracting or joint venture opportunities under a proposed contract to be bid, or procured pursuant to the competitive selection process, attendance at such prebid or preselection meetings is not mandatory; however, bidders and proposers are responsible for the information provided at these meetings.
 - b. The bidder or proposer must solicit through all reasonable and available means, the interest of all MBEs and WBEs certified in the scopes of work of the contract. The bidder or proposer must solicit the interest of such MBEs and WBEs within sufficient time, prior to the bid opening or date of final project-specific proposal in the case of a competitive selection process, to allow such MBEs and WBEs to respond to the solicitation. The bidder or proposer must determine with certainty if the MBEs and WBEs are interested by demonstrating appropriate steps to follow up initial solicitations.
 - c. The bidder or proposer must select portions of the work of the contract to be performed by MBEs and WBEs in order to increase the likelihood that the project goal will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MBE and WBE participation as subcontractors or joint venturers, and for bidder or proposer self-performed work, as suppliers, manufacturers, manufacturer's representatives and brokers, all reasonably consistent with industry practice, even when the bidder or proposer would otherwise prefer to perform these work items with its own forces. The bidder or proposer must identify what portions of the contract will be self-performed and what portions of the contract will be opened to solicitation of bids, proposals and quotes from MBE and WBEs. All portions of the contract not self-performed must be solicited for MBE and WBE participation. The ability or desire of a bidder or proposer to perform the work of a contract with its own forces does not relieve the bidder or proposer of the responsibility to meet the project goal or demonstrate good faith efforts to do so.
 - d. The bidder or proposer, consistent with industry practice, must provide MBEs and WBEs at a clearly stated location with timely, adequate access to and information about the plans, specifications, and requirements of the contract, including bonding and insurance requirements, if any, to assist them in responding to a solicitation.
 - e. The bidder or proposer must negotiate in good faith with interested MBEs and WBEs and provide written documentation of such negotiation with each such MBE or WBE.
 - f. For each MBE or WBE which contacted the bidder or proposer or which the bidder or proposer contacted or attempted to subcontract or joint venture with, consistent with industry practice, the bidder or proposer must supply a statement giving the reasons why the bidder or proposer and the MBE or WBE did not succeed in negotiating a subcontracting, supplier, manufacturer, manufacturer's representative, broker or joint venture agreement, as applicable.
3. The bidder or proposer must provide verification that it rejected each non-utilized MBE and WBE because the MBE or WBE did not submit the lowest bid or it was not qualified. Such verification shall include a verified statement of the amounts of all bids received from potential or utilized subcontractors, suppliers, manufacturers, manufacturer's representatives, brokers or joint venturers on the contract, whether or not they are MBEs or WBEs. In making such a determination of not being qualified, the bidder or proposer shall be guided by the definition of qualified in section 28-54(42), but evidence of lack of qualification must be based on factors other than solely the amount of the MBE's or WBE's bid. For each MBE or WBE found not to be qualified by the bidder or proposer, the verification shall include a statement giving the bidder's or proposer's reasons for its conclusion. A bidder's or proposer's industry standing, or group memberships may not be the cause of rejection of an MBE or WBE. A

bidder or proposer may not reject an MBE or WBE as being unqualified without sound reasons based on a reasonably thorough investigation and assessment of the MBE's or WBE's capabilities and expertise.

4. If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining bonding, lines of credit, or insurance as required by the City or by the bidder or proposer, provided that the bidder or proposer need not provide financial assistance toward this effort.
5. If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining necessary and competitively priced equipment, supplies, materials, or related assistance or services for performance under the contract, provided that the bidder or proposer need not provide financial assistance toward this effort.
6. The bidder or proposer must use the DSBO MBE/WBE directories to identify, recruit, and place MBEs and WBEs.
7. In determining whether a bidder or proposer has satisfied good faith efforts as to a project goal, the success or failure of other bidders or proposers on the contract in meeting such project goal may be considered.

Continuing Commitments

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

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

to the director the documentation described in Section 28-75(c) of the M/WBE Ordinance with respect to the increased dollar value of the contract.

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

IB- 27 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-28 GENERAL BIDDING INFORMATION

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

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IB-29 PAYMENT PROCEDURE REQUIREMENTS

Bidder recognizes and agrees that it shall be required to use the Textura® Construction Payment Management System (“Textura”) for this Project to request payment from the City and to pay subcontractors. All certified subcontractors or suppliers who are listed for participation towards any assigned program goal must be paid via Textura. All fees associated with Textura are to be paid by the bidder for billings for work performed. Bidders are required, when preparing a bid, to enter the price of Textura on the line provided for the service. The fee is all inclusive of all subcontractor, project and subscription fees associated with Textura. The bidder will calculate the fee based on their total bid (not including any alternates, if applicable) and the table below, and then include it on the line item provided in the bid form labeled “Textura® Construction Payment Management System Fee”. This expense becomes part of the contract and billable to the City. All costs including, but not limited to, costs associated with training, entering data, and/or utilizing Textura other than the Textura Construction Payment Management System Fee are overhead and shall not be reimbursed by the City. Bidder will be responsible for any tax on the Textura fee. As with other taxes, the City will not reimburse bidder for this cost and therefore this cost should be included in bidder’s bid. Textura will invoice the awarded bidder directly.

Project Value	Project Fee (GC + Sub Usage)
\$100,000 – 249,999.99	\$780
\$250,000 - \$499,999.99	\$1,625
\$500,000 - \$999,999.99	\$3,250
\$1,000,000 - \$2,999,999.99	\$5,850
\$3,000,000 - \$4,999,999.99	\$9,100
\$5,000,000 - \$9,999,999.99	\$12,220
\$10,000,000 - \$19,999,999.99	\$20,345
\$20,000,000 - \$49,999,999.99	\$32,500
\$50,000,000 - \$99,999,999.99	\$48,750
\$100,000,000 - \$199,999,999.99	\$69,095
\$200,000,000 - \$299,999,999.99	\$85,345
\$300,000,000 - \$399,999,999.99	\$109,720
\$400,000,000 - \$499,999,999.99	\$142,220
\$500,000,000 - \$999,999,999.99	\$162,500
\$1,000,000,000 - \$1,999,999,999.99	\$345,345
\$2,000,000,000 - \$4,999,999,999.99	\$650,000
\$5,000,000,000 - \$9,999,999,999.99	\$1,015,625
\$10,000,000,000 or greater	\$1,503,125

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**RULES AND REGULATIONS
REGARDING
EQUAL EMPLOYMENT OPPORTUNITY**

Promulgated and adopted by the Manager of Public Works, and incorporated within these documents by the Department of Transportation and Infrastructure 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.

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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.

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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 Department of Public Works
City and County of Denver

A. REQUIREMENTS - AN AFFIRMATIVE ACTION PLAN:

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

1. GOALS AND TIMETABLES:

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

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

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

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

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

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

2. SPECIFIC AFFIRMATIVE ACTION STEPS:

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

directed at increasing minority and female utilization and that such efforts were at least as extensive and as specific as the following:

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

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

3. NON - DISCRIMINATION:

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

4. COMPLIANCE AND ENFORCEMENT:

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

B. CONTRACTORS SUBJECT TO THESE BID CONDITIONS:

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

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

C. OBLIGATIONS APPLICABLE TO CONTRACTORS:

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

D. GENERAL REQUIREMENTS:

Contractors are responsible for informing their subcontractors in writing regardless of tier, as to their respective obligations. Whenever a Contractor subcontracts a portion of work in any trade covered by these Bid Conditions, **it shall include these Bid Conditions in such subcontracts and each subcontractor shall be bound by these Bid Conditions to the full extent as if it were the prime contractor.** The Contractor shall not, however, be held accountable for the failure of its subcontractors to fulfill their obligations under these Bid Conditions. However, the prime contractor shall give notice to the Director of any refusal or failure of any subcontractor to fulfill the obligations under these Bid Conditions. A subcontractor's failure to comply will be treated in the same manner as such failure by a prime contractor.

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

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**CITY AND COUNTY OF DENVER
CONTRACT NO. 202053748**

HIGHLINE CANAL CROSSING AT HOLLY ST. AND ILIFF AVE.

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

**TECHNOLOGY CONSTRUCTORS, INC.
5636 KENDALL CT., UNIT A
ARVADA CO 80002**

WITNESSETH, commencing on **March 3, 2020**, 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:

<p>CONTRACT NO. 202053748</p> <p>HIGHLINE CANAL CROSSING AT HOLLY ST. AND ILIFF AVE.</p>
--

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

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

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

1. CONTRACT DOCUMENTS

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

Advertisement of Notice of Invitation for Bids
Instructions to Bidders
Commitment to M/WBE Participation
Article III, Divisions 1, 2, and 3 of Chapter 28, D.R.M.C.
Bid Bond
Addenda (as applicable)
Equal Employment Opportunity Provisions (Appendix A and Appendix F)
Bid Form
Contract Form

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

2. SCOPE OF WORK

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

3. TERMS OF PERFORMANCE

The Contractor agrees to undertake the performance of the Work under this Contract within ten (10) days after being notified to commence work by issuance of a Notice to Proceed in substantially the form contained herein from the Manager and agrees to fully complete said Work within **120 (One Hundred Twenty)** 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 Schedule A (bid item numbers 201 through 630 (42 bid items)) plus Schedule B (bid items 109 through 630 (31 bid items)) for a total of (73 bid items)**, the total estimated cost thereof being **Six Hundred Fifty-Eight Thousand Three Hundred Forty-Five Dollars and No Cents (\$658,345.00)**. 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 work under this contract, the Contractor may not refuse to hire, discharge, promote or demote, or discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, gender identity or gender expression, marital status, or physical or mental disability. The Contractor shall insert the foregoing provision in all subcontracts.

6. COMPLIANCE WITH M/WBE REQUIREMENT

This Contract is subject to all applicable provisions of Divisions 1 and 3 of Article III, of Chapter 28, Denver Revised Municipal Code (D.R.M.C.), designated as Sections 28-31 – 28-36 and 28-52 – 28-90 D.R.M.C. and referred to in this Contract as the "M/WBE Ordinance". Without limiting the general applicability of the foregoing, the Contractor acknowledges its continuing duty, pursuant to Sections 28-72, 28-73 and 28-75 of the D.R.M.C., to maintain throughout the duration of this Contract, compliance with the level of

Minority/Women Business Enterprise participation, upon which the City approved the award of this Contract to the Contractor and the Contractor further acknowledges that failure to maintain such participation commitments or otherwise comply with the requirements of the M/WBE Ordinance shall subject the Contractor to sanctions in accordance with Section 28-77 of the D.R.M.C. Nothing contained in this provision or in the M/WBE Ordinance shall negate the City's right to prior approval of subcontractors, or substitutes therefore, under this Contract.

7. WAGE RATE REQUIREMENTS

In performance of all Work hereunder, the Contractor agrees to comply with and be bound by all requirements and conditions of the City's Payment of Prevailing Wages Ordinance, Sections 20-76 through 20-79, D.R.M.C. and any determinations made by the City pursuant thereto as well as the City's Minimum Wage Protections Sections 20-82 through 20-84 D.R.M.C. and any determinations made by the City pursuant thereto. In the event a covered worker falls under both ordinances, Contractor shall pay the greater of the two rates.

8. APPLICABILITY OF LAWS

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

9. APPROPRIATION

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

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

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

10. APPROVALS

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

11. ASSIGNMENT

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

12. DISPUTES RESOLUTION PROCESS

It is the express intention of the parties to this Contract that all disputes of any nature whatsoever regarding the Contract including, but not limited to, any claims for compensation or damages arising out of breach or default under this Contract, shall be resolved by administrative hearing pursuant to the provisions of Section 56-106, D.R.M.C., or, as applicable, Section 28-33 D.R.M.C. for Minority/Women Business Enterprise disputes. The Contractor expressly agrees that this dispute resolution process is the only dispute resolution mechanism that will be recognized by the parties for any claims put forward by the Contractor, notwithstanding any other claimed theory of entitlement on the part of the Contractor or its subcontractors or suppliers.

13. CONTRACT BINDING

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

14. PARAGRAPH HEADINGS

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

15. SEVERABILITY

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

16. ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS

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

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Contract Control Number:
Contractor Name:

DOTI-202053748-00
TECHNOLOGY CONSTRUCTORS, INC

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:

Attorney for the City and County of Denver

By:

By:

By:

Contract Control Number:
Contractor Name:

DOTI-202053748-00
TECHNOLOGY CONSTRUCTORS, INC

By:  _____

Name: RICHARD LEE
(please print)

Title: PRESIDENT
(please print)

ATTEST: [if required]

By:  _____

Name: EDUARDO R. CALLEJO
(please print)

Title: SECRETARY
(please print)

**STANDARD SPECIFICATIONS FOR CONSTRUCTION
GENERAL CONTRACT CONDITIONS**

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CITY AND COUNTY OF DENVER
SPECIAL CONTRACT CONDITIONS

SC-1 CONSTRUCTION SPECIFICATIONS

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

City and County of Denver:

Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS,
(2011 Edition)

Transportation Standards and Details for the Engineering Division

City and County of Denver Traffic Standard Drawings

Wastewater Capital Projects Management

<https://www.denvergov.org/content/denvergov/en/wastewater-management/capital-projects-management.html>

Colorado Department of Transportation:

Standard Specifications for Road and Bridge Construction
(Sections 200 through 700 of the 2019 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 2018 Series, City and County of Denver Amendments 2019)

<https://www.denvergov.org/content/denvergov/en/denver-development-services/help-me-find-/building-codes-and-policies.html>

National Fire Protection Association Standards

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

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

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

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

SC-2 DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE (REPLACES GENERAL CONTRACT CONDITION 203)

As of January 1, 2020, the functions of Public Works are housed in the new Department of Transportation and Infrastructure. For purposes of this Contract all references (including, but not limited to, references appearing in the body of the contract, General Conditions, Special Conditions, Exhibits, Contract Documents or Policies and Procedures) to the Department of Public Works will have the same meaning as the Department of Transportation and Infrastructure.

Vested exclusively in the Department of Transportation and Infrastructure is the management and control of the design and construction of general and local public improvements undertaken by the City and County of Denver, except for: (i) work which is under the management and control of the Department of Aviation; (ii) that work performed by the Denver Board of Water Commissioners; (iii) any such work that the Mayor has specifically assigned to another department or agency; and (iv) work under the authority of the Department of Transportation and Infrastructure that is performed with the permission of the Manager of Transportation and Infrastructure by private entities at their own expense.

SC-3 MANAGER OF DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE (REPLACES GENERAL CONTRACT CONDITION 204)

General Condition 204 "Manager of Public Works" is hereby deleted in its entirety and replaced with the following:

As of January 1, 2020, the functions of Public Works are housed in the new Department of Transportation and Infrastructure. The Manager of Public Works / Executive Director of Public Works will become the Executive Director of Transportation and Infrastructure. Manager of Public Works, Executive Director of Public Works, Executive Director of Transportation and Infrastructure and Manager of Transportation and Infrastructure will have the same meaning for purposes of this Agreement.

SC-4 DEPUTY MANAGER / CITY ENGINEER

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

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

SC-5 PROJECT DELIVERY ADMINISTRATION / CITY ENGINEER

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

SC-6 WASTEWATER MANAGEMENT DIVISION

The Wastewater Management Division is a unit of the Department of Transportation and Infrastructure and is supervised by the Deputy Manager of the Department of Transportation and Infrastructure for

Wastewater Management, who is subordinate to the Manager of the Department of Transportation and Infrastructure. This Division is responsible for the operation and maintenance of the City's wastewater facilities.

SC-7 CITY DELEGATION OF AUTHORITY

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

Department of Transportation and Infrastructure:

<u>Project Manager</u>	<u>Telephone</u>
Kevin Rens	720.865.3151
Brett Boncore	720.865.3214

<u>Consultant</u>	<u>Name</u>	<u>Telephone</u>
Wood	Eric Pilger	303.630.0785
FHU	Sean Fahey	720.508.1403

SC-8 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 **\$800.00** 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-9 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-10 PAYMENTS TO CONTRACTORS

The application for payment shall be submitted through Textura® Corporations Construction Management Website. Contractor recognizes and agrees that it shall be required to use the Textura Construction Payment Management System for this Project to request payment from the City and to pay subcontractors. All certified subcontractors or suppliers who are listed for participation towards any assigned program goal must be paid via Textura®. Contractor further agrees that, to the fullest extent possible within Textura, the City shall be entitled to all non-Confidential records, reports, data and other information related to the project that are available to Contractor through Textura, including, but not limited to, information related

to Contractor and subcontractor billings. To that end, Contractor agrees it will activate any available settings within Textura necessary to grant the City access to such non-Confidential information related to the contract and the project. Applications for payment shall be based on the Contract Unit Prices or the approved Schedule of Values described in GC 903.1

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

<u>Agency/Firm</u>	<u>Name</u>	<u>Telephone</u>
Department of Transportation and Infrastructure	Kevin Rens	720.865.3151
	Brett Boncore	720.865.3214

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

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

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

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DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE
FINAL/PARTIAL RELEASE AND CERTIFICATE OF PAYMENT
(SUBCONTRACTOR/SUPPLIER)

 (PROJECT NO. and NAME)

 (NAME OF CONTRACTOR)

 (NAME OF SUBCONTRACTOR/SUPPLIER)

Date: _____, 20____.

Subcontract #: _____.

Subcontract Value: \$ _____.

Last Progress Payment: \$ _____.

Date: _____.

Total Paid to Date: \$ _____.

Date of Last Work: _____.

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

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

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

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

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

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

STATE OF COLORADO) ss.
 CITY OF _____)

Signed and sworn before this _____
 day of _____, 20____.
 Notary Public/Commissioner of Oaths
 My Commission Expires: _____

 (Name of Subcontractor)

By: _____

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

SC-11 CONTRACT FORMS

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

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

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

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

SC-12 CONSTRUCTION INSPECTION BY THE CITY

General Condition 1701, CONSTRUCTION INSPECTION BY THE CITY, 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 Building Inspection will perform building code compliance inspections for structures designed for human occupancy. It is the General Contractor's responsibility to schedule and obtain these inspections. If a code compliance inspection results in identification of a condition which will be at variance to the Contract Documents, the General Contractor shall immediately notify the Project Manager and confirm such notification with formal correspondence no later than forty-eight (48) hours after the occurrence.

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

SC-13 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-14 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-15 WAIVER OF: PART 8 OF ARTICLE 20 OF TITLE 13, COLORADO REVISED STATUTES

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

SC-16 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-17 INSURANCE

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

(1) General Conditions: Contractor agrees to secure, at or before the time of execution of this Agreement, the following insurance covering all operations, goods or services provided pursuant to this Agreement. Contractor shall keep the required insurance coverage in force at all times during the term of the Agreement, or any extension thereof, during any warranty period, and for eight (8) years after termination of the Agreement. The required insurance shall be underwritten by an insurer licensed or authorized to do business in Colorado and rated by A.M. Best Company as “A-”VIII or better. Each policy shall contain a valid provision or endorsement requiring notification to the City in the event any of the required policies be canceled or non-renewed before the expiration date thereof. Such written notice shall be sent to the parties identified in the Notices section of this Agreement. Such notice shall reference the City contract number listed on the signature page of this Agreement. Said notice shall be sent thirty (30) days prior to such cancellation or non-renewal unless due to non-payment of premiums for which notice shall be sent ten (10) days prior. If such written notice is unavailable from the insurer, contractor shall provide written notice of cancellation, non-renewal and any reduction in coverage to the parties identified in the Notices section by certified mail, return receipt requested within three (3) business days of such notice by its insurer(s) and referencing the City’s contract number. If any policy is in excess of a deductible or self-insured retention, the City must be notified by the Contractor. Contractor shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Agreement are the minimum

requirements, and these requirements do not lessen or limit the liability of the Contractor. The Contractor shall maintain, at its own expense, any additional kinds or amounts of insurance that it may deem necessary to cover its obligations and liabilities under this Agreement.

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

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

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

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

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

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

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

(9) Contractors Pollution Liability: Contractor shall maintain limits of \$1,000,000 per occurrence and \$2,000,000 policy aggregate. Policy to include bodily injury; property damage including loss of use of damaged property; defense costs including costs and expenses incurred in the investigation, defense or settlement of claims; and clean-up costs. Policy shall include a severability of interest or separation of

insured provision (no insured vs. insured exclusion) and a provision that coverage is primary and non-contributory with any other coverage or self-insurance maintained by the City.

(10) Additional Provisions:

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

SC-18 GREENPRINT DENVER REQUIREMENTS

In accordance with the City and County of Denver Executive Order 123: Greenprint Denver Office and Sustainability Policy, as amended, Contractor shall adhere to sections of Executive Order 123 pertinent to the construction of the built environment. This includes but is not limited to: all construction and renovation of buildings shall follow instructions and memorandum for high performance buildings; horizontal projects shall include the use of fly ash concrete and recycled aggregate where possible; and, all projects shall recycle construction and demolition waste, and install materials that contain recycled content whenever possible using the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) as guidance. Non-hazardous solid waste that is eligible for reuse or recycling is not subject to the DADS disposal requirement defined in SC-13.

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

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

SC-19 ACCOUNTING OF COST AND AUDIT

Title 911 is hereby deleted in its entirety and replaced with the following:

Any authorized agent of the City, including the City Auditor or his or her representative, has the right to access, and the right to examine, copy and retain copies, at City’s election in paper or electronic form, any pertinent books, documents, papers and records related to Contractors’ performance pursuant to this Agreement, provision of any goods or services to the City, and any other transactions related to this Agreement. Contractor shall cooperate with City representatives and City representatives shall be granted access to the foregoing documents and information during reasonable business hours and until the latter of three (3) years after the final payment under the Agreement or expiration of the applicable statute of limitations. When conducting an audit of this Agreement, the City Auditor shall be subject to government auditing standards issued by the United States Government Accountability Office by the Comptroller General of the United States, including with respect to disclosure of information acquired during the course of an audit. No examination of records and audits pursuant to this paragraph shall require Contractor to

make disclosures in violation of state or federal privacy laws. Contractor shall at all times comply with D.R.M.C. 20-276.

SC-20 DEFENSE AND INDEMNIFICATION

Title 1602 is hereby deleted in its entirety and replaced with the following:

- (a) To the fullest extent permitted by law, the Contractor hereby agrees to defend, indemnify, reimburse and hold harmless City, its appointed and elected officials, agents and employees for, from and 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 Agreement 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 Agreement 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 Agreement.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned Technology Constructors, Inc.,
5636 Kendall Ct., Unit A, Arvada, CO 80002

a corporation organized and existing under and by virtue of the laws of the State of Colorado,
hereafter referred to as the "Contractor", and Employers Mutual Casualty Company,
a corporation organized and existing under and by virtue of the laws of the State of Iowa,
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 **Six Hundred Fifty-Eight Thousand Three Hundred Forty-Five Dollars and No
Cents Dollars (\$658,345.00)**, 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. 202053748 - Highline Canal Crossing at Holly St.
and Iliff Ave.**, 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;

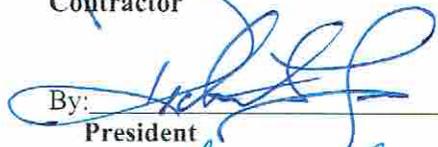
PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to contracts with others in connection with this project, or the work to be performed thereunder, or the Technical Specifications 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 _____ day of _____, 2020.

Attest:


Secretary **EDWARD R. CALLESO**

Technology Constructors, Inc.
Contractor

By: 
President


Surety Sarah Brown, Attorney-in-Fact
Employers Mutual Casualty Company

(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

Signature by the CAO will be provided
By: later and fully incorporated herein.
Assistant City Attorney

APPROVED FOR THE CITY AND COUNTY
DENVER

Signature by the CAO will be provided
By: later and fully incorporated herein.
MAYOR
Signature by ED will be provided later and fully
By: incorporated herein
**EXECUTIVE DIRECTOR OF THE DEPARTMENT
OF TRANSPORTATION AND INFRASTRUCTURE**



POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, that:

- 1. Employers Mutual Casualty Company, an Iowa Corporation
- 2. EMCASCO Insurance Company, an Iowa Corporation
- 3. Union Insurance Company of Providence, an Iowa Corporation
- 4. Illinois EMCASCO Insurance Company, an Iowa Corporation
- 5. Dakota Fire Insurance Company, a North Dakota Corporation
- 6. EMC Property & Casualty Company, an Iowa Corporation

hereinafter referred to severally as "Company" and collectively as "Companies", each does, by these presents, make, constitute and appoint:

Sarah Brown

its true and lawful attorney-in-fact, with full power and authority conferred to sign, seal, and execute the Surety Bond:

Any and All Bonds

and to bind each Company thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of each such Company, and all of the acts of said attorney pursuant to the authority hereby given are hereby ratified and confirmed.

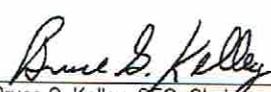
The authority hereby granted shall expire April 1st, 2021, unless sooner revoked.

AUTHORITY FOR POWER OF ATTORNEY

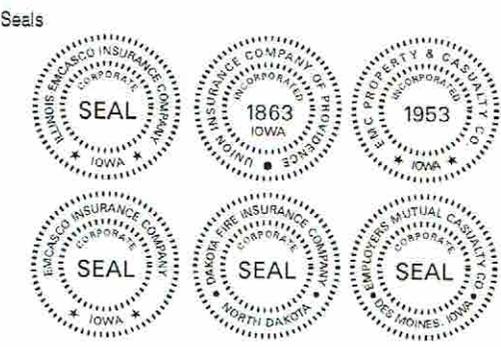
This Power-of-Attorney is made and executed pursuant to and by the authority of the following resolution of the Boards of Directors of each of the Companies at the first regularly scheduled meeting of each company duly called and held in 1999:

RESOLVED: The President and Chief Executive Officer, any Vice President, the Treasurer and the Secretary of Employers Mutual Casualty Company shall have power and authority to (1) appoint attorneys-in-fact and authorize them to execute on behalf of each Company and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof; and (2) to remove any such attorney-in-fact at any time and revoke the power and authority given to him or her. Attorneys-in-fact shall have power and authority, subject to the terms and limitations of the power-of-attorney issued to them, to execute and deliver on behalf of the Company, and to attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and any such instrument executed by any such attorney-in-fact shall be fully and in all respects binding upon the Company. Certification as to the validity of any power-of-attorney authorized herein made by an officer of Employers Mutual Casualty Company shall be fully and in all respects binding upon this Company. The facsimile or mechanically reproduced signature of such officer, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power-of-attorney of the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS THEREOF, the Companies have caused these presents to be signed for each by their officers as shown, and the Corporate seals to be hereto affixed this 1st day of July, 2018.

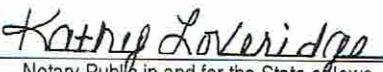

 Bruce G. Kelley, CEO, Chairman of
 Companies 2, 3, 4, 5 & 6; President
 of Companies 1, 2 & 6; Treasurer of
 Companies 1, 2, 3, 4 & 6


 Todd Strother
 Vice President



On this 1st day of July, 2018 before me a Notary Public in and for the State of Iowa, personally appeared Bruce G. Kelley and Todd Strother, who, being by me duly sworn, did say that they are, and are known to me to be the CEO, Chairman, President and Treasurer, and/or Vice President, respectively, of each of the Companies above; that the seals affixed to this instrument are the seals of said corporations; that said instrument was signed and sealed on behalf of each of the Companies by authority of their respective Boards of Directors; and that the said Bruce G. Kelley and Todd Strother, as such officers, acknowledged the execution of said instrument to be their voluntary act and deed, and the voluntary act and deed of each of the Companies.

My Commission Expires October 10, 2022.


 Kathy Loveridge
 Notary Public in and for the State of Iowa



CERTIFICATE

I, James D. Clough, Vice President of the Companies, do hereby certify that the foregoing resolution of the Boards of Directors by each of the Companies, and this Power of Attorney issued pursuant thereto on 1st day of July, 2018, are true and correct and are still in full force and effect.

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this _____ day of _____, _____.


 Vice President



THINKING AHEAD

June 09, 2020

PERFORMANCE AND PAYMENT BOND
SURETY AUTHORIZATION

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

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

RE: **Technology Constructors, Inc.**

Contract No: **202053748**
Federal Project No:
Project Name: **Highline Canal Crossing at Holly St. and Iliff Ave.**
Contract Amount: **\$658,345.00**
Performance and Payment Bond No: **S015619**

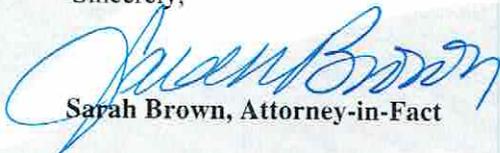
Dear Assistant City Attorney,

The Performance and Payment Bonds covering the above captioned project were executed by this agency through **Employers Mutual Casualty Company** insurance company, on **June 9th**, 20**20**.

We hereby authorize the City and County of Denver, the Department of Transportation and Infrastructure, 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 **(720) 622-8357**.

Thank you,
Employers Mutual Casualty Company
Sincerely,

A handwritten signature in blue ink that reads 'Sarah Brown'.

Sarah Brown, Attorney-in-Fact



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

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

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

RE: (Company name)

Contract No: **202053748**
Project Name: **Highline Canal Crossing at Holly St. and Iliff Ave.**

Contract Amount:
Performance and Payment Bond No.:

SAMPLE

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, the Department of Transportation and Infrastructure, 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,

City and County of Denver Department of Transportation & Infrastructure
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/doti

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



NOTICE TO APPARENT LOW BIDDER

Name
Address
City, State Zip

The EXECUTIVE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE has considered the Bids submitted on **April 16, 2020**, for work to be done and materials to be furnished in and for:

CONTRACT 202053748 - Highline Canal Crossing at Holly St. and Iloff Ave.

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: **(#) bid items (# through #)** the total estimated cost thereof being: **(Contract Written Amount) (\$_____)**.

It will be necessary for you to appear forthwith at the office of the Department of Transportation and Infrastructure, 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 Transportation and Infrastructure, Contract Administration within the time limit set forth in the Bid Package Documents.

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

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

All construction Contracts made and entered into by the City and County of Denver are subject to Affirmative Action and Equal Opportunity Rules and Regulations, as adopted by the Manager of the Department of Transportation and Infrastructure, 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 TO APPARENT LOW BIDDER

CONTRACT NO. 202053748

Page 2

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

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

CITY AND COUNTY OF DENVER

By _____
Executive Director of the Department of Transportation and Infrastructure

SAMPLE

City and County of Denver Department of Transportation & Infrastructure
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/doti

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**NOTICE TO PROCEED
(SAMPLE)**

Current Date

Name
Company
Street
City/State/Zip

CONTRACT NO. 202053748 - Highline Canal Crossing at Holly St. and Iliff Ave.

In accordance with General Contract Condition 302 of the Standard Specifications for Construction, General Contract Conditions, 2011 Edition, you are hereby authorized and directed to proceed on _____ with the work of constructing contract number 202053748, as set forth in detail in the contract documents for the City and County of Denver.

With a contract time of 120 calendar days, the project must be complete on or before _____.

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

Sincerely,

By: _____
Lesley B. Thomas
City Engineer

cc:

City and County of Denver Department of Transportation & Infrastructure
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/doti

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Certificate of Contract Release
(SAMPLE)

Current Date

Name
Street Address
City, State, Zip

RE: Certificate of Contract Release for
202053748 - Highline Canal Crossing at Holly St. and Iliff Ave.

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 (###) ###-####. Please return this document to me via email at pw.procurement@denvergov.org.

Sincerely,

Contract Administration

City and County of Denver Department of Transportation & Infrastructure
201 West Colfax Avenue, Dept 608 | Denver, CO 80202
www.denvergov.org/doti

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

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER

**TRANSPORTATION &
INFRASTRUCTURE**

**DEPARTMENT OF TRANSPORTATION &
INFRASTRUCTURE**

Prevailing Wage Rates

Contract Number: 202053748



Highline Canal Crossing at Holly St. and Iliff Ave.

March 3, 2020



TO: All Users of the City and County of Denver Prevailing Wage Schedules
FROM: Ryland Feno, Classification & Compensation Technician II
DATE: January 06, 2020
SUBJECT: Latest Change to Prevailing Wage Schedules

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

The effective date for this publication will be **Friday, January 03, 2020** and applies to the City and County of Denver for **HIGHWAY CONSTRUCTION PROJECTS** in accordance with the Denver Revised Municipal Code, Section 20-76(c).

General Wage Decision No. CO20200009
Superseded General Decision No. CO20190009
Modification No. 0
Publication Date: 01/03/2020
(6 pages)

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

Attachments as listed above.

***Career Service Board approved to adjust all Davis Bacon classifications under \$13.00 to comply with the city's minimum wage. The effective date is August 15, 2019. See page 7 for reference.**

Office of Human Resources
201 W. Colfax Ave. Dept. 412 | Denver, CO 80202
p: 720.913.5751 | f: 720.913.5720
www.denvergov.org/humanresources

TRAFFIC SIGNALIZATION:

Traffic Signal Installation

Zone 1.....	\$ 26.42	4.75%+8.68
Zone 2.....	\$ 29.42	4.75%+8.68

TRAFFIC SIGNAL INSTALLER ZONE DEFINITIONS

Zone 1 shall be a 35 mile radius, measured from the following addresses in each of the following cities:

- Colorado Springs - Nevada & Bijou
- Denver - Ellsworth Avenue & Broadway
- Ft. Collins - Prospect & College
- Grand Junction - 12th & North Avenue
- Pueblo - I-25 & Highway 50

All work outside of these areas shall be paid Zone 2 rates.

 ENGI0009-008 05/01/2018

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
(3)-Hydraulic Backhoe (Wheel Mounted, under 3/4 yds), Hydraulic Backhoe (Backhoe/Loader combination), Drill Rig Caisson (smaller than Watson 2500 and similar), Loader (up to and including 6 cu. yd.).....	\$ 28.25	10.70
(3)-Loader (under 6 cu. yd.) Denver County.....	\$ 28.25	10.70
(3)-Motor Grader (blade- rough) Douglas County.....	\$ 28.25	10.70
(4)-Crane (50 tons and under), Scraper (single bowl, under 40 cu. yd).....	\$ 28.40	10.70
(4)-Loader (over 6 cu. yd) Denver County.....	\$ 28.40	10.70
(5)-Drill Rig Caisson (Watson 2500 similar or larger), Crane (51-90 tons), Scraper (40 cu.yd and over),.....	\$ 28.57	10.70
(5)-Motor Grader (blade- finish) Douglas County.....	\$ 28.57	10.70
(6)-Crane (91-140 tons).....	\$ 29.55	10.70

SUCO2011-004 09/15/2011

	Rates	Fringes
CARPENTER (Excludes Form Work)...	\$ 19.27	5.08
CEMENT MASON/CONCRETE FINISHER		
Denver.....	\$ 20.18	5.75
Douglas.....	\$ 18.75	3.00
ELECTRICIAN (Excludes Traffic Signal Installation).....	\$ 35.13	6.83
FENCE ERECTOR (Excludes Link/Cyclone Fence Erection).....	\$ 13.02	3.20
GUARDRAIL INSTALLER.....	\$ 12.89	3.20
HIGHWAY/PARKING LOT STRIPING:Painter		
Denver.....	\$ 12.62	3.21
Douglas.....	\$ 13.89	3.21
IRONWORKER, REINFORCING (Excludes Guardrail Installation).....	\$ 16.69	5.45
IRONWORKER, STRUCTURAL (Includes Link/Cyclone Fence Erection, Excludes Guardrail Installation).....	\$ 18.22	6.01
LABORER		
Asphalt Raker.....	\$ 16.29	4.25
Asphalt Shoveler.....	\$ 21.21	4.25
Asphalt Spreader.....	\$ 18.58	4.65
Common or General		
Denver.....	\$ 16.76	6.77
Douglas.....	\$ 16.29	4.25
Concrete Saw (Hand Held)....	\$ 16.29	6.14
Landscape and Irrigation....	\$ 12.26	3.16
Mason Tender- Cement/Concrete		
Denver.....	\$ 16.96	4.04
Douglas.....	\$ 16.29	4.25
Pipelayer		
Denver.....	\$ 13.55	2.41
Douglas.....	\$ 16.30	2.18
Traffic Control (Flagger)...	\$ 9.55	3.05
Traffic Control (Sets Up/Moves Barrels, Cones,		

Install Signs, Arrow Boards and Place Stationary Flags) (Excludes Flaggers).....	\$ 12.43	3.22
PAINTER (Spray Only).....	\$ 16.99	2.87
POWER EQUIPMENT OPERATOR:		
Asphalt Laydown		
Denver.....	\$ 22.67	8.72
Douglas.....	\$ 23.67	8.47
Asphalt Paver		
Denver.....	\$ 24.97	6.13
Douglas.....	\$ 25.44	3.50
Asphalt Roller		
Denver.....	\$ 23.13	7.55
Douglas.....	\$ 23.63	6.43
Asphalt Spreader.....	\$ 22.67	8.72
Backhoe/Trackhoe		
Douglas.....	\$ 23.82	6.00
Bobcat/Skid Loader.....	\$ 15.37	4.28
Boom.....	\$ 22.67	8.72
Broom/Sweeper		
Denver.....	\$ 22.47	8.72
Douglas.....	\$ 22.96	8.22
Bulldozer.....	\$ 26.90	5.59
Concrete Pump.....	\$ 21.60	5.21
Drill		
Denver.....	\$ 20.48	4.71
Douglas.....	\$ 20.71	2.66
Forklift.....	\$ 15.91	4.68
Grader/Blade		
Denver.....	\$ 22.67	8.72
Guardrail/Post Driver.....	\$ 16.07	4.41
Loader (Front End)		
Douglas.....	\$ 21.67	8.22
Mechanic		
Denver.....	\$ 22.89	8.72
Douglas.....	\$ 23.88	8.22
Oiler		
Denver.....	\$ 23.73	8.41
Douglas.....	\$ 24.90	7.67
Roller/Compactor (Dirt and Grade Compaction)		
Denver.....	\$ 20.30	5.51
Douglas.....	\$ 22.78	4.86
Rotomill.....	\$ 16.22	4.41
Screed		
Denver.....	\$ 22.67	8.38
Douglas.....	\$ 29.99	1.40
Tractor.....	\$ 13.13	2.95

TRAFFIC SIGNALIZATION:

Groundsman

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

TRUCK DRIVER

Distributor

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

Dump Truck

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

Lowboy Truck.....

\$ 17.25	5.27
----------	------

Mechanic.....

\$ 26.48	3.50
----------	------

Multi-Purpose Specialty &

Hoisting Truck

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

Pickup and Pilot Car

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

Semi/Trailer Truck.....

\$ 18.39	4.13
----------	------

Truck Mounted Attenuator....

\$ 12.43	3.22
----------	------

Water Truck

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

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

**Office of Human Resources
Supplemental Rtes
(Specific to the Denver Projects)
Revised 08/21/2019)**

Classification		Base	Fringe
Guard Rail Installer		\$13.00	\$3.20
Highway Parking Lot Striping: Painter		\$13.00	\$3.21
Ironworker (Ornamental)		\$26.05	\$12.00
Laborer	Removal of Asbestos	\$21.03	\$8.55
Laborer (Landscape & Irrigation)		\$13.00	\$3.16
Laborer: Traffic Control (Flagger)		\$13.00	\$3.05
Laborer: Stationary Flags(excludes Flaggers)		\$13.00	\$3.22
Line Construction	Lineman, Gas Fitter/Welder	\$36.88	\$9.55
	Line Eq Operator/Line Truck Crew	\$25.74	\$8.09
Millwright		\$28.00	\$10.00
Pipefitter		\$30.45	\$12.85
Plumber		\$30.19	\$13.55
Power Equipment Operator (Tunnels Above and Below Ground, shafts and raises):	Group 1	\$25.12	\$10.81
	Group 2	\$25.47	\$10.85
	Group 3	\$25.57	\$10.86
	Group 4	\$25.82	\$10.88
	Group 5	\$25.97	\$10.90
	Group 6	\$26.12	\$10.91
	Group 7	\$26.37	\$10.94
Power Equipment Operator	Group 1	\$22.97	\$10.60
	Group 2	\$23.32	\$10.63
	Group 3	\$23.67	\$10.67
	Group 4	\$23.82	\$10.68
	Group 5	\$23.97	\$10.70
	Group 6	\$24.12	\$10.71
	Group 7	\$24.88	\$10.79
Truck Driver	Group 1	\$18.42	\$10.00
	Group 2	\$19.14	\$10.07
	Group 3	\$19.48	\$10.11
	Group 4	\$20.01	\$10.16
	Group 5	\$20.66	\$10.23
	Group 6	\$21.46	\$10.31
Truck Driver: Truck Mounted Attenuator		\$13.00	\$3.22

Go to <http://www.denvergov.org/Auditor> to view the Prevailing Wage Clarification Document for a list of complete classifications used.

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER

**TRANSPORTATION &
INFRASTRUCTURE**

**DEPARTMENT OF TRANSPORTATION &
INFRASTRUCTURE**

Addenda

Contract Number: 202053748



Highline Canal Crossing at Holly St. and Iliff Ave.

March 3, 2020

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

CONTRACT NO: 202053748 PROJECT NAME: Highline Canal Crossing at Holly St. and Iliff Ave.

ADDENDUM NO. 1 TO CONTRACT DOCUMENTS

Interested firms are hereby notified that the Pre-bid Meeting for the above project has been postponed until Tuesday, March 31, 2020 and will take place in room 4.I.5. 201 W. Colfax Ave., Denver, CO 80202, at 10:00 a.m.

Thus, the Question Deadline date for the above project has been postponed. Questions will need to be submitted, no later than, 10:00 a.m. on Tuesday, April 7, 2020.

Thus, the Bid Opening date for the above project has been postponed until Thursday, April 30, 2020. Sealed bids will be received in Room 6.G.7, 201 W. Colfax Ave., Denver, CO 80202, beginning at 10:30 a.m., no later than 11:00 a.m., on bid day. All properly delivered bids will then be publicly opened and read aloud. Bids submitted prior to 10:30 a.m. on the specified bid opening date/time shall be presented at the Office of Contract Administration, 201 W. Colfax Ave. Department 614, Denver, CO 80202.

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



Lesley B. Thomas
City Engineer

3/13/2020

Date

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

Contractor

Date

ADDENDUM NO. 1

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

CONTRACT NO: 202053748 PROJECT NAME: Highline Canal Crossing at Holly St. and Iliff Ave.

ADDENDUM NO. 2 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:

I. ADVERTISEMENT AND INSTRUCTIONS TO BIDDERS:

Interested firms are hereby notified that the Pre-bid Meeting for the above project has been postponed until Thursday, April 2nd, 2020 and will be held as a virtual meeting at 9:00 a.m. This is an optional meeting and will be a phone-in meeting only. To access the meeting, use the call-in line at (720) 388-6219, and then use the Conference ID when prompted. The Conference ID is 396 682 061#.

Bids for this project will ONLY be received and accepted via the online electronic bid service through www.QuestCDN.com. Bids must be submitted via QuestCDN no later than 11:00 a.m., Thursday, April 30, 2020. To access the electronic bid form, download the file 202053704 BF.pdf and click the online bidding button at the top of advertisement. Prospective bidders must be on the plan holders list through QuestCDN for bids to be accepted. Bidders will be charged a fee of \$30.00 to submit a bid electronically.

II. BID FORM:

Page BF-2 is modified as follows:

The original bid bond must be received by mail within 7 calendar days of bid opening date to be considered part of a responsive bid. Mail original to 201 W. Colfax Ave. Ste. 614, Denver CO 80202 Attn: Contract Administration.

BF-20	<p>Fill in all Bid Bond blanks. <u>The original bid bond must be received by mail within 7 calendar days of bid opening date to be considered part of a responsive bid. Mail original to 201 W. Colfax Ave. Ste. 614, Denver CO 80202 Attn: Contract Administration</u></p> <p>Signatures required</p> <p>a.) Corporate Seal if required (shade so visible)</p> <p>b.) Dated</p> <p>e.) Attach Surety Agents Power of Attorney or Certified or cashier's check made out to the Manager of Revenue referencing Bidder's Company and Contract Number.</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
-------	---	--

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

Lesley B. Thomas
Lesley B. Thomas
City Engineer

3/26/2020
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. 2

Date

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

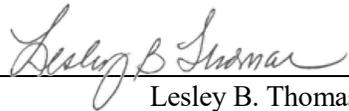
CONTRACT NO: 202053748 PROJECT NAME: Highline Canal Crossing at Holly St. and Iliff Ave.

ADDENDUM NO. 3 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:

Interested firms are hereby notified that the Question Deadline date for the above project has been extended. Questions will need to be submitted, no later than, 10:00 am. on Thursday, April 16, 2020.

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



Lesley B. Thomas
City Engineer

April 2, 2020
Date

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

Contractor

Date

ADDENDUM NO. 3

**CITY AND COUNTY OF DENVER
DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE**

CONTRACT NO: 202053748 PROJECT NAME: Highline Canal Crossing at Holly St. and Iliff Ave.

ADDENDUM NO. 4 TO CONTRACT DOCUMENTS

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

QUESTIONS AND ANSWERS:

Q1. What are the contractor's public information requirements?

A1. The City and County of Denver Bridge Group holly Project Manager (Kevin Lee Rens) will complete 3 public information tasks: 1) Place Variable message board on site 10 days prior to construction mobilization notifying community of upcoming work, 2) work with CCD public information personnel (Nancy Kuhn) to post project specifics on social media and internet, and 3) Notify council district.

Q2. Is the paint on the girders lead based?

A2. Please see the attached Asbestos and Lead-Based Paint Assessment Report (dated January 15, 2019) prepared by Pinyon Environmental, Inc. for Ground Engineering Consultants, Inc.

Q3. Specification page PSP-56, Painting Existing Structure, states payment will be by the SF however bid item 509 on bid sheet BF-6.6 is 1 LS. Please Clarify.

A3. The pay unit is Lump Sum.

Q4. See drawing #13, SCH. B: Are the existing steel diaphragms on the south abutment to be sandblasted and painted?

A4. The diaphragms at the south abutment will not require sandblasting and painting.

Q5. Please provide a copy of the Environmental Report prepared by Pinyon Environmental, Inc. - See Sheet 13, Sch. B, Note 6

A5. Attached.

Q6. Does the highline canal still carry irrigation water? If so, what are the dates and can it be stopped?

A6. From Denver water "irrigation season" is to run from April 1 through November 1. However, that being said, it has been a long time since we have been able to push water as far as Monaco. The High Line does take on a number of stormwater inputs, also, so that means that the canal can get a fair amount of water flowing in it during storm and snowmelt events in the local area. "

Q7. On Sheet PSP 36, Erosion Control, There is an implication there should be a unit pay item for ECS. Can a Bid Item be added?

A7. The Erosion Control Supervisor (ECS) effort shall not be paid for separately but shall be included in the work per the specifications and notes on sheet G02.

Q8. See PSP-56, PCCP: Is fast track concrete (Class E) anticipated?

A8. Class E concrete is not anticipated.

Q9. Can the asphalt planing of the bridge deck be completed in one mobilization, with traffic allowed to drive on the milled deck?

A9. Traffic may utilize the milled deck surface so long as no damage is done to the deck during the milling process and no existing deck damage is uncovered and exposed to traffic. If either of those occurs no

traffic may travel over the damaged portions until the contractor has repaired the damaged portion(s) of the deck to the satisfaction of the Engineer.

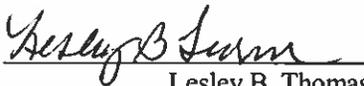
Q10. See Page PSP-35, Sch B, Contractor's Experience Requirements: Can the "...completed in the last three years..." be eliminated if the contractor can demonstrate previous experience with current personnel?

A10. The requirement may be waived so long as the contractor has personnel on staff who can demonstrate the experience. In addition, Section 204 of the specifications has been amended to require that the bridge jacking and shoring plan be signed and sealed by a Colorado registered professional engineer. An updated Section 204 is attached to this addendum.

Q11. Is the depth of existing asphalt on the bridge deck known?

A11. The available inspection report shows an asphalt thickness of 4". The actual thickness may vary.

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



Lesley B. Thomas
City Engineer

4.21-2020

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. 4

Date

SECTION 204 BRIDGE JACKING AND SHORING

Section 204 is hereby added for this project to include the following:

DESCRIPTION

204.1 This work consists of the installation of blocking, steel shims, hydraulic jack systems and raising and lowering the bridge superstructure. This work also includes construction engineering as well as making adjustments to dimensions and elevations due to varying field conditions. The contractor is responsible for the stability of the structure during construction.

CONTRACTOR'S EXPERIENCE REQUIREMENTS

The contractor or subcontractor performing this work shall submit proof of personnel on staff with at least two projects successfully completed in the last three years involving jacking a bridge superstructure. A brief description of each project with owner's name and current phone number shall be included and submitted to the Engineer prior to the preconstruction meeting.

MATERIALS

204.2 The contractor shall submit a plan for jacking and temporarily supporting the beam ends to the engineer for review and approval. The plan shall be signed and sealed by a Colorado registered professional engineer. Jacking points shall be as close to the existing bearing stiffeners as practical. Minimum jacking load (service dead load) per bearing is estimated to be 13,000 lbs. Jacking equipment shall be capable of lifting and supporting at least two times the total service dead load.

The hydraulic jacking system shall be a ganged system working off a common manifold or similar device with and electric/hydraulic pump, shut-off valves, load-lowering valves, and pressure gages. The jacking system shall have a minimum capacity shown in the plans for each ram and a minimum stroke of 1 inch.

If jacking systems involve jacking frames or other structural steel other than temporary bearing/shim plates, the steel shall be new material. The contractor shall provide the Engineer with copies of all certified mill test reports for all structural steel and bolts. Structural steel may be reused on subsequent jacking operations provided that acceptable condition is maintained. The structural steel shall conform to the requirements of AASHTO M270 Grade 50. If welds are necessary, the welds shall be made according to AWS D1.5. The contractor's welders shall be qualified according to AWS D1.5 to make all necessary welds. All structural steel field connections shall be bolted with new high strength bolts conforming to Section 509. High strength bolts, including suitable nuts and plain hardened washers, shall conform to the requirements of ASTM A-325. Bolts shall be Type 3.

CONSTRUCTION REQUIREMENTS

204.3 When raising and lowering the superstructure, all live load traffic shall be detoured off the bridge as shown in the phasing plans.

Contractor shall provide the necessary number of jacks needed to lift the bridge as uniformly as possible to prevent damage to the structure. Damage to the bridge structure shall be repaired at the contractor's expense. The contractor shall install string lines or other approved systems by which the Engineer can monitor the relative movement of the bridge.

**SECTION 204
BRIDGE JACKING AND SHORING**

The maximum amount of superstructure lift shall be 0.125 inch above the rebound height of the bearing. Adjacent jacks shall be loaded only enough to achieve the aforementioned lift at the bearing being replaced without damaging the bridge. A jacking plan indicating the number of adjacent jacks shall be submitted to the Engineer for approval. In the event that, in the opinion of the Engineer, any jacking operation is causing distress or damage to the bridge structure, jacking operation shall be immediately terminated.

METHOD OF MEASUREMENT

204.4 Bridge jacking and shoring will not be measured but will be paid for on a lump sum basis.

BASIS OF PAYMENT

204.5 The accepted quantity shall be paid for at the contract unit price for the pay unit listed below. Payment will be made under:

Pay Item	Pay Unit
Bridge Jacking and Shoring	Lump Sum

Payment shall be full compensation for all work necessary to complete the item, which shall include but not be limited to design, field adjustments, fabrication, welding, bolted connections, transportation to the bridge site, blocking, raising and lowering the superstructure for each bearing replacement. Payment for this item will not be made for this item until all required submittals have been approved by the Engineer.

January 15, 2019

Asbestos and Lead-Based Paint Assessment Report

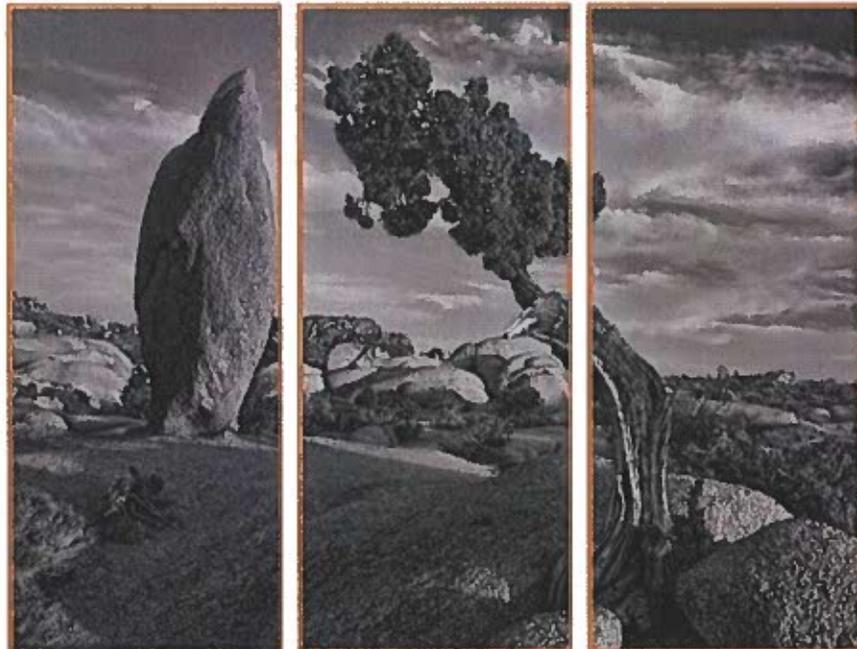
Highline Canal Bridges
Holly Street and Monaco Parkway
Denver Colorado, CO 802112

Prepared For:

Ground Engineering Consultants, Inc.
41 Inverness Drive East
Englewood, CO 80112

Pinyon Project No.:

1/18-1130-01.IHS006



January 15, 2019

Asbestos and Lead-Based Paint Assessment Report

**Highline Canal Bridges
Holly Street and Monaco Parkway
Denver Colorado, CO 802112**

Prepared For:

Ground Engineering Consultants, Inc.
41 Inverness Drive East
Englewood, CO 80112

Pinyon Project No.:

1/18-1130-01.IHS006

Prepared by:



Deborah Fernandez
Regulated Materials Specialist I

Reviewed by:



Tricia McCready
Technical Group Manager – Industrial Hygiene

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Figure A2	Asbestos Bulk Sample and Lead-Based Paint Sample Locations- Holly Street Bridge, East Side
Figure A3	Asbestos Bulk Sample and Lead-Based Paint Sample Locations- Holly Street Bridge, West Side
Figure B1	Site Location- Monaco Parkway Bridge
Figure B2	Asbestos Bulk Sample and Lead-Based Paint Sample Locations- Monaco Parkway Bridge, East Side
Figure B3	Asbestos Bulk Sample and Lead-Based Paint Sample Locations- Monaco Parkway Bridge, West Side

Appendices

Appendix A	Asbestos and Lead-Based Paint Inspector Credentials
Appendix B	Homogeneous Material Photographic Log
Appendix C	Suspect Lead-Based Paint Photographic Log
Appendix D	Laboratory Analytical Reports – Suspect Asbestos-Containing Materials
Appendix E	Laboratory Analytical Reports – Suspect Lead-Based Paint
Appendix F	NESHAP Notification Information and ACM Summary of Findings

I. Introduction

Pinyon Environmental, Inc. (Pinyon), was retained to complete a survey for asbestos-containing materials (ACMs) and lead-based paint (LBP) at the below-referenced Site, to identify items that need to be abated or removed prior to demolition activities. These services were conducted in accordance with the Pinyon proposal referenced below.

Table I-1 Project Details

Client Name:	Ground Engineering Consultants
Proposal Date:	November 30, 2018
Site Location:	Holly Street and Monaco Parkway Bridges at Highline Canal Trail Denver, Colorado 80112
Structure Type	Two concrete bridges
Structure Size	Approximately 40 feet in length
Construction Date:	Unknown
Structure Uses:	Roadway traffic
Types of Materials to be Disturbed/Description of Proposed Disturbances:	Client intends to repair and repaint the bridges.

2. Survey Methods

2.1 Asbestos Survey

Pinyon conducted the asbestos survey on December 20, 2018. The asbestos survey was conducted in accordance with Environmental Protection Agency (EPA) National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations. The inspection and sampling activities conducted as part of the survey were performed by Deborah Fernandez of Pinyon, an EPA-certified Asbestos Hazard Emergency Response Act (AHERA) Building Inspector (Appendix A). The survey consisted of inspecting the bridges for suspect ACM and collecting bulk building material samples for submittal to an accredited laboratory under Pinyon chain-of-custody protocol. The inspector planned and organized the bulk sampling; identified and mapped homogeneous areas; performed the physical assessment of suspect materials; assessed the condition and potential damage to non-friable and friable materials during future renovation/repair to the bridges; took photographs of each suspect ACM and generated a photographic log; and collected the bulk samples. The bulk sample locations were then recorded on sample location drawings. The bulk samples were submitted to EMSL Analytical (EMSL) in Denver, Colorado for asbestos analysis via Polarized Light Microscopy (PLM) techniques, performed in general accordance with the procedures outlined in the EPA "Method for the Determination of Asbestos in Bulk Building Materials" (EPA 600/R-93/116). EMSL is certified for Bulk Asbestos Fiber Analysis under the National Voluntary Laboratory Accreditation Program (NVLAP).

A total of five suspect homogeneous materials were identified throughout the two bridges. Homogeneous building materials are defined as being uniform in visual appearance (e.g., color, texture, and pattern) and appear to be constructed at one time. A total of 15 samples were collected for PLM analysis, three bulk samples from each suspect homogeneous material. Descriptions, locations and quantity of asbestos detected in the samples analyzed are presented in the 'Findings' section below. Site location and suspect ACM sample locations for the Holly Street Bridge are presented on Figures A1-A3. Site location and suspect ACM sample locations for the Monaco Parkway Bridge are presented on Figures B1-B3. Photographs of suspect material are included in Appendix B.

2.2 Lead-Based Paint Survey

Pinyon conducted the LBP survey concurrently with the asbestos survey. The LBP survey was conducted to evaluate the presence of LBP or lead-containing paint (LCP) that could be impacted during repair and painting activities. As before, the survey consisted of inspecting both bridge structures for suspect LBP or LCP, by collecting paint chip samples of each unique paint color for submittal to an accredited laboratory under Pinyon chain-of-custody protocol. All inspection and sampling activities were performed by Deborah Fernandez, a certified lead inspector/assessor. A copy of Ms. Fernandez's certification is included in Attachment A. The suspect LBP samples were also submitted to EMSL for analysis of total lead (by percentage) by EPA Method 7420 (via flame atomic absorption). EMSL is accredited under the American Industrial Hygiene Association's Environmental Lead Proficiency Analytical Testing program.

Two homogeneous suspect LBP areas were identified at the Holly Street Bridge (Figures B2-B3). Photographs of suspect Lead-Based paint are included in Appendix C. The Monaco Bridge is unpainted metal and paint chip samples were not collected. Pinyon collected a total of three paint chip samples from the Holly Street Bridge for laboratory analysis. Descriptions of the suspect homogeneous materials and a list of the collected samples are included in the 'Findings' section below.

3. Findings

3.1 Asbestos Survey

A total of 15 bulk samples were collected from five suspect homogenous materials throughout the two bridges, and the results of the PLM analysis are presented in Table 3-1. Laboratory analysis indicated the 15 samples collected from the two bridges were non-detect for asbestos.

3.2 Lead-Based Paint Survey

A total of three paint chip samples were analyzed for the presence of LBP and LCP. Under EPA 40 CFR Part 745, LBP is defined as any paint or surface coating that contains lead equal to or exceeding 0.5% (by weight), while LCP is defined as any paint or surface coating containing lead greater than or equal to 0.06% up to 0.5% (by weight). Please note that the regulatory definition of LBP only applies to child-occupied facilities or targeted housing (pre-1978). For all other facilities, caution should be taken during demolition to minimize cutting, abrading, or otherwise causing an air disturbance to this material and work shall be completed in accordance with the Occupation Safety and Health Administration (OSHA) Lead in Construction Standard (29 CFR 1926.62).

As shown on Table 3-2, lead was detected in two of the three samples at concentrations above the laboratory reporting limits and LBP threshold of 0.50% by weight. Lead was detected in one sample above the threshold of 0.006% by weight but below the LBP of 0.50% by weight and is considered LCP. The laboratory analytical report is included in Appendix E.

Table 3-1 Summary of Laboratory Analysis for Asbestos

Sample Name	Sample Location	Lab Results/ Asbestos Type	Detection Method(s)	Condition	Material Description	Material Location	NESHAP Classification	Estimated Quantity (Sq. ft.) (LF)
Collected on December 20, 2018								
HCON01-01	West side bridge, northwest	ND	PLM	Good	Concrete, gray	Holly Street Bridge/Highline Canal Trail	N/A	500
HCON01-02	West side bridge, southwest	ND	PLM					
HCON01-03	East side bridge, southeast	ND	PLM					
HEXPJT-01	West side bridge, northwest	ND	PLM	Good	Expansion joint material, black, tar-like	Holly Street Bridge/Highline Canal Trail	N/A	<10
HEXPJT-02	West side bridge, northwest	ND	PLM					
HEXPJT-03	East side bridge, northeast	ND	PLM					
HPI-01	West side bridge, northwest	ND	PLM	Good	Pipe insulation	Holly Street Bridge/Highline Canal Trail, under the west side of bridge	N/A	30 Linear feet
HPI-02	West side bridge, northwest	ND	PLM					
HPI-03	West side bridge, southwest	ND	PLM					
MCON01-01	West side bridge, north	ND	PLM	Good	Concrete, gray	Monaco Parkway Bridge/Highline Canal Trail	N/A	500
MCON01-02	West side bridge, south	ND	PLM					
MCON01-03	East side bridge, south	ND	PLM					



Sample Name	Sample Location	Lab Results/Asbestos Type	Detection Method(s)	Condition	Material Description	Material Location	NESHAP Classification	Estimated Quantity (Sq. ft.) (LF)
Collected on December 20, 2018								
MEXJPT-01	West side bridge, north	ND	PLM	Good	Expansion joint material	Monaco Parkway Bridge/Highline Canal Trail, west side	N/A	<5
MEXJPT-02	West side bridge, north	ND	PLM					
MEXJPT-03	West side bridge, north	ND	PLM					

Notes:

N/A Not Applicable

ND No Asbestos Detected

NESHAP National Emission Standard for Hazardous Air Pollutants

PLM Polarized Light Microscopy

Sq. ft. Square Feet

LF Linear Feet

Table 3-2 Summary of Paint Chip Laboratory Analysis for Lead

Sample Number	Sample Location	Lead Concentration (% wt.)	Component	Paint Description	Classification
Collected on December 20, 2018					
HPB01-01	Holly Street Bridge/Highline Canal Trail, west side	2.3	Metal	Green	LBP
HPB02-01	Holly Street Bridge/Highline Canal Trail, west side	0.010	Concrete	White	LCP
HPB03-01	Holly Street Bridge/Highline Canal Trail, east side	0.52	Metal Girders	White	LBP

Notes:

- LBP *Lead-Based Paint*
- NLC *Non-lead containing paint*
- % wt. *percent weight*

4. Conclusions and Recommendations

4.1 Asbestos

ACM was not identified at either the Holly Street Bridge nor the Monaco Parkway Bridge; however, if additional suspect materials, not sampled during this investigation, are identified during renovations of these bridges they should either be assumed to be ACM or should be sampled prior to disturbance. Appendix F contains the NESHAP notification information statement and summary of results.

4.2 Lead-Based Paint

Lead was identified in two of the three paint samples at concentrations above the laboratory reporting and LBP threshold of 0.50% by wt. and are considered LBP. In one sample, Lead was detected at concentrations above the laboratory reporting limits of 0.06% by weight but below the threshold of 0.50% by weight and is considered LCP.

Caution should be taken during repair and repaint activities to minimize cutting, abrading, or otherwise causing an air disturbance to this material and work must be completed in accordance with the OSHA Lead in Construction Standard (29 CFR 1926.62). No other special regulatory requirements or abatement are needed for LBP or LCP prior to the repair and repair activities.

However, if the intent is to perform abrasive blasting operations please follow the guidelines outlined in the Colorado Environmental Guide to Abrasive Blasting and Hazardous Waste Regulations. Here is link to that source.

https://www.colorado.gov/pacific/sites/default/files/AP_Abrasive-Blast-Cleaning-Guide.pdf

5. Limitations

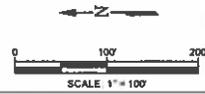
This report was prepared by Pinyon Environmental, Inc., at the request of and for the sole benefit of Ground Engineering Consultants, Inc or any entity controlling, controlled by, or under common control with Ground Engineering. Any use a third party makes of this report, including reuse or publication of any portion of this report or any reliance on or decisions to be made based upon the results presented, are the responsibility of such third party. Pinyon Environmental, Inc., shall not be liable for any damages arising out of such reuse or publication, and accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

This report addresses certain physical characteristics of the site with regards to the presence of visible and accessible suspect asbestos-containing material and suspect lead-based paint. Although Pinyon utilized destructive inspection methods in performing this survey, it is possible that areas or materials, inaccessible to Pinyon at the time of the sampling event, may be uncovered during renovation. If any additional materials are revealed during the renovation activities, Pinyon recommends that the materials should be assumed to be asbestos containing materials or lead-based paint, and managed as such, until properly sampled and analyzed.

Figures



LEGEND
 BRIDGE LOCATION



SITE LOCATION
 Holly Street and Highline Canal Trail
 Denver, Colorado

Site Location: 39.875657°, -104.922198°, Denver, Colorado

Pinyon Project Number: 1/18-1130-01.IH3008

Drawn By: GMD

Figure: A1

Reviewed By: DAF

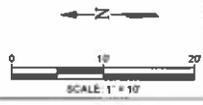
Date: 1/15/2019



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LEGEND

- SITE BOUNDARY
- ASB ASBESTOS BULK SAMPLE LOCATIONS (NON-DETECT)
- LBP LEAD-BASED PAINT SAMPLE LOCATIONS (NON-DETECT)



ASBESTOS BULK SAMPLE AND LEAD-BASED PAINT SAMPLE LOCATIONS
 Holy Street and Highline Canal Trail - Bridge East
 Denver, Colorado

Site Location 39.075657°, -104.922188°, Denver, Colorado

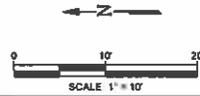
Pinyon Project Number 1/18-1130-01.JHS006

Drawn By: GMD	Figure A2
Reviewed By: DAF	Date: 1/15/2019

0881 0885 0886 0887 0888 0889 0890 0891 0892 0893 0894 0895 0896 0897 0898 0899 0900 0901 0902 0903 0904 0905 0906 0907 0908 0909 0910 0911 0912 0913 0914 0915 0916 0917 0918 0919 0920 0921 0922 0923 0924 0925 0926 0927 0928 0929 0930 0931 0932 0933 0934 0935 0936 0937 0938 0939 0940 0941 0942 0943 0944 0945 0946 0947 0948 0949 0950 0951 0952 0953 0954 0955 0956 0957 0958 0959 0960 0961 0962 0963 0964 0965 0966 0967 0968 0969 0970 0971 0972 0973 0974 0975 0976 0977 0978 0979 0980 0981 0982 0983 0984 0985 0986 0987 0988 0989 0990 0991 0992 0993 0994 0995 0996 0997 0998 0999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 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2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 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- LEGEND**
- SITE BOUNDARY
 - ASBESTOS BULK SAMPLE LOCATIONS (NON-DETECT)
 - LEAD-BASED PAINT SAMPLE LOCATIONS (DETECT)



Pinyon
ASBESTOS BULK SAMPLE AND LEAD-BASED PAINT SAMPLE LOCATIONS
 Holly Street and Highline Canal Trail - Bridge West
 Denver, Colorado

Site Location 39.875657°, -104.922198° Denver, Colorado
 Pinyon Project Number: 1/18-1130-01.8/18006

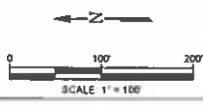
Drawn By GMD	Figure A3
Reviewed By DAF	Date 1/15/2019



LAST REVISED: 1/15/2019
 P:\Projects\118-1130-01\118-1130-01-115006\118-1130-01-115006.dwg
 1/15/2019 10:00 AM

LEGEND

 BRIDGE LOCATION



SITE LOCATION

Monaco Parkway and Highline Canal Trail
 Denver, Colorado

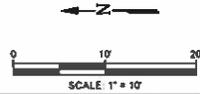
Site Location: 39,669347° -104,912894° Denver, Colorado

Pinyon Project Number: 118-1130-01.115006

Drawn By: GMD	Figure: B1
Reviewed By: DAF	Date: 1/15/2019



- LEGEND**
- SITE BOUNDARY
 - ASBESTOS BULK SAMPLE LOCATIONS (NON-DETECT)



Pinyon	
ASBESTOS BULK SAMPLE LOCATION	
<i>Monaco Parkway and Highline Canal Trail - Bridge East Denver, Colorado</i>	
Drawn By: GMD	Figure: B2
Reviewed By: DAF	Date: 1/15/2019

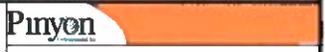
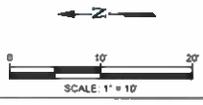
Site Location: 39.669347°, -104.912894°, Denver, Colorado
 Pinyon Project Number: 1/18-1130-01.LHS006



LEGEND

SITE BOUNDARY

ASBESTOS BULK SAMPLE LOCATIONS (NON-DETECT)



ASBESTOS BULK SAMPLE LOCATION
 Monaco Parkway and Highline Canal Trail - Bridge West
 Denver, Colorado

Site Location: 39.668347°, -104.912854°, Denver, Colorado
 Pinyon Project Number: 178-1130-01.IHS006

Drawn By: GMD	Figure: B3
Reviewed By: DAF	Date: 1/15/2019

LAST UPDATED: 1/15/2019 BY: GMD
 C:\Users\gmd\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\...

Appendices

Appendix A Asbestos and Lead-Based Paint Inspector Credentials

STATE OF COLORADO

John W. Hickenlooper, Governor
Christopher E. Urbina, MD, MPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado.

4300 Cherry Creek Dr. S. Laboratory Services Division
Denver, Colorado 80246-1530 8100 Lowry Blvd.
Phone (303) 692-2000 Denver, Colorado 80230-6928
Located in Glendale, Colorado (303) 692-3090

<http://www.colorado.gov/cdphe>



Colorado Department
of Public Health
and Environment

3/22/2018

Deborah A. Fernandez
7427 Fountain Drive
Ft Collins, CO 80525

Congratulations! You have met the certification requirements for the Risk Assessor discipline(s) under the Colorado Lead-Based Paint Certification Program. Your certification expires on 3/6/2019.

Call Heidi Newbold at the Colorado Department of Public Health and Environment at (303) 692-3158 if you have any questions regarding Lead-Based Paint abatement certification.

The submittal of your application at least 30 days prior to your expiration date of 3/6/2019 will help ensure your Colorado certification does not lapse.



Colorado Department
of Public Health
and Environment

LEAD-BASED PAINT CERTIFICATION*

This certifies that

Deborah A. Fernandez

Certification No.: 13223

has met the requirements of 25-7-1104, C.R.S. and Air Quality Control
Commission Regulation No. 19, and is hereby certified by the state of
Colorado in the following discipline:

Risk Assessor*

Issued: March 06, 2018

Expires: March 06, 2019

** This certificate is valid only with the possession of a valid
lead-based paint training certificate in the discipline specified
above, issued by either a Colorado approved training provider,
an EPA approved training provider, or a training provider
approved by another EPA authorized program.*

Authorized APCD Representative

SEAL

STATE OF COLORADO

John W. Hickenlooper, Governor
Christopher E. Urbina, MD, MPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S. Laboratory Services Division
Denver, Colorado 80246-1530 8100 Lowry Blvd.
Phone (303) 692-2000 Denver, Colorado 80230-6928
Located in Glendale, Colorado (303) 692-3090

<http://www.colorado.gov/cdphe>



Colorado Department
of Public Health
and Environment

3/23/2018

Deborah A. Fernandez
7427 Fountain Drive
Ft Collins, CO 80525

Congratulations! You have met the certification requirements for the Building Inspector discipline(s) under the Colorado Asbestos Certification Program. Your certification expires on 3/27/2019.

Please note that annual refresher courses are required under Colorado law for all certification categories. If you successfully complete the testing process prior to the expiration date listed above, your new certificate will be re-issued as of the above date; if you do not complete the process by the date listed above, the date you complete the process will become your new certification date. When submitting your application, be sure to include the original of your latest refresher certificate and the proper fee.

The submittal of your application at least 30 days prior to your expiration date of 3/27/2019 will help ensure your Colorado certification does not lapse.

Call Heidi Newbold at the Colorado Department of Public Health and Environment at (303) 692-3158 if you have any questions regarding asbestos abatement certification.



Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Deborah A. Fernandez

Certification No.: 9022

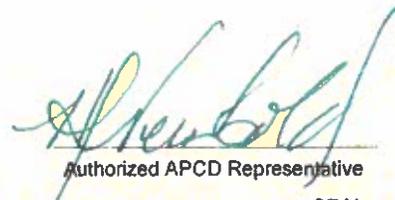
has met the requirements of 25-7-507, C.R.S. and Air Quality Control
Commission Regulation No. 8, Part B, and is hereby certified by the
state of Colorado in the following discipline:

Building Inspector*

Issued: March 14, 2018

Expires: March 27, 2019

** This certificate is valid only with the possession of a
current Division-approved training course certification
in the discipline specified above.*


Authorized APCD Representative
SEAL

Appendix B Homogeneous Material Photographic Log

Holly
Street/Highline
Canal Trail
Bridge

HCON01 –
Concrete gray



Holly
Street/Highline
Canal Trail
Bridge

HEXJPT –
Expansion joint
material



Holly
Street/Highline
Canal Trail
Bridge

HPI – Pipe
Insulation under
west side of
bridge



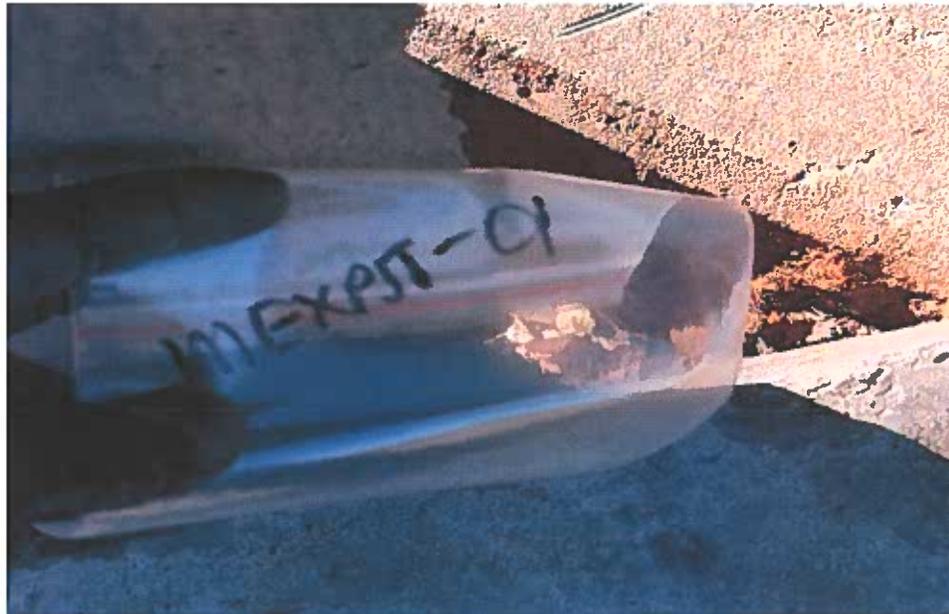
Monaco Parkway
Bridge/Highline
Canal Trail
Bridge

MCONOI –
Concrete, gray



Monaco Parkway
Bridge/Highline
Canal Trail
Bridge

MEXPJT –
Expansion joint
material

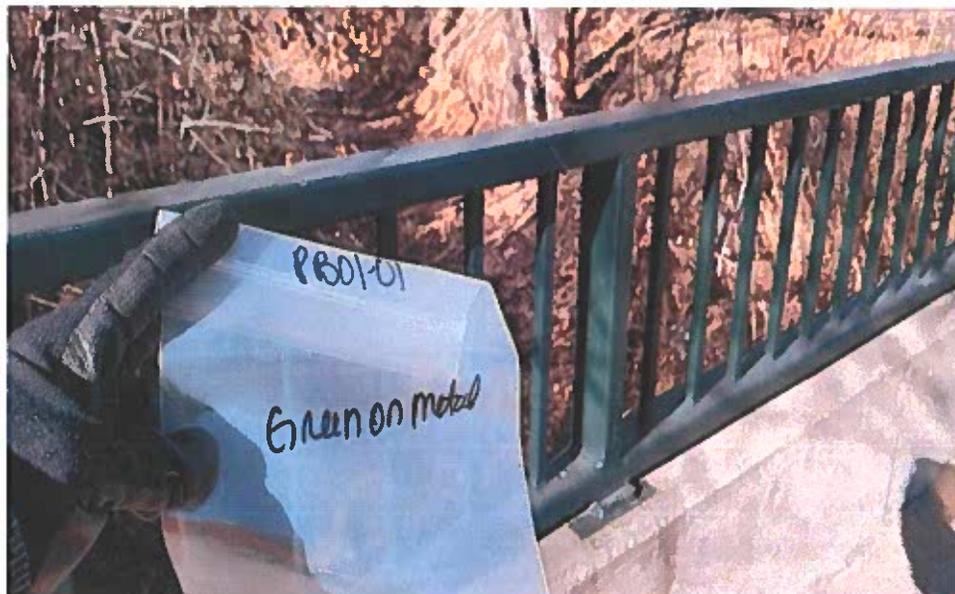




Appendix C Suspect Lead-Based Paint Photographic Log

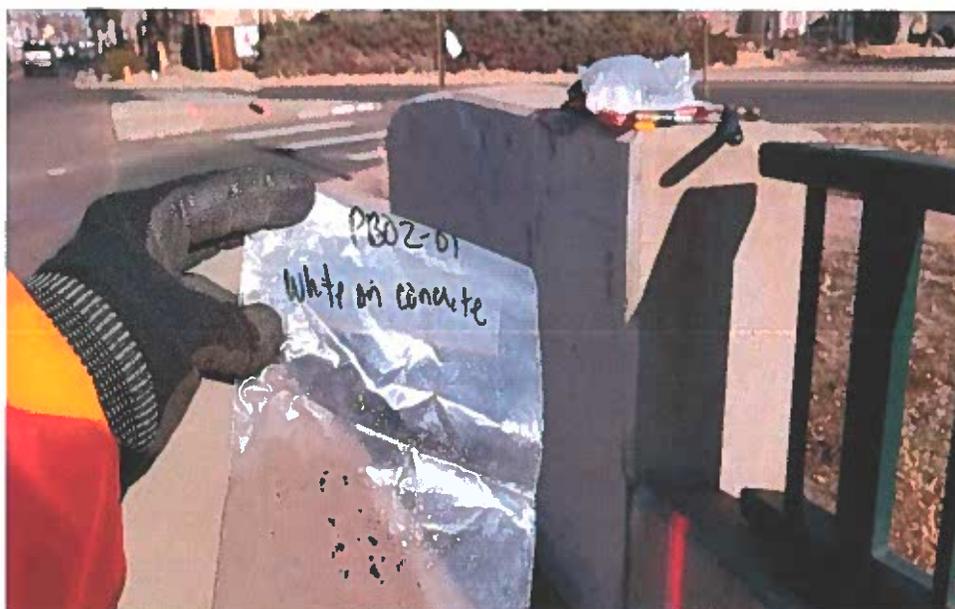
Holly
Street/Highline
Canal Trail
Bridge

HPB01 – Green
paint on metal
railings



Holly
Street/Highline
Canal Trail
Bridge

HPB02 – white
paint on
concrete



Holly
Street/Highline
Canal Trail
Bridge

HPB03 – White
paint on metal
girders



Appendix D Laboratory Analytical Reports – Suspect Asbestos-Containing Materials



EMSL Analytical, Inc.

1010 Yuma Street Denver, CO 80204
Tel/Fax: (303) 740-5700 / (303) 741-1400
<http://www.EMSL.com/denverlab@emsl.com>

EMSL Order: 221810109
Customer ID: PINY63
Customer PO:
Project ID:

Attention: Deborah Fernandez
Pinyon Environmental
3222 S. Vance Street
Suite 200
Lakewood, CO 80227
Project: 118113.0011H5006

Phone: (970) 310-1217
Fax: (303) 980-0089
Received Date: 12/21/2018 8:30 AM
Analysis Date: 12/21/2018 - 12/26/2018
Collected Date:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HCON01-01-Caulk 221810109-0001		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HCON01-01-Concrete 221810109-0001A		Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
HCON01-02-Caulk 221810109-0002		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HCON01-02-Concrete 221810109-0002A		Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
HCON01-03 221810109-0003		Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
HEXPJT-01 221810109-0004		Black Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (Other)	None Detected
HEXPJT-02 221810109-0005		Black Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (Other)	None Detected
HEXPJT-05 221810109-0006		Brown/Black Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
HPI-01-Silver Paint 221810109-0007		Silver Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HPI-01-Tar Paper 221810109-0007A		Black Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (Other)	None Detected
HPI-01-Roofing 221810109-0007B		Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HPI-02-Silver Paint 221810109-0008		Silver Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HPI-02-Tar Paper 221810109-0008A		Brown/Black Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (Other)	None Detected
HPI-02-Roofing 221810109-0008B		Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HPI-03-Silver Paint 221810109-0009		Silver Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
HPI-03-Tar Paper 221810109-0009A		Tan/Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected

Initial report from: 12/26/2018 15:13:29



EMSL Analytical, Inc.

1010 Yuma Street Denver, CO 80204
Tel/Fax: (303) 740-5700 / (303) 741-1400
<http://www.EMSL.com/denverlab@emsl.com>

EMSL Order: 221810109
Customer ID: PINY63
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HPI-03-Roofing <i>221810109-0009B</i>		Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
MCON01-01 <i>221810109-0010</i>		Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
MCON01-02 <i>221810109-0011</i>		Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
MCON01-03 <i>221810109-0012</i>		Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
MEXJPT-01-Insulation <i>221810109-0013</i>		Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
MEXJPT-01-Concrete <i>221810109-0013A</i>		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
MEXJPT-02 <i>221810109-0014</i>		Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
MEXJPT-03 <i>221810109-0015</i>		Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s) _____

Amanda Hammer (17)
Timothy Kleehammer (7)

Melanie Rech, Laboratory Director
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Denver, CO NVLAP Lab Code 200828-0

Initial report from: 12/26/2018 15:13:29



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

2218 10109

EMSL ANALYTICAL, INC.
1010 YUMA ST.
DENVER, CO 80204
PHONE: (303)740-5700
FAX: (303)741-1400

Company: Pinyon Environmental
 Street: 3222 S Vance St Ste 200
 City: Lakewood State/Province: _____ Zip/Postal Code: _____ Country: _____
 Report To (Name): Deborah Fernandez Fax #: _____
 Telephone #: 303-980-5200 Email Address: fernandez@pinyon-env.com
 Project Name/Number: 118113001-001-115006
 Please Provide Results: Fax Email Purchase Order: _____ U.S. State Samples Taken: _____

Turnaround Time (TAT) Options* - Please Check
 3 Hours 6 Hours 24 Hrs 48 Hrs 3 Days 4 Days 5 Days 10 Days
 *For TEM Air 3 hours/6 hours, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA PLM - Bulk (reporting limit) <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)	TEM - Air <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 TEM - Bulk <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 TEM - Water EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	TEM - Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) Soil/Rock/Vermiculite <input type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative) Other: <input type="checkbox"/>
---	---	---

Check For Positive Stop - Clearly Identify Homogenous Group

Samplers Name: Deborah Fernandez Samplers Signature: [Signature]

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
HCON01-01		Bulk	
HCON01-02			
HCON01-03			
HEXPJT-01			
HEXPJT-02			
HEXPJT-03			
HPI-01			
HPI-02			

Client Sample # (s): _____ Total # of Samples: 15

Relinquished (Client): Deborah Fernandez Date: 12/21/18 (1030) Time: _____

Received (Lab): BLH Date: 12/21/18 Time: 8:30am DB

Comments/Special Instructions: PT ET < 1% Please

**Appendix E Laboratory Analytical Reports – Suspect Lead-Based
Paint**



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
<http://www.EMSL.com> cinnaminsonleadlab@emsl.com

EMSL Order: 201814558
CustomerID: PINY63
CustomerPO:
ProjectID:

Attn: **Deborah Fernandez**
Pinyon Environmental
3222 S. Vance Street
Suite 200
Lakewood, CO 80227

Phone: (303) 980-5200
Fax: (303) 980-0089
Received: 12/24/18 9:50 AM
Collected: 12/20/2018

Project: 118113001.001 IHS006

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>Lead Concentration</i>
HPB01-01	201814558-0001	12/20/2018	12/26/2018	0.2140 g	2.3 % wt
Site: Green, Metal					
HPB02-01	201814558-0002	12/20/2018	12/26/2018	0.2815 g	0.010 % wt
Site: White on concrete					
HPB03-01	201814558-0003	12/20/2018	12/26/2018	0.2592 g	0.52 % wt
Site: White on metal girders					

Phillip Worby, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * < (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 12/27/2018 11:18:56

Lead (Pb) Chain of Custody

EMSL Order ID (Lab Use Only):

201814558

PHONE: Pinyon
FAX: 863

Company: Pinyon Environmental		EMSL-Bill to: <input checked="" type="checkbox"/> Different <input type="checkbox"/> Same <small>If Bill to is Different note instructions in Comments**</small>	
Street: 3022 S. Vance		Third Party Billing requires written authorization from third party	
City: Lakewood	State/Province: CO	Zip/Postal Code:	Country:
Report To (Name): Deborah Fernandez		Telephone #: 970.310.1217	
Email Address: fernandez@pinyon-env.com		Fax #:	Purchase Order:
Project Name/Number: 118113 001-001 815006		Please Provide Results: <input type="checkbox"/> FAX <input checked="" type="checkbox"/> E-mail <input type="checkbox"/> Mail	
U.S. State Samples Taken: CO		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

Turnaround Time (TAT) Options* - Please Check

3 Hour
 6 Hour
 24 Hour
 48 Hour
 72 Hour
 96 Hour
 1 Week
 2 Week

*Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide

Matrix	Method	Instrument	Reporting Limit	Check
Chips <input checked="" type="checkbox"/> % by wt. <input type="checkbox"/> mg/cm ² <input type="checkbox"/> ppm	SW846-7000B	Flame Atomic Absorption	0.01%	<input type="checkbox"/>
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	<input type="checkbox"/>
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	<input type="checkbox"/>
	NIOSH 7300 modified	ICP-AES/ICP-MS	0.5 µg/filter	<input type="checkbox"/>
Wipe* <small>ASTM <input type="checkbox"/> non ASTM <input type="checkbox"/> *If no box is checked, non-ASTM Wipe is assumed</small>	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	<input type="checkbox"/>
	SW846-6010B or C	ICP-AES	1.0 µg/wipe	<input type="checkbox"/>
	SW846-7000B/7010	Graphite Furnace AA	0.075 µg/wipe	<input type="checkbox"/>
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1131/SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)	<input type="checkbox"/>
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	SW846-7010	Graphite Furnace AA	0.3 mg/kg (ppm)	<input type="checkbox"/>
	SW846-6010B or C	ICP-AES	2 mg/kg (ppm)	<input type="checkbox"/>
Wastewater Unpreserved <input type="checkbox"/> Preserved with HNO ₃ pH < 2 <input type="checkbox"/>	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.7	ICP-AES	0.020 mg/L (ppm)	<input type="checkbox"/>
Drinking Water Unpreserved <input type="checkbox"/> Preserved with HNO ₃ pH < 2 <input type="checkbox"/>	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	<input type="checkbox"/>
TSP/SPM Filter	40 CFR Part 50	ICP-AES	12 µg/filter	<input type="checkbox"/>
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	<input type="checkbox"/>
Other:				<input type="checkbox"/>

Name of Sampler: _____ Signature of Sampler: _____

Sample #	Location	Volume/Area	Date/Time Sampled
1 HPB01-01	green, metal		12/20/18
2 HPB02-01	white on concrete		↓
3 HPB03-01	white on metal girders		↓

Client Sample #'s: _____ Total # of Samples: **3**

Relinquished (Client): **Deborah Fernandez** Date: **12/21/18** Time: **0630**

Received (Lab): **BLH** Date: **12/21/18** Time: **8:30 am DB**

Comments: **perx hwy 12/24/18 952 L 601150**

3 AR

**Appendix F NESHAP Notification Information and ACM Summary
of Findings**



**NESHAP NOTIFICATION INFORMATION AND
ACM SUMMARY OF FINDINGS**

Owner Ground Engineering Consultants, Inc.
Address Holly Street and Monaco Parkway Bridges at Highline Canal Trail, Colorado 80503
Survey Date December 20, 2018
Number of Bulk Samples Collected 15
Lab Performing Analysis EMSL Analytical
Survey Inspectors 1

Inspector	Cert. No.	Expiration	Training Center
Deborah Fernandez	9022	03.27.19	Acclaim Environmental Inc.

Based on the analysis of materials identified and collected by Pinyon Environmental, Inc., there were no Regulated Asbestos Containing Materials (RACM). No abatement required.

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER

**TRANSPORTATION &
INFRASTRUCTURE**

DEPARTMENT OF TRANSPORTATION &
INFRASTRUCTURE

Technical Specifications

Contract Number: 202053748



Highline Canal Crossing at Holly St. and Iliff Ave.

March 3, 2020

SCHEDULE A

SPECIAL PROVISIONS

CITY AND COUNTY OF DENVER DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE



HIGHLINE CANAL CROSSING IMPROVEMENTS AT HOLLY & ILIFF

CCD PROJECT NO. PWTRN201842077

October 15, 2019

PREPARED BY:

FELSBURG, HOLT & ULLEVIG



GENERAL INFORMATION

References to the City and County of Denver (CCD), City, Department or Engineer in the Standard Construction Specifications, Standard Special Provisions, Project Special Provisions, and / or Standard Construction Details refer to the City and County of Denver Project Delivery Manager or the Public Works Director.

STANDARD SPECIFICATIONS FOR CONSTRUCTION

The Standard Specifications for Construction used for this Project shall be the Colorado Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted in 2019 and as hereinafter modified.

The CDOT Standard Special Provisions revise and prevail over the 2019 CDOT "Standard Specifications for Road and Bridge Construction".

The Project Special Provisions prevail over the CDOT Standard Special Provisions and the 2019 CDOT "Standard Specifications for Road and Bridge Construction".

STANDARD CONSTRUCTION DETAILS

Details for items marked on the City and County of Denver Transportation Engineering Standard Drawings, Wastewater Standard Details, and Traffic Standard Drawings shall prevail over any conflicting details.

Details contained in the Plans prevail over the CDOT and CCD standard drawings.

SUBMITTALS

All submittals required for this project shall be a minimum of 4 copies.

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

**HIGHLINE CANAL CROSSING IMPROVEMENTS
AT HOLLY & ILIFF**

CCD PROJECT NO. PWTRN201842077

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PROJECT SPECIAL PROVISIONS

All project related revisions to the CDOT Standard Specifications for Road and Bridge Construction, including revisions, additions, deletions, are contained in the following Project Special Provisions. All bids and all construction shall be in accordance with the Project Special Provisions as applicable.

INDEX OF PROJECT SPECIAL PROVISIONS

NAME	DATE	PAGE
Index Page	[AD DATE]	PSP-4
Construction Limits	[AD DATE]	PSP-5
Notice to Bidders	[AD DATE]	PSP-6
Commencement and Completion of Work	[AD DATE]	PSP-7 to PSP-8
Revision of Division 100 – General Provisions	[AD DATE]	PSP 9
Revision of Section 101 – Definitions and Terms	[AD DATE]	PSP-10
Revision of Section 104 – Scope of Work	[AD DATE]	PSP-11
Revision of Section 105 – Control of Work	[AD DATE]	PSP-12
Revision of Section 107 – Performance of Safety Critical Work	[AD DATE]	PSP-13 to PSP-14
Revision of Section 107 – Worker Safety	[AD DATE]	PSP-15
Revision of Section 107 – Protection of Existing Vegetation	[AD DATE]	PSP-16
Revision of Section 109 – Measurement and Payment	[AD DATE]	PSP-17
Revision of Section 201 – Clearing and Grubbing	[AD DATE]	PSP-18
Revision of Section 202 – Removal of Structures and Obstructions	[AD DATE]	PSP-19
Revision of Section 203 – Potholing	[AD DATE]	PSP-20
Revision of Section 203 – Excavation and Embankment	[AD DATE]	PSP-21 to PSP-22
Revision of Section 208 – Erosion Control	[AD DATE]	PSP-23 to PSP-36
Revision of Section 209 – Watering and Dust Palliatives	[AD DATE]	PSP-37
Revision of Section 212 – Seeding, Fertilizer, Soil Conditioner and Soidding	[AD DATE]	PSP-38 to PSP-51
Revision of Section 306 – Reconditioning	[AD DATE]	PSP-52
Revision of Sections 401 & 403 – Hot Mix Asphalt	[AD DATE]	PSP-53 to PSP-55
Revision of Section 412 – Portland Cement Concrete Pavement	[AD DATE]	PSP-56 to PSP-59
Revision of Section 608 – Sidewalks and Curb Ramps	[AD DATE]	PSP-60 to PSP-62
Revision of Section 609 – Curb and Gutter	[AD DATE]	PSP-63 to PSP-64
Revision of Section 625 – Construction Surveying	[AD DATE]	PSP-65 to PSP-68
Revision of Section 628 – Construction As-Builts	[AD DATE]	PSP-69 to PSP-70
Revision of Section 629 – Survey Monumentation	[AD DATE]	PSP-71 to PSP-72
Revision of Section 630 – Construction Zone Traffic Control	[AD DATE]	PSP-73 to PSP-75
Traffic Control Plan – General	[AD DATE]	PSP-76 to PSP-79
Utilities	[AD DATE]	PSP-80 to PSP-81

CONSTRUCTION LIMITS

The “construction limits” for the Site are defined as the intersection of Holly Street and Iloff Avenue. Furthermore, the construction limits include the Highline Canal Trail, west and east of Holly Street as necessary to complete the Work. All Work shall occur within the City and County of Denver and Arapahoe County right-of-ways. Impacts to existing landscaping, concrete, sidewalk, structures, sprinklers, curbs, gutters, etc. that occur beyond the right-of-way shall be repaired by the Contractor at their own expense. Impacts to existing landscaping, concrete, sidewalk, structures, sprinklers, curbs, gutters, etc. that occur within the right-of-way, but are not specifically designated to be removed by the Contract Drawings or by the Project Manager, shall be repaired by the Contractor at their own expense.

NOTICE TO BIDDERS

It is recommended that bidders on this project review the work site and plan details.

COMMENCEMENT AND COMPLETION OF WORK

The Contractor shall commence work under the Contract per the City General Contract Conditions. The Contractor shall complete all work within 120 calendar days in accordance with the "Notice to Proceed."

Salient features to be shown on the Contractor's Progress Schedule are:

1. Mobilization
2. Detour(s)
3. Clearing and Grubbing
4. Best Management Practices
5. Removal of Pavement
6. Removal of Sidewalks
7. Removal of Curb & Gutter
8. Asphalt Paving
9. Concrete Pavement
10. Curb and Gutter
11. Sidewalk
12. Final Signing
13. Final Striping
14. Anticipated Substantial Completion and Opening to Traffic
15. Anticipated Final Completion
16. Project Cleanup

Contractor Schedule

The Contractor's progress schedule shall be a Critical Path Method Schedule. The schedule shall include 5 days of down time (float) for utility conflicts and delays.

The Contractor will not be compensated for administrative or management costs incurred during down time due to for utility or other delays.

No additional payment will be made of out of sequence work.

COMMENCEMENT AND COMPLETION OF WORK

Work Restrictions for City Holidays

Work shall not occur on holidays listed below. Work shall cease at 12:00 p.m. (noon) the day before the holiday or on the Sunday before a Monday holiday. Work may resume at 8:00 a.m. the day after the holiday. All travel ways shall be open to the public and clear of obstructions during the holiday non-working periods listed above.

Holidays:

- New Years Day
- Martin Luther King Day
- President's Day
- Cesar Chavez Day
- Memorial Day
- Independence Day
- Labor Day
- Veteran's Day
- Thanksgiving Day
- Christmas Day

Work Restrictions for City sponsored or sanctioned events

Work may be restricted by City sponsored or sanctioned events. Contractor will be responsible for coordinating with City of Denver Office of Special Events. Contractor shall attend all Downtown Construction Coordination Meetings during the construction of this project. Contractor shall contact XXXX for information on City of Denver Special Events. XXX-XXX-XXXX. Email XXXX@denvergov.org

Work Restrictions for City Noise Ordinance and Street Occupancy Permit

Work shall be in conformance with the City's Noise Ordinance and the Contractor's street occupancy permit.

Substantial Completion

Substantial completion has two components:

1. Substantial completion of facilities open to the Public.
2. Substantial completion of landscaping.

Each component will be approved separately by the Project Manager.

REVISION OF DIVISION 100
GENERAL PROVISIONS

The Colorado Department of Transportation (CDOT) General Provisions consists of Sections 100 through 109 of the CDOT Standard Specifications for Road and Bridge Construction. With the exception of the following, all other General Provisions are not applicable to this Project and are hereby deleted.

In place of the deleted sections, the City and County of Denver's General Conditions and Special Conditions for this project will apply. The City and County of Denver General Conditions shall prevail over any conflicting Division 100 General Provisions of the CDOT "Standard Specifications for Road and Bridge Construction".

The City and County of Denver Project Special Conditions shall prevail over any conflicting subsections of the City and County of Denver General Conditions and the Division 100 General Provisions of the CDOT "Standard Specifications for Road and Bridge Construction".

- General Provision Section 101 – Definitions and Terms [with the exception of 101.01 Abbreviations, 101.17 Contract, 101.22 Contract Time, 101.23 Contractor, 101.36 Holidays, 101.37 Inspector, 101.42 Notice to Proceed, 101.50 Project, 101.68 Shop Drawings, 101.73 Specifications, 101.81 Subcontractor, 101.84 Superintendent, 101.87 Surety, 101.92 Work]
- General Provision Subsection 102.05 – Examination of Plans, Specifications, Special Provisions, and Site of Work
- General Provision Subsection 104.04 – Maintaining Traffic
- General Provision Subsection 105.02 – Plans, Shop Drawings, Working Drawings, Other Submittals, and Construction Drawings
- General Provision Subsection 105.03 – Conformity to the Contract
- General Provision Subsection 105.09 – Coordination of Plans, Specifications, Supplemental Specifications, and Special Provisions
- General Provision Subsection 105.10 – Cooperation by Contractor
- General Provision Subsection 105.11 – Cooperation with Utilities
- General Provision Section 106 – Control of Material
- General Provision Subsection 107.25 – Water Quality Control
- General Provision Subsection 109.04 – Compensation for Changes and Force Account Work
- General Provision Subsection 109.06 - Partial Payments

REVISION OF SECTION 101
DEFINITIONS AND TERMS

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

Delete Subsection 101.28 and replace with the following:

101.28 Department or Department of Transportation. Refers to the City and County of Denver.

Delete Subsection 101.29 and replace with the following:

101.29 Engineer. References to the “Engineer” within the Project Special Provisions and plans will refer to the City and County of Denver Project Manager.

Subsection 101.96 shall be added as follows:

101.96 Unsuitable Materials. Unsuitable Materials refers to organic, rock and other unsuitable soil materials that cannot be compacted to 95% of Standard Proctor Density (AASHTO T-99), at optimum moisture +/- 2% for clay soils and 95% of Standard Proctor Density (AASHTO T-180), at optimum moisture +/- 2% for granular soils.

Subsection 101.97 shall be added as follows:

101.97 Project Manager. References to the “Project Manager” within the Project Special Provisions and Plans will refer to the City and County of Denver Project Manager.

REVISION OF SECTION 104
SCOPE OF WORK

Section 104 of the Standard Specifications is hereby revised for this project as follows:

Replace the third paragraph in Subsection 104.04 with the following:

Portions of any roadways that are not included in the contract will be maintained by the City and County of Denver. Snow removal within the contract work limits will be the responsibility of the Contractor. The Contractor shall be responsible for maintaining all Work that is included in the Contract, and maintaining approaches, crossings, intersections, and other features as may be necessary to accommodate traffic without direct compensation, except as provided in the Contract or as described below.

Subsection 104.04 shall include the following:

The Contractor shall be responsible for maintaining all accesses along the project areas during construction. The Contractor will not be permitted to have construction equipment or materials in the lane(s) open to traffic at any time. All personal vehicle and construction equipment parking will be prohibited where it conflicts with safety, access, or the flow of traffic. Parking shall be allowed in designated areas only.

Unless otherwise approved by the Project Manager, the Contractor's equipment shall follow normal and legal traffic movements. The Contractor's ingress and egress of the work area shall be accomplished with as little disruption to traffic as possible. Traffic control devices shall be removed by picking up the devices in a reverse sequence to that used for installation. This may require moving backwards through the work zone. When located behind barrier or at other locations shown on approved traffic control plans, equipment may operate in a direction opposite to adjacent traffic.

The City may have entered into operating agreements with one or more law enforcement organizations for cooperative activities. Under such agreements, at the sole discretion of the City, law enforcement personnel may enter the work zone for enforcement purposes and may participate in the Contractor's traffic control activities. The responsibility under the Contract for all traffic control resides with the Contractor and any such participation by law enforcement personnel in Contractor traffic control activities will be referenced in either the Special Provisions or General Notes of the plans. Nothing in this Contract is intended to create an entitlement, on the part of the Contractor, to the services or participation of the law enforcement organization.

The key elements of the Contractor's method of handling traffic (MHT) are outlined in subsection 630.10(a). The components of the TCP for this project are included in the following:

1. Section 630 of the specifications.
2. Signing Plans

The Contractor will not be allowed to place temporary pavement marking on the top mat of permanent pavement.

REVISION OF SECTION 105
CONTROL OF WORK

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 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 or grading.

The locations of utility facilities as shown on the plan and profile sheets were obtained from the best available information. No warranty is made for the adequacy or accuracy of subsurface information provided. The Contractor shall cooperate with the utility owners in their relocation operations as provided in subsection 105.11 of the Standard Specifications for Road and Bridge Construction. No guarantee is made that utility conflicts will be resolved prior to construction activities and any delays resulting from utility relocation work shall be dealt with in accordance with subsection 108.08 of the Standard Specifications for Road and Bridge Construction as amended.

MEASUREMENT AND PAYMENT:

All costs incidental to the foregoing requirements will not be paid for separately, but shall be included in the work.

REVISION OF SECTION 107
PERFORMANCE OF SAFETY CRITICAL WORK

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

Add subsection 107.061 immediately following subsection 107.06 as follows:

107.061 Performance of Safety Critical Work. The following work elements are considered safety critical work for this project:

- (1) Work requiring the use of cranes or other lifting equipment

The Contractor shall submit, for record purposes only, an initial detailed construction plan that addresses safe construction of each of the safety critical elements. An erection plan, it shall be included as a part of this plan. The detailed construction plan shall be submitted two weeks prior to the safety critical element conference described below. The construction plan shall be stamped "Approved for Construction" and signed by the Contractor. The construction plan will not be approved by the Engineer.

The Construction Plan shall include the following:

1. Safety Critical Element for which the plan is being prepared and submitted.
2. Contractor or subcontractor responsible for the plan preparation and the work.
3. Schedule, procedures, equipment, and sequence of operations, that comply with the working hour limitations
4. Temporary works required: falsework, bracing, shoring, etc.
5. Additional actions that will be taken to ensure that the work will be performed safely.
6. Names and qualifications of workers who will be in responsible charge of the work:
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
7. Names and qualifications of workers operating cranes or other lifting equipment
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
8. The construction plan shall address how the Contractor will handle contingencies such as:
 - A. Unplanned events (storms, traffic accidents, etc.)
 - B. Structural elements that don't fit or line up
 - C. Work that cannot be completed in time for the roadway to be reopened to traffic
 - D. Replacement of workers who don't perform the work safely
 - E. Equipment failure
 - F. Other potential difficulties inherent in the type of work being performed
9. Name and qualifications of Contractor's person designated to determine and notify the Engineer in writing when it is safe to open a route to traffic after it has been closed for safety critical work.

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REVISION OF SECTION 107
PERFORMANCE OF SAFETY CRITICAL WORK

A safety critical element conference shall be held two weeks prior to beginning construction on each safety critical element. The Engineer, the Contractor, the safety critical element subcontractors, and the Contractor's Engineer shall attend the conference. Required pre-erection conferences may be included as a part of this conference.

After the safety critical element conference, and prior to beginning work on the safety critical element, the Contractor shall submit a final construction plan to the Engineer for record purposes only. The Contractor's Engineer shall sign and seal temporary works related to construction plans for the safety critical elements, and Temporary Works. The final construction plan shall be stamped "Approved for Construction" and signed by the Contractor.

The Contractor shall perform safety critical work only when the Engineer is on the project site. The Contractor's Engineer shall be on site to inspect and provide written approval of safety critical work for which he provided stamped construction details. Unless otherwise directed or approved, the Contractor's Engineer need not be on site during the actual performance of safety critical work, but shall be present to conduct inspection for written approval of the safety critical work.

When ordered by the Engineer, the Contractor shall immediately stop safety critical work that is being performed in an unsafe manner or will result in an unsafe situation for the traveling public. Prior to stopping work, the Contractor shall make the situation safe for work stoppage. The Contractor shall submit an acceptable plan to correct the unsafe process before the Engineer will authorize resumption of the work.

When ordered by the Engineer, the Contractor shall remove workers from the project that are performing the safety critical work in a manner that creates an unsafe situation for the public in accordance with subsection 108.05.

Should an unplanned event occur or the safety critical operation deviate from the submitted plan, the Contractor shall immediately cease operations on the safety critical element, except for performing any work necessary to ensure worksite safety, and provide proper protection of the work and the traveling public. If the Contractor intends to modify the submitted plan, he shall submit a revised plan to the Engineer prior to resuming operations.

All costs associated with the preparation and implementation of each safety critical element construction plan will not be measured and paid for separately, but shall be included in the work.

The requirements of this section shall not relieve the Contractor from ultimate liability for unsafe or negligent acts or to be a waiver of the Colorado Governmental Immunity Act on behalf of the City and County of Denver.

REVISION OF SECTION 107
WORKER SAFETY

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

Subsection 107.06 shall include the following:

Contractors shall comply with the CCD Noise Control Ordinance for all construction activities scheduled to occur between the hours of 9:00 p.m. to 7:00 a.m. Monday – Friday and 5:00 p.m. and 8:00 a.m. Saturday through Sunday if noise levels are expected to exceed 50 dBA in residential areas or 60 dBA in commercial areas. Nighttime construction activities exceeding noise levels during these restricted hours may not be initiated without first obtaining this permit variance from CCD.

Under any circumstances where nighttime construction activities will take place between the restrictive hours listed above where noise levels will exceed the noise impact thresholds, the contractor is required to apply for a construction noise variance no less than one month before the startup date for construction. Note: the CCD board only meets the 2nd Thursday of every month.

Applications shall be submitted through the Denver Department of Environmental Health (DEH) at a cost of \$25.00 for application processing.

The contractor is responsible for fulfilling the requirements set forth by the CCD and is responsible for obtaining the permit variance prior to the construction startup date. All exemption requests and permitting requirements will not be paid for separately, but will be included in the work. Copies of the final application approval shall be provided to CCD (John Yu) for recording and documentation purposes demonstrating compliance with CCD regulations.

If the Contractor is ordered to cease operations due to violations of a noise ordinance as a result of equipment back up alarms, the Contractor shall take whatever actions are necessary to comply with the ordinance and continue work on the project. This includes the option of using an observer in lieu of using the equipment's back up alarms as allowed by 29 CFR 1926.601(b) (4) (II) of the OSHA Safety and Health Standards. Should the Contractor fail to mitigate the noise ordinance violation, the Contractor shall be deemed to have waived any right to a claim as a result of work suspension or being required to perform the work at times not specified in the Contract.

If the Contractor uses an observer in lieu of back up alarms, the Contractor shall follow all of the OSHA requirements regarding the use of observers.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project.

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 notify Ted Berg, or Ben Rickenbacker, when tree removals are planned.

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:

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

A consulting Arborist retained by the City of Denver 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 City's Landscape Architect or Wetland Specialist. Contact Jim Myers at CCD Forestry Department.

REVISION OF SECTION 109
MEASUREMENT AND PAYMENT

Section 109 of the Standard Specifications is hereby revised for this project as follows:

Delete the seventh paragraph of Subsection 109.01 and replace with the following:

In computing volumes of excavation and embankment, the method incorporated into the Design Engineer's computer modeling program will be used.

REVISION OF SECTION 201
CLEARING AND GRUBBING

Section 201 of the Standard Specifications is hereby revised for this project as follows:

In Subsection 201.02, delete the sixth paragraph and replace with the following:

No material or debris shall be disposed of within the project limits; and, shall be legally recycle or disposed of. The Contractor shall make all arrangements to obtain written permission from property owners for disposal locations outside the limits of the project. Copies of this written agreement shall be furnished to the Project Manager before the disposal area is used.

Existing trees, shrubs, bushes or grass, outside the designated work areas but inside the project limits that are damaged due to the Contractor's operations shall be replaced in kind at the Contractor's expense.

REVISION OF SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS

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

Delete the first sentence in the second paragraph and the seventh paragraph of Subsection 202.11 and replace with the following:

Removal of pavement markings, permanent and temporary, will not be measured and paid for separately, but shall be included in the work.

Subsection 202.12 is hereby revised to include the following:

Pay Item	Pay Unit
Removal of Sidewalk	SF
Removal of Curb and Gutter	LF
Removal of Concrete Curb Ramp	SF
Removal of Asphalt Mat	SY

**REVISION OF SECTION 203
POTHOLING**

Section 203.05(f) 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 *Standards and Details for the City and County of Denver* (January 2013).

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

METHOD OF MEASUREMENT

Subsection 203.11(e) shall be deleted and replaced with the following:

Potholing will be paid for by the number of potholes for the purpose of locating utilities or other underground obstructions that could be impacted by construction related activity. All associated work activity and labor, such as removal and replacement of existing pavement and/or sidewalks, excavation, backfilling and shoring, shall be considered incidental to the work.

BASIS OF PAYMENT

Subsection 203.12 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Potholing	Each

REVISION OF SECTION 203
EXCAVATION AND EMBANKMENT

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

DESCRIPTION

Subsection 203.01 shall include the following:

Disposal of materials not recycled or reused shall be made at Denver Arapahoe Disposal Site (DADS), 3500 South Gun Club Road, Aurora, Colorado and shall be part of this Contract.

Fencing shall be erected around all excavations greater than 4 feet deep to preclude public access when unattended.

CONSTRUCTION REQUIREMENTS

Subsection 203.04 shall include the following:

The Contractor shall protect and promptly dewater and recondition all excavations from water, regardless of the sources of water.

Subsection 203.05 (c), shall include the following:

Approved backfill material shall be Aggregate Base Course (Class 6) or other material as approved by the Project Manager.

Delete the first paragraph of Subsection 203.08 and replace with:

Proof rolling: Proof rolling shall be conducted with a double tandem ten-wheel end-dump truck, loaded to a minimum gross weight of 45,000 pounds; pneumatic tire equipment using a minimum axle load of 18 kips per axle; or other equipment as approved by the Project Manager. A weight ticket from an approved scale shall be furnished by the Contractor to substantiate the weight of the truck or equipment.

The Project Manager may require hand operated compaction equipment or other methods to evaluate areas not accessible to the above mentioned truck or equipment.

Areas found to be weak, and those areas that failed, shall be ripped, scarified, dried or wetted as necessary and re-compacted to the requirements for density and moisture at the Contractor's expense.

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REVISION OF SECTION 203
EXCAVATION AND EMBANKMENT

METHOD OF MEASUREMENT

Subsection 203.11 (a) shall be deleted and replaced with the following:

Excavation. Excavation to finished subgrade per approved Contract Drawing elevation shall be measured by cubic yards removed. Truck bed volume or other volume calculation acceptable to the Contractor and approved by the Project Manager shall be used.

Dewatering and reconditioning shall not be measured and paid for separately, but shall be included in the work.

Subsection 203.11 (b) shall include the following:

Aggregate base course backfill material shall not be measured and paid for separately, but shall be included in the work.

Subsection 203.11 (d) shall be deleted and replaced with the following:

Blading and Dozing: Proof rolling, blading, wetting, drying, and dozing, will not be measured and paid for separately, but shall be included in the cost of the work.

Subsection 203.11 (f) shall be deleted and replaced with the following:

Proof Rolling: Proof rolling will not be measured and paid for separately, but shall be included in the cost of the work.

Subsection 203.13 shall include the following:

(g) *Haul and Disposal.* Haul and disposal will not be measured and paid for separately but shall be included in the cost of the work.

REVISION OF SECTION 208
EROSION CONTROL

Delete all of Section 208 of the Standard Construction Specifications, with the exception of Subsection 208.02, and replace with the following:

PART I: DEFINITIONS

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

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

Additional Definitions applicable to this Section are listed heretofore:

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

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

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

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

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

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

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

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REVISION OF SECTION 208
EROSION CONTROL

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

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

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

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

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

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

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

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

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REVISION OF SECTION 208
EROSION CONTROL

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

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

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

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

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

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

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

REVISION OF SECTION 208
EROSION CONTROL

PART II: DESCRIPTION

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

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

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

PART III: MATERIALS

Materials to be used for BMPs shall conform to Section 208.02 of the Standard Construction Specifications, each specific detail as set forth within the Project SWMP or as noted on the Contract Drawings.

The current SWMP status for the Project is as follows:

An approved SWMP has been prepared and CASDP obtained by the City prior to bidding of the Project and as such must be properly transferred to the Contractor prior to the start of construction. The SWMP has been provided within the Contract Documents. The Contractor shall coordinate with the Project Manager and Permit Authority to perform the necessary transfer of CASDP from City to Contractor prior to the start of construction. The Permit transfer will be performed at no cost to the Contractor.

Prior to transfer of CASDP, additional elements shall be completed by the Contractor before the CASDP will be transferred from City to Contractor:

- a. Complete Sections B&E (Permittee & Site Supervisor) of the CASDP "Narrative Report Information Worksheet".
- b. Prepare a complete SWMP including any required adjustments for proposed construction phasing, staging areas, or additional items necessary to address applicable project specific Permit requirements. This will require the Contractor to provide or retain a Professional Engineer or subcontract with the original Professional Engineer that prepared the Bid Documents.

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REVISION OF SECTION 208
EROSION CONTROL

PART IV: EROSION CONTROL PERMIT STATUS

- a. Complete the “Construction Scheduling” section of the “Narrative Report Information Worksheet”.
- b. Include specific methods and/or BMPs that the Contractor will implement to address hazardous spill prevention/ containment response.
- c. Provide any “Additional Documentation and Correspondence” applicable to the Contractor as stated in the CASM. This will require the Contractor to provide or retain a Professional Engineer or subcontract with the original Professional Engineer that prepared the Contract Documents.

If deemed necessary, the Contractor may propose modifications to the approved SWMP once the CASDP has been transferred to the Contractor. Per CASDP requirements, the Contractor shall obtain the endorsement of a Professional Engineer licensed in the State of Colorado for any proposed Major or Minor SWMP Amendments. This may require the Contractor to provide or retain a Professional Engineer or subcontract with the original Professional Engineer of the “For reference only” erosion control drawings.

Per definition, a Major SWMP Modification requires the submission of revised SWMP elements to the Permit Authority for review and approval.

Prior to construction, the Contractor shall obtain the required State Construction Stormwater Permit(s) as applicable.

- A) **SCHEDULES**: At least 10 working days prior to the beginning of any construction work, the Contractor shall submit for approval a schedule for accomplishment of temporary and permanent BMPs shown in the SWMP. This schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent BMPs. The schedule shall include BMPs for all areas within the Project boundaries, including but not limited to, haul roads, borrow pits, and storage and other staging sites. Work shall not be started until the BMP schedule has been approved in writing by the Project Manager. Once the work has started, and during the active construction period, the Contractor shall update the schedule for all BMPs on a regular basis, and as required to keep the SWMP in compliance.
- B) **CONSTRUCTION IMPLEMENTATION**: The Contractor shall incorporate into the Project all BMPs as outlined in the accepted schedule.
- C) **UNFORSEEN CONDITIONS**: The Contractor shall direct the ECS (under the supervision of a Professional Engineer licensed in the State of Colorado) to design and implement BMPs for correcting conditions unforeseen during design of the Project, or as possible for emergency situations, which arise during construction. The Project’s SWMP, UDFCD Vol 3 standards and details, and CDOT’s “Erosion Control and Storm-Water Quality Guide,” and any approved modification to these documents as proposed by the Contractor, shall be used as reference documents for the purpose of designing appropriate BMPs. Measures and methods proposed by the Contractor to deal with unforeseen conditions shall be reviewed and approved in writing by the Permit Enforcement Authority and the Project Manager prior to implementation and construction.

REVISION OF SECTION 208
EROSION CONTROL

PART V: CONSTRUCTION REQUIREMENTS

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

- D) **PERMITS**: The Contractor shall obtain all required permits for the Project including those required by Federal, State, and local agencies. The Contractor shall obtain (or transfer from the City when specified) required erosion control and water quality permits and shall be responsible for compliance with all requirements under any such permits.
- E) **EROSION CONTROL SUPERVISOR**: Contractor shall assign to the Project an employee or subcontractor to serve as Erosion Control Supervisor (ECS). The ECS shall be a person other than the Contractor's superintendent, foreman, or equivalent supervisory position. The ECS shall be experienced in aspects of BMP construction and have satisfactorily completed a Colorado DOT or equivalent ECS training program authorized by the City. Proof that this requirement has been met shall be submitted to the Project Manager at least ten working days prior to the beginning of any soil disturbance work. A list of authorized ECS training programs is available from the City upon request. Additionally, per definition, the ECS shall be under the direction of a Professional Engineer licensed in the State of Colorado when performing any modifications to the Project Stormwater Management Plan (SWMP).

The ECS shall be responsible for oversight of the implementation, maintenance, and revision of the SWMP for the duration of the Project. The ECS's responsibilities shall be as follows:

- 1) Ensure compliance with all water quality permits or certifications in effect during the construction work.
- 2) Supervise the installation, construction, and maintenance of all BMPs specified in the Contract and coordinate the construction of BMPs with all other construction operations.
- 3) Direct the implementation of suitable BMPs as necessary to correct unforeseen conditions or emergency situations. Direct the dismantling of those features when their purpose has been fulfilled due to completion of each Project phase unless the Permit Enforcement Authority agrees that the features be left in place.
- 4) Inspect the construction site and document inspection activities at least every seven (7) days and immediately following any precipitation or snowmelt event with the potential to cause surface erosion. If no land disturbing construction activities are present during a storm event, post-storm event inspections shall be conducted prior to commencing any new land disturbing construction activities, but no later than seventy-two (72) hours following the storm event.

REVISION OF SECTION 208
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- 5) Attend the preconstruction conference, erosion control preconstruction inspection, Project scheduling meetings, weekly construction/ field meetings, substantial completion and final stabilization inspections, and other meetings regarding construction that could impact water quality.
- 6) Evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, the ECS shall propose appropriate SWMP modifications to the Contractor to protect off-site water from becoming contaminated with sediment or other pollutants.
- 7) Coordinate with the Contractor to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
- 8) Coordinate with the Contractor to ensure all labor, material, and equipment deployed to meet SWMP requirements is judged appropriately.
- 9) During construction, update and record the following items in the SWMP as changes occur:
 - (i) Construction boundaries (may require Major SWMP Modification)
 - (ii) Areas of disturbance (may require Major SWMP Modification)
 - (iii) Areas used for storage of construction materials, equipment, soils, or wastes.
 - (iv) Location of any dedicated asphalt or concrete batch plants.
 - (v) Location of construction offices and staging areas.
 - (vi) Location of work access routes during construction.
 - (vii) Location of borrow and waste.
 - (viii) Location of temporary and permanent stabilization

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

- I0) Amend the SWMP whenever there are: additions, deletions, or changes in locations of BMPs. SWMP revisions shall be recorded immediately. Items shall be dated and signed at time of occurrence. Specifically, amendments shall include the following:
 - (i) A change in design, construction, operation, or maintenance of the site which would require the implementation of new or revised BMPs; or
 - (ii) Changes when the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity.
 - (iii) Changes when temporary BMPs are no longer necessary from changes in Project phase and are removed. All inspection and maintenance activities or other repairs shall be documented.

All inspection and maintenance activities or other repairs shall be documented. The SWMP and documentation shall be kept on the Project site at all times.

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EROSION CONTROL

- I 1) Modify the site map with arrows to indicate direction of surface and storm water flowing across the Project site.
- I 2) When adding or revising BMPs in the SWMP, amend the narrative to explain what, when, where, why, and how the BMP is being used, and add a detail to the SWMP.
- I 3) If using existing topography, vegetation, etc. as a BMP, label it as such in the SWMP site map; amend the Narrative to explain when, why, and how the BMP is being used to the SWMP.
- I 4) Record on the SWMP, and implement the approved plan for concrete and asphalt saw cutting, grinding, and milling containment and removal.
- I 5) Update the potential pollutants list in the SWMP throughout construction meeting CASDP requirements.
- I 6) Spills, leaks, or overflows that result in the discharge of pollutants shall be documented on the inspection form. The ECS shall record the time and date, weather conditions, reasons for spill, and how it was remediated. The ECS shall immediately report to the Contractor and Project Manager the following instances of noncompliance:
 - (i) Noncompliance which may endanger health or environment.
 - (ii) Spills or discharge of hazardous substance or oil which may cause pollution of the City MS4 or State Waters.
 - (iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
- I 7) Perform a thorough inspection of the stormwater management system at least every seven (7) days and within 24 hours after any precipitation or snowmelt event with the potential to cause surface erosion. The inspection records shall be kept on-site in a written or previously approved format. Inspections shall be conducted during the progress of the work, during work suspensions, or until Final Stabilization of all disturbed areas is approved by Permit Enforcement Authority and shall include the following services at a minimum:
 - (i) The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. BMPs identified in the SWMP shall be observed to ensure that they are operating correctly.
 - (ii) The description of potential pollutant sources, and the BMPs identified in the SWMP, shall be revised and modified as appropriate based on the results of the inspection as soon as practicable after such inspection. Modification to the SWMP shall be implemented in a timely manner and in accordance with applicable Permit requirements.

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

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

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

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- G) **WORK OUTSIDE LIMITS OF CONSTRUCTION:** Non-contiguous areas outside the limits of construction that are used by the Contractor that include, but are not limited to, borrow pits, haul routes, storage and disposal areas, field offices, maintenance, batching areas, etc., shall have appropriate BMPs implemented by the Contractor at the Contractor's expense. Should said areas meet applicable CASDP Permit criteria, the Contractor shall obtain a separate CASDP for each area as applicable at no additional expense to the City.
- H) **MAINTENANCE:** The Contractor shall continuously maintain erosion and sediment control BMPs on a daily basis or as directed by the ECS so that they function properly during and after construction (including work suspensions) until Final Stabilization has been approved by the Permit Enforcement Authority. Maintenance includes, but is not limited to, the following items:
- (i) From the time seeding and mulching work begins until the date the Project has reached Substantial Completion of Erosion Control, the Contractor shall keep all seeded areas stabilized at all times. Any damage to seeded areas or to mulch materials shall be promptly repaired.
 - (ii) All inspection sediment removal, and BMP maintenance activities to comply with all Federal, State & Local erosion control permit requirements until Final Stabilization is reached.
 - (iii) All removal and replacement of existing BMPs due to damage to same suffered either by the contractor, outside agencies, the public, or acts of God.
 - (iv) All required mechanical and/ or manual street sweeping.
 - (v) Discretionary changes required of any regulatory enforcement officer.

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

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

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- J) **MAJOR SWMP MODIFICATION:** The City reserves the right to require changes in the Work or Project Limits that may require a Major Modification to the SWMP and/ or CASDP due to unforeseen circumstances. Should this occur, the Contractor will be responsible for the following (as applicable):
- (i) Make required revisions to comply with changing federal or state rulemaking if occurs within timeframe of Project
 - (ii) Make required revisions due to unforeseen or unplanned conditions leading to deficient Drawings/ SWMP (hazardous materials encountered, landfills, expansion of work limits, etc.)
 - (iii) Prepare revised SWMP elements endorsed by a Professional Engineer licensed in the State of Colorado.
- K) **SUBSTANTIAL COMPLETION OF EROSION CONTROL:** When a CASDP is required for the Project, Substantial Completion of the Project as defined by the City and County of Denver General Contract Conditions cannot be reached until Substantial Completion of Erosion Control has been granted. Granting of Substantial Completion of Erosion Control must be requested by the Contractor and be approved by the Permit Enforcement Authority in the form of a “Certificate of Substantial Completion of Erosion Control”.
- L) **FINAL STABILIZATION:** Granting of Final Stabilization must be requested by the Contractor and be approved by the Permit Enforcement Authority. Other permanent soil stabilization techniques may be proposed, in writing, by the Contractor and used upon approval, in writing, by the Project Manager and Permit Enforcement Authority.

The Contractor may reach Final Stabilization via the following procedures:

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

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

PART VI: CONSTRUCTION OF BMPs

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

PART VII: METHOD OF MEASUREMENT

Erosion Control Supervisor (ECS) will be measured by the total number of hours the ECS is required to be on the Project performing the duties (including supervision by a Professional Engineer licensed in the State of Colorado) as outlined in this Specification. The Contractor shall record the tasks that were performed by the ECS and the hours that were required to complete each task. The records for the payment period shall be submitted to the Project Manager after completion of work, at the time of monthly pay request, for approval and acceptance.

Silt fence, silt berms, erosion logs, gravel bags, silt dikes, temporary berms, temporary diversions, temporary drains, and brush barriers will be measured by the actual number of linear feet that are installed and accepted. Stakes, anchors, connections and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Vehicle tracking pad and concrete washout structure will be measured by the actual number of structures that are installed and accepted, and if specified on the SWMP as in-ground will include excavation, embankment, concrete, liner, erosion bales, fencing, and containment and disposal of concrete washout and all other associated waste material.

Storm drain inlet protection will be measured by the unit as specified in the Contract. Sediment trap and sediment basin quantities will be measured by the unit which shall include all excavation and embankment required to construct the item.

Any excavation required for the removal of sediment from traps, basins, areas adjacent to silt fences and erosion bales, and any other cleanout excavation of accumulated sediment, and removal of check dams or storm drain inlet protection will be measured by the number of hours that equipment, labor or both are used for sediment removal.

Work to furnish, install, maintain, replace (if not due to contractor negligence), remove, and dispose of BMPs specified in the Contract will be paid for at the contract unit price.

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PART VIII: BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
Rock Sock	LF
Pre-Fabricated Concrete Washout Structure	Each
Pre-Fabricated Vehicle Tracking Pad	Each
Sweeping (Sediment Removal)	Hour

Temporary BMPs will be measured and paid for by the BMPs used, except that surface roughening, and removal of trash will not be measured and paid for separately.

Payment for each BMP item will be full compensation for all work, materials and equipment required to furnish, install, maintain, remove, and dispose of it. BMPs as deployed per the SWMP requiring replacement due to Contractor negligence and or carelessness shall be provided at the Contactor's expense.

Temporary BMPs required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or for the Contractor's convenience, shall be performed at the Contractor's expense.

If the Contractor fails to complete construction within the approved contract time, payment will not be made for Section 208 pay items for the period of time after expiration of the approved contract time. These items shall be provided at the Contractor's expense.

The cost for any corrective actions required by the State or City due to contractor's failure to obtain or comply with applicable Permits will be borne by the Contractor, including fines and penalties. In the case of failures on the part of the Contractor in controlling erosion, sedimentation, and/or water pollution, the City may provide the necessary corrective actions. All corrective action costs, including Engineering costs, will be charged to the Contractor, and appropriate deduction will be made from the Contractor's monthly pay estimate.

The sole remedy for additional costs associated with installation of BMPs as required by regulatory agencies to ensure compliance with local and State requirements shall be per unit BMP as provided in the Bid Schedule of this Contract. The Contractor however may submit a separate itemized Change Order for any required Major SWMP Modification proposed by the City during the course of the Project.

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Pay Units for ECS will be full compensation for the Erosion Control Supervisor including all materials, labor and equipment necessary for the ECS to perform the work. Commute time will not be measured and paid for separately, but shall be included in the work. The ECS pay item shall include all labor, Professional Engineering (includes supervisory Professional Engineer licensed in the State of Colorado), and/ or design fees to prepare modifications to Stormwater Management Plan(s), revise or amend Permits, coordinate with State and Local agencies, design special erosion control plans for emergency situations that develop during construction or unexpected weather conditions.

Additional stabilized construction/ staging area proposed by Contractor beyond area included in the Bid shall be installed per requirements of the Permit Authority and Permit Enforcement Authority without any additional compensation.

Payment for concrete washout structure, whether constructed or prefabricated, will be full compensation for all work and materials required to install, maintain, and remove the item. This includes, but is not limited to: excavation, embankment, liner, erosion bales, fencing, signing, and containment and disposal of concrete washout and all other associated waste material.

Sweeping, when used as a BMP as shown in the Contract, will be measured by the number of hours that a pickup broom or motorized equipment capable of collecting sediment, authorized by the Project Manager, is used to remove sediment from the roadway or other paved surfaces. Operator will not be measured and paid for separately, but shall be included in the work.

Stakes, anchors, connections, geotextile, riprap and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Surveying of permanent BMPs will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 209
WATERING AND DUST PALLIATIVES

Section 209 of the Standard Specifications is hereby revised for this project as follows:

METHOD OF MEASUREMENT

Delete the first paragraph in Subsection 209.07 and replace with the following:

Water for moisture-density control, landscaping, pre-wetting, and for dust palliatives will not be measured and paid for separately but shall be included in the cost of the work.

REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

Delete all of Section 212 of the Standard Construction Specifications and replaced with the following:

PART I RELATED DOCUMENTS

Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

PART II SUMMARY

- A. This Section includes requirements for the installation of native seed, mulch, erosion control material (if applicable), and maintenance of the seeded areas, to be achieved as outlined in the “Maintenance” section below.
- B. Related Sections:
1. Division 01 Section “Erosion and Sedimentation Control”.
 2. Division 01 Section “Tree Retention and Protection”.
 3. Division 31 Section “Earth Moving”.
 4. Division 31 Section “Watering”.
 5. Division 32 Section “Irrigation System”.
 6. Division 32 Section “Soil Preparation”.
 7. Division 32 Section “Topsoil”.
 8. Division 32 Section “Trees, Plants, and Groundcovers”.

PART III DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, herbicide, defoliant, or desiccant.
- C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- D. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- E. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- F. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

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- G. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.
- H. Weeds: Including but not limited to Puncturevine, Field Bindweed, Twitch, Dandelion, Jimsonweed, Diffuse, Spotted and Russian Napweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canada Thistle, Nutgrass, Blackberry, Tansy Ragwort, Bermuda Grass, Johnsongrass, Poison Ivy, Nut Sedge, Nimble Weed, Bent Grass, Garlic Mustard, Perennial Sorrel, and Broom Grass or any weed listed on Colorado Noxious Weed List and Watch List.

PART IV REFERENCES

Comply with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act and be equal to or better in quality than the standards for Certified Seed.

Colorado Department of Transportation (CDOT) – Standards Specifications for Road and Bridge Construction.

PART V SUBMITTALS

- A. See Division 01 Section “Submittals” for submittal requirements.
- B. Materials: The Contractor shall submit to the Project Manager for approval a complete list of all materials to be used during this portion of the work prior to delivery of any materials to the site. Include complete data on source, amount and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Project Manager.
 - 1. Certification of Seed: From seed vendor for each seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
 - 2. Native Grass Species (supplied as pure live seed): Submit lab germination test results for all grass species. Submit an affidavit that describes estimated purity for all forb species that are not typically tested.
 - 3. Pesticides: Include product label and manufacturer's application instructions specific to this Project.
 - 4. Product Certificates: For soil amendments and fertilizers, from manufacturer.
- C. Qualification Data: For qualified landscape Installer.
- D. Material Test Reports: For existing in-place surface soil.
 - 1. Soil Analysis: See Division 32 Section “Soil Preparation”
 - 2. Analysis for each soil amendment.
 - 3. Analysis for each amended planting soil.
- E. Analysis and standards: Wherever applicable, for non-packaged materials, provide two copies of analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists.

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- F. Seeding schedule: Submit, in writing, two (2) copies of proposed seeding schedule, indicating dates for site preparation, seeding, mulching, erosion control, and coordination with plant procurement, planting soil preparation, plant delivery and planting. Schedule all Work during specified planting seasons. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.
- G. Maintenance Instructions: Recommended procedures for maintenance of irrigated and non-irrigated native seed areas during a calendar year. Submit before expiration of required initial maintenance periods.
- H. Contract Closeout Submittals:
 - 1. Operating and Maintenance Data: At completion of work, submit one (1) digital copy and two (2) hard copies to the Project Manager in accordance with Division 01 Section "Contract Closeout". Include directions for irrigation, aeration, mowing, fertilizing, and spraying as required for continued and proper maintenance through full growing season and dormant period.
 - 2. Warranty for Native Seed Areas: At completion of work, furnish written warranty to Parks Project Manager based upon specified requirements.
- I. The Project Manager reserves the right to reject the seed at any time prior to acceptance and that fails to meet specification requirements. Promptly remove rejected seed from the site.

PART VI QUALITY CONTROL

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful native grass establishment.
 - 1. Experience: Five years' experience in native seed installation in addition to requirements in Division 01 Section "Quality Control".
 - 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 3. Personnel Certifications: Installers shall have certification the following categories from the NALP:
 - a. Landscape Industry Certified Technician - Exterior, with installation maintenance irrigation specialty area(s).
 - 4. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.
 - 5. Pesticide Applicator: State licensed, commercial.
- B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Pre-installation Conference: Conduct conference at Project site to coordinate the process with other trades, to coordinate equipment movement within planting areas and to avoid soil compaction, to review proposed methods of installation, performance criteria, and maintenance procedures. Review underground utility location maps and plans. This meeting shall be coordinated by the Contractor, and comply with requirements in Division 01.
- D.

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- E. Standards: All materials and methods used during this portion of the work shall meet or exceed applicable federal, state, county, and local laws and regulations. All seed shall be free from insects and disease. Species shall be true to their scientific name as specified.

PART VII DELIVERY, STORAGE, AND HANDLING

- A. Seed: Shall be furnished in bags or containers clearly labeled to show the name and address of the supplier, the seed name, the lot number, net weight, origin, the percent of weed seed content, the guaranteed percentage of purity and germination, pounds of pure live seed (PLS) of each seed species, and the total pounds of PLS in the container. Seed that has become wet, moldy or damaged in transit or in storage will not be acceptable.
- B. Other Packaged Materials: Deliver packaged materials in original unopened containers bearing weight, analysis and name of supplier.
- C. Fertilizer: Deliver organic or chemical fertilizer to site in original unopened container bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark and conformance to state law, and bearing name and warranty of producer.
- D. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 3. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.
 4. Seed: Deliver seed materials in original unopened containers, showing bearing weight, analysis and name of supplier.
 5. Fertilizer: Deliver inorganic or chemical fertilizer to site in original unopened container bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark and conformance to state law, and bearing name and warranty of producer.
- E. Material will be inspected upon arrival at project site. Project Manager will reject any opened or unacceptable materials as described above. Store all materials in a manner to prevent wetting and deterioration.
- F. Immediately remove unacceptable material from job site.

PART VIII PROJECT/SITE CONDITIONS

- A. Work scheduling: Proceed with and complete landscape work rapidly, as portions of the site become available, working within the specified planting season and approved schedule.
- B. Planting Restrictions: Planting is preferred in spring but may be performed during one of the periods noted below. Variance from the schedule shall be permitted only with written approval from the Project Manager. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.

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- C. Vehicular accessibility on site shall be as directed by Project Manager. Repair damage to prepared topsoil and existing surfaces, caused by vehicular access and movement during work under this section, to original condition at no additional cost to the City.
- D. Do not drill or sow seed during windy, rainy weather or when ground is frozen or otherwise unable to be tilled.
- E. Seeding Season: Seeding shall generally occur during the specified windows below. Seeding dates may be modified when temperature and moisture conditions are favorable. Verify with local producers and contractors prior to finalizing.

Seed Type	Irrigated Areas Only	Non-Irrigated Areas
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Native Grasses	April 15-Sept.1	November 15-April 15
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- I. Dormant Seeding: Upon approval of the Project Manager, dormant seeding for Irrigated and Non-irrigated areas may be accomplished between November 15 and April 15. No seeding shall be done when the ground is frozen, muddy, covered with snow, or otherwise in a condition unsuitable for seeding. Dormant seeding will not relieve the Contractor from the warranty or the acceptance requirements specified elsewhere in this specification.
- F. Existing conditions:
 - 1. Existing Plants: Install sod only after all other landscape and irrigation items have been installed and accepted by the Project Manager.
 - 2. Utilities: Determine location of underground utilities. Perform work in a manner to avoid possible damage. Hand excavate, as required.
 - 3. Excavation: Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, noxious materials or obstructions, notify Project Manager before planting.
 - 4. If weeds are present on site, treat with pesticide prior to preparing soil for installing seed or sod as specified below.
- G. Coordination:
 - 1. Coordinate with construction of utilities on site. Do not begin placing topsoil until underground work is completed in the area.
 - 2. Coordinate with seeding and landscape Contractor(s) approved schedule. Limit construction access to areas where topsoil has been placed if placement is completed more than three (3) days prior to commencement of landscaping in the area. Limit fine grading to areas that can be prepared for planting within twenty-four (24) hours after fine grading.
 - 3. Coordinate with Contractors work requiring access to site over seeded areas.
 - 4. Coordinate with installation of underground irrigation system.

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PART IX MATERIALS

- A. Topsoil: See Division 32 Section "Topsoil".
- B. General:
1. The selected seed mix must be approved by the City Naturalist, and the Project Manager prior to its incorporation into the project.
 2. All seed brands shall be free from Colorado prohibited noxious weed seeds, including but not limited to Canada Thistle, Field Bindweed, Johnsongrass, and Leafy Spurge. The Contractor shall furnish to the Project Manager a signed statement certifying that the seed is from a lot that has been tested by a recognized laboratory for seed testing within six months prior to the date of delivery.
 3. Computation for quantity of seed required on the project is based on Pure Live Seed (PLS).
 4. The formula used for determining the quantity of PLS shall be:
Pounds of Seed x (Purity x Germination) = Pounds of PLS.
 5. If seed available on the market does not meet the minimum purity and germination specified, the Contractor must compensate for a lesser percentage of purity or germination by furnishing sufficient additional seed to equal the specified product. Product comparison shall be made on the basis of PLS in pounds, stated on each seed bag.
- C. Seed Mixes:
- I. Short Grass Mix:

Common Name	Scientific Name	PLS lbs/ ac	PLS/sf	% of PLS/sf
Blue Grama	Bouteloua gracilis	2.0	36	28.00
Bottlebrush Squirreltail	Elymus elymoides	2.0	9	6.82
Buffalograss	Buchloe dactyloides	10.8	12	9.18
Green Needlegrass	Nassella viridula	1.4	6	4.33
Prairie Junegrass	Koeleria cristata	0.5	22	17.22
Sand Dropseed	Sporobolus cryptandrus	0.1	10	7.82
Sideoats Grama	Bouteloua curtipendula	4.9	21	16.45
Western wheatgrass	Pascopyrum smithii	4.3	13	10.18
		26.1	130	100.00

Drill Seeded Rate: 26.1 PLS#/Acre
 Mechanical Broadcast Rate: 26.1 PLS#/Acre
 Hand Broadcast Areas Rate: 52.2 PLS#/Acre

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2. Mid Grass Mix:

Common Name	Scientific Name	PLS lbs/ac	PLS/sf	% of PLS/sf
Blue Grama	Bouteloua gracilis	2.0	35	27.24
Little Bluestem	Schizachyrium scoparium	3.7	17	12.71
Needle and Thread	Stipa comata	1.8	5.0	3.75
Prairie Junegrass	Koeleria cristata	0.5	22	16.75
Indian Ricegrass	Achnatherum hymenoides	1.3	3	2.45
Sand Dropseed	Sporobolus cryptandrus	0.1	10	7.61
Sideoats Grama	Bouteloua curtipendula	5.9	26	20.00
Switchgrass	Panicum virgatum	0.7	6	4.54
Western Wheatgrass	Pascopyrum smithii	2.1	6	4.95
		18.1	130	100

Drill Seeded Rate: 18.1 PLS#/Acre
 Mechanical Broadcast Rate: 18.1 PLS#/Acre
 Hand Broadcast Areas Rate: 36.2 PLS#/Acre

3. Sandhill Prairie Mix:

Common Name	Scientific Name	PLS lbs/ac	PLS/sf	% of PLS/sf
Big Bluestem	Andropogon gerardii	7.8	23	17.85
Indiangrass	Sorghastrum nutans	7.1	28	21.22
Little Bluestem	Schizachyrium scoparium	4.9	22	17.04
Needle and Thread	Stipa comata	2.5	7	5.02
Prairie Sandreed	Calamovilfa longifolia	4.9	31	23.85
Indian Ricegrass	Achnatherum hymenoides	1.8	4	3.28
Sand Bluestem	Andropogon hallii	2.8	7	5.64
Switchgrass	Panicum virgatum	0.9	8	6.09
		32.7	130	100

Drill Seeded Rate: 32.7 PLS#/Acre
 Mechanical Broadcast Rate: 32.7 PLS#/Acre
 Hand Broadcast Areas Rate: 65.4 PLS#/Acre

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4. Riparian Prairie Mix:

Common Name	Scientific Name	PLS lbs/ac	PLS/sf	% of PLS/sf
Big Bluestem	Andropogon gerardii	1.8	5	4.12
Prairie Cordgrass	Spartina pectinata	8.0	34	25.76
Prairie Sandreed	Calamovilfa longifolia	5.6	35	26.90
Slender Wheatgrass	Elymus trachycaulus	1.8	6	4.67
Western Wheatgrass	Pascopyrum smithii	5.1	16	11.94
Switchgrass	Panicum virgatum	0.8	7	5.49
Canada Wildrye	Elymus canadensis	12.0	28	21.12
		35.1	130	100

Drill Seeded Rate: 35.1 PLS#/Acre
Mechanical Broadcast Rate: 35.1 PLS#/Acre
Hand Broadcast Areas Rate: 70.2 PLS#/Acre

5. Wetland Mix:

Common Name	Scientific Name	PLS lbs/ac	PLS/sf	% of PLS/sf
American Sloughgrass	Beckmannia syzigachne	0.8	21	15.78
Nebraska Sedge	Carex nebraskensis	1.2	19	14.55
Creeping Spikerush	Eleocharis palustris	0.9	13	9.92
Hardstem Bullrush	Schoenoplectus acutus	1.6	11	8.34
Alkali Bullrush	Schoenoplectus maritimus	1.4	8	5.83
Switchgrass	Panicum virgatum	1.6	15	11.15
Western Wheatgrass	Pascopyrum smithii	3.3	14	10.46
Prairie Cordgrass	Spartina pectinata	7.8	24	18.25
Canada Wildrye	Elymus canadensis	3.3	7	5.72
		21.8	130	100.00

Drill Seeded Rate: 21.8 PLS#/Acre
Mechanical Broadcast Rate: 21.8 PLS#/Acre
Hand Broadcast Areas Rate: 43.6 PLS#/Acre

6. Native Wildflower Mix:

Common Name	Scientific Name	PLS lbs/ac	PLS/sf	% of PLS/sf
Purple Prairie Clover	Petalostemon purpurea	4.0	29	22.44
Narrowleaf Penstemon	Penstemon angustifolius	1.1	6	4.28
Blanketflower	Gaillardia aristata	3.7	16	12.33
Prairie Coneflower	Ratibida columnifera	1.0	14	10.62
Rocky Mountain Beeplant	Cleome serrulata	9.3	14	10.66
Golden Crownbeard	Verbesine encelioides	4.3	24	18.33
Western Yarrow	Achillea lanulosa	0.1	8	6.49
American Vetch	Vicia americana	15.3	12	8.96
Fringed Sage	Artemesia frigida	0.1	8	5.90
		38.9	130	100.00

Drill Seeded Rate: 38.9 PLS#/Acre
Mechanical Broadcast Rate: 38.9 PLS#/Acre
Hand Broadcast Areas Rate: 77.8 PLS#/Acre

REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

- D. Mulch: Comply with Section 213 – Mulching of the CDOT Standards and Specifications for Road and Bridge Construction.
- E. Fertilizer: None required unless otherwise specified by soils test.
- F. Water: Contractor to utilize the existing irrigation system and or quick coupler(s) when available. If irrigation or quick coupler(s) are not available then the contractor is responsible for watering. Water shall be free of substances that may be harmful to seed growth. Hoses and other watering equipment necessary to water the seed to be furnished by Contractor.
- G. Tackifier: Comply with Section 213 – Mulching of the CDOT Standards and Specifications for Road and Bridge Construction.

PART X PESTICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by Project Manager and authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): “Journey” by BASF, or approved equal.
- C. Post-Emergent Broadleaf Herbicide: “Plateau” by BASF, or approved equal.

PART XI EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.
- B. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches (6”) long.
- C. Erosion-Control Mats: Cellular, non-biodegradable slope-stabilization mats designed to isolate and contain small areas of soil over steeply sloped surface, of 3 inch (3”) nominal mat thickness. Include manufacturer's recommended anchorage system for slope conditions.
 - I. Products: Subject to compliance with requirements, provide one of the following:
 - a. Invisible Structures, Inc.; Slopetame 2.
 - b. Presto Products Company, a business of Alcoa; Geoweb.
 - c. Tenax Corporation - USA; Tenweb.

PART XII SUBSTITUTIONS

All substitutions shall be submitted to and approved by the Project Manager prior to construction.

REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

PART XIII EXAMINATION

- D. Examine areas to be seeded for compliance with requirements and other conditions affecting performance.
 - 1. Verify that finished grades are consistent with the slopes and grades indicated on the Contract Drawings. Verify grades are in conformance with Division 31 Section "Earth Moving". Obtain the Project Manager's approval of finished grade prior to proceeding with seeding operations.
 - 2. Verify soil prepare of all areas to be seeded is in accordance with the requirements of Division 32 Section "Soil Preparation". When completed, the soil shall be firmed by float dragging, followed by steel raking, to provide for the proper seeded surface. The seed bed shall be totally free from rock or clay clods over one inch (1") in diameter.
 - 3. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a seeding area. If contamination is present in soil, remove the soil and contamination as directed by the Project Manager and replace with new soil.
- E. Verify that the irrigation system is operable and provides adequate coverage prior to seeding.
- F. Proceed with seeding only after unsatisfactory conditions have been corrected and approved by the Project Manager.
- G. Acceptance: Beginning of installation means acceptance of existing conditions by the Contractor.

PART XIV PREPARATION

- A. Notify the Project Manager at least seven (7) working days prior to start of seeding operations.
- B. Protect existing utilities, paving, planting and other facilities from damage caused by seeding operations. Contractor shall repair any damage at no additional cost to the City.
- C. Locate, protect and maintain the irrigation system during seeding operations. Repair irrigation system components damaged during seeding operations shall be replaced or repaired to current City irrigation standards at Contractor's expense.
- D. Utilize equipment having low unit pressure ground contact within seeding areas.
- E. Limit preparation to areas that can be seeded within twenty-four (24) hours of preparation.
- F. Moisten prepared area before seeding if soil is dry. Water thoroughly and allow surface to dry before seeding. Do not create muddy soil.
- G. Erosion Control: Take measures and furnish equipment and labor necessary to control and prevent soil erosion, blowing soil and accumulation of wind-deposited materials on the site throughout the duration of work.

REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

PART XV SEEDING

- A. Seed within twenty-four (24) hours after preparation of seed bed. Seeding at other times may only be done if approved by the Project Manager.
- B. Areas outside Contract Limits disturbed as a result of construction operations shall be restored at Contractor's expense.
- C. Seed shall be uniformly applied at the specified rate, (half in one direction and the other half perpendicular to the first application). The direction of the final application shall always be perpendicular to the slope or running in the direction of the contour. Seed shall be installed at a depth between one-quarter inch (1/4") and one-half inch (1/2").
- D. Areas that are too small or steep for mechanical seeding may be hand seeded. Seed shall be uniformly applied at the specified rate utilizing a broadcast spreader and then hand raked in to a depth of no more than one-half inch (1/2"), then roll seed bed to ensure proper contact to the soil.

PART XVI EROSION CONTROL MATERIALS

- A. Review erosion control measures with the Project Manager prior to installation.
- B. For erosion control mats, install planting soil in two lifts, with second lift equal to thickness of erosion control mats. Install erosion control mat and fasten as recommended by material manufacturer.
- C. Fill cells of erosion control mat with planting soil and compact before planting.
- D. Install erosion control blanket on slopes exceeding 4:1, and in swales or other areas of concentrated runoff. As shown on the Contract Drawings or as directed by the Project Manager. Install in accordance with manufacturer's instructions.
- E. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.

PART XVII MULCHING

- A. Straw Mulch Application: Comply with Section 213 – Mulching of the CDOT Standards and Specifications for Road and Bridge Construction.
- B. Hydromulch Application: Utilize an approved hydromulcher to apply cellulose fiber at a rate of two-thousand (2,000) pounds per acre. Apply tackifier to comply with CDOT Section 213.02 – Mulching. Contractor shall provide verification of application rates in the form of ship tickets.
- C. Mulching shall not be installed when surface water is present resulting from rain, melting snow, irrigation, or other causes.

REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

- D. Areas not properly mulched, or any damage that may occur during construction is the responsibility of the Contractor and shall be repaired and re-mulched in an acceptable manner at the Contractor's expense. Mulching removed by wind, rain, or other causes prior to acceptance shall be re-established by the Contractor at their own expense.
- E. The seeded area shall be mulched within eight (8) hours of seeding. Areas not mulched within twenty-four (24) hours after seeding must be re-prepped and re-seeded with the specified seed mix at the Contractor's expense.
- F. Contractor shall remove all hydromulch from surface areas not specified for seeding, including but not limited to plant materials, fences, paved areas, signs, mulch beds, irrigation components and all other objects as directed by the Project Manager.

PART XVIII CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from all excess materials, debris and equipment from site. Repair any damage resulting from seeding operations.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- C. Remove non-degradable erosion-control measures after grass establishment period.

PART XIX PROTECTION

Restrict vehicular and pedestrian traffic from seeded areas until vegetation is established. Erect signs and barriers as required or directed by the Project Manager at no additional cost to the City.

PART XX MAINTENANCE

- A. Refer to Landscape Maintenance section 32 97 00
- B. If no native seed maintenance is required per the contract, then the native seed warranty is per the Acceptance sub-section. Maintenance of the native seed area is the responsibility of the Contractor until Final Acceptance.

PART XXI ACCEPTANCE

- A. Substantial Completion shall be granted when the seeded areas have a uniform plant growth establishing over the entire seeded area. Refer to the Contract General Conditions, Title 19 – Substantial Completion of the Work.
- B. Final Acceptance will be granted when native seed areas are in a healthy, vigorous growing condition, and for consistency and completion of coverage for a minimum period of one (1) year from date of Substantial Completion or until the Project Manager and City Naturalist are satisfied with germination.
- C. Irrigated native seed areas shall be established when the following criteria are met:

REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

1. By the end of the first full growing season after seeding, total vegetation cover including cover crop shall exceed ninety percent (90%) by aerial cover and ten percent (10%) of all species present shall be native.
 2. By the end of the first full growing season, seedling from twenty percent (20%) of planted forb species shall be present, only if forbs are specified in the contract.
 3. At any time during the contract period no more than ten percent (10%) by aerial cover of the seeded area should be dominated by aggressive exotic species such as, but not limited to, red clover (*Trifolium* spp.), white or yellow sweet clover (*Melilotus* spp.), Canada thistle (*Cirsium arvense*), tall fescue (*Festuca elatior*), field bindweed (*Convolvulus arvensis*) etc.
 4. Until Final Acceptance, seeded areas that fail after having been replaced previously, shall be replaced until it meets establishment as required above. Replacement materials shall be identical to those originally specified.
 5. Remedial action: If seeded areas greater than ten (10) square feet fail to meet the terms of the guarantee shown above, the Landscape Contractor will develop and submit to the Owner's Representative a remedial action plan that takes into consideration the site goals and specific deficiencies causing the remedial action. Contractor will implement the remedial action plan and submit a report that describes the remedial action taken. If remedial seeding or planting is required, Contractor will not be required to perform additional remedial seeding or planting in the same area for a minimum of two growing seasons. After two growing seasons following the remedial planting, the performance criteria must be met for the second growing season or additional remedial action must be taken. This guarantee remains in effect until all zones meet the third growing season criteria.
 6. Seeded areas will not be accepted in parts. Each time any portion or section of the entire seeded area requires replacement or remedial action, the maintenance period shall extend until all seeded areas meet the minimum establishment requirements stated above.
 7. All expense incurred including repairs from vandalism for the replacement and or establishment of the seed areas are the responsibility of the Contractor.
 8. If seeded in the fall, review for establishment shall be no later than June 15 of the following year.
- D. Non-irrigated native seed areas shall be established when the following criteria are met:
1. Total vegetation cover in all zones seeded with cover crop shall exceed fifty percent (50%) by aerial cover and ten percent (10%) of all species present shall be native. Native seed shall be free of weeds, foreign grasses, disease and harmful insects.
 2. At any time during the contract period no more than ten percent (10%) by aerial cover of the seeded area should be dominated by aggressive exotic species such as, but not limited to, red clover (*Trifolium* spp.), white or yellow sweet clover (*Melilotus* spp.), Canada thistle (*Cirsium arvense*), tall fescue (*Festuca elatior*), field bindweed (*Convolvulus arvensis*) etc.
 3. During the original warranty period, reseed at once with comparable blend/mix, those areas that have failed to achieve a stand of grass or which in the Project Manager's opinion are unhealthy.
 4. Reseeding will not be allowed in any season considerable unfavorable for seeding by the Project Manager.
 5. Reseed in a manner to achieve quality as originally specified.

REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

PART XXII MEASUREMENT

Measurement will be made by the contract unit specified for Native Seeding. Measurement shall include the actual number of units of specified material(s) placed and accepted at the locations shown on the Contract Drawings, or as directed by the Project Manager, and in accordance with the Specifications.

PART XXIII PAYMENT

Payment will be made at the [Acre] price, and shall include required materials, transportation, equipment, labor, earthwork, stockpiling, disposing, hauling off, watering, dust control, erosion and sediment control, fine grading, <Insert additional items> furnishing and installation of seeds and mulches installation and maintenance of temporary protection by fencing or other means, watering and all maintenance required until Final Acceptance of the work as required in accordance with the Contract Drawings and Specifications.

REVISION OF SECTION 306
RECONDITIONING

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

DESCRIPTION

Subsection 306.01 shall include the following:

All existing sub grade on streets shall be reconditioned over the area defined in the Contract Drawings for removal of pavement.

Proof rolling shall be in accordance with Revision of Section 203 Excavation and Embankment, Subsection 203.09.

CONSTRUCTION REQUIREMENTS

Subsection 306.02 shall include the following:

Moisture and density requirements for reconditioning shall be as stated in Revision of Section 203 Excavation and Embankment, Subsection 203.07.

METHOD OF MEASUREMENT

Delete Subsection 306.03 and replace with the following:

Reconditioning will not be measured.

BASIS OF PAYMENT

Delete Subsection 306.04 and replace with the following:

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

REVISION OF SECTIONS 401 & 403
HOT MIX ASPHALT

Sections 401 and 403 of the Standard Specifications is hereby deleted and replaced with Item 20 “Hot Mix Asphalt Pavement” Specifications from the Metropolitan Government Pavement Engineers Council (MGPEC), Volume I Pavement Design Standards and Construction Specification, latest version.

This work consists of one or more courses of asphalt mixture constructed on a prepared foundation in accordance with these specifications and the specific requirements of the type under contract, and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established.

Contact MGPEC at 303-979-2190 for MGPEC membership information and to receive full design standards and construction specifications. This Item 20 specification is available online at www.mgpec.org.

Warm Mix Asphalt Technology may be considered, upon approval by the Project Manager.

CONSTRUCTION REQUIREMENTS

The Contractor shall be required to place 90% of the HMA on the project using a bituminous paver that has been certified to have met the National Institute for Occupational Safety and Health (NIOSH) emission guidelines as set forth in Engineering Control Guidelines for Hot Mix Asphalt Pavers, Part I: New Highway-Class Pavers (Department of Health and Human Services (NIOSH) Publication No. 97-105, April 1997 printing)

METHOD OF MEASUREMENT

Add Subsection 20.16 to the MGPEC Specifications immediately following 20.15:

The measurement for payment of Stone Matrix Asphalt Pavement and Hot Mix Asphalt Pavement will be the actual number of square yards per inch thickness of stone matrix or hot mix asphalt, in place, complete as pavement, and accepted by the Project Manager. No measurement for payment will be made for stone matrix or hot mix asphalt placed in areas not specifically approved by the Project Manager, nor required due to careless or unauthorized operation by the Contractor.

Hot Mix Asphalt (Patching) will be measured by the actual number of square yards per inch thickness of hot mix asphalt to a minimum 9 inch depth or greater to match the thickness of the existing pavement, in place, complete as pavement, and accepted by the Project Manager. No measurement for payment will be made for hot mix asphalt (patching) placed in areas not specifically approved by the Project Manager, nor required due to careless or unauthorized operation by the Contractor.

BASIS OF PAYMENT

Add Subsection 20.17 to the MGPEC Specifications immediately following 20.16:

Payment will be made under:

Pay Item	Pay Unit
Hot Mix Asphalt (GR S)(75)(PG 64-22)	Ton
Hot Mix Asphalt (GR SX)(75)(PG 64-22)	Ton
Hot Mix Asphalt (Patching) (Asphalt)	Ton

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REVISION OF SECTIONS 401 & 403
HOT MIX ASPHALT

The Contractor shall collect the scale ticket on each load when it is delivered to the project site, and ensure that the following information is shown on each ticket:

- (1) Project Number.
- (2) Date.
- (3) Ticket Number.
- (4) Haul Unit Number.
- (5) Gross Weight.
- (6) Tare Weight.
- (7) Net Weight.
- (8) Material Type.
- (9) Certified Weigher's Name.

The scale tickets shall be available on site for the Project Manager to inspect.

Each day the Contractor shall provide to the Project Manager envelopes which contain the previous day's signed tickets and the following:

1. On each envelope: Project number, date of paving, type of material, daily total and cumulative total.
2. One of the following:
 - A. Two adding machine tape tabulations of the weight tickets with corresponding totals run and signed by different persons,
 - B. One signed adding machine tape tabulation of the weight tickets that has been checked and signed by a second person,
 - C. Signed check tape of computer scale tickets that have a cumulative total. These scale tickets must be consecutive and without voids adjustments.
3. A listing of any overweight loads on the envelope, including ticket numbers and amount over legal limit.
4. A comparison of the actual yield for each day's placement to the theoretical yield. Theoretical yield shall be based on the actual area paved, the planned thickness, and the actual density of the mixture being placed. Any variance greater than +2.5% shall be indicated on the envelope and a written explanation included.

The Contractor shall provide a vehicle identification sheet containing the following information for each vehicle that is used to deliver Hot Mix Asphalt to the project:

- (1) Vehicle number
- (2) Length
- (3) Tare weight
- (4) Number of axles
- (5) Distance between extreme axles
- (6) All other information required to determine legal weight.
- (7) Legal weight limit.

**REVISION OF SECTIONS 401 & 403
HOT MIX ASPHALT**



**METROPOLITAN GOVERNMENT
PAVEMENT ENGINEERS COUNCIL**

**Form 20
Mix Design Requirements** V. 10/2017

Agency: _____ Date: _____

Project: _____

Details: _____ APM (tons): _____
(To / From, Length)

Classification Arterial Collector Local Other _____

APM Placement Wearing course Intermediate lift Bottom lift Patching

ASPHALT MIX DESIGN

- Design / Traffic** $N_{design} = 50$ gyrations <100,000 ESALs
 $N_{design} = 75$ gyrations ≥100,000 to <3 million ESALs
- Binder** PG 58-28 PG 64-22 PG 76-28 (Top lift only)
- | | | <u>Minimum Lift (3x)</u> | <u>Maximum Lift (5x)</u> |
|----------------|-------------------------------------|--------------------------|--------------------------|
| Grading | <input type="checkbox"/> ST (3/8") | 1 1/8" | 2 1/4" |
| | <input type="checkbox"/> SX (1/2") | 1 1/2" | 2 1/2" |
| | <input type="checkbox"/> S (3/4") | 2" | 4 1/4" |
| | <input type="checkbox"/> SG (1") | 3" | 5" |
| | <input type="checkbox"/> SMA (1/2") | 1 1/2" | 2 1/2" |
| | <input type="checkbox"/> SMA (3/4") | 3" | 4 1/4" |
- Anti - Strip** Liquid Lime

BEST PRACTICES to include in Mix Design

- RAP** 25% 35% (Grading SG only)
- WMA** Additive Foaming

AGENCY EXCEPTIONS

- No RAP in wearing course**
 No RAP allowed in mixture
- No WMA allowed in mix**

REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT

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

DESCRIPTION

Subsection 412.01 shall include the following:

Work shall also include driveways, cross-pans, bus pads, and alley paving (as applicable).

MATERIALS

Subsection 412.02 and 412.03 shall include the following:

Type C or E accelerators may be used under the following conditions:

The median daily temperature is less than 55 degrees (Average of previous three days).

The date of placement is between September 30th and May 30th.

The concrete temperature may not exceed 80 degrees F prior to placement.

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

CONSTRUCTION REQUIREMENTS

Subsection 412.03 and 412.04 shall include the following:

The Project Manager may require the use of fast track concrete (Class E) in certain areas to minimize the duration of lane closures or impacts of driveway closures to adjacent property owners. When directed by the Project Manager, the Contractor shall supply and use a maturity meter (James Instrument Model No. 3006 , or approved equal) and all needed detectors and accessories to monitor on-site maturity of pavement concrete. The Contractor shall establish a maturity versus strength relationship by CP 69 for the concrete mixture being used. This correlation may be achieved by casting and curing cylinders on site, monitoring temperature and maturity of cylinders and paving concrete versus time, and testing cylinders at time intervals to establish the correlation.

The Contractor may request the use of fast track concrete in other areas for his convenience. In these cases, the locations must be approved by the Project Manager and the work will be done at no additional cost to the project.

Subsection 412.06 shall include the following:

Mix designs must be submitted to the Project Manager for approval and shall be designed taking into account allowed road closures as designated in the Traffic Control Plans and Specification. Mix designs shall be submitted in a timely manner so as not to delay the scheduled commencement of the project, taking into account time for testing of the mix by the Contractor's laboratory.

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REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT

Subsection 412.07 shall include the following:

The Contractor shall submit a detailed list of paving equipment, vibratory devices, finishing tools, and provisions for protection of the equipment in inclement weather. This information shall be submitted for review by the Project Manager prior to commencing paving operations.

Subsection 412.11 shall include the following:

The Contractor shall provide a lockable storage container capable of holding 12 standard concrete cylinders at a temperature of 60 to 80 degrees F. An equivalent facility may be substituted with the approval of the Project Manager. This facility shall be positioned at the jobsite for easy access during construction. During hot weather (May 15 to October 1), the container shall be a water tank with removable lid or a box which can be automatically regulated to assure cooling to limit the temperature to 80 degrees F max. Standard test cylinders will be 6 inch diameter by 12 inches long.

Subsection 412.12(c) *Final Finish and Stationing* shall include the following:

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

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

I. *Longitudinal Construction Joints*. Keyways in longitudinal construction joints are not allowed except when combined with regular tie bars.

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

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

Weakened plane joints shall be formed by sawing to the depth specified on the drawings and/ or applicable City of Denver Public Works Engineering Detail 11.0, in accordance with the requirements of this subsection or as otherwise approved by the Project Manager, except as follows: When required to adhere to the City Noise Control Ordinance, joints shall be formed initially by deep tooling or "soft-cut" methods, followed by sawing at the first available time within the ordinance. Weakened plane joints for high early strength concrete shall be cut within an hour of concrete placement.

REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT

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

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

The Contractor shall adhere to the City Noise Control Ordinance. In the event that the need for saw cutting is anticipated during restricted time periods, a "soft-cut" saw shall be used before restricted hours, or deep tooling of joints shall be performed on plastic concrete, followed by saw cutting of the concrete as soon as possible during unrestricted hours. At the discretion of the Project Manager, saw cutting will be prohibited between 10:00 p.m. and 7:00 a.m. on weekdays and 5:00 p.m. and 8:00 a.m. on weekends.

Subsection 412.18 shall include the following:

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

In addition, the Project Manager may elect to check for bonding or adherence to the sides of the joint.

Material shall conform to Subsection 705.01(a).

When curb and gutter is poured monolithically with the pavement, the Contractor shall install a Sawed Joint in accordance with Standard Drawing 11.2b. The joint shall be placed at the lip line of the curb and gutter. The Sawed Joint will not be measured or paid for separately but shall be included in the cost of the work.

METHOD OF MEASUREMENT

In Subsection 412.23, delete the second, third and fourth paragraphs.

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REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT

BASIS OF PAYMENT

Subsection 412.24 shall be deleted and replaced with the following:

The price per square yard of Concrete Pavement (all Pay items) shall be full compensation for furnishing and placing all materials, including dowels, tie bars, reinforcing steel, wire, joint materials, tining, sawing, finishing, and labor.

Furnishing, calibrating and use of maturity meters, wire and other appurtenances including the molding, curing, storage, and breaking of cylinders for calibration and placement of calibration slabs will not be measured and paid for separately, but shall be included in the work.

Furnishing, installing, and monitoring vibrators and vibrator monitoring device will not be measured and paid for separately, but shall be included in the work.

Concrete accelerators will not be measured or paid for separately, but shall be included in the work.

Payment will be made under:

Pay Item	Pay Unit
Concrete Pavement (_ ”)	Square Yard

REVISION OF SECTION 608
SIDEWALKS AND BIKEWAYS

Section 608 of the Standard Specifications is hereby revised for this project as follows:

DESCRIPTION

Subsection 608.01 shall be revised to include the following:

This work consists of the construction of concrete sidewalks, bikeways and curb ramps in accordance with these specifications and in conformity with the lines and grades shown on the plans or established.'

Concrete Curb Ramp construction shall conform to the requirements of the City and County of Denver's Standard Details for Curb Ramps (Details 7.0 through 7.7)

MATERIALS

Delete Subsection 608.02 and replace with the following:

Materials shall meet the requirements specified in the following subsections:

Joint Fillers	705.01
Bed Course Material	703.07

Concrete for sidewalks, curb ramps and bikeways shall be Class "P, or optional B or D for sidewalks or ramps", as specified in subsections 601.02 and 601.03.

All concrete used for sidewalks, and curb ramps shall be reinforced with polypropylene fibers. Polypropylene fibers shall be FIBERMESH or FORTA FIBRE. Length of fibers shall be as recommended by the manufacturer. Add 1.5 pounds FIBERMESH or FORTA FIBRE per cubic yard of concrete.

ASTM C1315 cure+seal shall be applied to all paving and flatwork placed September 1 through April 1 to minimize damage from de-icing chemicals.

Bituminous material for sidewalks, bikeways and curb ramps shall meet the requirements of revised sections 401 & 403.

CONSTRUCTION REQUIREMENTS

Subsection 608.03 shall be revised to include the following:

Where excavation to the finished grade elevation results in a sub grade of unsuitable soil, the Project Manager may designate the unsuitable material to be removed and replaced with approved material. Removal of unsuitable material will not be measured and paid for separately but included in the work; backfill shall be in accordance with Revision of Section 203.05(c) and backfilled with Aggregate Base Course (Class 6), or other material approved by the Project Manager.

REVISION OF SECTION 608
SIDEWALKS AND CURB RAMPS

Contractor shall provide a Jointing Layout Plan for review with the Project Manager two weeks prior to concrete installation. Joints have typically been called out on drawings and should be used as a starting point for this Jointing Layout Plan. Additional jointing will be necessary for Best Practices of concrete installation and unforeseen field conditions. Contractor shall accommodate this as necessary.

Subsection 608.03(d) shall include the following:

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

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

Subsection 608.03(e) shall include the following:

For Bikeways, control joints shall be zipstrip or sawcut to a minimum depth of $\frac{1}{4}$ of the total slab thickness and no greater than $\frac{1}{4}$ inch wide. Control joints shall be spaced at 10 feet on center or as noted on the plans. Any damage to the concrete such as spalling, dislodging of aggregate particles, or cracking will be repaired by the Contractor at no additional cost to the Project. If said damage cannot be adequately repaired to the satisfaction of the Project Manager, the Contractor shall remove and replace the damaged concrete at no additional cost to the Project.

Subsection 608.03(g) Protection of New Concrete shall be added as follows:

(g) *Protection of New Concrete.* 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 Project Manager, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Subsection 608.05 shall include the following:

Curb ramp type 4 shall be measured and paid for as concrete curb ramp.

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REVISION OF SECTION 608
SIDEWALKS AND CURB RAMPS

BASIS OF PAYMENT

Subsection 608.06 shall be deleted and replaced with the following:

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.

Pay Item	Pay Unit
Concrete Sidewalk	Square Yard
Concrete Curb Ramp	Square Yard
Concrete Bikeway	Square Yard

Excavation to proposed sub grade elevation will not be paid for separately but shall be included in the Sidewalk and Concrete Curb Ramp pay items.

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

Truncated Dome Panels will not be measured and paid for separately but shall be included in Concrete Curb Ramp.

ASTM C1315 cure+seal will not be paid for separately but included in the work.

REVISION OF SECTION 609
CURB AND GUTTER

Section 609 of the Standard Specifications is hereby revised for this project as follows:

MATERIALS

Subsection 609.02 shall include the following:

In the first paragraph, reference to Section 703.07, Bed Course Material, shall be deleted.

Subsection 609.02, Paragraph 2 shall be deleted and replaced with the following:

Concrete shall conform to the requirements for Class "P" concrete as specified in subsections 601.02 and 601.03. AASHTO M 43 Size 57 or 67 aggregate shall be used, and a maximum slump of 4" will be permitted.

CONSTRUCTION REQUIREMENTS

Subsection 609.03(d) shall include the following:

Sections of curb and gutter with honeycombed concrete facing, or which develop random cracking or spalling shall be removed and replaced or repaired in a satisfactory manner approved by the Engineer, by the Contractor at his expense.

Subsection 609.03(i) shall include the following:

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

Subsection 609.03 (f) shall be revised to include the following:

Concrete shall not be left exposed for more than 1/2 hour between the time finishing is completed and commencement of curing treatment unless approved by the Engineer. All edges of concrete exposed by the removal of forms shall be immediately protected with the Contractor's method of curing treatment.

It shall be the Contractor's responsibility to protect the concrete from the elements and physical damage. Any concrete showing any signs of exposure to precipitation, flowing water or freezing, or showing any signs of physical damage from pedestrians, bicycles, motor vehicle traffic, or vandalism shall be removed and replaced by the Contractor at his expense.

Subsection 609.03(j) Protection of New Concrete shall be added as follows:

- (j) *Protection of New Concrete.* 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 Project Manager, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Subsection 609.04 shall be added as follows:

ASTM C1315 cure+seal shall be applied to all paving and flatwork concrete placed Sept 1 thru April 1st to minimize damage from deicer chemicals.

REVISION OF SECTION 609
CURB AND GUTTER

METHOD OF MEASUREMENT

Subsection 609.06 shall include the following:

ASTM C1315 cure+seal will not be paid for separately but included in the work.

6” Curb and Gutter – X-ft Catch Pan and 6” Curb and Gutter – X-ft Spill Pan shall be paid for as Curb and Gutter.

Monolithic Median Curb Nose will be measured by the square foot of finished surface.

BASIS OF PAYMENT

Subsection 609.07 shall include the following:

Pay Item	Pay Unit
Curb and Gutter	LF
Monolithic Median Curb Nose	SF

In Subsection 609.07, delete the third paragraph and replace it with the following:

The unit cost bid shall include all labor, equipment and materials required to complete the work, including but not limited to: forming, subgrade preparation, bed course material, joints, etc.

Aggregate Base Course material will not be paid for separately but shall be included in the work.

REVISION OF SECTION 625
CONSTRUCTION SURVEYING

Section 625 of the standard specifications is hereby revised as follows:

Delete section 625 and replace with the following:

DESCRIPTION

625.01 This work consists of the construction surveying, calculating, and staking necessary for the construction of all elements of the project. The work shall be done under the supervision of a Professional Land Surveyor (PLS) who is licensed in the State of Colorado.

Locating, preserving, referencing, installing and restoring land monuments such as Primary Control monuments from which the Right of Way or any land boundary will be calculated, described or monumented, Public Land Survey System (PLSS) monuments, General Land Office (GLO) monuments, Bureau of Land Management (BLM) monuments, Mineral Survey (MS) monuments, Right of Way (ROW) monuments, property boundary monuments and offsets, range points, benchmarks, easement monuments, and other monuments that are required by law or regulation to be established by a PLS, and the determination of any land boundary, shall be done under the supervision of a Professional Land Surveyor (PLS) who is licensed in the State of Colorado.

MATERIALS AND EQUIPMENT

625.02 The Contractor shall furnish all personnel, survey equipment, safety equipment, materials, and traffic control necessary to perform the required construction surveying and staking. All surveying equipment, including Electronic Distance Meters (EDM), total stations, theodolites, levels, rods, tapes, tripods, tribrachs, and Global Positioning System (GPS) receivers and equipment.

If any survey equipment is found to be functioning outside the manufacturer's specified tolerance, certification from an approved repair facility showing that the instruments have been repaired, properly adjusted, or both if necessary shall be included in the survey records and submitted to the City Surveyor's Office before being used.

CONSTRUCTION REQUIREMENTS

625.03 A Construction Survey Conference shall be held with the City Surveyor's Office prior to performing any surveying work under this section. The Contractor's Surveyor (PLS) and Party Chief shall attend. A Construction Survey Checklist shall be completed and signed by the City Surveyor's Office and the contractor.

The Contractor shall check and verify all established Primary horizontal and vertical control points.

REVISION OF SECTION 625
CONSTRUCTION SURVEYING

All survey records generated shall be the property of the City and shall be available to the City Surveyor's Office for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance.

Electronic formats may be acceptable, please coordinate with the City Surveyor's Office.

Copies of any new Monument Records filed by the PLS with the State Board of Registration shall be submitted to the City Surveyor prior to filing.

625.04 Contractor Surveying. The Contractor's PLS shall perform all construction surveying and staking that is necessary for construction of the project.

625.05 Staking. It is the responsibility of the Contractor's PLS to adhere to industry standards and acceptable practices in regards to staking. Any restaking will be the responsibility of the Contractor's PLS at no cost to the City.

625.06 Accuracy and Tolerances. It is the responsibility of the Contractor's PLS to adhere to industry standards and applicable standards with regard to horizontal and vertical accuracy tolerances.

625.07 Responsibility and Inspection. Supervision and coordination of construction surveying and staking is the Contractor's responsibility. The City Surveyor's Office or Project Manager may inspect the Contractor's surveying; however such inspection will not relieve the Contractor of any responsibility for accuracy or completeness of work. All Contractor surveying inaccuracies, errors, or omissions shall be corrected at the Contractor's expense.

625.08 Reset Monuments and Stakes. Survey monuments, benchmarks, and other significant stakes that are damaged, destroyed, or made inaccessible by the progress of construction shall be replaced, transferred or reestablished at the Contractor's expense.

Locating, preserving, referencing, installing and restoring land monuments as described in 625.01, shall be done in accordance with Section 629, under the supervision of a PLS who is experienced and competent in Right of Way and boundary surveying and licensed in the State of Colorado.

625.09 Changes. All changes in lines and grades required by field conditions and all discrepancies in grades, alignment, location or dimensions detected by the Contractor shall be immediately submitted to the Project Manager in writing. No changes in given data or plans will be allowed unless approved by the Project Manager in writing. All changes shall be documented by the contractor.

625.10 Pay Quantities Measurements. The Project Manager will perform all interim and final measurements deemed necessary by the City to determine contract pay quantities. The Contractor shall establish and maintain Control points and stationing as required for these measurements.

REVISION OF SECTION 625
CONSTRUCTION SURVEYING

METHOD OF MEASUREMENT

625.11 Survey Records. Survey records shall be completed as the work is done. Field survey notes for construction surveying and checking by the Contractor shall be recorded in survey records in conformance with industry standards and acceptable practices.

All survey records generated shall be the property of the City and shall be available to the City Surveyor's Office or the Project Manager for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance. All survey records shall be stamped with the seal of, and signed by, the responsible PLS.

Electronic submittal of survey records may be acceptable, please coordinate with the City Surveyor's Office.

As-built surveys as noted on the Survey Tabulation Sheet are required.

625.12 Construction surveying will not be measured but will be paid for on a lump sum basis

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REVISION OF SECTION 625
CONSTRUCTION SURVEYING

BASIS OF PAYMENT

625.13 Payment for construction surveying will be the contract lump sum bid and will be full compensation for all surveying work necessary to complete the project to include all resetting of stakes, marks, monuments and preparing survey documentation as required.

Partial payment for construction surveying, as determined by the Project Manager, will be made as the work progresses. The Contractor shall submit a schedule of estimated contractor construction surveying time as required on the Survey Tabulation Sheet before the first partial payment is made. Copies of the Survey Records for all completed survey work shall be submitted to the Project Manager prior to payment of the monthly estimate.

Before final payment is made, the following two items shall be completed, bear the seal and signature of the responsible PLS identified in Section 625.01, and have copies submitted to the Project Manager for review:

1. All Survey Records
2. Supplemental or amended Project Control Diagram (a copy of which shall be submitted to the Project Manager)

Payment will be made under:

Pay Item	Pay Unit
Construction Surveying	Lump Sum

Partial payments for the pay item construction surveying will be made as the work progresses. These partial payments will be made as follows:

When 5 percent of the original Contract amount is earned, 25 percent of the amount bid for this item will be paid.

When 10 percent of the original Contract amount is earned, 40 percent of the amount bid for this item, less all previous payments, will be paid.

When 25 percent of the original Contract amount is earned, 50 percent of the amount bid for this item, less all previous payments, will be paid.

When 75 percent of the original Contract amount is earned, 90 percent of the amount bid for this item, less all previous payments, will be paid.

When 100 percent of the original Contract amount is earned, 100 percent of the amount bid for this item, less all previous payments, will be paid.

For purposes of Construction Traffic Control Lump Sum, the term "original Contract amount" as used above, shall mean the amount bid for the construction items on this Contract, not including the amounts bid for Clearing & Grubbing, Mobilization, Construction As-Built and Construction Traffic Control.

SECTION 628
CONSTRUCTION AS-BUILTS

Section 628 of the Standard Specifications is hereby added for this project as follows:

DESCRIPTION

628.01 Per Section 403.2 of the General Contract Conditions “Contractor must maintain a set of Contract Drawings and Technical Specifications in good condition at the Work site for the purpose of recording "as-built" conditions in order to develop a record of the construction of the Work. On this set, the Contractor shall daily record all changes and deviations in a neat and legible manner. Any deviation between Contract Drawings and Technical Specifications and the Work actually done, no matter how insignificant, must be recorded. Of special concern is that all underground utility structures encountered in performing the Work be correctly located on such Drawings by means of physical ties or dimensions to permanent monuments or structures. When the Work is completed, the Contractor shall deliver this single set of Contract Drawings and Technical Specifications to the Project Manager. These Drawings must be submitted to and approved by the Project Manager before final payment can be made.”

The above referenced record of construction set shall be known as the “As-Built Drawings”.

CONSTRUCTION REQUIREMENTS

628.02 A final set of red-lined drawings shall be submitted by the Contractor on a clean, full size set of project plans for As-Built purposes. When the Work is completed, the Contractor shall deliver this single set of As-Built Drawings to the Project Manager for approval.

628.03 The minimum required information on an As-Built Drawing set is as follows:

- Coversheet with vicinity map and index shall be stamped in large bold text “As Constructed” and signed by the Contractor.
- Coversheet statement indicating NAVD88 benchmark location, name and elevation.
- Each sheet shall be stamped in large bold text “As Constructed”.
- As-Built construction conditions indicated by single strikeout of design date and insert of new.
- Actual length of installed pipe, type, diameter, and slope with invert elevations.
- Location, rim and invert elevations, size, and type of all storm and sanitary structures (manholes, inlets, catch basins, special structures, etc...).
- Location of restored service connections (showing distances from downstream manhole)
- Field recorded length of rehabilitated segments (face of manhole to face of manhole)
- Elevations or inverts of existing structures at beginning and/or end of improvement

SECTION 628
CONSTRUCTION AS-BUILTS

628.04 Required information on ponds, detention structures and other special structures to also be shown on or included with As-Built Drawings:

- City monument tie-out records and Survey Plat (post construction) as required by City Surveyor.

METHOD OF MEASUREMENT

628.05 The Contractor shall furnish all personnel (including Professional Engineering and/or Surveying) and materials necessary to perform the As-Built Drawing submittal and approval process as required and these quantities will not be measured but will be paid for on a lump sum basis.

BASIS OF PAYMENT

628.06 The accepted quantities of field survey/plan submittal & approval will be paid for on a lump sum basis, which shall be full compensation for the entire Project. A final set of red-lined drawings shall be submitted by the Contractor on a clean, full size set of project plans for As-Built purposes prior to processing final payment and releasing remaining retainage.

Pay Item	Pay Unit
Construction As-Builts	Lump Sum

Providing inaccurate or incomplete record information on the As-Built drawings is reason for withholding of final payment as outlined in the General Contract Conditions.

Partial payments for the pay item construction as-builts will be made as the work progresses. These partial payments will be made as follows:

When 5 percent of the original Contract amount is earned, 25 percent of the amount bid for this item will be paid.

When 10 percent of the original Contract amount is earned, 40 percent of the amount bid for this item, less all previous payments, will be paid.

When 25 percent of the original Contract amount is earned, 50 percent of the amount bid for this item, less all previous payments, will be paid.

When 75 percent of the original Contract amount is earned, 90 percent of the amount bid for this item, less all previous payments, will be paid.

When 100 percent of the original Contract amount is earned, 100 percent of the amount bid for this item, less all previous payments, will be paid.

For purposes of Construction Traffic Control Lump Sum, the term "original Contract amount" as used above, shall mean the amount bid for the construction items on this Contract, not including the amounts bid for Clearing & Grubbing, Construction Surveying, Mobilization and Construction Traffic Control.

REVISION OF SECTION 629 SURVEY MONUMENTATION

Section 629 of the standard specifications is hereby revised as follows:

Delete section 629 and replace with the following:

DESCRIPTION

629.01 This work consists of locating, preserving, referencing, installing and restoring land monuments, such as Primary Control monuments from which the Right of Way or any land boundary will be calculated, described or monumented, Public Land Survey System (PLSS) monuments, General Land Office (GLO) monuments, Bureau of Land Management (BLM) monuments, Mineral Survey (MS) monuments, Right of Way (ROW) monuments, property boundary monuments and offsets, range points, benchmarks, easement monuments, and other monuments that are required by law or regulation to be established and recorded by a Professional Land Surveyor (PLS), along with installing or adjusting Monument Boxes.

The production of additional documentation may be required by the City Surveyors' Office. All such work included in this section shall be under the supervision of a PLS who is licensed in the State of Colorado.

MATERIALS AND EQUIPMENT

629.02 The Contractor shall furnish all personnel, survey equipment, safety equipment, materials, and traffic control necessary to perform the required monumentation and related surveying.

CONSTRUCTION REQUIREMENTS

629.03 A Construction Survey Conference shall be held with the City Surveyor's Office prior to performing any surveying work under this section. The Contractor's Surveyor (PLS) and Party Chief shall attend. A Construction Survey Check List shall be completed and signed by the City Surveyor's Office and the contractor.

The Contractor shall check and verify all established Primary horizontal and vertical control points.

All survey records generated shall be the property of the City and shall be available to the City Surveyor's Office for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance.

Electronic formats may be acceptable, please coordinate with the City Surveyor's office.

Copies of any new Monument Records filed by the PLS with the State Board of Registration shall be submitted to the City Surveyor's Office prior to filing.

629.04 Locating Monuments. This work consists of field locating all survey monumentation as discussed in 629.01 which is in place within the project limits. A diligent search of construction zones and project limits shall be performed by the PLS.

629.05 Preserving and Referencing Monuments. All monuments as described in 629.01 shall be preserved, reference and reset by a PLS within the project limits.

**REVISION OF SECTION 629
SURVEY MONUMENTATION**

629.06 Installing Monuments. All monuments as described in 629.01 shall be preserved through construction. If any monuments as described in 629.01 are to be disturbed/removed during construction, it will be the contractor's PLS responsibility to reset all monuments to current City of Denver standards. Appropriate documentation will be required for all reset monuments.

629.07 Monument Box. This survey work shall consist of installing or adjusting monument boxes to current City or State requirements.

METHOD OF MEASUREMENT

629.08 Survey Monuments, Monument Boxes, and Adjust Monument Boxes will be measured by the actual number of the various types installed and accepted by the Engineer. Measurement for locating survey monuments, preserving and referencing monuments will not be measured.

BASIS OF PAYMENT

629.09 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.

Prior to final payment, all survey records and documentation must be submitted and accepted by the City Surveyor's Office.

The Construction Survey checklist, equipment calibrations, and survey records will not be paid for separately but shall be included in the work. The locating of monuments, preserving and referencing monuments will not be paid for separately but shall be included in the work.

Payment will be made under:

Pay Item	Pay Unit
Survey Monument	Each
Monument Box	Each
Adjust Monument Box	Each

Traffic control for monumentation and related surveying will be measured and paid for in accordance with Section 630.

REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

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

Subsection 630.10 shall include the following:

All construction signing shall be in conformance with MUTCD and be installed in accordance with CDOT Standard Drawing S-630-1. Traffic control devices and barricades must be kept clean and in good working order at all times. All flaggers and traffic control supervisors shall be certified per Specifications 630.10 and 630.13.

All advanced construction signing shall be installed prior to any construction activity and remain in place for all phases of construction. Road Work advance sequence signs shall be reset as required to match current locations of initial traffic control devices.

Traffic lanes through construction areas shall be maintained with a clear width of at least 10 feet per lane. Pavement marking paint shall be used for temporary pavement marking. Temporary pavement markings shall be in full conformance with the project traffic control plans. Temporary pavement markings shall be in place prior to opening the roadway to traffic. Prior to the start of a subsequent phase, pavement markings from the previous phase shall be removed if they conflict with markings required by the subsequent phase. Contractor shall replace faded markings during individual phases as directed by the Engineer.

The Contractor shall provide all temporary striping. Removal of pavement marking shall be accomplished by heat application (temporary stripes), water blasting, or sandblasting as necessary during construction. Painting existing markings black as a means of obliteration shall not be approved.

Concrete barrier (temporary) deployed during construction shall be tapered such that uncovered end sections are outside the clear zone in accordance with the AASHTO "Roadside Design Guide." If it is not possible to deploy barrier such that clear zone requirements are met, Contractor shall provide temporary impact attenuators to cover all exposed barrier ends. The unit price for the pay item for "Concrete Barrier (Temporary)" is for the total footage of barriers, not the number of times the Contractor moves the concrete barriers. Hence, if the Contractor moves the concrete barriers four times to accommodate the different construction phases, Contractor will be paid only once for the first 1,000 linear feet.

During non-construction periods (evenings, weekends, holidays, etc.), all work shall be adequately protected to insure the safety of vehicular and pedestrian traffic. All excavated areas must be securely enclosed with snow fence or other material meeting the approval of the Engineer.

The Contractor shall be allowed to work between the hours of 7:00 AM to 7:00 PM. Monday through Friday. The Contractor will not be permitted to do any work between the hours of 6:30 AM and 9:00 AM and 3:30 PM to 6:00 PM Monday through Friday that interferes with traffic. The Contractor may be required to perform certain construction activities between the hours of 7:00 PM and 5:30 AM as approved by the Engineer. Weekend work will be allowed with the prior written approval of the Engineer in combination with the possession of all required permits.

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REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

Multilane closures in a singular direction are not permitted on weekdays between 7:00 AM to 9:00 AM in the southbound direction and between 4:00 PM to 6:00 PM in the northbound direction.

Work that interferes with traffic will not be permitted during any of the following times: 1) on any day of a 3-day or 4-day holiday weekend; or 2) after 12:00 noon on the day preceding such holiday weekend unless approved by the Engineer. Holidays on which this restriction applies include all banking holidays observed in Colorado. Also included are the days before Christmas and New Year's Day whenever the day before either holiday occurs on a Thursday, Friday or Monday; and Fridays whenever Friday is the day after Christmas, New Year's Day or Thanksgiving Day.

Traffic shall be carried on paved surfaces at all times except as otherwise provided in the Contract or approved by the Engineer.

The Contractor shall cooperate fully with the Engineer and others in the handling of traffic. All lane closures shall be subject to the approval of the Engineer. The Contractor shall inform the Engineer of his intent to close any lane at least 24 hours prior to closing the lane. Lane closures will not be allowed to remain in perpetuity during a given work shift unless utilized continuously for the purpose for which they were setup.

The Contractor shall obtain all required access and construction permits from the City and County of Denver, prior to initiating work within right of way.

The Contractor shall not be permitted to have construction equipment or materials in the lanes open to traffic at any time, unless directed. All personal/employee vehicle and construction equipment parking is prohibited when it conflicts with safety, access or the flow of vehicular, bicycle or pedestrian traffic.

The contractor and subcontractors shall equip their construction vehicles with flashing amber lights visible from all directions.

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

Access to all roadways, side streets, walkways, alleyways, driveways and hike/bike paths must be maintained at all times unless otherwise approved by the Engineer. Access to all individual properties shall be maintained at all times unless otherwise approved by the Engineer. The Contractor shall be required to coordinate temporary closures of all private driveways with property owners adjacent to the construction area. Asphalt paving that may be required for sidewalk, bike path, or bridle path detours will not be measured and paid for separately but shall be included in the cost of the work.

Subsection 630.10(a)(6) shall include the following:

The Contractor shall comply with OSHA requirements for protection of construction workers ("Workers on Foot").

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REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

Subsection 630.11 shall include the following after the first paragraph:

The Contractor's Superintendent and all others serving in a similar supervisory capacity shall have completed a CDOT-approved two-day Traffic Control Supervisor training as offered by the CCA. The one-day ATSSA Traffic Control Technician (TCT) training along with the two-day ATSSA Traffic Control Supervisor training will serve as an alternate. If the alternate is chosen, the Contractor shall provide written evidence that at least an 80 percent score was achieved in both of the two training classes. The certifications of completion or certifications of achievement for all appropriate staff shall be submitted to the Engineer at the preconstruction conference.

Subsection 630.18 shall include the following:

Pay Item	Pay Unit
Construction Traffic Control	Lump Sum

Lump sum payment for Construction Traffic Control will be full compensation for adherence to relevant permits, design, preparation of the Construction Traffic Control method of handling traffic, labor, materials, tools and equipment required for Construction Traffic Control.

Partial payments for the pay item construction traffic control will be made as the work progresses. These partial payments will be made as follows:

When 5 percent of the original Contract amount is earned, 25 percent of the amount bid for this item will be paid.

When 10 percent of the original Contract amount is earned, 40 percent of the amount bid for this item, less all previous payments, will be paid.

When 25 percent of the original Contract amount is earned, 50 percent of the amount bid for this item, less all previous payments, will be paid.

When 75 percent of the original Contract amount is earned, 90 percent of the amount bid for this item, less all previous payments, will be paid.

When 100 percent of the original Contract amount is earned, 100 percent of the amount bid for this item, less all previous payments, will be paid.

For purposes of Construction Traffic Control Lump Sum, the term "original Contract amount" as used above, shall mean the amount bid for the construction items on this Contract, not including the amounts bid for Clearing & Grubbing, Construction Surveying, Mobilization and Construction As-Builts .

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 Traffic Control Plan (TCP) for this project are included in the following:

- (a) Section 630 of the Standard Specifications.
- (b) Schedule of Construction Traffic Control Devices.
- (c) Tabulation of Traffic Engineering Items included in the plans for this project.
- (d) Latest revised Standard Plan S-630-1 (07/22/2014), Traffic Controls for Highway Construction and Standard Plan S-630-2.
- (e) Manual on Uniform Traffic Control Devices for Streets and Highways.

Special Traffic Control Plan requirements for this project are as follows:

- (a) This project includes restrictions to work times and days that affect traffic during peak traffic times and days, holidays, holiday eves (all day), holiday weekends, special events, and other circumstances as described later in this special provision. Wherever other laws, ordinances, regulations or orders are more restrictive, they shall take precedence over these requirements.
- (b) All lane closures are subject to the approval of the Project Manager. The Contractor shall submit a plan for each lane closure to the Project Manager for review and approval at least 72 hours in advance of the time the lane closure is to be implemented. Lane closures will not be allowed to remain unless being used continuously for the purpose for which they were set up.
- (c) The Contractor shall coordinate and cooperate fully with the City and County of Denver, RTD, utility owners, and other contractors, to assure adequate and proper traffic control is provided.
- (d) The Contractor shall coordinate and cooperate fully with any others providing traffic control for other operations to assure that work or traffic control devices do not interfere with the free flow of traffic except as allowed by the Traffic Control Plan. During flagging and uniform traffic control operations at signalized intersections, the signal heads shall be masked.

RESTRICTED WORK TIMES FOR PEAK TRAFFIC

Work performed and material placed that interferes with traffic during the times and in the locations that the roadway is specified to remain open will not be paid for unless the work is directed by the Project Manager to be done during those times.

TRAFFIC CONTROL PLAN – GENERAL

GENERAL TIME RESTRICTIONS

No work shall be performed which interferes with the flow of traffic on streets during the peak traffic hours of 5:30 a.m. to 9:00 p.m.

RESTRICTED WORK TIMES FOR SPECIAL EVENTS

Per the Project Manager's discretion, contract time may be extended on days during which special events interfere with the Contractor's normally scheduled activities, such that the resulting delay affects the ultimate completion of the project.

CONSTRUCTION PHASING, DETOUR PLANS AND CONSTRUCTION TRAFFIC CONTROL PLANS

A proposed construction phasing plan for the construction of the project and the maintenance of traffic is shown in the plans. Stop and start dates for each phase will not be necessary by coincident, but overlap of phases may occur subject to the Contractor's production rates and scheduling

If the Contractor proposes alternate phasing plans, he shall submit a written proposal to the Project Manager for approval seven working days prior to commencement of work. The proposal shall be signed and sealed by a Professional Engineer registered in the State of Colorado.

The Contractor is responsible for developing construction traffic control plans and detour plans. These shall be signed and sealed by a Profession Engineer registered in the State of Colorado and be submitted to the Project Manager for review a minimum of 72 hours before commencement of work.

CONSTRUCTION ACCESS

Construction access to and from all roadways is prohibited unless approved by the Project Manager or otherwise specified in the Contract.

As part of the MHT the Contractor shall prepare, and submit to the Project Manager for approval, a Construction Access Plan. This plan shall contain, but is not limited to, a diagram showing access to and from each affected roadway; location and duration of each signing and flagger position; and a narrative explanation of the plan. The Project Manager shall approve the Construction Access Plan prior to the Contractor beginning any work.

The Construction Access Plan shall address maintenance of all accesses to the project, including access to the Project Manager's field facilities. Access to all work areas will be limited to that which can be safely accomplished without hazard to traffic, and which does not interfere with traffic during the times specified. Access will not be allowed to any work areas where such access requires the implementation of traffic control measures that interfere with the flow of traffic, except where such implementation is in compliance with the working limitations in the Contract.

TRAFFIC CONTROL PLAN – GENERAL

ACCESS MAINTENANCE

Unless otherwise included in the plans or directed by the Project Manager, the Contractor shall maintain access to all roadways, side streets, walkways, alleyways, driveways, and other pathways at all times.

As part of the MHT the Contractor shall develop, and submit to the Project Manager for approval, an Access Maintenance Plan. This plan shall be coordinated with, and approved by, all affected owners, property manager or tenant. The Project Manager's approval of the Access Maintenance Plan is dependent on the Contractor acquiring signatures from each affected owner, property manager or tenant. If the Contractor is unable to obtain approval and signatures, documentation of "good faith efforts" to obtain said approval and signatures shall be submitted.

All accesses shall be maintained on surfaces equal to or better than those existing at the time the access is first disturbed. For short periods of time only, as allowed by the Project Manager, access may be maintained on aggregate base course surfaces. All costs incidental to the maintenance of access will not be paid for separately, but shall be included in the work. Utilization of materials to be incorporated permanently into the work may be permitted, however, any degradation or other contamination, or destruction shall be corrected at the Contractor's expense prior to acceptance.

CONSTRUCTION CLEAR ZONE

The construction clear zone for the project is defined as follows:

- (a) 1.5 feet from the edge of the driving lane for streets under construction or laneage restrictions.

The construction clear zone shall contain no immediate vertical drop offs in excess of 1 inch. The construction clear zone shall contain no unprotected collision hazards. All parking shall be outside of the clear zone.

Traffic control devices shall not be stored within the construction clear zone, except behind guardrail, unless laid flat; nor shall traffic control devices be stored in landscaped areas unless otherwise designated or permitted.

PEDESTRIAN AND BICYCLE SAFETY

The Contractor shall maintain a protected route for pedestrians and bicyclists at all times during construction.

The Contractor shall cover and fence all open trenches, manholes, inlets, etc. during non-construction work hours to protect the public.

MISCELLANEOUS

The Contractor shall obtain an occupancy permit from the City and County of Denver for construction activities on Broadway and 16th Avenue.

TRAFFIC CONTROL PLAN – GENERAL

The Contractor shall remove and reset all existing signs prior to performing any work that affects those signs. All signs damaged due to the Contractor operations shall be replaced in kind or repaired by the Contractor at no cost to the project. An inventory of all existing signs shall be made with the Project Manager prior to beginning work.

Whenever the Contractor removes, obliterates, or covers in any way, pavement markings, they shall be replaced on a daily basis prior to opening affected areas to traffic. All pavement markings shall be in place in accordance with the Contract.

Traffic shall be carried on a paved surface at all times except as otherwise provided or approved by the Project Manager.

During non-working hours, the roadways shall be restored to safe pre-construction travel conditions for the free flow of traffic. All maintenance required to restore the roadways to this condition, including pavement patching, grading, and sweeping shall be done prior to opening the areas to traffic or completing work for the day.

Workers shall not access the work areas by crossing roadways unless proper traffic control or other necessary precautions are provided. Suitable transportation to the work site for personnel whose vehicles are parked off site shall be provided by the Contractor.

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

The Contractor shall equip all vehicles with flashing amber lights visible from all directions.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project, including any additional traffic control items required for haul routes into or away from the project.

If work is performed outside of the exempted hours for construction (from 7 a.m. to 9 p.m. Monday through Friday and 8 a.m. to 5 p.m. on Saturdays and Sundays) per sections 36-6.(b)(7) and 36-7.(5)a., b. and c. of Denver's noise ordinance, Chapter 36 "Noise Control," Denver Revised Municipal Code (DRMC):

- The Contractor shall make a request for a nighttime noise variance as allowed for in section 36-7.(5)c. of the DRMC; request will not be paid for separately but included in the cost of the work.
- The variance process shall be started a minimum of two months prior to the desired start date of any work needing to occur outside of exempted hours.

Noise variance questions should be directed to Paul Riedesel, Department of Environmental Health, Denver Community Noise Program, (Phone 720-865-5410) a minimum of three months prior to the start of the project.

UTILITIES

The known utilities within the limits of this project are:

UTILITY	CONTACT/EMAIL	PHONE/FAX

The work described in these plans and specifications requires full cooperation between the Contractor and the utility owners in accordance with Subsection 105.11 in conducting their respective operations, to complete the utility work with minimum delay to the project.

All new underground facilities, including laterals up to the structure or building being served, installed as part of this project must be electronically locatable when installed, in compliance with Colorado Revised Statutes, Title 9, Article 1.5.

PART 1 CONTRACTOR SHALL PERFORM THE WORK LISTED BELOW:

Project Limits – All Utility Owners

Prior to excavating, the Contractor shall positively locate (through potholing if necessary) 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.

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 CDOT 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 CDOT Engineer prior to beginning the utility work to be performed outside typical project work hours.

-2-
UTILITIES

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 no. **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.

The location of utility facilities as shown on the plan and profile sheets, and herein described, achieved Quality Level C per CSI/ASCE 38-02.

All costs incidental to the foregoing requirements will not be paid for separately but shall be included in the work

STANDARD SPECIAL PROVISIONS

Standard revisions to applicable CDOT Standard Specifications for Road and Bridge Construction, including revisions, additions, deletions are contained in the Standard Special Provisions. All bids and all construction shall be in accordance with the Standard Special Provisions.

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[For 2017 Spec Book]

NAME	DATE	NO. OF PAGES
Revision of Section 412 – Dowel Bars for Joints	[October 4, 2019]	1
Revision of Section 703 – Aggregate for Bases (RAP Allowed)	[October 1, 2019]	1
Affirmative Action Requirements – Equal Employment Opportunity	[October 1, 2019]	12

**REVISION OF SECTION 412
DOWEL BARS FOR JOINTS**

In subsection 412.13(b)2, first paragraph, delete the fourth sentence which states: “The horizontal support wires or shipping braces shall not be cut prior to concrete placement.”

In subsection 412.13(b)2, after the third paragraph, add the following:

The Contractor shall perform a pull test after baskets are staked. The minimum staking method will be determined using the pullout test. The pullout test shall be performed on all baskets placed in a test section and one basket per day thereafter when the minimum staking method is used. The test section for determining staking method shall be the first 10 joints with dowel bar assemblies for each base type. Each basket in the test section shall withstand a minimum of 25 pounds of force when pulled vertically at three equally spaced locations along the length of the basket frame using a fish scale, or approved equivalent. If any basket moves more than 0.5 inches, a new staking method and test section will be required.

When dowel bar assemblies are used and the shipping wires are cut or dowel bar inserters are used, the use of the MIT Scan-2 will be required and joint scores shall be calculated.

When dowel bar assemblies are used and the shipping wires are not cut, the use of the MIT Scan-2 will be required, however, no joint score will be calculated. Joint acceptance or rejection will be based on the Joint Map generated by the MIT Scan software. Should the joint map show missing or misaligned bars the Contractor will have the choice of either performing additional testing using a method approved by the Engineer or taking the corrective measures listed after Table 412-1. CP 79 will be used to determine if a basket is misaligned or missing. Dowel bar assemblies will be inspected by the Engineer prior to concrete placement for misalignment. If misalignments exceeding the rejection tolerances listed after Table 412-1 are found, the assembly shall be reset.

In subsection 412.13(b)2, after the 19th paragraph, add the following:

Due to potential magnetic interference from tie bars, dowel bars located within 15 inches of a tied joint shall not be included in the evaluation.

The Engineer will witness the use of the MIT-Scan-2 on the test section(s) and weekly section(s). The Contractor shall provide the Engineer a copy of the raw data files from the MIT Scan-2 prior to analysis, for verification of the Contractor’s analysis. Data files will be sent by the Engineer to DOT_Profiles@state.co.us for analysis. The Contractor’s analysis and the Department’s analysis will be compared, and if the bar alignments and joint score for each joint match, the Contractor’s analysis will be approved. If the Contractor’s analysis is not approved, analysis procedures will be reviewed and the Contractor may be required to re-test the joints representing the data. A minimum of 10 percent of the sections or test sections will be evaluated for verification by CDOT Staff Materials.

October 1, 2019

**REVISION OF SECTION 703
AGGREGATE FOR BASES (RAP ALLOWED)**

Section 703 of the Standard Specifications is hereby revised for this project as follows:

In subsection 703.03, first paragraph, delete the first sentence and replace with the following:

Aggregates for bases other than Aggregate Base Coarse (RAP) shall be crushed stone, crushed slag, crushed gravel, natural gravel, crushed reclaimed concrete or crushed reclaimed asphalt pavement (RAP).

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

A. AFFIRMATIVE ACTION REQUIREMENTS

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

1. The 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:

Goals and Timetable for Minority Utilization

Timetable - Until Further Notice			
Economic Area	Standard Metropolitan Statistical Area (SMSA)	Counties Involved	Goal
157 (Denver)	2080 Denver-Boulder	Adams, Arapahoe, Boulder, Denver, Douglas, Gilpin, Jefferson.....	13.8%
	2670 Fort Collins	Larimer.....	6.9%
	3060 Greeley	Weld.....	13.1%
	Non SMSA Counties	Cheyenne, Clear Creek, Elbert, Grand, Kit Carson, Logan, Morgan, Park, Phillips, Sedgwick, Summit, Washington & Yuma.....	12.8%
158 (Colo. Spgs. - Pueblo)	1720 Colorado Springs	El Paso, Teller.....	10.9%
	6560 Pueblo	Pueblo.....	27.5%
	Non SMSA Counties	Alamosa, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Lake, Las Animas, Lincoln, Mineral, Otero, Prowers, Rio Grande, Saguache.....	19.0%
159 (Grand Junction)	Non SMSA	Archuleta, Delta, Dolores, Eagle, Garfield, Gunnison, Hinsdale, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Juan, San Miguel	10.2%
156 (Cheyenne - Casper WY)	Non SMSA	Jackson County, Colorado.....	7.5%
GOALS AND TIMETABLES FOR FEMALE UTILIZATION			
Until Further Notice.....6.9% -- Statewide			

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals 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 meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Par 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs 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; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. *As used in this specification, and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the Invitation for Bids and on the plans. In cases where the work is in two or more counties covered by differing percentage goals, the highest percentage will govern.*

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

**B. STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS**

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

- I. 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, United States 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;
 - i) *Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);*
 - ii) *Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);*
 - iii) *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*
 - iv) *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 must 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 Subcontractor 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.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p 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 geographical areas 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 must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must 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 on-site 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 union have employment opportunities available, and maintain a record of the organization's 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 of community organization and of what action was taken with respect to each 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 therefor, along with whatever additional actions the Contractor may have taken.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

- d. Provide immediate written notification to the Director when the union with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman 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 Contractor's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the Contractor'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 Foreman, 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 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.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

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. 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 numbers, 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 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).

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

C. SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES.

I. *General.*

- a) Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract. Provisions (Form FHWA 1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract provisions.
 - i) The Contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.
 - ii) The Contractor and all his/her subcontractors holding subcontracts not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The Contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. *Equal Employment Opportunity Policy.* The Contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program;

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, or national origin. 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.

3. *Equal Employment Opportunity Officer.* The Contractor will designate and make known to the State highway agency contracting officers and equal employment opportunity officer (herein after referred to as the EEO Officer) who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

4. *Dissemination of Policy.*

- a) 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 equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity 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;
 - i) 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 equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
 - ii) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the Contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the Contractor.
 - iii) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the Contractor's procedures for locating and hiring minority group employees.
- b) In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:
 - i) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - ii) The Contractor's equal employment opportunity 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.

5. *Recruitment.*

- a) When advertising for employees, the Contractor will include in all advertisements for employees the notation; "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

- b) 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, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the Contractor will, through his EEO Officer, 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.

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 equal employment opportunity contract provisions. (The U.S. Department of Labor 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 by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.
6. *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, or national origin. 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 Contract 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.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

7. *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.
- 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.

8. *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 with the unions, and to effect referrals by such unions of minority and female employees. Actions by the Contractor either directly or thorough 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 equal employment opportunity 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, or national origin.
- 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 State highway department 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 he 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 or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor 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 State highway agency.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

9. *Subcontracting.*

- a) The Contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from State highway agency personnel.
- b) The Contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. *Records and Reports.*

- a) The Contractor will keep such records as are necessary to determine compliance with the Contractor's equal employment opportunity obligations. The records kept by the Contractor will be designed to indicate:
 - i) The number of minority and nonminority group members and women employed in each work classification on the project.
 - ii) The Progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractors who rely in whole or in part on unions as a source of their work force).
 - iii) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
 - iv) The progress and efforts being made in securing the services of minority group subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b) All such records must 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 State highway agency and the Federal Highway Administration.
- c) The Contractors will submit an annual report to the State highway agency 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 PR 1391.

SCHEDULE B

SPECIAL PROVISIONS

CITY AND COUNTY OF DENVER DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE



DENVER
THE MILE HIGH CITY

SOUTH HOLLY BRIDGE (D-10-HC-170) OVER THE HIGHLINE CANAL

CCD PROJECT WBS ID 04.159

PREPARED BY:

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS

August 14, 2019

wood.

GENERAL INFORMATION

References to the City and County of Denver (CCD), City, Department or Engineer in the Standard Construction Specifications, Standard Special Provisions, Project Special Provisions, and / or Standard Construction Details refer to the City and County of Denver Project Delivery Manager or the Public Works Director.

STANDARD SPECIFICATIONS FOR CONSTRUCTION

The Standard Specifications for Construction used for this Project shall be the Colorado Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted in 2017 and as hereinafter modified.

The CDOT Standard Special Provisions revise and prevail over the 2017 CDOT "Standard Specifications for Road and Bridge Construction".

The Project Special Provisions prevail over the CDOT Standard Special Provisions and the 2017 CDOT "Standard Specifications for Road and Bridge Construction".

Drainage and Sanitary related appurtenances shall be constructed as specified in the most recent edition of the City and County of Denver, Department of Public Works documents titled:

- Sanitary Design & Technical Criteria Manual
- Storm Drainage & Technical Criteria
- Wastewater Standard Design & Technical Criteria
- Wastewater Standard Detail Drawings

These documents can be found at the following web address:

<https://www.denvergov.org/content/denvergov/en/right-of-way-services/engineering-regulatory-analytics/engineering-plan-review/manuals-regulations.html>

The City and County of Denver Department of Aviation, Department of Public Works Standard Specifications for General Construction Conditions, 2011 Edition

STANDARD CONSTRUCTION DETAILS

Details for items marked on the City and County of Denver Transportation Engineering Standard Drawings, Wastewater Standard Details, and Traffic Standard Drawings shall prevail over any conflicting details.

Details contained in the Plans prevail over the CDOT and CCD standard drawings.

SUBMITTALS

All submittals required for this project shall be a minimum of 4 copies.

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

**SOUTH HOLLY BRIDGE (D-10-HC-170)
OVER THE HIGHLINE CANAL**

CCD PROJECT WBS 04.159

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PROJECT SPECIAL PROVISIONS

All project related revisions to the CDOT Standard Specifications for Road and Bridge Construction, including revisions, additions, deletions, are contained in the following Project Special Provisions. All bids and all construction shall be in accordance with the Project Special Provisions as applicable.

INDEX OF PROJECT SPECIAL PROVISIONS

NAME	DATE	PAGE
Index Page	[AD DATE]	PSP-3
Construction Limits	[AD DATE]	PSP-4
Notice to Bidders	[AD DATE]	PSP-5
Commencement and Completion of Work	[AD DATE]	PSP-6 to PSP-7
Revision of Division 100 – General Provisions	[AD DATE]	PSP-8
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Revision of Section 107 – Worker Safety	[AD DATE]	PSP-14
Revision of Section 107 – Protection of Existing Vegetation	[AD DATE]	PSP-15
Revision of Section 108 – Project Schedule	[AD DATE]	PSP-16
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Revision of Section 202 – Sandblasting Reinforcing Steel	[AD DATE]	PSP-32
Revision of Section 203 – Excavation and Embankment	[AD DATE]	PSP-33 to PSP-34
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Revision of Section 601 – Galvanic Anodes	[AD DATE]	PSP-62 to PSP-64
Revision of Section 608 – Sidewalks and Curb Ramps	[AD DATE]	PSP-65 to PSP-66
Revision of Section 609 – Curb and Gutter	[AD DATE]	PSP-67 to PSP-68
Revision of Section 625 – Construction Surveying	[AD DATE]	PSP-69 to PSP-72
Revision of Section 628 – Construction As-Builts	[AD DATE]	PSP-73 to PSP-74
Revision of Section 630 – Construction Zone Traffic Control	[AD DATE]	PSP-75 to PSP-77
Traffic Control Plan – General	[AD DATE]	PSP-78 to PSP-82

CONSTRUCTION LIMITS

The “construction limits” for the Site are defined as the south Holly Street bridge over the Highline Canal, plus or minus thirty-five feet beyond the backface of the abutment walls at each end of the bridge, measured along the South Holly Street centerline. All Work shall occur within the City and County of Denver and Arapahoe County rights-of-ways. Impacts to existing landscaping, concrete, sidewalk, structures, sprinklers, curbs, gutters, etc. that occur beyond the right- of-way shall be repaired by the Contractor at their own expense. Impacts to existing landscaping, concrete, sidewalk, structures, sprinklers, curbs, gutters, etc. that occur within the right-of-way, but are not specifically designated to be removed by the Contract Drawings or by the Project Manager, shall be repaired by the Contractor at their own expense.

NOTICE TO BIDDERS

It is recommended that bidders on this project review the work site and plan details.

COMMENCEMENT AND COMPLETION OF WORK

The Contractor shall commence work under the Contract per the City General Contract Conditions. The Contractor shall complete all work within 120 calendar days in accordance with the "Notice to Proceed."

Salient features to be shown on the Contractor's Progress Schedule are:

1. Mobilization
2. Detour(s)
3. Clearing and Grubbing
4. Best Management Practices
5. Removal of Pavement
6. Removal of Portions of Present Structure
7. Bridge Jacking and Shoring
8. Removal of Sidewalks
9. Removal of Curb & Gutter
10. Asphalt Paving
11. Concrete Pavement
12. Curb and Gutter
13. Sidewalk
14. Final Signing
15. Final Striping
16. Anticipated Substantial Completion and Opening to Traffic
17. Anticipated Final Completion
18. Project Cleanup

Contractor Schedule

The Contractor's progress schedule shall be a Critical Path Method Schedule. The schedule shall include 5 days of down time (float) for utility conflicts and delays.

The Contractor will not be compensated for administrative or management costs incurred during down time due to for utility or other delays.

No additional payment will be made of out of sequence work.

COMMENCEMENT AND COMPLETION OF WORK

Work Restrictions for City Holidays

Work shall not occur on holidays listed below. Work shall cease at 12:00 p.m. (noon) the day before the holiday or on the Sunday before a Monday holiday. Work may resume at 8:00 a.m. the day after the holiday. All travel ways shall be open to the public and clear of obstructions during the holiday non-working periods listed above.

Holidays:

- New Years Day
- Martin Luther King Day
- President's Day
- Cesar Chavez Day
- Memorial Day
- Independence Day
- Labor Day
- Veteran's Day
- Thanksgiving Day
- Christmas Day

Work Restrictions for City sponsored or sanctioned events

Work may be restricted by City sponsored or sanctioned events. Contractor will be responsible for coordinating with City of Denver Office of Special Events. Contractor shall attend all Downtown Construction Coordination Meetings during the construction of this project. Contractor shall contact Nancy Kuhn, Director, Public Information Office for information on City of Denver Special Events. 720-865-8720. Email nancy.khun@denvergov.org

Work Restrictions for City Noise Ordinance and Street Occupancy Permit

Work shall be in conformance with the City's Noise Ordinance and the Contractor's street occupancy permit.

Substantial Completion

Substantial completion has two components:

1. Substantial completion of facilities open to the Public.
2. Substantial completion of landscaping.

Each component will be approved separately by the Project Manager.

REVISION OF DIVISION 100 GENERAL PROVISIONS

The Colorado Department of Transportation (CDOT) General Provisions consists of Sections 100 through 109 of the CDOT Standard Specifications for Road and Bridge Construction. With the exception of the following, all other General Provisions are not applicable to this Project and are hereby deleted.

In place of the deleted sections, the City and County of Denver's General Conditions and Special Conditions for this project will apply. The City and County of Denver General Conditions shall prevail over any conflicting Division 100 General Provisions of the CDOT "Standard Specifications for Road and Bridge Construction".

The City and County of Denver Project Special Conditions shall prevail over any conflicting subsections of the City and County of Denver General Conditions and the Division 100 General Provisions of the CDOT "Standard Specifications for Road and Bridge Construction".

- General Provision Section 101 – Definitions and Terms [with the exception of 101.01 Abbreviations, 101.17 Contract, 101.22 Contract Time, 101.23 Contractor, 101.36 Holidays, 101.37 Inspector, 101.42 Notice to Proceed, 101.50 Project, 101.68 Shop Drawings, 101.73 Specifications, 101.81 Subcontractor, 101.84 Superintendent, 101.87 Surety, 101.92 Work]
- General Provision Subsection 102.05 – Examination of Plans, Specifications, Special Provisions, and Site of Work
- General Provision Subsection 104.04 – Maintaining Traffic
- General Provision Subsection 105.02 – Plans, Shop Drawings, Working Drawings, Other Submittals, and Construction Drawings
- General Provision Subsection 105.03 – Conformity to the Contract
- General Provision Subsection 105.09 – Coordination of Plans, Specifications, Supplemental Specifications, and Special Provisions
- General Provision Subsection 105.10 – Cooperation by Contractor
- General Provision Subsection 105.11 – Cooperation with Utilities
- General Provision Section 106 – Control of Material
- General Provision Subsection 107.25 – Water Quality Control
- General Provision Subsection 109.04 – Compensation for Changes and Allowance Account Work
- General Provision Subsection 109.06 – Partial Payments

**REVISION OF SECTION 101
DEFINITIONS AND TERMS**

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

Delete Subsection 101.28 and replace with the following:

101.28 Department or Department of Transportation. Refers to the City and County of Denver.

Delete Subsection 101.29 and replace with the following:

101.29 Engineer. References to the “Engineer” within the Project Special Provisions and plans will refer to the City and County of Denver Project Manager.

Subsection 101.96 shall be added as follows:

101.96 Unsuitable Materials. Unsuitable Materials refers to organic, rock and other unsuitable soil materials that cannot be compacted to 95% of Standard Proctor Density (AASHTO T-99), at optimum moisture +/- 2% for clay soils and 95% of Standard Proctor Density (AASHTO T-180), at optimum moisture +/- 2% for granular soils.

Subsection 101.97 shall be added as follows:

101.97 Project Manager. References to the “Project Manager” within the Project Special Provisions and Plans will refer to the City and County of Denver Project Manager.

REVISION OF SECTION 104 SCOPE OF WORK

Section 104 of the Standard Specifications is hereby revised for this project as follows:

Replace the third paragraph in Subsection 104.04 with the following:

Portions of any roadways that are not included in the contract will be maintained by the City and County of Denver. Snow removal within the contract work limits will be the responsibility of the Contractor. The Contractor shall be responsible for maintaining all Work that is included in the Contract, and maintaining approaches, crossings, intersections, and other features as may be necessary to accommodate traffic without direct compensation, except as provided in the Contract or as described below.

Subsection 104.04 shall include the following:

The Contractor shall be responsible for maintaining all accesses along the project areas during construction. The Contractor will not be permitted to have construction equipment or materials in the lane(s) open to traffic at any time. All personal vehicle and construction equipment parking will be prohibited where it conflicts with safety, access, or the flow of traffic. Parking shall be allowed in designated areas only.

Unless otherwise approved by the Project Manager, the Contractor's equipment shall follow normal and legal traffic movements. The Contractor's ingress and egress of the work area shall be accomplished with as little disruption to traffic as possible. Traffic control devices shall be removed by picking up the devices in a reverse sequence to that used for installation. This may require moving backwards through the work zone. When located behind barrier or at other locations shown on approved traffic control plans, equipment may operate in a direction opposite to adjacent traffic.

The City may have entered into operating agreements with one or more law enforcement organizations for cooperative activities. Under such agreements, at the sole discretion of the City, law enforcement personnel may enter the work zone for enforcement purposes and may participate in the Contractor's traffic control activities. The responsibility under the Contract for all traffic control resides with the Contractor and any such participation by law enforcement personnel in Contractor traffic control activities will be referenced in either the Special Provisions or General Notes of the plans. Nothing in this Contract is intended to create an entitlement, on the part of the Contractor, to the services or participation of the law enforcement organization.

The key elements of the Contractor's method of handling traffic (MHT) are outlined in subsection 630.10(a). The components of the TCP for this project are included in the following:

1. Section 630 of the specifications.
2. Signing Plans

The Contractor will not be allowed to place temporary pavement marking on the top mat of permanent pavement.

REVISION OF SECTION 105 CONTROL OF WORK

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 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 or grading.

The locations of utility facilities as shown on the plan and profile sheets were obtained from the best available information. No warranty is made for the adequacy or accuracy of subsurface information provided. The Contractor shall cooperate with the utility owners in their relocation operations as provided in subsection 105.11 of the Standard Specifications for Road and Bridge Construction. No guarantee is made that utility conflicts will be resolved prior to construction activities and any delays resulting from utility relocation work shall be dealt with in accordance with subsection 108.08 of the Standard Specifications for Road and Bridge Construction as amended.

MEASUREMENT AND PAYMENT:

All costs incidental to the foregoing requirements will not be paid for separately, but shall be included in the work.

**REVISION OF SECTION 107
PERFORMANCE OF SAFETY CRITICAL WORK**

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

Add subsection 107.061 immediately following subsection 107.06 as follows:

107.061 Performance of Safety Critical Work. The following work elements are considered safety critical work for this project:

- (1) Work requiring the use of cranes or other lifting equipment

The Contractor shall submit, for record purposes only, an initial detailed construction plan that addresses safe construction of each of the safety critical elements. An erection plan, it shall be included as a part of this plan. The detailed construction plan shall be submitted two weeks prior to the safety critical element conference described below. The construction plan shall be stamped "Approved for Construction" and signed by the Contractor. The construction plan will not be approved by the Engineer.

The Construction Plan shall include the following:

1. Safety Critical Element for which the plan is being prepared and submitted.
2. Contractor or subcontractor responsible for the plan preparation and the work.
3. Schedule, procedures, equipment, and sequence of operations, that comply with the working hour limitations
4. Temporary works required: falsework, bracing, shoring, etc.
5. Additional actions that will be taken to ensure that the work will be performed safely.
6. Names and qualifications of workers who will be in responsible charge of the work:
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
7. Names and qualifications of workers operating cranes or other lifting equipment
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
8. The construction plan shall address how the Contractor will handle contingencies such as:
 - A. Unplanned events (storms, traffic accidents, etc.)
 - B. Structural elements that don't fit or line up
 - C. Work that cannot be completed in time for the roadway to be reopened to traffic
 - D. Replacement of workers who don't perform the work safely
 - E. Equipment failure
 - F. Other potential difficulties inherent in the type of work being performed
9. Name and qualifications of Contractor's person designated to determine and notify the Engineer in writing when it is safe to open a route to traffic after it has been closed for safety critical work.

REVISION OF SECTION 107 PERFORMANCE OF SAFETY CRITICAL WORK

A safety critical element conference shall be held two weeks prior to beginning construction on each safety critical element. The Engineer, the Contractor, the safety critical element subcontractors, and the Contractor's Engineer shall attend the conference. Required pre-erection conferences may be included as a part of this conference.

After the safety critical element conference, and prior to beginning work on the safety critical element, the Contractor shall submit a final construction plan to the Engineer for record purposes only. The Contractor's Engineer shall sign and seal temporary works related to construction plans for the safety critical elements, and Temporary Works. The final construction plan shall be stamped "Approved for Construction" and signed by the Contractor.

The Contractor shall perform safety critical work only when the Engineer is on the project site. The Contractor's Engineer shall be on site to inspect and provide written approval of safety critical work for which he provided stamped construction details. Unless otherwise directed or approved, the Contractor's Engineer need not be on site during the actual performance of safety critical work, but shall be present to conduct inspection for written approval of the safety critical work.

When ordered by the Engineer, the Contractor shall immediately stop safety critical work that is being performed in an unsafe manner or will result in an unsafe situation for the traveling public. Prior to stopping work, the Contractor shall make the situation safe for work stoppage. The Contractor shall submit an acceptable plan to correct the unsafe process before the Engineer will authorize resumption of the work.

When ordered by the Engineer, the Contractor shall remove workers from the project that are performing the safety critical work in a manner that creates an unsafe situation for the public in accordance with subsection 108.05.

Should an unplanned event occur or the safety critical operation deviate from the submitted plan, the Contractor shall immediately cease operations on the safety critical element, except for performing any work necessary to ensure worksite safety, and provide proper protection of the work and the traveling public. If the Contractor intends to modify the submitted plan, he shall submit a revised plan to the Engineer prior to resuming operations.

All costs associated with the preparation and implementation of each safety critical element construction plan will not be measured and paid for separately, but shall be included in the work.

The requirements of this section shall not relieve the Contractor from ultimate liability for unsafe or negligent acts or to be a waiver of the Colorado Governmental Immunity Act on behalf of the City and County of Denver.

REVISION OF SECTION 107 WORKER SAFETY

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

Subsection 107.06 shall include the following:

Contractors shall comply with the CCD Noise Control Ordinance for all construction activities scheduled to occur between the hours of 9:00 p.m. to 7:00 a.m. Monday – Friday and 5:00 p.m. and 8:00 a.m. Saturday through Sunday if noise levels are expected to exceed 50 dBA in residential areas or 60 dBA in commercial areas. Nighttime construction activities exceeding noise levels during these restricted hours may not be initiated without first obtaining this permit variance from CCD.

Under any circumstances where nighttime construction activities will take place between the restrictive hours listed above where noise levels will exceed the noise impact thresholds, the contractor is required to apply for a construction noise variance no less than one month before the startup date for construction. Note: the CCD board only meets the 2nd Thursday of every month.

Applications shall be submitted through the Denver Department of Environmental Health (DEH) at a cost of \$25.00 for application processing.

The contractor is responsible for fulfilling the requirements set forth by the CCD and is responsible for obtaining the permit variance prior to the construction startup date. All exemption requests and permitting requirements will not be paid for separately, but will be included in the work. Copies of the final application approval shall be provided to CCD (Kevin Rens) for recording and documentation purposes demonstrating compliance with CCD regulations.

If the Contractor is ordered to cease operations due to violations of a noise ordinance as a result of equipment back up alarms, the Contractor shall take whatever actions are necessary to comply with the ordinance and continue work on the project. This includes the option of using an observer in lieu of using the equipment's back up alarms as allowed by 29 CFR 1926.601(b) (4) (II) of the OSHA Safety and Health Standards. Should the Contractor fail to mitigate the noise ordinance violation, the Contractor shall be deemed to have waived any right to a claim as a result of work suspension or being required to perform the work at times not specified in the Contract.

If the Contractor uses an observer in lieu of back up alarms, the Contractor shall follow all of the OSHA requirements regarding the use of observers.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project.

**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 notify Ted Berg, or Ben Rickenbacker, when tree removals are planned.

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:

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

A consulting Arborist retained by the City of Denver 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 City's Landscape Architect or Wetland Specialist. Contact Jim Myers at CCD Forestry Department.

**REVISION OF SECTION 108
PROJECT SCHEDULE**

Section 108 of the Standard Specifications is hereby revised for this project as follows:

In subsection 108.03(b) delete the first sentence and replace with the following:

The Contractor shall use Microsoft Project Scheduling software to develop and manage a CPM Project Schedule to plan, schedule, and report the progress of the work.

**REVISION OF SECTION 108
LIQUIDATED DAMAGES**

Section 108 of the Standard Specifications is hereby revised for this project as follows:

In subsection 108.09 delete schedule of liquidated damages and replace with the following:

Original Contract Amount (\$)		Liquidated Damages per Calendar Day (\$)
From More Than	To and Including	
0	500,000	800

**REVISION OF SECTION 109
MEASUREMENT AND PAYMENT**

Section 109 of the Standard Specifications is hereby revised for this project as follows:

Delete the seventh paragraph of Subsection 109.0

**REVISION OF SECTION 109
ALLOWANCE ACCOUNT ITEMS**

Subsection 109.04 is hereby revised to include the following:

DESCRIPTION

This special provision contains the estimate for allowance account items included in the Contract. Such estimated amounts will be included in the total bid to determine the project commitment and the amount of performance payment bonds. Allowance Account Item work shall be performed as directed by the Project Manager's designee.

BASIS OF PAYMENT

Payment will be made in accordance with General Contract Conditions Title 1104. Payment will constitute full compensation for all work necessary to complete the item.

Allowance Account (A/A) 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>Allowance Account Item</u>	<u>Total Amount</u>
A/A Minor Contract Revisions	\$28,000
A/A Erosion Control	\$7,500

Allowance Account Descriptions:

F/A Minor Contract Revisions are for contract adjustments authorized through contract modification orders. There will be no payment for this force account item unless written authorization is provided to the Contractor from the Engineer.

A/A Erosion Control This allowance account is to pay for any other erosion control items the erosion control supervisor will need during the duration of the project above and beyond those accounted for in the Stormwater Management Plan. All items shall be pre-approved by the Project Manager prior to installation or they will be at no cost to the project.

**REVISION OF SECTION 201
CLEARING AND GRUBBING**

Section 201 of the Standard Specifications is hereby revised for this project as follows:

In Subsection 201.02, delete the sixth paragraph and replace with the following:

No material or debris shall be disposed of within the project limits; and, shall be legally recycled or disposed of. The Contractor shall make all arrangements to obtain written permission from property owners for disposal locations outside the limits of the project. Copies of this written agreement shall be furnished to the Project Manager before the disposal area is used.

Existing trees, shrubs, bushes or grass, outside the designated work areas but inside the project limits that are damaged due to the Contractor's operations shall be replaced in kind at the Contractor's expense.

**REVISION OF SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS**

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

Delete the first sentence in the second paragraph and the seventh paragraph of Subsection 202.11 and replace with the following:

Removal of pavement markings, permanent and temporary, will not be measured and paid for separately, but shall be included in the work.

Subsection 202.12 is hereby revised to include the following:

Pay Item	Pay Unit
Removal of Sidewalk	SF
Removal of Curb and Gutter	LF
Removal of Asphalt Mat	SY

**REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT (Planing)**

Section 202 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of the removal of all asphalt material and the removal of waterproofing membrane from the surface of the concrete.

CONSTRUCTION REQUIREMENTS

All asphalt material and waterproofing membrane (if present) shall be removed from the surface of the bridge deck. The surface of the deck shall be relatively smooth upon completion of removal operations. Jagged or broken edges or otherwise unsmooth areas shall be removed and ground smooth.

The Contractor is responsible for cleaning and maintaining the deck prior to and during placement of the new surface treatment.

Prior to beginning removal operations, the Contractor shall submit a removal plan for approval. This plan shall include as a minimum:

- (1) Methods of removal including confined areas that are unreachable with large equipment.
- (2) The type and number of all equipment to be used. If cold milling is to be performed for removal of the final 1/2 inch of asphalt, appropriate information must be provided to demonstrate the equipment meets the requirements of this specification.
- (3) The width, location and phasing of removal passes along with the proposed schedule for these passes.

The Contractor shall remove the existing asphalt by cold milling to within 1/2 inch of the concrete deck. Removal of the remaining 1/2 inch of asphalt and any existing membrane shall be performed by any one or combinations of the following three methods:

- 1) Scraping with a loader equipped with a smooth-edged bucket (no teeth).
- 2) Diamond grinding.
- 3) Cold milling with equipment that has the capabilities and features as described below.

Cold milling equipment must be able to:

- (a) Remove concrete to a depth of 1/4 inch.
- (b) Provide a surface relief of at most 1/4 inch.
- (c) Provide a 5/32 inch grade tolerance.

Cold milling equipment must have the following features:

- (a) 3 or 4 riding tracks.
- (b) An automatic grade control system with electronic averaging having 3 sensors on each side of the equipment.
- (c) A conveyor system that leaves no debris on the bridge.
- (d) A drum that operates in an up-milling direction.
- (e) Bullet tooth tools with tungsten carbide steel cutting tips.
- (f) A maximum tool spacing of 1/4 inch.

REVISION OF SECTION 202 REMOVAL OF ASPHALT MAT (Planing)

- (g) A maximum operating track pair or set (axle) weight of 47,000 pounds, or as equivalent to the Tandem Axle Group as shown on the Colorado Bridge Weight Limit Map, White (10 feet less than or equal to d less than or equal to 12 feet, with d the spacing between axle groups)
- (h) A maximum track unit weight of 5875 pounds per foot.
- (i) New tooth tools at the start of the job.

For all cold milling operations, the Contractor shall:

1. Saw cut the outline of the asphalt surfacing to be removed to a depth of ½ inch.
2. Provide personnel on each side of the milling drum to monitor milling activities. Maintain constant radio communication with the operator during milling activities.
3. Verify the depth of the asphalt surfacing every 50 feet at one location on each shoulder and in the traveled way or as shown in the plans.

If the Contractor proposes a milling machine that exceeds the maximum operating one track weight or maximum track weight per foot, or the machine does not conform to the same configuration assumptions used in determining these weight limit assumptions, the Contractor's Engineer shall rate the bridge for the proposed milling machine or complete a comparative analysis using the Colorado Bridge Weight Limit Map. The Contractor shall provide to the Engineer for review a stamped certified letter and accompanying rating of the bridge or comparative analysis for the proposed milling machine.

A small width rotomill (maximum 2-foot head) and low impact hand tools may be used in confined areas where the primary removal equipment will have difficulty accessing.

In the transverse direction, removal shall extend to the face of the curbs. The removal depth near the face of the curbs shall be consistent with the remainder of the bridge deck.

Hydrodemolition and pressure jetting will not be permitted for removal operations.

After cold milling is complete, the Contractor shall ensure that the coarse aggregate remaining at the removal depth is firmly embedded and remove it if it is not.

The Contractor shall prepare the bridge deck surface for placement of the new overlay. All construction debris, wearing surface material, and residual materials from the scarification process shall be completely removed from the bridge deck.

If cold milling is to be performed for removal of the final ½ inch of asphalt, the Contractor shall furnish a documented history of successfully performing cold milling on bridge decks with equipment similar to that described herein. The documentation shall include three projects within the past five years and shall include equipment type used as well as specifics regarding the bridges. If mechanical milling results in the exposure of reinforcing steel, the operation shall be stopped immediately, and the depth of removal adjusted. Damaged or dislodged reinforcing steel as a result of Contractor negligence during the operation shall be repaired or replaced at the Contractor's expense.

The Contractor shall take all necessary precautions to protect the expansion devices, barriers, and drains from damage. All damage to the bridge expansion devices, barriers, drains or any other property of CCD resulting from removal operations shall be repaired at the Contractor's expense without time extension and per approval of the Engineer.

**- 24 -REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT (Planing)**

The Contractor shall take all precautions to protect the bridge deck from damage that would not ordinarily occur with the removal methods described herein. This includes damage to deck reinforcing. Such damage resulting from removal operations shall be repaired at the Contractor's expense without time extension and per approval of the Engineer.

The Contractor shall provide protection to live traffic and waterways below from any falling debris in work areas.

At the completion of each day's work, vertical edges caused by planing that are greater than $\frac{3}{4}$ inch in height shall be: Longitudinal - tapered edges parallel to the direction of traffic shall be tapered to not less than a 3:1 (horizontal: vertical) slope, Transverse - tapered edges perpendicular to the direction of traffic shall be tapered to not less than a 50:1 (horizontal: vertical) slope.

All removal operations shall be completed parallel to the travel lanes unless otherwise directed by the Engineer.

METHOD OF MEASUREMENT

Removal of Asphalt Mat (planing) will be measured by the actual quantity completed to the required depth and accepted.

BASIS OF PAYMENT

The accepted quantities of Removal of Asphalt Mat (planing) will be paid for at the contract unit price.

Payment will be made under:

Pay Item	Pay Unit
Removal of Asphalt Mat (planing)	Square Yard

Payment for Removal of Asphalt Mat (planing) will be full compensation for all labor, materials, tools, equipment, and incidentals required to remove the asphalt and any waterproofing membrane as designated in the plans, as specified in these special provisions, and as directed by the Engineer.

Asphalt depth verification will not be measured and paid for separately but shall be included in the work.

Methods to prevent debris from falling from the structure, and methods to protect the traveling public using the structure, or adjacent to the structure, from airborne debris will not be paid for separately, but shall be included in the work.

**REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2 AND 3)**

Section 202 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of saw cutting, removal and disposal of existing deteriorated bridge deck and concrete. Removal operations shall be conducted so that the traveling public is protected, and so that interference with the traveling public using the structure is minimized.

The applicable classes of removal shall be performed as defined in the plans. The locations and limits of removal will be as determined by the Engineer.

CONSTRUCTION REQUIREMENTS

a) General:

At least 10 working days before beginning removal, the Contractor shall submit a Method Statement to the Engineer with details of the removal operations including the means, methods, sequence of removal, tools, and equipment to be used.

The Contractor's Method Statement shall also include proposed methods used to:

- (1) Determine the locations and limits of deteriorating concrete
- (2) Prevent debris from falling to the ground or waterways below the structure
- (3) Protect the traveling public using the structure, and adjacent to the structure, from airborne debris generated by the removal operations.

All removal operations, methods, and equipment must be approved by the Engineer before the work begins.

The Contractor shall control dust and run-off in accordance with applicable governmental agencies. The Contractor is responsible for the proper disposal of all material removed, including but not limited to, material collected by vacuuming the deck.

Prior to removal of concrete, the Contractor shall sound the bridge deck for delamination in accordance with ASTM D4580, Procedure B Chain Drag. The Contractor shall mark the areas of deteriorated concrete to be removed as directed by the Engineer. Removal and patching areas not designated for removal by the Engineer will not be measured or paid for.

The existing concrete shall be removed as shown on the plans or as directed by the Engineer. The Contractor shall saw cut along the removal limits prior to removal. Removal operations shall not occur prior to approval of the Engineer. The sawing of concrete shall be done to a true line, with a vertical face, unless otherwise specified. Feathered edges will not be acceptable. The depth of the saw cut shall be approximately $\frac{3}{4}$ -inch.

The Contractor shall take all steps necessary to prevent cutting or otherwise damaging reinforcing steel, including any vertical stirrups, and/or structural steel including welded shear connectors projecting into the bridge deck. All bars or shear connectors damaged by the Contractor's operations shall be repaired or replaced at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

**REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2 AND 3)**

Following the removal of the concrete, all exposed non-epoxy reinforcing steel to remain in place shall be straightened as required and thoroughly cleaned to sound metal by sandblasting per Revision of Section 202 Sandblasting. Epoxy coated reinforcing steel, if present, shall not be sandblasted but shall be cleaned with hand tools. Epoxy coating on reinforcing steel, if damaged, shall be repainted with epoxy paint prior to placement of the concrete.

Following sandblasting, the condition of all exposed reinforcing bars will be inspected by the Engineer. If, in the opinion of the Engineer, the loss of original cross-sectional area of the bar due to deterioration is 25 percent or more, the Contractor shall add additional bars to replace the section area loss due to deterioration, as approved by the Engineer. New added bars shall be lap spliced as shown in the plans. If the required lap splice length cannot be utilized, a mechanical splice shall be used. The mechanical splice shall develop at least 125 percent of the specified yield strength of the bar. The Mechanical splice shall be selected from CDOT's Approved Products List. All minimum clearances shall be maintained as defined in the plans. As an alternative, the Contractor may remove additional sound concrete to achieve the required lap length. Payment for additional removals and repairs will be based on the unit price for the appropriate class of removal and repair method.

All reinforcing steel shall be secured to adjacent bars or to the bridge deck as provided in subsection 602.

All areas of the prepared surface contaminated by oil or other materials detrimental to bonding shall be thoroughly cleaned by a method approved by the Engineer.

b) Surface Preparation Equipment

Pneumatic hammers heavier than nominal 15-pound class will not be permitted. Pneumatic hammers and chipping tools shall not be operated at an angle exceeding 60° relative to the surface of the slab. Such tools may be started in the vertical position but must be immediately tilted to 60° operating angle.

Hand tools such as hammers and chisels shall be provided for removal of final particles of loose, unbonded concrete. Only short, one-handed hammers with a maximum head weight of 5 pounds will be allowed unless Class 3 removal is designated. Hydraulic demolition may be utilized with approval of Engineer.

Sandblasting equipment shall meet the requirements of Revision of Section 202 Sandblasting.

c) Class 2:

Removal of Portions of Present Structure (Class 2) shall consist of removing existing bridge deck concrete within the limits shown on the plans, or as designated by the Engineer. Class 2 removal shall begin at the surface of the existing concrete bridge deck and extend to sound concrete, but not more or less than the maximum and minimum for Class 2 shown in the plans.

Wherever solid bond between existing concrete and reinforcing steel is lacking, or where more than half of the diameter of the reinforcing bars is exposed by removal of concrete, the concrete adjacent to the bar shall be removed to a minimum clearance of one inch below and around the bar in all directions to permit new concrete to bond to the entire periphery of the bar. Care shall be taken so as not to fracture sound concrete in the bottom half of the bridge deck.

**REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2 AND 3)**

Removal may be performed by power chipping or hand tools in accordance with these specifications or as otherwise approved by the Engineer.

If loose or deteriorated concrete exists below Class 2 limits, Class 3 removal is required.

d) Class 3:

Removal of Portions of Present Structure (Class 3) shall consist of removing existing bridge deck concrete within the limits shown on the plans, or as designated by the Engineer, following the Class 2 removal work. The concrete within the designated limits shall be removed full depth from the top of bridge deck to bottom of bridge deck.

The Contractor shall take all precautions necessary to prevent damage to diaphragms and girders below the removal limits and to minimize spalling on the bottom of the bridge deck slab adjacent to the removal boundaries.

The Contractor shall implement a containment system that prevents debris from falling to the ground or waterways below the structure.

The Contractor is responsible for the disposal of all removed material and debris.

METHOD OF MEASUREMENT

Removal of Portions of Present Structure will be measured by the actual quantity completed and accepted to the required depth for each class. Each area of bridge deck removal will only be measured once as Class 2 or lass 3; measurement of removal areas will not overlap.

Removal and repairs beyond the minimim required lap length of reinforcing steel will not be measured or paid for, but will be at the contractors expense.

Cleaning of prepared surfaces contaminated by oil or other materials detrimental to bonding will not be measured and paid for separately, but shall be included in the work.

BASIS OF PAYMENT

Planned deck rehabilitation quantities are approximate. The actual accepted quantities of Removal of Portions of Present Structure will be paid for at the contract unit price.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Removal of Portions of Present Structure (Class 2)	Square Yard
Removal of Portions of Present Structure (Class 3)	Square Yard

Payment for Removal of Portions of Present Structure will be full compensation for all labor, materials, tools, equipment and incidentals required to complete the item including saw cutting removal of concrete to the required depth, sandblasting or hand cleaning reinforcing steel including epoxy repair, and disposal of removed materials and debris.

**REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2 AND 3)**

Methods to prevent debris from falling from the structure, and methods to protect the traveling public using the structure, or adjacent to the structure, from airborne debris will not be paid for separately, but shall be included in the work.

Cleaning, straightening, and repairing epoxy coating of existing reinforcing steel will not be paid for separately, but shall be included in the work.

Sounding and marking repair areas will not be paid for separately, but shall be included in the work.

Payment for the new reinforcement steel will be made in accordance with Section 602. Payment for the Mechanical splice will be as the weight of reinforcing steel for the designated lap splice for that bar size.

**REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE**

Section 202 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of removal of the existing concrete bridge deck and abutment backwalls and replacement of bearing assemblies as shown in the plans.

This work consists of saw cutting, removal and disposal of existing deteriorated, spalled and unsound concrete as shown in the plans.

It also consists of removing corroded steel, and sandblasting the newly exposed concrete surfaces at the removal locations.

CONSTRUCTION REQUIREMENTS

At least 10 working days before beginning removal, the Contractor shall submit a Method Statement to the Engineer with details of the removal operations including the means, methods, sequence of removal, tools, and equipment to be used. All removal operations, methods, and equipment must be approved by the Engineer before the work begins.

The Contractor's Method Statement shall include proposed methods used to:

- (1) Determine the locations, and limits, of deteriorating concrete,
- (2) Prevent debris from falling to the ground below the structure,
- (3) Protect the traveling public using the structure, and adjacent to the structure, from airborne debris generated by the removal operations.

Removal operations shall be conducted so that the traveling public is protected, and so there will be minimal interference with the traveling public on or below the structure.

The work shall be done in accordance with these Special Provisions and Revision of Section 202 Sandblasting and in conformity with the plans, or as directed by the Engineer.

The existing bridge rail and guardrail to remain shall be prepared to fit the new construction, and shall be protected from damage. Any damage caused by the Contractor to any portion of the structure not intended for repair shall be repaired in kind by the Contractor at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

The existing concrete shall be removed as shown on the plans or as directed by the Engineer, but to a minimum depth to provide 1 inch clear around all existing reinforcing steel projecting into the removal area, or to sound concrete, whichever is deeper. Removal operations shall not occur prior to approval of the Engineer. The Contractor shall saw cut along the removal limits prior to removal. The sawing of concrete shall be done to a true line, with a vertical face, unless otherwise specified. Feathered edges will not be acceptable. The depth of the saw cut shall be approximately $\frac{3}{4}$ -inch.

The Contractor shall take all steps necessary to minimize spalling on the face of the existing concrete adjacent to the removal boundaries. Removals adjacent to the removal boundaries shall not use pneumatic hammers heavier than nominal 15-pound class. Hand tools such as hammers and chisels shall be used for removal of particles of loose, unbonded concrete. Exposed concrete surfaces within the removal limits shall be sandblasted to remove all final fractured or loose particles. Any damage caused by the Contractor to any portion of the structure not

REVISION OF SECTION 202 REMOVAL OF PORTIONS OF PRESENT STRUCTURE

intended for repair shall be repaired in kind by the Contractor at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

The Contractor shall take all steps necessary to prevent cutting or otherwise damaging reinforcing steel or welded wire fabric intended to remain in place. Any reinforcing damaged by the Contractor's operation shall be repaired or replaced at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

Following the removal of the concrete, all exposed non-epoxy reinforcing steel to remain in place shall be straightened as required and thoroughly cleaned to sound metal by sandblasting per Revision of Section 202 Sandblasting. Epoxy coated reinforcing steel, if present, shall not be sandblasted but shall be cleaned with hand tools. Epoxy coating on reinforcing steel, if damaged, shall be repainted with epoxy paint prior to placement of the concrete.

Following sandblasting, the condition of all exposed reinforcing bars will be inspected by the Engineer. If, in the opinion of the Engineer, the loss of original cross-sectional area of the bar due to deterioration is 25 percent or more, the Contractor shall add additional bars as approved by the Engineer. New added bars shall be lap spliced as shown in the plans. If the required lap splice length cannot be utilized, a mechanical splice shall be used. The mechanical splice shall develop at least 125 percent of the specified yield strength of the bar. The mechanical splice shall be selected from CDOT's Approved Products List (APL). All minimum clearances shall be maintained as defined in the plans. Payment for the mechanical splice will be as the weight of reinforcing steel for the designated lap splice for that bar size. As an alternative, the Contractor may remove additional sound concrete to achieve the required lap length. Payment for additional removals and repairs will be based on the unit price for the appropriate class of removal and repair method. Place anodes as directed in the plans.

All reinforcing steel shall be secured to adjacent bars as provided in subsection 602.

All areas of the prepared surface contaminated by oil or other materials detrimental to bonding shall be thoroughly cleaned by a method approved by the Engineer.

The Contractor is responsible for the disposal of all removed material and debris.

All materials removed from the existing structure shall become the property of the Contractor and shall be disposed of properly off-site at the Contractor's expense.

METHOD OF MEASUREMENT

Removal of Portions of Present Structure will be measured by the area completed and accepted.

Removal and repairs beyond the minimum required lap length of reinforcing steel will not be measured or paid for, but will be at the contractor's expense.

Cleaning of prepared surfaces contaminated by oil or other materials detrimental to bonding will not be measured and paid for separately, but shall be included in the work.

**REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE**

BASIS OF PAYMENT

Planned rehabilitation quantities are approximate. The accepted quantities will be paid for at the contract unit price.

Payment will be made under:

Pay Item	Pay Unit
Removal of Portions of Present Structure	Cubic Yard

Payment for Removal of Portions of Present Structure will be full compensation for all labor, materials, tools, equipment and incidentals required to perform the neat line removals to the required depth, methods to prevent debris from falling from the structure, and methods to protect the traveling public using the structure, or adjacent to the structure, from airborne debris.

Payment for the new reinforcement steel will be made in accordance with Section 602. Payment for the Mechanical splice will be as the weight of reinforcing steel for the designated lap splice for that bar size.

Cleaning, straightening, and repairing existing reinforcing steel will not be paid for separately, but shall be included in the work.

Saw cutting will not be paid for separately, but shall be included in the work.

Sounding and marking repair areas will not be paid for separately, but shall be included in the work.

Disposal of removed materials and debris will not be paid for separately, but shall be included in the work.

**REVISION OF SECTION 202
SANDBLASTING REINFORCING STEEL**

Section 202 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

Sandblasting shall consist of cleaning exposed non-epoxy reinforcing steel designated to remain in place and roughening the surface and removing all fractured particles from the entire existing concrete surface against which new concrete is to be placed.

CONSTRUCTION REQUIREMENTS

Sandblasting equipment shall be capable of removing rust scale and concrete fragments or laitance from reinforcing steel, roughening existing surface, and removing all fractured particles from the existing concrete surface.

Following the removal of adjacent concrete, all exposed non-epoxy reinforcing steel designated to remain in place shall be cleaned to sound steel by sandblasting. Sound steel is defined as free of oil, dirt, concrete fragments, or laitance, loose rust scale, and other coatings of any character that would limit or inhibit the bond with the new concrete. Epoxy-coated steel shall not be sandblasted.

Rust that may form on the reinforcing steel within seven calendar days following the accepted sandblasting, will not be cause for rejection of the steel.

When acceptable reinforcing steel is exposed to the elements for more than seven calendar days prior to encasement in concrete, adequate measures shall be taken by the Contractor, as approved by the Engineer, to protect the steel from contamination or corrosion. Reinforcing steel contaminated or corroded, shall be re-sandblasted at the Contractor's expense. No adjustment in Contract time will be made for re-sandblasting.

BASIS OF PAYMENT

Payment will be made under:

Pay Item

Sandblasting Reinforcing Steel

Pay Unit

Square Yard of deck

**REVISION OF SECTION 203
EXCAVATION AND EMBANKMENT**

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

DESCRIPTION

Subsection 203.01 shall include the following:

Disposal of materials not recycled or reused shall be made at Denver Arapahoe Disposal Site (DADS), 3500 South Gun Club Road, Aurora, Colorado and shall be part of this Contract.

Fencing shall be erected around all excavations greater than 4 feet deep to preclude public access when unattended.

CONSTRUCTION REQUIREMENTS

Subsection 203.04 shall include the following:

The Contractor shall protect and promptly dewater and recondition all excavations from water, regardless of the sources of water.

Delete the first paragraph of Subsection 203.08 and replace with:

Proof rolling: Proof rolling shall be conducted with a double tandem ten-wheel end-dump truck, loaded to a minimum gross weight of 45,000 pounds; pneumatic tire equipment using a minimum axle load of 18 kips per axle; or other equipment as approved by the Project Manager. A weight ticket from an approved scale shall be furnished by the Contractor to substantiate the weight of the truck or equipment.

The Project Manager may require hand operated compaction equipment or other methods to evaluate areas not accessible to the above mentioned truck or equipment.

Areas found to be weak, and those areas that failed, shall be ripped, scarified, dried or wetted as necessary and re-compacted to the requirements for density and moisture at the Contractor's expense.

**REVISION OF SECTION 203
EXCAVATION AND EMBANKMENT**

METHOD OF MEASUREMENT

Subsection 203.11 (a) shall be deleted and replaced with the following:

Excavation. Excavation to finished subgrade per approved Contract Drawing elevation shall be measured by cubic yards removed. Truck bed volume or other volume calculation acceptable to the Contractor and approved by the Project Manager shall be used.

Dewatering and reconditioning shall not be measured and paid for separately, but shall be included in the work.

Subsection 203.11 (b) shall include the following:

Aggregate base course backfill material shall not be measured and paid for separately, but shall be included in the work.

Subsection 203.11 (d) shall be deleted and replaced with the following:

Blading and Dozing: Proof rolling, blading, wetting, drying, and dozing, will not be measured and paid for separately, but shall be included in the cost of the work.

Subsection 203.11 (f) shall be deleted and replaced with the following:

Proof Rolling: Proof rolling will not be measured and paid for separately, but shall be included in the cost of the work.

Subsection 203.13 shall include the following:

(g) *Haul and Disposal.* Haul and disposal will not be measured and paid for separately but shall be included in the cost of the work.

SECTION 204 BRIDGE JACKING AND SHORING

Section 204 is hereby added for this project to include the following:

DESCRIPTION

204.1 This work consists of the installation of blocking, steel shims, hydraulic jack systems and raising and lowering the bridge superstructure. This work also includes construction engineering as well as making adjustments to dimensions and elevations due to varying field conditions. The contractor is responsible for the stability of the structure during construction.

CONTRACTOR'S EXPERIENCE REQUIREMENTS

The contractor or subcontractor performing this work shall submit proof of at least two projects successfully completed in the last three years involving jacking a bridge superstructure. A brief description of each project with owner's name and current phone number shall be included and submitted to the Engineer prior to the preconstruction meeting.

MATERIALS

204.2 The contractor shall submit a plan for jacking and temporarily supporting the beam ends to the engineer for review and approval. Jacking point shall be as close to the existing bearing stiffeners as practical. Minimum jacking load (service dead load) per bearing is estimated to be 13,000 lbs. Jacking equipment shall be capable of lifting and supporting at least two times the service dead load.

The hydraulic jacking system shall be a ganged system working off a common manifold or similar device with and electric/hydraulic pump, shut-off valves, load-lowering valves, and pressure gages. The jacking system shall have a minimum capacity shown in the plans for each ram and a minimum stroke of 1 inch.

If jacking systems involve jacking frames or other structural steel other than temporary bearing/shim plates, the steel shall be new material. The contractor shall provide the Engineer with copies of all certified mill test reports for all structural steel and bolts. Structural steel may be reused on subsequent jacking operations provided that acceptable condition is maintained. The structural steel shall conform to the requirements of AASHTO M270 Grade 50. If welds are necessary, the welds shall be made according to AWS D1.5. The contractor's welders shall be qualified according to AWS D1.5 to make all necessary welds. All structural steel field connections shall be bolted with new high strength bolts conforming to Section 509. High strength bolts, including suitable nuts and plain hardened washers, shall conform to the requirements of ASTM A-325. Bolts shall be Type 3.

CONSTRUCTION REQUIREMENTS

204.3 When raising and lowering the superstructure, all live load traffic shall be detoured off the bridge as shown in the phasing plans.

Contractor shall provide the necessary number of jacks needed to lift the bridge as uniformly as possible to prevent damage to the structure. Damage to the bridge structure shall be repaired at the contractor's expense. The contractor shall install string lines or other approved systems by which the Engineer can monitor the relative movement of the bridge.

**SECTION 204
BRIDGE JACKING AND SHORING**

The maximum amount of superstructure lift shall be 0.125 inch above the rebound height of the bearing. Adjacent jacks shall be loaded only enough to achieve the aforementioned lift at the bearing being replaced without damaging the bridge. A jacking plan indicating the number of adjacent jacks shall be submitted to the Engineer for approval. In the event that, in the opinion of the Engineer, any jacking operation is causing distress or damage to the bridge structure, jacking operation shall be immediately terminated.

METHOD OF MEASUREMENT

204.4 Bridge jacking and shoring will be measured by the individual bearing being replaced.

BASIS OF PAYMENT

204.5 The accepted quantity shall be paid for at the contract unit price for the pay unit listed below. Payment will be made under:

Pay Item	Pay Unit
Bridge Jacking and Shoring	Each

Payment shall be full compensation for all work necessary to complete the item, which shall include but not be limited to design, field adjustments, fabrication, welding, bolted connections, transportation to the bridge site, blocking, raising and lowering the superstructure for each bearing replacement. Payment for this item will not be made for this item until all required submittals have been approved by the Engineer.

REVISION OF SECTION 208 EROSION CONTROL

Delete all of Section 208 of the Standard Construction Specifications, with the exception of Subsection 208.02, and replace with the following:

PART I: DEFINITIONS

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

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

Additional Definitions applicable to this Section are listed heretofore:

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

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

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

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

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

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

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

REVISION OF SECTION 208 EROSION CONTROL

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

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

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

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

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

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

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

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

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

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

Stormwater Management Plan (SWMP): IN ADDITION TO SCHEDULE A DOCUMENTS, SEE SCHEDULE A DESIGN DOCUMENTS AND SPECIFICATIONS FOR SWMP

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

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

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

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

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

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PART II: DESCRIPTION

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

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

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

PART III: MATERIALS

Materials to be used for BMPs shall conform to Section 208.02 of the Standard Construction Specifications, each specific detail as set forth within the Project SWMP or as noted on the Contract Drawings.

The current SWMP status for the Project is as follows:

An approved SWMP has been prepared and CASDP obtained by the City prior to bidding of the Project and as such must be properly transferred to the Contractor prior to the start of construction. The SWMP has been provided within the Contract Documents. The Contractor shall coordinate with the Project Manager and Permit Authority to perform the necessary transfer of CASDP from City to Contractor prior to the start of construction. The Permit transfer will be performed at no cost to the Contractor.

Prior to transfer of CASDP, additional elements shall be completed by the Contractor before the CASDP will be transferred from City to Contractor:

- a. Complete Sections B&E (Permittee & Site Supervisor) of the CASDP “Narrative Report Information Worksheet”.
- b. Prepare a complete SWMP including any required adjustments for proposed construction phasing, staging areas, or additional items necessary to address applicable project specific Permit requirements. This will require the Contractor to provide or retain a Professional Engineer or subcontract with the original Professional Engineer that prepared the Bid Documents.

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PART IV: EROSION CONTROL PERMIT STATUS

- a. Complete the “Construction Scheduling” section of the “Narrative Report Information Worksheet”.
- b. Include specific methods and/or BMPs that the Contractor will implement to address hazardous spill prevention/ containment response.
- c. Provide any “Additional Documentation and Correspondence” applicable to the Contractor as stated in the CASM. This will require the Contractor to provide or retain a Professional Engineer or subcontract with the original Professional Engineer that prepared the Contract Documents.

If deemed necessary, the Contractor may propose modifications to the approved SWMP once the CASDP has been transferred to the Contractor. Per CASDP requirements, the Contractor shall obtain the endorsement of a Professional Engineer licensed in the State of Colorado for any proposed Major or Minor SWMP Amendments. This may require the Contractor to provide or retain a Professional Engineer or subcontract with the original Professional Engineer of the “For reference only” erosion control drawings.

Per definition, a Major SWMP Modification requires the submission of revised SWMP elements to the Permit Authority for review and approval.

Prior to construction, the Contractor shall obtain the required State Construction Stormwater Permit(s) as applicable.

- A) **SCHEDULES**: At least 10 working days prior to the beginning of any construction work, the Contractor shall submit for approval a schedule for accomplishment of temporary and permanent BMPs shown in the SWMP. This schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent BMPs. The schedule shall include BMPs for all areas within the Project boundaries, including but not limited to, haul roads, borrow pits, and storage and other staging sites. Work shall not be started until the BMP schedule has been approved in writing by the Project Manager. Once the work has started, and during the active construction period, the Contractor shall update the schedule for all BMPs on a regular basis, and as required to keep the SWMP in compliance.
- B) **CONSTRUCTION IMPLEMENTATION**: The Contractor shall incorporate into the Project all BMPs as outlined in the accepted schedule.
- C) **UNFORSEEN CONDITIONS**: The Contractor shall direct the ECS (under the supervision of a Professional Engineer licensed in the State of Colorado) to design and implement BMPs for correcting conditions unforeseen during design of the Project, or as possible for emergency situations, which arise during construction. The Project’s SWMP, UDFCD Vol 3 standards and details, and CDOT’s “Erosion Control and Storm-Water Quality Guide,” and any approved modification to these documents as proposed by the Contractor, shall be used as reference documents for the purpose of designing appropriate BMPs. Measures and methods proposed by the Contractor to deal with unforeseen conditions shall be reviewed and approved in writing by the Permit Enforcement Authority and the Project Manager prior to implementation and construction.

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PART V: CONSTRUCTION REQUIREMENTS

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

- D) PERMITS: The Contractor shall obtain all required permits for the Project including those required by Federal, State, and local agencies. The Contractor shall obtain (or transfer from the City when specified) required erosion control and water quality permits and shall be responsible for compliance with all requirements under any such permits.
- E) EROSION CONTROL SUPERVISOR: Contractor shall assign to the Project an employee or subcontractor to serve as Erosion Control Supervisor (ECS). The ECS shall be a person other than the Contractor's superintendent, foreman, or equivalent supervisory position. The ECS shall be experienced in aspects of BMP construction and have satisfactorily completed a Colorado DOT or equivalent ECS training program authorized by the City. Proof that this requirement has been met shall be submitted to the Project Manager at least ten working days prior to the beginning of any soil disturbance work. A list of authorized ECS training programs is available from the City upon request. Additionally, per definition, the ECS shall be under the direction of a Professional Engineer licensed in the State of Colorado when performing any modifications to the Project Stormwater Management Plan (SWMP).

The ECS shall be responsible for oversight of the implementation, maintenance, and revision of the SWMP for the duration of the Project. The ECS's responsibilities shall be as follows:

- 1) Ensure compliance with all water quality permits or certifications in effect during the construction work.
- 2) Supervise the installation, construction, and maintenance of all BMPs specified in the Contract and coordinate the construction of BMPs with all other construction operations.
- 3) Direct the implementation of suitable BMPs as necessary to correct unforeseen conditions or emergency situations. Direct the dismantling of those features when their purpose has been fulfilled due to completion of each Project phase unless the Permit Enforcement Authority agrees that the features be left in place.
- 4) Inspect the construction site and document inspection activities at least every seven (7) days and immediately following any precipitation or snowmelt event with the potential to cause surface erosion. If no land disturbing construction activities are present during a storm event, post-storm event inspections shall be conducted prior to commencing any new land disturbing construction activities, but no later than seventy-two (72) hours following the storm event.

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- 5) Attend the preconstruction conference, erosion control preconstruction inspection, Project scheduling meetings, weekly construction/ field meetings, substantial completion and final stabilization inspections, and other meetings regarding construction that could impact water quality.
- 6) Evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, the ECS shall propose appropriate SWMP modifications to the Contractor to protect off-site water from becoming contaminated with sediment or other pollutants.
- 7) Coordinate with the Contractor to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
- 8) Coordinate with the Contractor to ensure all labor, material, and equipment deployed to meet SWMP requirements is judged appropriately.
- 9) During construction, update and record the following items in the SWMP as changes occur:
 - (i) Construction boundaries (may require Major SWMP Modification)
 - (ii) Areas of disturbance (may require Major SWMP Modification)
 - (iii) Areas used for storage of construction materials, equipment, soils, or wastes.
 - (iv) Location of any dedicated asphalt or concrete batch plants.
 - (v) Location of construction offices and staging areas.
 - (vi) Location of work access routes during construction.
 - (vii) Location of borrow and waste.
 - (viii) Location of temporary and permanent stabilization

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

- 10) Amend the SWMP whenever there are: additions, deletions, or changes in locations of BMPs. SWMP revisions shall be recorded immediately. Items shall be dated and signed at time of occurrence. Specifically, amendments shall include the following:
 - (i) A change in design, construction, operation, or maintenance of the site which would require the implementation of new or revised BMPs; or
 - (ii) Changes when the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity.
 - (iii) Changes when temporary BMPs are no longer necessary from changes in Project phase and are removed. All inspection and maintenance activities or other repairs shall be documented.

All inspection and maintenance activities or other repairs shall be documented. The SWMP and documentation shall be kept on the Project site at all times.

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- I 1) Modify the site map with arrows to indicate direction of surface and storm water flowing across the Project site.
- I 2) When adding or revising BMPs in the SWMP, amend the narrative to explain what, when, where, why, and how the BMP is being used, and add a detail to the SWMP.
- I 3) If using existing topography, vegetation, etc. as a BMP, label it as such in the SWMP site map; amend the Narrative to explain when, why, and how the BMP is being used to the SWMP.
- I 4) Record on the SWMP, and implement the approved plan for concrete and asphalt saw cutting, grinding, and milling containment and removal.
- I 5) Update the potential pollutants list in the SWMP throughout construction meeting CASDP requirements.
- I 6) Spills, leaks, or overflows that result in the discharge of pollutants shall be documented on the inspection form. The ECS shall record the time and date, weather conditions, reasons for spill, and how it was remediated. The ECS shall immediately report to the Contractor and Project Manager the following instances of noncompliance:
 - (i) Noncompliance which may endanger health or environment.
 - (ii) Spills or discharge of hazardous substance or oil which may cause pollution of the City MS4 or State Waters.
 - (iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
- I 7) Perform a thorough inspection of the stormwater management system at least every seven (7) days and within 24 hours after any precipitation or snowmelt event with the potential to cause surface erosion. The inspection records shall be kept on-site in a written or previously approved format. Inspections shall be conducted during the progress of the work, during work suspensions, or until Final Stabilization of all disturbed areas is approved by Permit Enforcement Authority and shall include the following services at a minimum:
 - (i) The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. BMPs identified in the SWMP shall be observed to ensure that they are operating correctly.
 - (ii) The description of potential pollutant sources, and the BMPs identified in the SWMP, shall be revised and modified as appropriate based on the results of the inspection as soon as practicable after such inspection. Modification to the SWMP shall be implemented in a timely manner and in accordance with applicable Permit requirements.

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- (iii) The operator shall keep a record of inspections. Uncontrolled releases of sediment or polluted storm water or measurable quantities of sediment found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measures taken to clean up the sediment that has left the site. Inspection records shall be made available to the City upon request. Note: documentation of uncontrolled releases at site DOES NOT alleviate any State or Federal requirements for reporting of discharges or upset conditions. Care should be taken to ensure compliance with all regulatory requirements at site.
 - (iv) Seven (7) day inspections are required during construction and at all times until Final Stabilization has been achieved. Seeding and mulching of disturbed areas does NOT count as final stabilization until such time as 70% pre disturbed vegetative cover has been achieved. Sites with growth in place sufficient to deter erosion that have not yet achieved final stabilization may petition the City to grant an alternative inspection schedule while awaiting additional growth for final stabilization. These inspections must be conducted in accordance with the above paragraphs.
- F) **APPLYING BMPs TO STABILIZE SITE:** The duration of the exposure of uncompleted construction to the effects of weather shall be as short as practicable. BMPs such as: seeding, surface roughening, mulching, applying tackifier, use of geotextiles and matting, permanent landscaping, or other selected BMPs shall be applied within fourteen (14) calendar days of completion of grading/soil disturbance activities to stabilize the construction site unless disturbed area is within 100 feet of an MS4 or State Waters or has slopes of 3 to 1 or greater in which case BMPs shall be implemented within seven (7) calendar days of completion of grading activities. Disturbed areas where work is temporarily halted shall be temporarily stabilized within seven (7) days after the activity ceased unless work is to be resumed within thirty (30) calendar days after the activity ceased.

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

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EROSION CONTROL**

- G) **WORK OUTSIDE LIMITS OF CONSTRUCTION:** Non-contiguous areas outside the limits of construction that are used by the Contractor that include, but are not limited to, borrow pits, haul routes, storage and disposal areas, field offices, maintenance, batching areas, etc., shall have appropriate BMPs implemented by the Contractor at the Contractor's expense. Should said areas meet applicable CASDP Permit criteria, the Contractor shall obtain a separate CASDP for each area as applicable at no additional expense to the City.
- H) **MAINTENANCE:** The Contractor shall continuously maintain erosion and sediment control BMPs on a daily basis or as directed by the ECS so that they function properly during and after construction (including work suspensions) until Final Stabilization has been approved by the Permit Enforcement Authority. Maintenance includes, but is not limited to, the following items:
- (i) From the time seeding and mulching work begins until the date the Project has reached Substantial Completion of Erosion Control, the Contractor shall keep all seeded areas stabilized at all times. Any damage to seeded areas or to mulch materials shall be promptly repaired.
 - (ii) All inspection sediment removal, and BMP maintenance activities to comply with all Federal, State & Local erosion control permit requirements until Final Stabilization is reached.
 - (iii) All removal and replacement of existing BMPs due to damage to same suffered either by the contractor, outside agencies, the public, or acts of God.
 - (iv) All required mechanical and/ or manual street sweeping.
 - (v) Discretionary changes required of any regulatory enforcement officer.

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

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

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- J) **MAJOR SWMP MODIFICATION:** The City reserves the right to require changes in the Work or Project Limits that may require a Major Modification to the SWMP and/ or CASDP due to unforeseen circumstances. Should this occur, the Contractor will be responsible for the following (as applicable):
- (i) Make required revisions to comply with changing federal or state rulemaking if occurs within timeframe of Project
 - (ii) Make required revisions due to unforeseen or unplanned conditions leading to deficient Drawings/ SWMP (hazardous materials encountered, landfills, expansion of work limits, etc.)
 - (iii) Prepare revised SWMP elements endorsed by a Professional Engineer licensed in the State of Colorado.
- K) **SUBSTANTIAL COMPLETION OF EROSION CONTROL:** When a CASDP is required for the Project, Substantial Completion of the Project as defined by the City and County of Denver General Contract Conditions cannot be reached until Substantial Completion of Erosion Control has been granted. Granting of Substantial Completion of Erosion Control must be requested by the Contractor and be approved by the Permit Enforcement Authority in the form of a “Certificate of Substantial Completion of Erosion Control”.
- L) **FINAL STABILIZATION:** Granting of Final Stabilization must be requested by the Contractor and be approved by the Permit Enforcement Authority. Other permanent soil stabilization techniques may be proposed, in writing, by the Contractor and used upon approval, in writing, by the Project Manager and Permit Enforcement Authority.

The Contractor may reach Final Stabilization via the following procedures:

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

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

PART VI: CONSTRUCTION OF BMPs

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

PART VII: METHOD OF MEASUREMENT

Erosion Control Supervisor (ECS) will be measured by the total number of hours the ECS is required to be on the Project performing the duties (including supervision by a Professional Engineer licensed in the State of Colorado) as outlined in this Specification. The Contractor shall record the tasks that were performed by the ECS and the hours that were required to complete each task. The records for the payment period shall be submitted to the Project Manager after completion of work, at the time of monthly pay request, for approval and acceptance.

Silt fence, silt berms, erosion logs, gravel bags, silt dikes, temporary berms, temporary diversions, temporary drains, and brush barriers will be measured by the actual number of linear feet that are installed and accepted. Stakes, anchors, connections and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Vehicle tracking pad and concrete washout structure will be measured by the actual number of structures that are installed and accepted, and if specified on the SWMP as in-ground will include excavation, embankment, concrete, liner, erosion bales, fencing, and containment and disposal of concrete washout and all other associated waste material.

Storm drain inlet protection will be measured by the unit as specified in the Contract. Sediment trap and sediment basin quantities will be measured by the unit which shall include all excavation and embankment required to construct the item.

Any excavation required for the removal of sediment from traps, basins, areas adjacent to silt fences and erosion bales, and any other cleanout excavation of accumulated sediment, and removal of check dams or storm drain inlet protection will be measured by the number of hours that equipment, labor or both are used for sediment removal.

Work to furnish, install, maintain, replace (if not due to contractor negligence), remove, and dispose of BMPs specified in the Contract will be paid for at the contract unit price.

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PART VIII: BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
Rock Sock	LF
Pre-Fabricated Concrete Washout Structure	Each
Pre-Fabricated Vehicle Tracking Pad	Each
Sweeping (Sediment Removal)	Hour

Temporary BMPs will be measured and paid for by the BMPs used, except that surface roughening, and removal of trash will not be measured and paid for separately.

Payment for each BMP item will be full compensation for all work, materials and equipment required to furnish, install, maintain, remove, and dispose of it. BMPs as deployed per the SWMP requiring replacement due to Contractor negligence and or carelessness shall be provided at the Contactor's expense.

Temporary BMPs required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or for the Contractor's convenience, shall be performed at the Contractor's expense.

If the Contractor fails to complete construction within the approved contract time, payment will not be made for Section 208 pay items for the period of time after expiration of the approved contract time. These items shall be provided at the Contractor's expense.

The cost for any corrective actions required by the State or City due to contractor's failure to obtain or comply with applicable Permits will be borne by the Contractor, including fines and penalties. In the case of failures on the part of the Contractor in controlling erosion, sedimentation, and/or water pollution, the City may provide the necessary corrective actions. All corrective action costs, including Engineering costs, will be charged to the Contractor, and appropriate deduction will be made from the Contractor's monthly pay estimate.

The sole remedy for additional costs associated with installation of BMPs as required by regulatory agencies to ensure compliance with local and State requirements shall be per unit BMP as provided in the Bid Schedule of this Contract. The Contractor however may submit a separate itemized Change Order for any required Major SWMP Modification proposed by the City during the course of the Project.

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Pay Units for ECS will be full compensation for the Erosion Control Supervisor including all materials, labor and equipment necessary for the ECS to perform the work. Commute time will not be measured and paid for separately, but shall be included in the work. The ECS pay item shall include all labor, Professional Engineering (includes supervisory Professional Engineer licensed in the State of Colorado), and/ or design fees to prepare modifications to Stormwater Management Plan(s), revise or amend Permits, coordinate with State and Local agencies, design special erosion control plans for emergency situations that develop during construction or unexpected weather conditions.

Additional stabilized construction/ staging area proposed by Contractor beyond area included in the Bid shall be installed per requirements of the Permit Authority and Permit Enforcement Authority without any additional compensation.

Payment for concrete washout structure, whether constructed or prefabricated, will be full compensation for all work and materials required to install, maintain, and remove the item. This includes, but is not limited to: excavation, embankment, liner, erosion bales, fencing, signing, and containment and disposal of concrete washout and all other associated waste material.

Sweeping, when used as a BMP as shown in the Contract, will be measured by the number of hours that a pickup broom or motorized equipment capable of collecting sediment, authorized by the Project Manager, is used to remove sediment from the roadway or other paved surfaces. Operator will not be measured and paid for separately, but shall be included in the work.

Stakes, anchors, connections, geotextile, riprap and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Surveying of permanent BMPs will not be measured and paid for separately, but shall be included in the work.

**REVISION OF SECTION 209
WATERING AND DUST PALLIATIVES**

Section 209 of the Standard Specifications is hereby revised for this project as follows:

METHOD OF MEASUREMENT

Delete the first paragraph in Subsection 209.07 and replace with the following:

Water for moisture-density control, landscaping, pre-wetting, and for dust palliatives will not be measured and paid for separately but shall be included in the cost of the work.

**REVISION OF SECTION 306
RECONDITIONING**

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

DESCRIPTION

Subsection 306.01 shall include the following:

All existing sub grade on streets shall be reconditioned over the area defined in the Contract Drawings for removal of pavement.

Proof rolling shall be in accordance with Revision of Section 203 Excavation and Embankment, Subsection 203.09.

CONSTRUCTION REQUIREMENTS

Subsection 306.02 shall include the following:

Moisture and density requirements for reconditioning shall be as stated in Revision of Section 203 Excavation and Embankment, Subsection 203.07.

METHOD OF MEASUREMENT

Delete Subsection 306.03 and replace with the following:

Reconditioning will not be measured.

BASIS OF PAYMENT

Delete Subsection 306.04 and replace with the following:

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

REVISION OF SECTIONS 401 & 403 HOT MIX ASPHALT

Sections 401 and 403 of the Standard Specifications is hereby deleted and replaced with Item 20 “Hot Mix Asphalt Pavement” Specifications from the Metropolitan Government Pavement Engineers Council (MGPEC), Volume I Pavement Design Standards and Construction Specification, latest version.

This work consists of one or more courses of asphalt mixture constructed on a prepared foundation in accordance with these specifications and the specific requirements of the type under contract, and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established.

Contact MGPEC at 303-979-2190 for MGPEC membership information and to receive full design standards and construction specifications. This Item 20 specification is available online at www.mgpec.org.

Warm Mix Asphalt Technology may be considered, upon approval by the Project Manager.

CONSTRUCTION REQUIREMENTS

The Contractor shall be required to place 90% of the HMA on the project using a bituminous paver that has been certified to have met the National Institute for Occupational Safety and Health (NIOSH) emission guidelines as set forth in Engineering Control Guidelines for Hot Mix Asphalt Pavers, Part I: New Highway-Class Pavers (Department of Health and Human Services (NIOSH) Publication No. 97-105, April 1997 printing)

METHOD OF MEASUREMENT

Add Subsection 20.16 to the MGPEC Specifications immediately following 20.15:

The measurement for payment of Stone Matrix Asphalt Pavement and Hot Mix Asphalt Pavement will be the actual number of square yards per inch thickness of stone matrix or hot mix asphalt, in place, complete as pavement, and accepted by the Project Manager. No measurement for payment will be made for stone matrix or hot mix asphalt placed in areas not specifically approved by the Project Manager, nor required due to careless or unauthorized operation by the Contractor.

Hot Mix Asphalt (Patching) will be measured by the actual number of square yards per inch thickness of hot mix asphalt to a minimum 9 inch depth or greater to match the thickness of the existing pavement, in place, complete as pavement, and accepted by the Project Manager. No measurement for payment will be made for hot mix asphalt (patching) placed in areas not specifically approved by the Project Manager, nor required due to careless or unauthorized operation by the Contractor.

BASIS OF PAYMENT

Add Subsection 20.17 to the MGPEC Specifications immediately following 20.16:

Payment will be made under:

Pay Item	Pay Unit
Hot Mix Asphalt (GR SX)(75)(PG 64-22)	Ton
Hot Mix Asphalt (Patching) (Asphalt)	Ton

REVISION OF SECTIONS 401 & 403 HOT MIX ASPHALT

The Contractor shall collect the scale ticket on each load when it is delivered to the project site, and ensure that the following information is shown on each ticket:

- (1) Project Number.
- (2) Date.
- (3) Ticket Number.
- (4) Haul Unit Number.
- (5) Gross Weight.
- (6) Tare Weight.
- (7) Net Weight.
- (8) Material Type.
- (9) Certified Weigher's Name.

The scale tickets shall be available on site for the Project Manager to inspect.

Each day the Contractor shall provide to the Project Manager envelopes which contain the previous day's signed tickets and the following:

1. On each envelope: Project number, date of paving, type of material, daily total and cumulative total.
2. One of the following:
 - A. Two adding machine tape tabulations of the weight tickets with corresponding totals run and signed by different persons,
 - B. One signed adding machine tape tabulation of the weight tickets that has been checked and signed by a second person,
 - C. Signed check tape of computer scale tickets that have a cumulative total. These scale tickets must be consecutive and without voids adjustments.
3. A listing of any overweight loads on the envelope, including ticket numbers and amount over legal limit.
4. A comparison of the actual yield for each day's placement to the theoretical yield. Theoretical yield shall be based on the actual area paved, the planned thickness, and the actual density of the mixture being placed. Any variance greater than +2.5% shall be indicated on the envelope and a written explanation included.

The Contractor shall provide a vehicle identification sheet containing the following information for each vehicle that is used to deliver Hot Mix Asphalt to the project:

- (1) Vehicle number
- (2) Length
- (3) Tare weight
- (4) Number of axles
- (5) Distance between extreme axles
- (6) All other information required to determine legal weight.
- (7) Legal weight limit.

**REVISION OF SECTIONS 401 & 403
HOT MIX ASPHALT**



**METROPOLITAN GOVERNMENT
PAVEMENT ENGINEERS COUNCIL**

**Form 20
Mix Design Requirements** V. 10/2017

Agency: _____ Date: _____

Project: _____

Details: _____ APM (tons): _____
(To / From, Length)

Classification Arterial Collector Local Other _____

APM Placement Wearing course Intermediate lift Bottom lift Patching

ASPHALT MIX DESIGN			
Design / Traffic	<input type="checkbox"/> N _{design} = 50 gyrations	<input type="checkbox"/> N _{design} = 75 gyrations	<input type="checkbox"/> <100,000 ESALs <input type="checkbox"/> ≥100,000 to <3 million ESALs
Binder	<input type="checkbox"/> PG 58-28	<input checked="" type="checkbox"/> PG 64-22	<input type="checkbox"/> PG 76-28 (Top lift only)
Grading	<input type="checkbox"/> ST (3/8")	<input checked="" type="checkbox"/> SX (1/2")	<input checked="" type="checkbox"/> S (3/4")
	<input type="checkbox"/> SG (1")	<input type="checkbox"/> SMA (1/2")	<input type="checkbox"/> SMA (3/4")
Anti - Strip	<input type="checkbox"/> Liquid	<input checked="" type="checkbox"/> Lime	

BEST PRACTICES to include in Mix Design	
RAP	<input checked="" type="checkbox"/> 25% <input type="checkbox"/> 35% (Grading SG only)
WMA	<input checked="" type="checkbox"/> Additive <input type="checkbox"/> Foaming
<small>Foaming shall not be used, no exceptions.</small>	

AGENCY EXCEPTIONS
<input type="checkbox"/> No RAP in wearing course
<input type="checkbox"/> No RAP allowed in mixture
<input type="checkbox"/> No WMA allowed in mix

REVISION OF SECTION 509 PAINTING EXISTING STRUCTURE

Section 509 of the Standard Specifications is hereby revised for this project as follows: Subsection 509.01

shall include the following:

This work consists of painting the structural steel elements including the fascia of the exterior girders, spot/zone painting of the interior steel girders, and other areas as directed by the engineer in accordance with the requirements of the plans, and specifications.

Subsection 509.29 shall include the following:

(f) After the structural steel surfaces have been prepared in accordance with the requirements of SSPC- SP10, they shall be painted with the three coat paint system defined below.

The primer coat of paint shall be applied to the prepared surfaces before new rust forms.

The Contractor/Subcontractor(s) performing the painting shall be certified, and maintain the certification for the duration of the work, under the SSPC: The Society for Protective Coatings Certification Program in the following areas:

- 1) QP 1 – Surface Preparation and Coating Application in the Field.
- 2) QP 2 – Removal of Hazardous Paint in the Field.

The Contractor shall provide the certification documents to the Engineer at the Preconstruction Conference.

The Contractor shall provide all personnel (Construction and the Department's) safe access to all locations where painting operations are in progress in accordance with the requirements of subsection 107.06.

The structural steel shall be painted with the following three coat system. All three coats of paint shall be supplied from the same paint manufacturer. The dry film thickness of each coat shall be 3-4 mils. Each coat shall contain less than 0.01 percent lead in the dry film thickness and no more than trace amounts of hexavalent chromium, cadmium, mercury or other toxic heavy metals. The volatile organic compounds (VOC) of each coat shall not exceed 3.5 lbs. per gallon as applied. All paint shall be applied in accordance with the manufacturer's recommendations.

- 1) A Type II, organic zinc-rich primer conforming to SSPC-Paint 20 shall be applied to the prepared steel surfaces before new rust forms. The primer shall contain a minimum of 77% to 85% zinc dust (Level 2) by weight in the dry film. The zinc dust shall comply with the requirements of ASTM D 520, Type II. The primer shall be compatible with the SSPC-SP 6 surface preparation and profile, see the Revision of 202.
- 2) The intermediate coat shall be a solvent based two part catalyzed epoxy compatible with the primer and top coats. The intermediate coat's color shall be noticeably different than the primer and the top coat, but in the same color family as the top coat.
- 3) The top coat shall be an aliphatic polyurethane compatible with the epoxy intermediate coat. The color of the top coat shall be as shown on the plans and approved by the Engineer.
- 4) The product data sheets for the paint shall be provided to the Engineer for the Preconstruction Conference.

Alternate paint systems of equal or better quality successfully used for other existing steel bridges in the State of Colorado may be submitted for approval.

REVISION OF SECTION 509
PAINING EXISTING STRUCTURE

In subsection 509.32, add the following:

(d) Painting of existing structure will not be measured, but will be paid for on a lump sum basis when it is completed and accepted.

Subsection 509.33 shall include the following: Payment will be

made under:

Pay Item	Pay Unit
Paint Existing Structure	SF

Payment shall be full compensation for all labor, materials, and equipment necessary to complete the work including paint removal and containment, waste disposal, preparing steel surface, primer, intermediate coat, and top coat.

REVISION OF SECTION 601 CONCRETE CLASS DR

Section 601 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of furnishing and placing concrete patching material in accordance with these specifications and in conformity with the lines, grades and dimensions as shown on the plans or established.

MATERIALS

The concrete patching material may be pre-packaged Concrete patching material or Class DR concrete.

(a) *Pre-Packaged Concrete Patching Material.* Concrete patching material shall be polymer modified hydraulic cement and shall be one of the following:

(1) Rapid Set DOT Concrete Mix as manufactured by:
CTS Cement Manufacturing Company
11065 Knott Avenue
Cypress, CA 90630

(2) HD 50 as manufactured by
Dayton Superior Corp.
1125 Byers Road
Miamisburg, Ohio 45342

(3) or approved equal

Alternate concrete patching materials shall demonstrate 1/32-inch maximum mid panel and end crack widths, 0 percent delamination, and 0 percent spalling as tested by NTPEP in a one-year field evaluation. The Contractor shall refer to rapid-set concrete patch materials at www.ntpep.org.

Before January 1, 2020 equivalent materials may be tested to meet minimum requirements by an independent testing lab or NTPEP. If the product has not been field tested by NTPEP, the Contractor shall submit documentation of a project demonstrating the successful use of the proposed product in Colorado. The submittal shall document the material used, the project location and detailed pictures of the patch after at least 1 year of service.

The Contractor shall obtain and provide to the Engineer documentation from the Concrete patching material supplier of the expiration dates of the material components that will be used on the project.

Concrete patching material shall attain an average compressive strength of at least 2,500 psi prior to placing traffic and 4,500 psi at 28 days. Concrete patching material compressive strengths shall be tested according to ASTM C39 or ASTM C109. The compressive strengths shall be used to develop a strength versus time curve for the material. Three strength data points shall be determined to assess the necessary time to wait before traffic is allowed on the material. Maturity meter data may also be submitted to allow the use of maturity meter to determine when the patching material has gained the required strength for opening to traffic.

REVISION OF SECTION 601 CONCRETE CLASS DR

Concrete patching material shall provide a minimum bond strength of 2,000 psi at 28 days, as tested by ASTM C882.

Concrete patching material shall have a relative durability factor greater than 90 and a mass loss not to exceed 2.0 percent as tested by ASTM C666.

Concrete patching material shall have a maximum expansion of 0.05 percent, at 28 days as tested by ASTM C157

ASTM C39, C109, C882 and C157 testing shall be from the same lot of concrete patching material being used on the project. A CTR, in accordance with subsection 106.13, shall be submitted to the Engineer for approval at least 2 weeks prior to placement.

Two bags of the concrete patching material, and two bags of the extending aggregate if used, from the same lot to be used on the project shall be submitted to an accredited Lab to verify compressive strength, and set time properties, by the Contractor before the concrete patching material is to be used on the project. Test results shall be submitted to the Engineer for acceptance. Verification of the strength properties will be achieved if the test results are either equal in strength or stronger than those advertised. Verification of the set time will be achieved if the set time is equal or less than the advertised value. Testing shall be included in the cost of the materials. Test results from other projects using the same lot may be submitted. If the project uses material from more than one lot, test results are required for each lot used.

When Anodes are specified and are to be installed with pre-packaged concrete patching material, the Contractor shall submit test results of ASTM C1760 that the concrete patching material has an electrical resistivity of 15,000 Ohm-centimeters or less. Concrete patching materials that do not meet the electrical resistivity requirements may be used with special anode installation methods recommended by the anode manufacturer and approved by the Engineer. Additional work for special anode installation methods shall be included in the bid price.

- (b) *Class DR Concrete.* Class DR Concrete shall have a minimum cement content of 615 pounds per cubic yard, an air content of 5 to 8 percent, a maximum water to cement ratio of 0.44, a minimum 6 hour compressive strength of 2,500 psi and a minimum 28 day compressive strength of 4,500 psi. The concrete mix shall consist of a minimum of 50 percent AASHTO M 43 Size No. 7 or Size No. 8 coarse aggregate by weight of total aggregate. Lab test results shall show that the unrestrained shrinkage is less than 0.050 percent when tested by CP-L 4103.

ASTM C150 Type III or ASTM C1157 Type HE cement may be used in lieu of Concrete Class DR, as approved.

The Contractor shall develop maturity relationships in accordance with CP 69. The Contractor shall provide a multi-channel maturity meter and all necessary wire and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meter and wire. Placement shall be as directed by the Engineer.

**REVISION OF SECTION 601
CONCRETE CLASS DR**

CONSTRUCTION REQUIREMENTS

- (a) *Pre-Packaged Concrete Patching Material.* Concrete patching material shall be placed in the repair areas before the expiration date of the material. Proportions of all mix components shall be measured by volume measurement (number of bags of standard weight and quantity of water or liquid component in gallons or quarts). If partial bags are used the bagged mix, extending aggregate, and water shall be weighed on a calibrated scale provided by the Contractor. The Contractor shall submit the Concrete patching material mix design for approval two weeks before any concrete patching material is placed. The Contractor shall also submit a method statement describing what type of equipment will be used to batch the patching material, including the type of mixer, the type of material, volume measures to be used, scales for partial bags, procedures to insure accurate proportioning of the patching material components, and tools to be used in placing and finishing the surface of the patch.

The Contractor shall produce a batch ticket for each mixed batch of concrete patching material with the following information shown on each ticket:

- (1) Project No.
- (2) Bridge No.
- (3) Structure Temperature
- (4) Date and Time of batch
- (5) Material Type, name, and manufacturer
- (6) Material expiration date
- (7) Weight or volume of bag mix concrete
- (8) Weight or volume of extending aggregate
- (9) Weight or volume of water or liquid component
- (10) Location of placement (Lane and Station Limits)

The tickets shall be available on site for CDOT personnel to inspect.

Each day the Contractor shall provide to the Engineer tickets for each bridge in separate envelopes stating Project Number, Bridge Number, Date of Paving, Type of Material, Daily Total, and Cumulative Total.

Concrete patching material minimum and maximum thicknesses shall be per recommendation of the material manufacturer.

Concrete patching material site preparation, batching, extending with aggregate, mixing, placement, placement during cold temperatures, consolidation, and curing shall be in accordance with the manufacturer's recommendations. A mix may be extended up to 90 percent of the manufacturer's maximum extension.

The surface of concrete patching material shall have a similar texture as the adjacent driving surfaces.

The Contractor shall submit a report consisting of the mix proportions and compressive strength vs time curve information to the Engineer at least two weeks before the material is to be used on the project.

Field cast cylinders or cubes shall be taken by a qualified testing representative, with a minimum ACI Field Testing Technician Grade I certification, and test results shall be submitted to the Engineer within 24 hours, the first day and every other subsequent day deck patching material is placed with compressive strength determined at 24 hours according to ASTM C 39 or ASTM C109.

REVISION OF SECTION 601 CONCRETE CLASS DR

Areas patched with Concrete Class DR shall not be opened to traffic until concrete patching material has reached a compressive strength of 2,500 psi using the compressive strength versus time curve developed for the material.

- (b) *Class DR Concrete.* Class DR Concrete shall be placed in accordance with Class D concrete with the following changes:

The area to be patched with Class DR Concrete and anodes shall be saturated surface dry before placement and shall be free of standing water at the time of placement.

Portions of decks patched with Concrete Class DR shall not be opened to traffic until the concrete's compressive strength, determined by CP 69, has achieved at least 2500 psi.

Concrete Class DR shall be cured until a compressive strength of at least 2500 psi has been achieved. The curing compound shall conform to ASTM C309, Type 2 applied at a rate of 1 gallon per 100 square feet. The curing compound shall be applied as a fine spray within 10 minutes of discontinuing the finishing operation. Before and during application the curing compound shall be kept thoroughly mixed. Curing blankets with a minimum R-value of 0.5 shall be provided and shall be placed as soon as they can be placed without marring the surface. When the ambient temperature is below 50°F, the Contractor shall maintain the concrete temperature above 50°F during the curing period.

METHOD OF MEASUREMENT

Concrete Class DR will be measured and paid for as the actual quantity placed and accepted by the Engineer. The Contractor may stockpile material at their own risk. All unused concrete patching material shall remain the property of the Contractor. CDOT will not purchase leftover materials or pay any restocking fees.

BASIS OF PAYMENT

The accepted quantities will be paid for at the contract unit price per unit of measurement for each of the pay items listed below that appear in the bid schedule.

Pay Item	Pay Unit
Concrete Class DR	Cubic Yard

Payment for Concrete Class DR will be full compensation for all the work, materials, tools, equipment, testing, and incidentals required to complete patching, excluding special installation of anodes when specified, when required.

Furnishing all appurtenances including the molding, curing and breaking of cylinders or cubes for generating the strength versus time curve and for determining the information cylinder or cube strength will not be measured and paid for separately, but shall be included in the work. Concrete patching material or Class DR Concrete will not be measured and paid for separately, but shall be included in the Concrete Class DR bid item.

REVISION OF SECTION 601 GALVANIC ANODES

Section 601 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of furnishing and installing galvanic anodes, tying existing steel reinforcing mats for electrical continuity, and testing for electrical continuity in concrete repair locations as shown on the plans or as directed by the Engineer.

MATERIALS

Galvanic anodes shall be one of the following:

- (1) "Galvashield XP2" as manufactured by Vector Corrosion Technologies,
1330 Bellaire Street
Broomfield, CO 80020
303-465-5806
- (2) "MasterProtect 8105 CP" as supplied by BASF Corporation,
889 Valley Park Drive,
Shakopee, MN 55379
800-433-9517
- (3) "Sentinel Silver" as manufactured by Euclid Chemical
19218 Redwood Rd.
Cleveland, OH 44110
800-321-7628
- (4) "Galvashield XP+" as supplied by Sika Corporation
201 Polito Ave.
Lyndhurst, NJ 07071
248-577-0980

Galvanic anodes shall be pre-manufactured and consist of a minimum of 100 grams of zinc conforming to ASTM B6 Special High Grade, cast around a pair of steel tie wires conforming to bright annealed ASTM A82.

At least 10 working days prior to the start of repair work, the Contractor shall submit documentation of the anode manufacturer's approval of the patching materials compatibility with their anode system and any special treatment requirements and installation instructions. The Contractor shall contact the manufacturer of the anodes to gain a full understanding of any special treatments that will be required and the process to properly install the anodes. The concrete patching material shall be as shown on the plans or as approved by the Engineer. Any grout used for grout beds or encapsulation of anodes shall have compressive strength equivalent to the original deck concrete per as-built drawings.

CONSTRUCTION REQUIREMENTS

Anodes shall be installed the same day as preparation and cleaning of steel reinforcement to bright metal at the anode tie wire connection. The anode units, in cementitious patching material, shall be pre-wet to achieve a saturated surface dry condition, and the repair shall be completed while the anodes are in this condition.

Anodes used with patching material having resistivity greater than 15,000 Ohm-Centimeters (Ohm-cm) or not meeting compatibility requirements shall be specially treated and installed in accordance with manufacturer recommendations.

REVISION OF SECTION 601 GALVANIC ANODES

Galvanic anodes shall be installed in accordance with manufacturer's recommendations. Anodes shall be placed in each patch, 18 to 24 inches apart on the perimeter, based on rebar spacing. A minimum of one anode shall be placed in each patch and may be placed in the middle of the patching material area if the spacing requirement cannot be met. Each anode shall have a minimum 1.5 inch top cover to the surface of the new concrete deck patch and a 1 inch minimum side and bottom clear cover.

Galvanic anodes shall be secured with anode tie wires as close as possible to the patch edge while achieving minimum cover requirements. The tie wires shall be wrapped around the cleaned reinforcing steel and twisted tight to allow little or no free movement.

Prior to placing new concrete, galvanic anodes shall be installed in accordance with the manufacturer's recommendations and inspected for proper connection and continuity to reinforcing steel.

(a) Electrical Connection and Continuity.

Electrical connection and continuity between anode tie wire and reinforcing steel shall be confirmed by measuring DC resistance (ohm) or potential with a multi-meter. Electrical connection and continuity is acceptable if the DC resistance measured with a multimeter is less than 1 ohm or the DC potential is less than 1 mV.

All intersections of reinforcing steel shall provide electrical continuity. The Contractor shall confirm continuity of at least three intersections per repair area on each structure or as directed by the Engineer. Intersections with visible separation or lack of continuity shall be cleaned and/or tied with bare steel tie wire to achieve continuity. Additional continuity testing will be required as directed by the Engineer. Electrical continuity within a repair area is acceptable if the DC resistance measured with a multimeter is less than 1 ohm or the potential is less than 1 mV.

The Contractor shall furnish the Department with a multimeter to independently check the electrical connection. The multimeter shall become the property of the Department.

METHOD OF MEASUREMENT

Galvanic Anodes will be measured as the actual quantity installed and accepted. The Contractor may stockpile material at their own risk. All unused galvanic anodes shall remain property of the Contractor. CDOT will not purchase leftover materials or pay any restocking fees.

BASIS OF PAYMENT

The accepted quantities of Galvanic Anodes will be paid for at the contract unit price.

Payment will be made under:

Pay Item	Pay Unit
Galvanic Anodes	Each

Payment for Galvanic Anodes will be full compensation for all labor, equipment, materials, and incidentals required to complete the item.

**REVISION OF SECTION 601
GALVANIC ANODES**

Electrical continuity tie wiring and testing will not be measured and paid for separately, but shall be included in the work.

The multimeter will not be measured and paid for separately, but shall be included in the work.
If additional anodes are required during construction, the additional anodes will be paid for at the original Contract unit price.

Any special treatment or installation of the anodes that is required by anode supplier due to the type of patching material used, including but not limited to, grout beds between substrate and anode, or grout encapsulation of the anodes, will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 608
SIDEWALKS AND CURB RAMPS

Section 608 of the Standard Specifications is hereby revised for this project as follows:

DESCRIPTION

Subsection 608.01 shall be revised to include the following:

This work consists of the construction of concrete sidewalks and curb ramps in accordance with these specifications and in conformity with the lines and grades shown on the plans or established.'

Concrete Curb Ramp construction shall conform to the requirements of the City and County of Denver's Standard Details for Curb Ramps (Details 7.0 through 7.7)

MATERIALS

Delete Subsection 608.02 and replace with the following:

Materials shall meet the requirements specified in the following subsections:

Joint Fillers 705.01

Concrete for sidewalks, curb ramps and bikeways shall be Class "P, or optional B or D for sidewalks or ramps", as specified in subsections 601.02 and 601.03.

All concrete used for sidewalks, and curb ramps shall be reinforced with polypropylene fibers. Polypropylene fibers shall be FIBERMESH or FORTA FIBRE. Length of fibers shall be as recommended by the manufacturer. Add 1.5 pounds FIBERMESH or FORTA FIBRE per cubic yard of concrete.

ASTM C-135 cure+seal shall be applied to all paving and flatwork placed September 1 through April 1 to minimize damage from de-icing chemicals.

Bituminous material for sidewalks, bikeways and curb ramps shall meet the requirements of revised sections 401 & 403.

CONSTRUCTION REQUIREMENTS

Subsection 608.03 shall be revised to include the following:

Where excavation to the finished grade elevation results in a sub grade of unsuitable soil, the Project Manager may designate the unsuitable material to be removed and replaced with approved material. Removal of unsuitable material will not be measured and paid for separately but included in the work; backfill shall be in accordance with Revision of Section 203.05(c) and backfilled with Aggregate Base Course (Class 6), or other material approved by the Project Manager.

Contractor shall provide a Jointing Layout Plan for review with the Project Manager two weeks prior to concrete installation. Joints have typically been called out on drawings and should be used as a starting point for this Jointing Layout Plan. Additional jointing will be necessary for Best Practices of concrete installation and unforeseen field conditions. Contractor shall accommodate this as necessary.

REVISION OF SECTION 608
SIDEWALKS AND CURB RAMPS

Subsection 608.03(d) shall include the following:

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

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

Subsection 608.03(e) shall include the following:

For Bikeways, control joints shall be zipstrip or sawcut to a minimum depth of 1/4 of the total slab thickness and no greater than 1/4 inch wide. Control joints shall be spaced at 10 feet on center or as noted on the plans. Any damage to the concrete such as spalling, dislodging of aggregate particles, or cracking will be repaired by the Contractor at no additional cost to the Project. If said damage cannot be adequately repaired to the satisfaction of the Project Manager, the Contractor shall remove and replace the damaged concrete at no additional cost to the Project.

Subsection 608.03 (g) Protection of New Concrete shall be added as follows:

(g) *Protection of New Concrete.* 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 Project Manager, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Subsection 608.05 shall include the following:

Curb ramp type 4 shall be measured and paid for as concrete curb ramp.

BASIS OF PAYMENT

Pay Item	Pay Unit
Concrete Sidewalk	SY

**REVISION OF SECTION 609
CURB AND GUTTER**

Section 609 of the Standard Specifications is hereby revised for this project as follows:

MATERIALS

Subsection 609.02 shall include the following:

In the first paragraph, reference to Section 703.07, Bed Course Material, shall be deleted.

Subsection 609.02, Paragraph 2 shall be deleted and replaced with the following:

Concrete shall conform to the requirements for Class "P" concrete as specified in subsections 601.02 and 601.03. AASHTO M 43 Size 57 or 67 aggregate shall be used, and a maximum slump of 4" will be permitted.

CONSTRUCTION REQUIREMENTS

Subsection 609.03(d) shall include the following:

Sections of curb and gutter with honeycombed concrete facing, or which develop random cracking or spalling shall be removed and replaced, or repaired in a satisfactory manner approved by the Engineer, by the Contractor at his expense.

Subsection 609.03(i) shall include the following:

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

Subsection 609.03 (f) shall be revised to include the following:

Concrete shall not be left exposed for more than 1/2 hour between the time finishing is completed and commencement of curing treatment unless approved by the Engineer. All edges of concrete exposed by the removal of forms shall be immediately protected with the Contractor's method of curing treatment.

It shall be the Contractor's responsibility to protect the concrete from the elements and physical damage. Any concrete showing any signs of exposure to precipitation, flowing water or freezing, or showing any signs of physical damage from pedestrians, bicycles, motor vehicle traffic, or vandalism shall be removed and replaced by the Contractor at his expense.

Subsection 609.03(j) Protection of New Concrete shall be added as follows:

(j) Protection of New Concrete. 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 Project Manager, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Subsection 609.04 shall be added as follows:

ASTM C-1315 cure+seal shall be applied to all paving and flatwork concrete placed Sept 1 thru April 1st to minimize damage from deicer chemicals.

**REVISION OF SECTION 609
CURB AND GUTTER**

**METHOD OF MEASUREMENT
BASIS OF PAYMENT**

Subsection 609.07 shall include the following:

Pay Item	Pay Unit
Curb and Gutter	LF

In Subsection 609.07, delete the third paragraph and replace it with the following:

The unit cost bid shall include all labor, equipment and materials required to complete the work, including but not limited to: forming, subgrade preparation, bed course material, joints, etc.

Aggregate Base Course material will not be paid for separately, but shall be included in the work.

REVISION OF SECTION 625 CONSTRUCTION SURVEYING

Section 625 of the standard specifications is hereby revised as follows:

Delete section 625 and replace with the following:

DESCRIPTION

625.01 This work consists of the construction surveying, calculating, and staking necessary for the construction of all elements of the project. The work shall be done under the supervision of a Professional Land Surveyor (PLS) who is licensed in the State of Colorado.

Locating, preserving, referencing, installing and restoring land monuments such as Primary Control monuments from which the Right of Way or any land boundary will be calculated, described or monumented, Public Land Survey System (PLSS) monuments, General Land Office (GLO) monuments, Bureau of Land Management (BLM) monuments, Mineral Survey (MS) monuments, Right of Way (ROW) monuments, property boundary monuments and offsets, range points, benchmarks, easement monuments, and other monuments that are required by law or regulation to be established by a PLS, and the determination of any land boundary, shall be done under the supervision of a Professional Land Surveyor (PLS) who is licensed in the State of Colorado.

MATERIALS AND EQUIPMENT

625.02 The Contractor shall furnish all personnel, survey equipment, safety equipment, materials, and traffic control necessary to perform the required construction surveying and staking. All surveying equipment, including Electronic Distance Meters (EDM), total stations, theodolites, levels, rods, tapes, tripods, tribrachs, and Global Positioning System (GPS) receivers and equipment.

If any survey equipment is found to be functioning outside the manufacturer's specified tolerance, certification from an approved repair facility showing that the instruments have been repaired, properly adjusted, or both if necessary shall be included in the survey records and submitted to the City Surveyor's Office before being used.

CONSTRUCTION REQUIREMENTS

625.03 A Construction Survey Conference shall be held with the City Surveyor's Office prior to performing any surveying work under this section. The Contractor's Surveyor (PLS) and Party Chief shall attend. A Construction Survey Checklist shall be completed and signed by the City Surveyor's Office and the contractor.

The Contractor shall check and verify all established Primary horizontal and vertical control points.

REVISION OF SECTION 625 CONSTRUCTION SURVEYING

All survey records generated shall be the property of the City and shall be available to the City Surveyor's Office for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance.

Electronic formats may be acceptable, please coordinate with the City Surveyor's Office.

Copies of any new Monument Records filed by the PLS with the State Board of Registration shall be submitted to the City Surveyor prior to filing.

625.04 Contractor Surveying. The Contractor's PLS shall perform all construction surveying and staking that is necessary for construction of the project.

625.05 Staking. It is the responsibility of the Contractor's PLS to adhere to industry standards and acceptable practices in regards to staking. Any restaking will be the responsibility of the Contractor's PLS at no cost to the City.

625.06 Accuracy and Tolerances. It is the responsibility of the Contractor's PLS to adhere to industry standards and applicable standards with regard to horizontal and vertical accuracy tolerances.

625.07 Responsibility and Inspection. Supervision and coordination of construction surveying and staking is the Contractor's responsibility. The City Surveyor's Office or Project Manager may inspect the Contractor's surveying; however such inspection will not relieve the Contractor of any responsibility for accuracy or completeness of work. All Contractor surveying inaccuracies, errors, or omissions shall be corrected at the Contractor's expense.

625.08 Reset Monuments and Stakes. Survey monuments, benchmarks, and other significant stakes that are damaged, destroyed, or made inaccessible by the progress of construction shall be replaced, transferred or reestablished at the Contractor's expense.

Locating, preserving, referencing, installing and restoring land monuments as described in 625.01, shall be done in accordance with Section 629, under the supervision of a PLS who is experienced and competent in Right of Way and boundary surveying and licensed in the State of Colorado.

625.09 Changes. All changes in lines and grades required by field conditions and all discrepancies in grades, alignment, location or dimensions detected by the Contractor shall be immediately submitted to the Project Manager in writing. No changes in given data or plans will be allowed unless approved by the Project Manager in writing. All changes shall be documented by the contractor.

625.10 Pay Quantities Measurements. The Project Manager will perform all interim and final measurements deemed necessary by the City to determine contract pay quantities. The Contractor shall establish and maintain Control points and stationing as required for these measurements.

**REVISION OF SECTION 625
CONSTRUCTION SURVEYING**

METHOD OF MEASUREMENT

625.11 Survey Records. Survey records shall be completed as the work is done. Field survey notes for construction surveying and checking by the Contractor shall be recorded in survey records in conformance with industry standards and acceptable practices.

All survey records generated shall be the property of the City and shall be available to the City Surveyor's Office or the Project Manager for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance. All survey records shall be stamped with the seal of, and signed by, the responsible PLS.

Electronic submittal of survey records may be acceptable, please coordinate with the City Surveyor's Office.

As-built surveys as noted on the Survey Tabulation Sheet are required.

625.12 Construction surveying will not be measured but will be paid for on a lump sum basis

**REVISION OF SECTION 625
CONSTRUCTION SURVEYING**

BASIS OF PAYMENT

625.13 Payment for construction surveying will be the contract lump sum bid and will be full compensation for all surveying work necessary to complete the project to include all resetting of stakes, marks, monuments and preparing survey documentation as required.

Partial payment for construction surveying, as determined by the Project Manager, will be made as the work progresses. The Contractor shall submit a schedule of estimated contractor construction surveying time as required on the Survey Tabulation Sheet before the first partial payment is made. Copies of the Survey Records for all completed survey work shall be submitted to the Project Manager prior to payment of the monthly estimate.

Before final payment is made, the following two items shall be completed, bear the seal and signature of the responsible PLS identified in Section 625.01, and have copies submitted to the Project Manager for review:

1. All Survey Records
2. Supplemental or amended Project Control Diagram (a copy of which shall be submitted to the Project Manager)

Payment will be made under:

Pay Item	Pay Unit
Construction Surveying	Lump Sum

Partial payments for the pay item construction surveying will be made as the work progresses. These partial payments will be made as follows:

When 5 percent of the original Contract amount is earned, 25 percent of the amount bid for this item will be paid.

When 10 percent of the original Contract amount is earned, 40 percent of the amount bid for this item, less all previous payments, will be paid.

When 25 percent of the original Contract amount is earned, 50 percent of the amount bid for this item, less all previous payments, will be paid.

When 75 percent of the original Contract amount is earned, 90 percent of the amount bid for this item, less all previous payments, will be paid.

When 100 percent of the original Contract amount is earned, 100 percent of the amount bid for this item, less all previous payments, will be paid.

For purposes of Construction Traffic Control Lump Sum, the term "original Contract amount" as used above, shall mean the amount bid for the construction items on this Contract, not including the amounts bid for Clearing & Grubbing, Mobilization, Construction As-Builts and Construction Traffic Control.

SECTION 628 CONSTRUCTION AS-BUILTS

Section 628 of the Standard Specifications is hereby added for this project as follows:

DESCRIPTION

628.01 Per Section 403.2 of the General Contract Conditions “Contractor must maintain a set of Contract Drawings and Technical Specifications in good condition at the Work site for the purpose of recording "as-built" conditions in order to develop a record of the construction of the Work. On this set, the Contractor shall daily record all changes and deviations in a neat and legible manner. Any deviation between Contract Drawings and Technical Specifications and the Work actually done, no matter how insignificant, must be recorded. Of special concern is that all underground utility structures encountered in performing the Work be correctly located on such Drawings by means of physical ties or dimensions to permanent monuments or structures. When the Work is completed, the Contractor shall deliver this single set of Contract Drawings and Technical Specifications to the Project Manager. These Drawings must be submitted to and approved by the Project Manager before final payment can be made.”

The above referenced record of construction set shall be known as the “As-Built Drawings”.

CONSTRUCTION REQUIREMENTS

628.02 A final set of red-lined drawings shall be submitted by the Contractor on a clean, full size set of project plans for As-Built purposes. When the Work is completed, the Contractor shall deliver this single set of As-Built Drawings to the Project Manager for approval.

628.03 The minimum required information on an As-Built Drawing set is as follows:

- Coversheet with vicinity map and index shall be stamped in large bold text “As Constructed” and signed by the Contractor.
- Coversheet statement indicating NAVD88 benchmark location, name and elevation.
- Each sheet shall be stamped in large bold text “As Constructed”.
- As-Built construction conditions indicated by single strikeout of design date and insert of new.
- Actual length of installed pipe, type, diameter, and slope with invert elevations.
- Location, rim and invert elevations, size, and type of all storm and sanitary structures (manholes, inlets, catch basins, special structures, etc....).
- Location of restored service connections (showing distances from downstream manhole)
- Field recorded length of rehabilitated segments (face of manhole to face of manhole)
- Elevations or inverts of existing structures at beginning and/or end of improvement

**SECTION 628
CONSTRUCTION AS-BUILTS**

- 628.04** Required information on ponds, detention structures and other special structures to also be shown on or included with As-Built Drawings:
- City monument tie-out records and Survey Plat (post construction) as required by City Surveyor.

METHOD OF MEASUREMENT

- 628.05** The Contractor shall furnish all personnel (including Professional Engineering and/or Surveying) and materials necessary to perform the As-Built Drawing submittal and approval process as required and these quantities will not be measured but will be paid for on a lump sum basis.

BASIS OF PAYMENT

- 628.06** The accepted quantities of field survey/plan submittal & approval will be paid for on a lump sum basis, which shall be full compensation for the entire Project. A final set of red-lined drawings shall be submitted by the Contractor on a clean, full size set of project plans for As-Built purposes prior to processing final payment and releasing remaining retainage.

Pay Item	Pay Unit
Construction As-Builts	Lump Sum

Providing inaccurate or incomplete record information on the As-Built drawings is reason for withholding of final payment as outlined in the General Contract Conditions.

Partial payments for the pay item construction as-builts will be made as the work progresses. These partial payments will be made as follows:

When 5 percent of the original Contract amount is earned, 25 percent of the amount bid for this item will be paid.

When 10 percent of the original Contract amount is earned, 40 percent of the amount bid for this item, less all previous payments, will be paid.

When 25 percent of the original Contract amount is earned, 50 percent of the amount bid for this item, less all previous payments, will be paid.

When 75 percent of the original Contract amount is earned, 90 percent of the amount bid for this item, less all previous payments, will be paid.

When 100 percent of the original Contract amount is earned, 100 percent of the amount bid for this item, less all previous payments, will be paid.

For purposes of Construction Traffic Control Lump Sum, the term “original Contract amount” as used above, shall mean the amount bid for the construction items on this Contract, not including the amounts bid for Clearing & Grubbing, Construction Surveying, Mobilization and Construction Traffic Control.

REVISION OF SECTION 630 CONSTRUCTION ZONE TRAFFIC CONTROL

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

Subsection 630.10 shall include the following:

All construction signing shall be in conformance with MUTCD and be installed in accordance with CDOT Standard Drawing S-630-1. Traffic control devices and barricades must be kept clean and in good working order at all times. All flaggers and traffic control supervisors shall be certified per Specifications 630.10 and 630.13.

All advanced construction signing shall be installed prior to any construction activity and remain in place for all phases of construction. Road Work advance sequence signs shall be reset as required to match current locations of initial traffic control devices.

Traffic lanes through construction areas shall be maintained with a clear width of at least 10 feet per lane. Pavement marking paint shall be used for temporary pavement marking. Temporary pavement markings shall be in full conformance with the project traffic control plans. Temporary pavement markings shall be in place prior to opening the roadway to traffic. Prior to the start of a subsequent phase, pavement markings from the previous phase shall be removed if they conflict with markings required by the subsequent phase. Contractor shall replace faded markings during individual phases as directed by the Engineer.

The Contractor shall provide all temporary striping. Removal of pavement marking shall be accomplished by heat application (temporary stripes), water blasting, or sandblasting as necessary during construction. Painting existing markings black as a means of obliteration shall not be approved.

Concrete barrier (temporary) deployed during construction shall be tapered such that uncovered end sections are outside the clear zone in accordance with the AASHTO "Roadside Design Guide." If it is not possible to deploy barrier such that clear zone requirements are met, Contractor shall provide temporary impact attenuators to cover all exposed barrier ends.

During non-construction periods (evenings, weekends, holidays, etc.), all work shall be adequately protected to insure the safety of vehicular and pedestrian traffic. All excavated areas must be securely enclosed with snow fence or other material meeting the approval of the Engineer.

The Contractor shall be allowed to work between the hours of 7:00 AM to 7:00 PM. Monday through Friday. The Contractor will not be permitted to do any work between the hours of 6:30 AM and 9:00 AM and 3:30 PM to 6:00 PM Monday through Friday that interferes with traffic. The Contractor may be required to perform certain construction activities between the hours of 7:00 PM and 5:30 AM as approved by the Engineer. Weekend work will be allowed with the prior written approval of the Engineer in combination with the possession of all required permits.

REVISION OF SECTION 630 CONSTRUCTION ZONE TRAFFIC CONTROL

Multilane closures in a singular direction are not permitted on weekdays between 7:00 AM to 9:00 AM in the southbound direction and between 4:00 PM to 6:00 PM in the northbound direction.

Work that interferes with traffic will not be permitted during any of the following times: 1) on any day of a 3-day or 4-day holiday weekend; or 2) after 12:00 noon on the day preceding such holiday weekend unless approved by the Engineer. Holidays on which this restriction applies include all banking holidays observed in Colorado. Also included are the days before Christmas and New Year's Day whenever the day before either holiday occurs on a Thursday, Friday or Monday; and Fridays whenever Friday is the day after Christmas, New Year's Day or Thanksgiving Day.

Traffic shall be carried on paved surfaces at all times except as otherwise provided in the Contract or approved by the Engineer.

The Contractor shall cooperate fully with the Engineer and others in the handling of traffic. All lane closures shall be subject to the approval of the Engineer. The Contractor shall inform the Engineer of his intent to close any lane at least 24 hours prior to closing the lane. Lane closures will not be allowed to remain in perpetuity during a given work shift unless utilized continuously for the purpose for which they were setup.

The Contractor shall obtain all required access and construction permits from the City and County of Denver, prior to initiating work within right of way.

The Contractor shall not be permitted to have construction equipment or materials in the lanes open to traffic at any time, unless directed. All personal/employee vehicle and construction equipment parking is prohibited when it conflicts with safety, access or the flow of vehicular, bicycle or pedestrian traffic.

The contractor and subcontractors shall equip their construction vehicles with flashing amber lights visible from all directions.

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

Access to all roadways, side streets, walkways, alleyways, driveways and hike/bike paths must be maintained at all times unless otherwise approved by the Engineer. Access to all individual properties shall be maintained at all times unless otherwise approved by the Engineer. The Contractor shall be required to coordinate temporary closures of all private driveways with property owners adjacent to the construction area. Asphalt paving that may be required for sidewalk, bike path, or bridle path detours will not be measured and paid for separately but shall be included in the cost of the work.

Subsection 630.10(a)(6) shall include the following:

The Contractor shall comply with OSHA requirements for protection of construction workers ("Workers on Foot").

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

Subsection 630.11 shall include the following after the first paragraph:

The Contractor's Superintendent and all others serving in a similar supervisory capacity shall have completed a CDOT-approved two-day Traffic Control Supervisor training as offered by the CCA. The one-day ATSSA Traffic Control Technician (TCT) training along with the two-day ATSSA Traffic Control Supervisor training will serve as an alternate. If the alternate is chosen, the Contractor shall provide written evidence that at least an 80 percent score was achieved in both of the two training classes. The certifications of completion or certifications of achievement for all appropriate staff shall be submitted to the Engineer at the preconstruction conference.

Subsection 630.18 shall include the following:

Pay Item	Pay Unit
Construction Traffic Control	Lump Sum

Lump sum payment for Construction Traffic Control will be full compensation for adherence to relevant permits, design, preparation of the Construction Traffic Control method of handling traffic, labor, materials, tools and equipment required for Construction Traffic Control.

Partial payments for the pay item construction traffic control will be made as the work progresses. These partial payments will be made as follows:

When 5 percent of the original Contract amount is earned, 25 percent of the amount bid for this item will be paid.

When 10 percent of the original Contract amount is earned, 40 percent of the amount bid for this item, less all previous payments, will be paid.

When 25 percent of the original Contract amount is earned, 50 percent of the amount bid for this item, less all previous payments, will be paid.

When 75 percent of the original Contract amount is earned, 90 percent of the amount bid for this item, less all previous payments, will be paid.

When 100 percent of the original Contract amount is earned, 100 percent of the amount bid for this item, less all previous payments, will be paid.

For purposes of Construction Traffic Control Lump Sum, the term "original Contract amount" as used above, shall mean the amount bid for the construction items on this Contract, not including the amounts bid for Clearing & Grubbing, Construction Surveying, Mobilization and Construction As-Builts .

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 Traffic Control Plan (TCP) for this project are included in the following:

- (a) Section 630 of the Standard Specifications.
- (b) Schedule of Construction Traffic Control Devices.
- (c) Tabulation of Traffic Engineering Items included in the plans for this project.
- (d) Latest revised Standard Plan S-630-1 (05/03/2019), Traffic Controls for Highway Construction and Standard Plan S-630-2.
- (e) Manual on Uniform Traffic Control Devices for Streets and Highways.

Special Traffic Control Plan requirements for this project are as follows:

- (a) The Contractor shall be responsible for preparing all Method of Handling Traffic (MHT) plans.
- (b) The Contractor shall conform to the *Colorado Work Zone Best Practices Safety Guide*, Latest Edition, which is available under the 'Work Zone Best Practices 2007' link at:
<http://www.coloradodot.info/library/traffic-manuals-guidelines>
- (c) The Contractor shall design an MHT that facilitates orderly and efficient project completion. The Contractor shall be allowed two full weekend closures provided that those two weekends do not coincide with any major events in the area. Nighttime phasing may include one lane open for one-way traffic with detours provided for the opposite direction.
- (d) All personnel/employee vehicle and construction equipment parking are prohibited when it conflicts with safety, access or the flow of traffic.
- (e) 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.
- (f) The Contractor shall provide traffic control devices that are in good working order and clean condition.
- (g) The Contractor and subcontractors shall equip their construction vehicles with flashing amber lights on vehicles and equipment shall be visible from all directions.
- (h) The constructor 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 Project Manager or Project Manager's designee.
- (i) During non-construction periods (nights) all work shall be adequately protected to insure the safety of vehicular and pedestrian traffic, as detailed in the Contractor's MHT.

TRAFFIC CONTROL PLAN – GENERAL

- (j) For information on working hours refer to Section 306 of City and County of Denver's 'Standard Specifications for Construction, General Contract Conditions ', 2011 Edition.
- (k) The Contractor shall coordinate all the work on the roadway during any special event with the Project manager or Project Manager's designee.
- (l) Contractor shall obtain all required access and construction permits from the City & County of Denver prior to initiating work along City and county of Denver's right of way.
- (m) The Contractor shall coordinate all street occupancy, street cut or construction permits with Right of Way Services Construction Project 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 Project Manager prior to permit application.
- (n) All lane closures shall be subject to the approval of the Project Manager or Project Manager's designee. Requests for such lane closures shall be made at least three weeks in advance of the time the lane closure is to be implements. Lane closures will not be allowed to remain unless utilized in continuum for the duration of each working period.
- (o) Contractor shall coordinate with all tenants affected by alley and/or access closures two weeks prior to closure.
- (p) All construction vehicles shall remain on paved surfaces at all times.
- (q) RTD requires a three-day notification for all bus stop closures. All requests need to be sent to RTD Sign Department, Bus,Stop@RTD-Denver.com, (303)299-6563 or (303)299-6561, Emergency closures should be sent to RTD immediately.
- (r) All costs incidental to the foregoing requirements shall be included in the original contract prices for the project and will not be measured and paid for separately.

RESTRICTED WORK TIMES FOR PEAK TRAFFIC

Work performed and material placed that interferes with traffic during the times and in the locations that the roadway is specified to remain open will not be paid for unless the work is directed by the Project Manager to be done during those times.

TRAFFIC CONTROL PLAN – GENERAL

GENERAL TIME RESTRICTIONS

No work shall be performed which interferes with the flow of traffic on streets during the peak traffic hours of 5:30 a.m. to 9:00 p.m.

RESTRICTED WORK TIMES FOR SPECIAL EVENTS

Per the Project Manager's discretion, contract time may be extended on days during which special events interfere with the Contractor's normally scheduled activities, such that the resulting delay affects the ultimate completion of the project.

CONSTRUCTION PHASING, DETOUR PLANS AND CONSTRUCTION TRAFFIC CONTROL PLANS

A proposed construction phasing plan for the construction of the project and the maintenance of traffic is shown in the plans. Stop and start dates for each phase will not be necessary by coincident, but overlap of phases may occur subject to the Contractor's production rates and scheduling

If the Contractor proposes alternate phasing plans, he shall submit a written proposal to the Project Manager for approval seven working days prior to commencement of work. The proposal shall be signed and sealed by a Professional Engineer registered in the State of Colorado.

The Contractor is responsible for developing construction traffic control plans and detour plans. These shall be signed and sealed by a Profession Engineer registered in the State of Colorado and be submitted to the Project Manager for review a minimum of 72 hours before commencement of work.

CONSTRUCTION ACCESS

Construction access to and from all roadways is prohibited unless approved by the Project Manager or otherwise specified in the Contract.

As part of the MHT the Contractor shall prepare, and submit to the Project Manager for approval, a Construction Access Plan. This plan shall contain, but is not limited to, a diagram showing access to and from each affected roadway; location and duration of each signing and flagger position; and a narrative explanation of the plan. The Project Manager shall approve the Construction Access Plan prior to the Contractor beginning any work.

The Construction Access Plan shall address maintenance of all accesses to the project, including access to the Project Manager's field facilities. Access to all work areas will be limited to that which can be safely accomplished without hazard to traffic, and which does not interfere with traffic during the times specified. Access will not be allowed to any work areas where such access requires the implementation of traffic control measures that interfere with the flow of traffic, except where such implementation is in compliance with the working limitations in the Contract.

TRAFFIC CONTROL PLAN – GENERAL

ACCESS MAINTENANCE

Unless otherwise included in the plans or directed by the Project Manager, the Contractor shall maintain access to all roadways, side streets, walkways, alleyways, driveways, and other pathways at all times.

As part of the MHT the Contractor shall develop, and submit to the Project Manager for approval, an Access Maintenance Plan. This plan shall be coordinated with, and approved by, all affected owners, property manager or tenant. The Project Manager's approval of the Access Maintenance Plan is dependent on the Contractor acquiring signatures from each affected owner, property manager or tenant. If the Contractor is unable to obtain approval and signatures, documentation of "good faith efforts" to obtain said approval and signatures shall be submitted.

All accesses shall be maintained on surfaces equal to or better than those existing at the time the access is first disturbed. For short periods of time only, as allowed by the Project Manager, access may be maintained on aggregate base course surfaces. All costs incidental to the maintenance of access will not be paid for separately, but shall be included in the work. Utilization of materials to be incorporated permanently into the work may be permitted, however, any degradation or other contamination, or destruction shall be corrected at the Contractor's expense prior to acceptance.

CONSTRUCTION CLEAR ZONE

The construction clear zone for the project is defined as follows:

- (a) 1.5 feet from the edge of the driving lane for streets under construction or laneage restrictions.

The construction clear zone shall contain no immediate vertical drop offs in excess of 1 inch. The construction clear zone shall contain no unprotected collision hazards. All parking shall be outside of the clear zone.

Traffic control devices shall not be stored within the construction clear zone, except behind guardrail, unless laid flat; nor shall traffic control devices be stored in landscaped areas unless otherwise designated or permitted.

PEDESTRIAN AND BICYCLE SAFETY

The Contractor shall maintain a protected route for pedestrians and bicyclists at all times during construction.

The Contractor shall cover and fence all open trenches, manholes, inlets, etc. during non-construction work hours to protect the public.

MISCELLANEOUS

The Contractor shall obtain an occupancy permit from the City and County of Denver for construction activities on Broadway and 16th Avenue.

TRAFFIC CONTROL PLAN – GENERAL

The Contractor shall remove and reset all existing signs prior to performing any work that affects those signs. All signs damaged due to the Contractor operations shall be replaced in kind or repaired by the Contractor at no cost to the project. An inventory of all existing signs shall be made with the Project Manager prior to beginning work.

Whenever the Contractor removes, obliterates, or covers in any way, pavement markings, they shall be replaced on a daily basis prior to opening affected areas to traffic. All pavement markings shall be in place in accordance with the Contract.

Traffic shall be carried on a paved surface at all times except as otherwise provided or approved by the Project Manager.

During non-working hours, the roadways shall be restored to safe pre-construction travel conditions for the free flow of traffic. All maintenance required to restore the roadways to this condition, including pavement patching, grading, and sweeping shall be done prior to opening the areas to traffic or completing work for the day.

Workers shall not access the work areas by crossing roadways unless proper traffic control or other necessary precautions are provided. Suitable transportation to the work site for personnel whose vehicles are parked off site shall be provided by the Contractor.

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

The Contractor shall equip all vehicles with flashing amber lights visible from all directions.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project, including any additional traffic control items required for haul routes into or away from the project.

If work is performed outside of the exempted hours for construction (from 7 a.m. to 9 p.m. Monday through Friday and 8 a.m. to 5 p.m. on Saturdays and Sundays) per sections 36-6.(b)(7) and 36-7.(5)a., b. and c. of Denver's noise ordinance, Chapter 36 "Noise Control," Denver Revised Municipal Code (DRMC):

- The Contractor shall make a request for a nighttime noise variance as allowed for in section 36-7.(5)c. of the DRMC; request will not be paid for separately but included in the cost of the work.
- The variance process shall be started a minimum of two months prior to the desired start date of any work needing to occur outside of exempted hours.

Noise variance questions should be directed to Paul Riedesel, Department of Environmental Health, Denver Community Noise Program, (Phone 720-865-5410) a minimum of three months prior to the start of the project.

STANDARD SPECIAL PROVISIONS

Standard revisions to applicable CDOT Standard Specifications for Road and Bridge Construction, including revisions, additions, deletions are contained in the Standard Special Provisions. All bids and all construction shall be in accordance with the Standard Special Provisions.

SSP Index 12-13-18
[For 2017 Spec Book]

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Revision of Section 106 – Buy America Requirements	[July 3, 2017]	1
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Revision of Section 106 – Supplier List	[July 3, 2017]	1
Revision of Sections 106 and 601 – Concrete Test Reports	[January 7, 2019]	1
Revision of Section 107 – Water Quality Control	[March 27, 2019]	4
Revision of Sections 107 and 208 – Water Quality Control Under One Acre of Disturbance	[November 2, 2017]	4
Revision of Section 208 Erosion Control	[July 3, 2017]	1
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CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER

**TRANSPORTATION &
INFRASTRUCTURE**

DEPARTMENT OF TRANSPORTATION &
INFRASTRUCTURE

Plans/Drawings

Contract Number: 202053748



Highline Canal Crossing at Holly St. and Iliff Ave.

March 3, 2020

Oversight / NHS

■ NO □ YES

NATIONAL HIGHWAY SYSTEM?

■ NO □ YES

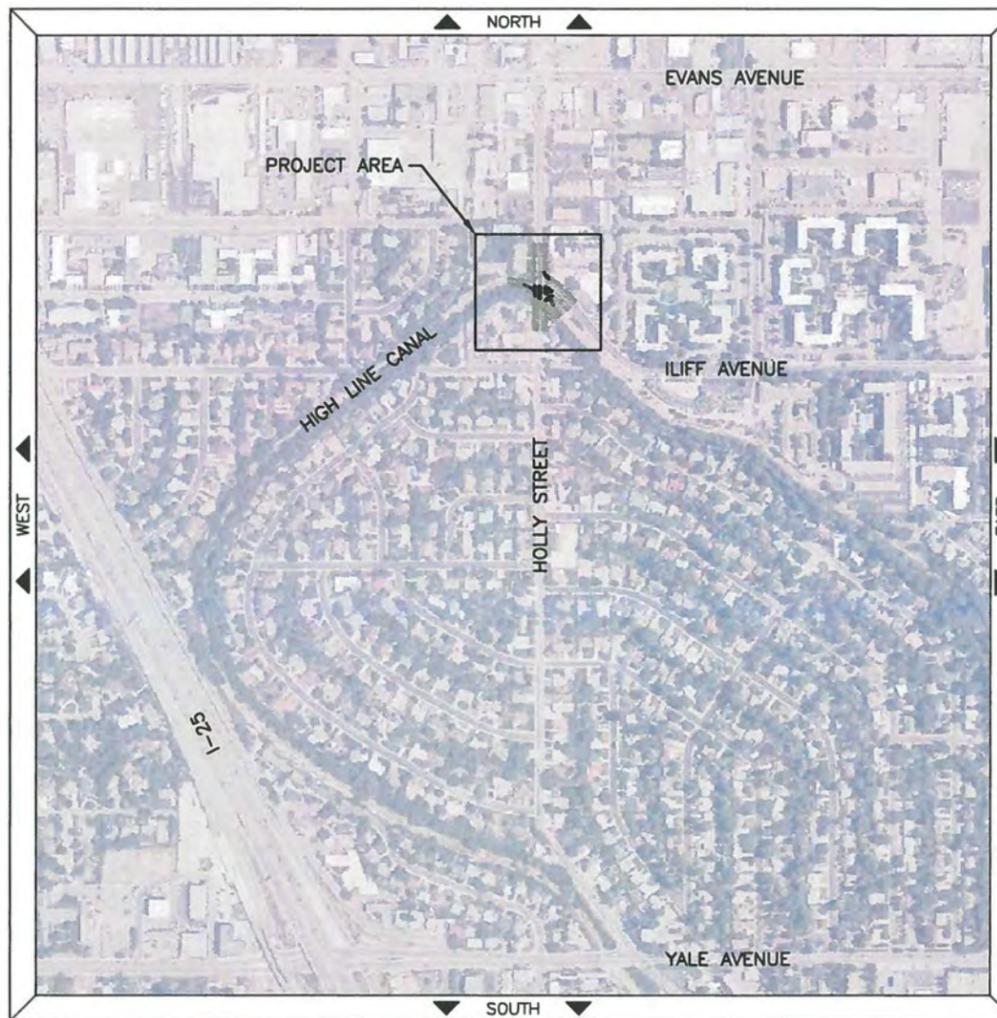
HIGH LINE CANAL CROSSING IMPROVEMENTS AT HOLLY STREET AND ILIFF AVENUE

PWTRN201842077
2018-PROJMSTR-0000485
DENVER, COLORADO

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7	SCD-01	SURVEY CONTROL DIAGRAM
8	ST-01	SURVEY TABULATION
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CITY AND COUNTY OF DENVER
DEPARTMENT OF
TRANSPORTATION AND
INFRASTRUCTURE



APPROVED BY:	
	9.17.19
EXECUTIVE DIRECTOR OF PUBLIC WORKS EULOIS CHECKLEY	DATE
	9.17.19
CITY ENGINEER LESLIE THOMAS	DATE
	9/16/19
DIRECTOR OF ENGINEERING CAPITAL PROJECTS DAVID HUNTSINGER, PE	DATE
	9/10/19
CITY TRAFFIC ENGINEER EMILY GLOECKNER, PE	DATE



Print Date: 7/17/2019	Sheet Revisions <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> <th>Initials</th> </tr> </thead> <tbody> <tr> <td>1/15/19</td> <td>ERA Comments addressed</td> <td>ESC</td> </tr> </tbody> </table>	Date	Comments	Initials	1/15/19	ERA Comments addressed	ESC	DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE 201 WEST COLFAX AVENUE DENVER, CO 80202 PHONE: (720) 913-4501 FAX: (720) 913-4544	As Constructed	HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS TITLE SHEET	Project No./Code PWTRN201842077
Date		Comments	Initials								
1/15/19	ERA Comments addressed	ESC									
File Name: 116235-08DES_TTL01.dwg	No Revisions: Revised: Void:	Designer: SPF Detailer: DAL Subset: ROADWAY	Structure Numbers Sheets: TL-01 OF 1	SCHEDULE A Sheet Number 1							
Horizontal Scale: N/A Vertical Scale: N/A	(R-X)										
6300 South Syracuse Way, Suite 600 Centennial, CO 80111 Phone: 303.721.1440 www.FHUENG.com											

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TRANSPORTATION ENGINEERING STANDARD DRAWINGS

NO.	TITLE
<input type="checkbox"/> 1.0	INDEX OF STANDARD DRAWINGS
<input type="checkbox"/> 1.1	LEGEND
<input type="checkbox"/> 2.0	LOCAL STREET CROSS-SECTION AND STANDARD UTILITY PLACEMENT DETAIL
<input type="checkbox"/> 3.0	COLLECTOR - 2 OR 3 LANE CROSS-SECTION
<input type="checkbox"/> 4.0	ARTERIAL - 4 LANE WITH MEDIAN AND NO PARKING CROSS-SECTION
<input type="checkbox"/> 4.1	ARTERIAL - 4 LANE WITH MEDIAN AND PARKING CROSS-SECTION
<input type="checkbox"/> 4.2	ARTERIAL - 6 LANE CROSS-SECTION
<input type="checkbox"/> 5.0	CURB & GUTTER AND DETACHED SIDEWALK
<input checked="" type="checkbox"/> 5.1	CURB & GUTTER AND ATTACHED SIDEWALK
<input checked="" type="checkbox"/> 5.2	TYPICAL CURB & GUTTER SECTIONS
<input type="checkbox"/> 5.3	SPECIAL USE CURB & GUTTER SECTIONS
<input type="checkbox"/> 5.4	CONCRETE GUTTER OVERLAY
<input type="checkbox"/> 5.5	CURB BULB EXTENSION
<input checked="" type="checkbox"/> 5.6	MONOLITHIC MEDIAN CURB NOSE
<input type="checkbox"/> 6.0	STANDARD RESIDENTIAL CURB CUT
<input checked="" type="checkbox"/> 6.1	STANDARD COMMERCIAL AND MULTI-FAMILY CURB CUT
<input type="checkbox"/> 6.2	CURB CUT CROSS-SECTIONS
<input type="checkbox"/> 6.3	CORNER CLEARANCES & MINIMUM DISTANCES BETWEEN CURB CUTS
<input checked="" type="checkbox"/> 7.0a,b	GENERAL NOTES FOR CURB RAMPS
<input type="checkbox"/> 7.1	CURB RAMP TYPE 1
<input type="checkbox"/> 7.2a	CURB RAMP TYPE 2
<input type="checkbox"/> 7.2b	CURB RAMP TYPE 2 MODIFIED (FOR COMBINATION CURB, GUTTER AND SIDEWALK)
<input type="checkbox"/> 7.3	CURB RAMP TYPE 3
<input checked="" type="checkbox"/> 7.4	CURB RAMP TYPE 4
<input type="checkbox"/> 7.5	DOWNTOWN SIGNALIZED CORNER BLENDED TRANSITION
<input checked="" type="checkbox"/> 7.6a,b	CURB RAMP TRUNCATED DOME PLACEMENT OPTIONS
<input checked="" type="checkbox"/> 7.7	CURB RAMP TYPICAL SECTION
<input type="checkbox"/> 7.8	TYPICAL SIDEWALK TRANSITIONS TO CURB RAMP LANDING
<input type="checkbox"/> 7.9	SIGNAL EQUIPMENT CLEAR ZONE
<input type="checkbox"/> 8.0	INTERSECTION VALLEY GUTTER
<input type="checkbox"/> 8.1	SIDEWALK CHASE DRAIN AND TREAD PLATE
<input type="checkbox"/> 9.0	TYPICAL CONCRETE BUS PULLOUT
<input type="checkbox"/> 9.1	TYPICAL CONCRETE BUS PAD IN ASPHALT ROADWAY
<input type="checkbox"/> 10.0	TYPICAL ALLEY LAYOUT
<input type="checkbox"/> 10.1	ALLEY CUT
<input type="checkbox"/> 10.2	ALLEY CUT (HISTORICAL DISTRICT)
<input type="checkbox"/> 10.3	TYPICAL ALLEY CROSS-SECTION
<input type="checkbox"/> 10.4	ALLEY CURB HEAD
<input type="checkbox"/> 10.5	"L" TYPE ALLEY CONFIGURATIONS
<input checked="" type="checkbox"/> 11.0a-c	GENERAL NOTES FOR CONCRETE PAVEMENT AND PAVEMENT JOINTS
<input checked="" type="checkbox"/> 11.1	CONCRETE NON-ROADWAY JOINTS H AND Z
<input type="checkbox"/> 11.2	CONCRETE ROADWAY JOINTS AND TRANSITIONS A-DA
<input type="checkbox"/> 11.3	CONCRETE ROADWAY JOINTS AND TRANSITIONS DC-L
<input type="checkbox"/> 11.4	CONCRETE ROADWAY JOINTS AND TRANSITIONS SA-X
<input type="checkbox"/> 11.5	CONCRETE ROADWAY JOINT SEALANTS
<input type="checkbox"/> 11.6	CONCRETE ROADWAY JOINTING AT NEW MANHOLES AND ALL INLETS
<input type="checkbox"/> 11.7	CONCRETE ROADWAY JOINTING AT EXISTING MANHOLES
<input type="checkbox"/> 11.8	CONCRETE ROADWAY TYPICAL JOINT LAYOUT
<input type="checkbox"/> 11.9	CONCRETE ROADWAY PANEL REPLACEMENT
<input type="checkbox"/> 11.10	CONCRETE STREET EXPLORATORY HOLES (POTHOLE) TYPICAL REPAIR

TRANSPORTATION ENGINEERING STANDARD DRAWINGS

NO.	TITLE
<input checked="" type="checkbox"/> 12.0	ASPHALT PATCH
<input type="checkbox"/> 12.1	TRENCH PATCH THROUGH EXISTING GRAVEL OR LANDSCAPE MATERIALS
<input type="checkbox"/> 12.2	TRENCH VERTICAL PATCH (ASPHALT) IN MORATORIUM STREET
<input type="checkbox"/> 12.3	TRENCH ("T") PATCH (CONCRETE)
<input type="checkbox"/> 12.4	TRENCH BACKFILL MATERIAL REQUIREMENTS
<input type="checkbox"/> 12.5	TYPICAL ASPHALT PAVEMENT DETAIL
<input type="checkbox"/> 12.6	TYPICAL ASPHALT PAVEMENT DETAIL LIFT THICKNESS CRITERIA
<input type="checkbox"/> 12.7	TYPICAL ASPHALT MIX DETAILS BY TRAFFIC USE OR LIFT POSITION
<input type="checkbox"/> 13.0	TREE PLANTER (RAISED CURB)
<input type="checkbox"/> 13.1	TREE PLANTER (GRATES)
<input type="checkbox"/> 13.2	SIDEWALK CLEAR ZONES
<input type="checkbox"/> 13.3	AMENITY ZONE PERMEABLE PAVERS
<input type="checkbox"/> 14.0	STANDARD CUL-DE-SAC
<input type="checkbox"/> 15.0	RIGHT-OF-WAY SURVEY CONTROL-RANGE POINTS

DATE: 4/17

WASTEWATER STANDARD DETAILS

NO.	TITLE
<input type="checkbox"/> S-301.1	TRENCHING AND BEDDING (SHEET 1)
<input type="checkbox"/> S-301.2	TRENCHING AND BEDDING (SHEET 2)
<input type="checkbox"/> S-350	ENCASEMENT OF SANITARY SEWERS
<input type="checkbox"/> S-401	SHIPLAP JOINTS/TYPE R JOINTS
<input type="checkbox"/> S-450	INLET CONNECTIONS AND PIPELINE CLOSURES
<input type="checkbox"/> S-501.1	PRECAST MANHOLE BARRELS AND TOP SECTIONS
<input type="checkbox"/> S-502	MANHOLE BASE CONSTRUCTION- TYPE A/C
<input type="checkbox"/> S-503	TYPE B MANHOLE
<input type="checkbox"/> S-504.1	TYPE P MANHOLE
<input type="checkbox"/> S-504.2	TYPE P MANHOLE BASE SECTIONS
<input type="checkbox"/> S-520	TYPICAL MANHOLE BASE CHANNELIZATION
<input type="checkbox"/> S-530	MANHOLE OUTSIDE DROP
<input type="checkbox"/> S-550	WATER STOP GASKET
<input type="checkbox"/> S-616.1	SINGLE NO. 16 INLET
<input type="checkbox"/> S-616.2	DOUBLE NO. 16 INLET
<input type="checkbox"/> S-616.3	TRIPLE NO. 16 INLET
<input type="checkbox"/> S-616V	SINGLE, DOUBLE, TRIPLE VALLEY INLET
<input type="checkbox"/> S-620.1	NO. 14 INLET (SHEET 1)
<input type="checkbox"/> S-620.2	NO. 14 INLET (SHEET 2)
<input type="checkbox"/> S-701	24" DIAMETER RING & COVER
<input type="checkbox"/> S-716	GRATE & FRAME - ADJUSTABLE CURB BOX
<input type="checkbox"/> S-750	MANHOLE STEPS

DATE: 8/15

**CITY AND COUNTY OF DENVER
STANDARD DRAWINGS LIST**

NOTE: THE MOST CURRENT CITY AND COUNTY OF DENVER STANDARDS AND DETAILS TO BE USED FOR THE DESIGN AND CONSTRUCTION OF EACH PHASE OF THE PROJECT.

THE STANDARD DRAWINGS/DETAILS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

ALL OF THE STANDARD DRAWINGS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN SHOWN ON PLANS OR NOTED.

TRAFFIC STANDARD DRAWINGS

NO.	TITLE
<input type="checkbox"/> 16.1.0	2011 TRAFFIC ENGINEERING SERVICES
<input type="checkbox"/> 16.1.1	TRAFFIC SIGNAL NOTES
<input type="checkbox"/> 16.1.2	LEGEND/KEY NOTES
<input type="checkbox"/> 16.1.3	SPAN WIRE SIGNAL DESIGN
<input type="checkbox"/> 16.1.4	MOUNTING HARDWARE
<input type="checkbox"/> 16.1.5	LOOP DETECTION
<input type="checkbox"/> 16.1.6	CONDUIT DETAILS
<input type="checkbox"/> 16.1.7	PULL BOXES
<input type="checkbox"/> 16.1.8	SIGNAL POLE FOUNDATION
<input type="checkbox"/> 16.1.9	MAST ARM POLE LOADS
<input type="checkbox"/> 16.1.10	MOUNTING DETAILS
<input type="checkbox"/> 16.1.11	TABLE DATA
<input type="checkbox"/> 16.1.12	LUMINAIRE DETAILS
<input type="checkbox"/> 16.1.13	PEDESTAL POLE DETAILS
<input type="checkbox"/> 16.1.14	POLE FOUNDATION DETAILS
<input type="checkbox"/> 16.1.15	FOUNDATION FOR XCEL FACILITIES
<input type="checkbox"/> 16.1.16	"P" CABINET BASE
<input type="checkbox"/> 16.1.17	"P" CABINET & BASE
<input type="checkbox"/> 16.1.18	"M" CABINET BASE
<input type="checkbox"/> 16.1.19	METER PEDESTAL CABINET DETAILS
<input type="checkbox"/> 16.1.20	METER PEDESTAL CABINET FOUNDATION AND BASE
<input type="checkbox"/> 16.1.21	FLASHING BEACON DETAILS
<input type="checkbox"/> 16.1.22	DRIVER'S FEEDBACK SIGN DETAILS
<input type="checkbox"/> 16.1.23	FLASHING BEACON & SIGN SHEET 1
<input type="checkbox"/> 16.1.24	FLASHING BEACON & SIGN SHEET 2
<input checked="" type="checkbox"/> 16.2.1	CROSSWALK LAYOUT DETAILS
<input checked="" type="checkbox"/> 16.2.2	PAVEMENT MARKING DETAILS SHEET 1
<input checked="" type="checkbox"/> 16.2.3	PAVEMENT MARKING DETAILS SHEET 2
<input type="checkbox"/> 16.2.4	BIKE LANE TYPICAL MARKING DETAILS
<input type="checkbox"/> 16.2.5	CENTRAL BUSINESS DISTRICT PAVEMENT MARKING DETAILS
<input checked="" type="checkbox"/> 16.2.6	SINGLE SIGN POST MOUNTING DETAILS
<input checked="" type="checkbox"/> 16.2.7	MULTIPLE SIGN POST MOUNTING DETAILS
<input type="checkbox"/> 16.2.8	ONE-WAY SIGN PLACEMENT DETAILS
<input type="checkbox"/> 16.2.9	TRAFFIC SIGN UTILITY POLE MOUNTING DETAIL
<input type="checkbox"/> 16.2.10	GROUND MOUNT STREET NAME SIGN INSTALLATION DETAIL
<input type="checkbox"/> 16.2.11	GROUND MOUNT STREET NAME SIGN DETAIL
<input type="checkbox"/> 16.2.12	OVERHEAD STREET NAME SIGNS (INSTALLED PRIOR TO APRIL, 2011)
<input type="checkbox"/> 16.2.13	OVERHEAD STREET NAME SIGNS (INSTALLED AFTER APRIL, 2011)
<input type="checkbox"/> 16.2.14	PARKING METER POST INSTALLATION
<input type="checkbox"/> 16.2.15	BARRICADE DETAILS

DATE: 1/12



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Sheet Revisions			
(R-X)	Date	Comments	Initials

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 FAX: (720) 913-4544

As Constructed
No Revisions:
Revised:
Void:

HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS STANDARD PLANS LIST			
Designer:	DAL	Structure	
Detailer:	DAL	Numbers	
Subset:	ROADWAY	Sheets:	SP-01 OF 1

Project No./Code
PWTRN201842077
SCHEDULE A
Sheet Number 2

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GENERAL

1. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET, OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
3. THE CONTRACTOR SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY ROW AT THE CLOSE OF DAILY OPERATIONS. THE TRAFFIC CONTROL PLAN (TCP) MUST INCLUDE PROTECTIVE MEASURES WHERE MATERIALS AND EQUIPMENT MAY BE STORED IN THE ROW, BUT ENSURE FIVE FEET OF PEDESTRIAN CLEARANCE ON SIDEWALKS. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL IN THE CLEAR ZONE OF THE TRAVELED WAY.
4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PROJECT PERMITS WITH THE CITY & COUNTY OF DENVER AND ARAPAHOE COUNTY THAT ARE ASSOCIATED WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.
5. IF ANY OF THE CONTRACTOR'S OPERATIONS DESTROY OR DAMAGE ANY PROPERTY, PUBLIC OR PRIVATE, THE CONTRACTOR SHALL PROMPTLY REPAIR OR REPLACE SUCH PROPERTY, TO THE SATISFACTION OF THE PROJECT MANAGER, BEFORE THE CITY WILL ACCEPT OR PAY FOR THE WORK PERFORMED UNDER THE CONTRACT. IF THE CONTRACTOR FAILS TO REPAIR OR REPLACE SUCH PROPERTY, THE CITY, AT THE SOLE DISCRETION OF THE MANAGER, MAY UNDERTAKE SUCH REPAIR OR REPLACEMENT AND DEDUCT THE COST OF THE SAME FROM AMOUNTS PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, IN AN AUTOCAD COMPATIBLE FORMAT, TO THE CITY.
7. ALL WORK SHALL CONFORM TO CURRENT CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE LATEST EDITION OF THE CITY STANDARDS SPECIFICATIONS, OR HALT CONSTRUCTION UNTIL THE CONFLICT IS RESOLVED.
8. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL STORM DRAIN INLETS, LATERALS, MAINS AND OTHER STORM RUNOFF APPURTENANCES WITHIN THE PROJECT LIMITS NOT REQUIRING REMOVALS SHALL BE CLEARED OF SEDIMENT AND DEBRIS IN ACCORDANCE WITH DENVER WASTEWATER MANAGEMENT DIVISION STANDARDS. AFTER CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ANY SEDIMENT OR DEBRIS FROM THE STORM SEWER SYSTEM.
9. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY ROW SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.
10. WHERE ROW FENCES MUST BE REMOVED OR CUT TO FACILITATE CONSTRUCTION, APPROVAL MUST FIRST BE GIVEN BY THE CITY. EXISTING ROW/FENCE LINE MUST BE ESTABLISHED BY GOOD SURVEY PRACTICES. FENCES WILL BE REPLACED IN KIND ACCORDING TO CITY FENCING STANDARDS.
11. PROTECTION AND REPLACEMENT OF STREET IMPROVEMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THESE IMPROVEMENTS ARE FULLY COMPLETED AND ACCEPTED BY THE CITY.

SURVEYING

1. PRIOR TO BEGINNING WORK ON THE PROJECT, THE CONTRACTOR'S SURVEYOR SHALL PERFORM A SURVEY TO VERIFY ALL SURVEY CONTROL POINTS, CITY OF DENVER RANGE POINTS, SECTION CORNERS, AND BENCHMARKS AS SHOWN ON THE SURVEY CONTROL DIAGRAM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL LAND SURVEY MONUMENTS DISRUPTED BY CONSTRUCTION ACTIVITIES OR BY NEGLIGENCE ON THE PART OF THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO FOLLOW COLORADO STATE LAW REGARDING SURVEY MONUMENTS. THE CONTRACTOR SHALL RETAIN A COLORADO LICENSED PROFESSIONAL LAND SURVEYOR TO RESET ANY AFFECTED SURVEY MONUMENTS FOR FURTHER INFORMATION CONTACT: PUBLIC WORKS - SURVEY DEPARTMENT

ATTN: CITY SURVEYOR
 201 W. COLFAX AVE.
 DENVER, CO 80202
 720-865-3121

2. AFTER COMPLETION OF THE PAVING OPERATIONS, THE CONTRACTOR SHALL UPGRADE TEMPORARY RANGE POINTS WITH PERMANENT RANGE POINT MONUMENTS AT THE LOCATIONS AS INDICATED ON THE LAND SURVEY CONTROL DIAGRAM. SEE POINT NOS. **XX, XX, XX, AND XX (XX TOTAL)**. MONUMENTS SHALL MEET CURRENT CITY AND COUNTY OF DENVER STANDARDS.

SEE SECTION 629 OF THE SPECIAL PROVISIONS FOR MORE INFORMATION.

3. A SURVEY SHALL BE DEPOSITED WITH THE CITY AND COUNTY OF DENVER PER STATE STATUTE. CITY MONUMENT RECORDS SHALL BE PREPARED FOR ALL RANGE POINTS WITHIN THE PROJECT AND DEPOSITED WITH THE CITY SURVEYOR.
4. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS, OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT AND/OR BOUNDARY MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE C.R.S. SECTION 18-4-508.
5. ALL STATIONS AND OFFSETS SHOWN ON THE PLANS ARE TO THE CONTROL LINES UNLESS OTHERWISE NOTED. THE USE OF CONTROL MONUMENTS FOR CONSTRUCTION STAKING OTHER THAN THOSE SHOWN ON THE PLANS OR APPROVED BY THE PW DEPT IS PROHIBITED, AND USE OF SUCH MONUMENTS IS AT THE CONTRACTOR'S SOLE RISK.
6. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

PROJECT PLANS, SPECIFICATIONS, PERMITS

1. ALL MATERIAL, EQUIPMENT, INSTALLATION AND CONSTRUCTION WITHIN THE ROW SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARD REFERENCES AS APPLICABLE:
 - a. CITY AND COUNTY OF DENVER, STANDARDS AND DETAILS FOR ENGINEERING DIVISION
 - b. STORM DRAINAGE AND SANITARY SEWER CONSTRUCTION DETAIL AND TECHNICAL SPECIFICATIONS
 - c. DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR CONSTRUCTION GENERAL CONTRACT CONDITIONS
 - d. WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS
 - e. TRAFFIC STANDARD DRAWINGS AND TRAFFIC ENGINEERING SERVICES PROJECT SPECIALS
 - f. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD PLANS, (M&S STANDARDS)
 - g. FEDERAL HIGHWAY ADMINISTRATION (FHWA), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO
 - h. AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE
2. THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, ONE COPY OF THE APPROVED PLANS, ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND COPIES OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.
3. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER IMMEDIATELY.

UTILITIES

1. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. RESPONSIBILITIES FOR THE RELOCATION OF UTILITY LINES ARE AS NOTED IN THE UTILITY MATRIX. THE CONTRACTOR SHALL COOPERATE WITH COMPANIES TRYING TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE CITY AND ITS ENGINEERS HARMLESS FOR DAMAGES ARISING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.
3. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST OR REPLACE ANY UTILITIES THAT ARE IMPACTED BY CONSTRUCTION AND ARE DESIGNED TO REMAIN WITHIN THE PROJECT LIMITS.
4. LOCATIONS FOR POTHOLING SHALL BE AS APPROVED BY THE PROJECT MANAGER.

REMOVALS, EXISTING ITEMS, SAW CUTTING

1. ALL ITEMS TO BE REMOVED AND NOT RESET SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
2. SIGNS AND / OR SIGNAL EQUIPMENT DESIGNATED AS REMOVAL ITEMS SHALL BE CAREFULLY REMOVED AND DELIVERED BY THE CONTRACTOR TO THE CITY YARD AT 5440 ROSLYN STREET, BUILDING E. ANY MATERIAL DESIGNATED FOR SALVAGE THAT IS DAMAGED AFTER REMOVAL

SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

3. WHERE IT IS REQUIRED TO REMOVE EXISTING CONCRETE OR ASPHALT, CUTTING SHALL BE DONE TO A NEAT WORK LINE TO FULL DEPTH USING A SAW, CUTTING WHEEL, OR OTHER METHOD APPROVED BY THE PROJECT MANAGER.
4. REMOVAL OF EXISTING CURB AND GUTTER, SIDEWALK, DRIVEWAYS, CURB CUTS, AND OTHER CONCRETE ITEMS THAT ARE ATTACHED OR ADJACENT TO OTHER CONCRETE ITEMS SHALL BE REMOVED TO THE NEAREST JOINT, AS NEEDED TO AVOID DAMAGING THE REMAINING CONCRETE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ADJACENT SIDEWALK DURING CURB AND GUTTER REMOVAL AND SHALL REPLACE DAMAGED SECTIONS AT NO ADDITIONAL COST TO THE PROJECT.
5. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST, OR REPLACE ANY UTILITIES, LANDSCAPING, SPRINKLER SYSTEMS, SIGNS, SIDEWALKS, ETC. THAT ARE IMPACTED BY CONSTRUCTION AND ARE NOT DESIGNATED TO BE REMOVED.

PAVEMENT

1. WHERE NEW CONSTRUCTION IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE TO CREATE A CLEAN CONSTRUCTION JOINT.
2. PATCH ASPHALT PAVEMENT AS NECESSARY TO JOIN NEW GUTTERS WITH EXISTING PAVEMENT.
3. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.

EARTHWORK AND EXCAVATIONS

1. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTION. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE EXPENSE OF THE CONTRACTOR.
2. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED.
3. THE DEPTH OF RECONDITIONING AND FOR THE BASES OF CUTS AND FILLS SHALL BE 6 INCHES. THE PROJECT SPECIFIED MOISTURE DENSITY CONTROL SHALL BE APPLIED FOR THE SPECIFIED DEPTH.
4. MOISTURE DENSITY CONTROL SHALL BE APPLIED FULL DEPTH FOR ALL EMBANKMENTS.
5. DURING EACH PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL SHAPE TO DRAIN AND COMPACT THE WORK AREA TO A UNIFORM CROSS-SECTION. ELIMINATE ALL RUTS AND LOW SPOTS THAT COULD HOLD WATER. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED.
6. ALL WORK SHALL BE PROPERLY BACKFILLED OR PROTECTED PRIOR TO THE END OF THE WORKDAY.
7. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
8. MATERIAL REMOVED FROM ANY PORTION OF THE ROADWAY PRISM MUST BE REPLACED IN LIKE KIND WITH EQUAL OR BETTER COMPACTION. NO SEGREGATION OF MATERIALS WILL BE PERMITTED.



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Horizontal Scale: N/A Vertical Scale: N/A

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Sheet Revisions			
(R-X)	Date	Comments	Initials

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THE MILE HIGH CITY

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 FAX: (720) 913-4544

As Constructed	No Revisions:
Revised:	Void:

HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS GENERAL NOTES			
Designer:	DAL	Structure	Numbers
Detailer:	DAL		
Subset:	ROADWAY	Sheets:	GN-01 OF 3

Project No./Code	PWTRN201842077
SCHEDULE A	Sheet Number 3

CONCRETE

1. IF CONCRETE REPLACEMENT IS NECESSARY, THE ENTIRE AFFECTED SLAB OR PANEL MUST BE REPLACED.
2. THE CONTRACTOR SHALL SELECT AND USE A BOXOUT AT CATCH BASINS, MANHOLES, AND OTHER ROADWAY APPURTENANCES OF SIMILAR AND LARGER SIZE. SEE CCD STD DWG NO. 11.5.
3. SIDEWALK SHALL BE CLASS B/D OR P CONCRETE. THE USE OF ¾ IN (#67) TOP SIZE AGGREGATE IS ALLOWED.
4. BENDER BOARDS (TWO INCH MINIMUM THICKNESS) SHALL BE USED ON ALL CURVES OF LESS THAN 75 FOOT RADIUS.
5. CURB AND GUTTER ANGLE BREAKS SHALL BE SMOOTHED WITH A 2 FT RADIUS UNLESS OTHERWISE SHOWN ON THE PLANS.
6. PROVIDE A 2 FT CURB AND GUTTER TRANSITION AT EACH END OF INLETS.
7. THE CONTRACTOR SHALL INSTALL ½ IN EXPANSION JOINT MATERIAL BETWEEN THE CURB, CURB AND GUTTER AND THE SIDEWALK, AND AROUND INLET STRUCTURES OR BLOCKOUTS OR AS DIRECTED BY THE PROJECT MANAGER.
8. CURB RAMPS SHALL BE CONSTRUCTED USING TRUNCATED DOMES AS SHOWN IN THE CITY AND COUNTY OF DENVER STANDARD DETAILS.

TRAFFIC

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND PERSONNEL. A TRAFFIC CONTROL PLAN (TCP) IS SUBJECT TO CITY APPROVAL PRIOR TO COMMENCING WORK ON ROADWAY ROW. A COPY OF APPROVED TCPS MUST BE AVAILABLE ON SITE DURING WORK. TRAFFIC CONTROL IS TO BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. ALL PAVEMENT MARKINGS MUST BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
3. SEE SCHEDULE B PLANS FOR PEDESTRIAN TRAFFIC CONTROL.

LANDSCAPING

1. THE CONTRACTOR SHALL NOT SPRAY, CUT OR TRIM TREES OR OTHER LANDSCAPING WITHIN THE ROW UNLESS SUCH WORK IS OTHERWISE SPECIFIED IN THIS PERMIT OR CLEARLY INDICATED ON THE APPROVED PLANS.
2. SEEDING, SODDING AND PLANTING IN THE ROW SHALL BE AS SPECIFIED OR OTHERWISE APPROVED BY THE CITY. CONSTRUCTION, MAINTENANCE AND WATERING REQUIREMENTS SHALL CONFORM TO THE TECHNICAL REQUIREMENTS.
3. PROPOSED TREES IN THE ROW SHALL BE PRE-APPROVED BY THE OFFICE OF THE CITY FORESTER AND SHALL BE A MINIMUM OF 30' FROM OUTSIDE EDGE OF INTERSECTING CURBS FOR SIGHT TRIANGLE, 20' FROM STOP SIGNS, 25' FROM STREET LIGHTS, AND 10' FROM EDGE OF DRIVEWAYS.
4. ALL PROPOSED LANDSCAPING IN THE ROW SHALL BE PER THE STREETScape DESIGN MANUAL. WITH THE EXCEPTION OF TREE PLANTING, THIS SHALL BE IN ACCORDANCE WITH CURRENT FORESTRY RULES AND REGULATIONS.
5. ALL PLANT MATERIAL SHALL MEET OR EXCEED CURRENT AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1 AND THE COLORADO NURSERY ACT AND ACCOMPANYING RULES AND REGULATIONS.
6. PER CITY CODE, ALL TREE REMOVALS IN DENVER LIMITS MUST BE PERFORMED BY PROPERTY OWNER OR A TREE CONTRACTOR LICENSED BY OFFICE OF THE CITY FORESTER, INCLUDING TREES IN ROW'S AND ON PRIVATE PROPERTY. FOR A CURRENT LIST OF LICENSED TREE CONTRACTORS, VISIT WWW.DENVERGOV.ORG/FORESTRY.
 - a) FOR FORESTRY-APPROVED TREE REMOVALS IN PUBLIC RIGHT(S) OF WAY: A TREE REMOVAL PERMIT ISSUED BY THE OFFICE OF THE CITY FORESTER IS REQUIRED PRIOR TO REMOVAL. TREE REMOVAL PERMITS ARE NOT INCLUDED WITH BUILDING PERMITS AND MUST BE OBTAINED SEPARATELY FROM THE OFFICE OF THE CITY FORESTER. TO OBTAIN TREE REMOVAL PERMIT, CONTACT OFFICE OF THE CITY FORESTER (FORESTRY@DENVERGOV.ORG) WITH NAME OF LICENSED CONTRACTOR OR PROPERTY OWNER PERFORMING REMOVAL. INCLUDE D-LOG NUMBER (2018-PROJMSTR-0000063) WHEN REQUESTING REMOVAL PERMIT.
 - b) FOR TREES ON PRIVATE PROPERTY: A FORESTRY-ISSUED TREE REMOVAL PERMIT IS NOT REQUIRED PRIOR TO REMOVAL. HOWEVER, PER CITY CODE, ALL TREE REMOVALS IN DENVER MUST BE PERFORMED BY PROPERTY OWNER OR A TREE CONTRACTOR LICENSED BY THE OFFICE OF THE CITY FORESTER.

5. A FORESTRY-ISSUED TREE PLANTING PERMIT IS REQUIRED FOR ALL TREES TO BE PLANTED IN PUBLIC RIGHTS OF WAY. CONTACT OFFICE OF THE CITY FORESTER (FORESTRY@DENVERGOV.ORG) WITH NAME OF CONTRACTOR OR PROPERTY OWNER PERFORMING PLANTING. INCLUDE D-LOG NUMBER (2018-PROJMSTR-0000063) WHEN REQUESTING PERMIT. TREE PLANTING PERMITS ARE NOT INCLUDED WITH BUILDING PERMITS AND MUST BE OBTAINED SEPARATELY FROM THE OFFICE OF THE CITY FORESTER PRIOR TO INSTALLATION.
6. EXISTING TREES TO BE PRESERVED IN PUBLIC RIGHT OF WAY SHALL BE PROTECTED PER OFFICE OF THE CITY FORESTER STANDARDS & PRACTICES. TREE PROTECTION SHALL BE INSTALLED PRIOR TO ISSUE OF DEMOLITION/BUILDING PERMIT, APPROVED BY THE OFFICE OF THE CITY FORESTER, AND SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION. NO CONSTRUCTION ACTIVITIES OR STORAGE OF CONSTRUCTION MATERIALS/DEBRIS/EQUIPMENT SHALL TAKE PLACE WITHIN TREE PROTECTION ZONES WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OFFICE OF THE CITY FORESTER.
7. EXISTING ROW TREES APPROVED FOR REMOVAL BY THE OFFICE OF THE CITY FORESTER MUST BE PROTECTED IN PLACE PER FORESTRY STANDARDS & SPECIFICATIONS UNTIL REMOVED BY A FORESTRY-LICENSED TREE CONTRACTOR. A TREE REMOVAL PERMIT IS REQUIRED FROM THE OFFICE OF THE CITY FORESTER PRIOR TO REMOVAL. FAILURE TO PROTECT SUCH TREES UNTIL REMOVAL, OR REMOVING ROW TREES WITHOUT A FORESTRY-ISSUED PERMIT WILL RESULT IN NOTICE OF VIOLATION AND MAY INCLUDE CITATIONS/FINES.
8. REQUIRED SOIL REMEDIATION WHEN REMOVING HARDSCAPE/CONCRETE/ASPHALT/PAVERS/ETC. TO PLANT TREES): SOIL ANALYSIS, BULK DENSITY TESTING AND REMEDIATION REQUIRED WHEN REMOVING HARDSCAPE TO PLANT TREES; INCLUDING BUT NOT LIMITED TO CONCRETE, ASPHALT, PAVERS, BRICK
 - A) DEEP SOIL ANALYSIS TO 24 DEPTH REQUIRED FROM CREDITED, LOCAL SOIL ANALYSIS LABORATORY WITH EXPERIENCE IN LOCAL URBAN SOILS.
 - (1) ANALYSIS MUST DETERMINE SOIL TEXTURE AND TYPE, PH BALANCE, SOIL SALINITY, ORGANIC MATTER (OM) PERCENTAGE, AND PLANT AVAILABLE NUTRIENTS
 - II) SOIL REMEDIATION REQUIRED BASED ON SOIL ANALYSIS.

EROSION CONTROL

1. THE PERMITTEE MUST IMPLEMENT AND COMPLY WITH THE APPROVED CASDP AND ASSOCIATED DOCUMENTS FOR THIS PROJECT.
2. THE CONTRACTOR 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 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.
3. THE PERMITTEE AND/OR CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR ACCUMULATE IN, THE FLOWLINES, STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AND COUNTY OF DENVER AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER.
4. SOIL STABILIZATION MEASURES SHALL BE IMPLEMENTED WITHIN FOURTEEN (14) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. STABILIZATION OF DISTURBED AREAS ADJACENT TO RECEIVING WATERS OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES.
5. THE DEVELOPER, GENERAL CONTRACTOR, GRADING 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.
6. THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES IS PROHIBITED. STEEL FENCE POSTS MAY BE USED ON A CASE BY CASE BASIS AND REQUIRES APPROVAL FROM THE CITY AND COUNTY OF DENVER SWMP REVIEWER OR THE STORMWATER ENFORCEMENT INVESTIGATOR PRIOR TO INSTALLATION.
7. APPROVED EROSION AND SEDIMENT CONTROL 'BEST MANAGEMENT PRACTICES' SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE PERMITTEE OR CONTRACTOR SHALL PRODUCE AND RETAIN WEEKLY WRITTEN INSPECTION RECORDS FOR ALL BMPS AND AFTER SIGNIFICANT PRECIPITATION EVENTS. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IMMEDIATELY. ADDITIONALLY, STREET SWEEPING IS TO BE COMPLETED BY THE CLOSE OF THE BUSINESS DAY OR (AND) ON AN AS NEEDED BASIS THROUGHOUT THE DAY.

THE PERMITTEE SHALL IMPLEMENT THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPS) ON SITE DURING CONSTRUCTION:

- A) VEHICLE TRACKING CONTROL: THIS BMP IS REQUIRED AT ALL ACCESS POINTS FOR INGRESS/EGRSS FROM OFF-SITE IMPERVIOUS SURFACES TO A CONSTRUCTION SITE THAT ARE USED BY VEHICULAR TRAFFIC OR CONSTRUCTION EQUIPMENT.
- B) 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.
- C) 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)
- D) 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.
- E) 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.
- F) CHUTE WASHOUT CONTAINMENT: WATER USED IN THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES SHALL BE DISCHARGED INTO A PREDEFINED, BERMED CONTAINMENT AREA ON THE JOB SITE. THE REQUIRED CONTAINMENT AREA IS TO BE BERMED SO THAT WASH WATER IS TOTALLY CONTAINED. WASH WATER DISCHARGED INTO THE CONTAINMENT AREA SHALL BE ALLOWED TO INFILTRATE OR EVAPORATE. DRIED CEMENT WASTE IS REMOVED FROM THE CONTAINMENT AREA AND PROPERLY DISPOSED OF.
 - a) SHOULD A PREDEFINED BERMED CONTAINMENT AREA NOT BE AVAILABLE DUE TO THE PROJECT SIZE, OR LACK OF AN AREA WITH A SUITABLE GROUND SURFACE FOR ESTABLISHING A CONTAINMENT AREA, PROPER DISPOSAL OF READY MIX WASHOUT AND RINSE OFF WATER AT THE JOB SITE SHALL CONFORM TO THE APPROVED TECHNIQUES AND PRACTICES IDENTIFIED IN THE COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT'S TRAINING VIDEO ENTITLED "BUILDING FOR A CLEANER ENVIRONMENT, READY MIX WASHOUT TRAINING", AND ITS ACCOMPANYING MANUAL ENTITLED, "READY MIX WASHOUT GUIDEBOOK, VEHICLE AND EQUIPMENT WASHOUT AT CONSTRUCTION SITES."
 - b) THE DIRECT OR INDIRECT DISCHARGE OF WATER CONTAINING WASTE CEMENT TO THE STORM SEWER SYSTEM IS PROHIBITED (SEC.56-102A, C; REVISED MUNICIPAL CODE, CITY AND COUNTY OF DENVER).
 - c) INFORMATION ABOUT, OR COPIES OF THE VIDEO AND TRAINING MANUAL ARE AVAILABLE FROM THE WATER QUALITY CONTROL DIVISION, COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT, 4300 CHERRY CREEK DRIVE SOUTH, DENVER, COLORADO 80222-1530, (303) 692-3555.
- G) 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.
- H) PERIMETER CONTROL: THIS BMP REQUIRES THAT A CONSTRUCTION CONTROL MEASURE ALONG THE EDGE OF THE CONSTRUCTION SITE DISCHARGE OF SURFACE RUNOFF FROM THE CONSTRUCTION SITE. CONTROL USED SHALL BE DETERMINED BASED ON SITE CONDITION AND REPAIR OF THE CONTROL MEASURE SHALL OCCUR AS NEEDED.



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THE PERMITTEE (CONTINUED)

- I) 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.
- J) 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)
- K) STRUCTURAL CONTROLS: DEVELOPMENT SITES THAT ARE REQUIRED TO PROVIDE DETENTION AND WATER QUALITY ENHANCEMENT FACILITIES FOR STORM RUNOFF NEED TO INSTALL THE DETENTION FACILITIES EARLY IN THE CONSTRUCTION BUILD-OUT OF THE SITE. PROJECTS THAT ARE USING UNDERGROUND DETENTION ARE REQUIRED TO INSTALL A PRETREATMENT STRUCTURE OR SEDIMENTATION BASINS AS A MEANS OF TREATING POTENTIALLY POLLUTED STORM WATER PRIOR TO ENTERING THE DETENTION STRUCTURE. USE OF THESE STRUCTURES IS REQUIRED FOR ENTRAPPING SEDIMENT AND CONSTRUCTION DEBRIS DURING THE ACTIVE CONSTRUCTION PHASE OF THE PROJECT. THE NARRATIVE SECTION OF THE MANAGEMENT PLAN IS ALSO REQUIRED TO ADDRESS OPERATION AND MAINTENANCE OF THE STRUCTURAL CONTROLS BEING USED AS AN ACTIVE CONSTRUCTION BMP.

OF THE EXEMPTED HOURS THE CONTRACTOR MUST REQUEST A VARIANCE.

WASTEWATER

1. NO WORK IS AUTHORIZED WITHOUT A PRE-CONSTRUCTION MEETING AT WHICH YOU WILL RECEIVE A COPY OF THE CITY AND COUNTY OF DENVER STAMPED AND APPROVED SET OF PLANS. PLEASE CALL 303-446-3722 TO SCHEDULE A PRECONSTRUCTION MEETING AFTER YOUR PLANS HAVE BEEN APPROVED.
2. PUBLIC WORKS, WASTEWATER CAPITAL PROJECT MANAGEMENT STANDARD CONSTRUCTION SPECIFICATIONS APPLY TO THIS WORK. PUBLIC WORKS, WASTEWATER MANAGEMENT DIVISION'S STANDARD DETAILS (DRAWINGS), MOST RECENT EDITION, SHALL BE USED AS A MINIMUM. THE TECHNICAL SPECIFICATIONS ARE AVAILABLE FROM DS - SITE ENGINEERING. BOTH SETS MUST BE IN POSSESSION OF THE CONTRACTOR AT THE PRE-CONSTRUCTION CONFERENCE AND MUST REMAIN ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
3. THE STANDARD DETAILS CAN BE VIEWED AT: WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS 2015
4. CONTRACTOR SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY RULES AND REGULATIONS.
5. ONE SET OF THE APPROVED SEWER CONSTRUCTION DRAWINGS MUST BE ON-SITE AT ALL TIMES OF CONSTRUCTION.
6. ALL SEWER PIPES SHALL BE INSTALLED WITH CLASS B BEDDING AS A MINIMUM.
7. ANY MODIFICATIONS, ADJUSTMENTS, CONSTRUCTION OR RECONSTRUCTION OF PUBLIC WORKS, WASTEWATER DIVISION FACILITIES MUST BE INSPECTED BY A PW CONSTRUCTION ENGINEERING INSPECTOR. PLEASE SCHEDULE AN APPOINTMENT AT 303-446-3722 A MINIMUM OF 48 HOURS IN ADVANCE OF THE WORK TO SCHEDULE AN INSPECTOR.
8. PIPE MATERIAL, FITTINGS, TRENCHING, BEDDING, CONNECTIONS, AND SEWER INSTALLATION MUST BE INSPECTED BY A PW CONSTRUCTION ENGINEERING INSPECTOR PRIOR TO ANY TRENCH BACKFILL. PLEASE SCHEDULE AN APPOINTMENT AT 303-446-3722 A MINIMUM OF 48 HOURS IN ADVANCE OF THE WORK TO SCHEDULE AN INSPECTOR. MONITORING OF THE PROJECT BY PW SHALL BE FOR THE PURPOSE OF ASSURING GENERAL COMPLIANCE WITH THE APPROVED PLANS, STANDARDS, DETAILS, AND SPECIFICATIONS AS WELL AS THE RULES & REGULATIONS. STORM AND SANITARY INSPECTIONS SHALL NOT TAKE THE PLACE OF CONSTRUCTION INSPECTION AND MATERIALS TESTING, WHICH IS THE OWNER'S RESPONSIBILITY.
9. SANITARY SEWER PIPES SHALL BE PVC AND CONFORM TO: ASTM D3034 SDR 35 FOR SIZES 8 INCHES TO 15 INCHES IN DIAMETER (SOLID WALL), ASTM F789 FOR 18 INCHES (SOLID WALL), ASTM F679 FOR SIZES 18 TO 36 INCHES (SOLID WALL), ASTM F949 FOR SIZES 8 TO 36 INCHES (PVC PROFILE WALL), ASTM F794 FOR SIZES 8 TO 48 INCHES (PROFILE WALL), OR ASTM F1803 FOR SIZES 18 TO 60 INCHES (CLOSED PROFILE GRAVITY PIPE).
10. ANY QUESTIONS REGARDING STORM OR SANITARY FACILITIES THAT ARISE DURING CONSTRUCTION SHOULD BE BROUGHT TO THE ATTENTION OF PW CONSTRUCTION ENGINEERING AT (303) 446-3722.
11. BACKFILL IN PUBLIC RIGHT OF WAY MUST MEET THE REQUIREMENTS OF DENVER PUBLIC WORKS DEPARTMENT. A STREET CUT PERMIT AND INSPECTION OF A BACKFILL AND PAVEMENT REPAIR BY PUBLIC WORKS IS REQUIRED FOR ALL WORK IN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR AND/OR DEVELOPER IS ADVISED TO CONTACT CONSTRUCTION ENGINEERING ROW INSPECTION AT 303- 446-3469 OR PWPO AT 303-446-3759 TO OBTAIN INFORMATION REGARDING FEES AND PROCEDURES FOR OBTAINING THE PAGE 3 OF 6 REQUIRED PERMIT(S). CONTRACTOR MUST OBTAIN A STREET CUT PERMIT AND NOTIFY THE DISTRICT INSPECTOR AT (303) 446-3469, 48-HOURS PRIOR TO START OF JOB. COMPACTION TESTING IS REQUIRED.
12. THE CONTRACTOR PERFORMING WORK ON ANY PUBLIC OR PRIVATE STORM SEWER FACILITY OR APPURTENANCE MUST BE PROPERLY TRADE LICENSED AS A COMPANY AND HAVE A LICENSED PLUMBER, DRAINLAYER SUPERVISOR OR SEWER CONTRACTOR ON SITE DURING THE WORK.
13. ACCESS MUST BE MAINTAINED FOR ALL SEWER MANHOLES DURING CONSTRUCTION. ANY DESIGN CHANGES TO NEW OR EXISTING PUBLIC STORM OR SANITARY SEWER MUST INCLUDE PERMANENT ACCESS TO THE PUBLIC STORM AND SANITARY SEWER MANHOLES AND COULD REQUIRE ROLL-OVER CURB, COMMERCIAL DRIVE, REINFORCED CONCRETE SIDEWALK, RITTER RINGS OR CONCRETE PAD. MINIMUM ACCESS TO EACH MANHOLE IS A 20' WIDE LANE FROM THE NEAREST PUBLIC RIGHT OF WAY, CENTERED AT THE MANHOLE INCLUDING A 10' RADIUS AROUND THE MANHOLE AND 22.0' VERTICAL CLEARANCE.

14. THE CONNECTION OF A NEW SANITARY/STORM SEWER TO AN EXISTING MANHOLE MAY REQUIRE MANHOLE RECONSTRUCTION AT THE DISCRETION OF THE PW CONSTRUCTION ENGINEERING INSPECTOR OR THE PW CONSTRUCTION ENGINEERING ENGINEER.
15. CHANGES IN THE ELEVATION OF AN EXISTING BRICK MANHOLE MAY REQUIRE THE USE OF A PRE-CAST CONCRETE MANHOLE OR MANHOLE RECONSTRUCTION AT THE DISCRETION OF THE PW CONSTRUCTION ENGINEERING INSPECTOR AND/OR PW CONSTRUCTION ENGINEERING ENGINEER.
16. CHANGES IN ELEVATION OR MODIFICATION TO EXISTING INLETS MAY REQUIRE RECONSTRUCTION AT THE DISCRETION OF THE PW CONSTRUCTION ENGINEERING INSPECTOR OR ENGINEER.
17. THE CONTRACTOR SHALL BE AWARE THAT WHEN DEBRIS IS DROPPED INTO PUBLIC MANHOLES AND OTHER PUBLIC STRUCTURES, THE CONTRACTOR IS TO IMMEDIATELY REMOVE THIS TO ELIMINATE THE POSSIBILITY OF PROPERTY DAMAGE DUE TO THE DEBRIS CAUSING BACKUP INTO PRIVATE PROPERTIES. IF IT IS DETERMINED THAT DEBRIS CAUSED A BACKUP, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGES.
18. THE CONTRACTOR SHALL MAKE SURE THAT ALL MANHOLES AND OTHER STRUCTURES ARE BUILT TO FINISHED GRADE.
19. NO TREES SHALL BE PLANTED WITHIN ANY SEWER EASEMENT OR WITHIN TEN (10) FEET OF ANY PUBLIC MANHOLES, PIPES OR INLETS.
20. "AS-BUILT" ELECTRONIC SUBMITTAL OR PRINTS ARE TO BE SUBMITTED TO DEVELOPMENT SERVICES AT COMPLETION OF THE PROJECT. "AS-BUILT" DRAWINGS ARE TO BE REPRODUCIBLE COPIES (OR ORIGINALS) OF THE APPROVED CONSTRUCTION DRAWINGS. ANY FIELD CHANGES ARE TO BE NOTED. THE DRAWINGS WILL STATE "AS-BUILT" IN LARGE BLOCK LETTERS. THE "AS-BUILT" ELECTRONIC SUBMITTAL OR PRINTS ARE TO BE SIGNED, DATED AND STAMPED BY A COLORADO REGISTERED ENGINEER.
21. AS-BUILT FIELD NOTES (IF REQUESTED), FROM WHICH THE AS-BUILT DRAWINGS ARE PREPARED, ARE TO BE PROVIDED AND STAMPED/SIGNED AND DATED BY THE COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR. THESE NOTES WILL INCLUDE THE STATIONING OF ANY BUILDING SEWER STUBS INSTALLED.
22. UPON COMPLETION OF SITE GRADING AND SEWER CONSTRUCTION, THE OWNER OR DEVELOPER SHALL BE RESPONSIBLE FOR FURNISHING DEVELOPMENT SERVICES WITH A CERTIFICATE OF INSPECTION PREPARED BY THE COLORADO REGISTERED ENGINEER WHO PERFORMED OR SUPERVISED CONSTRUCTION INSPECTION, CERTIFYING THAT:
 - a) A CONSTRUCTION INSPECTOR WAS ON THE JOB SITE AT ALL TIMES SEWER OR DRAINAGE FACILITY WORK WAS PERFORMED,
 - b) ALL STORM AND SANITARY SEWER FACILITIES, SITE GRADING, DETENTION POND GRADING AND OUTLET WORKS (IF ANY) WERE CONSTRUCTED IN COMPLIANCE WITH PLANS AND SPECIFICATIONS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS
 - c) THE AS-BUILT DRAWINGS INCLUDED ACCURATELY DEPICT THE FINAL INSTALLATION OF THE STORM DRAINAGE AND/OR SEWER SYSTEM.

THIS CERTIFICATION SHALL BE REQUIRED FOR ALL STORM AND SANITARY SEWER FACILITIES IN ADDITION TO ANY INSPECTIONS MADE BY THE DIVISION OR THE DEPARTMENT OF PUBLIC WORKS.
23. DENVER WATER DEPARTMENT NOTE: ALL PERSONS AND ENTITIES INVOLVED IN THIS PROJECT SHALL HAVE THE RESPONSIBILITY TO TAKE WHATEVER STEPS NECESSARY TO PROTECT ALL WATER FACILITIES. IF ANY WATER FACILITY CANNOT BE ADEQUATELY PROTECTED, THEN SAID WATER FACILITIES SHALL BE RELOCATED OR REMOVED IN ACCORDANCE WITH DENVER WATER DEPARTMENT REQUIREMENTS.

ENVIRONMENTAL

1. REGULATED ASBESTOS CONTAMINATED SOILS (RACS) MAY BE ENCOUNTERED IN BUILDING DEBRIS THROUGHOUT THE CITY DURING EXCAVATION. ALL RACS MUST BE MANAGED, DOCUMENTED, AND DISPOSED IN ACCORDANCE WITH THE APPROVED MATERIALS MANAGEMENT PLAN.
2. CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE AND TO PREVENT THE VISIBLE DISCHARGE OF FUGITIVE PARTICULATE EMISSIONS BEYOND THE PROPERTY LINE FROM WHICH THE EMISSIONS ORIGINATE. THE MEASURES TAKEN MUST BE EFFECTIVE AT ALL TIMES ON THE SITE, INCLUDING PERIODS OF INACTIVITY SUCH AS EVENINGS, WEEKENDS, AND HOLIDAYS AS WELL AS ANY OTHER PERIOD OF INACTIVITY.
3. DURING ANY SOIL DISTURBING ACTIVITIES, IF UNKNOWN/UNIDENTIFIED UNDERGROUND STORAGE TANKS, DRUMS, ODOROUS SOIL, STAINED SOIL, ASBESTOS-CEMENT PIPE (TRANSITE), BUILDING DEBRIS, OR WASTE MATERIALS ARE ENCOUNTERED, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA OF THE DISCOVERY UNTIL DENVER DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (DDPHE) MAKES A DETERMINATION OF HOW TO PROCEED. CONTRACTOR SHALL IMMEDIATELY NOTIFY DDPHE OF THE DISCOVERY AT 303-495-8376.
4. ANY SOIL EXCAVATED AND REUSED ON THE PROPERTY OR IMPORTED TO THE PROPERTY MUST MEET APPLICABLE SOIL REUSE ACCEPTANCE CRITERIA AS EXPLAINED IN THE DDPHE OCTOBER 5TH, 2017, MEMORANDUM TITLED GUIDANCE FOR REUSE OF SOIL ON CITY PROJECTS" LOCATED ON OUR WEBSITE UNDER THE "ABOUT" TAB FOR ENVIRONMENTAL REVIEW AND ASSESSMENT:
[HTTPS://WWW.DENVERGOV.ORG/CONTENT/DENVERGOV/EN/ENVIRONMENTAL-HEALTH/ENVIRONMENTAL-QUALITY/LAND-USE-AND-PLANNING.HTML](https://www.denvergov.org/content/denvergov/en/environmental-health/environmental-quality/land-use-and-planning.html)
5. THE CONTRACTOR SHALL DIRECT NON-RECYCLABLE, NON-HAZARDOUS WASTES FROM CCD-OWNED OR CONTROLLED PROPERTY OR FACILITIES TO THE DENVER ARAPAHOE DISPOSAL SITE (DADS) LANDFILL FOR DISPOSAL, FOLLOWING THE REQUIREMENTS AND PROCEDURAL GUIDANCE PER CCD EXECUTIVE ORDER 115. LABORATORY ANALYTICAL RESULTS WILL BE REQUIRED PRIOR TO DADS ACCEPTANCE FOR SOIL AND POSSIBLY OTHER MATERIALS. EARLY TESTING IS RECOMMENDED; DDPHE CAN ASSIST. CONTACT DDPHE AT 720 865 5448 WITH QUESTIONS.
6. NOISE CONTROL. ALL NOISE CAUSED BY, OR RESULTING FROM, COMPLETED PROJECTS MUST COMPLY WITH DENVER'S NOISE ORDINANCE, DRMC. CHAPTER 36 "NOISE CONTROL.". EXEMPTED HOURS FOR CONSTRUCTION IN THE CITY AND COUNTY OF DENVER ARE FROM 7 A.M. TO 9 P.M. MONDAY THROUGH FRIDAY AND 8 A.M. TO 5 P.M. ON SATURDAYS AND SUNDAYS. IF THERE IS A NEED TO WORK OUTSIDE



Print Date: 7/10/2019		Sheet Revisions			<p>DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 PHONE: (720) 913-4501 FAX: (720) 913-4544</p>	As Constructed		HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS GENERAL NOTES		Project No./Code	
File Name: 116235-08DES_GNR01.dwg		(R-X)	Date	Comments		Initials	No Revisions:				PWTRN201842077
Horizontal Scale: N/A Vertical Scale: N/A						Revised:		Designer: DAL		Structure Numbers	
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								Subset: ROADWAY		Sheets: GN-03 OF 3	
										Sheet Number 5	

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CONTRACT ITEM NUMBER	CONTRACT ITEM	UNIT	PROJECT TOTALS	
			PLAN	AS BUILT
201	CLEARING AND GRUBBING	LS	1	
202	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1	
202	REMOVAL OF SIDEWALK	SF	26	
202	REMOVAL OF CURB AND GUTTER	LF	119	
202	REMOVAL OF CONCRETE CURB RAMP	SF	45	
202	REMOVAL OF CONCRETE PAVEMENT	SY	22	
202	REMOVAL OF ASPHALT MAT	SY	470	
202	REMOVAL OF ASPHALT MAT (PLANING)	SY	43	
203	UNCLASSIFIED EXCAVATION	CY	165	
203	BLADING	HOUR	4	
203	DOZING	HOUR	4	
203	COMBINATION LOADER	HOUR	4	
203	POTHOLING	EA	6	
208	ROCK SOCK	LF	60	
208	PRE-FABRICATED CONCRETE WASHOUT STRUCTURE	EA	1	
208	PRE-FABRICATED VEHICLE TRACKING PAD	EA	2	
208	SWEEPING (SEDIMENT REMOVAL)	HOUR	16	
208	REMOVAL OF TRASH	HOUR	8	
210	RESET GROUND SIGN	EA	4	
212	SEEDING (NATIVE)	ACRE	0	
213	MULCHING (WEED FREE)	ACRE	0	
213	MULCH TACKIFIER	LB	40	
403	HOT MIX ASPHALT (PATCHING)	TON	49	
403	HOT MIX ASPHALT (GRADING S) (75) (PG 64-22)	TON	10	
403	HOT MIX ASPHALT (GRADING SX) (75) (PG 64-22)	TON	13	
411	EMULSIFIED ASPHALT (SLOW SETTING)	GAL	74	
412	CONCRETE PAVEMENT (8 INCH)	SY	116	
607	CONSTRUCTION FENCE	LF	200	
608	CONCRETE CURB RAMP	SY	73	
609	CURB & GUTTER	LF	112	
609	MONOLITHIC MEDIAN CURB NOSE	SF	114	
610	MEDIAN COVER MATERIAL (CONCRETE)	SF	463	
614	SIGN PANEL (CLASS 1)	SF	44	
614	STEEL SIGN POST (2X2 INCH TUBING)	LF	37	
620	SANITARY FACILITY	EA	1	
625	CONSTRUCTION SURVEYING	LS	1	
626	MOBILIZATION	LS	1	
627	EPOXY PAVEMENT MARKING	GAL	4	
627	PREFORMED THERMOPLASTIC PAVEMENT MARKING (XWALK-STOP LINE)	SF	180	
628	CONSTRUCTION AS-BUILTS	LS	1	
629	ADJUST MONUMENT BOX	EA	1	
630	CONSTRUCTION TRAFFIC CONTROL	LS	1	

(R-1)



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File Name: 116235-08DES_SAQ01.dwg		(R-X)	Date	Comments				Initials	No Revisions:	Designer: DAL	
Horizontal Scale: N/A Vertical Scale: N/A		2019-10-15	REVISION TO QUANTITIES	SPF		Revised:	Detailer: DAL				
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CITY AND COUNTY OF DENVER STATE OF COLORADO

PROJECT CONTROL DIAGRAM

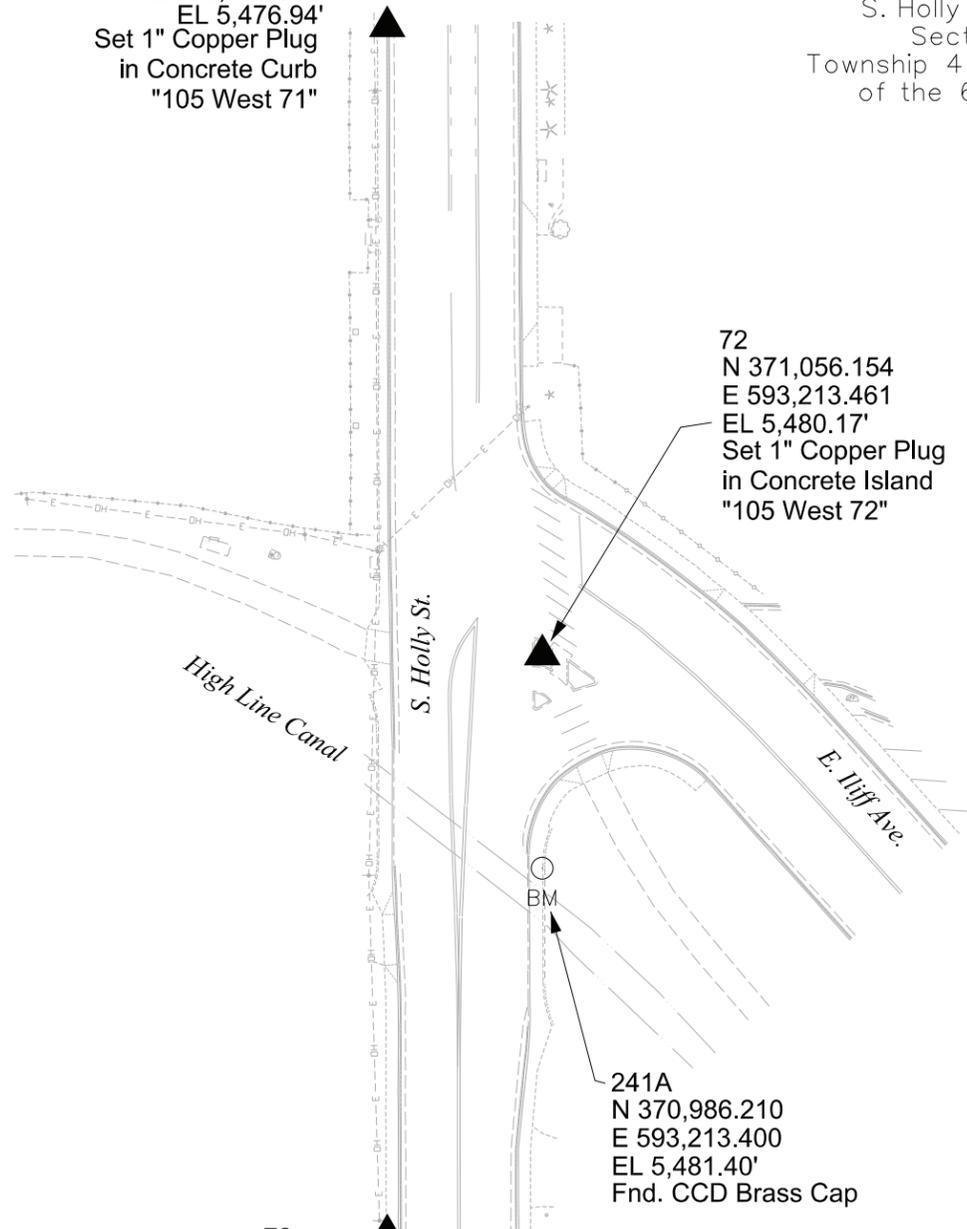
S. Holly St. and E. Iliff Ave.
Sections 29 and 30
Township 4 South, Range 67 West
of the 6th Principal Meridian

71
N 371,261.871
E 593,162.538
EL 5,476.94'
Set 1" Copper Plug
in Concrete Curb
"105 West 71"

72
N 371,056.154
E 593,213.461
EL 5,480.17'
Set 1" Copper Plug
in Concrete Island
"105 West 72"

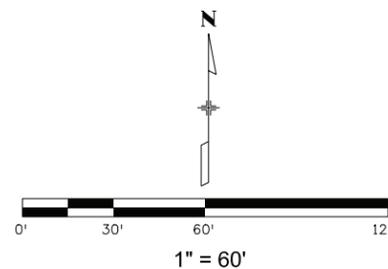
241A
N 370,986.210
E 593,213.400
EL 5,481.40'
Fnd. CCD Brass Cap

70
N 370,866.271
E 593,162.580
EL 5,481.67'
Set 1" Copper Plug
in Concrete Walk
"105 West 70"



NOTES

1. This Project Control Diagram is not a boundary survey of the adjoining property.
2. PROJECT BENCHMARK: Elevations are based on CCD Benchmark "241A", A Brass Cap in Concrete, East Side of Holly at the North end of the High Line Canal Bridge. NAVD88 Elevation = 5,481.40'
3. UNITS: Project coordinates and elevations shown hereon are U.S. Survey Feet.
4. According to Colorado State law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.



COORDINATE DATUM: Project coordinates are based on the following City and County of Denver Mapping Projection:

Project Mapping Projection
Projection: User-Defined Transverse Mercator
Zone: CCD_Local
Central Point False Northing = 400,000.00
Central Point False Easting = 600,000.00
Latitude of Origin = N39°45'19.00000"
Central Meridian = W104°53'53.00000"
Zone Width = 6°0'00.0"
Scale Factor at Origin = 1.00025403000
Units are US Survey Feet

I, Richard D. Muntean, a Licensed Professional Surveyor in the State of Colorado do hereby state that the survey represented by this map was made under my supervision and that this map and the notes shown hereon accurately represent said survey to the best of my knowledge, information and belief.



RICHARD D. MUNTEAN, PLS No. 38189
For and on behalf of 105 West, Inc.

Print Date: 7/10/2019

File Name: PROJECT CONTROL DIAGRAM

4201 E. Yale Ave., STE 230
Denver, CO 80222



6300 S. Syracuse Way, STE 600
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S. Holly St. and E. Iliff Ave.
Schedule A - Project Control Diagram

Designer:

Detailer:

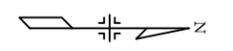
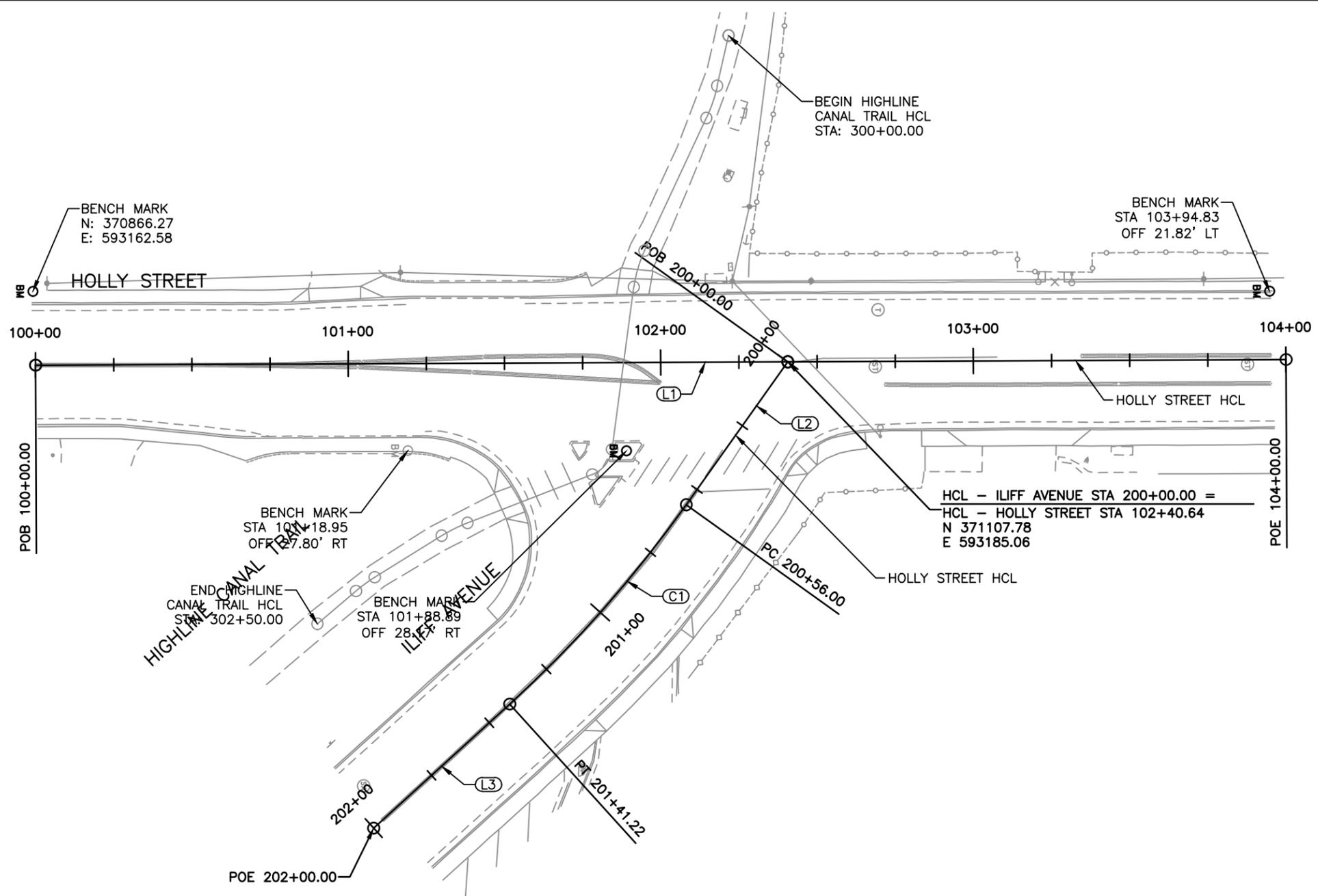
Sheet Subset:

Structure
Numbers

Subset Sheets:

Project No./Code

Sheet Number 7



HORIZ SCALE: 1"=40'

HOLLY STREET HCL								
NO.	STATION	NORTHING	EASTING	LENGTH	LINE/CHORD BEARING	DELTA	TANGENT	RADIUS
L1	100+00.00 104+00.00	370867.14 371267.14	593186.14 593184.34	400.00'	N0°15'30"W			

ILIFF AVENUE HCL									
NO.		STATION	NORTHING	EASTING	LENGTH	LINE/CHORD BEARING	DELTA	TANGENT	RADIUS
L2		200+00.00 200+56.00	371107.78 371075.26	593185.06 593230.65	56.00'	S54°30'13"E			
C1	PC= PI= PT=	200+56.00 200+98.78 201+41.22	371075.26 371050.43 371018.79	593230.65 593265.47 593294.26	85.22'	S48°24'00"E	12°12'25"	42.77'	400.00'
L3		201+41.22 202+00.00	371018.79 370975.32	593294.26 593333.81	58.78'	S42°17'48"E			



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No Revisions:	Designer: SPF	Structure Numbers
Revised:	Detailer: DAL	
Void:	Subset: ROADWAY	Sheets: GM-01 OF 2

Project No./Code
PWTRN201842077

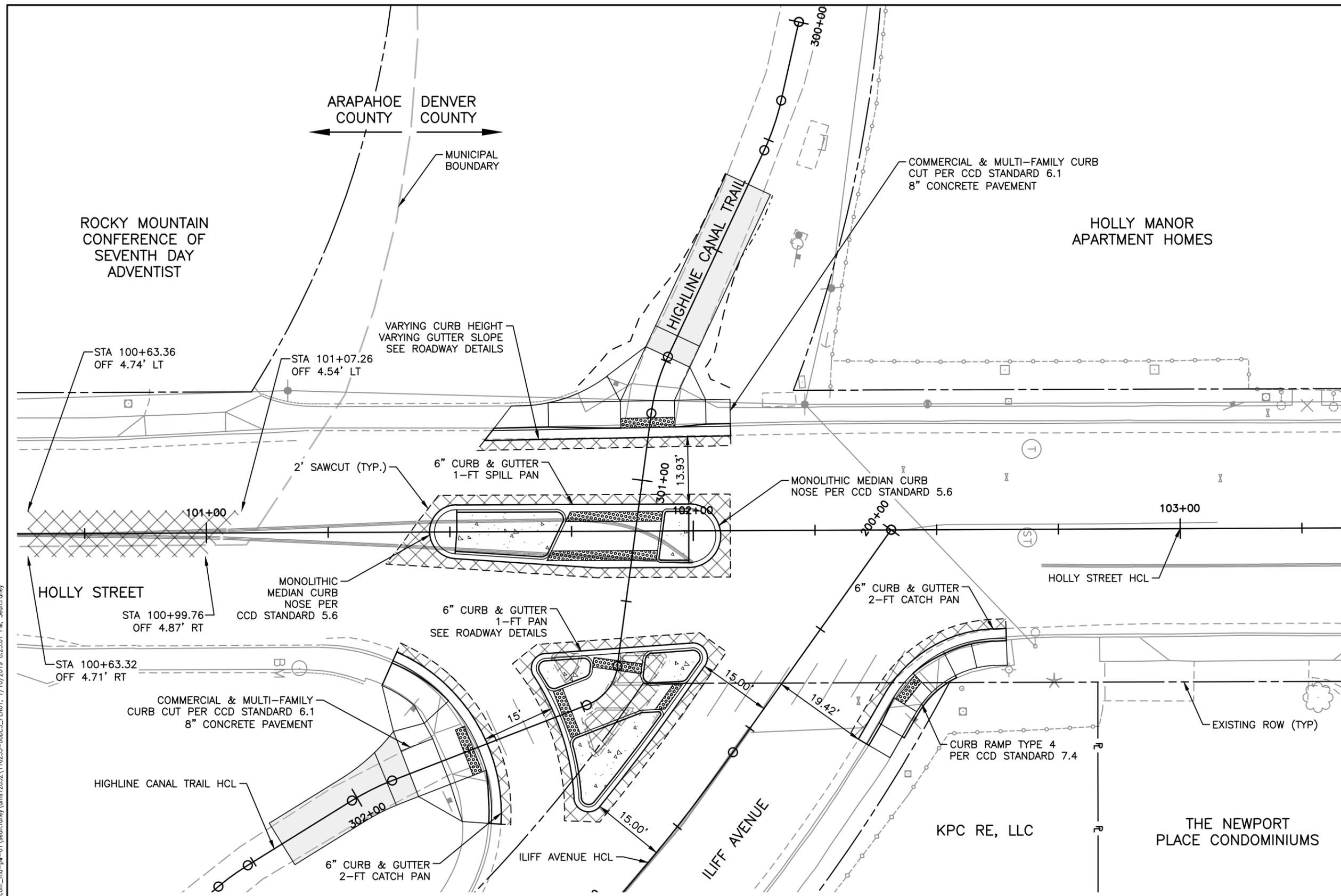
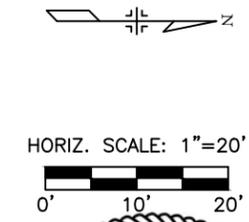
SCHEDULE A

Sheet Number 10

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- NOTES:
1. SEE ROADWAY DETAIL SHEETS FOR ADDITIONAL INFORMATION.
 2. SEE SCHEDULE B PLANS FOR PROPOSED BRIDGE, SIDEWALK AND ROADWAY IMPROVEMENTS.

- LEGEND:
- TOE OF FILL
 - - - TOP OF CUT
 - [Hatched Box] HIGH LINE CANAL TRAIL HOT MIX ASPHALT SEE SHEET 9
 - [Cross-hatched Box] HOLLY STREET HOT MIX ASPHALT SEE SHEET 9
 - [Dotted Box] MEDIAN COVER MATERIAL (CONCRETE)
 - [Grid Box] CAST IRON TRUNCATED DOMES



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**HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS
 ROADWAY PLANS AND PROFILES
 HOLLY AND ILIFF PLAN**

Designer: SPF
 Detailer: DAL
 Subset: ROADWAY

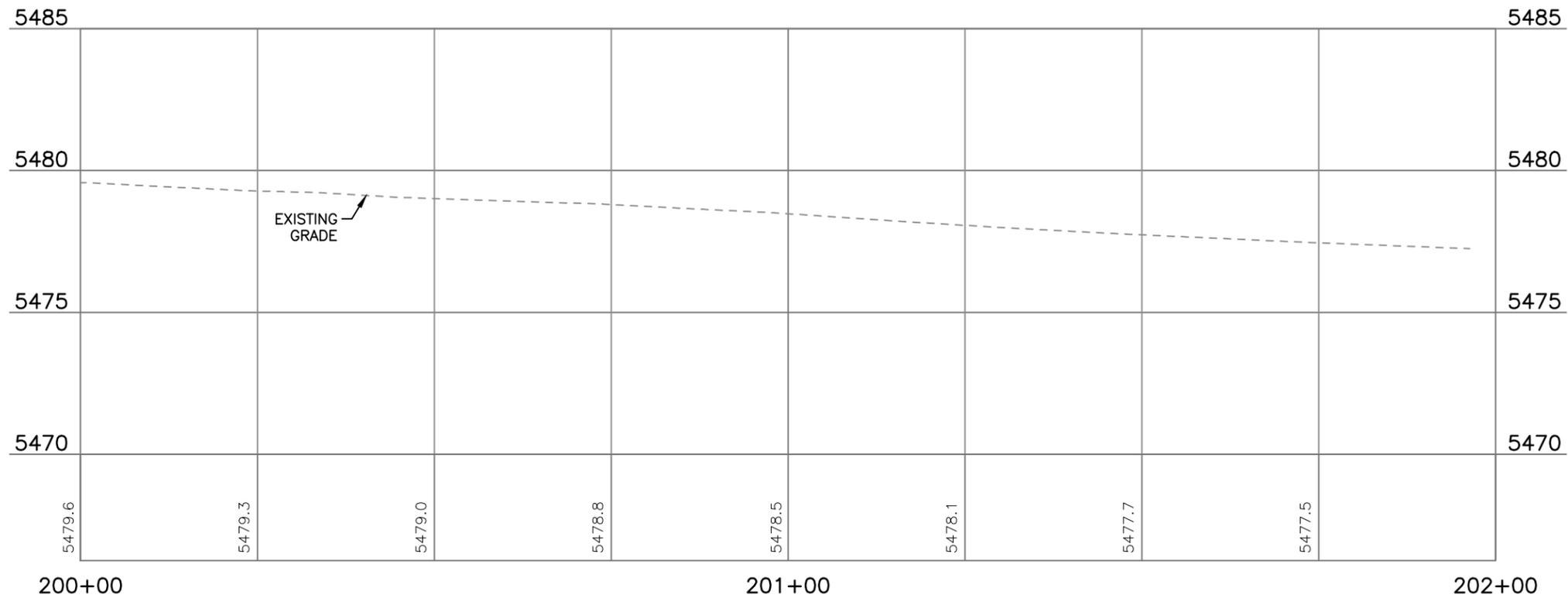
Structure Numbers
 Sheets: PL-01 OF 3

Project No./Code
 PWTRN201842077

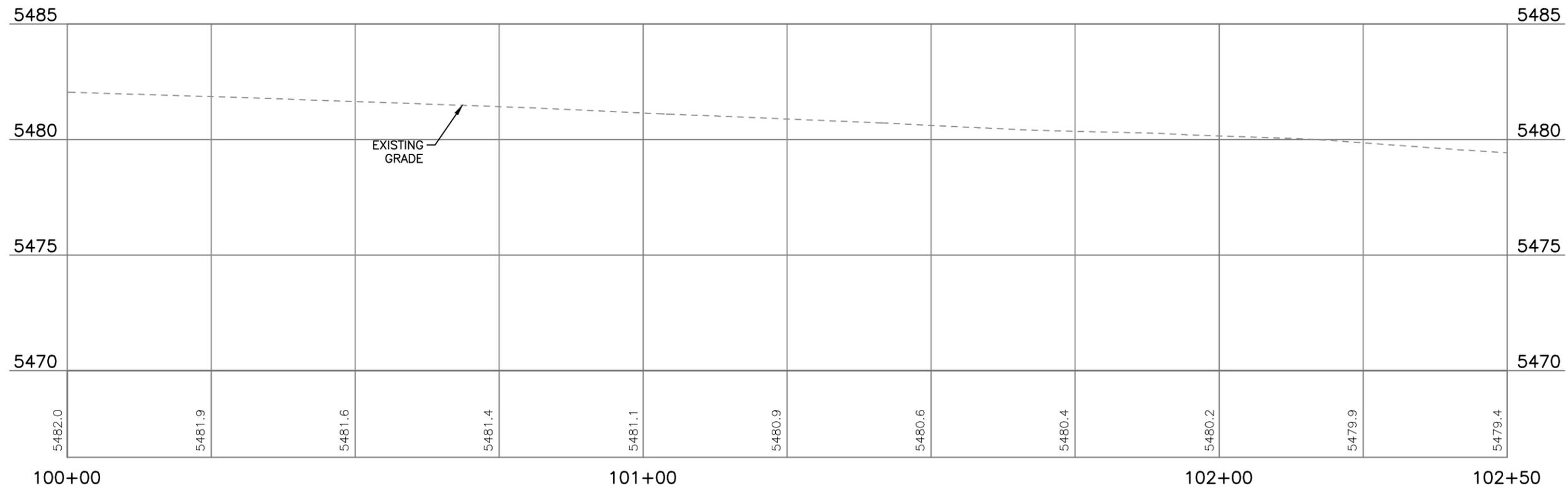
SCHEDULE A

Sheet Number 13

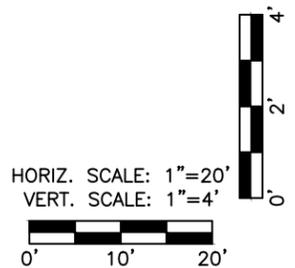
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ILIFF PROFILE



HOLLY STREET



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HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS
 ROADWAY PLANS AND PROFILES
 HOLLY AND ILIFF PROFILE

Designer: SPF
 Detailer: DAL
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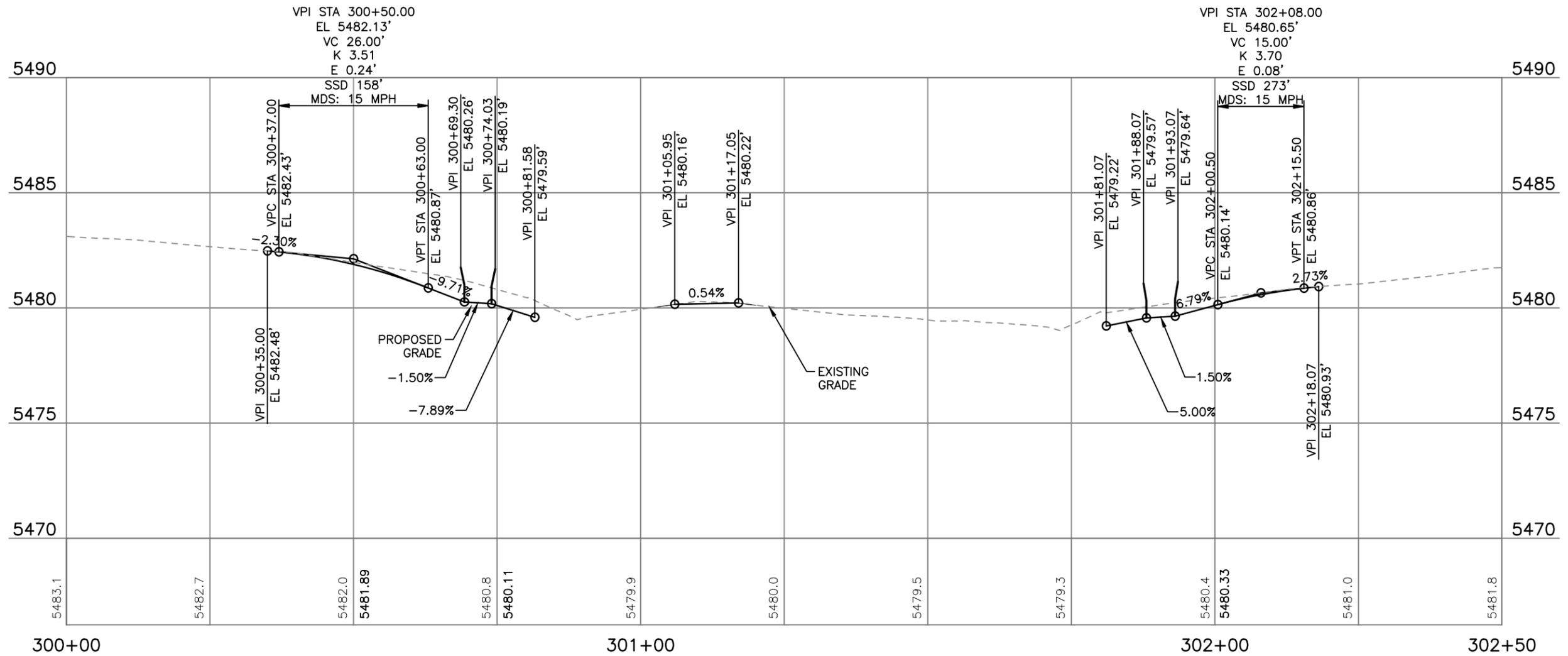
Structure Numbers
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Project No./Code
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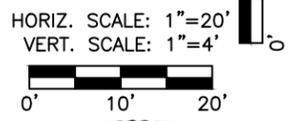
SCHEDULE A

Sheet Number 14

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HIGHLINE CANAL PROFILE



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Print Date: 7/10/2019		Sheet Revisions				DEPARTMENT OF PUBLIC WORKS		As Constructed		HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS ROADWAY PLANS AND PROFILES HIGHLINE CANAL TRAIL PROFILE		Project No./Code	
File Name: 116235-08DES_PLN01.dwg		Date	Comments	Initials		201 WEST COLFAX AVENUE DENVER, CO 80202		No Revisions:		Designer: SPF		PWTRN201842077	
Horizontal Scale: 1"=20' Vertical Scale: 1"=4'						PHONE: (720) 913-4501 FAX: (720) 913-4544		Revised:		Detailer: DAL		SCHEDULE A	
							Void:		Subset: ROADWAY		Sheet Number 15		
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POINT TABLE				
POINT #	STATION	OFFSET	ELEVATION	DESCRIPTION
1.01	300+98.46	34.51' RT		SAWCUT
1.02	300+96.24	33.21' RT		EDGE OF PAVEMENT
1.03	300+93.45	31.57' RT	5480.71	EDGE OF PAVEMENT
1.04	300+95.37	27.61' RT	5479.92	END 1.5% GUTTER
1.05	300+92.90	27.99' RT	5480.64	END 9 INCH CURB
1.06	300+88.46	28.67' RT	5480.73	SIDEWALK
1.07	300+88.14	26.61' RT	5480.58	SIDEWALK
1.08	300+94.23	20.15' RT	5479.78	BEGIN 8.33% GUTTER
1.09	300+92.25	20.46' RT	5479.61	BEGIN 6 INCH CURB
1.10	300+86.81	21.29' RT	5480.19	SIDEWALK
1.11	300+91.97	5.51' RT	5479.64	EDGE OF PAVEMENT
1.12	300+90.00	5.81' RT	5479.55	SIDEWALK
1.13	300+84.79	6.68' RT	5479.63	SIDEWALK
1.14	300+81.07	10.42' RT	5480.21	SIDEWALK
1.15	300+78.89	8.45' RT	5479.95	SIDEWALK

POINT TABLE				
POINT #	STATION	OFFSET	ELEVATION	DESCRIPTION
1.16	300+80.63	5.62' RT	5479.68	SIDEWALK
1.17	300+74.30	5.00' RT	5480.24	SIDEWALK
1.18	300+69.30	5.00' RT	5480.33	SIDEWALK
1.19	300+90.28	5.50' LT	5479.54	EDGE OF PAVEMENT
1.20	300+88.30	5.20' LT	5479.45	SIDEWALK
1.21	300+82.47	4.21' LT	5479.53	SIDEWALK
1.22	300+74.03	5.00' LT	5480.11	SIDEWALK
1.23	300+69.30	5.00' LT	5480.18	SIDEWALK
1.24	300+89.31	11.82' LT	5479.48	EDGE OF PAVEMENT
1.25	300+87.33	11.52' LT	5479.31	SIDEWALK
1.26	300+80.38	10.37' LT	5479.89	SIDEWALK
1.27	300+90.52	17.07' LT	5479.52	SAWCUT
1.28	300+88.55	16.76' LT	5479.43	EDGE OF PAVEMENT
1.29	300+86.01	16.38' LT	5479.77	SIDEWALK
1.30	300+78.02	15.11' LT	5479.84	SIDEWALK



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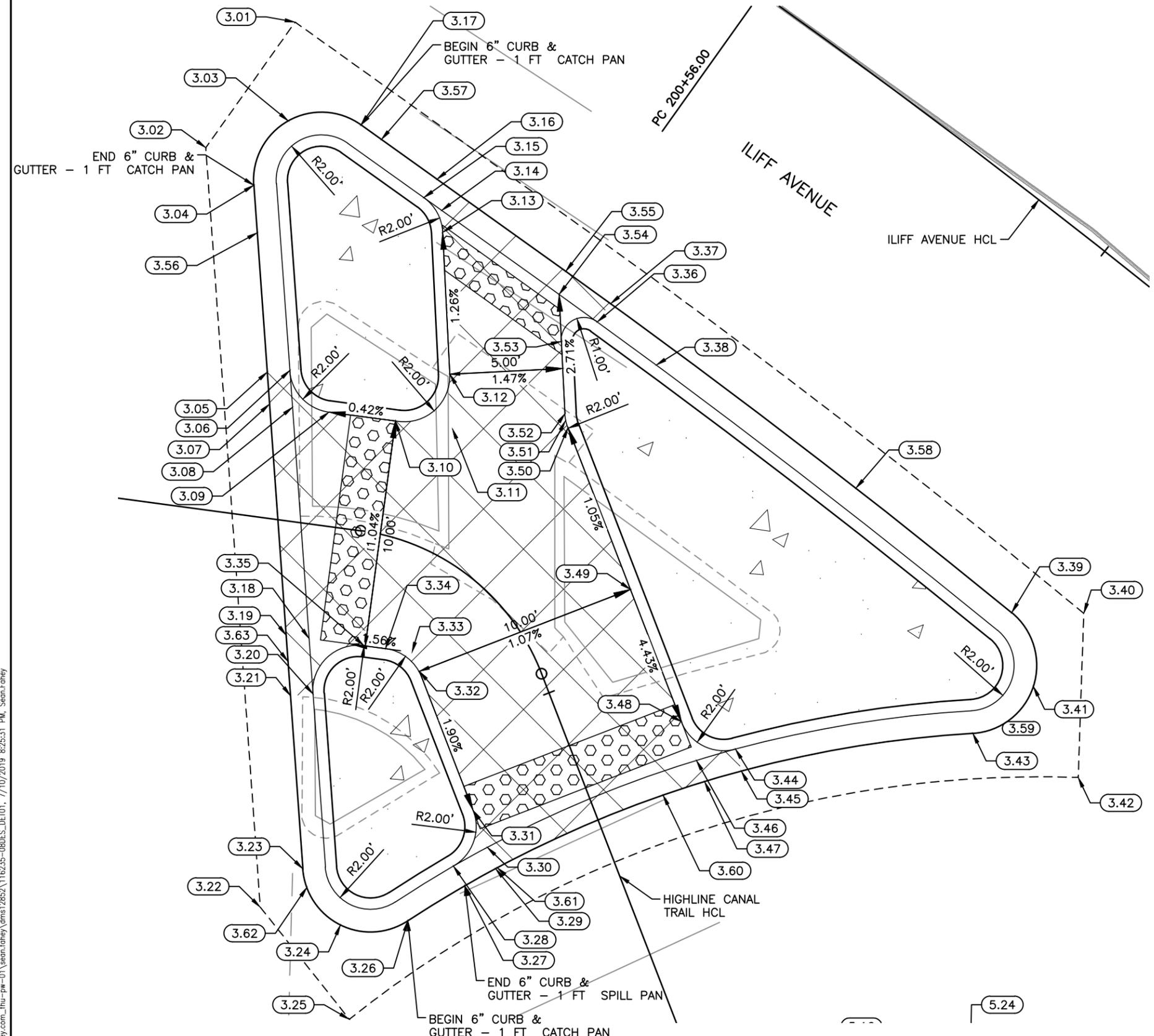
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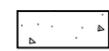
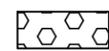
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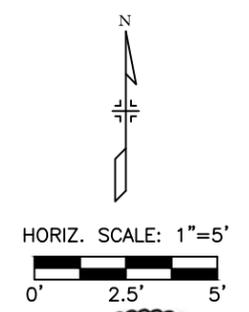
HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS ROADWAY DETAILS WEST HIGHLINE CANAL TRAIL DRIVEWAY POINTS		
Designer:	DAL	Structure
Detailer:	DAL	Numbers
Subset:	ROADWAY	Sheets: RD-02 OF 7

Project No./Code	PWTRN201842077
SCHEDULE A	
Sheet Number	17

NOTES:
 1. IN CURB TRANSITIONS, FLOWLINE AND BACK OF CURB ARE TRANSITIONING.



- LEGEND:**
-  TRAIL HOT MIX ASPHALT SEE DETAIL
 -  CONCRETE CURB RAMP
 -  MEDIAN COVER MATERIAL (CONCRETE)
 -  CAST IRON TRUNCATED DOMES



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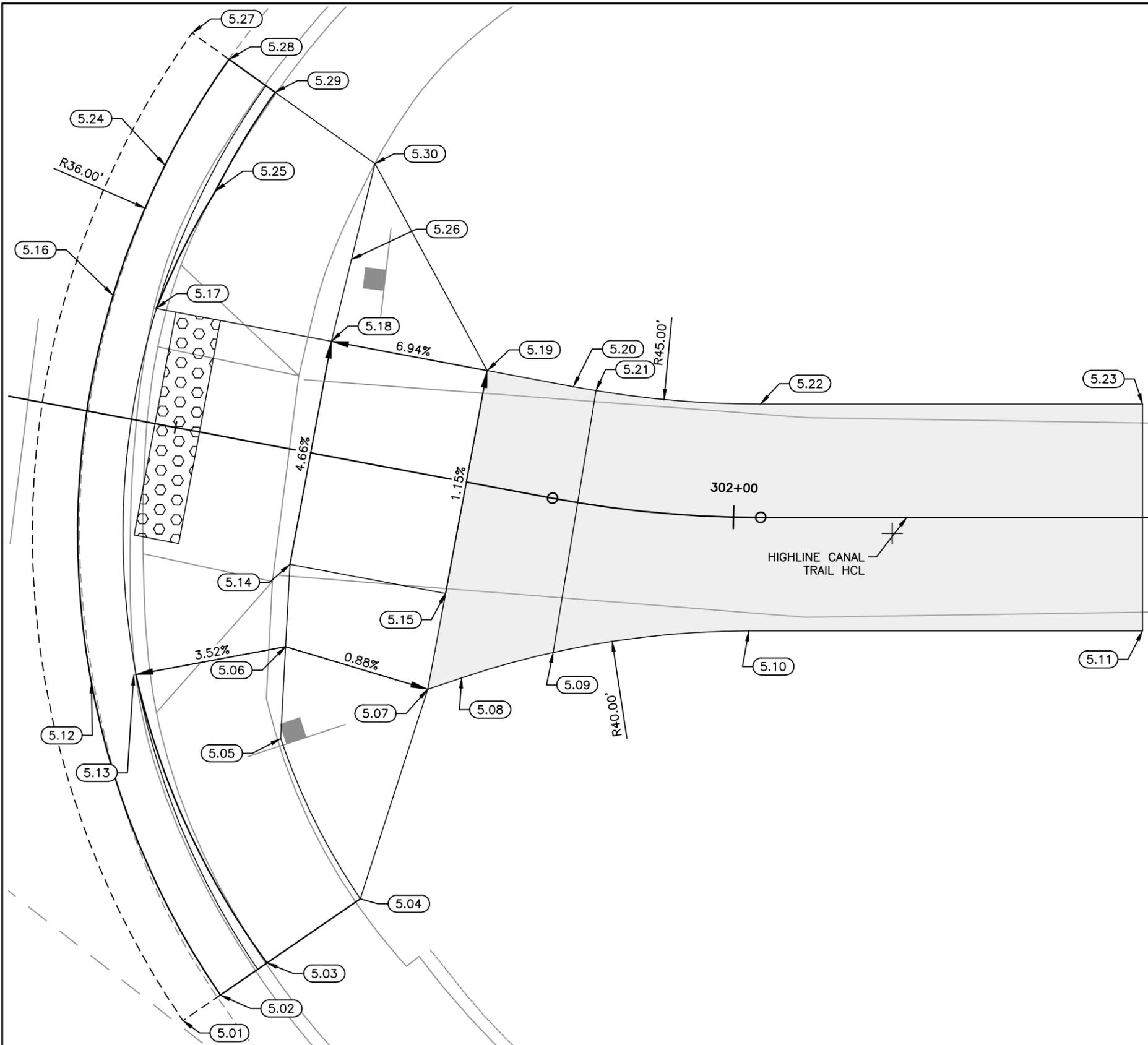
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**HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS
 ROADWAY DETAILS
 ILIFF ISLAND**

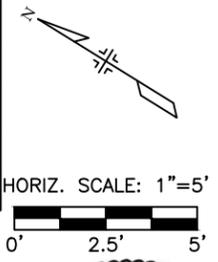
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 Subset: ROADWAY Sheets: RD-04 OF 7

Project No./Code
 PWTRN201842077
 SCHEDULE A
 Sheet Number 19



POINT TABLE				
POINT #	STATION	OFFSET	ELEVATION	DESCRIPTION
5.01	301+80.13	25.64' RT	5480.32	SAWCUT
5.02	301+81.54	24.23' RT	5480.13	SAWCUT
5.03	301+83.31	22.46' RT	5480.46	TIE INTO EX.
5.04	301+86.84	18.92' RT	5480.72	TIE INTO EX.
5.05	301+82.09	12.63' RT	5480.09	SIDEWALK
5.06	301+81.55	8.60' RT	5479.76	SIDEWALK
5.07	301+88.07	9.29' RT	5479.71	SIDEWALK
5.08	301+89.45	8.53' RT	5479.71	SIDEWALK
5.09	301+93.07	6.69' RT	5479.74	SIDEWALK
5.10	302+00.72	5.00' RT	5480.24	SIDEWALK
5.11	302+18.07	5.00' RT	0.00	TIE INTO EX.
5.12	301+73.41	11.75' RT	5479.62	EDGE OF PAVEMENT
5.13	301+75.19	11.07' RT	5479.53	SIDEWALK
5.14	301+81.07	5.00' RT	5479.47	SIDEWALK
5.15	301+88.07	5.00' RT	5479.61	SIDEWALK
5.16	301+71.21	5.22' LT	5478.96	EDGE OF PAVEMENT
5.17	301+73.20	5.00' LT	5478.87	SIDEWALK
5.18	301+81.07	5.00' LT	5479.01	SIDEWALK
5.19	301+88.07	5.00' LT	5479.49	SIDEWALK
5.20	301+91.94	5.00' LT	5479.55	SIDEWALK
5.21	301+93.07	5.00' LT	5479.57	SIDEWALK
5.22	302+01.19	5.00' LT	5480.12	SIDEWALK
5.23	302+18.07	5.00' LT	0.00	TIE INTO EX.
5.24	301+72.42	11.28' LT	5478.72	EDGE OF PAVEMENT
5.25	301+74.82	10.58' LT	5479.05	CURB TRANSITION
5.26	301+81.27	8.70' LT	5479.00	SIDEWALK
5.27	301+72.52	17.23' LT	5478.44	SAWCUT
5.28	301+74.33	16.39' LT	5478.48	SAWCUT
5.29	301+76.60	15.34' LT	5478.82	TIE INTO EX.
5.30	301+81.52	13.05' LT	5479.00	TIE INTO EX.

- LEGEND:
- TRAIL HOT MIX ASPHALT SEE DETAIL
 - CONCRETE CURB RAMP
 - MEDIAN COVER MATERIAL (CONCRETE)
 - CAST IRON TRUNCATED DOMES



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 Revised:
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HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS ROADWAY DETAILS
SOUTH HIGHLINE CANAL TRAIL DRIVEWAY
 Designer: DAL
 Detailer: DAL
 Subset: ROADWAY
 Structure Numbers:
 Sheets: RD-07 OF 7

Project No./Code
 PWTRN201842077
 SCHEDULE A
 Sheet Number 22

CONSTRUCTION ACTIVITIES STORMWATER MANAGEMENT PLANS – STANDARD NOTES

STANDARD NOTE # 1

"THE PERMITTEE AND/OR CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR, ACCUMULATE IN, THE FLOWLINES, STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AND COUNTY OF DENVER AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER."

STANDARD NOTE # 2

"THE CONTRACTOR 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 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."

STANDARD NOTE # 3

"SOIL STABILIZATION MEASURES SHALL BE IMPLEMENTED WITHIN FOURTEEN (14) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. STABILIZATION OF DISTURBED AREAS ADJACENT TO RECEIVING WATERS OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. NOTE: FEDERAL AND STATE REGULATIONS MAY SOON REQUIRE STABILIZATION WITHIN SEVEN (7) DAYS OF COMPLETION OF GRADING ACTIVITIES. IN SUCH CASES, THE SHORTER TIMEFRAME SHALL APPLY TO PROJECTS WITHIN DENVER AS WELL."

STANDARD NOTE # 4

"THE DEVELOPER, GENERAL CONTRACTOR, GRADING 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)

STANDARD NOTE # 5

"THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES IS PROHIBITED." STEEL FENCE POSTS MAY BE USED ON A CASE BY CASE BASIS AND REQUIRES APPROVAL FROM THE CITY AND COUNTY OF DENVER SWMP REVIEWER OR THE STORMWATER ENFORCEMENT INVESTIGATOR PRIOR TO INSTALLATION."

STANDARD NOTE # 6

"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 SUCH SHALL BE REQUIRED."

STANDARD NOTE # 7

"APPROVED EROSION AND SEDIMENT CONTROL 'BEST MANAGEMENT PRACTICES' SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE PERMITTEE OR CONTRACTOR SHALL PRODUCE AND RETAIN WEEKLY WRITTEN INSPECTION RECORDS FOR ALL BMPS AND AFTER SIGNIFICANT PRECIPITATION EVENTS. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IMMEDIATELY. ADDITIONALLY, STREET SWEEPING IS TO BE COMPLETED BY THE CLOSE OF THE BUSINESS DAY OR (AND) ON AN AS NEEDED BASIS THROUGHOUT THE DAY."

STANDARD NOTE # 8

"WATER USED IN THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES SHALL BE DISCHARGED INTO A PREDEFINED, CONCRETE WASHOUT AREA ON THE JOB SITE. BERMED CONTAINMENT OR COMMERCIALY AVAILABLE CONCRETE WASHOUT DEVICES THAT FULLY CONTAIN ALL WASH WATER ARE ACCEPTABLE. WASH WATER DISCHARGED INTO THE CONTAINMENT AREA OR DEVICE SHALL BE ALLOWED TO INFILTRATE, EVAPORATE, AND OR BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. DRIED CEMENT WASTE IS TO BE REMOVED FROM THE CONTAINMENT AREA AND PROPERLY DISPOSED. SHOULD THE USE OF A PREDEFINED BERMED CONTAINMENT AREA OR APPROVED WASHOUT DEVICE BE TECHNICALLY INFEASIBLE DUE TO THE PROJECT SIZE, OR LACK OF AN AREA WITH A SUITABLE GROUND SURFACE FOR ESTABLISHING CONTAINMENT, PROPER DISPOSAL OF CONCRETE WASHOUT AND WASH WATER AT THE JOB SITE SHALL CONFORM TO THE APPROVED TECHNIQUES AND PRACTICES IDENTIFIED IN THE COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT'S TRAINING VIDEO ENTITLED 'BUILDING FOR A CLEANER ENVIRONMENT, READY MIX WASHOUT TRAINING' AND ITS ACCOMPANYING MANUAL ENTITLED, 'READY MIX WASHOUT GUIDEBOOK, VEHICLE AND EQUIPMENT WASHOUT AT CONSTRUCTION SITES.' 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).

STANDARD NOTE # 9

"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)

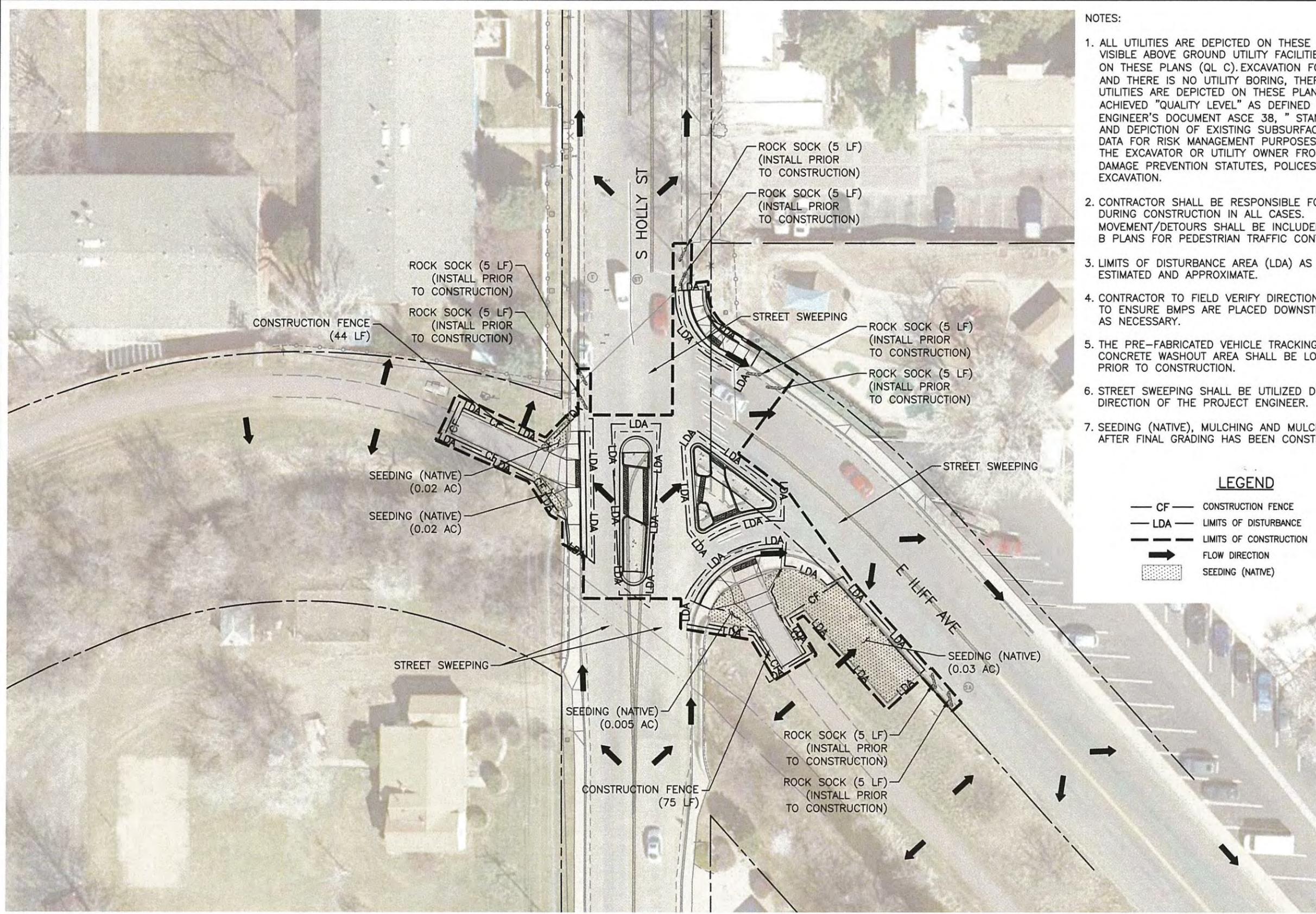
STANDARD NOTE # 10

"PAVED AND IMPERVIOUS SURFACES WHICH ARE ADJACENT TO CONSTRUCTION SITES MUST BE SWEEPED ON A DAILY BASIS AND AS NEEDED DURING THE DAY WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ONTO 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." (SEC.56-102A, C; REVISED MUNICIPAL CODE, CITY AND COUNTY OF DENVER). KICK-BROOMS ARE NOT ALLOWED.



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Print Date: 7/10/2019		Sheet Revisions			DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 PHONE: (720) 913-4501 FAX: (720) 913-4544	As Constructed	HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS EROSION CONTROL		Project No./Code
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6300 South Syracuse Way, Suite 600 Centennial, CO 80111 Phone: 303.721.1440 www.FHUENG.com					Void:	Subset: EROSION	Sheets: EC-01 OF 2	Sheet Number 23	

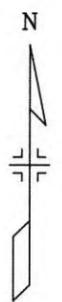


NOTES:

- ALL UTILITIES ARE DEPICTED ON THESE PLANS AT QUALITY LEVEL D (QL D). VISIBLE ABOVE GROUND UTILITY FACILITIES WERE SURVEYED AND ARE DEPICTED ON THESE PLANS (QL C). EXCAVATION FOR THIS PROJECT IS LIMITED TO 2 FEET AND THERE IS NO UTILITY BORING, THEREFORE SUE (QL B) IS NOT REQUIRED. UTILITIES ARE DEPICTED ON THESE PLANS IN ACCORDANCE WITH THEIR ACHIEVED "QUALITY LEVEL" AS DEFINED IN THE AMERICAN SOCIETY OF CIVIL ENGINEER'S DOCUMENT ASCE 38, "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA. RELIANCE UPON THESE DATA FOR RISK MANAGEMENT PURPOSES DURING BIDDING DOES NOT RELIEVE THE EXCAVATOR OR UTILITY OWNER FROM FOLLOWING ALL APPLICABLE UTILITY DAMAGE PREVENTION STATUTES, POLICES, AND/OR PROCEDURES DURING EXCAVATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PEDESTRIAN MOVEMENT/DETOURS DURING CONSTRUCTION IN ALL CASES. COST OF PEDESTRIAN MOVEMENT/DETOURS SHALL BE INCLUDED IN COST OF WORK. SEE SCHEDULE B PLANS FOR PEDESTRIAN TRAFFIC CONTROL PLANS.
- LIMITS OF DISTURBANCE AREA (LDA) AS SHOWN ON THIS PLAN SHEET ARE ESTIMATED AND APPROXIMATE.
- CONTRACTOR TO FIELD VERIFY DIRECTION OF FLOW AND SHALL FIELD ADJUST TO ENSURE BMPs ARE PLACED DOWNSTREAM OF FLOW FROM DISTURBED AREAS AS NECESSARY.
- THE PRE-FABRICATED VEHICLE TRACKING CONTROL AND PRE-FABRICATED CONCRETE WASHOUT AREA SHALL BE LOCATED BY THE PROJECT ENGINEER PRIOR TO CONSTRUCTION.
- STREET SWEEPING SHALL BE UTILIZED DURING CONSTRUCTION AND AT THE DIRECTION OF THE PROJECT ENGINEER.
- SEEDING (NATIVE), MULCHING AND MULCH TACKIFIER SHALL BE COMPLETED AFTER FINAL GRADING HAS BEEN CONSTRUCTED.

LEGEND

- CF — CONSTRUCTION FENCE
- LDA — LIMITS OF DISTURBANCE
- - - LCA — LIMITS OF CONSTRUCTION
- FLOW DIRECTION
- ▨ SEEDING (NATIVE)



HORIZ. SCALE: 1"=40'



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HOLLY & ILLIFF PEDESTRIAN IMPROVEMENTS
 EROSION CONTROL

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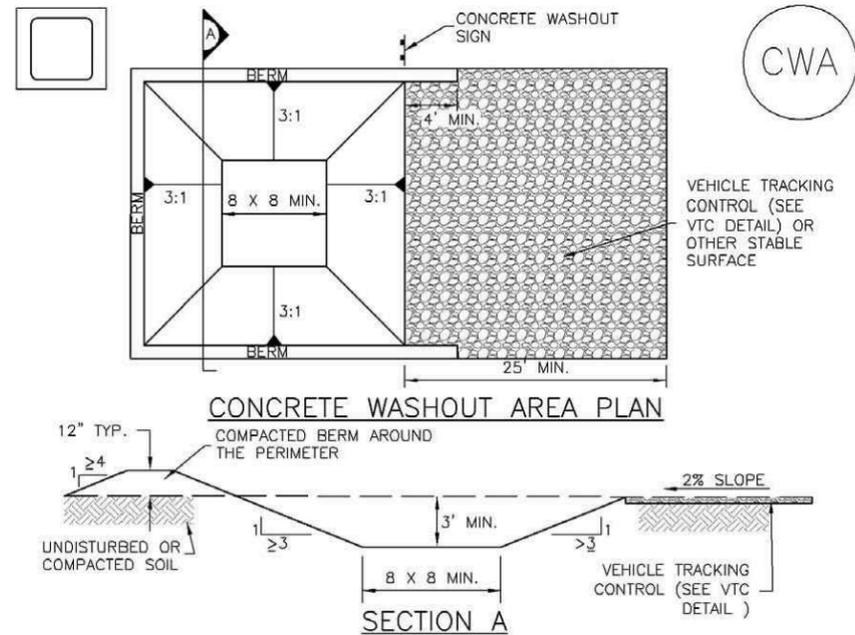
SCHEDULE A

Sheet Number 24

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Concrete Washout Area (CWA)

MM-1



CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-CWA INSTALLATION LOCATION.
- DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

November 2010 Urban Drainage and Flood Control District CWA-3
Urban Storm Drainage Criteria Manual Volume 3

MM-1

Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

- INSPECT BMPs EVERY 7 DAYS, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
- THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).

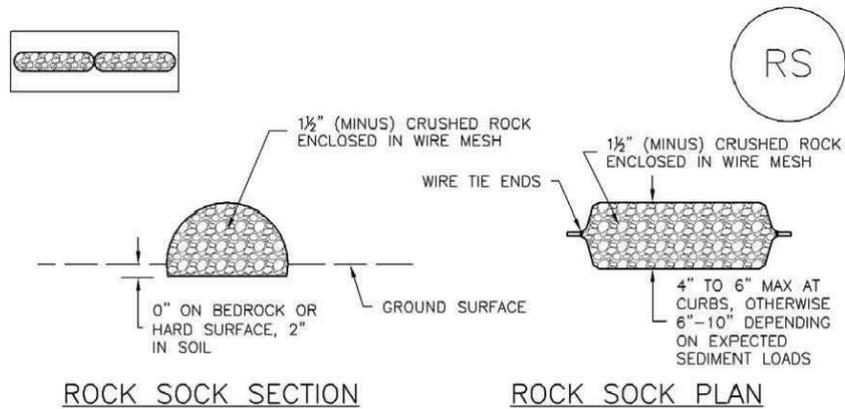
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



CWA-4 Urban Drainage and Flood Control District November 2010
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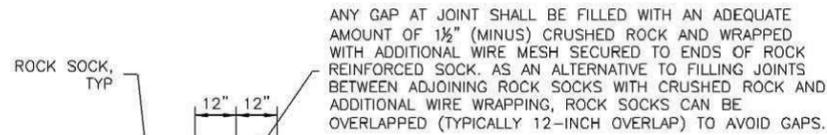
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ROCK SOCK SECTION

ROCK SOCK PLAN



ROCK SOCK JOINTING

GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5

MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.

ROCK SOCK INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION(S) OF ROCK SOCKS.
- CRUSHED ROCK SHALL BE 1 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1 1/2" MINUS).
- WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2", RECOMMENDED MINIMUM ROLL WIDTH OF 48"
- WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
- SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS-1. ROCK SOCK PERIMETER CONTROL

ROCK SOCK MAINTENANCE NOTES

- INSPECT BMPs EVERY 7 DAYS, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
- SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
- ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.



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HOLLY & ILIFF PEDESTRIAN IMPROVEMENTS
STORMWATER MANAGEMENT
PLANS

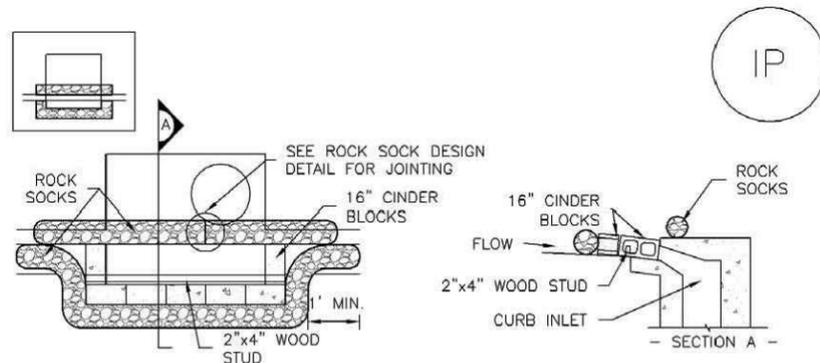
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SCHEDULE A

Sheet Number 26

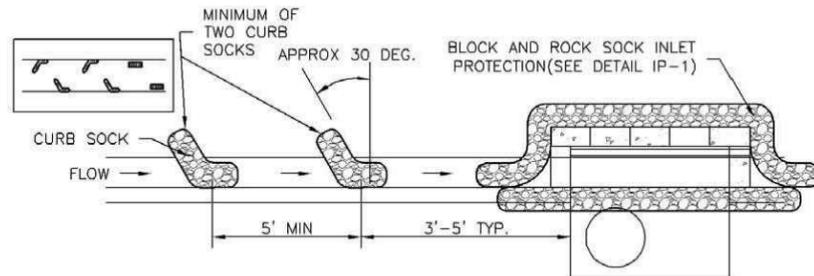
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IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

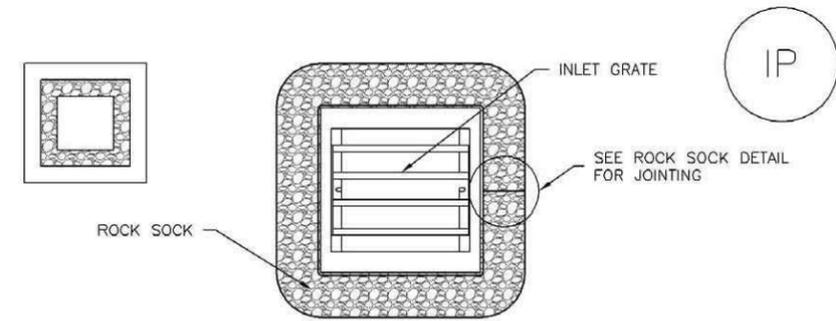
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

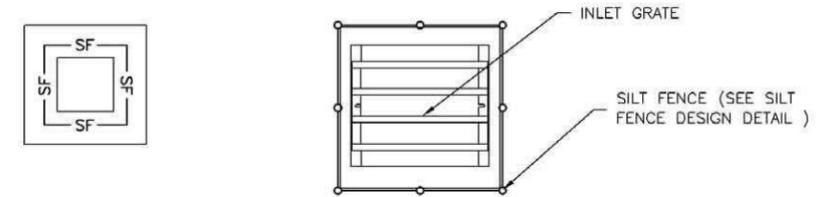
1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.



IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP-4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



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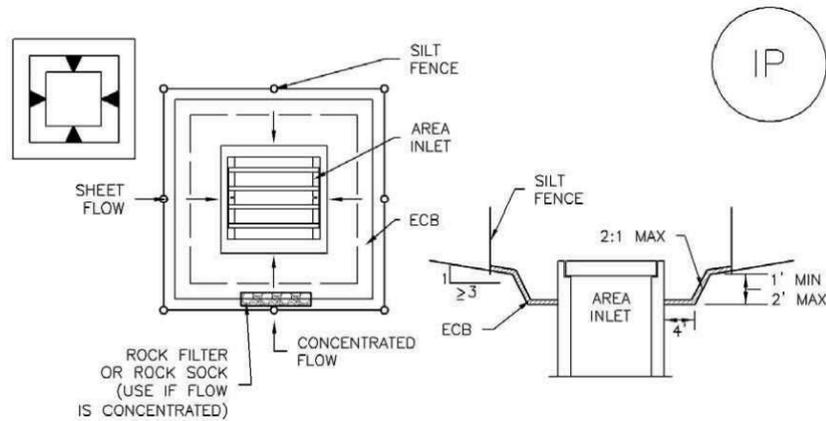
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Revised:	Detailer: KLT		
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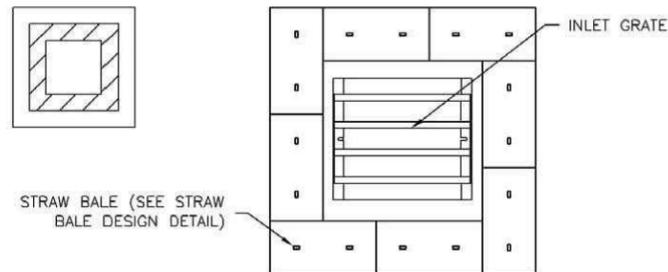
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IP-5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.



IP-6. STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF INLET PROTECTION.
-TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EVERY 7 DAYS, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.



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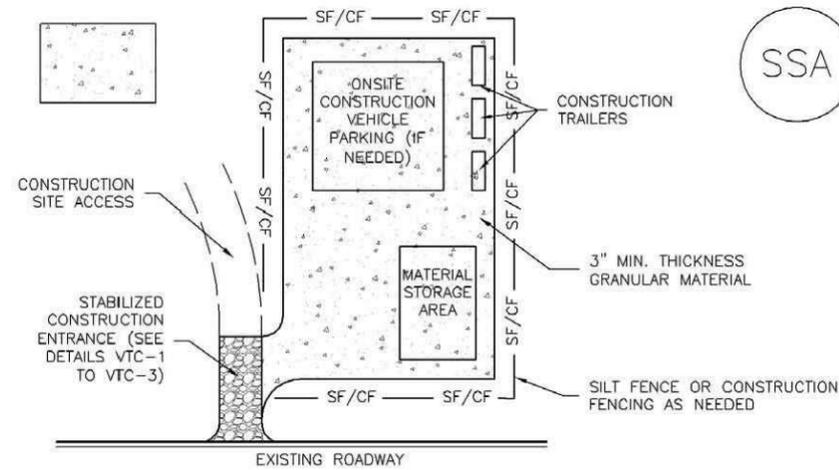
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Stabilized Staging Area (SSA)

SM-6



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

- SEE PLAN VIEW FOR
 - LOCATION OF STAGING AREA(S).
 - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
- STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
- STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
- THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
- ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

- INSPECT BMPs EVERY 7 DAYS, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

SM-6

Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
 - THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE:** MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- NOTE:** MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

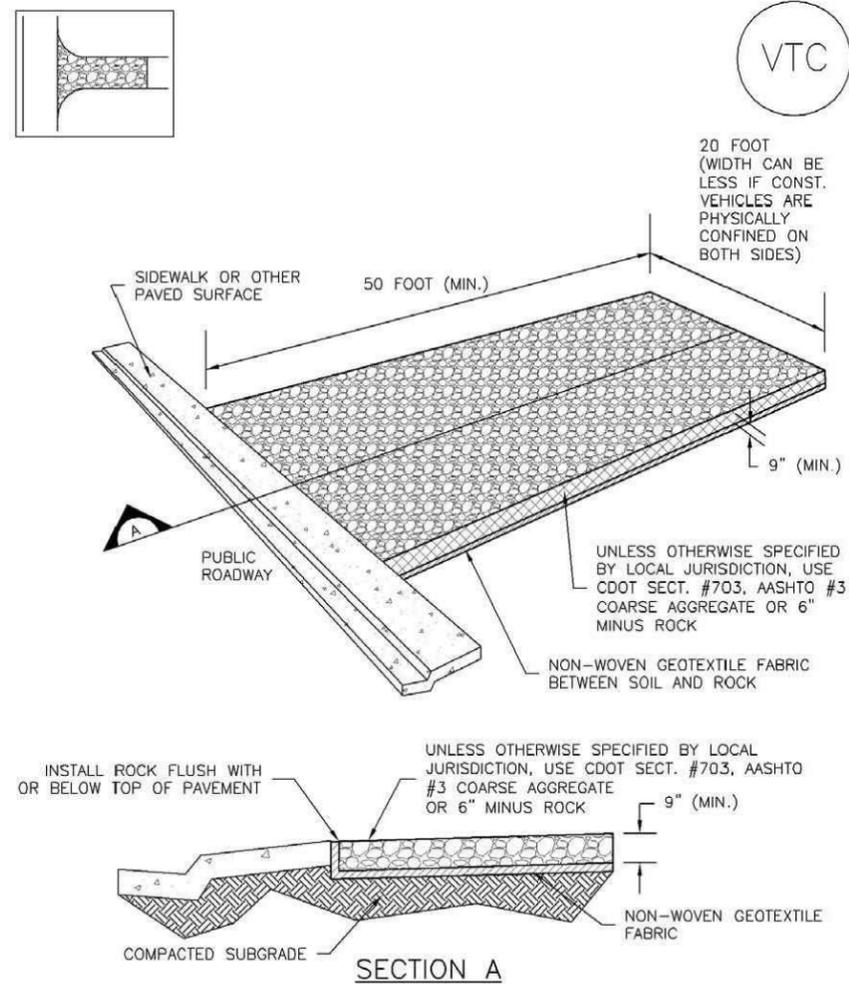


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Vehicle Tracking Control (VTC)

SM-4

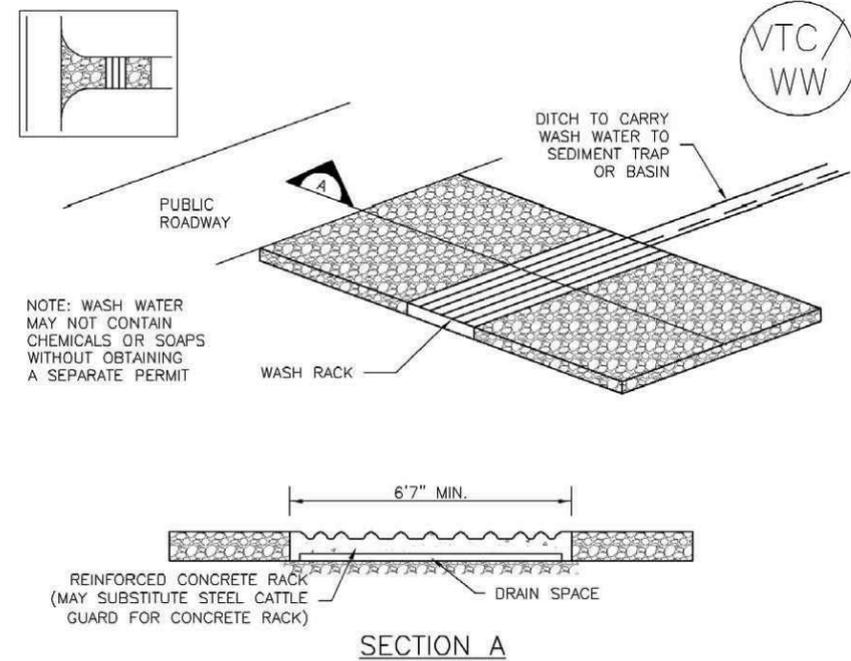


VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-3

SM-4

Vehicle Tracking Control (VTC)



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

VTC-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010



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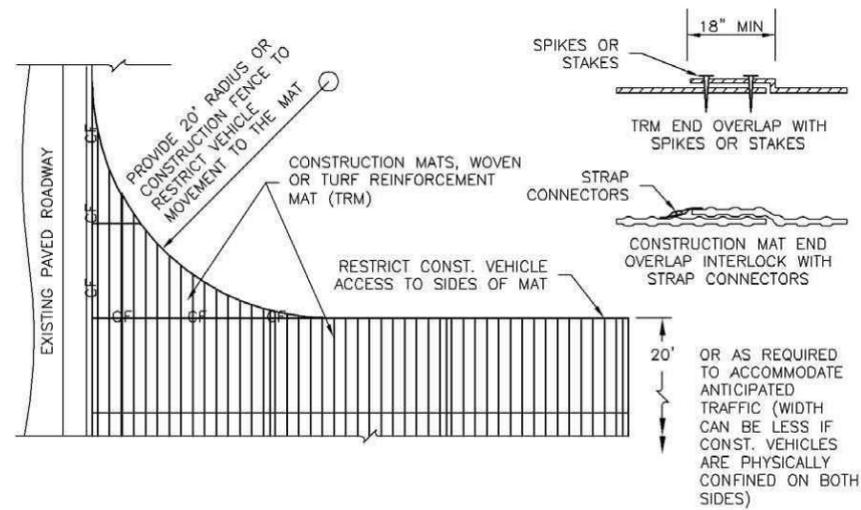
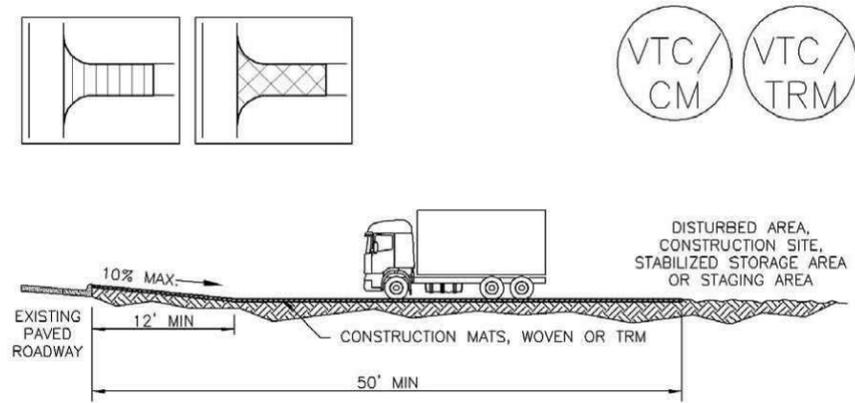
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Vehicle Tracking Control (VTC)

SM-4



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-5

SM-4

Vehicle Tracking Control (VTC)

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- SEE PLAN VIEW FOR
 - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
 - TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
- CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
- SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

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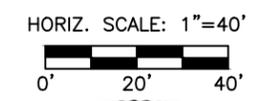
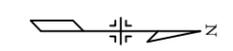
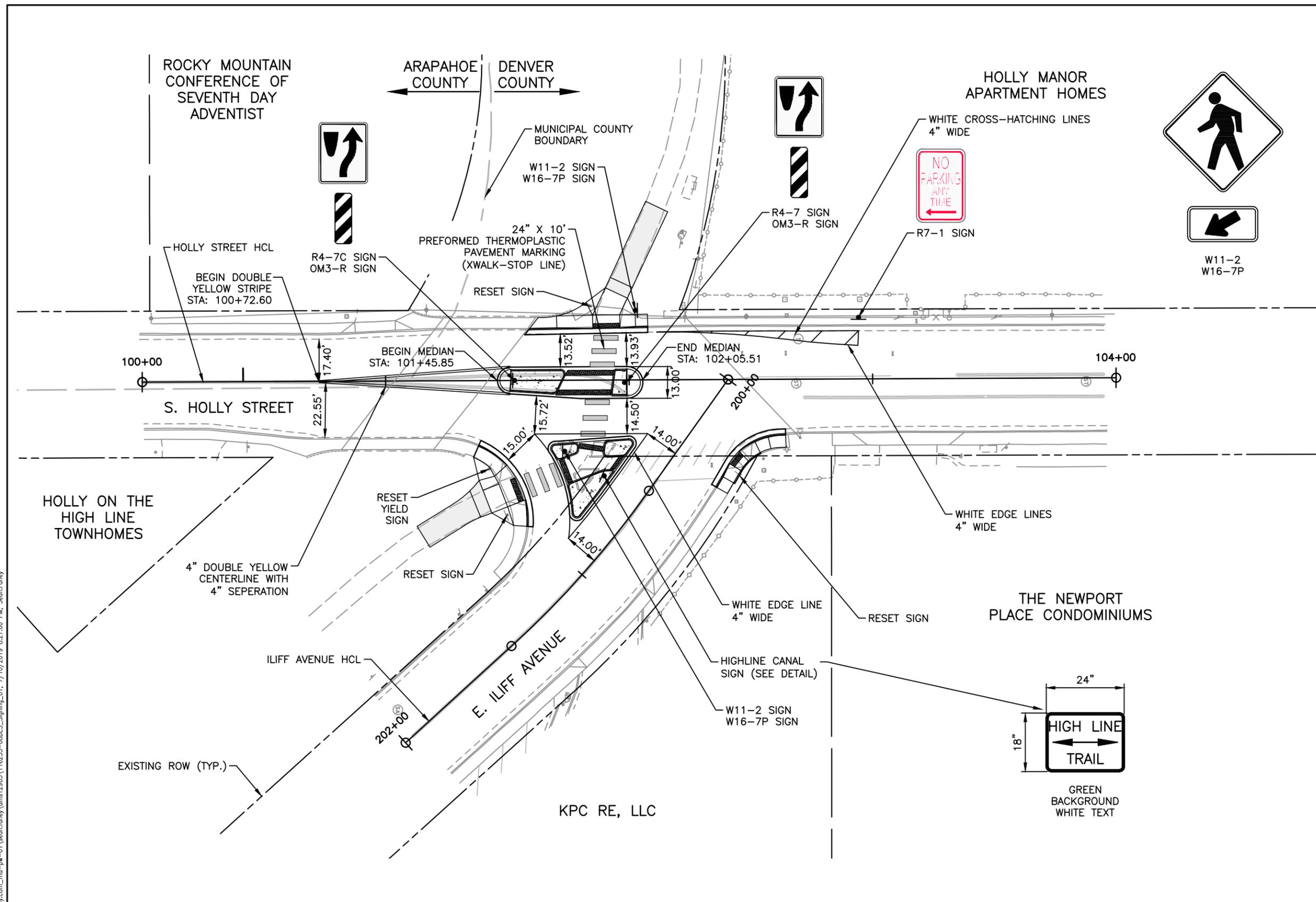
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	Subset: EROSION	Sheets: ED-07 OF 7	Sheet Number 31

- NOTES:
- SEE SCHEDULE B PLANS FOR PROPOSED BRIDGE, SIDEWALK AND ROADWAY IMPROVEMENTS.



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 SIGNING AND STRIPING PLANS**

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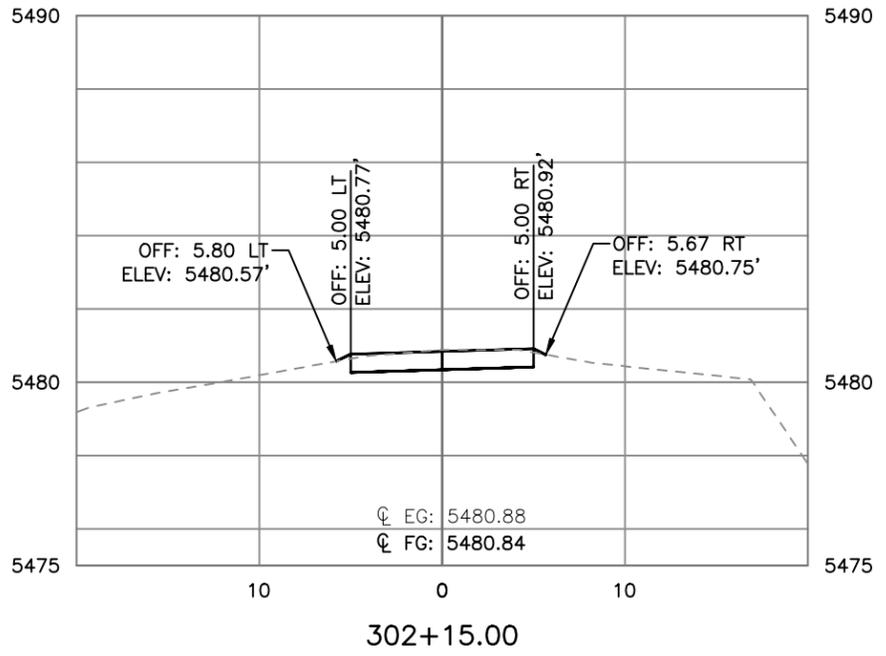
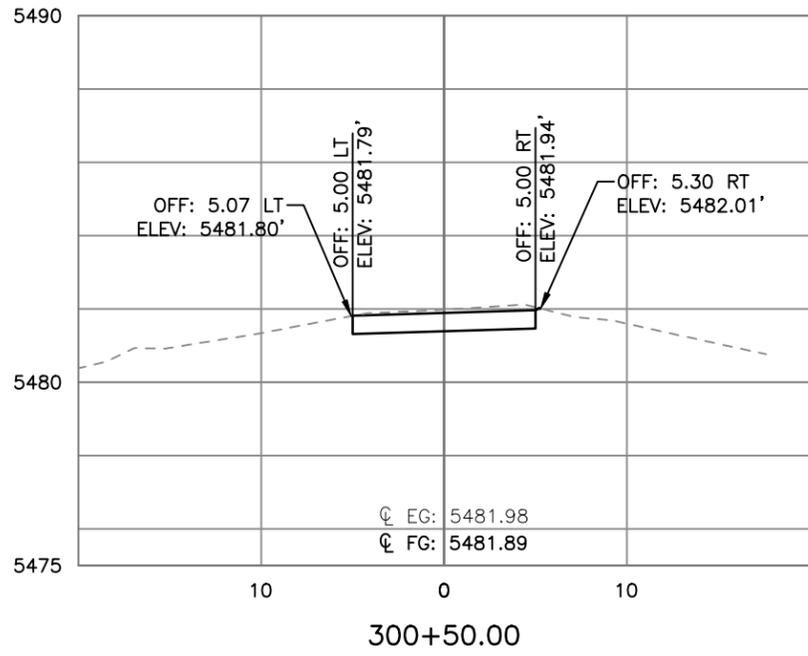
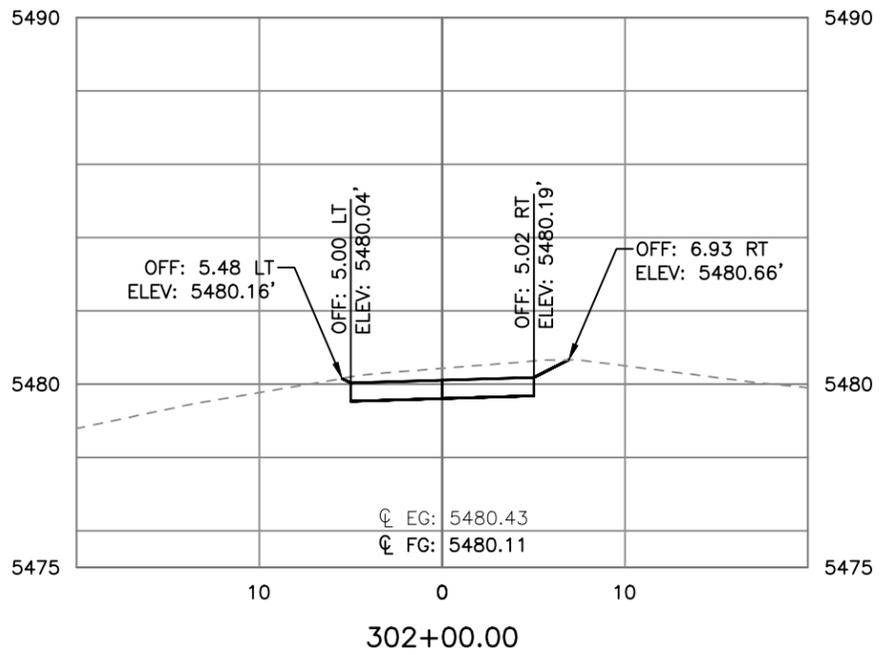
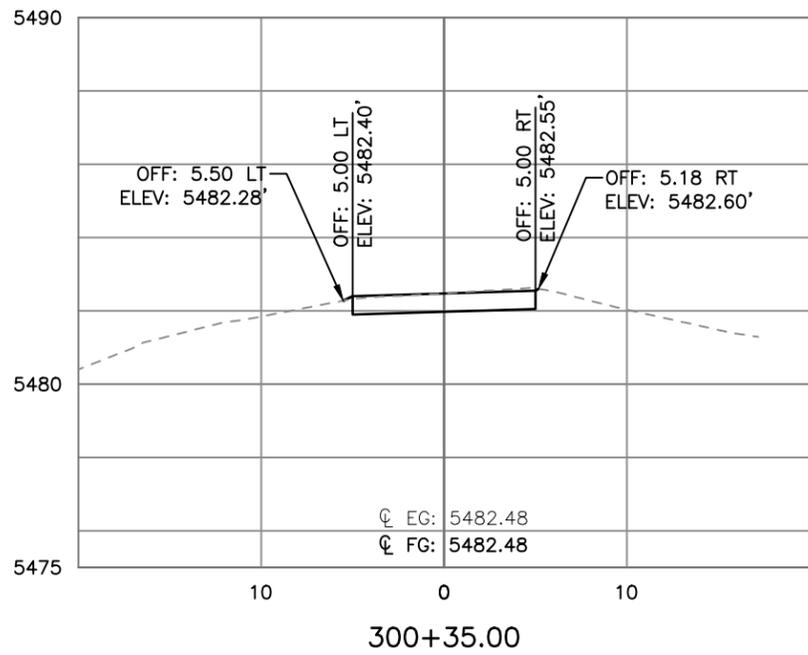
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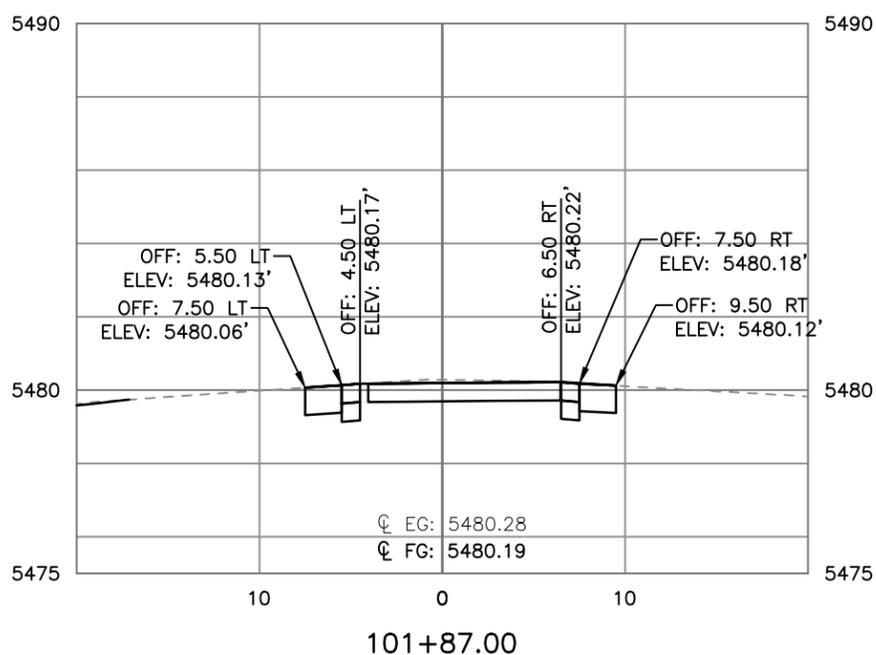
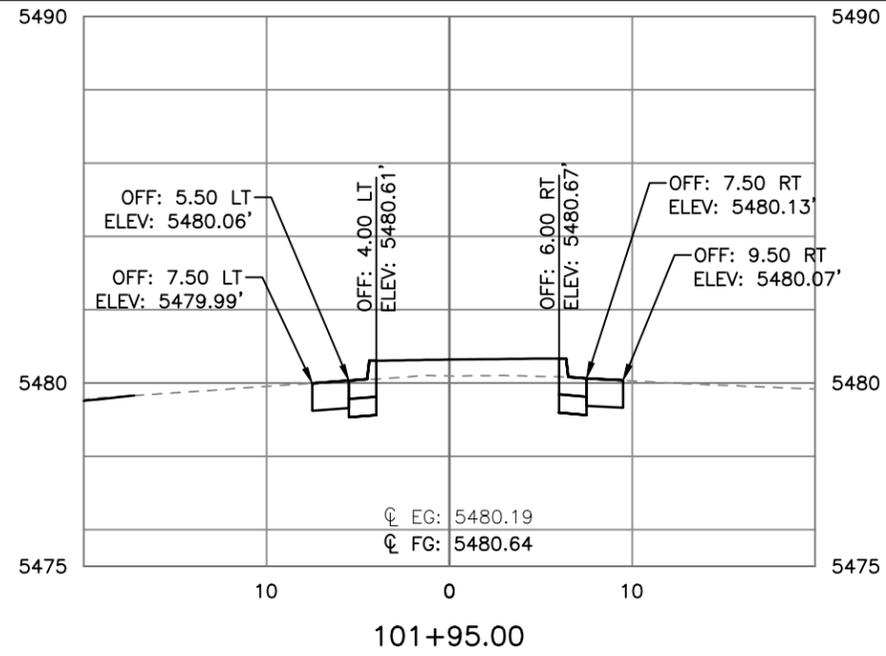
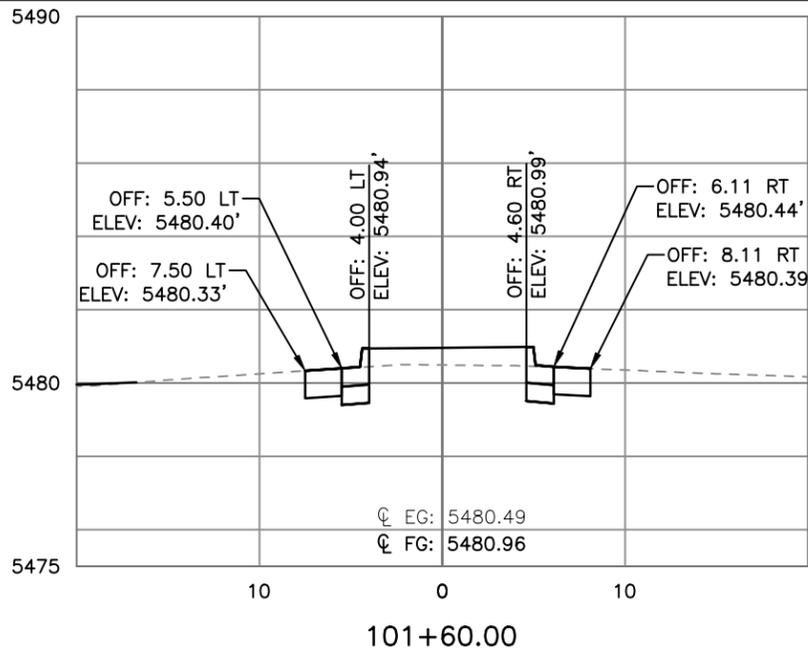
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 HOLLY STREET**

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 Subset: ROADWAY

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 SCHEDULE A
 Sheet Number **33**

Oversight / NHS	<input type="checkbox"/> NO <input type="checkbox"/> YES
NATIONAL HIGHWAY SYSTEM?	<input type="checkbox"/> NO <input type="checkbox"/> YES

**SOUTH HOLLY STREET BRIDGE (D-10-HC-170)
OVER HIGHLINE CANAL
SCHEDULE B**

WBS 04.159
DENVER, COLORADO

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11	BR-04	SUPERSTRUCTURE DETAILS (1 OF 2)
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**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS**

APPROVED BY:		
	9.17.19	DATE
EXECUTIVE DIRECTOR OF PUBLIC WORKS ERIC PFLIEGER		
	9.17.19	DATE
CITY ENGINEER LESLEY THOMAS		
	9/16/19	DATE
DIRECTOR OF ENGINEERING CAPITAL PROJECTS DAVID HUNTSINGER		
	9/10/19	DATE
CITY TRAFFIC ENGINEER EMILY GLOECKNER		



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File Name: (01) 46212 BR TL 01.dwg	Date:	Comments	Init.				TITLE SHEET			
Horiz. Scale: N/A Vert. Scale: N/A					201 WEST COLFAX AVENUE DENVER, CO 80202 PHONE: (720) 913-4501 FAX: (720) 913-4544	No Revisions:	Designer: EHP	Structure Numbers: D-10-HC-170	Sheet Number 1	
City Project Manager Kevin Rens, PE						Revised:	Detailer: EHP	SCHEDULE B		
						Void:	Sheet Subset: Bridge	Subset Sheets: TL01 OF 1		

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION 2017 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE 2011 EDITION OF THE CITY OF COUNTY OF DENVER STANDARD SPECIFICATIONS FOR CONSTRUCTION-GENERAL CONTRACT CONDITIONS AND AS NOTED IN THE DRAWINGS.
2. EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M213.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION AND REHABILITATION.
4. ALL LONGITUDINAL AND TRANSVERSE DIMENSIONS ARE MEASURED HORIZONTALLY AND INCLUDE NO CORRECTION FOR GRADE.
5. BEFORE REMOVAL, THE CONTRACTOR SHALL VERIFY THE EXISTING HMA THICKNESS ON THE BRIDGE DECK IN ACCORDANCE WITH THE SPECIAL PROVISIONS REMOVAL OF ASPHALT MAT (PLANING) (SPECIAL).
6. ALL ASPHALT MATERIAL AND REMAINING MEMBRANE SHALL BE REMOVED FROM THE SURFACE OF THE CONCRETE DECK PRIOR TO CONCRETE REMOVAL IN ACCORDANCE WITH THE SPECIAL PROVISIONS REMOVAL OF ASPHALT MAT (PLANING) (SPECIAL).
7. GRADE 60 REINFORCING STEEL IS REQUIRED.
8. ALL REINFORCING STEEL SHALL BE NON-EPOXY COATED UNLESS OTHERWISE NOTED.
9. AFTER REMOVAL, THE ENTIRE BRIDGE DECK SHALL BE SOUNDED FOR DELAMINATION ACCORDING TO ASTM D-4580, PROCEDURE B, CHAIN DRAG. ALL UNSOUND CONCRETE SHALL BE MARKED AND REMOVED AS DIRECTED BY THE ENGINEER. COSTS FOR SOUNDING SHALL BE INCLUDED IN THE WORK.
10. DECK REHABILITATION QUANTITIES ARE APPROXIMATE. FINAL LOCATIONS SHALL BE DETERMINED BY THE ENGINEER. PAYMENT WILL BE FOR THE ACTUAL AREA REPAIRED AND MATERIAL USED AS APPROVED BY THE ENGINEER. IF PLAN QUANTITIES ARE EXCEEDED, ADDITIONAL DECK REHABILITATION QUANTITIES WILL BE MEASURED AND PAID FOR AT THE UNIT PRICE FOR THE APPROPRIATE BID ITEM.
11. THE CONTRACTOR MAY STOCKPILE REPAIR MATERIAL AT OWN RISK. ALL UNUSED MATERIAL SHALL REMAIN PROPERTY OF THE CONTRACTOR. CITY AND COUNTY OF DENVER WILL NOT REPURCHASE LEFTOVER MATERIALS OR PAY ANY RESTOCKING FEES.
12. AFTER REMOVAL OF CONCRETE, ALL EXPOSED REBAR SHALL BE CLEANED OF ALL LOOSE CONCRETE BY CHIPPING AND/OR SANDBLASTING. GALVANIC ANODES SHALL BE INSTALLED AS NOTED IN THE DRAWINGS.
13. ALL SAW WATER, CORING WASTE, CONCRETE WASHOUT AND ANY OTHER CONSTRUCTION DEBRIS SHALL BE COLLECTED AND DISPOSED OF OFF SITE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. UNDER NO CIRCUMSTANCES SHALL SUCH MATERIAL BE ALLOWED TO ENTER ANY NATURAL OR MANMADE WATER WAY OR STORM DRAIN.
14. TRAFFIC MAY BE ALLOWED TO TRAVEL ON PATCHED DECK, PRIOR TO OVERLAY INSTALLATION, AT THE DISCRETION OF THE ENGINEER.
15. STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM THE "AS CONSTRUCTED PLANS". THESE STATIONS, ELEVATIONS, AND DIMENSIONS MAY BE ADJUSTED TO MEET THE EXISTING STRUCTURE. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.
16. THE BITUMINOUS PAVEMENT SHALL BE REMOVED FROM THE EXISTING STRUCTURE AS INDICATED ON THE PLANS AND REPLACED PER THE PLANS. IF ADDITIONAL DECK PREPARATION IS REQUIRED IT SHALL BE INCLUDED IN THE COST OF THE WORK.
17. THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 (1-800-922-1987) AT LEAST 3 DAYS (2 DAYS NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.
18. SEE GENERAL NOTES SHEETS IN THE SCHEDULE A PLANS FOR ITEMS NOT ADDRESSED IN THE SCHEDULE B PLAN SET.
19. EXISTING BRIDGE STEEL RAILS SHALL BE PROTECTED IN PLACE.
20. CONTRACTOR SHALL OBTAIN A CITY AND COUNTY OF DENVER STREET CUT AND ROW OCCUPANCY PERMIT. APPLY THROUGH THE CITY'S E-PERMIT SYSTEM:
[HTTPS://WWW.DENVERGOV.ORG/CONTENT/DENVERGOV/EN/RIGHT-OF-WAY-SERVICES/PERMITS.HTML](https://www.denvergov.org/content/denvergov/en/right-of-way-services/permits.html)
21. THE PROJECT IS NOT WITHIN A REGULATORY FLOOD HAZARD, A FLOODPLAIN PERMIT IS NOT REQUIRED.



BRIDGE DESCRIPTION

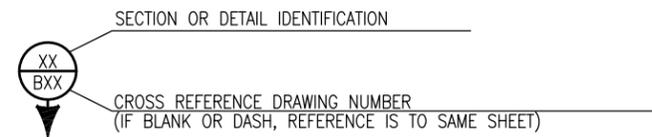
1-SPAN (38'-1") BRIDGE
 CONCRETE SLAB AND STEEL BEAM
 CARRYING SOUTH HOLLY ST. OVER THE HIGHLINE CANAL
 44'-0" ROADWAY CURB TO CURB 38' SKEW
 2-FIVE FOOT SIDEWALKS WITH 1 FOOT PARAPET

WORK DESCRIPTION

1. JACK BRIDGE AND REPLACE DETERIORATED BEARINGS
2. SANDBLAST AND PAINT END PORTION OF ALL STEEL BEAMS
3. REMOVAL OF EXISTING ASPHALT ON TOP OF DECK AND PLACEMENT OF WATERPROOFING MEMBRANE AND HMA
4. SOUND DECK AND PERFORM CLASS 2 AND CLASS 3 DECK REPAIRS AS NEEDED
5. REMOVE END PORTION OF DECK AND EXTEND BEYOND EXISTING ABUTMENT BACKWALLS
6. REMOVE AND REPLACE PORTIONS OF APPROACH ROADWAY, SIDEWALK, CURB, AND GUTTER, TO IMPROVE DRAINAGE

DESIGN DATA

AASHTO, EIGHTH EDITION LRFD
 DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN
 LIVE LOAD: HL-93 (DESIGN TRUCK OR TANDEM, AND DESIGN LANE LOAD)
 DEAD LOAD: ASSUMES 36 LBS PER SQ FT FOR BRIDGE DECK OVERLAY
 REINFORCED CONCRETE:
 CLASS DR CONCRETE: F'C = 4,500 PSI
 CLASS D CONCRETE: F'C = 4,500 PSI
 REINFORCING STEEL: FY = 60,000 PSI



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City Project Manager Kevin Rens, PE						Void:	Sheet Subset: Bridge		Subset Sheets: GN01 OF 12		
Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222					DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 PHONE: (720) 913-4501 FAX: (720) 913-4544						

EROSION CONTROL

THE OWNER, SITE DEVELOPER, 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 STREAMS, WETLANDS OR ANY WATER BODY IN THE VICINITY OF THIS PROJECT SITE IN ACCORDANCE WITH THE FOLLOWING:

1. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE WATERWAY DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING, OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, RECEIVING WATERS, WATERWAYS, WETLANDS, AND OR OTHER PUBLIC OR PRIVATE PROPERTIES, RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
2. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR, ACCUMULATE IN THE FLOW LINES OF 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 OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT ON PUBLIC RIGHTS OF WAY. (SEC.49-552; REVISED MUNICIPAL CODE)
4. THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES, OTHER THAN PORTABLE TOILETS, IS PROHIBITED.
5. THE OWNER, SITE DEVELOPER, 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)
 - IV. 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.
 - V. SPILL PREVENTION /CONTAINMENT: THIS BMP DEFINES THE MEASURES PROPOSED FOR REVENTING, CONTROLLING, OR CONTAINING SPILLS OF FUEL, LUBRICANTS, OR OTHER POLLUTANTS; AND PROTECTING POTENTIAL POLLUTANTS FROM CONTACT WITH PRECIPITATION OR RUNOFF.
 - VI. 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)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).

- VII. SWEEPING: THIS BMP REQUIRES THAT IMPERVIOUS SURFACES WHICH ARE ADJACENT TO OR CONTAINED WITHIN CONSTRUCTION SITES BE SWEPT ON A DAILY BASIS OR AS NEEDED DURING THE DAY WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ON TO THEM. EITHER SWEEPING BY HAND OR USE OF STREET SWEEPERS IS ACCEPTABLE. STREET SWEEPERS USING WATER WHILE SWEEPING IS PREFERRED IN ORDER TO MINIMIZE DUST. FLUSHING OFF PAVED SURFACES WITH WATER IS PROHIBITED.
- VIII. 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.
- IX. 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.
- X. 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)
- XI. STRUCTURAL CONTROLS: DEVELOPMENT SITES THAT ARE REQUIRED TO PROVIDE DETENTION AND WATER QUALITY ENHANCEMENT FACILITIES FOR STORM RUNOFF NEED TO INSTALL THE DETENTION FACILITIES EARLY IN THE CONSTRUCTION BUILD-OUT OF THE SITE. PROJECTS THAT ARE USING UNDERGROUND DETENTION ARE REQUIRED TO INSTALL A PRETREATMENT STRUCTURE(S) OR SEDIMENTATION BASIN(S) AS A MEANS OF TREATING POTENTIALLY POLLUTED STORM WATER PRIOR TO ENTERING THE DETENTION STRUCTURE. USE OF THESE STRUCTURES IS REQUIRED FOR ENTRAPPING SEDIMENT AND CONSTRUCTION DEBRIS DURING THE ACTIVE CONSTRUCTION PHASE OF THE PROJECT. A NARRATIVE SECTION OF A MANAGEMENT PLAN SHOULD ADDRESS OPERATION AND MAINTENANCE OF THE STRUCTURAL CONTROLS BEING USED AS AN ACTIVE CONSTRUCTION BMP.
6. EROSION AND SEDIMENT CONTROL 'BEST MANAGEMENT PRACTICES' SHALL BE MAINTAINED AND KEPT IN EFFECTIVE OPERATING CONDITION FOR THE DURATION OF THIS PROJECT. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IMMEDIATELY UPON DISCOVERY OF ANY DEFICIENCY OR DEFECT.

ENVIRONMENTAL

1. REGULATED ASBESTOS CONTAMINATED SOILS (RACS) MAY BE ENCOUNTERED IN BUILDING DEBRIS THROUGHOUT THE CITY DURING EXCAVATION. ALL RACS MUST BE MANAGED, DOCUMENTED, AND DISPOSED IN ACCORDANCE WITH STATE REGULATIONS PERTAINING TO SOLID WASTE SITES AND FACILITIES, SECTION 5 - ASBESTOS WASTE MANAGEMENT. STATE REGULATIONS REQUIRE ANY DISTURBED DEBRIS BE CHARACTERIZED TO DETERMINE APPLICABILITY OF THE REGULATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPETENT TRAINED PERSONNEL CAPABLE OF IDENTIFYING RACS IN DEBRIS, AND HAVING ACCESS TO AN ONSITE CERTIFIED ASBESTOS BUILDING INSPECTOR (CABI) IN CASE OF RACS DISCOVERY.
2. CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE AND TO PREVENT THE VISIBLE DISCHARGE OF FUGITIVE PARTICULATE EMISSIONS BEYOND THE PROPERTY LINE FROM WHICH THE EMISSIONS ORIGINATE. THE MEASURES TAKEN MUST BE EFFECTIVE AT ALL TIMES ON THE SITE, INCLUDING PERIODS OF INACTIVITY SUCH AS EVENINGS, WEEKENDS, AND HOLIDAYS AS WELL AS ANY OTHER PERIOD OF INACTIVITY.
3. DURING ANY SOIL DISTURBING ACTIVITIES, IF UNKNOWN/UNIDENTIFIED UNDERGROUND STORAGE TANKS, DRUMS, ODOROUS SOIL, STAINED SOIL, ASBESTOS-CEMENT PIPE (TRANSITE), BUILDING DEBRIS, OR WASTE MATERIALS ARE ENCOUNTERED, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA OF THE DISCOVERY UNTIL DENVER DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (DDPHE) MAKES A DETERMINATION OF HOW TO PROCEED. CONTRACTOR SHALL IMMEDIATELY NOTIFY DDPHE OF THE DISCOVERY AT 303-495-8376.
4. ANY SOIL EXCAVATED AND REUSED ON THE PROPERTY OR IMPORTED TO THE PROPERTY MUST MEET APPLICABLE SOIL REUSE ACCEPTANCE CRITERIA AS EXPLAINED IN THE DDPHE OCTOBER 5, 2017, MEMORANDUM TITLED GUIDANCE FOR REUSE OF SOIL ON CITY PROJECTS" LOCATED ON OUR WEBSITE UNDER THE "ABOUT" TAB FOR ENVIRONMENTAL REVIEW AND ASSESSMENT: [HTTPS://WWW.DENVERGOV.ORG/CONTENT/DENVERGOV/EN/ENVIRONMENTAL-HEALTH/ENVIRONMENTAL-QUALITY/LAND-USE-ANDPLANNING.HTML](https://www.denvergov.org/content/denvergov/en/environmental-health/environmental-quality/land-use-andplanning.html)
5. THE CONTRACTOR SHALL DIRECT NON-RECYCLABLE, NON-HAZARDOUS WASTES FROM CCD-OWNED OR CONTROLLED PROPERTY OR FACILITIES TO THE DENVER ARAPAHOE DISPOSAL SITE (DADS) LANDFILL FOR DISPOSAL, FOLLOWING THE REQUIREMENTS AND PROCEDURAL GUIDANCE PER CCD EXECUTIVE ORDER 115. LABORATORY ANALYTICAL RESULTS WILL BE REQUIRED PRIOR TO DADS ACCEPTANCE FOR SOIL AND POSSIBLY OTHER MATERIALS. EARLY TESTING IS RECOMMENDED; DDPHE CAN ASSIST. CONTACT DDPHE AT 720-865-5448 WITH QUESTIONS.
6. NOISE CONTROL. ALL NOISE CAUSED BY, OR RESULTING FROM, COMPLETED PROJECTS MUST COMPLY WITH DENVER'S NOISE ORDINANCE, D.R.M.C. CHAPTER 36 "NOISE CONTROL.". EXEMPTED HOURS FOR CONSTRUCTION IN THE CITY AND COUNTY OF DENVER ARE FROM 7 A.M. TO 9 P.M. MONDAY THROUGH FRIDAY AND 8 A.M. TO 5 P.M. ON SATURDAYS AND SUNDAYS. IF THERE IS A NEED TO WORK OUTSIDE OF THE EXEMPTED HOURS:
 - 1) THE CONTRACTOR MUST REQUEST A VARIANCE, AND
 - 2) THE VARIANCE PROCESS NEEDS TO BE STARTED A MINIMUM OF THREE MONTHS PRIOR TO THE DESIRED START DATE OF ANY WORK TO BE PERFORMED OUTSIDE OF EXEMPTED HOURS. ANY QUESTIONS SHOULD BE DIRECTED TO PAUL RIEDESEL, DDPHE COMMUNITY NOISE PROGRAM, 720-865-5410.

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File Name: (03) 46212 BR GN 02.dwg		Date:	Comments:	Init.		No Revisions:		GENERAL NOTES		
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City Project Manager Kevin Rens, PE						Void:	Detailer: EHP	Subset Sheets: GN02 OF 2	SCHEDULE B	
 Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222					Sheet Subset: Bridge					

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS BUILT
201	Clearing and Grubbing	L S	1	
202	Removal of Sidewalk	SY	17	
202	Removal of Curb and Gutter	LF	32	
202	Removal of Asphalt Mat	SY	51	
① 202	Removal of Asphalt Mat (Planing) (Special)	SY	239	
② 202	Removal of Portions of Present Structure (Class 2)	SY	19	
② 202	Removal of Portions of Present Structure (Class 3)	SY	2	
202	Removal of Portions of Present Structure	CY	15	
202	Sandblasting Reinforcing Steel	SY	47	
③ 202	Sandblasting	SF	780	
④ 204	Jacking and Shoring	L S	1	
206	Structure Excavation	CY	21	
250	Environmental Health and Safety Management	L S	1	
250	Health and Safety Officer	HOUR	8	
250	Monitoring Technician	HOUR	8	
304	Aggregate Base Course (Class 6)	TON	34	
⑨ 403	Hot Mix Asphalt (Patching) (Asphalt)	TON	47	
403	Hot Mix Asphalt (Grading SX) (75) (PG 64-22)	TON	36	
③ 509	Painting Existing Structure	L S	1	
⑤ 512	Bearing Device	EACH	6	
515	Waterproofing (Membrane)	SY	194	
601	Concrete Class D (Bridge)	CY	24	
⑥ 601	Concrete Class DR	CY	2	
⑦ 601	Galvanic Anodes	EACH	102	
⑧ 602	Reinforcing Steel	LB	9,232	
608	Concrete Sidewalk	SY	24	
609	Curb and Gutter	LF	35	
625	Construction Surveying	L S	1	
626	Mobilization	L S	1	
630	Construction Traffic Control	L S	1	

NOTES:

1. AFTER THE REMOVAL OF THE EXISTING ASPHALT THE BRIDGE DECK SHALL BE SOUNDED FOR DELAMINATIONS ACCORDING TO ASTM D-4580. ALL UNSOUND CONCRETE SHALL BE MARKED AND REMOVED AS DIRECTED BY THE ENGINEER.
2. QUANTITIES FOR REMOVAL OF PORTIONS OF PRESENT STRUCTURE ARE ESTIMATED BASED ON THE FOLLOWING PERCENTAGES OF TOTAL BRIDGE DECK AREAS:

DECK NBI RATING	CLASS 2	CLASS 3
5	10%	1%

3. QUANTITY SHOWN IS FOR SANDBLASTING AND PAINTING OF STEEL BEAMS (509). LEAD PAINT WAS IDENTIFIED ON THE STEEL BEAMS. SANDBLASTING OF BEAMS SHALL FOLLOW THE GUIDELINES OUTLINED IN THE COLORADO ENVIRONMENTAL GUIDE TO ABRASIVE BLASTING HAZARDOUS WASTE REGULATIONS:

[HTTPS://WWW.COLORADO.GOV/PACIFIC/SITES/DEFAULT/FILES/AP_ABRASIVE-BLAST-CLEANING-GUIDE.PDF](https://www.colorado.gov/pacific/sites/default/files/AP_ABRASIVE-BLAST-CLEANING-GUIDE.PDF)

ALSO SEE "ASBESTOS AND LEAD-BASED PAINT ASSESSMENT REPORT" BY PINYON ENVIRONMENTAL, INC. DATED JANUARY 15, 2019.

4. INCLUDES REMOVAL OF SHORING NEEDED FOR BRIDGE JACKING.
5. INCLUDES REMOVAL AND DISPOSAL OF EXISTING BEARINGS.
6. PLAN QUANTITIES FOR CONCRETE CLASS DR ARE BASED ON ONE-HALF THE DECK THICKNESS TIMES THE CLASS 2 REMOVAL AREA PLUS THE FULL DECK THICKNESS TIMES THE CLASS 3 REMOVAL AREA.
7. QUANTITY FOR ANODES IS BASED ON 5 ANODES / SY OF CLASS 2 AND CLASS 3 REMOVAL.
8. COST OF DOWELING (DRILL & EPOXY) SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
9. HOT MIX ASPHALT (PATCHING) (ASPHALT) SHALL BE HMA (GRADING S) (75) (PG 64-22)

Print Date: 6/10/2019		Sheet Revisions				As Constructed		SOUTH HOLLY STREET BRIDGE		Project Number		
File Name: (04) 46212 SQ TB 01.dwg		Date:	Comments:	Init.		DEPARTMENT OF PUBLIC WORKS		SUMMARY OF APPROXIMATE QUANTITIES		WBS 04.159		
Horiz. Scale: N/A Vert. Scale: N/A						201 WEST COLFAX AVENUE DENVER, CO 80202		Designer: EHP	Structure Numbers	D-10-HC-170		
City Project Manager Kevin Rens, PE						PHONE: (720) 913-4501 FAX: (720) 913-4544		Detailer: EHP		SCHEDULE B		
 Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222				THE MILE HIGH CITY		Sheet Subset: Bridge	Subset Sheets: SQ01 OF 1			Sheet Number 4		

CITY AND COUNTY OF DENVER STATE OF COLORADO

PROJECT CONTROL DIAGRAM

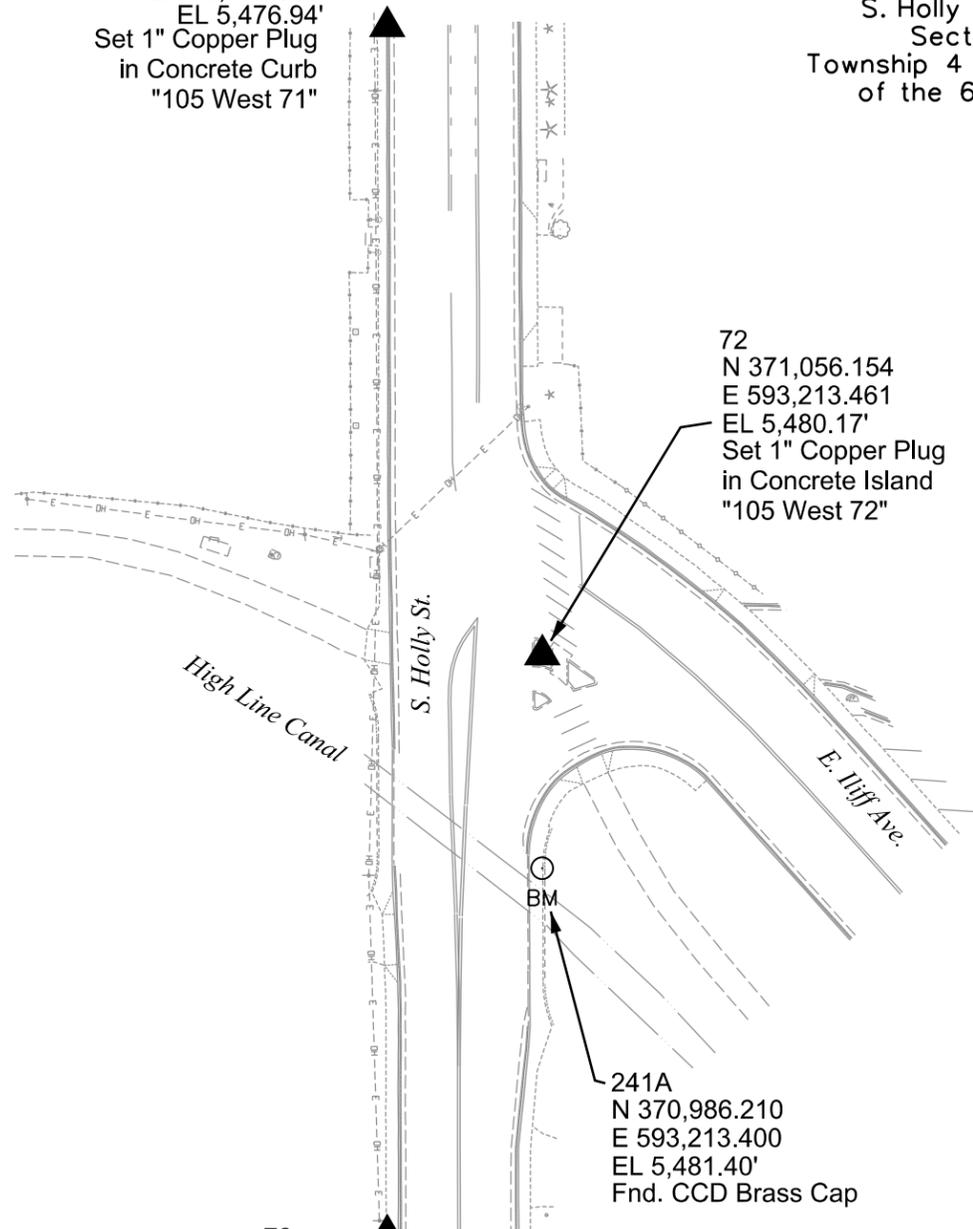
S. Holly St. and E. Iliff Ave.
Sections 29 and 30
Township 4 South, Range 67 West
of the 6th Principal Meridian

71
N 371,261.871
E 593,162.538
EL 5,476.94'
Set 1" Copper Plug
in Concrete Curb
"105 West 71"

72
N 371,056.154
E 593,213.461
EL 5,480.17'
Set 1" Copper Plug
in Concrete Island
"105 West 72"

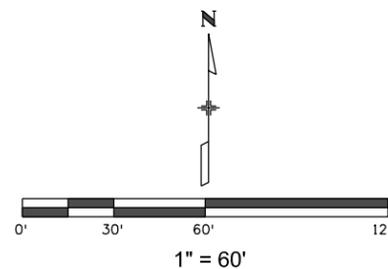
241A
N 370,986.210
E 593,213.400
EL 5,481.40'
Fnd. CCD Brass Cap

70
N 370,866.271
E 593,162.580
EL 5,481.67'
Set 1" Copper Plug
in Concrete Walk
"105 West 70"



NOTES

1. This Project Control Diagram is not a boundary survey of the adjoining property.
2. PROJECT BENCHMARK: Elevations are based on CCD Benchmark "241A", A Brass Cap in Concrete, East Side of Holly at the North end of the High Line Canal Bridge. NAVD88 Elevation = 5,481.40'
3. UNITS: Project coordinates and elevations shown hereon are U.S. Survey Feet.
4. According to Colorado State law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.



COORDINATE DATUM: Project coordinates are based on the following City and County of Denver Mapping Projection:

Project Mapping Projection
Projection: User-Defined Transverse Mercator
Zone: CCD_Local
Central Point False Northing = 400,000.00
Central Point False Easting = 600,000.00
Latitude of Origin = N39°45'19.00000"
Central Meridian = W104°53'53.00000"
Zone Width = 6°0'00.0"
Scale Factor at Origin = 1.00025403000
Units are US Survey Feet

I, Richard D. Muntean, a Licensed Professional Surveyor in the State of Colorado do hereby state that the survey represented by this map was made under my supervision and that this map and the notes shown hereon accurately represent said survey to the best of my knowledge, information and belief.

RICHARD D. MUNTEAN, PLS No. 38189
For and on behalf of 105 West, Inc.

Print Date: 7/19/2018

File Name: PROJECT CONTROL DIAGRAM

4201 E. Yale Ave., STE 230
Denver, CO 80222



6300 S. Syracuse Way, STE 600
Centennial, CO 80111



Sheet Revisions

Date:	Comments	Init.



DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
DENVER, CO 80202
PHONE: (720) 913-4501
FAX: (720) 913-4544

As Constructed

No Revisions:

Revised:

Void:

S. Holly St. and E. Iliff Ave. Project Control Diagram

Designer:

Detailer:

Sheet Subset: Survey

Structure
Numbers

Subset Sheets: SU01

Project No./Code

Sheet Number **05**

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

Format *

3D Design Modeling Electronic Files _____

Horizontal Control PLAN

Vertical Control PLAN

Roadway Alignment _____

Original Terrain Data _____

Other: _____

* Specify the information format, i.e., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

Landscaping Major Reconstruction

Signalization New Roadway Construction

Safety Improvement Bridge Replacement

Asphalt Overlay Bridge Widening

Concrete Overlay New Bridge

Minor Widening Other: MEDIAN AND CURB ISLAND CONSTRUCTION; BRIDGE DECK REHAB; BRIDGE BEARING REPLACEMENT; SIDEWALK, CURB AND GUTTER REPLACEMENT.

SURVEY WORK TO BE PERFORMED BY OTHERS:

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- A complete passing Base Line report (completed within 6 months prior to the start of the project)
- An instrument calibration Certification (completed within 6 months prior to the start of the project)
- Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- Verification and Maintenance of Horizontal and Vertical Control
- Verify or Determine existing grades and alignments
- Verify or Determine existing topography
- Clearing and Grubbing Limits (Section 201)
- Removal Limits (Section 202)
- Reset Items (Section 210)
- Excavation and Embankment (Section 203)

- Excavation
- Unclassified
 - Stripping
 - Muck
 - Rock
 - Borrow
 - Other: _____
 - Potholing

- Embankment
- Site Grading
 - Erosion Control (Perm)
 - Other: _____
 - As Staked Earthwork Quantities (See General Notes)

- Landscaping
- Top Soil (Section 207)
 - Seeding (Section 212)
 - Mulching (Section 213)
 - Planting (Section 214)
 - Herbicide (Section 217)
 - Other: _____

- Erosion Control (Section 208)
- Seeding (Temp)
 - Silt Fence
 - Erosion Bales
 - Erosion Logs
 - Riprap (Temp)
 - Other: _____

- Roadway Bases
- Untreated Subgrade
 - Treated Subgrade
 - Aggregate Base Course (Section 304)
 - Reconditioning
 - PMBB - Plant Mix Bituminous Base
 - Other: _____

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Excavation	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Embankment	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
Roadway Bases	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- Pavements
- HMA - Hot Mix Asphalt (Section 403)
 - Concrete (Section 412)
 - Heating & Scarifying Treatment
 - Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
 - Seal Coat or Chip Seal (Section 409)
 - Other: _____

	Grid (Y/N)	Special Interval	Special Offset
Pavements	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

- Roadway Elements
- Curb and Gutter (Section 609)
 - Drop inlets -
 - alignment and grades (Section 604)
 - Retaining Walls
 - Guard Rail (Section 606)
 - Sidewalk (Section 608)
 - Overlay Stationing
 - Other: _____

	Tangent Interval	Curve Interval	Special Offset
Curb & Gutter	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

- Riprap (Perm) (Section 506)
- Slope and Ditch Paving (Section 507)

	Left Interval	Center Interval	Right Interval
Stationing	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

- Minor Structures
- Structure Excavation limits (Section 206)
 - Culverts (Section 603)
 - Culverts w/ Headwalls and Wingwalls (Section 601)
 - Concrete Box Culverts w/ Headwalls and Wingwalls
 - Pipes (Section 603)
 - Sanitary Sewer
 - Storm Sewer
 - Water
 - Irrigation
 - Miscellaneous
 - Manholes (Section 604)
 - Inlets (Section 604)
 - Permanent Water Quality BMP (Section 208)
 - Other: _____

- Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number
- Structure Excavation limits (Section 206)
 - Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
 - Piling locations and cut off elevations (Section 502)
 - Caisson locations and elevations (Section 503)
 - Footing locations, alignment, and elevations
 - Abutment/Pier locations, alignment, and elevations
 - Wingwall skew angles/offsets
 - Structural concrete form locations
 - Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
 - Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
 - Deck grades at Girder 10th or "n" th point locations and elevations
 - Slope and Ditch Paving (Section 507)
 - Other: _____

- Fencing (Section 607)
 - Temporary
 - Permanent
 - Sound Barrier
 - Other: _____

- Delineators (Section 612)
 - Temporary
 - Permanent

- Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
 - Signal pole locations and elevations
 - Light pole locations and elevations
 - Sign locations
 - Field verify sign post locations, elevations, and lengths before fabrication.
 - Other: _____

- Pavement Marking (Section 627)
 - Striping (Temp)
 - Striping (Perm)
 - Symbols
 - Other: _____
- Temporary Lighting and Construction Traffic Control Devices (Section 630)
 - Signal pole locations and elevations (Temp)
 - Light pole locations and elevations (Temp)
 - Sign Locations (Temp)
 - Other: _____
- All Easements (Temp Staking by P.L.S. Only)
- Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- Monumentation (Section 629)
 - Control
 - Right of Way
 - Land corners, Aliquot corners
 - Easements
 - Reference the specified existing monuments: **** REPLACE ANY MONUMENT**
 - Replace the specified existing monuments: **** DESTROYED DURING CONSTRUCTION**
 - Locate monuments. It is estimated _____ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

1. Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDDT Survey Manual.
2. Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
3. The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer _____ days prior to the Presurvey Conference - Construction Survey.
4. Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
5. The Contractor shall furnish an As Staked (or 3D Design Modeling Electronic Files) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDDT Survey Manual. A printed copy of the As Staked (or 3D Design Modeling Electronic Files) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
6. Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
7. The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
8. The Contractor shall coordinate construction staking on the project with any utility work.
9. Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
10. The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
 - Horizontal Control (Primary & Secondary)
 - Vertical Control (i.e. Benchmarks)
 - Property Pin Ties
 - Horizontal Alignment
 - Grading
 - Slope Staking
 - Minor Structures
 - Major Structures
 - One fieldbook for each work category shown on this sheet
 - Other Fieldbook(s): AS-BUILT DRAWING REDLINES
11. The Contractor's surveyor shall submit the following (prior to surveying on the project) to the Engineer:
 - All required Instrument Calibrations

Print Date: 6/25/2019

File Name: (06) 46045 SU DT 02.dwg

Horiz. Scale: N/A Vert. Scale: N/A

City Project Manager Kevin Rens, PE

wood Colorado Center Tower 2
2000 S. Colorado Blvd Suite 2-1000
Denver, CO 80222

Sheet Revisions		
Date:	Comments	Init.



DEPARTMENT OF PUBLIC WORKS

201 WEST COLFAX AVENUE
DENVER, CO 80202
PHONE: (720) 913-4501
FAX: (720) 913-4544

As Constructed

No Revisions:

Revised:

Void:

SOUTH HOLLY STREET BRIDGE SURVEY TABULATION

Designer: EHP Structure Numbers **D-10-HC-170**

Detailer: EHP

Sheet Subset: Survey Subset Sheets: SU02 OF 2

Project Number

WBS 04.159

Sheet Number 6

HOLLY STREET BRIDGE HOLLY STREET & HIGHLINE CANAL DENVER, CO

PREPARED FOR:

GOODBEE & ASSOCIATES

GENERAL NOTES

- SUBSURFACE UTILITY ENGINEERING IS A PROFESSIONAL PRACTICE DEFINED BY THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE.) CARDNO CONDUCTS UTILITY INVESTIGATIONS THAT CONFORM TO COLORADO SENATE BILL SB-167 AND THE ASCE 38.02 STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA. IDENTIFYING AND MAPPING UNDERGROUND UTILITIES IS A RESULT OF GATHERING EVIDENCE FROM VARIOUS SOURCES AND EXACT UTILITY LOCATIONS ARE NOT CONFIRMED UNLESS VISUALLY EXPOSED AND SURVEYED, AND THEN ONLY AT THOSE SPECIFIC EXPOSED LOCATIONS. ADDITIONALLY, CARDNO CANNOT GUARANTEE THAT ALL UTILITIES HAVE BEEN DISCOVERED AND DEPICTED.
- INVESTIGATIONS OF DEPICTED UTILITIES WERE COMPLETED ON MARCH 21, 2019. CARDNO DISCLAIMS RESPONSIBILITY FOR NEW INSTALLATIONS OR ALTERATIONS TO EXISTING UTILITIES AFTER THIS DATE. CONSIDERATION SHOULD BE GIVEN TO UPDATING THIS INVESTIGATION PRIOR TO FINAL DESIGN AND/OR CONSTRUCTION.
- UTILITY SIZE AND MATERIAL ARE SHOWN IF AVAILABLE FROM RECORD INFORMATION. FIELD OBSERVATIONS WERE MADE WHERE POSSIBLE TO CORROBORATE AND SUPPLEMENT SUCH INFORMATION BUT DO NOT GUARANTEE ITS ACCURACY OR COMPLETENESS. UNLESS OTHERWISE SPECIFIED, PIPE DIAMETERS ARE NOMINAL AND NOT EXACT.
- PROFESSIONAL ASSISTANCE IS RECOMMENDED IN SELECTING LOCATIONS FOR QUALITY LEVEL A DATA FOR SPECIFIC DESIGN DECISIONS.
- THIS INVESTIGATION DEPICTS UTILITIES FOR PLANNING AND DESIGN PURPOSES AND NOT FOR CONSTRUCTION. FOR DAMAGE PREVENTION DURING CONSTRUCTION, COMPLY WITH APPLICABLE ONE-CALL LAWS.
- AS DEFINED BY THE PROJECT SCOPE, CARDNO ATTEMPTED TO FIND UNDOCUMENTED UTILITIES; HOWEVER, UNDOCUMENTED UTILITIES MAY BE PRESENT IN THE PROJECT AREA THAT WERE NOT DISCOVERABLE BY THE SCOPED EFFORT AND THEREFORE NOT DEPICTED.
- THESE PLANS HAVE BEEN PREPARED FOR THE USE OF CARDNO'S CLIENT AND MAY NOT BE USED, REPRODUCED OR RELIED UPON BY THIRD PARTIES EXCEPT AS AGREED BY CARDNO AND ITS CLIENT OR AS REQUIRED BY LAW.
- UNDER THE PROJECT SCOPE, THE FOLLOWING UTILITIES WERE EXPRESSLY LIMITED TO A QUALITY LEVEL C INVESTIGATION AND EXCLUDED FROM ATTEMPTING FURTHER QUALITY LEVEL IMPROVEMENT: SANITARY SEWER AND STORM DRAIN FACILITIES.
- UNDER THE PROJECT SCOPE, THE FOLLOWING UTILITIES WERE EXPRESSLY EXCLUDED FROM THIS INVESTIGATION: LANDSCAPE IRRIGATION SYSTEMS, TRAFFIC SIGNAL LOOP DETECTION DEVICES, AND UNDERGROUND STORAGE TANKS OR SEPTIC SYSTEMS.

SUBSURFACE UTILITY ENGINEERING SYMBOLS

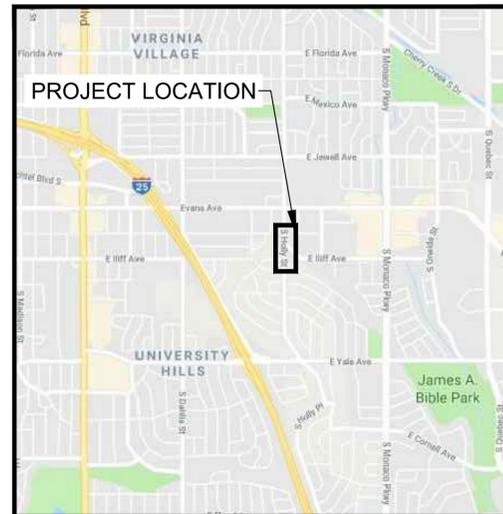
- △ END OF SIGNAL
- ∩ LIMITS OF ASCE 38 INVESTIGATION
- x CHANGE OF ASCE 38 QUALITY LEVEL
- ▲ CONTROL POINT
- COP-36"VCP-QLD (UTILITY OWNER)-(SIZE AND/OR TYPE)-(ASCE QUALITY LEVEL)
- Ⓢ SANITARY SEWER MANHOLE
- POWER POLE

UTILITY LINETYPES

- W DENVER WATER LINE
- FOT FIBER OPTIC TELEPHONE LINE
- T TELEPHONE LINE
- G XCEL NATURAL GAS LINE
- OHE XCEL ELECTRIC OVERHEAD LINE
- OH UNKNOWN OVERHEAD LINE
- OHSL XCEL STREET LIGHT OVERHEAD LINE
- SS SANITARY SEWER LINE



KEY MAP
N.T.S.



VICINITY MAP
N.T.S.



SHEET INDEX	
SHEET NO.	DESCRIPTION
U-001	TITLE SHEET, KEY MAP & VICINITY MAP, GENERAL NOTES, LEGEND, ABBREVIATIONS, AND UTILITY MAPPING

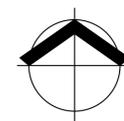
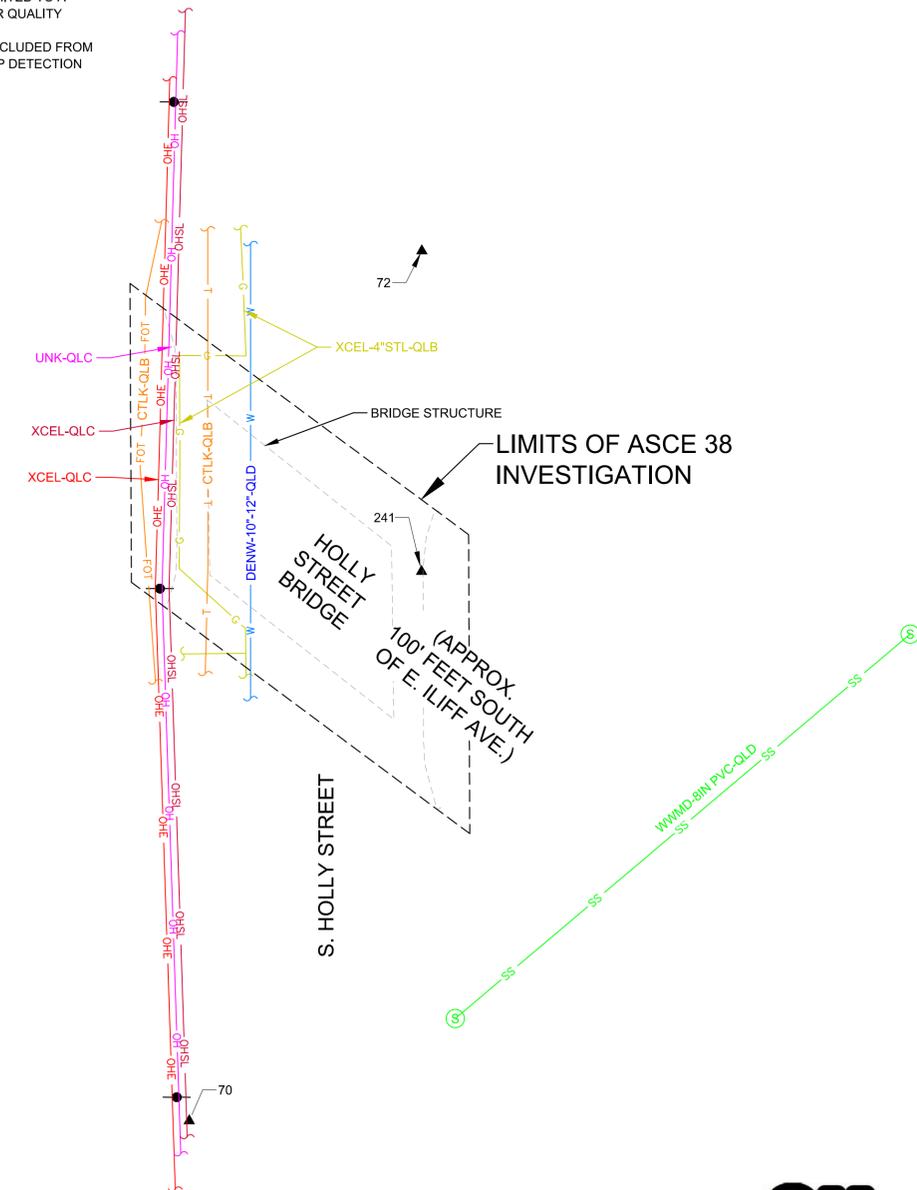
UTILITY DETECTION EQUIPMENT UTILIZED
NOTE: DUE TO EXISTING SITE CONDITIONS, POOR GPR SOIL SUITABILITY, GPR WAS NOT USED ON THIS PROJECT
VIVAX METROTECH PROLOC 2
RADIODETECTION RD8100PDL
SCHONSTEDT MAGNETIC LOCATOR
DETECTABLE RODDER

UTILITY CONTACT INFORMATION					
OWNER	UTILITY	ABBREVIATION	CONTACT	PHONE/EMAIL	RESPONSE
COMCAST	TV	CMST	ARTJAHMEL DAVIS	720-281-8666	NO RESPONSE
MCI/VERIZON	TEL	VERZ	VIA 811 SUE TICKET	N/A	ALL CLEAR
XCEL	GAS, ELEC	XCEL	GARY MOTSINGER	303-571-6636	MAP PROVIDED
CENTURY LINK	TELE, FIBR	CTLK	VIA 811 SUE TICKET	N/A	MAP PROVIDED
DENVER WATER	WATER	DENW	DWLocate@denverwater.org	303-628-6666	MAP PROVIDED
METRO WASTEWATER	SANITARY	MWSD	www.metrowastewater.com	303-286-3432	MAP PROVIDED
WASTEWATER MGMT DIV	SANITARY	WWMD	DEVINDRA WILLIAMS	303-446-3744	MAP PROVIDED
DENVER PARKS AND REC	IRRIGATION	DPAR	VIA 811 SUE TICKET	N/A	ALL CLEAR

NOTE: CARDNO CONTACTED COMCAST ON MULTIPLE OCCASIONS TO OBTAIN UTILITY RECORD INFORMATION WITHIN THE PROJECT LIMITS. NO RESPONSE WAS RECEIVED FROM THE UTILITY OWNER, AND AS SUCH, ADDITIONAL UTILITIES MAY EXIST WITHIN THE PROJECT LIMITS WHICH WERE NOT FOUND AND HENCE NOT DEPICTED ON THESE PLANS. ADDITIONAL COORDINATION WITH THE UTILITY OWNER IS RECOMMENDED.

SURVEY CONTROL				
SURVEY CONTROL IS BASED OFF OF A CITY AND COUNTY OF DENVER PROJECT CONTROL DIAGRAM, PREPARED BY 105 WEST, INC. HAVING A PRINT DATE OF JULY 19, 2018. THIS INFORMATION WAS PROVIDED TO CARDNO, INC. BY GOODBEE AND ASSOCIATES ON APRIL 9, 2019.				
CP #	NORTHING	EASTING	ELEVATION	DESCRIPTION
241A	370986.210	593213.400	5481.40'	BENCHMARK
70	370866.271	593162.580	5481.67'	CONTROL MONUMENT
71	371261.871	593162.538	5476.94'	CONTROL MONUMENT
72	371056.154	593213.461	5480.17'	CONTROL MONUMENT

UNDERGROUND UTILITY INVESTIGATION AND DEPICTIONS CERTIFICATION
THE ENGINEER'S SEAL HEREON CERTIFIES THAT SUBSURFACE UTILITY DATA WAS COLLECTED AND DEPICTED IN ACCORDANCE WITH THEIR ACHIEVED "QUALITY LEVELS" AS DEFINED IN THE AMERICAN SOCIETY OF CIVIL ENGINEER'S DOCUMENT ASCE 38-02, "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."



UTILITY MAPPING PLANS

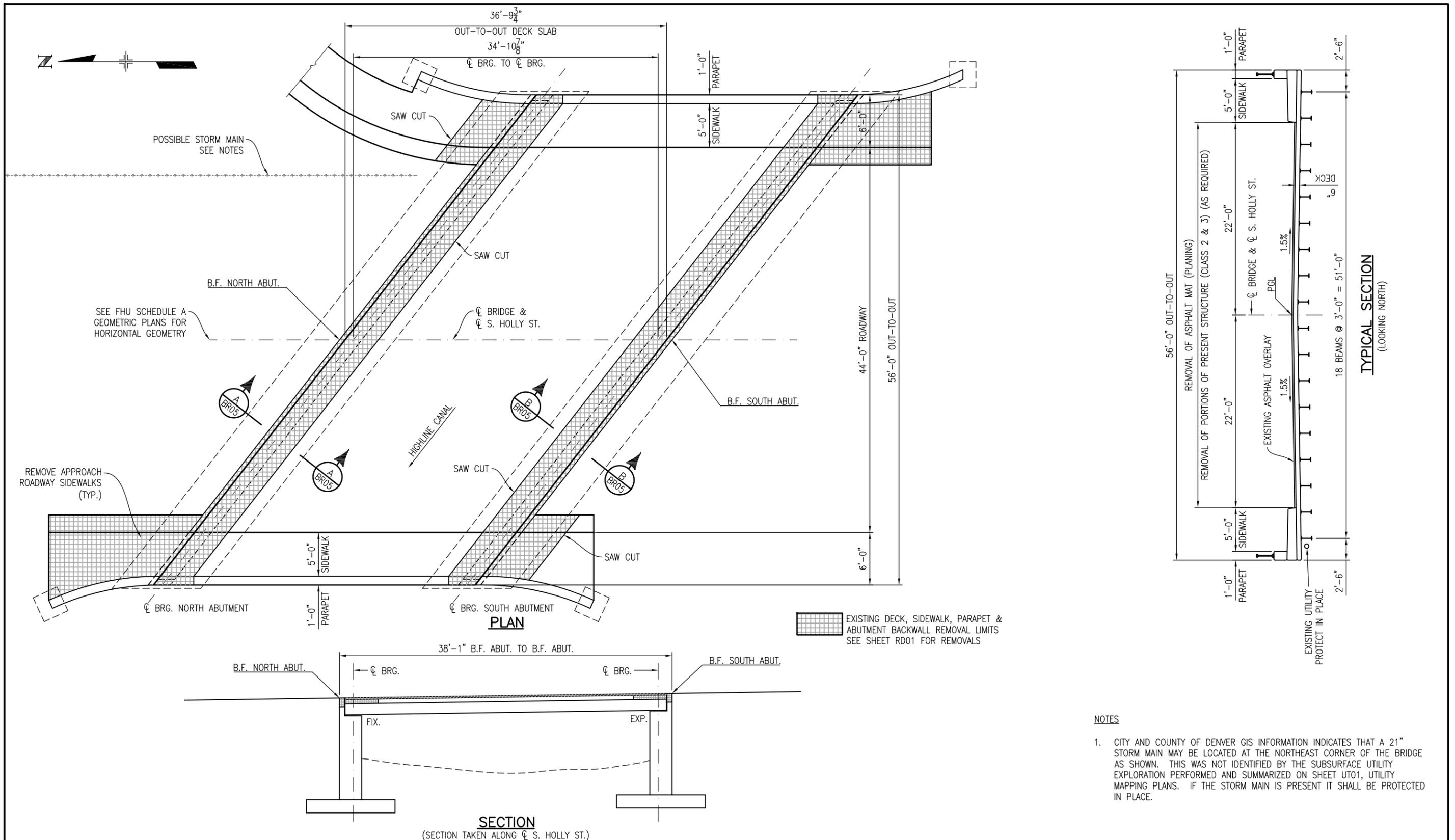
HOLLY STREET BRIDGE
GOODBEE & ASSOCIATES

DENVER, CO

DATE	DESCRIPTION



DATE	5/17/2019
DRAWN	KE
SURVEYED	MJ
CHECKED	LJ
PROJECT #	CO02500300
SHEET TITLE	TITLE SHEET
SHEET NUMBER	UT01 07



- NOTES**
- CITY AND COUNTY OF DENVER GIS INFORMATION INDICATES THAT A 21" STORM MAIN MAY BE LOCATED AT THE NORTHEAST CORNER OF THE BRIDGE AS SHOWN. THIS WAS NOT IDENTIFIED BY THE SUBSURFACE UTILITY EXPLORATION PERFORMED AND SUMMARIZED ON SHEET UTO1, UTILITY MAPPING PLANS. IF THE STORM MAIN IS PRESENT IT SHALL BE PROTECTED IN PLACE.

Print Date: 8/14/2019
 File Name: (08) 46212 BR DT 01.dwg
 Horiz. Scale: N/A Vert. Scale: N/A
 City Project Manager Kevin Rens, PE
wood Colorado Center Tower 2
 2000 S. Colorado Blvd Suite 2-1000
 Denver, CO 80222

Sheet Revisions		
Date:	Comments	Init.

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 PHONE: (720) 913-4501
 FAX: (720) 913-4544

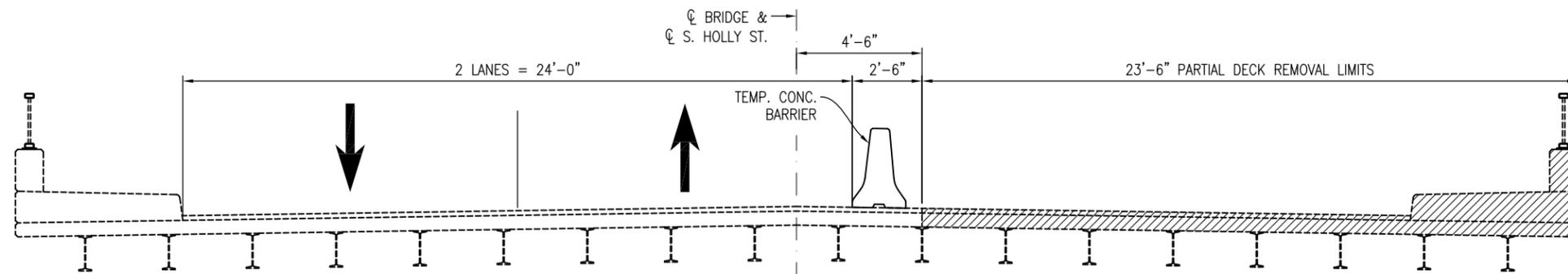
As Constructed
 No Revisions:
 Revised:
 Void:

**SOUTH HOLLY STREET BRIDGE
 EXISTING GENERAL LAYOUT**

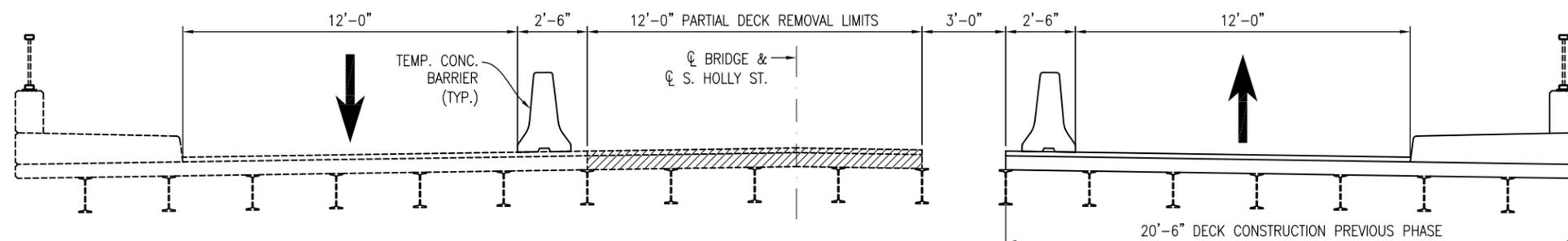
Designer:	JMB	Structure Numbers	D-10-HC-170
Detailer:	JMB	Subset Sheets:	BR01 OF 8
Sheet Subset:	Bridge		

Project Number
WBS 04.159

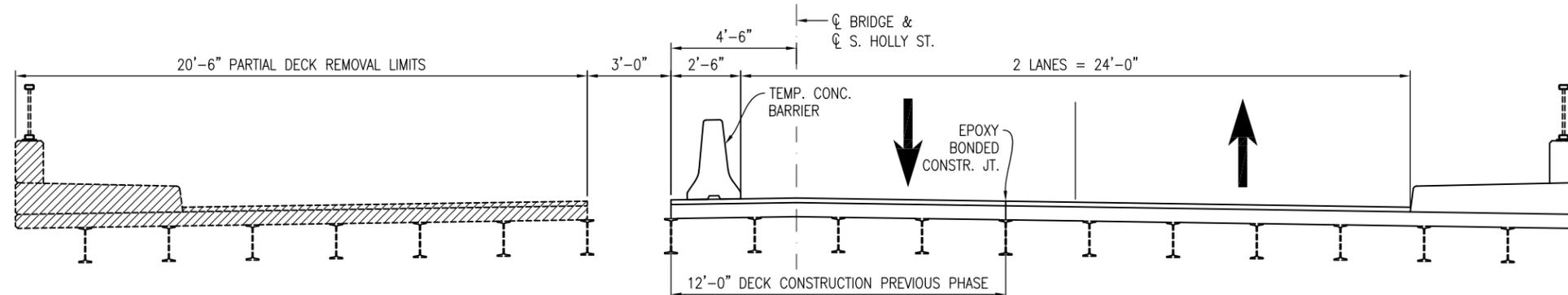
Sheet Number 8



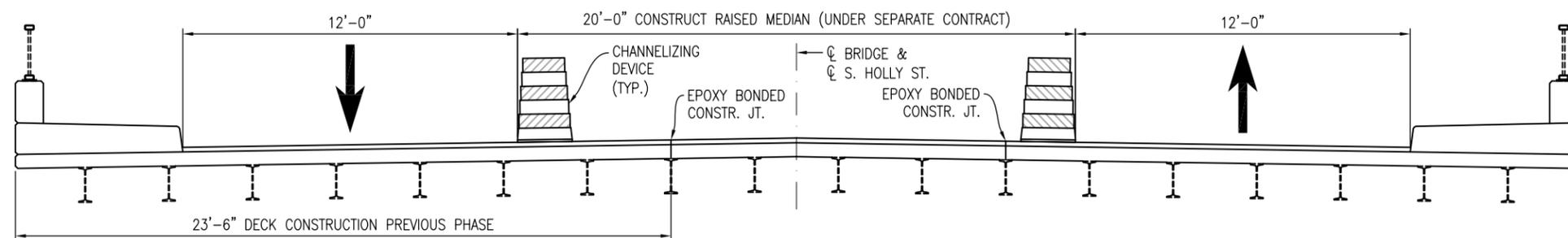
TYPICAL SECTION – PHASE 1
(LOOKING NORTH)



TYPICAL SECTION – PHASE 2
(LOOKING NORTH)



TYPICAL SECTION – PHASE 3
(LOOKING NORTH)



TYPICAL SECTION – PHASE 4
(LOOKING NORTH)

SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING IS A SUGGESTED CONSTRUCTION SEQUENCE. THE CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL. ITEMS NOT IMPACTED BY TRAFFIC MAY BE COMBINED INTO FEWER PHASES. ONE LANE OF TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES. TRAFFIC MAY BE REDUCED TO A SINGLE LANE WITH A FLAGGER FOR LIMITED TIMES WITH THE APPROVAL OF THE OWNER.

PHASE 1:

- SHIFT TRAFFIC TO WEST SIDE OF BRIDGE
- REMOVE EXISTING ASPHALT MAT FROM BRIDGE
- REMOVE UNSOUND CONCRETE FROM EXPOSED DECK AND REMOVE PORTIONS OF STRUCTURE AT EACH END, CLEANING, STRAIGHTENING & REPAIRING REINFORCEMENT AS REQUIRED
- CLEAN ABUTMENT SEATS AND REPAIR ANY UNSOUND CONCRETE
- SANDBLAST BEAM ENDS, REPLACE BEARINGS AND PAINT PORTIONS OF EXISTING STRUCTURE STEEL
- RECONSTRUCT PORTIONS OF DECK SLAB, SIDEWALKS AND PARAPET

PHASE 2:

- SHIFT NORTHBOUND TRAFFIC TO PORTION OF STRUCTURE RECONSTRUCTED IN PHASE 1. SOUTHBOUND TRAFFIC STAYS IN PREVIOUS LOCATION.
- REMOVE EXISTING ASPHALT MAT FROM BRIDGE
- REMOVE UNSOUND CONCRETE FROM EXPOSED DECK AND REMOVE PORTIONS OF STRUCTURE AT EACH END, CLEANING, STRAIGHTENING & REPAIRING REINFORCEMENT AS REQUIRED
- CLEAN ABUTMENT SEATS AND REPAIR ANY UNSOUND CONCRETE
- SANDBLAST BEAM ENDS, REPLACE BEARINGS AND PAINT PORTIONS OF EXISTING STRUCTURE STEEL
- RECONSTRUCT PORTIONS OF DECK SLAB

PHASE 3:

- SHIFT SOUTHBOUND TRAFFIC TO PORTION OF STRUCTURE RECONSTRUCTED IN PHASES 1 AND 2. NORTHBOUND TRAFFIC STAYS IN PREVIOUS LOCATION.
- REMOVE EXISTING ASPHALT MAT FROM BRIDGE
- REMOVE UNSOUND CONCRETE FROM EXPOSED DECK AND REMOVE PORTIONS OF STRUCTURE AT EACH END, CLEANING, STRAIGHTENING & REPAIRING REINFORCEMENT AS REQUIRED
- CLEAN ABUTMENT SEATS AND REPAIR ANY UNSOUND CONCRETE
- SANDBLAST BEAM ENDS, REPLACE BEARINGS AND PAINT PORTIONS OF EXISTING STRUCTURE STEEL
- RECONSTRUCT REMAINING PORTIONS OF DECK SLAB, SIDEWALKS AND PARAPET

PHASE 4:

- SHIFT SOUTHBOUND TRAFFIC TO PORTION OF STRUCTURE RECONSTRUCTED IN PHASES 3. NORTHBOUND TRAFFIC STAYS IN PREVIOUS LOCATION.
- RAISED MEDIAN IN ADJACENT ROADWAY CONTRACT MAY BE CONSTRUCTED.

Print Date: 8/13/2019	
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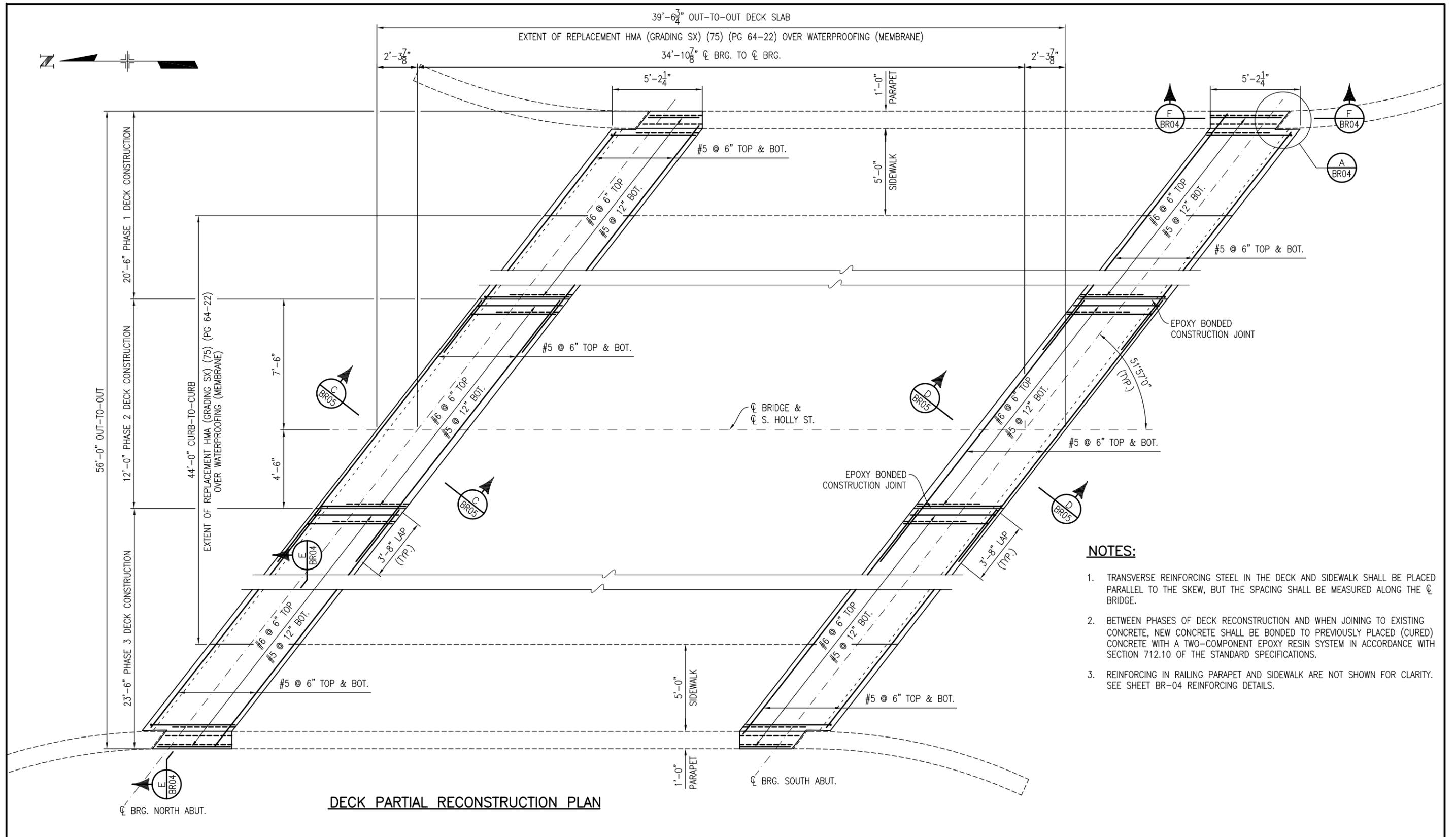
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SOUTH HOLLY STREET BRIDGE CONSTRUCTION PHASING			
Designer:	JMB	Structure Numbers	D-10-HC-170
Detailer:	JMB	Subset Sheets:	SCHEDULE B
Sheet Subset:	Bridge	BR02	OF 8

Project Number
WBS 04.159
Sheet Number
9



NOTES:

1. TRANSVERSE REINFORCING STEEL IN THE DECK AND SIDEWALK SHALL BE PLACED PARALLEL TO THE SKEW, BUT THE SPACING SHALL BE MEASURED ALONG THE ϕ BRIDGE.
2. BETWEEN PHASES OF DECK RECONSTRUCTION AND WHEN JOINING TO EXISTING CONCRETE, NEW CONCRETE SHALL BE BONDED TO PREVIOUSLY PLACED (CURED) CONCRETE WITH A TWO-COMPONENT EPOXY RESIN SYSTEM IN ACCORDANCE WITH SECTION 712.10 OF THE STANDARD SPECIFICATIONS.
3. REINFORCING IN RAILING PARAPET AND SIDEWALK ARE NOT SHOWN FOR CLARITY. SEE SHEET BR-04 REINFORCING DETAILS.

DECK PARTIAL RECONSTRUCTION PLAN

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**SOUTH HOLLY STREET BRIDGE
 DECK REINFORCING PLAN**

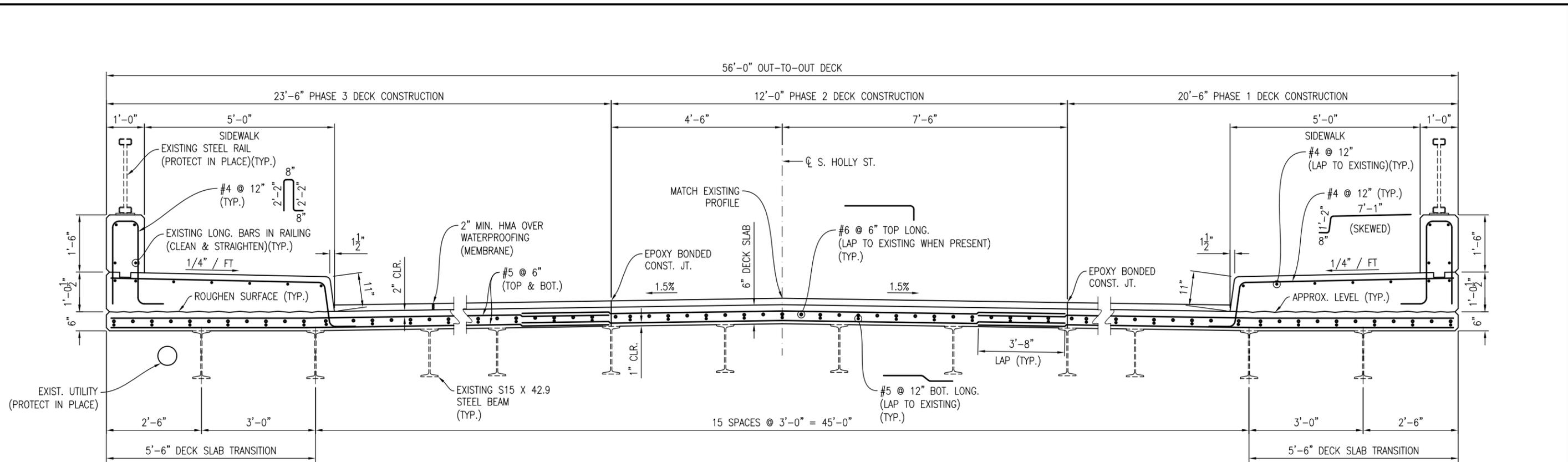
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 Detailer: JMB
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Structure Numbers: **D-10-HC-170**
SCHEDULE B
 Subset Sheets: BR03 OF 8

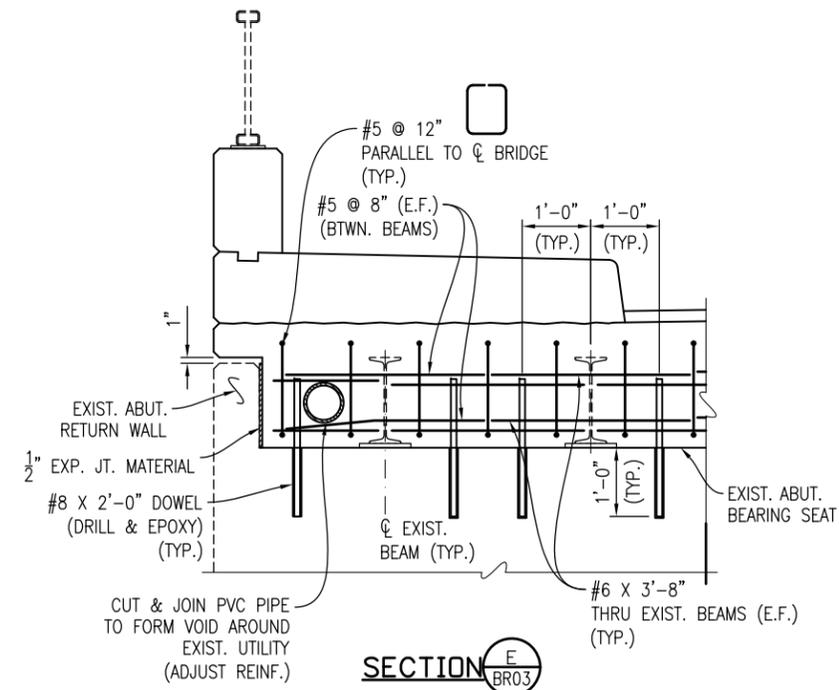
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WBS 04.159

Sheet Number 10

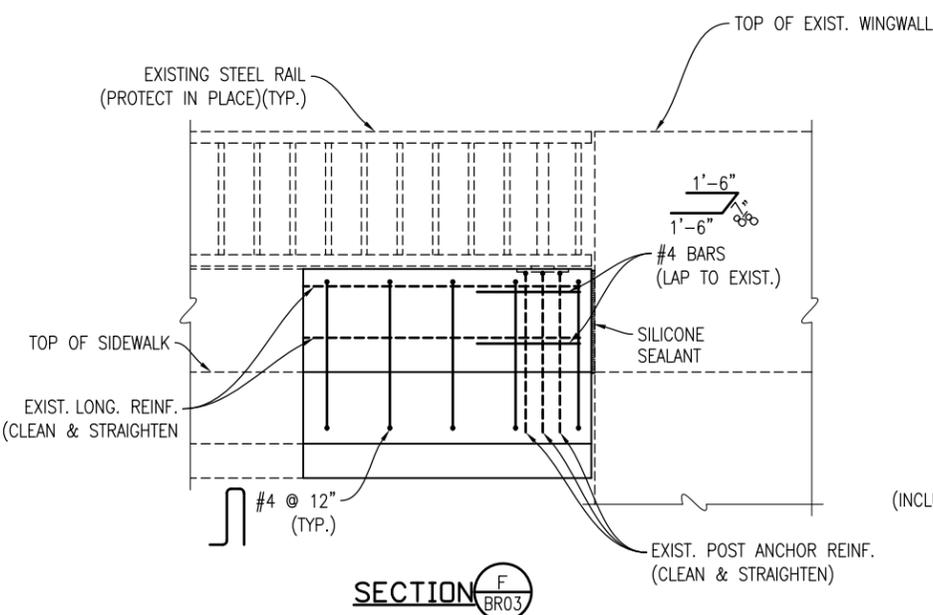




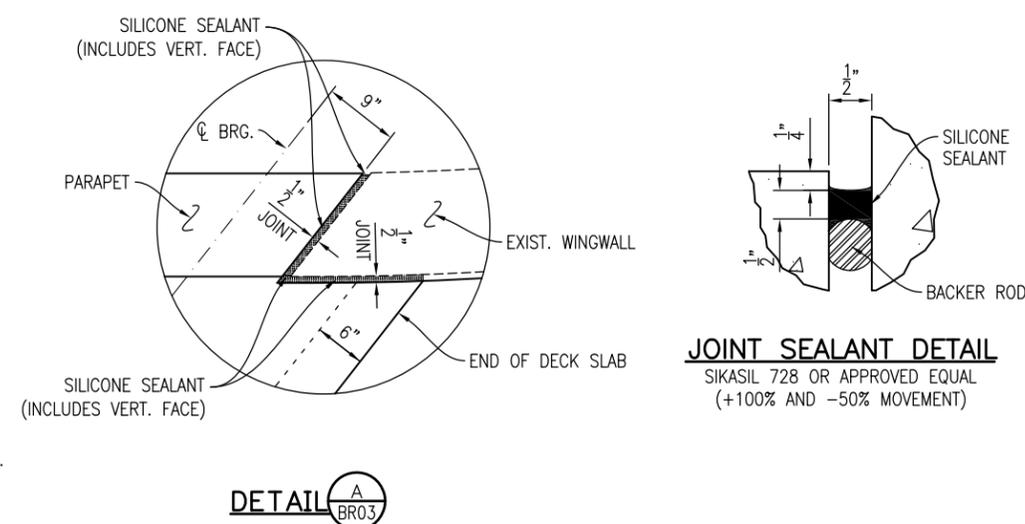
TYPICAL SECTION - DECK RECONSTRUCTION
(LOOKING NORTH)



SECTION E
(FIXED NORTH ABUTMENT ONLY)
(DECK REINFORCING NOT SHOWN FOR CLARITY)

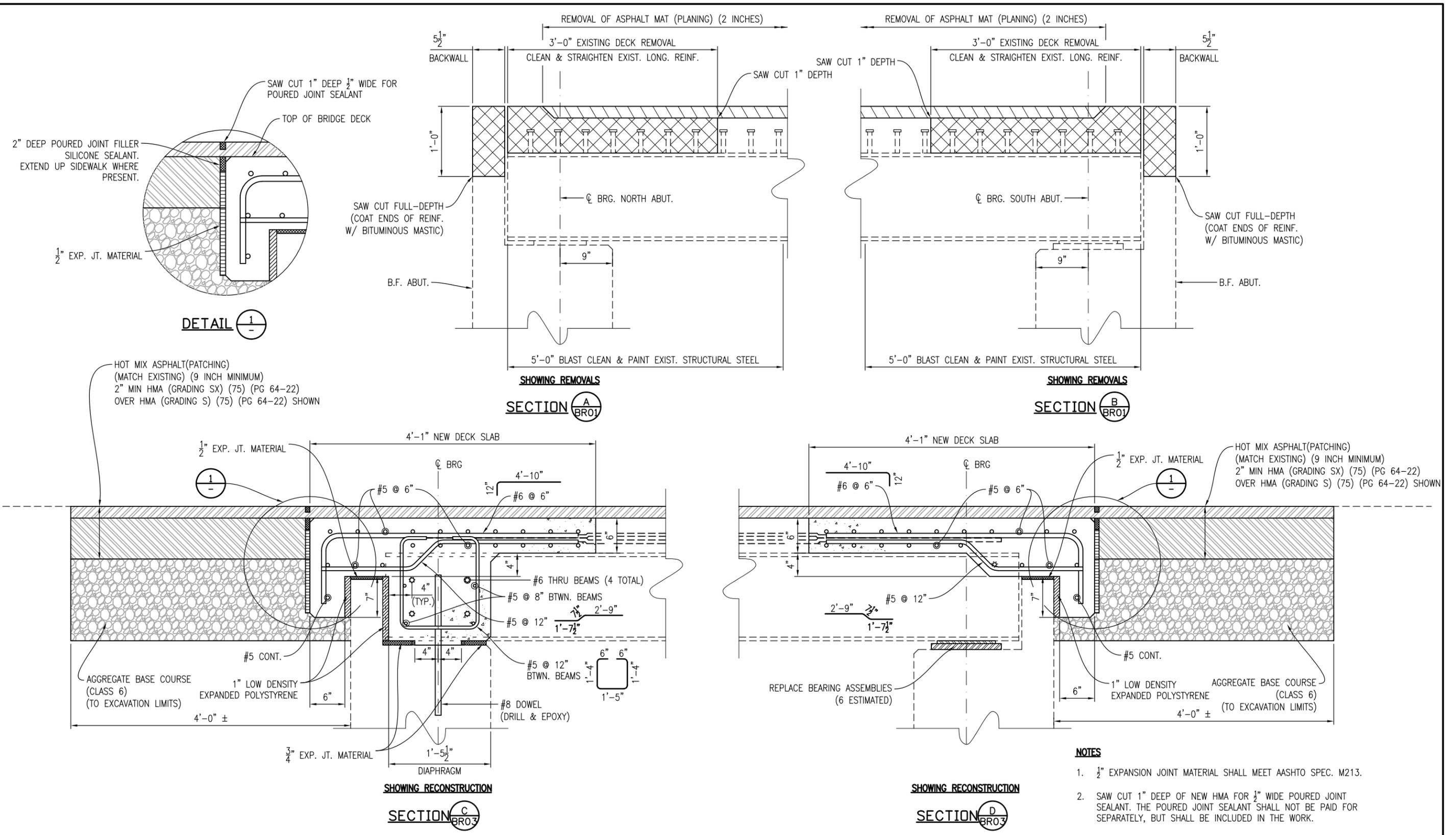


SECTION F
(DECK REINFORCING NOT SHOWN FOR CLARITY)



JOINT SEALANT DETAIL
SIKASIL 728 OR APPROVED EQUAL
(+100% AND -50% MOVEMENT)

Print Date: 8/13/2019	<table border="1"> <thead> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th>Date:</th> <th>Comments</th> <th>Init.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Sheet Revisions			Date:	Comments	Init.								DEPARTMENT OF PUBLIC WORKS 201 WEST COLFAX AVENUE DENVER, CO 80202 PHONE: (720) 913-4501 FAX: (720) 913-4544	As Constructed No Revisions: Revised: Void:	SOUTH HOLLY STREET BRIDGE SUPERSTRUCTURE DETAILS (SHEET 1 OF 2)			Project Number	
Sheet Revisions																					
Date:		Comments	Init.																		
WBS 04.159																					
File Name: (11) 46212 BR DT 04.dwg		Designer: JMB Detailer: JMB Sheet Subset: Bridge	Structure Numbers: D-10-HC-170 SCHEDULE B Subset Sheets: BR04 OF 8	Sheet Number																	
Horiz. Scale: N/A				11																	
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**SOUTH HOLLY STREET BRIDGE
 SUPERSTRUCTURE DETAILS
 (SHEET 2 OF 2)**

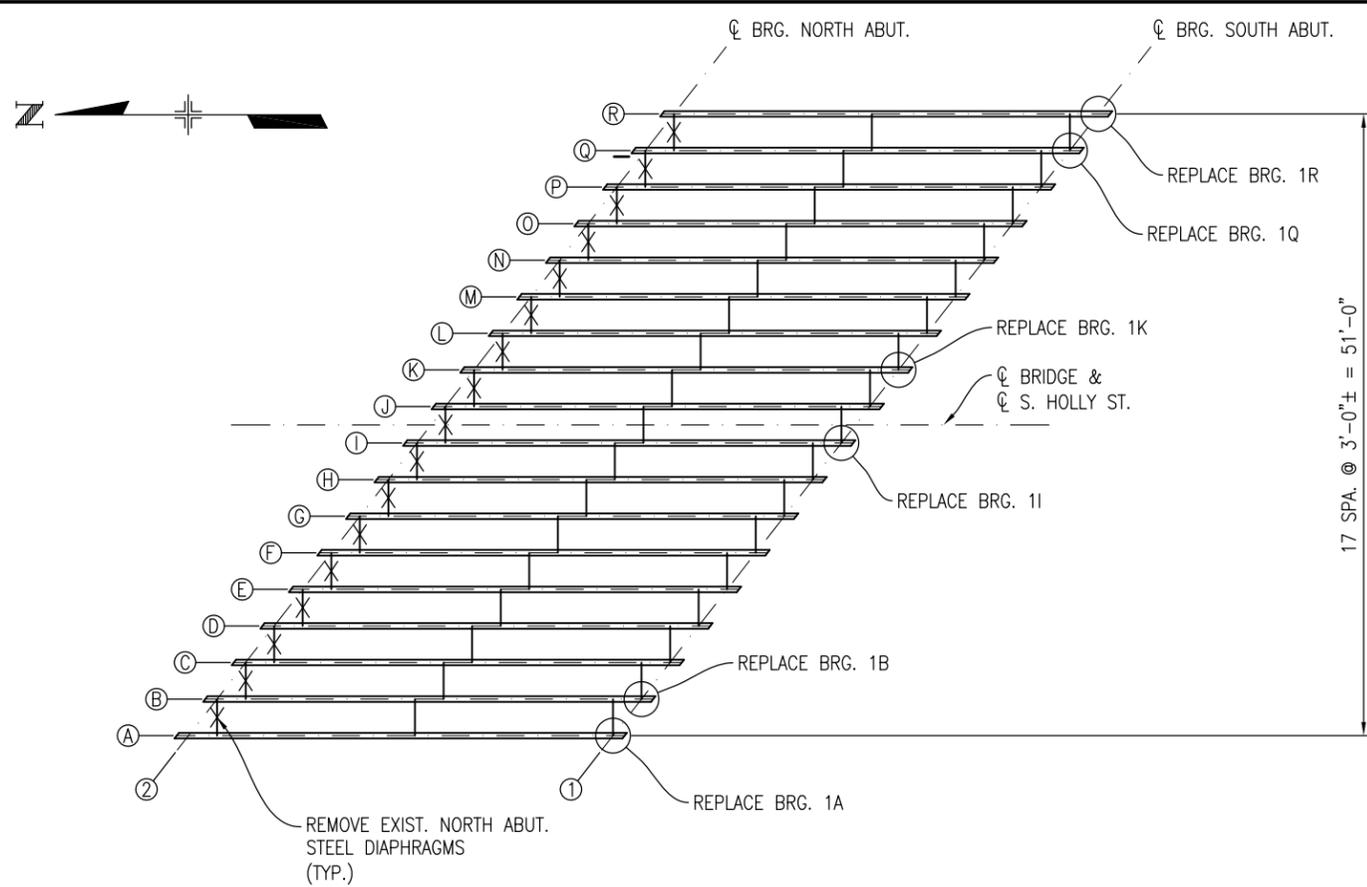
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Structure Numbers: **D-10-HC-170**
SCHEDULE B
 Subset Sheets: BR05 OF 8

Project Number
WBS 04.159

Sheet Number 12

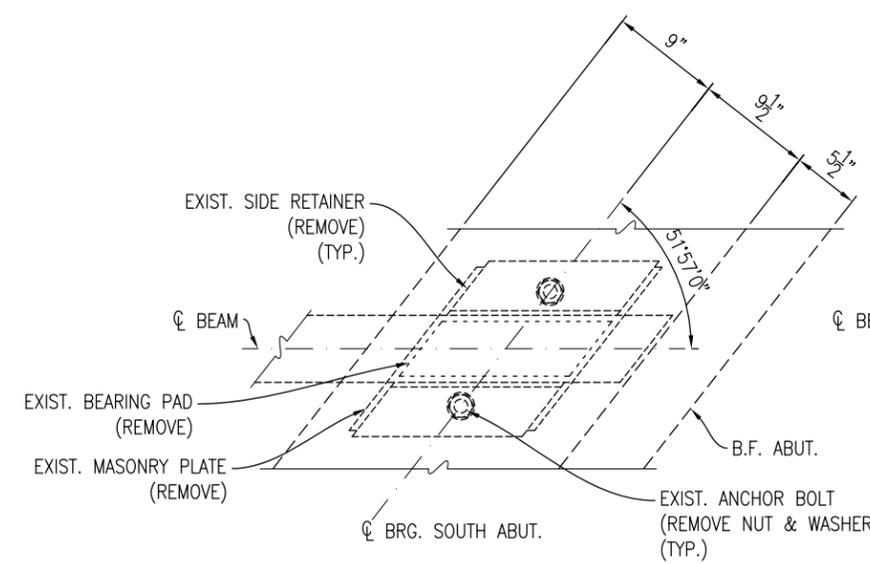
- NOTES**
- 1/2" EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPEC. M213.
 - SAW CUT 1" DEEP OF NEW HMA FOR 1/2" WIDE Poured JOINT SEALANT. THE Poured JOINT SEALANT SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.



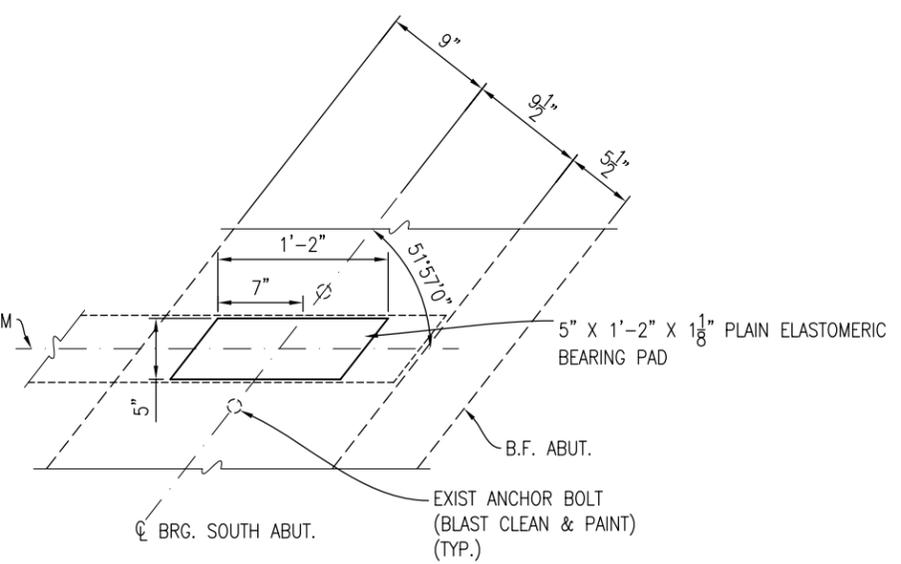
FRAMING PLAN

NOTES:

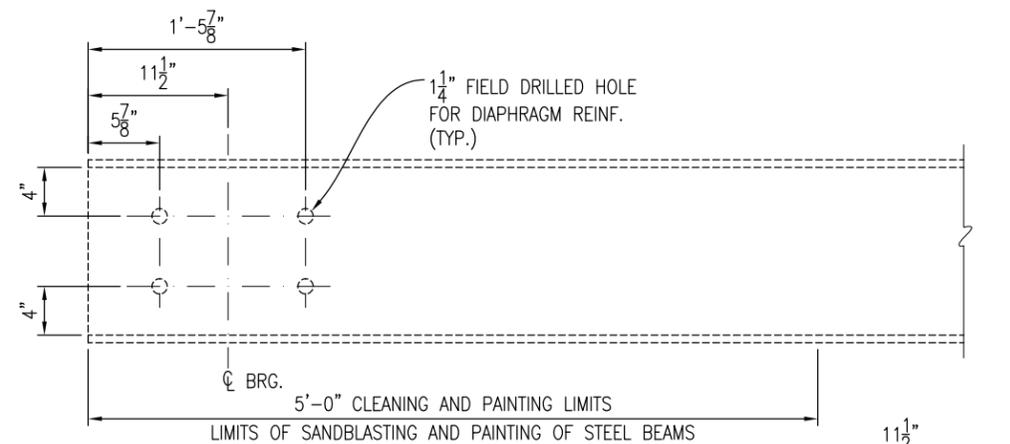
1. AFTER BLAST CLEANING OF THE EXISTING STEEL BEAM ENDS IS COMPLETE, THE ENGINEER SHALL INSPECT THE REMAINING MATERIAL AND MAKE RECOMMENDATIONS FOR ADDITIONAL REPAIRS, IF ANY, AND CONFIRM THE NUMBER OF EXPANSION BEARINGS TO BE REPLACED PRIOR TO CONTINUING WORK.
2. POWER WASH THE EXISTING ABUTMENT SEATS AND REMOVE ALL DIRT AND DEBRIS. SOUND THE CONCRETE WITH A SMALL HAMMER. ANY UNSOUND CONCRETE DISCOVERED SHALL BE REMOVED AND REPAIRED AT THE DIRECTION OF THE ENGINEER.
3. CONTRACTOR TO TAKE DETAILED MEASUREMENTS OF EXISTING EXPANSION (SOUTH) BEARING HEIGHTS PRIOR TO ORDERING REPLACEMENT BEARINGS. BEARING PADS SHALL BE UNLAMINATED AND CUT OR MOLDED FROM AASHTO ELASTOMER GRADE 3, 4, OR 5 WITH A DUROMETER (SHORE "A") HARDNESS OF 60. PLAIN PADS MAY BE AS THIN AS 7/8" OR AS THICK AS 1 5/8" TO MATCH THE EXISTING BEARING HEIGHTS.
4. THE CONTRACTOR SHALL SUBMIT A PLAN FOR JACKING AND TEMPORARILY SUPPORTING THE BEAM ENDS TO THE ENGINEER FOR REVIEW AND APPROVAL. JACKING POINTS SHALL BE AS CLOSE TO THE EXISTING BEARING STIFFENERS AS PRACTICAL. MINIMUM JACKING LOAD (SERVICE DEAD LOAD) PER BEARING IS ESTIMATED TO BE UP TO 13,000 LBS. JACKING EQUIPMENT SHALL BE CAPABLE OF LIFTING AND SUPPORTING AT LEAST TWO TIMES THE SERVICE DEAD LOAD.
5. THE EXISTING STEEL DIAPHRAGMS AT THE FIXED (NORTH) ABUTMENT SHALL BE REMOVED PRIOR TO CLEANING AND PAINTING THE BEAM ENDS AND FORMING THE NEW CONCRETE DIAPHRAGM. EXISTING BEARING STIFFENERS TO REMAIN. REMOVAL OF DIAPHRAGMS WILL NOT PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
6. BLAST CLEAN EXISTING BEAM ENDS AND BEARINGS TO A NEAR-WHITE FINISH (SSPC-SP10). EXISTING COATINGS ARE CONSIDERED LEAD BASED PAINT (LBP). ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS, INCLUDING THE "COLORADO ENVIRONMENTAL GUIDE TO ABRASIVE BLASTING AND HAZARDOUS WASTE REGULATIONS":
[HTTPS://WWW.COLORADO.GOV/PACIFIC/SITES/DEFAULT/FILES/AP_ABRASIVE-BLAST-CLEANING-GUIDE.PDF](https://www.colorado.gov/pacific/sites/default/files/ap_abrasive-blast-cleaning-guide.pdf)
ALSO SEE "ASBESTOS AND LEAD-BASED PAINT ASSESSMENT REPORT" BY PINYON ENVIRONMENTAL, INC. DATED JANUARY 15, 2019.
7. LOCATION OF FIELD DRILLED HOLES IN BEAM ENDS FOR REINFORCING SHALL BE FIELD VERIFIED TO ENSURE REINFORCING IS LOCATED INSIDE THE NEW STIRRUPS / LONGITUDINAL REINFORCING.
8. PAINT PROPERLY PREPARED SURFACES WITH A THREE COAT PAINT SYSTEM IN ACCORDANCE WITH SPECIAL PROVISIONS. TOP COAT COLOR SHALL MATCH THE EXISTING STRUCTURE AND BE APPROVED BY THE ENGINEER.
9. FIELD DRILLED HOLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.



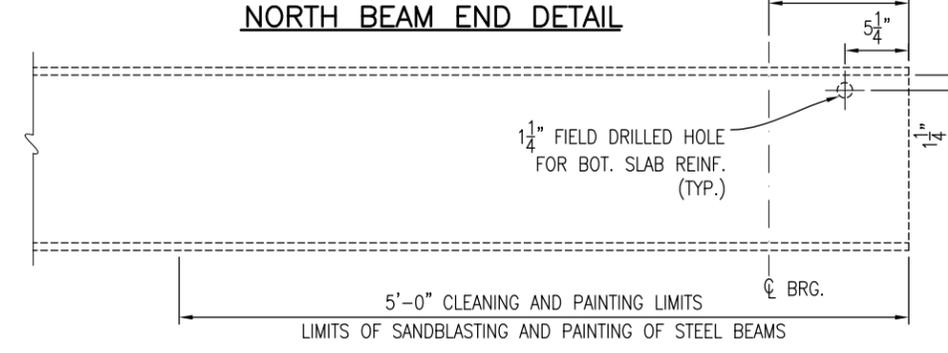
SHOWING REMOVALS



SHOWING RECONSTRUCTION



NORTH BEAM END DETAIL



SOUTH BEAM END DETAIL

EXPANSION BEARING REPLACEMENT DETAIL

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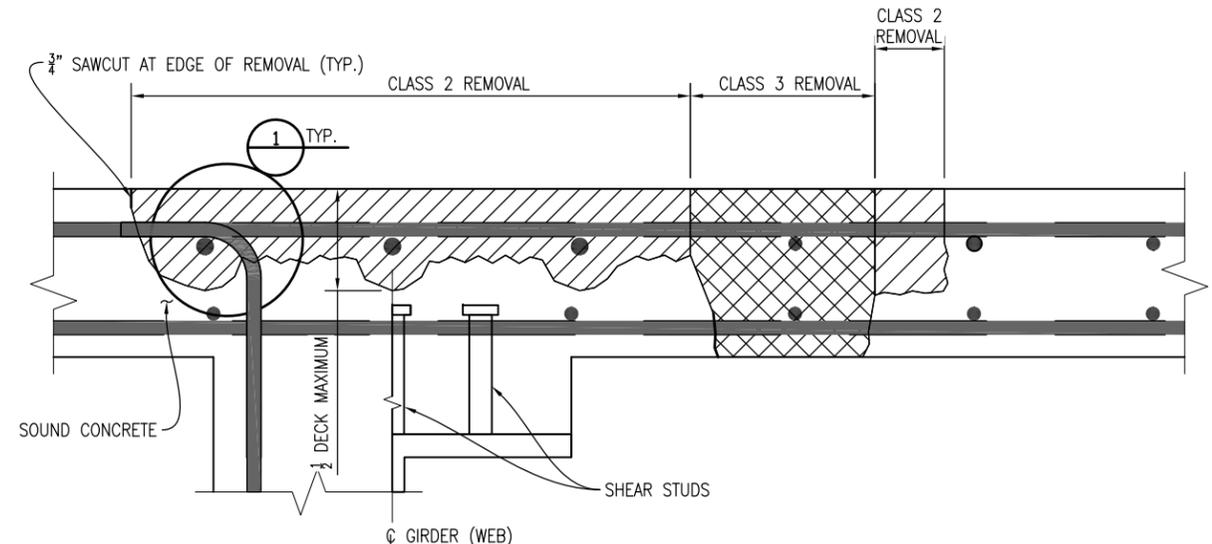
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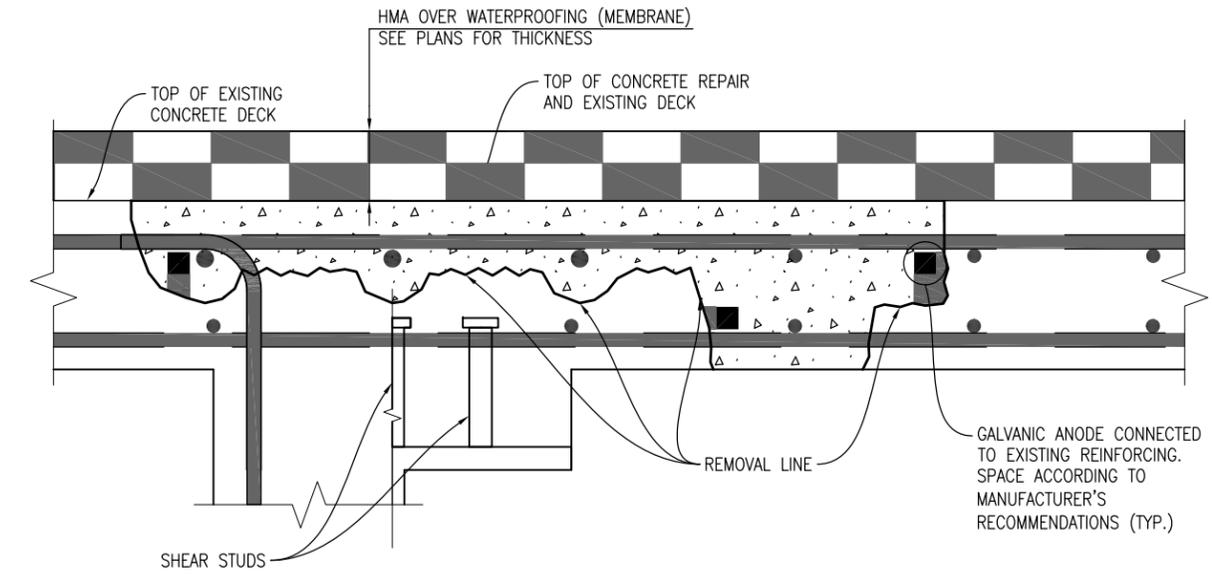
**SOUTH HOLLY STREET BRIDGE
 BEAM AND BEARING DETAILS**

Designer:	JMB	Structure Numbers	D-10-HC-170
Detailer:	JMB	Subset Sheets:	SCHEDULE B
Sheet Subset:	Bridge	Subset Sheets:	BR06 OF 8

Project Number
WBS 04.159
 Sheet Number 13



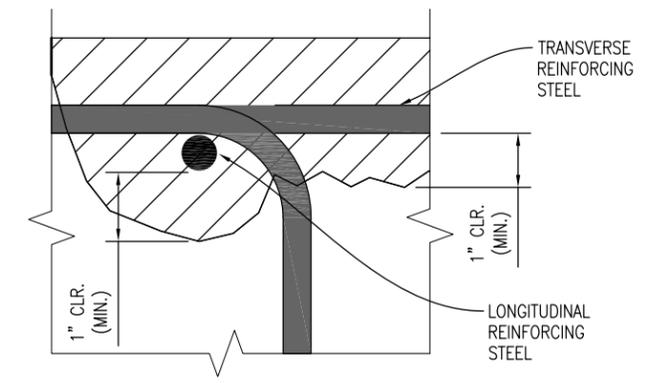
REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2 & 3)



CONCRETE REPLACEMENT

LEGEND

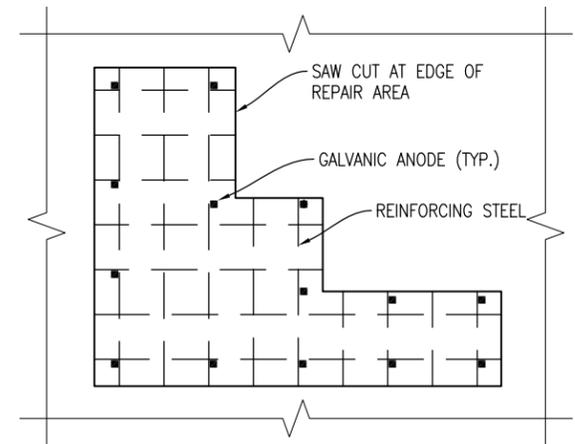
- CLASS 2 REMOVAL: FROM TOP OF DECK TO SOUND CONCRETE, BUT NOT LESS THAN 1" CLEAR BELOW THE TOP MAT OF REINFORCING STEEL. IF THE BOTTOM MAT OF REINFORCING STEEL IS EXPOSED, THEN CLASS 3 REMOVAL SHALL BE PERFORMED AT THOSE LOCATIONS.
- CLASS 3 REMOVAL: FROM TOP TO BOTTOM OF DECK, FULL DEPTH REMOVAL.
- PATCHING MATERIAL: CONCRETE CLASS DR.
- HMA: HMA DESIGN AND THICKNESS AS DESIGNATED IN THE PLANS.
- GROUT BEDS: REQUIRED IF THE CLEAR DISTANCE BETWEEN ANODES AND EXISTING CONCRETE SUBSTRATE IS LESS THAN 1". GROUT ENCAPSULATION OF ANODES MAY BE REQUIRED FOR CERTAIN PATCHING MATERIALS. SEE REVISION OF SECTION 601 GALVANIC ANODES.



DETAIL 1

NOTES

- THESE DETAILS REFLECT THE SCOPE AND THE NATURE OF THE WORK. THEY ARE NOT INTENDED TO REPRESENT THE ACTUAL STRUCTURE.
- THE APPLICABLE CLASSES OF REMOVAL SHALL BE AS DESIGNATED BY THE SUMMARY OF QUANTITIES IN THE PLANS.
- PLAN QUANTITIES ARE ESTIMATES. ACTUAL CONCRETE REMOVAL AND REPLACEMENT SHALL BE AS NEEDED TO REACH SOUND CONCRETE OR AS DIRECTED BY THE ENGINEER.
- REMOVAL OPERATIONS SHALL BE COORDINATED WITH THE ENGINEER AND PERFORMED IN A MANNER AS REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY OF THE BRIDGE.
- IF CLASS 2 OR 3 REMOVAL IS PERFORMED ON BOTH SIDES OF A CAST IN PLACE CONCRETE GIRDER SIMULTANEOUSLY WITHIN THE QUARTER OF A SPAN ON EITHER SIDE OF THE PIER, THAT GIRDER SHALL BE SHORED AT THE THIRD POINT EACH SIDE OF THAT PIER. THIS NOTE IS NOT INTENDED TO REQUIRE SHORING FOR "POTHOLE" TYPE REPAIRS OF LIMITED EXTENT WHERE AT LEAST ONE HALF OF THE LONGITUDINAL DECK REINFORCING IS ANCHORED ON BOTH SIDES OF THE REMOVAL AREA.
- IF FALSEWORK IS REQUIRED, THE FALSEWORK LOAD CAPACITY REQUIRED TO SUPPORT THE GIRDERS SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER UNLESS SPECIFIED OTHERWISE ON THE PLANS. FALSEWORK SHALL BE INCLUDED IN THE WORK FOR REMOVAL OF PORTIONS OF PRESENT STRUCTURES (CLASS 2 & 3).
- CARE SHALL BE TAKEN IN REMOVING CONCRETE FROM AROUND STRUCTURAL STEEL ELEMENTS AND REINFORCING STEEL TO PREVENT DAMAGE TO THE STEEL.
- ALL DAMAGED OR CORRODED NON-EPOXY COATED REINFORCING STEEL REQUIRES NEW NON-EPOXY COATED REINFORCING STEEL TO BE ADDED PER REVISION OF SECTION 202 REMOVAL OF PORTIONS OF PRESENT STRUCTURE. ALL EXPOSED NON-EPOXY COATED REINFORCING STEEL SHALL BE CLEANED WITH HAND TOOLS, STRAIGHTENED AND SANDBLASTED PRIOR TO PLACING CONCRETE.
- GALVANIC ANODE CORROSION PROTECTION IS REQUIRED ON ALL AREAS OF REINFORCING PRIOR TO PLACING CONCRETE. GALVANIC ANODES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS IN ACCORDANCE WITH REVISION OF SECTION 601 GALVANIC ANODES.
- PATCHED DECK MAY BE OPENED TO TRAFFIC AS SOON AS NEW CONCRETE HAS ATTAINED REQUIRED STRENGTH.
- HMA AND WATERPROOFING MEMBRANE SHALL NOT BE PLACED UNTIL THE NEW CONCRETE HAS CURED FOR FIVE FULL DAYS, OR HAS A MOISTURE METER READING OF 5 PERCENT OR LESS BASED ON A MOISTURE METER APPROVED BY THE ENGINEER.



CORROSION PROTECTION

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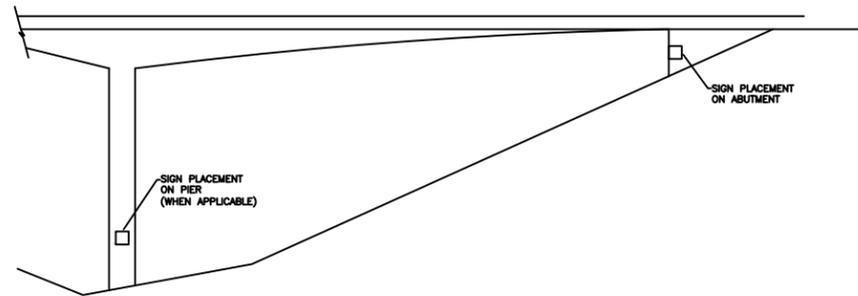


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SOUTH HOLLY STREET BRIDGE DECK REPAIR DETAILS			
Designer: EHP	Structure Numbers: D-10-HC-170	SCHEDULE B	
Detailer: EHP	Subset Sheets: BR07 OF 8		
Sheet Subset: Bridge			

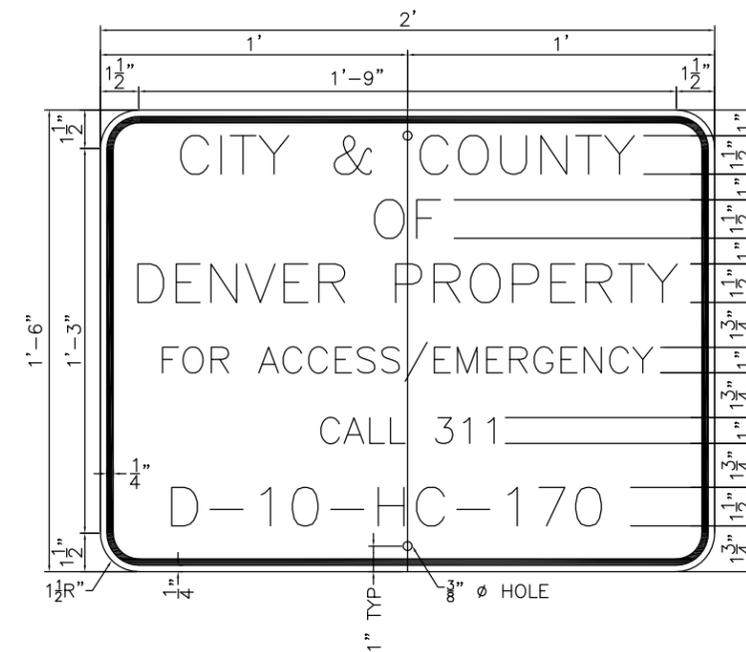
Project Number
WBS 04.159
Sheet Number 14



STRUCTURE IDENTIFICATION PANEL LOCATIONS

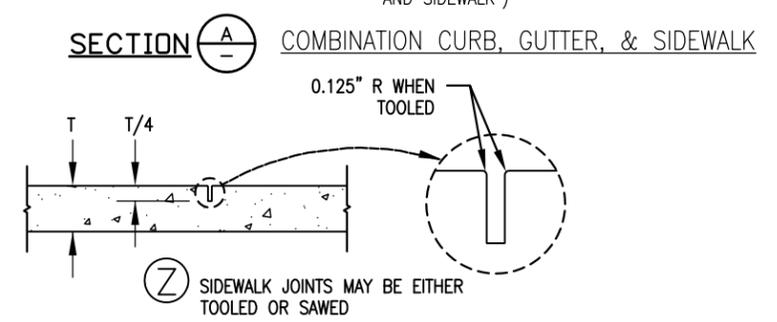
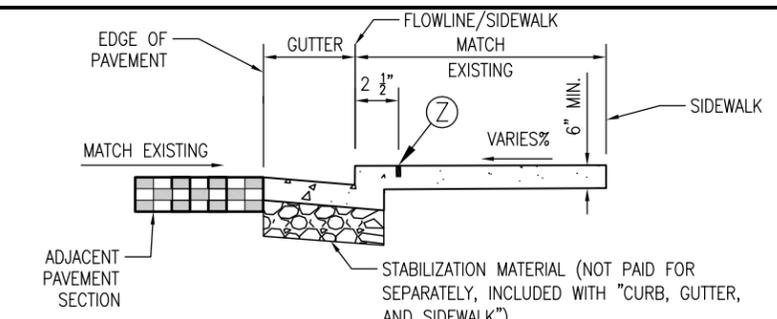
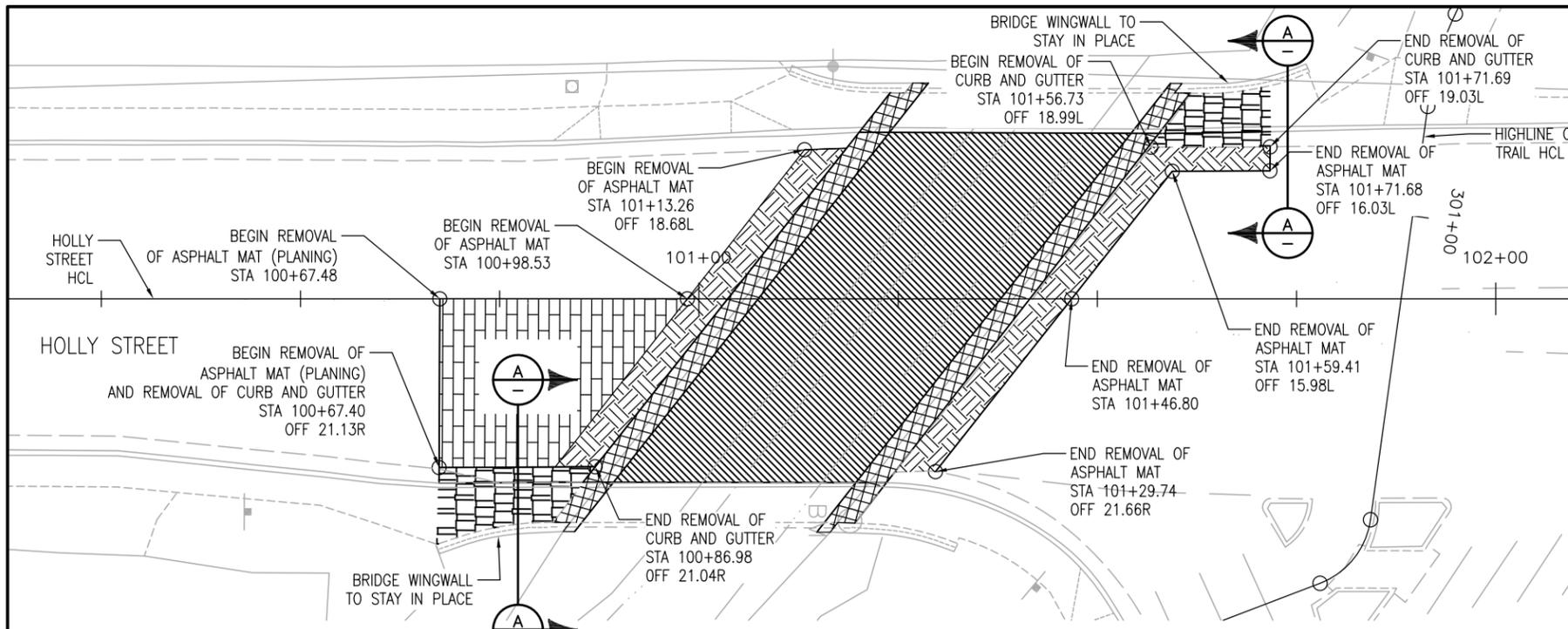
GENERAL NOTES

1. STRUCTURE IDENTIFICATION PANELS SHALL BE FABRICATED FROM SINGLE SHEET ALUMINUM 0.080 IN. MINIMUM THICKNESS.
2. THE STRUCTURE NUMBER IS SHOWN ON THE PLANS.
3. ALL SIGNS SHALL BE FABRICATED USING RETROREFLECTIVE SHEETING CONFORMING TO ASTM D4956, TYPE I MINIMUM. THE SIGN SHALL HAVE WHITE REFLECTIVE SHEETING BACKGROUND WITH BLACK LETTERS.
4. STRUCTURE IDENTIFICATION PANELS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
5. IN ADDITION TO THE REQUIREMENTS STATED ABOVE, STRUCTURE IDENTIFICATION PANELS SHALL BE PLACED IN A VISIBLE LOCATION ON ONE OF THE ABUTMENTS AND ON A PIER WHEN APPLICABLE.



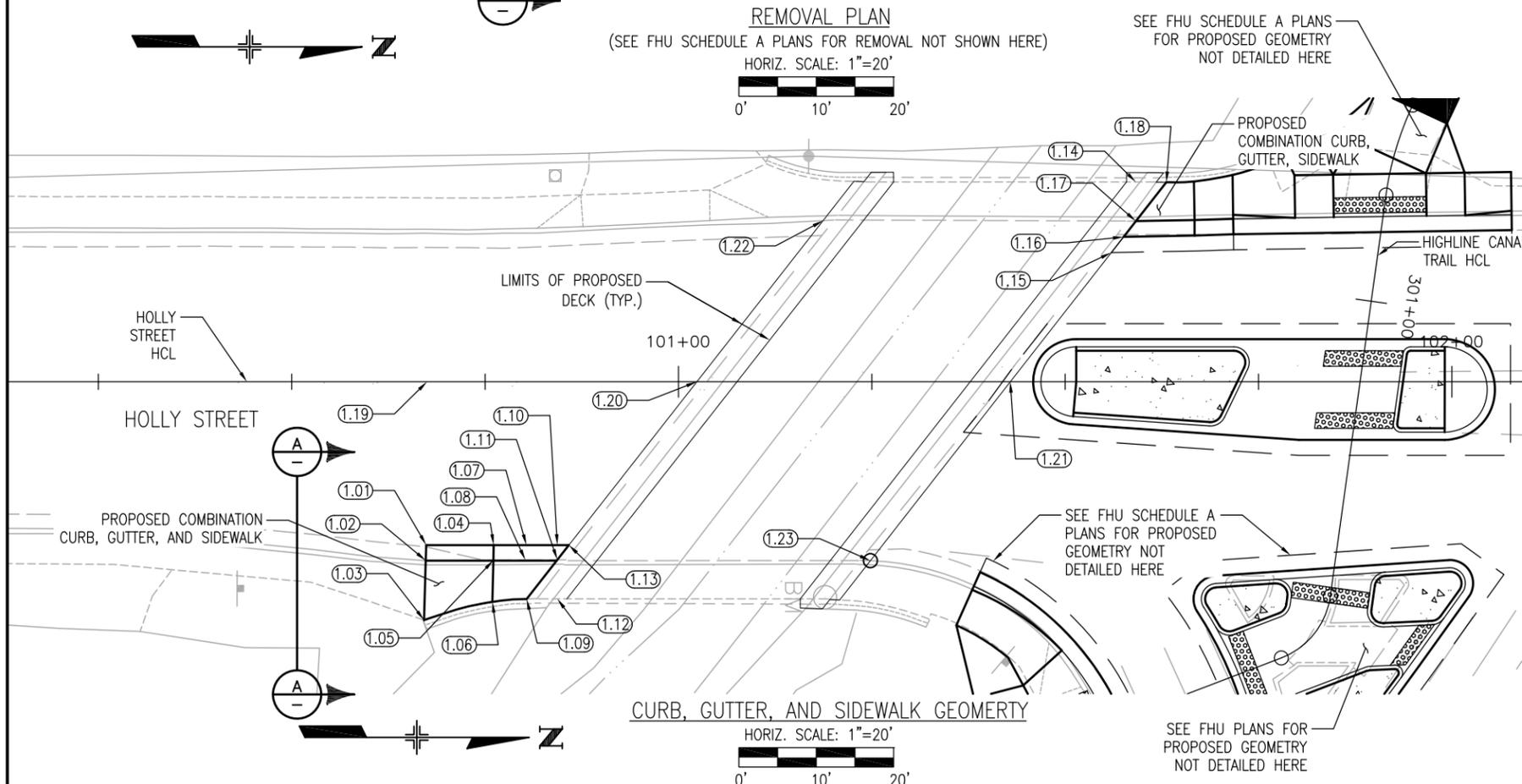
STRUCTURE IDENTIFICATION PANEL

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File Name: (15) 46212 BR DT 08.dwg		Date:	Comments:	Init.		No Revisions:	STRUCTURE IDENTIFICATION PANEL		WBS 04.159		
Horiz. Scale: N/A Vert. Scale: N/A						Revised:	Designer: EHP	Structure Numbers	D-10-HC-180		
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POINT TABLE (FINAL GRADE)				
POINT #	STATION	OFFSET	ELEVATION	DESCRIPTION
1.01	100+67.41	21.08R	5481.01	EDGE OF PAVEMENT
1.02	100+67.33	23.08R	5480.89	FLOWLINE
			5481.42	SIDEWALK
1.03	100+67.10	30.75R	5481.56	SIDEWALK
1.04	100+76.07	21.08R	5480.94	EDGE OF PAVEMENT
1.05	100+76.07	23.08R	5480.86	FLOWLINE
			5481.60	SIDEWALK
1.06	100+75.94	28.40R	5481.68	SIDEWALK
1.07	100+80.33	21.08R	5480.92	EDGE OF PAVEMENT
1.08	100+80.36	23.08R	5480.84	FLOWLINE
			5481.74	SIDEWALK
1.09	100+80.37	28.02R	5481.67	SIDEWALK
1.10	100+84.26	21.08R	5480.91	EDGE OF PAVEMENT
1.11	100+84.25	23.08R	5480.82	FLOWLINE
			5480.64	SIDEWALK
1.12	100+84.26	28.01R	5481.72	SIDEWALK
1.13	100+85.82	21.08R	5480.90	EDGE OF PAVEMENT
1.14	101+59.15	25.73L	5480.86	SIDEWALK
1.15	101+55.97	16.66L	5480.08	SAWCUT
1.16	101+57.56	18.69L	5480.03	EDGE OF PAVEMENT
1.17	101+59.15	20.72L	5479.93	FLOWLINE
			5480.71	SIDEWALK
1.18	101+63.08	25.77L	5480.77	SIDEWALK
1.19	101+67.48	0.00	5481.49	HOLLY STREET HCL
1.20	101+02.38	0.00	5481.12	HOLLY STREET HCL
1.21	101+42.91	0.00	5480.70	HOLLY STREET HCL
1.22	101+18.70	20.78L	5480.39	FLOWLINE
1.23	101+24.82	23.08R	5480.40	FLOWLINE

- LEGEND:**
- REMOVAL OF SIDEWALK, CURB AND GUTTER
 - REMOVAL OF ASPHALT MAT (PLANNING)
 - FULL REMOVAL OF ASPHALT MAT & REPLACEMENT WITH HOT MIX ASPHALT (PATCHING) (ASPHALT) (MATCH EXISTING, 9" MINIMUM)
 - FULL REMOVAL AND REPLACEMENT OF DECK AND SIDEWALK. SEE SUPERSTRUCTURE DETAILS
 - REMOVAL OF ASPHALT MAT (PLANNING) & REPLACEMENT WITH HOT MIX ASPHALT (PATCHING) (ASPHALT)
 - 2" MIN HMA (GRADING SX) (75) (PG 64-22)
 - HOLLY STREET BRIDGE OVERLAY
 - 3" HMA (GRADING S) (75) (PG 64-22) (TYP.)
 - HOT MIX ASPHALT (PATCHING) (ASPHALT)



- NOTES:**
1. STATIONING BASED ON HOLLY STREET HCL
 2. ALL UTILITIES TO BE PROTECTED IN PLACE
 3. ELEVATIONS SHALL MATCH EXISTING WHERE THE PROPOSED IMPROVEMENTS TIE INTO EXISTING. PROPOSED HOLLY STREET HCL ELEVATIONS SHALL MATCH EXISTING
 4. THE CONTRACTOR SHALL MATCH EXISTING SIDEWALK AND CURB PLAN DIMENSIONS UNLESS NOTED OTHERWISE
 5. THE CONTRACTOR SHALL VERIFY THAT THE ABOVE POINTS WILL RESULT IN POSITIVE DRAINAGE OFF BRIDGE AND APPROACH ROADWAYS.
 6. SEE "BRIDGE DECK" SHEET FOR LIMITS OF HMA (GRADING SX) (75) (PG 64-22) AND WATERPROOFING (MEMBRANE).
- *REMOVE AND REPLACE AS NEEDED TO ACHIEVE POSITIVE DRAINAGE OFF BRIDGE AND APPROACH. MINIMUM ASPHALT LIFT SHALL BE 3". SEE "HOT MIX ASPHALT (PATCHING) (ASPHALT)" DETAIL.

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City Project Manager: Kevin Rens, PE			FAX: (720) 913-4544	Void:	Detailer: DMP	D-10-HC-170 SCHEDULE B
Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222					Sheet Subset: Bridge	Sheet Number 16

TABULATION OF CONSTRUCTION TRAFFIC CONTROL DEVICES MEASURED AND PAID FOR AS 630 CONSTRUCTION TRAFFIC CONTROL LUMP SUM

ITEM DESCRIPTION	UNIT	PROJECT TOTALS
Seeding (Native)	ACRE	0.01
Curb Ramp (Temporary Perpendicular)	EACH	4
24 Inch Pavement Marking Tape (Removable)	LF	170
Baricade (Type 3 M-A) (Temporary)	EACH	4
Construction Traffic Sign (Panel Size A)	EACH	13
Construction Traffic Sign (Panel Size B)	EACH	10
Traffic Cone	EACH	20

SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL SIGNS

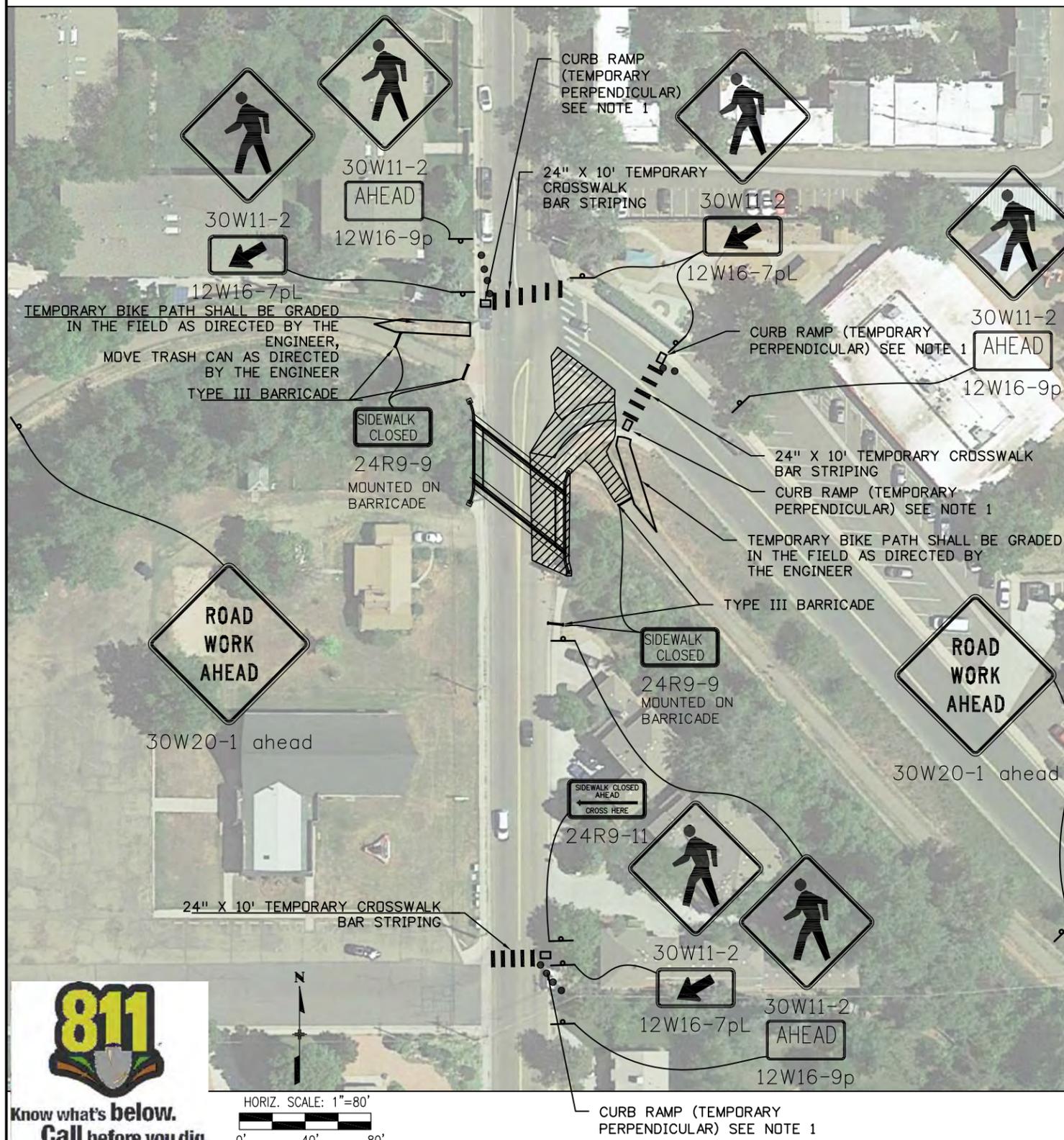
SIGN CODE	LEGEND	DIMENSION (INCHES)	SIGN PANEL										
			Phase 1		Phase 2		Phase 3		MAX				
			A	B	A	B	A	B	A	B			
30W11-2	PEDESTRIAN	30 x 30		8		4							8
12W16-7pL	DOWNWARD DIAGONAL ARROW (PLAQUE)	24 x 12	4		2								4
12W16-9p	AHEAD (PLAQUE)	24 x 12	4		2								4
24R9-9	SIDEWALK CLOSED	24 x 12	4		3		2						4
30W20-1	ROAD WORK AHEAD	30 x 30		2		2		2					2
24R9-11	SIDEWALK CLOSED AHEAD CROSS HERE	24 x 18	1		1		1						1
TOTALS			13	10	8	6	3	2	13	10			

NOTES:

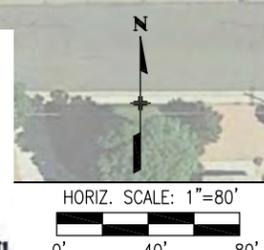
- CURB RAMP (TEMPORARY PERPENDICULAR) SHALL BE A HARD REMOVABLE SURFACE (ASPHALT, ALUMINUM, STEEL OR OTHER), AND BE ADA-COMPLIANT, THAT MAINTAIN A MAXIMUM 1:12 SLOPE RATIO WITH DETECTABLE EDGE CASTINGS TO PROVIDE GUIDANCE FOR PEDESTRIANS WITH CANES AND WALKING DEVICES, AND PREVENT WHEELCHAIRS FROM ROLL-OFFS, MINIMUM 4 FT WIDE SLIP-RESISTANT SURFACE. THE DIMENSIONS AND TRUNCATED DOMES SHALL BE SIMILAR TO CCD STANDARD 7.1, TYPE 1. CURB RAMPS (TEMPORARY) SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE.
- ADVANCE WARNING CONSTRUCTION SIGNS IN PLACE MORE THAN ONE WEEK SHALL BE POST MOUNTED AND PLACED IN ACCORDANCE WITH STANDARD S-614-1, "GROUND SIGN PLACEMENT." ALL OTHER SIGNS MAY BE MOUNTED ON APPROVED TEMPORARY STANDS AND MOVED WITH THE CONSTRUCTION OPERATION, AS APPROVED BY THE ENGINEER.
- BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATION OF SIGNS IS SUBJECT TO THE APPROVAL OF THE ENGINEER.
- FULL COMPLIANCE PAVEMENT MARKING SHALL BE REQUIRED AT THE END OF EACH WORKING DAY, IN ACCORDANCE WITH STANDARD S-627-1 AND THE PROJECT SPECIAL PROVISIONS. TEMPORARY PAVEMENT MARKING SHALL INCLUDE CENTER AND EDGE LINES AS REQUIRED. MULTIPLE APPLICATIONS MAY BE NEEDED DURING CONSTRUCTION.
- TRAFFIC CONES SHALL BE 36" MINIMUM HEIGHT.
- ACCESS TO RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.
- TEMPORARY BIKE PATH SHALL BE 3 INCH DEEP AGGREGATE BASE COURSE (CLASS 6). MINIMUM WIDTH SHALL BE 6 FEET. THE BASE COURSE SHALL BE REMOVED FROM THE SITE AND AREA REGRADED BACK TO EXISTING UPON COMPLETION OF CONSTRUCTION. CONSTRUCTION AND REMOVAL OF THE TEMPORARY BIKE PATH SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

LEGEND

- CONSTRUCTION ZONE
- TRAFFIC CONE



811
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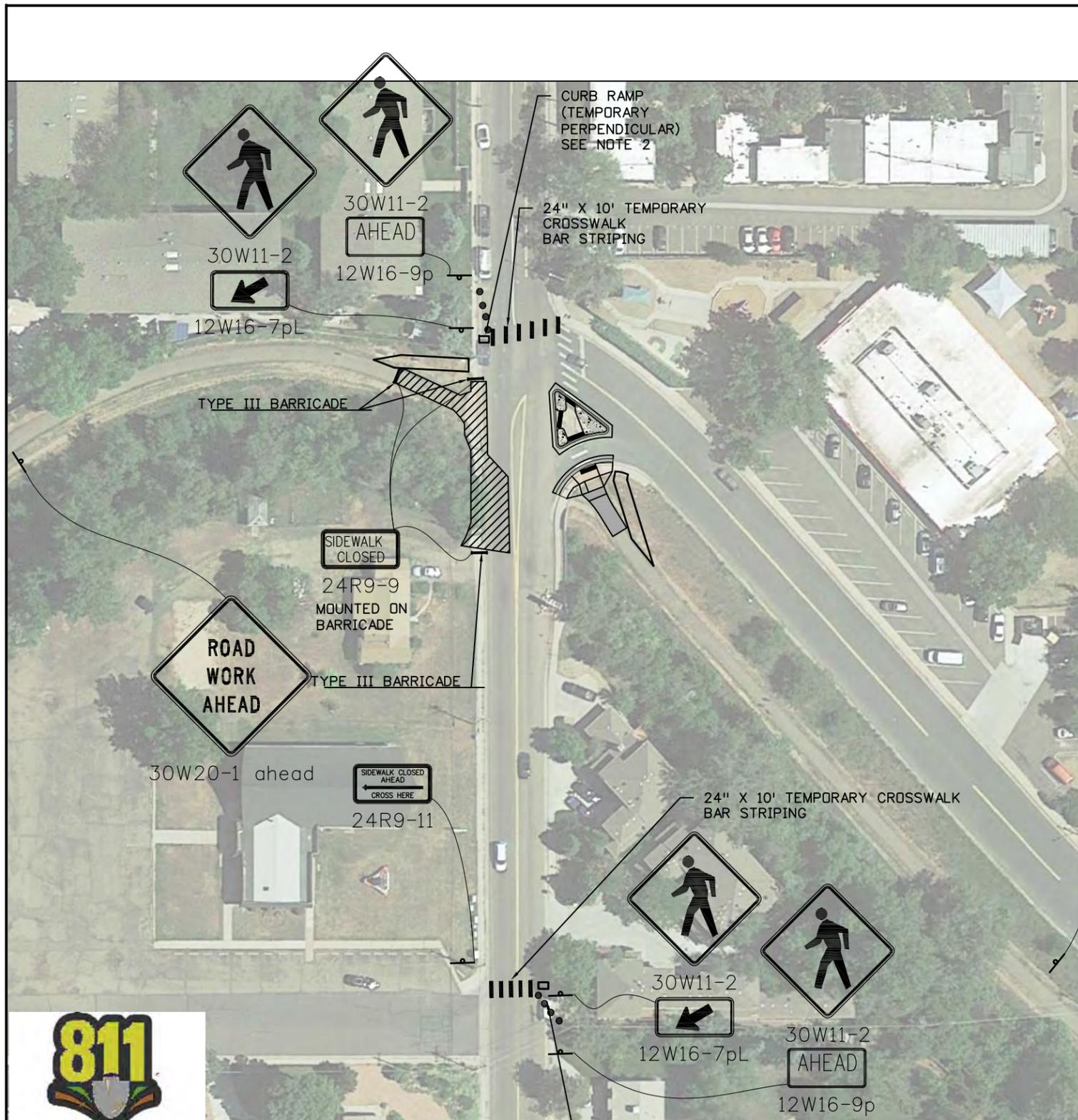
Print Date: 8/13/2019
 File Name: (17) 46212 TC DT 01.dwg
 Horiz. Scale: 1:80 Vert. Scale: N/A
 City Project Manager Kevin Rens, PE
wood. Colorado Center Tower 2
 2000 S. Colorado Blvd Suite 2-1000
 Denver, CO 80222

Sheet Revisions		
Date:	Comments	Init.

DENVER
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS
 201 WEST COLFAX AVENUE
 DENVER, CO 80202
 PHONE: (720) 913-4501
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As Constructed	SOUTH HOLLY STREET BRIDGE PEDESTRIAN TRAFFIC CONTROL PHASE 1		Project Number
	No Revisions:		WBS 04.159
	Revised:	Designer: KB Detailer: KB	Structure Numbers D-10-HC-170 SCHEDULE B
Void:	Sheet Subset: Traffic	Subset Sheets: TC01 of 3	Sheet Number 17



NOTES:

1. CURB RAMP (TEMPORARY PERPENDICULAR) SHALL BE A HARD REMOVABLE SURFACE (ASPHALT , ALUMINUM, STEEL OR OTHER), AND BE ADA-COMPLIANT, THAT MAINTAIN A MAXIMUM 1:12 SLOPE RATIO WITH DETECTABLE EDGE CASTINGS TO PROVIDE GUIDANCE FOR PEDESTRIANS WITH CANES AND WALKING DEVICES, AND PREVENT WHEELCHAIRS FROM ROLL-OFFS, MINIMUM 4 FT WIDE SLIP-RESISTANT SURFACE. THE DIMENSIONS AND TRUNCATED DOMES SHALL BE SIMILAR TO CCD STANDARD 7.1, TYPE 1. CURB RAMPS (TEMPORARY) SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE.

LEGEND

-  CONSTRUCTION ZONE
-  TRAFFIC CONE



30W20-1 ahead



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Print Date:	8/13/2019
File Name:	(18) 46212 TC DT 02.dwg
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wood.	Colorado Center Tower 2 2000 S. Colorado Blvd Suite 2-1000 Denver, CO 80222

Sheet Revisions		
Date:	Comments	Init.

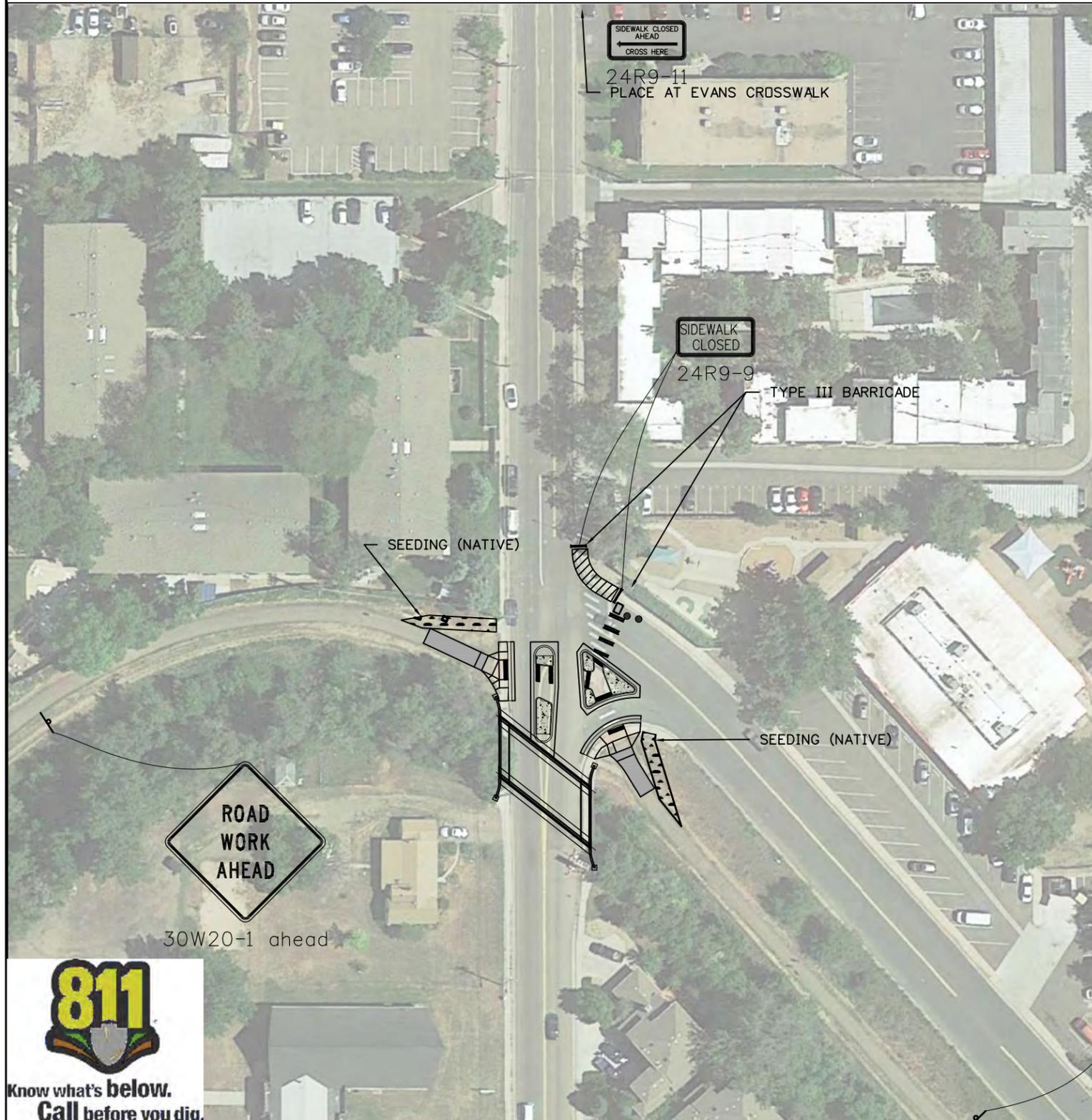


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SOUTH HOLLY STREET BRIDGE PEDESTRIAN TRAFFIC CONTROL PHASE 2			
Designer:	KB	Structure Numbers	D-10-HC-170
Detailer:	KB	Subset Sheets:	SCHEDULE B
Sheet Subset:	Traffic	Subset Sheets:	TC02 of 3

Project Number
WBS 04.159
Sheet Number
18

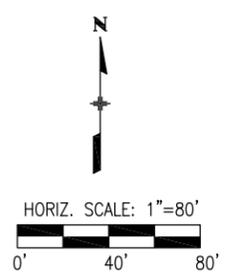


NOTES:

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2. FOR SEEDING (NATIVE) SPECIFICATIONS SEE SCHEDULE A.

LEGEND

-  CONSTRUCTION ZONE
-  TRAFFIC CONE
-  SEEDING (NATIVE)



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SOUTH HOLLY STREET BRIDGE PEDESTRIAN TRAFFIC CONTROL PHASE 3			
Designer:	KB	Structure Numbers	D-10-HC-170
Detailer:	KB	Subset Sheets:	SCHEDULE B
Sheet Subset:	Traffic	Subset Sheets:	TC03 of 3

Project Number
WBS 04.159
Sheet Number 19