

CITY AND COUNTY OF DENVER

STATE OF COLORADO



**DENVER**  
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Contract Documents

Contract Number: 201843277



Montbello Railings Phase 2

July 12, 2018



## NOTICE OF APPARENT LOW BIDDER

Hallmark, Inc.  
5085 Harlan Street  
Denver, Colorado 80212

The EXECUTIVE DIRECTOR OF PUBLIC WORKS has considered the Bids submitted on **August 9, 2018**, for work to be done and materials to be furnished in and for:

### CONTRACT NO: 201843277 Montbello Railings Phase 2

as set forth in detail in the Contract Documents for the City and County of Denver, Colorado. It appears that your Bid is fair, equitable, and to the best interest of the City and County; therefore, said Bid is hereby accepted at the bid price contained herein, subject to the approval and execution of the Contract Documents by the City in accordance with the Charter of the City and County of Denver, and to your furnishing the items specified below. The award is based on the total bid items: **201-00000 through 630-10005 (Thirty-Five [35] total bid items)**, the total estimated cost thereof being: **Six Hundred Twenty-Three Thousand Seven Hundred Ninety-Two Dollars and Zero Cents (\$623,792.00)**.

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

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

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

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

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

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



**NOTICE OF APPARENT LOW BIDDER**

CONTRACT NO. 201843277

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 20<sup>th</sup> day of August 2018.

CITY AND COUNTY OF DENVER

By *Eulois Cleckley*  
" Eulois Cleckley  
Executive Director of Public Works

cc: Kristen Moore (CAO), Treasury ([taxauditadmin@denvergov.org](mailto:taxauditadmin@denvergov.org)), Shane Doyle, DSBO Inbox ([dsbo@denvergov.org](mailto:dsbo@denvergov.org)), Cindy Ackerman, Ed Haun, Prevailing Wage([prevailingwage@denvergov.org](mailto:prevailingwage@denvergov.org)), Rudy Lopez, File.

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

CITY AND COUNTY OF DENVER

STATE OF COLORADO



**DENVER**  
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Bid Form Package

Contract Number: 201843277



Montbello Railings Phase 2

July 12, 2018

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

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BID FORM AND SUBMITTAL PACKAGE**

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# DENVER

THE MILE HIGH CITY

*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 checked="" type="checkbox"/>
BF-6+	a.) Fill in individual bid item dollars and totals in Numerical figures only b.) Complete all blanks c.) Legal name required	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-7	a.) Write out bid total or bid totals in words and figures in the blank form space(s) provided b.) Calculate Textura® Construction Payment Management System Fee from chart on pg. BF-3 and write % and fee in the space provided	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-8	a.) List all subcontractors who are performing work on this project	<input checked="" type="checkbox"/>
BF-9 – BF-10	a.) Fully complete List of Proposed Minority /Woman Business Enterprise Bidders, Subcontractors, Suppliers, Manufacturers, or Brokers – check appropriate boxes.	<input checked="" type="checkbox"/>
BF-11	a.) Complete all blanks b.) If Addenda have been issued, complete bottom section.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-12	a.) Complete appropriate sections - signature(s) required. b.) If corporation, then corporate seal required.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-13	a.) Fully complete Commitment to Participation	<input checked="" type="checkbox"/>
BF-16	a.) If applicable, fully complete Joint Venture Affidavit (Submit 10 days prior to Bid Opening date)	<input type="checkbox"/> NA
BF-17 – BF-19	a.) If applicable, fully complete Joint Venture Eligibility Form (Submit 10 days prior to Bid Opening date)	<input type="checkbox"/> NA
BF-20	a.) Fill in all Bid Bond blanks b.) Signatures required c.) Corporate Seal if required d.) Dated e.) Attach Surety Agents Power of Attorney or Certified or cashier's check made out to the Manager of Revenue referencing Bidder's Company and Contract Number.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" 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 checked="" type="checkbox"/>

**Textura® Construction Payment Management System (CPM System)**

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

Project Value	Project Fee (GC + Sub Usage)
\$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>

CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS

BID FORM AND SUBMITTAL PACKAGE ACKNOWLEDGMENT

CONTRACT NO. 201843277

Montbello Railings Phase 2

BIDDER:

HALLMARK INC.  
(Legal Name per Colorado Secretary of State)

ADDRESS:

5085 HARLAN STREET  
DENVER, CO 80212  
303-423-8005

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. 201843277, Montbello Railings Phase 2, made available to the undersigned bidder pursuant to Notice of Invitation for Bids dated July 12, 2018.

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

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

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

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

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

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

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

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

**BIDDER:** HALLMARK, INC.  
**Name:** ROBERT C. LAWRENCE  
**By:** [Signature]  
**Title:** PRESIDENT

**ATTEST:**

**By:** [Signature]

[SEAL]

CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS

BID FORM

CONTRACT NO. 201843277

Montbello Railings Phase 2

BIDDER

HALLMARK INC., 5085 HARLAN ST., DENVER, CO 80212  
(Legal Name per Colorado Secretary of State)

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

The Undersigned Bidder, having examined the plans, technical specifications, and remainder of the proposed Contract Documents as designated and enumerated in the General and Special Contract Conditions and any and all addenda thereto; having investigated the location of and conditions affecting the proposed Work; and being acquainted with and fully understanding the extent and character of the Work covered by this bid, and all factors and conditions affecting or which may be affected by Work, HEREBY SUBMITS THIS BID, pursuant to an advertisement of a Notice of Invitation for Bids as published on July 12, 2018, to furnish all required materials, tools, appliances, equipment and plant; to perform all necessary labor and to undertake and complete: CONTRACT NO. 201843277, Montbello Railings Phase 2, in Denver, Colorado, in full accordance with and conformity to the Plans, Technical Specifications, and Contract Documents hereto attached or by reference made a part hereof, at and for the following price(s) set forth on this Bid Form.

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

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

Item No.	Description and Price	Estimated Quantity	Estimated Cost
201-00000	<b>CLEARING AND GRUBBING</b> at the unit price of \$ <u>2,500.-</u> per EACH.	3 EACH	\$ <u>7,500.-</u>
202-00026	<b>REMOVAL OF SLOPE AND DITCH PAVING</b> at the unit price of \$ <u>120.-</u> per SQUARE YARD.	12 SY	\$ <u>1,440.-</u>
202-00035	<b>REMOVAL OF PIPE</b> at the unit price of \$ <u>60.-</u> per LINEAR FOOT.	24 LF	\$ <u>1,440.-</u>
202-00200	<b>REMOVAL OF SIDEWALK</b> at the unit price of \$ <u>35.-</u> per SQUARE YARD.	66 SY	\$ <u>2,310.-</u>
202-00203	<b>REMOVAL OF CURB AND GUTTER</b> at the unit price of \$ <u>7.-</u> per LINEAR FOOT.	484 LF	\$ <u>3,388.-</u>
202-00206	<b>REMOVAL OF CONCRETE CURB RAMP</b> at the unit price of \$ <u>35.-</u> per SQUARE YARD.	77 SY	\$ <u>2,695.-</u>
202-00220	<b>REMOVAL OF ASPHALT MAT</b> at the unit price of \$ <u>30.-</u> per SQUARE YARD.	132 SY	\$ <u>3,960.-</u>
202-00495	<b>REMOVAL OF PORTIONS OF PRESENT STRUCTURE</b> at the unit price of \$ <u>7,500.-</u> per EACH.	3 EACH	\$ <u>22,500.-</u>
202-04002	<b>CLEAN CULVERT</b> at the unit price of \$ <u>300.-</u> per EACH.	9 EACH	\$ <u>2,700.-</u>
203-01597	<b>POTHOLING</b> at the unit price of \$ <u>150.-</u> per HOUR.	20 HOUR	\$ <u>3,000.-</u>
206-00000	<b>STRUCTURE EXCAVATION</b> at the unit price of \$ <u>45.-</u> per CUBIC YARD.	320 CY	\$ <u>14,400.-</u>
206-00200	<b>STRUCTURE BACKFILL (CLASS 2)</b> at the unit price of \$ <u>65.-</u> per CUBIC YARD.	251 CY	\$ <u>16,315.-</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
208	<b>EROSION CONTROL</b> at the unit price of \$ <u>7,500.-</u> per EACH.	3 EACH	\$ <u>22,500.-</u>
210-00810	<b>RESET GROUND SIGN</b> at the unit price of \$ <u>250.-</u> per EACH.	6 EACH	\$ <u>1,500.-</u>
210-04020	<b>MODIFY INLET</b> at the unit price of \$ <u>3,500.-</u> per EACH.	2 EACH	\$ <u>7,000.-</u>
212-00050	<b>SOD</b> at the unit price of \$ <u>6.-</u> per SQUARE FOOT.	240 SF	\$ <u>1,440.-</u>
213	<b>CRUSHED ROCK (GRAY BREEZE)</b> at the unit price of \$ <u>8.-</u> per SQUARE FOOT.	423 SF	\$ <u>3,384.-</u>
213-00070	<b>LANDSCAPE WEED BARRIER FABRIC</b> at the unit price of \$ <u>10.-</u> per SQUARE YARD.	46 SY	\$ <u>460.-</u>
403-00720	<b>HOT MIX ASPHALT (PATCHING)(ASPHALT)</b> at the unit price of \$ <u>250.-</u> per TON.	74 TON	\$ <u>18,500.-</u>
507-00000	<b>CONCRETE SLOPE AND DITCH PAVING</b> at the unit price of \$ <u>800.-</u> per CUBIC YARD.	6 CY	\$ <u>4,800.-</u>
514-00201	<b>PEDESTRIAN RAILING (STEEL)(SPECIAL)</b> at the unit price of \$ <u>560.-</u> per LINEAR FOOT.	244 LF	\$ <u>136,640.-</u>
601-03050	<b>CONCRETE CLASS D (WALL)</b> at the unit price of \$ <u>1,500.-</u> per CUBIC YARD.	91 CY	\$ <u>136,500.-</u>
601-40300	<b>STRUCTURAL CONCRETE COATING</b> at the unit price of \$ <u>20.-</u> per SQUARE YARD.	332 SY	\$ <u>6,640.-</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
602-00020	<b>REINFORCING STEEL (EPOXY COATED)</b> at the unit price of \$ <u>2.-</u> per POUND.	13,645 LB	\$ <u>27,290.-</u>
603-01155	<b>15 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)</b> at the unit price of \$ <u>130.-</u> per LINEAR FOOT.	20 LF	\$ <u>2,600.-</u>
608-00005	<b>CONCRETE SIDEWALK (SPECIAL)</b> at the unit price of \$ <u>135.-</u> per SQUARE YARD.	88 SY	\$ <u>11,880.-</u>
608-00012	<b>CURB RAMP (SPECIAL)</b> at the unit price of \$ <u>200.-</u> per SQUARE YARD.	144 SY	\$ <u>28,800.-</u>
609-21023	<b>CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL)</b> at the unit price of \$ <u>40.-</u> per LINEAR FOOT.	319 LF	\$ <u>12,760.-</u>
620-00020	<b>SANITARY FACILITY</b> at the unit price of \$ <u>500.-</u> per EACH.	3 EACH	\$ <u>1,500.-</u>
623-00001	<b>IRRIGATION RECONSTRUCTION (URSULA)</b> at the unit price of \$ <u>5,000.-</u> per LUMP SUM.	1 LS	\$ <u>5,000.-</u>
623-00002	<b>IRRIGATION RECONSTRUCTION (ELGIN)</b> at the unit price of \$ <u>3,600.-</u> per LUMP SUM.	1 LS	\$ <u>3,600.-</u>
623-00003	<b>IRRIGATION ADJUSTMENT (ELK)</b> at the unit price of \$ <u>2,000.-</u> per LUMP SUM.	1 LS	\$ <u>2,000.-</u>
625-00000	<b>CONSTRUCTION SURVEYING</b> at the unit price of \$ <u>1,200.-</u> per EACH.	3 EACH	\$ <u>3,600.-</u>
626-00000	<b>MOBILIZATION</b> at the unit price of \$ <u>14,500.-</u> per EACH.	3 EACH	\$ <u>43,500.-</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
630-10005	<b>CONSTRUCTION TRAFFIC CONTROL</b> at the unit price of \$ <u>19,000.-</u> per EACH.	3 EACH	\$ <u>57,000.-</u>

35 ITEMS



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>602, 608</u>	<u>2.2%</u>	<u>Hot Shot Supply</u> <u>5351 Lincoln St. Denver 80216</u>
<u>630</u>	<u>7.8%</u>	<u>Innovative Traffic Control</u> <u>4104 W Eisenhower Blvd. Loveland 80537</u>
<u>625</u>	<u>.4%</u>	<u>Infinity Solutions</u> <u>10465 Melody Dr. Suite 215 Northglenn 80234</u>
<u>403, 626</u>	<u>3.1%</u>	<u>Loya Construction</u> <u>P.O. Box 211555 Denver 80221</u>
<u>623, 626, 213</u> <u>212, 208,</u>	<u>5.2%</u>	<u>Erosion Control Specialist</u> <u>2120 W 7<sup>th</sup> Ave Denver 80204</u>
<u>601, 507, 608, 609</u>	<u>2.2%</u>	<u>Vasquez Ready Mix 7555 E 41<sup>st</sup> Ave</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](mailto:DSBO@denvergov.org)

City & County of Denver Contract No.: 201843277

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: <u>Hallmark, Inc.</u>		
Address: <u>5085 Harlan St</u>	Contact Person: <u>Nathan Randall</u>	
Type of Service: <u>Excavation &amp; Concrete</u>	Dollar Amount: \$: <u>490,441.00</u>	Percent of Project: <u>79.1%</u>

**Certified MWBE Prime Bidder**

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

**Subcontractors, Suppliers Manufacturers or Brokers (check one box)**

<input type="checkbox"/> Subcontractor (v)	<input checked="" type="checkbox"/> Supplier (v)	<input type="checkbox"/> Manufacturer (v)	<input type="checkbox"/> Broker (v)
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Business Name: <u>Hot Shot Supply</u>		
Address: <u>5351 Lincoln St.</u>	Type of Service: <u>Supplier</u>	
Contact Person: <u>Mike Shannon</u>	Dollar Amount: \$: <u>13,916.00</u>	Percent of Project: <u>2.2%</u>

<input checked="" type="checkbox"/> Subcontractor (v)	<input type="checkbox"/> Supplier (v)	<input type="checkbox"/> Manufacturer (v)	<input type="checkbox"/> Broker (v)
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Business Name: <u>Innovative Traffic Control</u>		
Address: <u>4104 W Eisenhower Blvd.</u>	Type of Service: <u>Traffic Control</u>	
Contact Person: <u>David Pinckney</u>	Dollar Amount: \$: <u>48,600.00</u>	Percent of Project: <u>7.8%</u>

<input checked="" type="checkbox"/> Subcontractor (v)	<input type="checkbox"/> Supplier (v)	<input type="checkbox"/> Manufacturer (v)	<input type="checkbox"/> Broker (v)
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Business Name: <u>Infinity Solutions</u>		
Address: <u>10465 Melody Dr. Suite 215</u>	Type of Service: <u>Surveying</u>	
Contact Person: <u>Joe Jimenez</u>	Dollar Amount: \$: <u>2,250.00</u>	Percent of Project: <u>.4%</u>

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Subcontractors, Suppliers Manufacturers or Brokers (check one box)							
<input checked="" type="checkbox"/>	Subcontractor (v)	<input type="checkbox"/>	Supplier (v)	<input type="checkbox"/>	Manufacturer (v)	<input type="checkbox"/>	Broker (v)
Business Name:		Laya Construction					
Address:		P.O. Box 211555		Type of Service:			Paving
Contact Person:		Jessie Loya		Dollar Amount: \$:		19,300.00	Percent of Project: 3.1%
<input checked="" type="checkbox"/>	Subcontractor (v)	<input type="checkbox"/>	Supplier (v)	<input type="checkbox"/>	Manufacturer (v)	<input type="checkbox"/>	Broker (v)
Business Name:		Erosion Control Specialist					
Address:		2120 W 7 <sup>th</sup> Ave		Type of Service:			Erosion & Irrigation
Contact Person:		Jessica Acosta		Dollar Amount: \$:		32,325.00	Percent of Project: 5.2%
<input type="checkbox"/>	Subcontractor (v)	<input checked="" type="checkbox"/>	Supplier (v)	<input type="checkbox"/>	Manufacturer (v)	<input type="checkbox"/>	Broker (v)
Business Name:		Vasquez Ready Mix					
Address:		7555 E 41 <sup>st</sup> Ave		Type of Service:			Supplier
Contact Person:		Tanya Marchial		Dollar Amount: \$:		13,650.00	Percent of Project: 2.2%
<input type="checkbox"/>	Subcontractor (v)	<input type="checkbox"/>	Supplier (v)	<input type="checkbox"/>	Manufacturer (v)	<input type="checkbox"/>	Broker (v)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (v)	<input type="checkbox"/>	Supplier (v)	<input type="checkbox"/>	Manufacturer (v)	<input type="checkbox"/>	Broker (v)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (v)	<input type="checkbox"/>	Supplier (v)	<input type="checkbox"/>	Manufacturer (v)	<input type="checkbox"/>	Broker (v)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:
<input type="checkbox"/>	Subcontractor (v)	<input type="checkbox"/>	Supplier (v)	<input type="checkbox"/>	Manufacturer (v)	<input type="checkbox"/>	Broker (v)
Business Name:							
Address:					Type of Service:		
Contact Person:				Dollar Amount: \$:			Percent of Project:

Rev 031816JH

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: 5085 HARLAN STREET

City, State, Zip Code: DENVER CO 80212

Telephone Number of Bidder: 303-423-8005 Fax No. 303-423-8025

Social Security or Federal Employer ID Number of Bidder: 84-1172493

Name and location of the last work of this kind herein contemplated upon which the Bidder was engaged: MONTBELLO RAILINGS, PHASE 1

For information relative thereto, please refer to:

Name: ROBERT C. LAWRENCE ED HAUN

Title: PRESIDENT HALLMARK, INC. PROJ. MANAGER, DENVER PW

Address: 5085 HARLAN ST. DENVER CO 80212 720-913-4522  
303-423-8005

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

Addenda Number ONE Date 8-1-18

Addenda Number \_\_\_\_\_ Date \_\_\_\_\_

Addenda Number \_\_\_\_\_ Date \_\_\_\_\_

Dated this 9<sup>th</sup> day of AUGUST, 20 18.

**Signature of Bidder:**

If an Individual: \_\_\_\_\_ doing business  
as \_\_\_\_\_

If a Partnership: \_\_\_\_\_  
by: \_\_\_\_\_ General Partner.

If a Corporation: HALLMARK, INC.  
a COLORADO Corporation,  
by: Robert Q. Lawrence, its President.  
ROBERT Q. LAWRENCE

Attest: Jessica S Lawrence  
Secretary (Corporate Seal)

**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)



**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 20.9 % **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): HALLMARK, INC.

Firm's Representative (Please print): ROBERT C. LAWRENCE, PRES.

Signature (Firm's Representative): [Handwritten Signature]

Title: PRESIDENT

Address: 5085 HARLAN STREET

City: DENVER, State: CO Zip: 80212

Phone: 303-423-8005 Fax: 303-423-8025 Email: hallmark5040@hotmail.com

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



**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 [dsbo@denvergov.org](mailto:dsbo@denvergov.org)
- FOR RFPs and RFQs: LOIs should be included with Submittal

Contract No.: 201843277

Project Name: Montbello Railings Phase 2

**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: Hallmark, Inc. Self-Performing:  Yes  No Phone: 303-423-8005  
Contact Person: Nathan Randall Email: Hallmark5040@hotmail.com Fax: 303-423-8025  
Address: 5085 Harlan St City: Denver State: CO Zip: 80212

**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: Environmental Consulting Services Phone: 720-432-1327  
Contact Person: Jessica Acosta Email: jacosta@ecskompliance.com Fax:  
Address: 2120 W 7<sup>th</sup> Ave City: Denver State: CO Zip: 80204

Please check the designation which applies to the certified firm.

M/WBE (✓)	<input checked="" type="checkbox"/>	SBE (✓)	<input type="checkbox"/>	EBE (✓)	<input checked="" 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: N/A

**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.

208, 212-00050, 213, 213-00070, 623-00002, 623-00002, 623-00003 **EROSION CONTROL, SOD, CRUSHED ROCK RESTORATION, LANDSCAPE/WEEP BARRIER, IRRIGATION RESTORATION/REMEDICATION**

X 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:

\$ 32,385.00 5.2 %

**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 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: *Robert Lawrence* Date: 8-9-18  
Title: President

M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: *Jessica Acosta* Date: 8/10/18  
Title: Principal & CEO

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**  
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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](mailto:dsbo@denvergov.org),
- FOR RFPs and RFQs: LOIs should be included with Submittal

Contract No.: 201843277

Project Name: Montbello Railings Phase 2

**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: Hallmark, Inc.		Self-Performing: X Yes <input type="checkbox"/> No	Phone: 303-423-8005	
Contact Person: Nathan Randall	Email: Hallmark5040@hotmail.com		Fax: 303-423-8025	
Address: 5085 Harlan St	City: Denver	State: CO	Zip: 80212	

**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: Hot Shot Supply		Phone: 720-989-5072		
Contact Person: Mike Shannon	Email: Mike@hotshotsupply.build		Fax:	
Address: 5351 Lincoln St.	City: Denver	State: CO	Zip: 80216	

Please check the designation which applies to the certified firm.	M/WBE (✓)	<input checked="" type="checkbox"/>	SBE (✓)	<input 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: N/A

**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.**  
602-00020, 608-00012 *SUPPLY REINFORCING STEEL, TRUNCATED DOMES*

Subcontractor/Subconsultant (✓)	X	Supplier (✓)	Broker (✓)
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**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:

\$ **13,916.00** 2.2 %

**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: *Robert Lawrence* Date: *8-9-18*

Title: *President*

M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: *[Signature]* Date: *8-9-18*

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.



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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](mailto:dsbo@denvergov.org)
- FOR RFPs and RFQs: LOIs should be included with Submittal

<b>Contract No.:</b> 201843277	<b>Project Name:</b> Montbello Railings Phase 2
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**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**

<b>Name of Bidder/Consultant:</b> Hallmark, Inc.	<b>Self-Performing:</b> X Yes <input type="checkbox"/> No	<b>Phone:</b> 303-423-8005
<b>Contact Person:</b> Nathan Randall	<b>Email:</b> Hallmark5040@hotmail.com	<b>Fax:</b> 303-423-8025
<b>Address:</b> 5085 Harlan St	<b>City:</b> Denver	<b>State:</b> CO <b>Zip:</b> 80212

**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**

<b>Name of Certified Firm:</b> Infinity Solutions	<b>Phone:</b> 303-229-6885
<b>Contact Person:</b> Joe Jimenez	<b>Email:</b> jjimenez@infinitysurey.net <b>Fax:</b>
<b>Address:</b> 10465 Melody Dr, Suite 215	<b>City:</b> Northglenn <b>State:</b> CO <b>Zip:</b> 80234

<b>Please check the designation which applies to the certified firm.</b>	<b>M/WBE</b> (√) <input checked="" type="checkbox"/>	<b>SBE</b> (√) <input type="checkbox"/>	<b>EBE</b> (√) <input type="checkbox"/>	<b>DBE</b> (√) <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: N/A

**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.**

625-00000 *SURVEYING*

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

**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:

\$ **2,250.00** 0.4 %

**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:** *Robert Lawrence* **Date:** 8-9-18

**Title:** President

**M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature:** *[Signature]* **Date:** August 10, 2018

**Title:** President



**DENVER**  
OFFICE OF ECONOMIC  
DEVELOPMENT

Office of Economic Development  
Division of Small Business Opportunity  
Compliance Unit  
201 West Coifax 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](mailto:dsbo@denvergov.org).
- FOR RFPs and RFQs: LOIs should be included with Submittal

Contract No.: 201843277

Project Name: Montbello Railings Phase 2

**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: Hallmark, Inc.	Self-Performing: X Yes <input type="checkbox"/> No	Phone: 303-423-8005
Contact Person: Nathan Randall	Email: Hallmark5040@hotmail.com	Fax: 303-423-8025
Address: 5085 Harlan St	City: Denver	State: CO Zip: 80212

**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: Loya Construction	Phone: 720-254-3702
Contact Person: Jessie Loya	Email: loyaconstruction@yahoo.com Fax:
Address: P.O. Box 211555	City: Denver State: CO Zip: 80221

Please check the designation which applies to the certified firm.	M/WBE (✓)	<input checked="" type="checkbox"/>	SBE (✓)	<input type="checkbox"/>	EBE (✓)	<input type="checkbox"/>	DBE (✓)	<input 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: N/A

**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.  
626-00000, 403-00720 *Asphalt paving*

X	Subcontractor/Subconsultant (✓)	Supplier (✓)	Broker (✓)
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**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:

\$ 19,300.00 3.1 %

**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: *Robert Lawrence* Date: 8-9-18

Title: *President*

M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: *Jessie Loya* Date: 8/9/18

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.

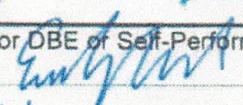


**DENVER**  
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Office of Economic Development  
Division of Small Business Opportunity  
Compliance Unit  
201 West Colfax Ave., Dept. 907  
Denver, CO 80202  
Phone: 720-913-1999

**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](mailto:dsbo@denvergov.org)
- FOR RFPs and RFQs: LOIs should be included with Submittal

Contract No.: 201843277		Project Name: Montbello Railings Phase 2					
<b>A. The Following Section Is To Be Completed by the Bidder/Consultant</b> <b>This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE</b>							
Name of Bidder/Consultant: Hallmark, Inc.				Self-Performing: X Yes <input type="checkbox"/> No		Phone: 303-423-8005	
Contact Person: Nathan Randall				Email: Hallmark5040@hotmail.com		Fax: 303-423-8025	
Address: 5085 Harlan St				City: Denver		State: CO Zip: 80212	
<b>B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, at any Tier</b> <b>This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant</b>							
Name of Certified Firm: Innovative Traffic Control Specialist				Phone: 720-341-3392			
Contact Person: David Pinckney				Email: dpinckney@itcsdenver.com		Fax:	
Address: 4140 W Eisenhower Blvd				City: Loveland		State: CO Zip: 80537	
Please check the designation which applies to the certified firm.			M/WBE (v) <input checked="" type="checkbox"/>	SBE (v) <input checked="" type="checkbox"/>	EBE (v) <input checked="" type="checkbox"/>	DBE (v) <input checked="" type="checkbox"/>	
<b>Indirect Utilization:</b> 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: N/A							
<b>A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached</b>							
Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. <u>On unit price bids only, identify which bid line items the M/WBE/SBE/EBE/DBEs scope of work or supply corresponds to.</u> 630-10005 Traffic Control							
X	Subcontractor/Subconsultant (v)			Supplier (v)		Broker (v)	
<b>Bidder</b> 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: \$ 48,600.00 <span style="float: right;">7.8 %</span>							
<b>Consultant</b> 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: <span style="float: right;">%</span> If the fee amount of the work to be performed is requested, the fee amount, is: \$							
Bidder/Consultant's Signature: 						Date: 8-9-18	
Title: President							
M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: 						Date: 8/10/18	
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.



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

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

- 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](mailto:dsbo@denvergov.org),
- **FOR RFPs and RFQs: LOIs should be included with Submittal**

<b>Contract No.: 201843277</b>		<b>Project Name: Montbello Railings Phase 2</b>					
<b>A. The Following Section Is To Be Completed by the Bidder/Consultant</b> <b>This Letter of Intent Must be Signed by the Bidder/Consultant and M/WBE, SBE, EBE or DBE</b>							
Name of Bidder/Consultant: Hallmark, Inc.				Self-Performing: X Yes    □ No		Phone: 303-423-8005	
Contact Person: Nathan Randall			Email: Hallmark5040@hotmail.com			Fax: 303-423-8025	
Address: 5085 Harlan St			City: Denver			State: CO	Zip: 80212
<b>B. The Following Section is To Be Completed by the M/WBE, SBE, EBE or DBE, at any Tier</b> <b>This Letter of Intent Must be Signed by the M/WBE, SBE, EBE or DBE and Bidder/Consultant</b>							
Name of Certified Firm: Vasquez Ready Mix					Phone: 303-870-5822 x2		
Contact Person: Tayna Marchiol			Email: tanya@vrmconcrete.com			Fax:	
Address: 7555 E 41 <sup>st</sup> Ave			City: Denver			State: CO	Zip: 80216
Please check the designation which applies to the certified firm.		M/WBE (✓)	<input checked="" type="checkbox"/>	SBE (✓)	<input type="checkbox"/>	EBE (✓)	DBE (✓)
<b>Indirect Utilization:</b> 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: N/A							
<b>A Copy of the M/WBE, SBE, EBE or DBE Letter of Certification must be Attached</b>							
Identify the scope of the work to be performed or supply item that will be provided by the M/WBE/SBE/DBE. <u>On unit price bids only, identify which bid line items the M/WBE/SBE/EBE/DBEs scope of work or supply corresponds to.</u> 601-03050, 608-00005, 608-00012, 609-21023 <i>CONCRETE SUPPLY</i>							
<b>Subcontractor/Subconsultant</b> (✓)		X	<b>Supplier</b> (✓)			<b>Broker</b> (✓)	
<b>Bidder</b> 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:							
\$ 13,650.00					2.2 %		
<b>Consultant</b> 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: <i>Robert Lawrence</i>				Date: 8-9-18			
Title: <i>President</i>							
M/WBE, SBE, EBE or DBE or Self-Performing Firm's Signature: <i>Azanne C. Marchiol</i>				Date: 8-13-2018			
Title: Owner (projected WBE/DBE date early Sept, currently WOSB certified)							

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

## Letter of Intent (LOI) Checklist

*All lines must be completed or marked N/A for Not Applicable*

*Submit the attached completed checklist with this letter.*

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

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

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



**Joint Venture Affidavit**

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

Name of Firm: _____		
Print Name: _____	Title _____	
Signature: _____	Date: _____	
<b>Notary Public</b>		
County of _____	State of _____	My Commission Expires: _____
Subscribed and sworn before me this _____ day of _____, 20____		Notary Seal
Notary Signature: _____		
Notary Commission #: _____		
Address: _____		

Name of Firm: _____		
Print Name: _____	Title _____	
Signature: _____	Date: _____	
<b>Notary Public</b>		
County of _____	State of _____	My Commission Expires: _____
Subscribed and sworn before me this _____ day of _____, 20____		Notary Seal
Notary Signature: _____		
Notary Commission #: _____		
Address: _____		



**JOINT VENTURE  
ELIGIBILITY FORM**

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

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

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

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

**Joint Venture Information**

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

**Joint Venture Participants**

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

**Type of Work for which Certification was granted:**

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

**Type of Work for which Certification was granted:**

**General Information**

SBE/EBE/MBE/WBE/DBE Initial Capital Contributions: \$ \_\_\_\_\_ %

Future capital contributions (explain requirements) (attach additional sheets if necessary):


Source of Funds for the SBE/EBE/MBE/WBE/DBE Capital Contributions:

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


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


**JOINT VENTURE ELIGIBILITY FORM**

**General information**

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


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


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


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

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


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


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

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


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


Which firm will be responsible for accounting functions relative to the joint venture's business?

Explain what authority each party will have to commit or obligate the other to insurance and bonding companies, financing institutions, suppliers, subcontractors, and/or other parties?

Please provide information relating to the approximate number of management, administrative, support and non-management employees that will be required to operate the business and indicate whether they will be employees of the S/E/MWBE/DBE, non- S/E/MWBE/DBE or joint venture:

	Non- SBE/EBE/MWBE/DBE	SBE/EBE/MWBE/DBE	Joint Venture
Management			
Administrative			
Support			
Hourly Employees			

### JOINT VENTURE ELIGIBILITY FORM

#### General Information

Please provide the name of the person who will be responsible for hiring employees for the joint venture.

Who will they be employed by?

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

Yes  
(✓)

No  
(✓)

If yes, please list the number and positions and indicate which firm currently employs the individual(s). (use additional sheets if necessary)

Number of employees	Position	Employed By

Attach a copy of the proposed joint venture agreement, promissory note or loan agreement (if applicable), and any and all written agreements between the joint venture partners.

List all other business relationships between the joint venture participants, including other joint venture agreements in which the parties are jointly involved.

If there are any significant changes in or pertaining to this submittal, the joint venture members must immediately notify the Division of Small Business Opportunity.

COMP-FRM-015

CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT Hallmark, Inc., as Principal, and American Contractors Indemnity Company, a corporation organized and existing under and by virtue of the laws of the State of CA, and authorized to do business within the State of Colorado, as Surety, are held and firmly bound unto the City and County of Denver, Colorado, as Obligee, in full and just sum of Five Percent of the 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 August 9, 2018, for the construction of: **Contract No. 201843277, MONTBELLO RAILINGS PHASE 2**, 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 9th day of August, 20 18.

ATTEST

Jhonna S Lawrence

Secretary

Hallmark, Inc.

Principal

By

Title

PRESIDENT

American Contractors Indemnity Company

Surety

By

Charles J. Schultz, Attorney-In-Fact

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

[SEAL]



**POWER OF ATTORNEY**  
**AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY**  
**UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY**

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a Maryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

**Charles J. Schultz of Littleton Colorado**

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed \*\*\*\*\*Three Million\*\*\*\*\* Dollars (\$ \*\*\*3,000,00.00\*\*\*).

This Power of Attorney shall expire without further action on November 3, 2019. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

*Be it Resolved*, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

*Attorney-in-Fact* may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

*Be it Resolved*, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 1st day of November, 2016.

**AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY**  
**UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY**

Corporate Seals



By:

  
**Daniel P. Aguilar, Vice President**

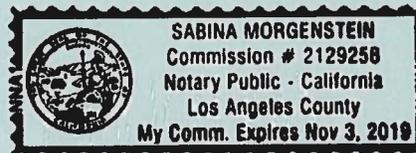
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
County of Los Angeles SS:

On this 1st day of November, 2016, before me, Sabina Morgenstein, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.  
WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)



I, Kio Lo, Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this 9<sup>th</sup> day of August, 2018

Corporate Seals



Bond No. Bid  
Agency No. 18020

  
**Kio Lo, Assistant Secretary**



Office of Economic Development  
 Division of Small Business Opportunity  
 201 W. Colfax Ave, Dept. 907  
 Denver, CO 80202  
 p: 720.913.1699  
 f: 720.913.1609  
[www.denvergov.org/dsbo](http://www.denvergov.org/dsbo)

## Diversity and Inclusiveness \* in City Solicitations Information Request Form

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

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

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

Business Email Address: Hallmark 5040@hotmail.com

Please include the Email address of the contact person facilitating this solicitation for the City and County of Denver: diane.mora@denvergov.org

Agency Name:

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

Project Name: Montbello Railings Phase 2

BID / RFP No.: 201843277

Name of Contractor/Consultant: Hallmark Inc.

What industry is your business? Construction

Address: 5085 Harlan st. Denver CO 80222

Business Phone No.: 303-423-8085

Business Facsimile No.: 303-423-8025

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

1. How many employees does your company employ?

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

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

Full-time 10      Part-Time \_\_\_\_\_

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

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

If Yes, does it address:

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

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

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

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

- Employee Training
- Pamphlets
- Public EEO postings
- Other
- Not Applicable

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

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

- Monthly                       Annually  
 Quarterly                       Not Applicable                       Other \_\_\_\_\_

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

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

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

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

8.1 If Yes, how often does it meet?

- Monthly                       Annually                       No Committee  
 Quarterly                       Other \_\_\_\_\_

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

9. Do you have a budget for diversity and inclusiveness efforts?  Yes  No

10. Does your company integrate diversity and inclusion competencies into executive/manager performance evaluation plans?  Yes  No

11. Would you like information detailing how to implement a Diversity and Inclusiveness program?  Yes  No

If yes, please email [XO101@denvergov.org](mailto: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

8/8/2018

Date

Nathan Randall

Printed Name of Person Completing Form

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

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

CITY AND COUNTY OF DENVER

STATE OF COLORADO



**DENVER**  
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Bid Documents Package

Contract Number: 201843277



Montbello Railings Phase 2

July 12, 2018

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

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**DENVER**  
THE MILE HIGH CITY  
CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS

**STATEMENT OF QUANTITIES**

<u>Item No.</u>	<u>Description</u>	<u>Estimated</u>	<u>Quantity</u>
201-00000	CLEARING AND GRUBBING	3	EACH
202-00026	REMOVAL OF SLOPE AND DITCH PAVING	12	SY
202-00035	REMOVAL OF PIPE	24	LF
202-00200	REMOVAL OF SIDEWALK	66	SY
202-00203	REMOVAL OF CURB AND GUTTER	484	LF
202-00206	REMOVAL OF CONCRETE CURB RAMP	77	SY
202-00220	REMOVAL OF ASPHALT MAT	132	SY
202-00495	REMOVAL OF PORTIONS OF PRESENT STRUCTURE	3	EACH
202-04002	CLEAN CULVERT	9	EACH
203-01597	POTHOLING	20	HOUR
206-00000	STRUCTURE EXCAVATION	320	CY
206-00200	STRUCTURE BACKFILL (CLASS 2)	251	CY
208	EROSION CONTROL	3	EACH
210-00810	RESET GROUND SIGN	6	EACH
210-04020	MODIFY INLET	2	EACH
212-00050	SOD	240	SF
213	CRUSHED ROCK (GRAY BREEZE)	423	SF
213-00070	LANDSCAPE WEED BARRIER FABRIC	46	SY
403-00720	HOT MIX ASPHALT (PATCHING)(ASPHALT)	74	TON



**DENVER**  
THE MILE HIGH CITY  
CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS

**STATEMENT OF QUANTITIES**

<u>Item No.</u>	<u>Description</u>	<u>Estimated</u>	<u>Quantity</u>
507-00000	CONCRETE SLOPE AND DITCH PAVING	6	CY
514-00201	PEDESTRIAN RAILING (STEEL)(SPECIAL)	244	LF
601-03050	CONCRETE CLASS D (WALL)	91	CY
601-40300	STRUCTURAL CONCRETE COATING	332	SY
602-00020	REINFORCING STEEL (EPOXY COATED)	13,645	LB
603-01155	15 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	20	LF
608-00005	CONCRETE SIDEWALK (SPECIAL)	88	SY
608-00012	CURB RAMP (SPECIAL)	144	SY
609-21023	CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL)	319	LF
620-00020	SANITARY FACILITY	3	EACH
623-00001	IRRIGATION RECONSTRUCTION (URSULA)	1	LS
623-00002	IRRIGATION RECONSTRUCTION (ELGIN)	1	LS
623-00003	IRRIGATION ADJUSTMENT (ELK)	1	LS
625-00000	CONSTRUCTION SURVEYING	3	EACH
626-00000	MOBILIZATION	3	EACH
630-10005	CONSTRUCTION TRAFFIC CONTROL	3	EACH

**35 ITEMS**

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

**NOTICE FOR INVITATION FOR BIDS  
FOR CONTRACT NO. 201843277**

**MONTBELLO RAILINGS PHASE 2**

**BID SCHEDULE:  
11:00 a.m., Local Time  
August 9, 2018**

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: Diane Mora, Public Works Contract Administration, 201 W. Colfax Ave., Department 614, Denver, CO 80202.

Prior to submitting a bid, the bidder shall consult the Contractor's Bulletin Board located at 201 W. Colfax Ave., 2<sup>nd</sup> Floor, Denver, CO 80202 and/or [www.work4denver.com](http://www.work4denver.com).

**GENERAL STATEMENT OF WORK:**

Remove and replace pedestrian railings along the Montbello Ditch (Andrews Dr.) in N.E. Denver. Three locations / intersections along Andrews Dr. are included in this phase (at Ursula, Elgin and Elk Pl).

**ESTIMATED CONSTRUCTION COST:**

The estimated cost of construction for this project is between \$527,000.00 and \$644,000.00.

**TEXTURA CONSTRUCTION PAYMENT MANAGEMENT:**

Bidders are required, when preparing a bid, to agree that it shall use the Textura® Construction Payment Management System (CPM System) for this Project and recognizes that all fees associated with the CPM System are to be paid by the awarded Contractor for billings for work performed. Use the pricing scale provided in Instructions to Bidders to price the Textura service appropriately. For details on the company and service contact the Textura® Corporation 866-TEXTURA or [www.texturacorp.com](http://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](http://www.work4denver.com). To download digital Contract Documents at a cost of \$10.00 per download, reference eBid Document Number #5853609. Contact QuestCDN at 952-233-1632 or [info@questcdn.com](mailto:info@questcdn.com) for assistance.

**PRE-BID CONFERENCE:**

A pre-bid conference will be held for this Project at 1:00 p.m., local time, on July 23, 2018. This meeting will take place at: the WEBB Building, 201 W Colfax Ave, 4<sup>th</sup> floor conference room 4.I.4., Denver, Colorado 80202.

**DEADLINE TO SUBMIT QUESTIONS:** July 31, 2018 by 2:00 p.m. local time.

**PREQUALIFICATION REQUIREMENTS:** None

**MINORITY AND WOMAN BUSINESS ENTERPRISE PARTICIPATION:**

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

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

**18% Minority and Woman Business Enterprise (M/WBE) Participation**

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

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

**MISCELLANEOUS:**

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

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

A modified version of this Notice of Invitation for Bids and the project's Statement of Quantities is available on the City and County of Denver's website at: [www.work4denver.com](http://www.work4denver.com).

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Published In: The Daily Journal

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

**INSTRUCTIONS TO BIDDERS**

**IB-1 INSTRUCTION TO BIDDERS**

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

**IB-2 BIDDING**

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

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

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

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

**IB-3 CONTRACT DOCUMENTS AS PUBLISHED BY CITY**

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

**IB-4 COMPLETING AND SIGNING THE BID FORMS**

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

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

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

**IB-5 UNACCEPTABLE BIDS**

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

**IB-6 INFORMAL AND UNBALANCED BIDS**

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

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

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

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

**IB-7 ONLY ONE BID ACCEPTED**

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

**IB-8 BID GUARANTEE**

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

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

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

**IB-9 SITE INSPECTION AND INVESTIGATIONS**

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

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

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

**IB-10 INCONSISTENCIES**

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

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

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

**IB-11 WITHDRAWAL OF BID**

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

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

**IB-12 CONTRACTOR'S BULLETIN BOARD**

It shall be conclusively presumed that the bidder has, before submitting any bid, read and shall take full responsibility for all addenda, posted decisions, and other information relevant to the bid posted by the City on the Contractor's Bulletin Board. The Contractor's Bulletin Board is located at 201 W. Colfax, 2<sup>nd</sup> 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: July 12, 2018.

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](mailto:auditor@denvergov.org).

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

#### **IB-23 TAX REQUIREMENTS**

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

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

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

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

#### **IB-24 DIVERSITY AND INCLUSIVENESS IN CITY SOLICITATIONS**

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

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

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

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

Article III, Divisions 1 and 3 of Chapter 28, Denver Revised Municipal Code (D.R.M.C.), designated as Sections 28-31 – 28-36 and 28-52 – 28-90 D.R.M.C. and referred to in these Bid Documents as the “M/WBE Ordinance” and any Rules or Regulations promulgated pursuant thereto apply to this Project and are incorporated into these Bid Documents by reference. Generally, the M/WBE Ordinance provides for the adoption of a good faith goals program, to be administered by the Division of Small Business Opportunity (DSBO), devised to provide increased bidding opportunities for Minority and Woman Business Enterprises

(M/WBEs). As such, each bidder must comply with the terms and conditions of the M/WBE Ordinance in making its bid and, if awarded the Contract, in performing all Work thereunder. A bidder's failure to comply with the M/WBE Ordinance, any Rules or Regulations promulgated pursuant thereto, or any additional requirement contained herein shall render the bid non-responsive and shall constitute cause for rejection. Failure by the contractor awarded the contract to comply with M/WBE Ordinance requirements during the performance of the contract is a material breach of the contract, which may result in the in the imposition of sanctions on the Contractor, as deemed appropriate by DSBO. Copies of the M/WBE Ordinance and its accompanying Rules and Regulations are available for the use and review of bidders from DSBO. In order to comply with the bid requirements of the M/WBE Ordinance, a bidder shall either meet the established project goal or, in the alternative, demonstrate that the bidder has made sufficient good faith efforts to meet the goal in accordance with the M/WBE Ordinance.

### **Meeting Established Goal**

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

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

6. In accordance with the provisions of the M/WBE Ordinance, DSBO will evaluate each bid to determine the responsiveness of the bid to the requirements of the M/WBE Ordinance. In determining whether a bidder's committed level of participation meets or exceeds the stated M/WBE goal, DSBO shall base its calculation of applicable amounts and percentages on the total base bid amount, not including any listed alternates, of each bid as follows:
  - a. The bid information provided by the agency will be used to determine the total base bid amount of each bid. Each bidder's total base bid amount will be multiplied by the M/WBE percentage established for the project to determine the exact dollar amount of required M/WBE participation for the Project. This amount will then be compared against the exact dollar amounts for the M/WBE committed for participation by the bidder. If the total dollar amount of participation listed meets or exceeds the established M/WBE dollar amount goal listed, then DSBO will determine that the goal has been met.
  - b. In addition, DSBO will determine the exact commitment percentage for each listed M/WBE by dividing the dollar amount listed for each M/WBE by the total base bid dollar amount submitted by the bidder. These individual percentages, when totaled for all listed M/WBE, will establish the total committed percentage level of M/WBE participation that the bidder must comply with during the life of the contract. In all cases, the committed percentage level of M/WBE participation must equal or exceed the assigned M/WBE goal for the Project.
  - c. In providing the exact dollar amount of participation for each listed M/WBE, a bidder should take care never to round up in determining whether or not the total of these amounts meets or exceeds the established percentage goal. The goal must be met or exceeded by dollar amounts and percentages in order for DSBO to determine that the bidder has met or exceeded the applicable M/WBE goal.
  - d. As previously mentioned, compliance with the M/WBE goal will be determined on the base bid alone. If a bid contains alternates, participation contained in any alternate will not count towards satisfaction of the Project goal. However, should any designated alternate be selected by the City for inclusion in the contract ultimately awarded, the M/WBE goal percentage level submitted at bid time, on the base bid, will also apply to the selected alternates and must be maintained for the life of the contract on the total contract amount, including any alternate work. Thus, even though such participation will not be considered in evaluating bids, bidders are urged to consider participation in preparing bids for designated alternates.
  - e. On projects where force account or allowance bid items have been included, bidders must meet the M/WBE goal percentage based upon the total base bid, including all such items that are submitted to the City. However, when a force account or allowance is designated by the City to be either performed or purchased from a specific company, the bidder may back out the dollar amount of the force account or allowance from the total base bid and meet the M/WBE goal on the remaining reduced amount.
  - f. On bids which, at the time of bid opening, are equal to or exceed Five Million Dollars (\$5,000,000.00), including any alternates which may be selected, only sixty percent (60%) of the value of the commercially useful function performed by M/WBE suppliers shall count toward satisfaction of the Project goal. On Projects under Five Million (\$5,000,000.00) the value of the commercially useful function of M/WBE supplier(s) will count at a one hundred percent (100%) level. Manufacturer's representatives and packagers shall be counted in the same manner as brokers.
  - g. In utilizing the M/WBE participation of a Broker only the bona fide commissions earned by such Broker for its performance of a commercially useful function will count toward meeting the Project goals. The bidder must separate the bona fide brokerage commissions from the actual cost of the supplies or materials provided to determine the actual dollar amount of participation that can be counted towards meeting the goal.

7. On or before the third (3<sup>rd</sup>) working day after bid opening, all of the Bidders are required to submit an executed "Letter of Intent" for each M/WBE listed on the Bid Form as a joint venture member, subcontractor, supplier, manufacturer, manufacturers' representative or broker of any tier. **An MBE or WBE Prime Bidder needs to submit a Letter of Intent for itself for self performed work,** and must identify their level of participation on the designated M/WBE participation page bound herein. A Letter of Intent shall be submitted only for the M/WBEs listed at the time of bid opening, since this is the only participation that will be counted toward satisfaction of the project goal. A form for the M/WBE Letter of Intent is included with the Bid Form. The M/WBE Letter of Intent is a written communication from the Bidder to the City evidencing an understanding that the Bidder has or will enter into a contractual relationship with the M/WBE or that its subcontractor(s) and supplier(s), manufacturer(s), manufacturers' representative(s) and broker(s) will do so. Each M/WBE Letter of Intent shall be accompanied by a copy of the City and County of Denver's M/WBE certification letter for each proposed M/WBE identified at bid time. Bidders are urged to carefully review these Letters before submission to the City to ensure that they are properly completed and executed by the appropriate parties.

### **Good Faith Effort.**

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

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

brokers, all reasonably consistent with industry practice, even when the bidder or proposer would otherwise prefer to perform these work items with its own forces. The bidder or proposer must identify what portions of the contract will be self-performed and what portions of the contract will be opened to solicitation of bids, proposals and quotes from MBE and WBEs. All portions of the contract not self-performed must be solicited for MBE and WBE participation. The ability or desire of a bidder or proposer to perform the work of a contract with its own forces does not relieve the bidder or proposer of the responsibility to meet the project goal or demonstrate good faith efforts to do so.

- d. The bidder or proposer, consistent with industry practice, must provide MBEs and WBEs at a clearly stated location with timely, adequate access to and information about the plans, specifications, and requirements of the contract, including bonding and insurance requirements, if any, to assist them in responding to a solicitation.
  - e. The bidder or proposer must negotiate in good faith with interested MBEs and WBEs and provide written documentation of such negotiation with each such MBE or WBE.
  - f. For each MBE or WBE which contacted the bidder or proposer or which the bidder or proposer contacted or attempted to subcontract or joint venture with, consistent with industry practice, the bidder or proposer must supply a statement giving the reasons why the bidder or proposer and the MBE or WBE did not succeed in negotiating a subcontracting, supplier, manufacturer, manufacturer's representative, broker or joint venture agreement, as applicable.
3. The bidder or proposer must provide verification that it rejected each non-utilized MBE and WBE because the MBE or WBE did not submit the lowest bid or it was not qualified. Such verification shall include a verified statement of the amounts of all bids received from potential or utilized subcontractors, suppliers, manufacturers, manufacturer's representatives, brokers or joint venturers on the contract, whether or not they are MBEs or WBEs. In making such a determination of not being qualified, the bidder or proposer shall be guided by the definition of qualified in section 28-54(42), but evidence of lack of qualification must be based on factors other than solely the amount of the MBE's or WBE's bid. For each MBE or WBE found not to be qualified by the bidder or proposer, the verification shall include a statement giving the bidder's or proposer's reasons for its conclusion. A bidder's or proposer's industry standing or group memberships may not be the cause of rejection of an MBE or WBE. A bidder or proposer may not reject an MBE or WBE as being unqualified without sound reasons based on a reasonably thorough investigation and assessment of the MBE's or WBE's capabilities and expertise.
  4. If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining bonding, lines of credit, or insurance as required by the City or by the bidder or proposer, provided that the bidder or proposer need not provide financial assistance toward this effort.
  5. If requested by a solicited MBE or WBE, the bidder or proposer must make reasonable efforts to assist interested MBEs and WBEs in obtaining necessary and competitively priced equipment, supplies, materials, or related assistance or services for performance under the contract, provided that the bidder or proposer need not provide financial assistance toward this effort.
  6. The bidder or proposer must use the DSBO MBE/WBE directories to identify, recruit, and place MBEs and WBEs.
  7. In determining whether a bidder or proposer has satisfied good faith efforts as to a project goal, the success or failure of other bidders or proposers on the contract in meeting such project goal may be considered.

#### **Continuing Commitments.**

In accordance with the provisions of the M/WBE Ordinance, the bidder agrees that it is committed to meeting either the M/WBE participation goal or the M/WBE participation set forth in its statement of good faith. This commitment

must be expressly indicated on the "Commitment to MWBE SBE Participation" form included with the Bid Form. This commitment includes the following understandings:

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

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

#### **IB- 26 DISCLOSURE OF INFORMATION**

All submissions and other materials provided or produced pursuant to this Invitation for Bids may be subject to the Colorado Open Records Law, C.R.S. 24-72-201, et seq. As such, bidders are urged to review these disclosure requirements and any exceptions to disclosure of information furnished by another party and, prior to submission of a bid to the City, appropriately identify materials that are not subject to disclosure. In the event of a request to the City for disclosure of such information, the City shall advise the bidder of such request to give the bidder an opportunity to object to the disclosure of designated confidential materials furnished to the City. In the event of the filing of a lawsuit to compel such disclosure, the City will tender all such material to the court for judicial determination of the issue of disclosure and each bidder agrees to intervene in such lawsuit to protect and assert its claims of privilege against disclosure of such material. Each bidder further agrees to defend, indemnify and save and hold harmless the City, its officers, agents and employees, from any claim, damages, expense, loss or costs arising out of the bidder's intervention to protect and assert its claims of privilege against disclosure under the Open Records Law including, but not limited to, prompt reimbursement to the City of all reasonable attorney fees, costs and damages that the City may incur directly or may be ordered to pay by such court.

#### **IB-27 GENERAL BIDDING INFORMATION**

Bidders are instructed to contact the Contract Administrator designated below for this Project for pre-bid, post-bid and general City bidding information. Bidders can also visit [www.work4denver.com](http://www.work4denver.com) for information, both general and project specific. The Contract Administrator assigned to this project is Diane Mora who can be reached via email at [diane.mora@denvergov.org](mailto:diane.mora@denvergov.org).

**IB-28 PAYMENT PROCEDURE REQUIREMENTS**

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

Project Value	Project Fee (GC + Sub Usage)
\$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

**RULES AND REGULATIONS  
REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

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

**RULE I - DEFINITIONS**

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

**RULE II - NOTICE OF HEARING**

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

### **RULE III - HEARING**

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

### **REGULATIONS**

#### **REGULATION NO. 1 - ORDINANCE:**

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

#### **REGULATION NO. 2 - EXEMPTIONS:**

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

#### **REGULATION NO. 3 - DIRECTOR OF CONTRACT COMPLIANCE:**

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

#### **REGULATION NO. 4 - GOALS AND TIMETABLES:**

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

#### **REGULATION NO. 5 - AWARD OF CONTRACTS:**

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

**REGULATION NO. 6 - PUBLICATION AND DUPLICATION:**

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

**REGULATION NO. 7 - NOTICE TO PROCEED:**

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

**REGULATION NO. 8 - CONTRACTS WITH SUBCONTRACTORS:**

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

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

**REGULATION NO. 9 - AGENCY REFERRALS:**

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

**REGULATION NO. 10 - CLAUSES:**

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

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

All amendments to the appendices shall be included by reference.

**REGULATION NO. 11 - SHOW CAUSE NOTICES:**

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

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

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

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

**APPENDIX A**

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

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

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

subject to Article III, Division 2 of Chapter 28 of the Revised Municipal Code with a contractor debarred from, or who has not demonstrated eligibility for, City contracts.

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

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

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

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

**APPENDIX F**

**AFFIRMATIVE ACTION REQUIREMENTS**

**EQUAL EMPLOYMENT OPPORTUNITY**

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

**NOTICE**

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

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

/s/ \_\_\_\_\_

Executive Director of Public Works  
City and County of Denver

**A. REQUIREMENTS - AN AFFIRMATIVE ACTION PLAN:**

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

**1. GOALS AND TIMETABLES:**

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

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

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

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

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

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

**2. SPECIFIC AFFIRMATIVE ACTION STEPS:**

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

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

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

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

**3. NON - DISCRIMINATION:**

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

**4. COMPLIANCE AND ENFORCEMENT:**

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

**B. CONTRACTORS SUBJECT TO THESE BID CONDITIONS:**

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

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

**C. OBLIGATIONS APPLICABLE TO CONTRACTORS:**

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

**D. GENERAL REQUIREMENTS:**

Contractors are responsible for informing their subcontractors in writing regardless of tier, as to their respective obligations. Whenever a Contractor subcontracts a portion of work in any trade covered by these Bid Conditions, **it shall include these Bid Conditions in such subcontracts and each subcontractor shall be bound by these Bid Conditions to the full extent as if it were the prime contractor.** The Contractor

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

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

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

**CONTRACT NO. 201843277**

**MONTBELLO RAILINGS PHASE 2**

**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

**HALLMARK, INC.  
5085 Harlan Street  
Denver, Colorado 80212**

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

**WITNESSETH**, commencing on **July 12, 2018**, 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><b>CONTRACT NO. 201843277 MONTBELLO RAILINGS PHASE 2</b></p>
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**WHEREAS**, bids pursuant to said advertisement have been received by the Manager of Public Works, who has recommended that a Contract for said work be made and entered into with the above named Contractor who was the lowest, responsive, qualified bidder therefore, and

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

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

**1. CONTRACT DOCUMENTS**

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

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

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

**2. SCOPE OF WORK**

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

**3. TERMS OF PERFORMANCE**

The Contractor agrees to undertake the performance of the Work under this Contract within ten (10) days after being notified to commence work by issuance of a Notice to Proceed in substantially the form contained herein from the Manager and agrees to fully complete said Work within **180 (One Hundred and Eighty Days)** consecutive calendar days from the effective date of said Notice, plus such extension or extensions of time as may be granted in accordance with the provisions of the General Contract Conditions and any applicable Special Contract Conditions.

**4. TERMS OF PAYMENT**

The City agrees to pay the Contractor for the performance of all of the Work required under this Contract, and the Contractor agrees to accept as the Contractor's full and only compensation therefore, such sum or sums of money as may be proper in accordance with the price or prices set forth in the Contractor's Bid Form hereto attached and made a part hereof for **bid item numbers 201-00000 through 630-10005 (Thirty-Five [35]) total bid items**, the total estimated cost thereof being **Six Hundred Twenty-Three Thousand Seven Hundred Ninety-Two Dollars and Zero Cents (\$623,792.00)**. 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 and Woman business enterprise participation, upon which the City approved the award of this Contract to the Contractor and the Contractor further acknowledges that failure to maintain such participation commitments or otherwise comply with the requirements of the M/WBE Ordinance shall subject the

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

**7. WAGE RATE REQUIREMENTS**

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

**8. APPLICABILITY OF LAWS**

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

**9. APPROPRIATION**

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

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

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

**10. APPROVALS**

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

**11. ASSIGNMENT**

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

**12. DISPUTES RESOLUTION PROCESS**

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

notwithstanding any other claimed theory of entitlement on the part of the Contractor or its subcontractors or suppliers.

**13. CONTRACT BINDING**

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

**14. PARAGRAPH HEADINGS**

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

**15. SEVERABILITY**

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

**16. ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS:**

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

**Contract Control Number:**

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

SEAL

**CITY AND COUNTY OF DENVER**

ATTEST:

By \_\_\_\_\_

\_\_\_\_\_

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

By \_\_\_\_\_

By \_\_\_\_\_

By \_\_\_\_\_



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

Contract Control Number: 201843277

Vendor Name: HALLMARK, INC

By: \_\_\_\_\_

Name: \_\_\_\_\_

(please print)

Title: \_\_\_\_\_

(please print)

ATTEST: [if required]

By: \_\_\_\_\_

Name: \_\_\_\_\_

(please print)

Title: \_\_\_\_\_

(please print)



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

**General Contract Conditions**

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

**SPECIAL CONTRACT CONDITIONS**

**SC-1 CONSTRUCTION SPECIFICATIONS**

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

City and County of Denver:

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

*Transportation Standards and Details for the Engineering Division*

*City and County of Denver Traffic Standard Drawings*

Wastewater Management Division

– *Standard Detail Drawings*

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

Colorado Department of Transportation:

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

Federal Highway Administration:

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

Building & Fire Codes:

*Building Code of the City and County of Denver*

(International Building Code 2015 Series, City and County of Denver Amendments 2016)

*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, (5<sup>th</sup> 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](http://www.fhwa.dot.gov). The FHWA website also contains purchasing information.

**SC-2 DEPUTY MANAGER / CITY ENGINEER**

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

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

**SC-3 ENGINEERING DIVISION / CITY ENGINEER**

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

**SC-4 WASTEWATER MANAGEMENT DIVISION**

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

**SC-5 CITY DELEGATION OF AUTHORITY**

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

**Denver Department of Public Works / Engineering Division,**

City Project Manager  
Ed Haun

Telephone  
(720) 913-4522

Design Consultant  
FHU

Telephone  
(303) 721-1440

**SC-6 LIQUIDATED DAMAGES**

Should the Contractor fail to complete all Work within the Contract Time allocated under the Contract Form at Paragraph 3, TERMS OF PERFORMANCE, the Contractor shall become liable to the City and County of Denver for liquidated damages, and not as a penalty, at the rate of \$500 (Five Hundred Dollars) for each Day that the Contractor exceeds the time limits herein specified, all in accordance with provisions of General Contract Condition 602, LIQUIDATED DAMAGES; ADMINISTRATIVE COSTS; ACTUAL DAMAGES.

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

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

**SC-7 SUBCONTRACTS**

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

**SC-8 RESERVED**

**SC-9 PAYMENTS TO CONTRACTORS**

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

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

<u>Agency/Firm</u>	<u>Name</u>	<u>Telephone</u>
Public Works/Engineering Division	Ed Haun	(720) 913-4522

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

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

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

**DEPARTMENT OF PUBLIC WORKS  
Engineering Division**

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

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

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

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

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

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

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

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

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





## Instructions for Completing the Contractor/Consultant Certification of Payment Form

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Rev: 031816

## **SC-10 CONTRACT FORMS**

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

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

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

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

## **SC-11 CONSTRUCTION INSPECTION BY THE CITY**

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

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

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

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

## **SC-12 DISPOSAL OF NON-HAZARDOUS WASTE AT DADS**

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

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

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

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

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

**SC-15 ATTORNEY'S FEES**

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

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

**SC-16 INSURANCE**

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

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

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

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

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

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

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

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

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

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

(9) **Additional Provisions:**

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

## SC-17 GREENPRINT DENVER REQUIREMENTS

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

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

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

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

Bond 1001049838

**PERFORMANCE AND PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned Hallmark, Inc., 5085 Harlan St., Denver, CO 80212, a corporation organized and existing under and by virtue of the laws of the State of Colorado, hereafter referred to as the "Contractor", and American Contractors Indemnity Company, a corporation organized and existing under and by virtue of the laws of the State of California, 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 Twenty-Three Thousand Seven Hundred Ninety-Two & 00/100

Dollars (\$ 623,792.00 ),

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 project of **CONTRACT NO. 201843277 MONTBELLO RAILINGS PHASE 2**, 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 10<sup>th</sup> day of September, 2018.

Attest: Sharon Lawrence  
Secretary / Vice President

Hallmark, Inc.  
Contractor  
By: Sharon Lawrence  
President  
American Contractors Indemnity Company  
Surety  
By: Charles J. Schultz  
Attorney-In-Fact, Charles J. Schultz

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

APPROVED AS TO FORM:  
Attorney for the City and County of  
Denver  
By: [Signature]  
Assistant City Attorney

APPROVED FOR THE CITY AND COUNTY OF  
DENVER  
By: [Signature]  
MAYOR  
By: [Signature]  
EXECUTIVE DIRECTOR OF PUBLIC WORKS

**POWER OF ATTORNEY**  
**AMERICAN CONTRACTORS INDEMNITY COMPANY    TEXAS BONDING COMPANY**  
**UNITED STATES SURETY COMPANY    U.S. SPECIALTY INSURANCE COMPANY**

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a Maryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

**Charles J. Schultz of Littleton Colorado**

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed \*\*\*\*\*Three Million\*\*\*\*\* Dollars (\$ \*\*\*3,000,00.00\*\*\*).

This Power of Attorney shall expire without further action on November 3, 2019. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

*Be it Resolved*, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

*Attorney-in-Fact* may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

*Be it Resolved*, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 1st day of November, 2016.

**AMERICAN CONTRACTORS INDEMNITY COMPANY    TEXAS BONDING COMPANY**  
**UNITED STATES SURETY COMPANY    U.S. SPECIALTY INSURANCE COMPANY**

Corporate Seals



By:

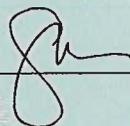
  
Daniel P. Aguilar, Vice President

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
County of Los Angeles    SS:

On this 1st day of November, 2016, before me, Sabina Morgenstein, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.  
WITNESS my hand and official seal.

Signature  (Seal)



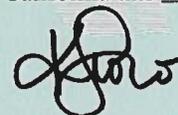
I, Kio Lo, Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

Corporate Seals

Bond No. 1001049638  
Agency No. 18020



  
Kio Lo, Assistant Secretary





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
08/21/2018

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

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

<b>PRODUCER</b> Pinnacol Assurance 7501 E. Lowry Blvd. Denver, CO 80230-7006	<b>CONTACT NAME:</b> _____	
	<b>PHONE (A/C, No, Ext):</b> _____	<b>FAX (A/C, No):</b> _____
<b>E-MAIL ADDRESS:</b> _____		
<b>INSURER(S) AFFORDING COVERAGE</b>		<b>NAIC #</b>
<b>INSURER A:</b> Pinnacol Assurance	<b>41190</b>	
<b>INSURER B:</b> _____	_____	
<b>INSURER C:</b> _____	_____	
<b>INSURER D:</b> _____	_____	
<b>INSURER E:</b> _____	_____	
<b>INSURER F:</b> _____	_____	

**COVERAGES**                      **CERTIFICATE NUMBER:** \_\_\_\_\_                      **REVISION NUMBER:** \_\_\_\_\_

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER: _____						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY <input type="checkbox"/> AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED    RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
<b>A</b>	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y / <input checked="" type="checkbox"/> N	<input type="checkbox"/> N / <input type="checkbox"/> A	4092140	01/01/2018	01/01/2019	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
 Job Description: 201843277 - Montbello Railings Phase 2

Excluded (If any) : Howard E Hall, Christine Hall, Theresa Lawrence

<b>CERTIFICATE HOLDER</b> 1923075 City and County of Denver, Department of Public Works 201 W Colfax Ave Dept 614 Denver, CO 80202	<b>CANCELLATION</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE AssuredPartners of Colorado, LLC -
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**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: 201843277  
Project Name: MONTBELLO RAILINGS PHASE 2  
Contract Amount:  
Performance and Payment Bond No.:

Dear Assistant City Attorney,

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

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

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

Thank you.

Sincerely,

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

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



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

Current Date

To:     TBD  
          TBD  
          TBD

Gentlemen:

The EXECUTIVE DIRECTOR OF PUBLIC WORKS has considered the Bids submitted on August 9, 2018 for work to be done and materials to be furnished in and for:

**PROJECT No. 201843277 MONTBELLO RAILINGS PHASE 2**

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

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

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

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

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

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

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

PROJECT NO. 201843277

Page 2

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

Dated at Denver, Colorado this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

CITY AND COUNTY OF DENVER

By \_\_\_\_\_  
Executive Director of Public Works

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

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Current Date

**NOTICE TO PROCEED  
(SAMPLE)**

Name  
Company  
Street  
City/State/Zip

**CONTRACT NO. 201843277, MONTBELLO RAILINGS PHASE 2**

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 201843277, as set forth in detail in the contract documents for the City and County of Denver.

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

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

Sincerely,

Lesley B. Thomas  
City Engineer

cc:

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

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Certificate of Contract Release  
(SAMPLE)

Date

Name  
Company  
Street  
City/State/Zip

RE: Certificate of Contract Release for  
**201843277, MONTBELLO RAILINGS PHASE 2**

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

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

\_\_\_\_\_  
Contractor's Signature

\_\_\_\_\_  
Date Signed

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

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

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CITY AND COUNTY OF DENVER

STATE OF COLORADO



**DENVER**  
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Prevailing Wage Rates

Contract Number: 201843277



Montbello Railings Phase 2

July 12, 2018



**DENVER**  
THE MILE HIGH CITY

**Career Service Authority**  
Denver's Human Resource Agency

201 W. Colfax, Department 412  
Denver, CO 80202  
p: 720.913.5751  
f: 720.913.5720  
[www.denvergov.org/csa](http://www.denvergov.org/csa)

TO: All Users of the City of Denver Prevailing Wage Schedules  
FROM: Susan Keller, Human Resources Technician, Classification & Compensation  
DATE: Wednesday, January 17, 2018  
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 is **Friday, January 5, 2018** 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. CO180019  
Superseded General Decision No. CO20170019  
Modification No. 0  
Publication Date: 01/05/2018  
(7 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.



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\* ENGI0009-008 05/01/2017

	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.).....	\$ 27.60	10.10
(3)-Loader (under 6 cu. yd.) Denver County.....	\$ 27.60	10.10
(3)-Motor Grader (blade- rough) Douglas County.....	\$ 27.60	10.10
(4)-Crane (50 tons and under), Scraper (single bowl, under 40 cu. yd).....	\$ 27.75	10.10
(4)-Loader (over 6 cu. yd) Denver County.....	\$ 27.75	10.10
(5)-Drill Rig Caisson (Watson 2500 similar or larger), Crane (51-90 tons), Scraper (40 cu.yd and over),.....	\$ 27.92	10.10
(5)-Motor Grader (blade- finish) Douglas County.....	\$ 27.92	10.10
(6)-Crane (91-140 tons).....	\$ 28.55	10.10

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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

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

**Office of Human Resources  
Supplemental rates  
(Specific to the Denver Projects)  
Revised 4/11/2017)**

<b>Classification</b>		<b>Base</b>	<b>Fringe</b>
Ironworker (Ornamental)		\$26.05	\$12.00
Laborer	Removal of Asbestos	\$21.03	\$8.55
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

- **Ironworker - Ornamental**
  - Set pedestrian and ornamental railings on bridges
  - Erect and construct wrought iron fences (not performed by Group I Laborers)
  - Set bike racks
  - Set handrails
  
- **Laborer - Asbestos**
  - Abatement of asbestos or remediation of hazardous materials inside or outside of a building
  - Asbestos Workers and Insulators do not perform abatement or remediation work
  
- **Power Equipment Operator (Tunnels Above and Below Ground, Shafts, and Raises)**
  - **Group 1** - Brakeman
  - **Group 2** - Motorman
  - **Group 3** - Compressor
  - **Group 4** - Air Tractors; Grout Machine; Gunnite Machine; Jumbo Form

- **Group 5** - Concrete Placement Pumps; Mucking Machines and Front End Loaders, Underground, Slusher; Mine Hoist Operator; Mechanic
- **Group 6** - Mechanic Welder
- **Group 7** - Mole

- **Power Equipment Operator**

NOTE: Any equipment listed below being used in tunnel work, below or above ground shall be paid no less than \$2.00 per hour above the listed wage rates.

- **Group 1** - Air compressor, brakeman, drill operator - smaller than Watson 2500 and similar, operators of 5 or more light plants, welding machines, generators, single unit conveyor, pumps, vacuum well point system, tractor, under 70 hp with or without attachments compressors, 360 C.F.M. or less.
- **Group 2** - Conveyor, handling **building** materials, ditch witch and similar trenching machine, haulage motor man, pugmill, portable screening plant with or without a spray bar, screening plants, with classifier.
- **Group 3** - Asphalt screed, asphalt plant, backfiller, bituminous spreader or laydown machine; cableway signalman, caisson drill, William MF, similar or larger; C.M.I. and similar, concrete batching plants, concrete finish machine, concrete gang saw on concrete paving, concrete mixer, less than 1 yd., concrete placement pumps, under 8 inches, distributors, bituminous surfaces dozer, drill, diamond or core, drill rigs, rotary, churn, or cable tool, elevating graders, elevator operator, equipment, lubricating and service engineer, grout machine, gunnite machine, hoist, 1 drum, horizontal directional drill operator, sandblasting machine, single unit portable crusher, with or without washer, tie tamper, wheel mounted, tractor, 70 hp and over with or without attachments, trenching machine operator, winch on truck.
- **Group 4** - Cable operated power shovels, draglines, articulated truck operator, clamshells, and backhoes, 5 cubic yards and under, concrete mixer over 1 cubic yard, concrete paver 34E or similar, concrete placement pumps, 8 inches and over, grade checker, hoist, 2 drums, hydraulic backhoe, 3/4 yds and over, loader, over 6 cubic yards, mechanic, mixer mobile, multiple unit portable crusher, with or without washer; pile driver, tractor with side boom, roto- mill and similar, welder.
- **Group 5** - Cable operated power shovels, draglines, clamshells and backhoes over 5 cubic yards, caisson drill Watson 2500 similar or larger, hoist 3 drum or more, mechanic – welder (heavy-duty).
- **Group 6** - Cableway, derrick, quad nine push unit, wheel excavator, belt or elevating loader
- **Group 7** - tower cranes all types

- **Truck Driver**

- **Group 1** - Greasemen, Servicemen and Ambulance Drivers, Battery Men, Shuttle Truck or Bus, Flat Rack Tandem Axle.
- **Group 2** - Fork Lift Driver, Straddle Truck Driver, Lumber Carrier, Liquid and Bulk Tankers Single Axle, Combination, Euclid Electric or Similar, Specialty and Hoisting, Truck Drivers Fuel Truck, Grease Truck, Combination Fuel and Grease.
- **Group 3** - Truck Driver Snow Plow, Truck Driver Dump or Type Jumbo and similar type equipment.
- **Group 4** - Cement Mixer Agitator Truck over 10 cubic yards to and including 15 cubic yards, Tire Man, Cab Operated Distributor Truck Driver.
- **Group 5** - Heavy Duty Diesel Mechanic, Body Man, Welders or Combination Men.

- Trade classification workers cannot be classified as common laborers for performing incidental cleanup from the installation of their craft. Common Laborers perform final cleanup of the entire jobsite.
- 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**  
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Addenda

Contract Number: 201843277



Montbello Railings Phase 2

July 12, 2018

CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS

CONTRACT NO.: 201843277  
PROJECT NAME: MONTBELLO RAILINGS PHASE 2

ADDENDUM NO. 1 TO CONTRACT DOCUMENTS

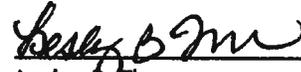
Bidders are hereby instructed that the drawings, specifications, and other contract documents are modified, corrected, supplemented and/or superseded for the above-mentioned project as hereinafter described in the following attachments:

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

**QUESTIONS AND ANSWERS:**

- Q1. Can the inside lane in each direction of Andrews Drive be closed permanently during construction? If not, what are the time restrictions for the lane closures? Please advise.
- A1. Permanent lane and/or intersection closures will not be allowed. The contractor will need to remove all materials and equipment from the travel lanes at the close of daily operations. Lane (and intersection) closures will be allowed from 8am to 5pm.
- Q2. What is the anticipated start date of construction in the field?
- A2. The Notice to Proceed can be issued once the contract is fully executed. Contract execution requires actions by both the Apparent Low Bidder and the City. Given that this project will need to go through the City Council approval process, and assuming the Apparent Low Bidder is responsive / timely with the required submittals, I would anticipate a fully executed contract (and NTP) by mid-late October.
- Q3. Can all three intersections be worked on simultaneously?
- A3. Yes.
- Q4. Where will the staging area be located?
- A4. During working hours, the contractor may utilize the intersection and lane closures for equipment and material stockpiles. However, areas for permanent / long-term staging on the site (after hours) are extremely limited. Please plan accordingly.
- Q5. See Revision of Section 514, page PSP-23: Is the Heat Induction Method the only process allowed for forming the curved radii in the Pedestrian Rail tubes?? If it can be demonstrated that the tubes can be curved locally by another method without the final product exhibiting kinks, wrinkling or ovality, will it be allowed?? Cost and fabrication time can be reduced significantly if the tube material can be formed locally.
- A5. The contractor's bid prices shall include all of the requirements in the plans and specifications, including the heat induction method to form the tubular steel. If there are no local (Colorado) companies that can perform this procedure, then the contractor will need to look out of state. The spec lists three possible fabricators that have the capability to shape the tubular steel via the heat induction method.

- Q6. Due to long fabrication/delivery times on the Pedestrian Rail, can the project time count be suspended until the rail is delivered if all other work is complete?  
A6. Yes.

  
\_\_\_\_\_  
Lesley B. Thomas  
City Engineer  
  
8.1.18  
\_\_\_\_\_  
Date

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

  
\_\_\_\_\_  
Contractor

ADDENDUM NO. 1

B-1-18  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
PRESIDENT

CITY AND COUNTY OF DENVER

STATE OF COLORADO



**DENVER**  
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Technical Specifications

Contract Number: 201843277



Montbello Railings Phase 2

July 12, 2018

# **SPECIAL PROVISIONS**

**City and County of Denver  
Department of Public Works**

## **Montbello Ditch Railing Replacements**

**City Master Project No. 2016-PROJMSTR-0000707**

**ISSUED FOR BID**  
**APRIL 16, 2018**

Prepared by:

**FELSBURG HOLT & ULLEVIG**

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

**MONTBELLO DITCH  
RAILING REPLACEMENTS**

**CITY MASTER PROJECT NO. 2016-PROJMSTR-0000707  
CITY PROJECT NO. PWTRN201737616**

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## **GENERAL INFORMATION**

### **General Contract Conditions**

General Contract Conditions shall be the City and County of Denver, Department of Public Works, "Standard Specifications for Construction General Contract Conditions", 2011 edition and herein after modified shall be used for this project.

The following Denver General Contract Condition shall be deleted:

Title 18 – Warranties, Guarantees and Corrective Work

### **Standard Construction Specifications**

Standard Construction Specifications shall be the Colorado Department of Transportation "Standard Specifications for Road and Bridge Construction (Sections 100 to 700)", 2017 and as herein after modified shall be used for this project.

The following Section 100 Specifications shall be deleted and Denver General Contract Conditions shall govern:

Section 102 – Bidding Requirements and Conditions

Section 103 – Award, and Execution of Contract

Section 107 – Legal Relations and Responsibility to the Public, except subsections 107.06, 107.15, and 107.25 which shall remain.

### **Standard Special Provisions**

The Standard Special Provisions supplement or amend the referenced Standard Construction Specifications.

### **Project Special Provisions**

Anything mentioned in the specifications and not shown in the drawings, or shown in the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. The Project Special Provisions supplement or amend the referenced Standard Construction Specifications and/or Standard Special Provisions.

### **Detailed Construction Specifications**

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

### **Standard Construction Details**

It is the intent of the City to use applicable details from the City and County of Denver Design and Construction Standards. References to CCD, City, Department, or Engineer in the Standard Construction Details refer to the City and County of Denver Construction Manager.

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**Montbello Ditch Railing Replacements** - The following Special Provisions shall supplement the 2017 Colorado Department of Transportation Standard Specifications for Road and Bridge Construction (Red Book).

**PROJECT SPECIAL PROVISIONS**

<b><u>Description</u></b>	<b><u>Page Nos.</u></b>
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**REVISION OF SECTION 101  
DEFINITION OF TERMS**

Technical Specifications related to construction materials and methods for the Work embraced under this Contract shall consist of the Colorado Department of Transportation, Standard Specifications for Road and Bridge Construction dated 2017.

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

**Subsection 101.27:** Department shall mean the City and County of Denver, Colorado.

**Subsection 101.28:** Engineer shall mean the Project Manager, City and County of Denver or their designated representative.

**Subsection 101.34:** Inspector shall mean City and County of Denver, Colorado or their designated representative.

**Subsection 101.36:** Laboratory shall mean City and County of Denver, Colorado or their designated representative.

**Subsection 101.47:** Project Engineer shall mean the Project Manager, City and County of Denver, Colorado, or their designated representative.

**Subsection 101.70:** State shall mean City and County of Denver (where applicable).

**END OF SECTION REVISION**

**REVISION OF SECTION 201  
CLEARING AND GRUBBING**

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

**CONSTRUCTION REQUIREMENTS**

Subsection 201.02 shall include the following:

Clearing and grubbing shall include stripping sod, and removing and disposing of vegetation and debris.

Trees to remain shall be protected during clearing and grubbing operations, as well as for the duration of construction.

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

Clearing and grubbing shall be within the toe limits of the project, as identified in the plans. All other areas of clearing and grubbing shall be as directed by the Project Manager.

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 disposed of off-site or preferably to a recycling center. 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.

**BASIS OF PAYMENT**

In Subsection 201.04, add the following:

No separate payment will be made for sod stripping or any tree removal regardless of size or number of trees to be removed. Cost of sod stripping and tree removal shall be included in the unit price for clearing and grubbing.

**END OF SECTION REVISION**

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**REVISION OF SECTION 202  
RECYCLING AND REUSE**

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

**Subsection 202.01 shall include the following:**

This work consists of recycling or delivering items for reuse which are designated to be removed as a part of this project.

Concrete, concrete with reinforcing, and asphalt items which are to be recycled shall be as follows:

<b>RECYCLED ITEM</b>	<b>MATERIAL</b>
REMOVAL OF SIDEWALK	CONCRETE
REMOVAL OF CURB AND GUTTER	CONCRETE
REMOVAL OF CURB RAMP	CONCRETE
REMOVAL OF ASPHALT MAT	ASPHALT
REMOVAL OF PORTIONS OF PRESENT STRUCTURE	CONCRETE WITH REINF.

Steel items which are to be recycled shall be as follows:

<b>RECYCLED ITEM</b>	<b>MATERIAL</b>
REMOVAL OF PORTIONS OF PRESENT STRUCTURE	STEEL

-2-  
**REVISION OF SECTION 202  
RECYCLING AND REUSE**

Subsection 202.02 shall include the following:

Concrete, concrete with reinforcing, and asphalt shall be recycled at the following location, or as approved by the Engineer:

Oxford Recycling  
2400 West Oxford Avenue  
Englewood, CO 80110-4340  
(303) 762-1160

Steel shall be recycled at one of the following locations, or as approved by the Engineer:

ATLAS Metal and Iron Corp.  
1100 Umatilla St.  
Denver, CO 80204  
(303) 825-7166

Iron and Metals Inc.  
5555 Franklin St.  
Denver, CO 80216  
(303) 292-5555

The contractor shall maintain documentation of recycling deliveries, and shall submit copies of documentation to the engineer.

Subsection 202.22 shall include the following:

The cost for recycling, including delivery, fees, and all labor, shall not be paid for separately, but will be included in the cost of the removal items. The cost for delivery of reused items shall not be paid for separately, but shall be included in the cost of the removal items.

The contractor shall submit certifications of delivery from the approved recycling locations, prior to partial or full payment of that specific item.

**END OF SECTION REVISION**

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**REVISION OF SECTION 202  
REMOVAL OF ASPHALT MAT**

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

**DESCRIPTION**

Subsection 202.01 shall include the following:

This work includes removal and disposal of existing asphalt mat within the project limits as shown on the plans or at locations directed by the Project Manager. The Contractor shall determine the thickness of existing asphalt mat prior to beginning removal.

**CONSTRUCTION REQUIREMENTS**

In subsection 202.02 delete the seventh paragraph and replace with the following:

The existing asphalt mat shall be removed in a manner that minimizes contamination of underlying materials with the removed mat. Disposal of non-hazardous materials shall be handled according to the CCD Department of Public Works, Engineering Division SPECIAL CONTRACT CONDITIONS.

Irregularities and distresses on the unfinished surface, such as, but not limited to, delamination, raveling, and potholes that are identified by the Project Manager shall be repaired as soon as possible. All unfinished surfaces shall be covered with new asphalt within 3 calendar days.

The roadway shall be left in a safe and usable condition at the end of each work day. The Contractor shall take appropriate measures to ensure that the surface does not trap or hold water.

**METHOD OF MEASUREMENT**

Subsection 202.11 shall include the following:

The removal of the existing asphalt mat will be measured by the area in square yards, completed to the depth determined in subsection 202.01, and accepted.

**BASIS OF PAYMENT**

Subsection 202.12 shall include the following:

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Removal of Asphalt Mat	Square Yard

Unless otherwise specified in the Contract, the disposal of the asphalt mat will not be measured and paid separately, but shall be included in the work.

**REVISION OF SECTION 202  
REMOVAL OF PORTIONS OF PRESENT STRUCTURE**

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

Subsection 202.01 shall include the following:

This work consists of the removal and recycling of existing concrete and pipe railing. See Revision of Section 202, Recycling and Reuse for additional requirements.

Subsection 202.02 shall include the following:

(a) *Removal Details.* At least 10 calendar days before start of work, the Contractor shall submit to the Engineer details of the removal operations showing the methods and sequence of removal and equipment to be used.

All methods and equipment used to accomplish this item shall be approved by the Engineer.

(b) *Protection of Reinforcing Steel.* The Contractor shall take all steps necessary to prevent cutting or otherwise damaging reinforcing steel projecting into the removed area of concrete. All reinforcing steel damaged by the Contractor's operations shall be repaired or replaced at the Contractor's expense.

Removal of portions of the present structure will be paid for at the contract unit price

Subsection 202.12 shall include the following:

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Removal of Portions of Present Structure	Each

**END OF SECTION REVISION**

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## REVISION OF SECTION 208 EROSION CONTROL

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

### PART I: DEFINITIONS

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

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

Additional Definitions applicable to this Section are listed heretofore:

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

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

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

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

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

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

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

**Final Stabilization:** Point of construction when all ground surface disturbing activities at the site have been completed and uniform vegetative cover has reached 70% of pre-disturbance vegetative cover (as judged by comparison to nearest fallow vegetation), or equivalent permanent

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**REVISION OF SECTION 208  
EROSION CONTROL**

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 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 Engineering, Regulatory and Analytics Office. As a clarification, the Development Services Department of the City serves as the point of intake and permit processing center.

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

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

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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:

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

Any preparation of or adjustments to a SWMP must be performed either by or under the supervision of a Professional Engineer 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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## REVISION OF SECTION 208 EROSION CONTROL

### PART II: DESCRIPTION

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

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

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

### PART III: MATERIALS

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

### PART IV: EROSION CONTROL PERMIT STATUS

The current SWMP status for the Project is as follows:

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

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

The Contractor and/or their authorized agents shall remove all sediment, mud, construction debris, or other potential pollutants that may have been discharged to or, accumulate in the flow lines of storm drainage appurtenances and public rights of ways of

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**REVISION OF SECTION 208  
EROSION CONTROL**

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.

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

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

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

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

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

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**REVISION OF SECTION 208  
EROSION CONTROL**

5. **SPILL PREVENTION /CONTAINMENT:** This BMP defines the measures proposed for preventing, controlling, or containing spills of fuel, lubricants, or other pollutants; and protecting potential pollutants from contact with precipitation or runoff.
6. **CHUTE WASHOUT CONTAINMENT:** Water used in the cleaning of ready mixed concrete truck delivery chutes shall be discharged into a predefined, bermed containment area on the job site. The required containment area is to be bermed so that wash water is totally contained. Wash water discharged into the containment area shall be allowed to infiltrate or evaporate. Dried concrete waste shall be removed from the containment area and properly disposed of. The direct or indirect discharge of water containing waste concrete to the storm sewer system is prohibited (Sec.56-102a, c; Revised Municipal Code, City and County of Denver).
7. **STREET SWEEPING:** This BMP requires that paved surfaces which are adjacent to construction sites be swept in a timely manner when sediment and other materials are tracked or discharged on to them. Either sweeping by hand or use of street sweepers is acceptable. Street sweepers using water while sweeping is preferred in order to minimize dust. Flushing off paved surfaces with water is prohibited.
8. **PERIMETER CONTROL:** This BMP requires that a construction site install a perimeter control measure along the edge of the construction site, to prevent, or filter the discharge of surface runoff from the construction site. The type of perimeter control used shall be determined based on site conditions and location. Maintenance and repair of the control measure shall occur as needed, in a timely manner.
9. **STOCK PILES:** Soils that will be stockpiled for more than thirty (30) days shall be protected from wind and water erosion within fourteen (14) days of stockpile construction. Stabilization of stockpiles located within 100 feet of an MS4 or State 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 Permit Enforcement Authority approval), or erosion control matting/Geotextiles. If stockpiles are located within 100 feet of top of bank of an MS4 or State Waters, a drainage way or the site perimeter, additional sediment controls shall be required.
10. **SAW CUTTING OPERATIONS:** The Contractor shall protect all storm sewer facilities adjacent to any location where pavement cutting operations involving wheel cutting, saw cutting, or abrasive water jet cutting are to occur. 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)."

**PART V: CONSTRUCTION REQUIREMENTS**

**A) SCHEDULES:**

At least 10 working days prior to the beginning of any construction work, the Contractor shall submit for approval a schedule for accomplishment of temporary and permanent BMPs shown in the SWMP. This schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent BMPs. The schedule shall include BMPs for all areas within the Project boundaries, including but not limited to, haul roads, borrow pits, and storage and other staging sites. Work shall not be started until the BMP schedule

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has been approved in writing by the Project Manager, and on site pre-construction inspection is performed and approved by CCD's NPDES inspector. Once the work has started, and during the active construction period, the Contractor shall update the schedule for all BMPs on a regular basis, and as required to keep the SWMP in compliance.

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

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

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

D) PERMITS:

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

E) EROSION CONTROL SUPERVISOR:

Contractor shall assign to the Project an employee or subcontractor to serve as Erosion Control Supervisor (ECS). The ECS shall be a person other than the Contractor's superintendent, foreman, or equivalent supervisory position. The ECS shall be experienced in aspects of BMP construction and have satisfactorily completed a Colorado DOT or equivalent ECS training program authorized by the City. Proof that this requirement has been met shall be submitted to the Project Manager at least ten working days prior to the beginning of any soil disturbance work. A list of authorized ECS training programs is available from the City upon request. Additionally, per definition, the ECS shall be under the direction of a Professional Engineer licensed in the State of Colorado when performing any modifications to the Project Stormwater Management Plan (SWMP).

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

- 1) Ensure compliance with all water quality permits or certifications in effect during the construction work.
- 2) Supervise the installation, construction, and maintenance of all BMPs specified in the

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- Contract and coordinate the construction of BMPs with all other construction operations.
- 3) Direct the implementation of suitable BMPs as necessary to correct unforeseen conditions or emergency situations. Direct the dismantling of those features when their purpose has been fulfilled due to completion of each Project phase unless the Permit Enforcement Authority agrees that the features be left in place.
  - 4) Attend the preconstruction conference, erosion control preconstruction inspection, Project scheduling meetings, weekly construction/ field meetings, substantial completion and final stabilization inspections, and other meetings regarding construction that could impact water quality.
  - 5) Evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, the ECS shall propose appropriate SWMP modifications to the Contractor to protect off-site water from becoming contaminated with sediment or other pollutants.
  - 6) Coordinate with the Contractor to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
  - 7) Coordinate with the Contractor to ensure all labor, material, and equipment deployed to meet SWMP requirements is judged appropriately.

- 8) During construction, update and record the following items in the SWMP as changes occur:
  - (i) Construction boundaries (may require Major SWMP Modification)
  - (ii) Areas of disturbance (may require Major SWMP Modification)
  - (iii) Areas used for storage of construction materials, equipment, soils, or wastes.
  - (iv) Location of any dedicated asphalt or concrete batch plants.
  - (v) Location of construction offices and staging areas.
  - (vi) Location of work access routes during construction.
  - (vii) Location of borrow and waste.
  - (viii) Location of temporary and permanent stabilization

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

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

- 10) Modify the site map with arrows to indicate direction of surface and storm water flowing across the Project site.

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EROSION CONTROL**

- 11) 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.
- 12) If using existing topography, vegetation, etc. as a BMP, label it as such in the SWMP site map; amend the Narrative to explain when, why, and how the BMP is being used in the SWMP.
- 13) Record on the SWMP, and implement the approved plan for concrete and asphalt saw cutting, grinding, and milling containment and removal.
- 14) Update the potential pollutants list in the SWMP throughout construction meeting CASDP requirements.
- 15) Spills, leaks, or overflows that result in the discharge of pollutants shall be documented on the inspection form. The ECS shall record the time and date, weather conditions, reasons for spill, and how it was remediated. The ECS shall immediately report to the Contractor and Project Manager the following instances of noncompliance:
- (i) Noncompliance which may endanger health or environment.
  - (ii) Spills or discharge of hazardous substance or oil which may cause pollution of the City MS4 or State Waters.
  - (iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
- 16) Perform a thorough inspection of the stormwater management system at least every seven (7) days and within 24 hours after any precipitation or snowmelt event with the potential to cause surface erosion. If no land disturbing construction activities are present during a storm event, post-storm event inspections shall be conducted prior to commencing any new land disturbing construction activities, but no later than seventy-two (72) hours following the storm event. The inspection records shall be kept on-site in a written or previously approved format. Inspections shall be conducted during the progress of the work, during work suspensions, or until Final Stabilization of all disturbed areas is approved by Permit Enforcement Authority and shall include the following services at a minimum:
- (i) The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. BMPs identified in the SWMP shall be observed to ensure that they are operating correctly.
  - (ii) The description of potential pollutant sources, and the BMPs identified in the SWMP, shall be revised and modified as appropriate based on the results of the inspection as soon as practicable after such inspection. Modification to the SWMP shall be implemented in a timely manner and in accordance with applicable Permit requirements.
  - (iii) The operator shall keep a record of inspections. Uncontrolled releases of sediment or polluted storm water or measurable quantities of sediment found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measures taken to clean up the sediment that has left the site. Inspection records shall be made available to the City upon request. Note: documentation of uncontrolled releases at site DOES NOT alleviate any State or Federal requirements for reporting of discharges or upset conditions. Care shall be taken to ensure compliance with all regulatory requirements at site.

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

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

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

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

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**REVISION OF SECTION 208  
EROSION CONTROL**

- (ii) All inspection sediment removal, and BMP maintenance activities to comply with all Federal, State & Local erosion control permit requirements until Final Stabilization is reached.
- (iii) All removal and replacement of existing BMPs due to damage to same suffered either by the contractor, outside agencies, the public, or acts of God.
- (iv) All required mechanical and/ or manual street sweeping.
- (v) Discretionary changes required of any regulatory enforcement officer.

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

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

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

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

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

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

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

- (i) The Contractor shall file Inactivation Request for Construction Activities Stormwater Discharge Permit (available within CASDP guidance documents) with the Permit Enforcement Authority.

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**REVISION OF SECTION 208  
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- (ii) The Contractor shall coordinate with the Permit Enforcement Authority to hold a Final Inactivation Inspection.
- (iii) If passing, the Permit Enforcement Authority transmits a letter of approval for Final Stabilization.
- (iv) If not passing, the Permit Enforcement Authority transmits a letter of denial for Final Stabilization with associated inspection report to Contractor.
- (v) Stabilization, inspection and maintenance requirements shall continue until confirmation of having met final closure requirements have been granted in writing by the Permit Enforcement Authority.  
When Final Stabilization has been reached, the Permit Enforcement Authority shall issue a "Certificate of Final Stabilization".
- (vi) Once the Inactivation request is approved by the City and County of Denver, the contractor can apply to close the State Stormwater Permit.

**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 best management practices will not be measured separately but shall be included in the cost of Erosion Control.

**PART VIII: BASIS OF PAYMENT**

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Erosion Control	Each

All labor for installation of BMPs, maintenance of BMPs, and removal and disposal of sediment shall be paid for under Erosion Control.

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 Erosion Control 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 Project 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 included in pay item Erosion Control 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.

Erosion Control pay item 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 Erosion Control 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 the Contractor beyond the area included in the Bid shall be installed per requirements of the Permit Authority and Permit Enforcement Authority without any additional compensation.

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**REVISION OF SECTION 208**  
**EROSION CONTROL**

**END OF REVISION OF SECTION 208**

**REVISION OF SECTIONS 401 & 403  
HOT MIX ASPHALT**

Sections 401 & 403 of the Standard Specification is hereby deleted and replaced with Item 9 “Hot Mix Asphalt Pavement” Specifications from the Metropolitan Government Pavement Engineers Council (MGPEC), Volume 1 Pavement Design Standards and Construction Specification, latest version, revised as follows.

The MGPEC Item 9 specification is available online at [www.mgpec.org](http://www.mgpec.org).

**ITEM 9, Subsection 9.2.2 shall include the following:**

The minimum requirements of the asphalt binder for this project shall meet the properties of PG 64-22.

**ITEM 9, Subsection 9.17 shall include the following:**

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Hot Mix Asphalt (Patching) (Asphalt)	Tons

**END OF SECTION REVISION**

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**REVISION OF SECTION 514  
PEDESTRIAN RAILING STEEL (SPECIAL)**

Section 514 of the Standard Specifications is hereby revised as follows:

**Subsection 514.01** shall include the following:

This work shall consist of construction of pedestrian railing in accordance with these specifications and in conformance with the lines and grades shown on the plans.

**MATERIALS**

**Subsection 514.02** shall include the following:

Structural steel shall conform to the requirements of Section 509 and the following:

- (a) Tubes shall conform to the requirements of ASTM A500 Grade B.
- (b) Steel bars and steel plates shall conform to the requirements of ASTM A36.
- (c) Bolts shall conform to the requirements of ASTM A307.

Subsection 514.03 shall be revised to include the following:

Rail post sections shall be vertical. These elements shall be aligned with a tolerance of 1/4 inch from plumb.

Welding shall be in accordance with ANSI/AASHTO/AWS D1.5 and AWS D1.1 (latest edition). GMAW or SMAW will be permitted.

Radii of tubular steel shall be performed by the heat induction method. Tubes shall be curved to the radii indicated on the Plans by heating the entire material and pushing the tube through an electrical coil, thus inducing heat by the eddy current effect. Concurrent cooling of the tube shall produce tubes with smooth radii. The final product shall not exhibit kinks, wrinkling or ovality.

Possible fabricators that may be able to supply the Contractor with the curved steel tubing are:

Tulsa Tube Bending  
4192 South Galveston  
Tulsa, OK 74107  
918-446-4461  
888-882-3637

CB&I  
210 East 700 South  
Clearfield, UT 84015  
801-773-7300

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**REVISION OF SECTION 514  
PEDESTRIAN RAILING STEEL (SPECIAL)**

Universal Industrial Sales, Inc.  
PO BOX 699  
Pleasant Grove, UT 84062  
801-785-0505

Subsection 514.06 shall be revised to include the following:

The Contractor shall be responsible for field verifying actual constructed dimensions prior to ordering and installing materials for the Structural Steel Railing. The Contractor, at no cost to the City, shall complete any modifications made to the original plans required by the Engineer for the railing materials.

The paint system shall meet the Duplex Coating System Standard Specification with revisions.

**General Notes:**

Pedestrian Railing (Steel)(Special) shall be installed at the locations shown on the plans. Prior to fabrication of this item, two sets of working drawings which comply with the requirements of Section 105 shall be submitted to the Engineer for information only. The working drawings will not be approved or returned.

Subsection 514.07 shall be revised to include the following:

All steel tubing, ornamental infill, rail supports, anchor bolts, and mechanical rail connectors shall be included in the linear foot measurement for Pedestrian Railing (Steel)(Special).

Subsection 514.08 is hereby revised as follows:

Payment will be made under:

**PAY ITEM**  
Pedestrian Railing (Steel)(Special)

**PAY UNIT**  
LF

**END OF REVISION OF SECTION 514**

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**REVISION OF SECTION 522  
DUPLEX COATING SYSTEM**

Section 522 of the standard specifications is hereby added to the Standard Specifications for this project as follows:

**DESCRIPTION**

**522.01** This work consists of hot dip galvanizing and duplex coating steel structures as shown in the Contract.

**MATERIALS AND CONSTRUCTION REQUIREMENTS**

**522.02**

- (a) *General.* The Contractor shall provide, install, and repair if necessary, all steel items that are prepared and coated in conformance with this Section. All repair and replacement of the finished coating necessary for final acceptance shall be at the Contractor's expense.

Steel products to be galvanized and coated shall be cleaned of weld spatter and bevel finished at exposed corners, edges and points. Areas having welds, cuts, bores, notches, or grooves shall also be beveled unless otherwise noted in the Contract or directed by the Engineer. Bevel work shall produce a uniform, smooth finish for galvanizing. Bevel size to be used is based on steel thickness and other criteria as follows:

<b>Steel Thickness/Type</b>	<b>Bevel Size (inches)</b>
Less than 1/2" thick	1/32" to 1/16"
Over 1/2" thick	1/16" to 1/8"
Bores, notches & grooves	root face of 1/32" to 1/16"

Welds shall be cleaned and finished according to AWS standards.

All coating measurements shall be taken with a Type 2 fixed probe Dry Film Thickness (DFT) gauge. The gauge shall be calibrated according to the Society for Protective Coatings (SSPC) Standard PA-2.

- (b) *Galvanizing.* Galvanizing shall be done in accordance with the Contract requirements and AASHTO M 111 (ASTM A123) for the type of material being galvanized, except that items shall only be quenched with ambient air. The poles and arms for traffic signals and signs shall be hot dipped galvanized inside and outside. Chromate treatment of any type will not be permitted. Zinc-phosphate pretreatment or acrylic passivation pretreatments shall be as described in (d) below.

The Contractor shall submit a certificate of compliance (COC), conforming to subsection 106.12, confirming that all materials meet or exceed the galvanizing requirements described herein.

Spot areas not requiring galvanizing shall be marked and cleanly patched with material that prevents galvanization but does not weaken the adjacent spelter coating. Repair of patched areas shall be achieved by metallizing as described in (c) below.

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**SECTION 522**  
**DUPLEX COATING SYSTEM**

Prior to galvanizing, the Contractor's galvanizer shall notify the Engineer in writing that the galvanized order is chromate free and air quenched. Products not certified chromate free by the Contractor's galvanizer shall be tested prior to galvanizing. The Contractor shall provide the Engineer with certification from an independent ASTM accredited laboratory listing all individual items that test chromate free. Testing shall comply with ASTM D-2092 Appendix X2. Test results shall be provided to the Engineer prior to galvanizing.

- (c) *Repair of Galvanized Products.* Uncoated areas or damaged coating exceeding applicable specification limits shall be re-galvanized to meet the original specification requirements. Cuts made after galvanizing shall be ground, beveled, and smoothed before repair. Damaged galvanized areas shall be re-galvanized or metallized.

Metallizing shall conform to ASTM A-780, Annex A1 or Annex A3, except that minor repair areas shall be cleaned according to SSPC method SP-3. SSPC Method SP-2 may be used to clean difficult access areas. Thickness of the repair coat shall match adjacent galvanizing, as measured by a calibrated DFT gauge.

Coating imperfections such as burring, runs or drips, high spots, heavy dross, or ash inclusion shall be removed and cleaned at the Contractor's expense. Areas of re-work falling below zinc thickness limits shall be repaired at the Contractor's expense.

Printed Technical Data Sheets (PTDS) shall be provided to the Engineer for repair materials used.

- (d) *Preparing Galvanized Surfaces for Coating.* Products shall be inspected for shipping and handling damage before surface preparation begins. Damage shall be reported to the Contractor's galvanizer and to the Engineer prior to repair. The Engineer will determine whether damaged items are to be repaired or replaced. Minor repair of galvanizing shall conform to (c) above, and shall be at the Contractor's expense.

The Contractor shall prepare each surface to be coated so that it has a slightly roughened profile without removing over 1.0 mil of the galvanized coating. Minimum ASTM zinc thickness specifications shall still apply after preparation.

Surfaces of fasteners to be coated shall be lightly brushed or sanded in a manner that will remove the least amount of zinc.

Surfaces that become soiled after pretreatment shall be cleaned prior to coating by low pressure, mild detergent wash and rinse. Stained or oiled surfaces may also be mildly scrubbed with a soft bristle nylon brush. Stubborn stains may be mildly scrubbed with a mix of 1 - 2 percent ammonia solution and thoroughly rinsed. Wash and rinse pressure shall not exceed 100 psi at 185° F temperature.

Surface preparation work shall be done according to one of the following methods:

1. *Zinc-Phosphate Pretreatment.* This treatment may be used only on new galvanizing less than 48 hours of age.

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**SECTION 522**  
**DUPLEX COATING SYSTEM**

Items shall be immersed in a bath of acidic zinc-phosphate solution for 3 - 6 minutes, rinsed with clean water, and dried. The first epoxy coat shall be applied within 48 hours after immersion treatment.

If treated items are shipped to a different coating facility they shall be rewashed, rinsed and dried to remove surface soiling. The first epoxy coat must still be applied within 48 hours after immersion treatment.

2. *Acrylic Passivation Pretreatment.* This treatment may be used only on fresh hot galvanizing or new galvanizing less than 48 hours of age. Only chrome-free solutions shall be used, applied by a method that ensures complete coverage of all surfaces to be coated. The Contractor shall provide the Engineer with treatment dates for each item and the PTDS for the solutions used.

The Contractor's galvanizer may apply solution to fresh hot galvanizing that is less than 6 hours of age, still clean, and dry and that has cooled to treatment application temperature guidelines.

If newly galvanized items are shipped to another treatment facility they shall be washed, rinsed and dried to remove surface soiling. The solution shall then be applied and cured according to the supplier's instructions.

Fully cured and treated items shall be rewashed, rinsed, and dried again just before coating. Items not coated within 100 days of treatment shall be abrasive blasted in conformance with subsection (d) 3.

3. *Abrasive Blasting.* This treatment may be used on galvanized items of any age if beveling requirements as listed in the third and fourth paragraphs of subsection (a) have been met.

The Contractor shall notify the Engineer in writing at least five working days before blasting begins. Zinc thickness shall be measured and recorded immediately after blasting and provided to the Engineer within 48 hours of blasting. Thickness limits and measurement frequency shall comply with the original applicable ASTM specification. Blast operations shall reasonably conform to ASTM Standard Practice D-6386, Subsection 5.4.1 except for small areas falling below required zinc thickness. These areas shall be repaired in accordance with subsection (c). No single area shall exceed 2 inches at its largest width or 12 inches at its longest dimension. The total repair area shall not exceed 1 percent of the coatable surface of the item; if limits are exceeded or zinc thickness is below the specification requirement, the item shall be re-galvanized in conformance with the original specification.

The Contractor shall measure and record the size, location and repair method used for all repairs. This information shall be included on the report of thickness measurements.

The first epoxy coat shall be applied within 90 minutes of abrasive blasting. Items shall be cleaned free of blast debris before coating. Compressed air used to clean items shall be free of oil, residue, oil and other harmful contaminants.

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## SECTION 522 DUPLEX COATING SYSTEM

Thickness measurement is not required after surface preparation work has been completed.

- (e) *Coating and Paint Systems.* Prepared items shall be coated with a two or three coat system described in this subsection. Alternative coating systems shall be pre-approved in writing by the Engineer. Manufacturer's PTDS for each coating type shall state test values for ASTM requirements of this subsection. Prior to product use the coating supplier shall provide the PTDS and certify to the Engineer in writing that all furnished coating materials meet applicable requirements of this subsection.

Faying surfaces shall not be painted unless written approval is given by the Engineer. All shop fabrication, including welds and attachments, shall be completed prior to coating unless otherwise specified in the Contract or directed in writing by the Engineer.

Inorganic zinc coatings shall not be used. Combined DFT of all coats applied over the galvanizing shall range from 6.5 to 10 mils with a topcoat DFT of 3 mils minimum. Dried color of the base coat and topcoat shall be visually contrasting. Finished color shall not vary more than 4  $\Delta E^*_{ab}$  units from the specified color determined in accordance with ASTM D 2244.

Volatile Organic Compound (VOC) levels shall not exceed 3.0 pounds per gallon for each applied coat. Dry films shall contain less than 1 percent lead and other toxic heavy metals. The zinc concentration of each epoxy coat shall not exceed 40 percent. Top coats shall have a semi-gloss value of 50-75.

All coatings shall be able to withstand temperatures up to 180° F without sag, blister, or peel damage. Topcoat formulation shall provide weathering, chemical, and ultraviolet (UV) resistance. All coatings shall meet the following ASTM requirements as amended:

- (1) Corrosion Weathering. ASTM D-5894, minimum 6-cycles of exposure:  
Corrosion rating of 8 or higher according to ASTM D-1654.  
Blistering rating of 8 or higher according to ASTM D-714.
- (2) Impact Resistance. ASTM D-2794, 30 day test:  
Epoxies – Minimum 40 inch-pounds  
All Topcoats – Minimum 90 inch-pounds
- (3) Adhesion Testing. ASTM D-4541, 30 day test, Minimum 500 psi for either: Method B - flat surface or Method E - curved surface.
- (4) Abrasion Resistance. ASTM D-4060, 30 day test: Maximum 90 mg loss after 1000 cycles with a CS10 or CS17 wheel.
- (5) Flexibility. ASTM D-522, 30 day test - Method B: Epoxies shall pass a 180 degree bend over a 3/4 inch mandrel. All Topcoats shall pass a 180 degree bend over a 3/8 inch mandrel.

Each coat shall be applied uniformly to provide an appearance free of laps, streaks, sags, drips, pinholes, and other discontinuities; all such defects shall be repaired prior to product shipment.

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**SECTION 522**  
**DUPLEX COATING SYSTEM**

The Contractor's coater shall measure the DFT of each applied coat according to SSPC, Guide PA-2, except that measurements shall be taken with a calibrated Type 2 fixed probe gauge. Thickness records shall be provided to the Engineer prior to project shipment. The following two coating systems do not require pre-approval:

1. Powder Coating. The Contractor's coater shall oven preheat the articles to abate out-gassing potential. The Contractor's coater shall use compatible materials and coating processes to obtain proper coat to coat adhesion.

The epoxy powder base coat shall measure 2 to 6 mils DFT and be applied by electrostatic or airstatic spray. The powder formulation shall be a non-hybrid epoxy of anti-gassing grade.

The powder topcoat shall be electrostatic or airstatic spray applied and measure 3 to 6 mils DFT. The powder formulation shall be a non-acrylic, high-build, aliphatic-based, enhanced polyester or urethane polyester of anti-gassing grade.

2. Liquid Coating. The Contractor's coater shall apply coats by conventional or airless spray according to the supplier's guidelines. Minimal striping at difficult work areas is permissible. The Contractor's Coater shall use proper work methods and compatible materials to obtain proper coat adhesion. Thinning of paints shall be done according to the manufacturer's instructions so that thinned products conform to the solids content and VOC limits of this subsection.

The epoxy base coat shall measure 2 to 6 mils DFT. Paint shall be a low-blush epoxy polyamide, or a low-blush cycloaliphatic bisphenol-A polyamine. Minimum solids by weight of all epoxies used shall be 68 percent.

The topcoat shall measure 3 to 6 mils DFT. Paint shall be an aliphatic-based urethane polyester or aliphatic-based polyurea urethane. Specially formulated aliphatic-based polyaspartic polyureas may also be used over compatible epoxy bases.

- (f) *Repair of Coated Products.* The Contractor shall repair damage from shipment, installation, field welding, or other activity during the construction. Damage shall be reported to the Engineer prior to repair. Repairs shall be as directed by the Engineer.

Significant repair procedures require written submittal of a proposed repair process from the Contractor. The Engineer shall approve the proposal in writing before repairs begin. Significant repairs are classified as:

- (1) Any damaged area to the base coat material over 1 square inch
- (2) Total repair areas exceeding 5 percent of the coating per item
- (3) Any single topcoat repair area over 64 square inches

Minor and touchup repair of topcoats shall be done as follows:

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**SECTION 522**  
**DUPLEX COATING SYSTEM**

A UV rated, aliphatic-based liquid topcoat paint shall be used. The paint shall be compatible with the existing topcoat material and closely match existing color. The paint shall meet the requirements of subsection (e). The paint supplier shall provide the Engineer with PTDS for the products used.

Single areas smaller than 8 square inches requiring repair shall be scuffed with 220 grit sandpaper or equivalent scuff material. Larger areas up to 64 square inches may be cleaned according to SSPC, Method SP-2. All border areas at the undamaged topcoat shall be scuffed with 220 grit material.

Cleaned, scuffed areas shall be bordered and coated by airless or conventional spray. Work areas shall be adequately shielded to contain errant spray. Fresh repair areas shall be protected as necessary during the initial cure. Repair thickness shall reasonably match the adjacent coating.

The repair coat shall provide an appearance free of sags, runs, streaks, drips, pinholes, or other discontinuities. Spray can paint repair shall not be used.

- (g) *Conditions for Final Acceptance of Coating.* Within six weeks immediately prior to final project acceptance, the Engineer and a representative of CDOT's Staff Bridge Branch will conduct a final inspection of the coating. The Contractor's Superintendent shall also attend the inspection. Before final project acceptance, the Contractor shall repair the following defects found during the inspection:
- a. Peeling on any portion of the coatings.
  - b. Blistering on any portion of the coatings.
  - c. Color fading below a 35 gloss rating, in accordance with ASTM D523.
  - d. Mottling defects that exceed 3 percent of the topcoat surface.
  - e. Visible cracking of the topcoat material.
  - f. Visible rusting discoloration on the coating.
  - g. Sag or other evidence of coating adhesion loss.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Duplex Coating System will not be measured and paid for separately, but shall be included in pay item Pedestrian Railing (Steel)(Special).

**REVISION OF SECTION 601  
CONCRETE CLASS D (WALL)**

Section 601 of the Standard Specifications is hereby revised for this project as follows:

Subsection 601.02 shall include the following:

The maximum Water/Cementitious Material ratio for Concrete Class D is 0.40

Subsection 601.02 shall include the following:

Class C fly ash is not allowed in Class D Concrete.

Subsection 601.20 shall include the following:

Payment will be made under:

**Pay Item**

Concrete Class D (Wall)

**Pay Unit**

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**END OF SECTION REVISION**

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**REVISION OF SECTION 608  
CONCRETE CURB RAMPS**

Section 608 of the Standard Specifications is hereby revised to include:

Subsection 608.01 shall include the following:

Concrete Curb Ramp construction shall conform to the lines and grades shown in the plans. Reference City and County of Denver's Standard Details for Curb Ramps (Detail 7.0a, 7.0B, & 7.3) for supplementary information. Construction of concrete curb ramps to include the installation of detectable warnings.

Subsection 608.02, delete in its entirety and replace as follows:

Materials shall meet the requirements specified in the following subsections:

Joint Fillers 705.01

Concrete for sidewalks, curb ramps, and driveways shall be Class "P", broom finish with natural color as specified in subsections 601.02 and 601.03, except that No. 67 coarse aggregate shall be used.

Truncated Domes (Surface Applied) and detectable warnings on curb ramps shall be Armor-Tile Tactile Systems or approved equal.

Alternate materials may be used, if pre-approved by the Engineer. The Contractor shall submit a sample of the product, the name of the selected supplier, and documentation that the product meets all contrast requirements and will be fully compatible with the curb ramp surface to the Engineer for approval prior to the start of work

Concrete shall be cured with a non-pigmented "clear" curing compound.

All concrete used for sidewalks, curb ramps, and driveways 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. The fiber additive utilized in the concrete mix shall be that supplied by the Fibermesh Company, 4019 Industry Drive, Chattanooga, TN, 37416, (800) 635-2308, or approved equal. The contractor shall submit five (5) copies of fibrous concrete reinforcement product data for use by the Engineer.

Concrete will be subject to inspection and tests as required to assure compliance with quality requirements.

Subsection 608.03 shall include the following:

Detectable warnings on curb ramps shall be installed in strict accordance with the manufacturer's recommendations.

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**REVISION OF SECTION 608  
CONCRETE CURB RAMPS**

**Subsection 608.03(d) is hereby revised to include:**

The following sentences shall be added:

Finishing shall occur only after the disappearance of bleed water and the second paragraph of section 412.12 shall be adhered to. Sprinkling of pigment onto the fresh surface is not permitted.

**Subsection 608.03(f) is hereby revised to include:**

The following paragraphs shall be added:

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. Any low spots in the new concrete items in excess of ¼" will require removal and replacement of such items at the Contractor's expense.

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

**Subsection 608.05 shall include the following:**

Detectable warnings on curb ramps, including all work and materials necessary for fabrication, transport and installation will not be measured and paid for separately, but shall be included in the work.

**Subsection 608.06 is hereby revised to include:**

Excavation to proposed subgrade elevation will not be paid for separately but shall be included in the work.

Payment shall be full compensation for prep work, furnishing, and placing all materials, including detectable warnings, necessary to complete the work to the dimensions shown on plans. Reconditioning, forms, finishing, jointing, backfill and curing, will be in accordance with the plans and specifications and will not be paid for separately.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Concrete Curb Ramp	Square Yard

**END OF SECTION REVISION**

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**REVISION OF SECTION 623  
IRRIGATION SYSTEM**

Section 623 of the Standard Specifications is hereby revised to include:

Subsection 623.01 shall include the following:

All work shall conform to Denver Parks and Recreation Irrigation Standards and Details. If there is a discrepancy between the Standard Specifications and Parks Standards and Details, the Parks Standards shall prevail.

Subsection 623.15 shall include the following:

An on-site irrigation preconstruction meeting with Parks and Recreation Staff will be required, prior to ordering any materials. Contact the Project Manager (Ed Haun) at 720-913-4522 to arrange the irrigation preconstruction meeting.

Subsection 623.32 shall include the following:

The lump sum bid items for Irrigation Reconstruction / Adjustment shall include all items necessary to complete the new irrigation systems. This includes all removals, irrigation materials (including but not limited to; 2" galvanized water line, 1" PVC electrical conduit with wire, valves / valve boxes, fittings, drain valves, brackets / anchors for wall attachments, sprinkler heads), trenching / backfilling, concrete pad (Ursula), all connections, and any other items necessary to complete the work. Below is a description of the irrigation work at each intersection:

Irrigation Reconstruction (Ursula):

The existing irrigation system (water line, electrical conduit, valve boxes, fittings, drain valves, etc.) shall be completely removed and replaced (in-kind) within the limits of construction. The only items to remain are the waterline and electrical conduit that run through the box culvert. New valve boxes shall be set at the removal limits (both sides of the ditch), to connect the existing system into the new system components. A new 2" galvanized water pipe and 1" PVC electrical conduit (w/ wire) shall be constructed from the new valve boxes to the intersection with 2' of cover. At the intersection, the water and electrical pipes shall be aligned to attach to the new railing wall (above the box culvert). It is critical that both the waterline and electrical conduit be secured to the backside of the new concrete wall (straight section), with no gaps between the pipes and the concrete. This will require numerous angle fittings, to achieve the proper alignment. Irrigation work shall be coordinated with the wall construction; it is anticipated that multiple mobilizations may be required.

In addition, the Contractor shall install electrical conduit (w/ wire) and construct a 2' X 2' concrete pad for the new controller cabinet on the southeast corner. Exact location for new controller will be as directed by the Project Manager. The new controller cabinet will be furnished and installed by Parks forces.

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**REVISION OF SECTION 623  
IRRIGATION SYSTEM**

**Irrigation Reconstruction (Elgin):**

The existing irrigation system (water line, electrical conduit, valve boxes, fittings, drain valves, etc.) shall be completely removed and replaced (in-kind) within the limits of construction. The only items to remain are the waterline and electrical conduit that run through the box culvert. New valve boxes shall be set at the removal limits (both sides of the ditch), to connect the existing system into the new system components. A new 2" galvanized water pipe and 1" PVC electrical conduit (w/ wire) shall be constructed from the new valve boxes to the intersection with 2' of cover. At the intersection, the water and electrical pipes shall be aligned to attach to the new railing wall (above the box culvert). It is critical that both the waterline and electrical conduit be secured to the backside of the new concrete wall (straight section), with no gaps between the pipes and the concrete. This will require numerous angle fittings, to achieve the proper alignment. Irrigation work shall be coordinated with the wall construction; it is anticipated that multiple mobilizations may be required.

**Irrigation Adjustment (Elk):**

The existing irrigation components (water line and sprinkler heads) shall be removed within the limits of construction, and new sprinkler heads (4 total) will be installed adjacent to the new slope and ditch paving.

Subsection 623.33 shall include the following:

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Irrigation Reconstruction (Ursula)	Lump Sum
Irrigation Reconstruction (Elgin)	Lump Sum
Irrigation Adjustment (Elk)	Lump Sum

**END OF SECTION REVISION**

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## **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, tribraches, 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.

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.

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**REVISION OF SECTION 625  
CONSTRUCTION SURVEYING**

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 re-staking 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 Engineer may inspect the Contractor's surveying; however, such inspection will not relieve the Contractor of any responsibility for accuracy or completeness of work. All Contractor surveying inaccuracies, errors, or omissions shall be corrected at the Contractor's expense.

**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 Engineer in writing. No changes in given data or plans will be allowed unless approved by the Engineer in writing. All changes shall be documented by the contractor.

**625.10:** Pay Quantities Measurements. The Engineer will perform all interim and final measurements deemed necessary by the City to determine contract pay quantities. The Contractor shall establish and maintain Control points and stationing as required for these measurements.

**625.11:** Survey Records. Survey records shall be completed as the work is done. Field survey notes for construction surveying and checking by the Contractor shall be recorded in survey records in conformance with industry standards and acceptable practices.

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**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 or the Engineer for inspection or reproduction at all times. All survey records shall be transmitted to the City Surveyor's Office for inclusion into the project records before final project acceptance. All survey records shall be stamped with the seal of, and signed by, the responsible PLS.

Electronic submittal of survey records may be acceptable, please coordinate with the City Surveyor's Office.

**METHOD OF MEASUREMENT**

**625.12:** Construction surveying will not be measured but will be paid for per intersection as Each.

**BASIS OF PAYMENT**

**625.13:** Payment for construction surveying will be bid as an Each item 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 Engineer, will be made as the work progresses.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Construction Surveying	Each

Traffic control for construction surveying will be measured and paid for in accordance with Section 630.

**END OF SECTION REVISION**

**PERMITS AND LICENSES**

Unless otherwise specified, the Contractor shall procure all permits and licenses; pay all charges, fees, and taxes, including permits procured for this project by others; and give all notices necessary and incidental to the due and lawful prosecution of the work. The costs of these permits will not be paid for separately, but shall be included in the work.

Prior to beginning work, the Contractor shall furnish the Engineer with a written list of all permits required for the proper completion of the contract. The list shall clearly identify the types of permits that must be obtained before work on any particular phase or phases of work can be started. Copies of the fully executed permits shall be furnished to the Engineer upon request.

The Contractor shall obtain, but not limited to, the following permits:

Permits, Clearances, Etc.	Required By	Responsible	Notes
CCD Street Cut and ROW Occupancy Permit	CCD	Contractor	Apply through DES Construction Engineering at least two weeks prior to scheduled start of work. Traffic control plans and project schedule must be approved prior to permit application.
CCD Parks and Recreation Construction and Access Permit	CCDPR	Contractor	Anticipated start and completion date must be submitted with the permit.
CCD Construction Permit	CCD	Contractor	Pre-construction meeting with CCD Construction Engineering required prior to start of work.
APEN (Air Pollution Emissions Notice) Permit	CDPHE	Contractor	
CDPHE Groundwater Dewatering Permit	CCD	Contractor	

**END OF SECTION REVISION**

## **UTILITIES**

The Contractor shall perform work in accordance with Section 804 of the City and County of Denver, Department of Public Works, Standard Specifications for Construction, General Contract Conditions.

Prior to excavating, the Contractor shall locate all potential conflicts with existing buried utility facilities with the proposed construction. The Contractor shall comply with Article 1.5 of Title 9. CAS ("Excavation Requirements") when excavating or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least three (3) business days, not including the actual day of notice prior to commencing such operations. Contact the Utility Notification Center of Colorado (UNCC), use phone no. 1-800-922-1987 to have locations of UNCC registered lines marked by member companies.

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. All other underground facilities shall be located by contacting the respective company. Utility service laterals shall also be located prior to beginning excavation or grading.

If a conflict exists, the Contractor shall contact utility owners 5 days prior to potholing to allow their observation of potholing activities. The Contractor shall modify construction plans to avoid existing underground facilities as needed, and as approved by the Engineer.

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

**END OF SECTION REVISION**

**REVISION OF SECTION 630  
CONSTRUCTION TRAFFIC CONTROL**

Development of the MHT's, furnishing, placing and removing traffic control devices, flagging and Traffic Control Management will not be measured separately, but included in Each for Construction Traffic Control per Intersection.

Delete Subsection 630.16 and replace with the following:

Payment for Construction Traffic Control will be full compensation for furnishing, erecting, cleaning, maintaining, resetting, repairing, replacing, removing and disposing of construction traffic control.

Payment will be full compensation for developing and carrying out the MHT.

Payment will be full compensation labor, materials and equipment required for Traffic Control Management, Traffic Control Inspection and Flagging.

<b>Pay Item</b>	<b>Pay Unit</b>
Construction Traffic Control	Each

**END OF SECTION REVISION**

**MONTBELLO DITCH RAILING REPLACEMENTS**

**CDOT STANDARD SPECIAL PROVISIONS**

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**APPENDIX A**

**MGPEC VOLUME 1 - ITEM 9**

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**ITEM 9**  
**HOTMIX ASPHALT PAVEMENT (HMA)**  
**Stone Matrix Asphalt (SMA)**

**9.1 DESIGN INTENT**

These specifications include general requirements applicable to all types of plant mixed hot mix asphalt (HMA). Also included are requirements for Stone Matrix Asphalt (SMA). Reference to HMA shall also mean SMA is Included. This work consists of one or more courses of asphalt mixture constructed on a prepared foundation in accordance with specifications. The design intent is to provide pavement with adequate thickness and quality to provide a serviceable life of at least 20 years. It is also the intent to provide construction in accordance with these specifications with a high standard of practice. This item shall include all labor, equipment, and materials to manufacture, place and compact asphaltic concrete for pavement purposes.

<b>TEST PROCEDURE DEFINITIONS</b>	
CP-##	Colorado Department of Transportation: Field Materials Manual (Colorado Testing Procedures)
ASTM	American Society for Testing & Materials
AASHTO	American Association of State Highway & Transportation Officials
CP-L #####	Colorado Department of Transportation: Laboratory Manual of Test Procedures (Lab Testing Procedures)

When references to both an AASHTO and either a CP or CP-L and test procedure are given, The CP or CP-L shall be used, unless an Agency stipulated they will ONLY use and require AASHTO test procedures.

**9.2 MATERIALS**

The hot mix asphalt shall be composed of a mixture of aggregate, filler, hydrated lime and asphalt binder. Some mixes may require polymer modified asphalt binder. Some mixes may allow up to 25% reclaimed asphalt pavement (RAP) as approved by the **AGENCY**. All RAP introduced shall meet the requirements of section 9.2.5. Stone Mastic Asphalt (SMA) Mixtures are to be used in the top lift only.

NOTE: SMA specifications are adapted from the CDOT specification (2008) and incorporated throughout other sections of this specification.

### 9.2.1 Aggregate

Aggregates for HMA shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, or crushed slag. Excess of fine material shall be wasted before crushing. The material shall not contain clay balls, vegetable matter, or other deleterious substances and shall meet the following requirements.

**TABLE 9.2.1.1- AGGREGATE PROPERTIES**

Aggregate Test Property	Coarse: Retained on #4	Fine: Passing the #4
Fine Aggregate Angularity, CP-L 5113 Method A or AASHTO T 304 Note: Fine aggregate angularity does not apply to RAP aggregates		45% Min
Two Fractured Faces, CP-45 or ASTM D 5821 SG Mixtures Top and Middle Lifts Bottom Lifts SMA Mixtures	90% Min. 80% Min. 70% Min. 100% required	
LA Abrasion, AASHTO T 96	45% Max.	
Flat and Elongated (Ratio 5:1) %, AASHTO M 283	10% Max.	
Adherent Coating (Dry Sieving) ASTM D 5711	0.5% Max.	
Sand Equivalent. AASHTO-T 176		45% Min.
Micro Deval CP-L 4211 or AASHTO T 327	18% Max	

Reclaimed Asphalt Pavement material (RAP) shall be used only where specifically allowed and shall be of uniform quality and gradation with a maximum size no greater than the nominal aggregate size of the mix. Mixes shall not contain more than 25 percent RAP.

The Proposed Design Job Mix Formula (PDJMF) gradation shall be wholly within the control point gradation range set forth in the following applicable Table 9.2.1.2 for dense graded mix designs or Table 9.2.1.3 for Stone Matrix Asphalt (SMA). The Allowable Job Mix Formula (AJMF) gradation for production shall be the PDJMF gradation with the tolerances of section 9.13.2 applied. The PDJMF and the final

AJMF gradation for production shall report all sieve sizes listed in the applicable Table 9.2.1.2 or Table 9.2.1.3.

Mineral filler for the Stone Matrix Asphalt pavement shall be limestone dust and shall meet the requirements of this subsection and have a maximum Plasticity Index (AASHTO T90) of 4%.

The **CONTRACTOR** shall submit hydrometer analysis (AASHTO T88) for the gradation of mineral filler used in the SMA mixture.

**TABLE 9.2.1.2 – DENSE GRADED HMA GRADATION RANGE**  
(Percent by Weight Passing Square Mesh Sieves, CP-31, AASHTO T 11 & T 27)

Mixture Grading	SX (1/2" nominal)		S (3/4" nominal)		SG (1" nominal)	
Sieve Size	Control Points	Caution Zone*	Control Points	Caution Zone*	Control Points	Caution Zone*
1 1/2"					100	
1"			100		90-100	
3/4"	100		90-100		@	
1/2"	90-100		@		@	
3/8"	@		@		@	
#4	@		@		@	39.5
#8	28-58	39.1	23-49	34.6	19-45	26.8-30.8
#16	@	25.6-31.6	@	22.3-28.3	@	18.1-24.1
#30	@	19.1-23.1	@	16.7-20.7	@	13.6-17.6
#50	@	15.5	@	13.7	@	11.4
#200**	2.0-8.0		2.0-7.0		1.0-7.0	

\* The caution zone is a guideline only. It is recommended that mix design gradations go above the caution zone boundaries, on the "fine" side.

\*\* These limits shall include the required 1% of lime by weight.

@ These sieve sizes used only to determine the final Allowable Job Mix Formula (JMF) in accordance with 9.13.

**TABLE 9.2.1.3- SMA AGGREGATE GRADATION RANGE PROPERTIES**  
**(Percent by Weight Passing Square Mesh Sieves, CP-31, AASHTO T 11 & T 27)**

(Ref: CDOT Table 703-5)

Sieve Size	Stone Mastic Grading Designation (Percent by Weight Passing Square Mesh Sieves)			
	#4 Nominal	3/8" Nominal	1/2" Nominal	3/4" Nominal
1"				100
3/4"			100	90-100
1/2"	100	100	90-100	50-88
3/8"	100	90-100	50-80	25-60
#4	90-100	26-60	20-35	20-28
#8	28-65	20-28	16-24	16-24
#16	22-36			
#30	18-28	12-18	12-18	12-18
#50	15-22	10-15		
#100				
#200	12-15	8-12	8-11	8-11

9.2.2 Performance Graded Asphalt Binders

The **CONTRACTOR** shall provide to the **AGENCY** acceptable 'Certifications of Compliance' of each applicable asphalt binder grade from the supplier. Upon non-conformance with the specifications, the asphalt binder may be rejected as directed by the **AGENCY**. When production begins, the **CONTRACTOR** shall, upon request, provide to the **AGENCY** a one quart can of each specified asphalt binder.

Additionally, when requested, the **CONTRACTOR** shall provide the refinery test results that pertain to the asphalt binders used during production.

Asphalt binder shall meet the requirements of the Superpave Performance-Graded Binders (PG) as presented in Table 9.2.2 below.

**TABLE 9.2.2 -PROPERTIES OF PERFORMANCE GRADED BINDERS**

<b>Usage for each Binder Grade</b>	<b>PG 58-28</b>	<b>PG 64-22</b>	<b>PG 76-28</b>
Traffic Loading, Total 18 kip ESALs Over Design Life (Usually 20 Years)***	Low Volume (0-100,000)	100,000 to <10.0 Million	3.0 Million to <10 Million
Superpave Compactor Design gyrations Recommended (alternate) Usage	N <sub>design</sub> = 50 (75)	N <sub>design</sub> = 75 (100)	N <sub>design</sub> = 100
<b>Property of Binder Grade</b>	<b>PG 58-28</b>	<b>PG 64-22</b>	<b>PG 76-28</b>
Flash Point Temperature, °C, AASHTO T 48	230 Min.	230 Min.	230 Min.
Viscosity at 135 °C, Pas, ASTM D 4402	3 Max.	3 Max.	3 Max.
Dynamic Shear, Temperature °C, where C'/Sin δ @ 10 rad/sec. ≥ 1.00 Kpa, AASHTO TP 5	58 ° C	64 ° C	76 ° C
<b>Rolling Thin Film Oven Residue Properties, AASHTO T 240</b>			
Mass Loss, %, AASHTO T 240	1.00 Max.	1.00 Max.	1.00 Max.
Dynamic Shear, Temperature °C, where G'/Sin δ @ 10 rad/sec. ≥ 2.20 Kpa, AASHTO TP 5	58 ° C	64 ° C	76 ° C
Elastic Recovery <sup>1</sup> , 25°C, % Min.*	N/A	N/A	50 Min.
<b>Pressure Aging Vessel Residue Properties, Aging Temperature 100 °C AASHTO PP1</b>			
Dynamic Shear, Temperature °C, where G'/Sin δ @ 10 rad/sec. ≤ 5,000 Kpa, AASHTO TP 5	19 ° C	25 ° C	28 ° C
Creep Stiffness, @ 60 sec. Test Temperature in °C, AASHTO TP 1	-18 ° C	-12 ° C	-18 ° C
S, Mpa, AASHTO TP 1	300 Max.	300 Max.	300 Max.
m-value, AASHTO TP 1	0.300 Min.	0.300 Min.	0.300 Min.
**Direct Tension Temperature in °C, @ 1.0 mm/min., Where Failure Strain >1.0%, AASHTO TP 3	-18 ° C	-12 ° C	-18 ° C

\* Elastic Recovery by Task Force 31, Appendix B Method

\*\* Direct tension measurements are required when needed to show conformance to AASHTO MP.1

\*\*\* AGENCY is to determine PG Binder

### 9.2.3 Additives – Hydrated Lime

Lime shall be added at the rate of 1% by dry weight of the aggregate and shall be included in the amount of material passing the No. 200 sieve. Hydrated lime for aggregate pretreatment shall conform to the requirements of ASTM C 207, Type N. In addition, the residue retained on a 200-mesh sieve shall not exceed 10% when determined in accordance with ASTM C 110. Drying of the test residue in an atmosphere free from carbon dioxide will not be required.

### 9.2.4 Tack Coat

The emulsified asphalt, for Tack Coat shall be CSS-1h or SS-1h and conform to AASHTO M208 or M140, respectively.

### 9.2.5 Reclaimed Asphalt Pavement

Reclaimed Asphalt Pavement (RAP) may be allowed in the HMA mixture by the **AGENCY**. It shall be of uniform quality and gradation with a maximum size particle no greater than the maximum size allowed in the HMA mixture. HMA mixtures containing RAP shall meet the same gradation requirements as a virgin HMA mix. The AGENCY may allow mixtures with a maximum of 20% RAP may be allowed in the top lift of any asphalt pavement, and a maximum of 25% RAP may be allowed in layers below the top lift, RAP is not allowed in Stone Mastic Asphalt Mixtures, except by agreement by the **AGENCY**.

The reclaimed asphalt pavement shall meet all the requirements for HMA pavement, as contained herein. The **CONTRACTOR** shall have an approved mix design for the amount of RAP to be used prior to placement.

The **AGENCY** may require the **CONTRACTOR** to maintain separate stockpiles for each type of RAP material. All processed material shall be free of foreign materials and segregation shall be minimized. Any RAP material that cannot be readily broken down in the mixing process, and/or affects the paving operation, shall be processed prior to mixing with the virgin material.

Fine Aggregate Angularity requirements shall not apply to any RAP aggregate. The RAP will not contain clay balls, vegetable matter, or other deleterious substances.

Verification testing for asphalt content and gradation will be performed on RAP at the frequencies listed in section 9.5.2, below. The **AGENCY** may request

the mix supplier's testing results on RAP at any time. In addition, the mixture shall be tested for properties as listed in Table 9.15

**When the use RAP is allowed, the following additional conditions shall apply:**

9.2.5.1. The processed RAP must be 100 percent passing the 1¼" sieve. The aggregate obtained from the processed RAP shall be 100% passing the 1" sieve. The aggregate and binder obtained from the processed RAP shall be uniform in all the measured parameters in accordance with the following schedule:

**Table 9.2.5.1 RAP AGGREGATE UNIFORMITY TOLERANCES**

<u>Element</u>	<u>Uniformity*</u>
Binder Content	0.5
% Passing ¾"	4.0
% Passing ½"	4.0
% Passing 3/8"	4.0
% Passing #4	4.0
% Passing #8	4.0
% Passing #30	3.0
% Passing #200	1.5

\* Uniformity is the Maximum allowable Standard Deviation of test results of processed RAP.

9.2.5.2. The **CONTRACTOR** shall have an **approved RAP Quality Control (QC) Plan** that details how the RAP will be processed and controlled. The QC plan must address the following:

9.2.5.2. A. RAP Processing Techniques. This requires a schematic diagram and narrative that explains the processing (crushing, screening, and rejecting) and stockpile operation for normal plant operation or a specific project.

9.2.5.2. B. Control of RAP Asphalt Binder Content: - Minimum Testing Frequency: 1/1,000 tons of processed RAP material (minimum 3 tests) for recent production of the mix type.

9.2.5.2. C. Control of RAP Gradation (CP31 or AASHTO T-30):

Minimum Testing Frequency: 1/1,000 tons of processed RAP material (minimum 3 tests) for recent production of the mix type.

9.2.5.2. D. Process Control Charts shall be maintained for binder content and each screen listed, during addition of any RAP material to the stockpile. The **CONTRACTOR** shall maintain separate control charts for each RAP stockpile. The control charts shall be displayed and shall be made available to the **AGENCY** upon request.

#### 9.2.5.3 Example of RAP QUALITY CONTROL PLAN

9.2.5.3. A Initial quality control of the reclaimed asphalt pavement shall be performed prior to and during crushing. Material for reclamation shall be separated by quality and source before being accepted for processing. Reclaimed asphalt must be free of concrete, dirt and organic materials... These stockpiles shall be built from the ground up, completely mixing all loads as they come in.

9.2.5.3. B Crushing of the reclaimed asphalt pavement shall be accomplished by means of a cone crusher and a screen deck. Oversize material shall be to be rejected on a  $\frac{3}{4}$ " scalping material, which reprocesses the material through the cone additional times. The processed material shall be stockpiled at the crushing facility and kept in separate piles and separate from other products to prevent intermingling of products, as well as the feed bins to prevent intermingling of the aggregates.

9.2.5.3. C The reclaimed asphalt pavement material shall be sampled during the crushing operations according to AASHTO T 2 at frequencies greater than 1/1000 tons and tested for gradation and asphalt content in accordance with AASHTO T 27 AND T11, and AASHTO T 308. Testing shall be done randomly on a daily basis to ensure conformance to specifications.

9.2.5.3. D The reclaimed asphalt pavement material at the asphalt plant shall be again sampled and tested according to the appropriate procedures to ensure that the asphalt content and gradation meet specifications and represent initial quality control data. Once data is collected, a statistical analysis shall be performed to determine the blend for the asphalt mixture design. This analysis shall be provided with the Asphalt Mixture Design submittal. The RAP will meet the Uniformity Specification of Table 9.2.5.1 above.

9.2.5.3. E The RAP system at the asphalt plant consists of a feed bin with a variable speed motor controlled by the plant computer, which ensures the proper quantity of RAP material called for by the mix design. Material is delivered to the asphalt-mixing chamber of the asphalt plant by means of conveyor belts. The RAP material falls from one conveyor to another through a shaker screen that serves to break up any RAP material that has recompacted. Any oversize material shall be rejected at the shaker screen. While in production, the front-end loader shall work the full face of the stockpile, to ensure a representative batch is being produced.

9.2.5.3. F Prior to starting a project and at any other time necessary, the RAP feed system shall be calibrated by placing an amount of RAP measured by certified external scales into the feed bin. That measured material is fed from the RAP bin across the belt scales. The weights are compared and, if outside of accepted tolerances for the blending system, adjustments are made by the plant-blending computer. This process is the same as for all other components of the mix design.

### **9.3 MIX DESIGN AND PLANT PRODUCED MIXTURE REQUIREMENTS**

The mix design materials shall be those listed in Section 9.2 and used for the project. No substitutions are allowed during production, unless approved by the **AGENCY**.

The **AGENCY** shall indicate on MGPEC Form #9 the project specific criteria concerning mix design method, traffic level, asphalt binder type, mixture grading, and maximum amount of RAP allowed. This information shall be provided on MGPEC Form #9, "Requirements for Hot Mix Asphalt (HMA)", or other Contract bidding documents.

Grading SG (1-inch nominal aggregate) shall only be designed using the 150 mm Superpave molds. Hveem Stability and Lottman test are not required for Grading SG mixtures. Grading S and SX shall be designed using 100 mm Superpave molds.

9.3.1 Superpave Mixture Design Method

The **CONTRACTOR** shall submit a Proposed Design Job Mix Formula (PDJMF) for each mixture required by the Contract. The mixture design shall be determined using AASHTO T-312 or Colorado Procedure CP-L 5115 for the Superpave Method of Mixture Design. Guidance is provided in "Superpave Level 1 Mix Design" SP-2 published by the Asphalt Institute. Mixture design and field control testing shall meet the following requirements of Table 9.3.1a for Dense Graded HMA.

Mixture design and field control testing of SMA shall meet the following requirements of Table 9.3.1b.

**TABLE 9.3.1a SUPERPAVE MIXTURE PROPERTIES FOR DENSE GRADED HMA**

Property or Test	Traffic Levels (ESALs)		
	Low (0-100,000)	Medium (100,000 to <3.0 Million)	High (3.0 Million to <30 Million)
Traffic Loading, Total 18 kip ESALs Over Design Life (Usually 20 Years)	Low (0-100,000)	Medium (100,000 to <3.0 Million)	High (3.0 Million to <30 Million)
Design gyrations, N <sub>design</sub> (Air Void: 3.5% to 4.5%) (See Note 1,2)	50	75	100
Air Voids in Total Mix (VTM) CPL 5115 or AASHTO T 312	(See Note 1)	(See Note 1)	(See Note 1)
Hveem Stability CP-L 5106 or AASHTO T 246 (Grading S & SX only) (See Note 3)	N/A	28 Min.	30 Min.
Voids Filled with Asphalt (VFA), MS-2	70-80	65-78	65-75
Lottman, Tensile Strength Ratio, % Retained, CP-L 5109 or AASHTO T 283, Method B	80 Min.	80 Min.	80 Min.
Lottman, CP-L 5109 or AASHTO T 283 Dry Tensile Strength, psi	30 Min.	30 Min.	30 Min.
VMA %. CP-48 or AASHTO PP 19 (See notes 2,3,4)	Minimum VMA criteria applies to the mix design only (Table 9.2.1.2). The minimum VMA criteria shall be linearly interpolated based on actual air voids. See 9.13 for production tolerances		

Note 1: Select the target Job Mix Optimum Binder Content for HMA gradings as close to 4.0% air voids as possible (3.5% to 4.5% air voids).

VTM is also referred to as Pax in CPL 5115, and %Gmmx in T 312

Note 2: Maximum Theoretical Specific Gravity of mix by CP-51 or AASHTO T 209.

Note 3: Refer to Section 9.13 for production tolerances.

Note 4: VMA shall be based on tests of the Bulk Specific Gravity of the Compacted Mix (CP-L 5103 or AASHTO T 166) and Aggregate (AASHTO T 84 & T 85), and calculated according to CP-48 or AASHTO PP 19. All mixes shall meet the minimum VMA specified in Table 9.3.2, below.

**Table 9.3.1b SUPERPAVE MIXTURE PROPERTIES FOR OPEN GRADED SMA**

Property	Test Method	Value for SMA
Lab compaction (Revolutions) $N_{Design}$	CPL 5115 or AASHTO T 312	100
Air Voids, percent at: $N_{Design}$ (See Note 1)	AASHTO T 312	3.0 – 4.0
Hveem Stability	CP-L 5106 or AASHTO T 246	30 Min.
Accelerated Moisture Susceptibility, tensile strength Ratio, (Lottman)	CPL 5109 or AASHTO T 283, Method B	80 Min.
Dry Split Tensile Strength, psi	CPL 5109 or AASHTO T 283, Method B	30 Min.
Grade of Asphalt Binder	n/a	PG 76-28
Voids in the Mineral Aggregate (VMA) %, minimum (see note 2)	CP 48 or AASHTO PP 19	17
Draindown at Production Temperature	AASHTO T 305	0.3 maximum
% $VCA_{MIX}$ (See Note 3)	AASHTO PP 41-02	Less than $VCA_{DRC}$ (See Note 4)

General Note: Copies of AASHTO PP 41-02 and MP 8-02 (for designing SMA mixes) can be obtained from the CDOT Region Materials or the AGENCY

Note 1: Select the target Job Mix Optimum Binder Content for SMA grading at 3.0% to 4.0% air voids

Note 2: VMA shall be based on tests of the Bulk Specific Gravity of the Compacted Mix (CP-L 5103 or AASHTO T-166) and Aggregate (AASHTO T 84 & T 85), and calculated according to CP-48 or AASHTO PP 19. All mixes shall meet the minimum VMA specified in Table 9.3.2, below

Note 3:  $VCA =$  Voids in the Coarse Aggregate

Note 4:  $DRC =$  Dry-Rodded Condition

**TABLE 9.3.2 MINIMUM VOIDS IN MINERAL AGGREGATE (VMA) for Dense Graded HMA & Open Graded SMA, %**

Nominal Maximum* Particle Size	Air Voids ++		
	3.5%	4.0%	4.5%
1"	12.2	12.7	13.2
¾"	13.2	13.7	14.2
½"	14.2	14.7	15.2
SMA	17.0	17.0	17.0

\* Nominal Maximum Particle Size is defined as one sieve size larger than the first sieve to retain more than 10%, but shall not exceed the 100% passing size. The Nominal Maximum Particle Size can vary during mix production even when the 100% passing size is constant.

++ Minimum VMA criteria apply to the mix design only. The minimum VMA criteria shall be linearly interpolated based on actual air voids. See Section 9.13 for tolerances.

## 9.4 MIXTURE DESIGN SUBMITTALS

### 9.4.1 General Requirements

The **CONTRACTOR** shall submit all mixture designs, Certificates of Compliance, and laboratory data to the **AGENCY** for approval at least 7 calendar days before construction is to begin. The mix design (Proposed Design Job Mix) must be approved by the **AGENCY** prior to the start of construction.

Mixture designs shall be performed in a materials laboratory under the direct supervision of and shall be stamped and signed by a Professional Engineer licensed in the State of Colorado and practicing in this field. In addition, the **CONTRACTOR** shall submit, as part of the mixture design, laboratory data documents to verify the following:

1. Source of materials.
2. Gradation, specific gravity, source and description of individual aggregates and the final blend.
3. Aggregate physical properties.
4. Source and Grade of the Performance Graded Binder (PG Binder).
5. Proposed Design Job Mix: aggregate and additive blending, final gradation shown on 0.45 power graph, optimum asphalt content.
6. Mixing and compaction temperatures used.

7. Mixture properties determined at a minimum of four asphalt contents and interpolated at optimum and graphs showing mixture properties versus asphalt content.

**AGENCY** approval of any mix design for HMA or SMA must be given prior to placement,

The **AGENCY** reserves the right to verify the **CONTRACTOR's** mix design for each hot mix asphalt grading utilizing materials actually produced and stockpiled. If requested, the **CONTRACTOR** shall provide, at no cost, a sufficient quantity of each aggregate, mineral filler, RAP, and additive for the required laboratory tests, by the **AGENCY**. The **AGENCY** may request a Certificate of Conformance or Certificate of Compliance at any time on any material used. The **AGENCY** may request the mix supplier's testing results on RAP at any time.

#### 9.4.2 Change in Source or Grade

Should a change in the source of Lime occur, or more than one temperature grade change on either the high or low end of Performance Graded Asphalt Binders - (PG Binder) occur, a one point verification test (at optimum asphalt content) of the mix must be performed to verify that the applicable criteria shown on 9.3.1a (Dense Graded HMA) or 9.3.1b (SMA), and Table 9.3.2 (VMA), is still met. If this testing shows noncompliance, a new Design Job Mix will be established and approved by the **AGENCY** before the new Performance Graded Asphalt Binders (PG Binder) or Lime source is used. Any change in aggregate type or source will require a new mix design. The one point verification test may be performed on lab mixed samples or on plant mixed samples

#### 9.4.3 Mix Production Verification

Production verification shall occur prior to the start of the project. The production verification shall be performed by LABCAT Level C certified technicians with current Certification to verify the volumetric properties of the mix. If the mix has been produced for another project within the last 90 days, data from that project can be submitted for this verification. Volumetric properties of the mix verification testing shall be within the following tolerances compared to the Proposed Design Job Mix. The mix verification test reports shall be submitted to the **AGENCY** prior to mix placement.

**TABLE 9.4.3 MIX DESIGN VERIFICATION TOLERANCES**

Air Voids	+/- 1.2%
VMA	+/- 1.2%
Asphalt Binder Content	+/-0.3%
Stability	Applicable minimum

The tolerances in this table are for mix design verification only. See section 9.13 for production tolerances.

#### 9.4.4 Pre-paving Meeting

**AGENCY** may require a pre-paving meeting of all parties involved in supply, haul, laydown inspection, quality control and quality acceptance of HMA. Areas of responsibility and contact names and numbers should be shared. A construction (joint) plan will be submitted at the pre-paving meeting, see section 9.9 for joint requirements. Form 9.1 provided at the end of this specification is an example of a pre-paving meeting agenda.

A minimum of two weeks prior to the proposed use of any Stone Matrix Asphalt pavement on the project, a pre-paving conference will be conducted. Prior to that time, the **CONTRACTOR** shall submit to the **AGENCY**, a mix design meeting the appropriate specification requirements for the items in Table 9.3.1b.

## 9.5 **EQUIPMENT**

### 9.5.1 Mixing Plant

The mixing plant shall be capable of producing a uniform material, have adequate capacity, and be maintained in good mechanical condition. Defective parts shall be replaced or repaired immediately if they adversely affect the proper functioning of the plant or plant units, or adversely affect the quality of the HMA.

Dust, smoke, or other contaminants shall be controlled at the plant site to meet all air quality requirements in the "Colorado Air Quality Control Act," Title 25, Article 7, CRS and regulations promulgated there under.

Acceptable safety equipment, approved by the **AGENCY**, shall be provided by the **CONTRACTOR** to accommodate sampling and testing.

### 9.5.2 Hauling Equipment

Trucks used for hauling HMA material shall have tight, clean, smooth beds, or functional and maintained conveyor belt bottom that is thinly coated with a minimum amount of paraffin oil, lime solution, or other approved release agent. Petroleum distillates such as kerosene or fuel oil will not be permitted. Each truck shall have a cover of canvas or other suitable material to protect the mixture from the weather and excessive temperature loss or cooled layers of mix in truck as covered in 9.6.3 Hauling, later in this specification.

### 9.5.3 Bituminous Pavers

Self-propelled pavers shall be provided for full lane width paving capable of spreading and finishing the HMA, material in full lane widths applicable to the typical section and thicknesses shown in the Contract and shall be equipped with:

1. anti-segregation devices,
2. A vibratory screed assembly capable of being heated.

Pavers used for shoulders, patching and similar construction, not requiring fine grade control, shall be capable of spreading and finishing courses of HMA material in widths shown in the Contract without segregation.

The paver's receiving hopper shall have sufficient capacity for a uniform spreading operation and shall have an automatic distribution system that will place and spread the mixture uniformly in front of the screed.

The paver shall be capable of operating at forward speeds consistent with uniform and continuous laying of the mixture. Stop and go operations of the paver shall be avoided. The screed or strike-off assembly shall produce the specified finished surface without tearing, shoving, or gouging the mixture. Self-propelled pavers shall be equipped with automatic screed controls with sensors capable of sensing grade from an outside reference line, and maintaining the screed at the specified longitudinal grade and transverse slope. The sensors may be contact or non-contact type devices. The sensor shall be constructed to operate from either or both sides of the paver and shall be capable of working with the following devices when they are required for the situation:

1. Grade control device at least 30 feet in length.

2. Joint matching device
3. Adequate length of control line and stakes, if no other type of geometric control is present
4. A straight edge at least 10 feet in length will be available to verify the crown on the screed, at the request of the **AGENCY**

The controls shall be capable of maintaining the screed at the specified transverse slope within plus or minus 0.1 percent. Automatic mode should be used where possible. If the automatic controls fail or malfunction, the equipment may be operated manually for the remainder of the normal working day, provided specified results are obtained.

If the **CONTRACTOR** fails to obtain and maintain the specified surface tolerances, the paving operations shall be suspended until satisfactory corrections, repairs, or equipment replacements are made.

Placement of HMA on a waterproofed bridge deck shall be accomplished with equipment that will not damage the membrane or protective covering.

## **9.6 MANUFACTURE**

### **9.6.1 Preparation of Aggregates**

Heating and drying of the aggregates shall be accomplished without damaging the aggregate. Hydrated lime shall be added to achieve complete and uniform coating of the aggregate, in accordance with one of the following methods:

- a) Lime Slurry Added to Aggregate: The hydrated lime shall be added to the aggregate in the form of slurry and then thoroughly mixed in an approved pugmill. The slurry shall contain a minimum of 70 percent water by weight.
- b) Dry Lime Added to Wet Aggregate: The dry hydrated lime shall be added to wet aggregate (a minimum of three percent above saturated surface dry) and then thoroughly mixed in an approved pug mill.

The lime-aggregate mixture may be fed directly into the hot plant after mixing or it may be stockpiled for not more than 90 days before introduction into the plant for mixing with the asphalt binder. The hydrated lime may be added to different sized aggregates and stockpiled by adding 75 percent of the lime to the aggregate passing the No.4 sieve and 25 percent to the aggregate retained on the No. 4 sieve.

A minimum of 1 percent hydrated lime by weight of the combined aggregate shall be added to the aggregate for all Dense Graded and Open Graded Stone Matrix Asphalt mixtures.

9.6.2 Mixing

The dried aggregates and asphalt binder shall be combined in the mixer in the quantities required to meet the design job mix. The materials shall be mixed until the aggregate is completely and uniformly coated, and the asphalt binder is uniformly distributed throughout the aggregate, Baghouse fines shall be fed back to the mixing plant in a uniform and continuous manner to maintain uniformity in the mixture. The Baghouse, fines feeder, auger, and related equipment, shall be in good working condition and operated in accordance with manufacturer's recommendation. If the **AGENCY** determines that non-uniform operation of the equipment is detrimental to the mixture, it may suspend all paving operations until the **CONTRACTOR** takes appropriate action.

The minimum temperature of the mixture when discharged from the mixer shall be as shown in the following table:

**TABLE 9.6.2.1- MIXTURE DISCHARGE TEMPERATURES**

Asphalt Grade	Minimum Discharge Temperature	Maximum Discharge Temperature
PG 58-28	275° F	310° F
PG 64-22	290° F	325° F
PG 76-28*	318° F	326° F

\* Contractor or Binder supplier must supply production temperature as require by their product

The **CONTRACTOR** may provide refinery information that recommends revised discharge temperatures depending on the base binder grade or source being used. HMA mix shall be produced at the lowest temperature within the specified

temperature range that produces a workable mix and provides for uniform coating of aggregates (95 percent minimum in accordance with AASHTO T 195), and that allows the required compaction to be achieved.

HMA mix may be stored provided that any and all characteristics of the mixture are not altered by such storage. If storing or holding of the mixture causes segregation, excessive heat loss, or adversely affects the quality of the finished product, corrective action shall be taken. Unsuitable mixture shall be disposed of at the **CONTRACTOR's** expense.

When placing hot mix asphalt over bridge decks covered by waterproofing membrane, the minimum temperature of the mixture, when rolling operations begin, shall be 250 ° F. The job mix temperature may be increased up to 30 ° F to obtain this temperature.

The mineral filler for SMA shall be stored in a separate silo and added automatically in the correct proportion. The mineral filler addition equipment shall be electronically or mechanically interlocked to the aggregate feed sensors so that the proper amount of mineral filler is added whenever SMA is produced. The SMA mineral filler shall be added at the same point the asphalt binder is added to the aggregate.

#### 9.6.3 Hauling

Each truck shall use full covers (tarps) to completely protect the mix during transport at all times. The **AGENCY** can reject any mix, which shows an excess or deficiency of asphalt cement, damage due to burning or overheating, an improper gradation, or thermal segregation with cold areas 10° F below the minimum discharge temperature.

### 9.7 TACK COAT

Prior to placement of HMA, a tack coat shall be applied to all existing concrete and asphalt surfaces. The material shall be in accordance with 9.2.4. The emulsified asphalt shall be diluted 1:1 with water and applied at  $0.10 \pm 0.01$  gallons per square yard of diluted material. The **AGENCY** may direct other application rates to match the age of

condition of the surface. The surface prior to receiving the tack coat shall be dry and cleaned by sweeping, or other approved method, until dust, debris, and foreign matter are removed. The tack coat shall then be applied uniformly by squeegee, brooms, or distributor. Prior to paving, all water must have evaporated from the tack coat. Contaminated areas shall be cleaned and tack coat shall be reapplied.

Prior to placement of SMA, tack coat between the existing pavement and Stone Matrix Asphalt pavement shall be placed at a rate between 0.03 and 0.05 gallons per square yard

**9.8 PLACEMENT**

Hot mix asphalt shall be placed only on approved, properly constructed surfaces that are free from loose material, water, frost, snow or ice. The hot mix asphalt and tack coat shall be placed in accordance with the temperature limitations of Table 9.8 and only when weather conditions permit the pavement to be properly placed and finished as determined by the **AGENCY**. Placement temperature as stated shall be increased by 5° F for each 10 miles per hour wind velocity to a maximum increased minimum placement temperature of 70° F.

**TABLE 9.8 MINIMUM AIR and SURFACE TEMPERATURES  
LIMITATIONS for MIX PLACEMENT (HMA)**

Compaction Layer Thickness	Top Layer of Pavement*		Lower Layers *	
	PG 58-28 PG 64-22	PG 76-28	PG 58-28 PG 64-22	PG 76-28
<2 inches (not recommended)	60° F	75° F	N/A	N/A
2 inches to <3 inches	50° F	65° F	40° F	50° F
> 3 inches	50°F	50° F	40° F	40° F
SG mix only	N/A	N/A	38° F	38° F

\*Air temperature is taken in the shade. Surface temperature is taken on the subgrade or base. The **AGENCY** may not waive the above temperature limitations for PG 76-28.

The mixture shall not be placed at a temperature lower than 245° F for mixes containing PG 58-28 or PG 64-22 asphalt, and 290 °F for mixes containing polymer modified

asphalt binder. Mix which is too cold or damaged by weather will be rejected.

The mixture shall be placed on an approved surface, spread and struck off to obtain the required grade and elevation after compaction. The minimum lift thickness shall be **at least three times (preferably four times) the nominal particle size**. The un-compacted mixture should be placed approximately 10-25 percent thicker than the existing surrounding mat to account for compaction based on the materials being placed. Raking is discouraged and will not be allowed except to correct major problems of grade and elevation. Casting or raking that causes any segregation will not be permitted.

On areas where the use of mechanical spreading and finishing equipment is impracticable, the mixture shall be carefully dumped, spread, raked, screeded, and luted by hand tools to the required compacted thickness plus approximately 25 percent based on the materials being placed. Carefully move or minimally work the HMA mix with the use of rakes, lutes, or shovels to avoid segregation. Mixtures made with modified asphalt binder require more rapid completion of handwork areas than for normal mixtures. Hauling and placement sequences shall be coordinated so that the paver is in constant motion. Excessive starting and stopping shall not be allowed. A construction joint shall be placed any time the paver stops, and the screed drops enough to cause a surface dip in violation of section 9.13.1, Surface Tolerances; or the mat temperature falls below that allowed in section 9.12, Compaction. Bituminous pavers shall be used to distribute the mixture either over the entire width or over such partial width as may be practicable. Echelon paving will be permitted.

#### 9.8.1 SMA PLACEMENT & Compaction

A Roller Pass Study (RPS) for Density and 1000 foot demonstration control strip are required for placement of lifts less than or equal to 1.5 inch thick, optional for thicker lifts.

##### 9.8.1.A For Thin Lift SMA less than or equal to 1.5 inch thick

In-place density shall be determined through the completion of a Roller Pass Study (RPS) to be conducted during placement of the required 1000-foot demonstration control strip. The RPS will determine the necessary roller compaction process needed to produce a minimum pavement density of 94 percent of theoretical maximum density (RICE). During the RPS, a minimum of three sets of three 4-inch diameter cores each shall be taken to measure SMA mat density for the various sections

of the RPS. All coring shall be completed by the **CONTRACTOR** and submitted to the **AGENCY**. The densities of the three cores will be averaged to produce the density for each RPS section tested.

Full production of the thin SMA shall not begin until density test results are determined and the project compaction process is established by the **CONTRACTOR** and approved by the **AGENCY**. The approved compaction process established from the RPS shall be used for the duration of the thin SMA paving. Changes to the thin SMA mixture will be reviewed and a new RPS may be required.

Using the same method for determining density during the RPS, density will be determined daily for each day of full production and tested to confirm pavement density. If a daily density check shows density below 92 percent of RICE, the **CONTRACTOR** shall stop production and the **CONTRACTOR** will again complete a RPS to establish the necessary compaction process. The **CONTRACTOR** will be allowed two daily density checks below 92 percent of RICE to be addressed in this manner during the project. All subsequent daily checks that identify locations having density below 92 percent of RICE shall be removed and replaced and a new RPS shall be completed and approved prior to again beginning production. Thin SMA density requirements will be enforced when the SMA mix design gradation and specified lift thickness are in accordance with or exceed the 3:1 requirements for the ratio of nominal maximum aggregate size to lift thickness.

The **CONTRACTOR** shall submit a plan for a Roller Pass Study (RPS) to the **AGENCY** for approval. Upon approval by the **AGENCY**, the **CONTRACTOR** shall perform a RPS. The plan for the RPS shall include, but is not limited to the following:

- Number, size, and type of rollers.
- Amplitude, frequency, size and speed of vibratory rollers.
- Temperature of mixture being compacted.
- Roller patterns.

The method of measuring density will be by roller passes. If a density

element is based on a RPS, the Pay Factor shall be as shown in section 9.14.3.

9.8.1.B For SMA lifts greater than 1.5 inch thick.

If in the opinion of the **AGENCY**, the roller pass study presented by the **CONTRACTOR** is inadequate, then the **CONTRACTOR** shall modify the compaction procedures as directed.

9.8.1.C Before Proceeding with SMA placement, the **CONTRACTOR** shall demonstrate the ability to produce and place a satisfactory mix.

The actual work may proceed when a full lane width demonstration control strip, having a minimum length of 1000 feet has been successfully placed. The **CONTRACTOR** shall determine properties (Superpave Air voids, VMA, in-place density, and Hveem Stability) of the project produced mix that is used in the demonstration control strip and provide the results to the **AGENCY**. No other SMA production or placement will be allowed until densities are determined. If the material in the demonstration control strip is not in close conformity with the specifications, the demonstration control strip will be removed and replaced at the **CONTRACTOR**'s expense. The **AGENCY** will designate the location of the control strip.

SMA mixture shall be transported and placed on the roadway without drain-down or flushing. All flushed areas behind the paver shall be removed immediately upon discovery. If more than 50 square feet of flushed SMA pavement is ordered removed and replaced in any continuous 500 linear feet of paver width laydown, operations shall be discontinued until the source of the flushing has been found and corrected. The **AGENCY** will designate the depth and area of all flushed areas requiring removal and replacement. All costs associated with the removal and replacement of the flushed areas shall be at the **CONTRACTOR**'s expense.

Stone Matrix Asphalt Pavement shall be placed and compacted in accordance with the temperatures listed in table 9.8 or as revised for the project.

The relative compaction for all SMA mixtures will be measured from roadway cores in accordance with CDOT-CP 44 or AASHTO T-166, Method B, unless the SMA mixture is being placed on a structure (bridge deck) in which case the **AGENCY** may specify that nuclear gauge measurements be used.

When cores are used, the **CONTRACTOR** shall provide all labor and equipment for the coring operation and filling the core holes. When nuclear density gauges are used, the tests will be performed in accordance with CDOT-CP 81 or ASTM D 2950 and CDOT-CP 82 or AASHTO T 230.

In-place density for SMA shall be  $95 \pm 2$  percent of the SMA Mix maximum specific gravity as measured according to Maximum theoretical value (Rice) (CDOT-CP 51 or AASHTO T 209).

## 9.9 LONGITUDINAL JOINTS

The longitudinal joints in both a new pavement and an overlay pavement layer shall offset the joint in the layer immediately below by a minimum of 6 inches. The joints in any pavement layer shall not fall in a wheel track or path. The joints in the top layer of new pavement, not built on top of an existing pavement, shall be located on lane lines, or as shown on the plans. Longitudinal joints shall be minimized, where feasible, with wide paving pulls or echelon paving. Joints shall be parallel to the flow of traffic and shall not cross any centerline, lane line, or edge line unless approved by the **AGENCY**. The **CONTRACTOR** shall submit, prior to paving, a joint plan and pavement marking plan showing locations and the methods to establish a field control line. The **AGENCY** must approve such plans prior to paving. The **CONTRACTOR** shall use a continuous string line to delineate longitudinal joints during paving as shown on the joint plan. All string lines shall be removed at the end of each day's paving.

The free edge of the paved pass shall be laid as straight as possible, to the satisfaction of the **AGENCY**. This joint, if cold, shall be tack coated prior to placement of adjacent paving.

The new compacted mat shall overlap the previously placed mat no more than 1.5 inches. Excess overlap or thickness shall not be raked or cast onto the new mat, but shall be wasted by pulling back and removing. The hot edge shall be blocked or bumped in a smooth line consistent with the previous longitudinal edge. Minor raking will only be allowed to correct major grade problems or provide mix around manholes and meter covers. The longitudinal joint shall be rolled from the hot side and overlap the joint by approximately 6 inches on the cold side.

#### **9.10 TRANSVERSE JOINTS**

The **CONTRACTOR** shall submit, prior to paving, a joint plan showing locations and the methods to be used to construct transverse joints. The **AGENCY** must approve such plans prior to paving. Placing of the HMA shall be continuous with a minimum of transverse joints, and rollers shall not pass over the unprotected end of a freshly laid mixture. Transverse joints shall be formed by cutting back on the previous run to expose the full depth of the course. Tack coat material shall be applied to contact surfaces of all joints just before additional mixture is placed against the previously compacted material. The end of transverse joints shall be located so they will be constructed with a full head of mix in front of the screed. When butt joints are constructed, runoff boards shall be used to support the roller on the downstream side of the joint. All tapered sections, rounded edges and segregated areas shall be removed to achieve a vertical face at the butt joint before paving is restarted.

When a temporary tapered joint is required for temporary traffic access, the ramp shall be removed back to a full depth section before paving is restarted.

When restarting paving operations, the paver screed shall be placed on the starter block on the completed side of the transverse joint. The starter block should be approximately 25% greater than the thickness of the existing completed mat, so that adequate grade and compaction can be achieved on starting the paving operation. The screed should be nulled (angle removed) when on starting blocks and an up angle of attack set. Proper head of mix should be introduced into the paver prior to starting. The new compacted (downstream) side of the joint may be up to 3/16 inches higher than the old (upstream) side. Raking of this joint shall not be allowed except to correct major grade problems. The surface tolerance at the transverse joint must be verified by the **CONTRACTOR**

with a 10-foot straight edge before the paver is more than 100 feet from the joint. If the surface tolerance is not within the 3/16", the **CONTRACTOR** shall make corrections before proceeding

### **9.11 SEGREGATION**

The asphalt mixture shall be transported and placed on the roadway without segregation. All segregated areas shall be removed immediately and replaced with specification material before the initial rolling. If more than 50 square feet of segregated pavement is removed and replaced in any continuous 500 linear feet of paver width laydown, operations shall be discontinued until the source of the segregation has been determined and corrected.

The **AGENCY** will visually determine areas that are segregated, and may also use density and gradation measures to help in this determination. The **AGENCY** will visually determine the extent of the segregation. The **CONTRACTOR** will not be allowed additional compensation for correction of segregated areas.

### **9.12 COMPACTION**

The temperature of the mixture immediately behind the screed shall be sufficient to allow for proper compaction of the HMA layer and at least 245 °F for PG 58-28 or PG 64-22 binder and between 297°F and 305 °F for PG 76-28 binder. The breakdown compaction should be completed as quickly as possible after placement occurs.

The HMA shall be compacted by rolling. The number, weight, and type of rollers furnished shall be sufficient to obtain the required density and surface texture while the mixture is in a workable condition. Compaction shall begin immediately after the mixture is placed and be continued until the required density is obtained. Final compaction shall be obtained using steel wheel rollers.

Pavement operations shall be suspended when density requirements are not met and the surface temperature falls below 185 °F, or there is obvious surface distress or breakage, the problem shall be resolved prior to continuing paving operations. The criteria for mixtures containing PG 76-28 asphalt cements shall be 235 °F. The minimum

compaction temperatures may be adjusted according to the asphalt binder supplier recommendations. Adjusted minimum compaction temperatures must be shown on the approved mix design or on other asphalt binder supplier documents, and be available on the job site. Pay Reduction criteria in Section 9.14 shall still apply in such cases.

All roller marks shall be removed with the finish rolling. Use of vibratory rollers with the vibrator on will not be permitted on bridge decks.

The **CONTRACTOR** shall establish a rolling pattern or procedure during the beginning of paving operations, which will achieve the required compaction and surface tolerances. This procedure may be re-evaluated by the **CONTRACTOR** and **AGENCY** throughout the paving operations.

All HMA paving shall be compacted to  $94.0 \pm 2$  percent of Maximum Theoretical (RICE) Density, (CP-51 or AASHTO T-209: Maximum Specific Gravity of Bituminous Paving Mixtures) as determined by ASTM D 2950. RICE values shall be used in calculating Relative Compaction according to CP-44 or AASHTO T 166. The **CONTRACTOR** shall determine the proper RICE value to use for the initial day's placement. Subsequent day's RICE value(s) will be based on the current day's production. The **CONTRACTOR** shall provide the producer's RICE value, which shall be used for production until the actual day's RICE value is determined by the testing firm of record for the project as approved by the **AGENCY**.

All joints shall be compacted to  $92.0 \pm 2$  percent of RICE, taken fully on each side of joint, every 200 Linear Feet. RICE values shall be used in calculating Relative Compaction according to AASHTO T 166, Cores if need will be used to verify compaction results.

The **CONTRACTOR** shall core the pavement, as required by the **AGENCY**, for field density tests in accordance with Colorado Procedure 44 or AASHTO T 230, Method B, or for field calibration of nuclear density equipment in accordance with the ASTM D 2950 or Appendix of Colorado Procedure 81. At a minimum, cores for nuclear density equipment calibration shall be taken at the beginning of placement of each pavement layer or change of mixture materials or gradation. Untested areas during placement will also require cores to be taken to verify compaction.

Along forms, curbs, headers, walls, and all other places not accessible to the rollers, the mixture shall be thoroughly compacted with mechanical tampers.

Any mixture that becomes loose and broken, mixed with dirt, or is in any way defective, shall be immediately removed and replaced with fresh hot mixture and compacted to conform to the surrounding area.

Compaction requirements for SMA are covered in section 9.8.1. Rollers shall not be used in a vibratory mode on SMA unless they are first used successfully in the demonstration control strip. Pneumatic wheel rollers shall not be used on SMA Mix.

### **9.13 PRODUCTION TOLERANCES**

#### **9.13.1 Top Lift Surface Tolerances**

The surface variation between any two contacts shall not exceed 3/16 inch in 10 feet for full lane width paving. For patching surface tolerances, the variation shall not exceed 3/8 inch in 10 feet. Irregularities exceeding the specified tolerance shall be corrected at the **CONTRACTOR'S** expense. Transverse measurements for variations shall exclude breaks in the crown sections.

#### **9.13.2 Job Mix Formula Tolerances**

Production test results that deviate from the design job mix by more than shown in the following table are subject to Section 9.14:

**TABLE 9.13.2 – JOB MIX FORMULA TOLERANCES**

Item	Tolerances
Passing No. 3/8" and Larger (note 1)	± 6%
Passing No. 4 and No.8	± 5%
Passing No. 30 to No. 50	± 4%
Passing No. 200 (note 2)	± 2%
Air Voids	± 1.2%
VMA (note 4)	± 1.2%
Hveem Stability	(note 3)
Asphalt Content	± 0.3%

(Note 1) There is 1.0 percent tolerance for the maximum sieve size.

(Note 2) Mixes with passing No. 200 sieve material produced over 7.0 percent are allowed only when the above Air Voids and VMA tolerances are still met.

(Note 3) Hveem Stability must meet the minimum value specified in table 9.3.2.

(Note 4) When calculating VMA, use the most current aggregate specific gravity  $G_{sb}$ .

When disagreements concerning determination of specification compliance occur, only valid tests from both the **AGENCY** and **CONTRACTOR** will be considered. The **AGENCY** shall determine validity. Generally, valid tests are those in which sampling and testing have been performed according to referenced procedures and the results are within stated precision statements. When disagreements occur with asphalt content and gradation tests results, solvent extracted aggregate testing shall take precedence over burn off oven extracted aggregate, which shall take precedence over cold feed belt testing.

**9.14 CONFORMITY WITH PLANS AND SPECIFICATION**

9.14.1 General

All work performed and all materials furnished shall conform to the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown in the contract.

For those items of work where working tolerances are not specified, the

**CONTRACTOR** shall perform the work in a manner consistent with reasonable

and customary manufacturing and construction practices.

When the **AGENCY** finds that the materials furnished, the work performed, or the finished product does not conform with the contract, but that reasonably acceptable work has been produced, the **AGENCY** shall determine the extent of the work to be accepted and remain in place. Cost reduction, when allowed, shall be accomplished by adjusting pay quantities as indicated herein and applying contract unit prices to the reduced quantities. If the work is to be accepted, the **AGENCY** will:

- A. Document the basis for acceptance by "Cure Notice" which may provide for an appropriate adjustment in the payment quantity for such work or materials not otherwise provided for in this section.
- B. Notify the **CONTRACTOR** in writing that the payment may be adjusted in accordance with this section when "P" is 25 or less, or require appropriate remediation being performed.
- C. In lieu of cost (quantity) adjustment, permit correction or replacement of the finished product provided the correction or replacement does not adversely affect the work or the **AGENCY**.

When the **AGENCY** determines that the material furnished, work performed, or the finished product is not in conformity with the contract and has resulted in inferior or unsatisfactory product, the finished product or materials shall be removed and replaced or otherwise corrected by, and at the expense of, the **CONTRACTOR**.

Materials shall be sampled and tested by a qualified testing laboratory in accordance with the sampling, testing schedules, and procedures contained in the Section 9.15 Testing and Inspection. The approximate maximum quantity represented by each sample shall be as set forth in the testing schedule. An additional number of samples, in relation to the quantity of materials represented, may be selected and tested at the **AGENCY'S** discretion. The quantity represented by five consecutive random samples shall constitute a lot, whenever production schedules and material continuity permits. When it is necessary to represent short production runs, significant material changes, or other unusual characteristics of the work, the **AGENCY** may establish a lot consisting of the

quantity represented by any number of consecutive random samples from one to seven inclusive. Testing results that are determined to have sampling or testing errors, as determined by the **AGENCY**, shall not be used.

#### 9.14.2 Pavement Thickness Deficiencies:

If the full depth cores indicate a thickness deficiency, additional cores will be taken by the **CONTRACTOR** to be given to the **AGENCY** so that price reductions can be determined per Lot. A Lot encompasses 250 lineal lane feet or the quantity between tests, and a price reduction shall be determined at the unit cost of the HMA.

##### 9.14.2.1 Use of Cores to Determine Acceptable Asphalt Thickness

All cores shall be no more than 0.25-inch deficient than the required thickness shown on plans or pavement design report for full payment or acceptance. A minimum of 90% of all the pavement thickness cores must equal or exceed the required thickness shown on plans or pavement design report for full payment or acceptance. Any deficient pavement thickness shall be handled by 9.14.2.3 below.

##### 9.14.2.2 Verification of Thickness and Remedial Action

When the **AGENCY** determines that deficient thickness exists, the **CONTRACTOR** may define the deficient section boundaries by any means, and then verify the boundaries to the satisfaction of the Agency at the boundary, or by direct measurement when cutting the pavement.

When the **AGENCY** determines that they do not want the top lift cored, they shall require the **CONTRACTOR** to use non-destructive survey techniques to determine top lift thickness. This shall be combined with core information taken from lower lifts to determine total pavement thickness.

The **CONTRACTOR** will be responsible for coring of the HMAP and notifying the **AGENCY** of the coring operations, so they may be present to observe. Duplicate cores will be required with the **CONTRACTOR** will retain one set and the **AGENCY** shall receive the other set for comparison testing.

#### 9.14.2.3 Price Reductions on Thickness

There will be no Unit Price Reduction for Thickness deficiencies on projects to be accepted from developers. Remedial action is required of the **CONTRACTOR** to the satisfaction of the **AGENCY** to meet the design thickness requirements. Extended warranty will not be an acceptable alternate to remedial action.

For an **Agency's** Capital Project, the **AGENCY** may elect to apply a linear price reduction based on pavement thickness in lieu of remedial action using a base number from: 6% deficiency in thickness equates to an approximate 25% reduction traffic capacity over the design life.

#### 9.14.3 Cost Reduction Formula

Materials or work shall only be evaluated for price adjustment when deviations from specifications occur on any of the individual tests for the lot. The several individual test values shall be averaged and the percentage of cost (quantity) reduction for the lot shall be determined by applicable formula. This shall apply only when a cost reduction factor "F" for the element is listed in Table 9.14.1.

##### 9.14.3.1 When the Lot is represented by three through seven Tests

The formula in (a) and (b) below shall be used.

a)  $P = (X_n + aR - T_u) * F$  Shall be used if a maximum limit only is specified or; when the average of the several test values is above the mid point of the specification band or above the job-mix formula value.

b)  $P = (T_L + aR - X_n) * F$  shall be used if the minimum limit only is specified or; when the average of the several test values is below the mid point of the specification band or below the job-mix formula value.

##### 9.14.3.2 When the lot is represented by fewer than three tests

The materials shall be evaluated for cost (quantity) reduction by the following procedure:

Lots represented by two tests shall be divided into two separate lots represented by one test each, as determined by the **AGENCY**. Each lot that deviates from the specifications shall be cost adjusted by one of the following formulae.

c)  $P = 0.76 * (T_o - T_u) * F$  When a maximum limit only is specified or the test value is above the maximum specified limit.

d)  $P = 0.76 * (T_L - T_o) * F$  When a minimum limit only is specified or the test value is below the minimum specified limit.

Where:

**P** is the percentage of reduction in payment quantity.

**X<sub>n</sub>** is the average of the several test values from samples taken from the lot, with “n” indicating the number of values.

**a** is a variable factor to be used if “n” changes according to the following:

when “n” is	“a” equals
3	0.45
4	0.38
5	0.33
6	0.30
7 or greater	0.28

**R** is the difference between the highest and lowest values in the group of several test results from the lot.

**T<sub>u</sub>** is the upper or maximum tolerance limit permitted by the specifications.

**T<sub>L</sub>** is the lower or minimum tolerance limit permitted by the specifications.

**T<sub>o</sub>** is the test value of the test that deviates from the specifications.

**F** is the cost reduction factor to be applied for each element as shown in the following table:

**TABLE 9.14.1**

<b>TABLE OF PRICE REDUCTION FACTORS</b>	
<b>ELEMENT</b>	<b>FACTOR "F"</b>
100 percent size sieve	1
1/2 inch sieve and larger	1
3/8 inch sieve, #4, #8, #30 sieves No. 100	3
No. 200 sieve	6
Density of Hot Mix Asphalt	8
Asphaltic Cement Binder content (all asphalt-aggregate mixtures)	20
Total air voids	30
Voids in mineral aggregate	20
Stability	5

If "**P**" is less than three (3) or a negative quantity, the material shall be accepted as being in conformity. In cases where one or more elements show a positive "**P**" value, such positive values shall be added and the resulting sum shall be used to determine whether the material is in conformity. If the total "**P**" value is between 3 and 25, the **AGENCY** may require correction or may accept the material at a reduced cost. If "**P**" is greater than 25, the **AGENCY** may:

- 1) Require complete removal and replacement with specification material at no additional cost to the **AGENCY**;
- 2) Require corrective action to bring the material into conformity at no additional cost to the **AGENCY**;
- 3) Where finished product is found to be capable of performing the intended purpose and the value of the finished product is not affected, permit the **CONTRACTOR** to leave the material in place with an appropriate cost adjustment to be based on the **AGENCY'S** evaluation but not less than that which would have occurred had an adjustment been made where "**P**" = 25.

If asphaltic binder content, aggregate sieve analysis, or compaction deviates from the specification requirements and the total "**P**" is three or greater, the

reduction shall apply to the contract cost (quantity) multiplied by 0.60 for aggregate base course and Hot Bituminous Pavement mixtures.

The **CONTRACTOR** shall not have the option of accepting a cost reduction in lieu of intentionally producing material not meeting specification. Continued production of non-specification material shall not be permitted. Material that is defective as identified by visual inspection shall be isolated and rejected without regard to sampling sequence or location within a lot.

### **9.15 TESTING AND INSPECTION**

If any materials furnished or work performed by the **CONTRACTOR** fails to fulfill the specification requirements, such deficiencies shall be reported to the Project Manager and the **CONTRACTOR** immediately. Preliminary written field reports of all tests taken and observation results shall be given to the **CONTRACTOR** and **AGENCY, and DEVELOPER** within 1 business day after samples were obtained or density testing performed. Field reports shall be forwarded to the Project Manager no later than 1 week following the testing.

Reports of all tests taken, including failing tests, shall be reported to the **AGENCY**, to the **DEVELOPER** and to the **CONTRACTOR** no later than 1 week following the sampling. Density test results will be given in writing at the time the testing occurs.

Testing of Hot Mix Asphalt Pavement shall be performed in accordance with Table 9.15. The tests shall be performed under the general supervision of and signed by a **Professional Engineer** registered in the State of Colorado. Laboratories shall be inspected by either AASHTO or accredited A2LA or equivalent in the elements listed below. Technicians taking samples and conducting compaction tests must have a LABCAT Level A certification or equivalent. Technicians conducting tests of asphalt content and gradation must have a LABCAT Level B certification or equivalent. Technicians performing volumetric testing must have a LABCAT Level C certification or equivalent.

**TABLE 9.15.1  
SCHEDULE FOR MINIMUM MATERIALS SAMPLING AND TESTING  
FOR ITEM 9- HMA -PAVEMENT**

<b>Test</b>	<b>Standard*</b>	<b>Minimum Frequency</b>
Sampling	AASHTO T 168, ASTM D 979 and ASTM D3665	One test for each day
Density	AASHTO T 166, T 238, T 230 Or CP-44, CP-81, CP-82	One test for each 250 lineal feet per Lane
Thickness (Core)	ASTM D 3549	One test for each 1000 lineal feet per Lane,
Air Voids & VMA	AASHTO T 166 & AASHTO PP 19 or CP-48	One test for each day (See note 4, Table 9.13.2)
Gradation	AASHTO T 27, T 11 or CP-31A, CP-31B	One test for each day
Hveem/Marshall Stability As Applicable	AASHTO T 245, AASHTO T 246 or CP-L 5106	One test for each day
Asphalt (AC) Content	AASHTO T 164 or CP-L 5120 or other methods agreed upon between <b>AGENCY</b> and <b>CONTRACTOR</b>	One test for each day
Maximum Theoretical Specific Gravity (Rice)	AASHTO T 209 or CP-51	One test for each day
Lottman Stripping, TSR & Dry Density	AASHTO T 283 or CP-L 5109, Method B	As requested by the <b>AGENCY</b> .
Micro Deval	AASHTO T 327 or CP-L 4211	One per 5000 tons or 1 per project minimum

\* Agency may determine the method used (CP vs. AASHTO).

Inspectors shall be responsible for checking temperatures of mix in the truck and on pavement, segregation, rolling patterns and other construction means and methods that affect the performance of the pavement system. The **CONTRACTOR** shall provide assistance in sampling and testing at all facilities and at the job site.

The HMA or SMA mix design must be approved by the **AGENCY** before any pavement is placed on the project. In addition, the **CONTRACTOR** shall provide field control testing during production of the SMA mix and for the demonstration control strip. The **CONTRACTOR** shall perform the following tests and provide the results to the **AGENCY** during production:

If a SuperPave SMA mix design is used, the **CONTRACTOR** shall perform the following tests and provide the results to the **AGENCY** during production:

**TABLE 9.15.2**  
**SCHEDULE FOR MINIMUM MATERIALS SAMPLING AND TESTING**  
**FOR ITEM 9- HMA/SMA PAVEMENT**

Superpave Mix Property	Frequency
Draindown (AASHTO T 305)	1/1000 tons or fraction thereof
Percent Voids in the total mix @ $N_{(design)}$	1/1000 tons or fraction thereof
VMA (Percent Voids in the Mineral Aggregate) @ $N_{(design)}$	1/1000 tons or fraction thereof
Lottman, CPL 5109 or AASHTO T 283, Method B	1/5000 tons or fraction thereof
Dry Tensile Strength, CPL 5109 or AASHTO T 283	1/5000 tons or fraction thereof
Percent AC & Aggregate Gradation CP 5120 or AASHTO T 308	1/1000 tons or fraction thereof

## 9.16 MEASUREMENT

HMA shall be measured based upon density, length X width and thickness to calculate tons Tack coat shall be measured gallons of bitumen without dilution.

Mix design, furnishing, hauling, preparing, and placing all materials, including aggregates, asphalt binder, limestone dust, hydrated lime, tack coat, and approved demonstration control strip; labor, equipment tools, setting of lines and guides where specified, and all other work necessary to complete the item will not be paid for separately but shall be included in the work.

## 9.17 PAYMENT

Item	Description	Payment
9.1	HMA	\$ per Ton
9.2*	Tack Coat	\$ per Gallon
9.3**	Stone Matrix Asphalt	\$ per Ton

\* When the cost of the tack coat is a separate bid item.

\*\* Stone Matrix Asphalt will be measured by the Ton of work completed and accepted.

# HOT MIX ASPHALT PRE-PAVING CONFERENCE AGENDA

## Form 9.1

*The items in the following agenda are minimum requirements that should be covered during the conference. The agenda may be used as is or as a base to develop a customized agenda.*

Project Number:		Owners Rep:	
Project Code (SA):		Project AGENCY:	
Location:		CONTRACTOR:	
Date:		Superintendent:	
Time:		Foreman:	
<b>I. Attendance Roster</b>			
Name:		Office Number:	
Representing:		Fax Number:	
Responsibilities:		Cell Number:	
City, State, Zip:		E-Mail Address:	
Name:		Office Number:	
Representing:		Fax Number:	
Street Address:		Cell Number:	
City, State, Zip:		E-Mail Address:	
Name:		Office Number:	
Representing:		Fax Number:	
Street Address:		Cell Number:	
City, State, Zip:		E-Mail Address:	
Name:		Office Number:	
Representing:		Fax Number:	
Street Address:		Cell Number:	
City, State, Zip:		E-Mail Address:	

<b>HOT MIX ASPHALT PRE-PAVING CONFERENCE AGENDA</b>			
<b>II. Project Organization and Status</b>			
<b>A. OWNER/AGENCY Personnel:</b>			
1. Personnel in Charge at Paving Site:			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
2. Alternate Contact (when personnel identified in A.1 is not present):			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
3. Quality Assurance Supervisor:			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
4. Inspector/Duties:			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
Comments:			

<b>B. CONTRACTOR Personnel:</b>			
1. Quality Control Supervisor:			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
2. Personnel to Notify at Paving Site			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
3. Other:			
Name/Title:		Fax Number:	
Office Number:		Home Number:	
Mobile Number:		E-Mail Address:	
Comments:			

<b>HOT MIX ASPHALT PRE-PAVING CONFERENCE AGENDA</b>	
<b>II. Project Organization and Status</b>	
<b>C. Testing Information:</b> (Compaction Test Results, acceptance tests to be performed, frequency)	
1. Test locations determined by?	
2. Frequency of tests to be performed?	
3. Are Quality Assurance tests to be performed in addition to Quality control tests? ➤ If Yes how often and who will be responsible to schedule the QA tests?	
4. Turn around time of test results? ➤ Preliminary? ➤ Final?	
5. Is the mix design(s) approved by the Owner/Agency?	

<b>HOT MIX ASPHALT PRE-PAVING CONFERENCE AGENDA</b>	
<b>III. Scheduling</b>	
<b>A. Materials:</b>	
Materials will be available for sampling on:	
<b>B. Asphalt Plant:</b>	
The asphalt plant will be ready to be checked on:	
<b>C. Paving Equipment:</b>	
The paving equipment will be set up and ready to be checked on:	
<b>D. Paving Sequence:</b>	
1. The CONTRACTOR will commence paving on:	
2. Hot Bituminous Pavement will be delivered at:	
3. The CONTRACTOR proposes to work the following hours:	
4. How many days per week does the CONTRACTOR intend to work?	
5. What paving sequence will the CONTRACTOR follow?	
<b>E. A quality control plan shall provide information to control the quality of the following:</b>	
1. Segregation:	
2. Longitudinal Joint Construction:	
3. Transverse Joint Construction:	
4. Smoothness:	
<b>III. Scheduling</b>	
5. Other:	
<b>F. Scales and Certified Weigher:</b>	
1. Scales shall be checked and sealed. Comments:	
2. Weigh tickets shall contain information required by the owner. Comments:	
3. Are truck weigh ticket required to be delivered on site? How will the weight tickets be collected? Comments:	

<b>IV. Preparation</b>
<b>A. Method of Approval Sub-Surface Materials?</b>
Comments:
<b>B. Has the Subsurface Been Approved for Paving?</b>
➤ Approved By Who?
<b>C. Tack Coat:</b>
1. Material type, Application Rate?

<b>V. Production and Placement</b>
<b>A. Compaction Test Section:</b>
<i>The following procedures should be observed and documented:</i>
1. The CONTRACTOR must establish a roller pattern and carefully record the following information:
a. Type, size, amplitude, frequency, and speed of roller:
b. Tire pressure for rubber tire rollers and if the pass for vibratory rollers is vibratory or static:
c. Surface temperature of mixture behind the lay-down machine and subsequent temperatures and densities after each roller pass:
d. Sequence and distance from lay-down machine for each roller and total number of passes of each roller to obtain specified density:

2. When the Compaction Test Section has been completed, the CONTRACTOR shall furnish a complete copy of this data to the person in charge (II.A.1) before continuing to pave. Comments:

**HOT MIX ASPHALT PRE-PAVING CONFERENCE AGENDA**

**V. Production and Placement (continued)**

3. When a successful Compaction Test Section has been completed, the CONTRACTOR is required to maintain the roller pattern established during the Compaction Test Section for the balance of the Hot Bituminous Pavement construction (i.e., the CONTRACTOR must use the same number and type of rollers and operate them at the same speed, frequency, and amplitude and in the same position, relative to the lay-down machine, as was performed during the Compaction Test Section). If the CONTRACTOR wants to change the roller pattern that was established during the Compaction Test Section, the CONTRACTOR must construct a new Compaction Test Section and demonstrate that the density can be obtained with the new roller pattern before proceeding with the paving operation.  
Comments:

4. The CONTRACTOR is responsible for compaction testing of the Compaction Test Section. Comments:

5. Cores are required to calibrate the nuclear density gauge. The CONTRACTOR can continue to pave under the following conditions:  
- The period that the CONTRACTOR continues to pave without test results from cores shall not exceed one working day.  
- Construction proceeds at the's risk.  
Comments:

6. A new Compaction Test Section will be required whenever there is a change in the compaction process.  
Comments:

7. Striping plan: Sub CONTRACTOR or CONTRACTOR to do striping?  
When will striping occur?  
What material will be used?  
Have Materials Data Sheets been submitted?                      Approved?                      If Not when?

**A. Laydown Equipment:**

1. Does the paving equipment meet the requirement detailed in the specifications? Comments:

**VIII. Traffic Control**

**A. Method of Handling Traffic:**

Has the Method of Handling Traffic been submitted for the Mix Asphalt Pavement placement operation?

If not, when will it be submitted?

Is the traffic control plan approved?

**IX. Follow Up Items**

Items discussed during the meeting, which will need follow up.

Item for follow up	Who will follow up	Date of completion or response
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

CITY AND COUNTY OF DENVER  
STATE OF COLORADO



DEPARTMENT OF PUBLIC WORKS

Plans/Drawings

Contract Number: 201843277



Montbello Railings Phase 2

July 12, 2018

# CITY & COUNTY OF DENVER DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

## PLANS OF PROPOSED CITY MASTER PROJECT NO. 2016-PROJMSTR-0000707 CITY PROJECT NO. PWTRN201737616 MONTBELLO DITCH RAILING REPLACEMENTS

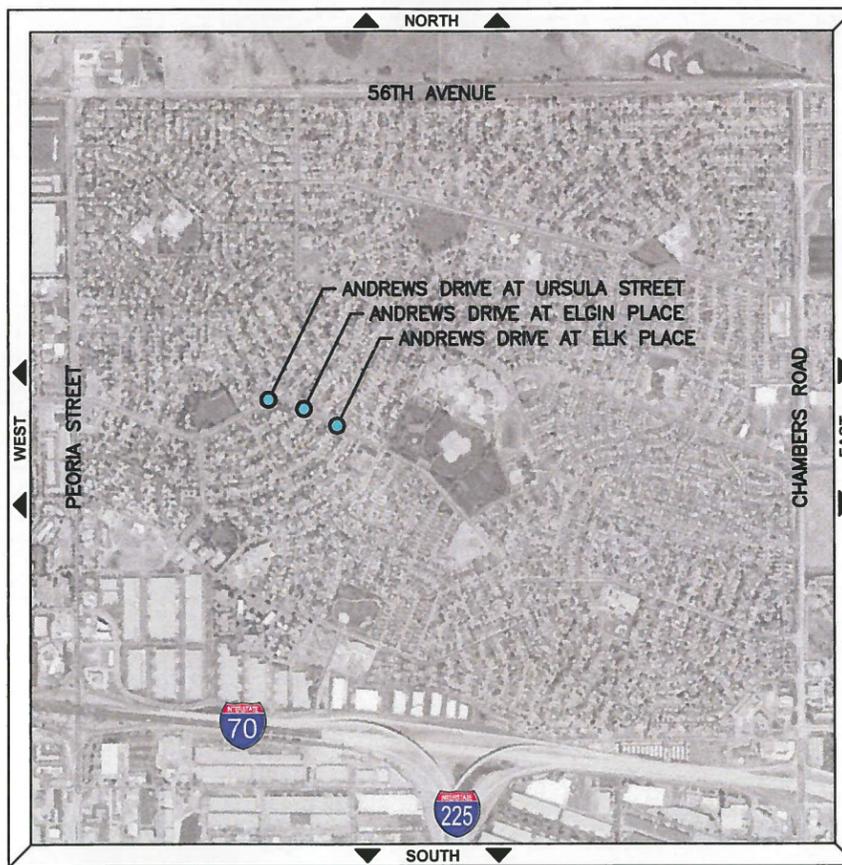
SCALE OF ORIGINAL DRAWINGS

ON PLAN      1" = 10'

### INDEX OF SHEETS

SHEET NO.	DWG. NO.	DESCRIPTION
1	T-1	TITLE SHEET
2	SP-1	STANDARD PLANS LIST
3-4	GN-1 TO GN-2	GENERAL NOTES
5	SQ-1	SUMMARY OF APPROXIMATE QUANTITIES
6	1	PROJECT CONTROL DIAGRAM
<b>ANDREWS DRIVE AT URSULA STREET (D-20-MB-480)</b>		
7	PD-1	POINT DATA
8	RM-1	REMOVAL AND RESET PLAN
9	PL-1	ROADWAY PLAN
10	CD-1	CURB RAMP DETAILS
11	RP-1	RAILING PLAN
12	EC-1	EROSION CONTROL PLAN
<b>ANDREWS DRIVE AT ELGIN PLACE (D-20-MB-490)</b>		
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14	RM-1	REMOVAL AND RESET PLAN
15	PL-1	ROADWAY PLAN
16	CD-1	CURB RAMP DETAILS
17	RP-1	RAILING PLAN
18	EC-1	EROSION CONTROL PLAN
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21	PL-1	ROADWAY PLAN
22	CD-1	CURB RAMP DETAILS
23	RP-1	RAILING PLAN
24	EC-1	EROSION CONTROL PLAN
<b>MISCELLANEOUS DETAILS AND NOTES</b>		
25-30	RD-1 TO RD-6	RAILING DETAILS
31	IP-1	STRUCTURE IDENTIFICATION PANEL DETAIL
32-40	ED-1 TO ED-9	EROSION CONTROL DETAILS
41-42	SW-1 TO SW-2	STORMWATER MANAGEMENT PLAN NOTES
43	ID-1	INLET DETAILS

ISSUED FOR BID  
PLAN SET  
April 16, 2018



Signature Block

Executive Director of Public Works	
City Engineer	
Director of Capital Projects	
City Traffic Engineer	
Small Business Opportunity Division	

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Print Date: 4/16/2018 10:27:06 AM	<b>Sheet Revisions</b>	<b>As Constructed</b>	<b>MONTBELLO DITCH RAILING REPLACEMENTS TITLE SHEET</b>	Project No./Code
File Name: A112197-20TTL01.dwg	(R-X)	No Revisions:		2016-PROJMSTR-0000707
Horizontal Scale: NTS      Vertical Scale: NTS	Date      Comments      Initials	Revised:	Designer: SED      Structure	PWTRN201737616
6300 South Syracuse Way, Suite 600 Centennial, CO 80111 Phone: 303.721.1440 www.FHUENG.com	Date      Comments      Initials	Void:	Detailer: SED      Numbers	Sheet Number
	Date      Comments      Initials		Subset: Title      Sheets: T-1 of 1	1



# CITY & COUNTY OF DENVER DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

## PLANS OF PROPOSED CITY MASTER PROJECT NO. 2016-PROJMSTR-0000707 CITY PROJECT NO. PWTRN201737616 MONTBELLO DITCH RAILING REPLACEMENTS

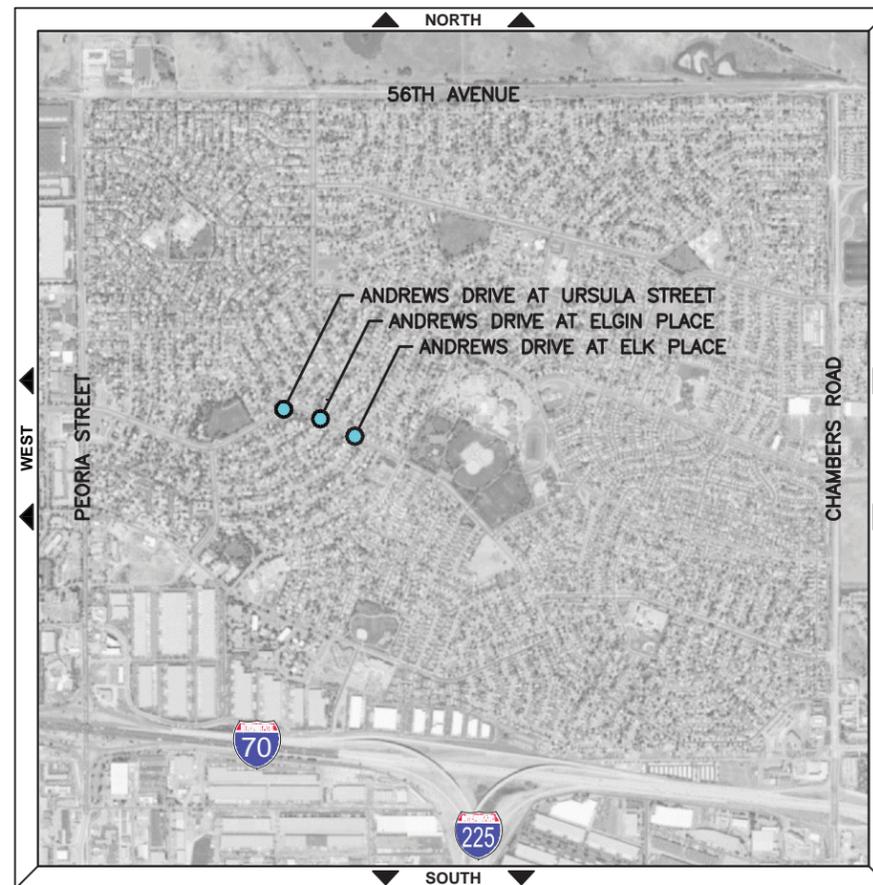
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**ISSUED FOR BID  
PLAN SET  
April 16, 2018**



### Signature Block

Executive Director of Public Works
City Engineer
Director of Capital Projects
City Traffic Engineer
Small Business Opportunity Division

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Print Date: 4/16/2018 10:27:06 AM	(R-X)	Sheet Revisions			 <b>DENVER</b> <small>THE MILE HIGH CITY</small>	As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS			Project No./Code
File Name: A112197-20TTL01.dwg		Date	Comments	Initials		No Revisions:	TITLE SHEET			2016-PROJMSTR-0000707
Horizontal Scale: NTS      Vertical Scale: NTS						Revised:	Designer: SED	Structure Numbers		PWTRN201737616
6300 South Syracuse Way, Suite 600 Centennial, CO 80111 Phone: 303.721.1440 www.FHUENG.com				Void:	Detailer: SED	Structure Numbers		Sheet Number		
					Subset:	Title	Sheets: T-1 of 1	1		

**TRANSPORTATION ENGINEERING STANDARD DRAWINGS**

NO.	TITLE
<input checked="" type="checkbox"/> 1.0	INDEX OF STANDARD DRAWINGS
<input checked="" 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"/> 5.3	SPECIAL USE CURB & GUTTER SECTIONS
<input type="checkbox"/> 5.4	CONCRETE GUTTER OVERLAY
<input type="checkbox"/> 5.5	CURB BULB EXTENSION
<input type="checkbox"/> 5.6	MONOLITHIC MEDIAN CURB NOSE
<input type="checkbox"/> 6.0	STANDARD RESIDENTIAL CURB CUT
<input type="checkbox"/> 6.1	STANDARD COMMERCIAL & 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	CURB RAMP NOTES FOR CURB RAMPS
<input type="checkbox"/> 7.1	CURB RAMP TYPE 1
<input checked="" 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 checked="" type="checkbox"/> 7.3	CURB RAMP TYPE 3
<input type="checkbox"/> 7.4	CURB RAMP TYPE 4
<input checked="" 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 checked="" 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 (HISTORIC 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,b,c	GENERAL NOTES FOR CONCRETE PAVEMENT AND PAVEMENT JOINTS
<input 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 (POTHoles) TYPICAL REPAIR
<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 checked="" type="checkbox"/> S-301.1	TRENCHING AND BEDDING - PART I
<input checked="" type="checkbox"/> S-301.2	TRENCHING AND BEDDING - PART II
<input type="checkbox"/> S-350	ENCASEMENT OF SANITARY SEWERS
<input checked="" type="checkbox"/> S-401	SHIPLAP JOINTS/TYPE R JOINTS
<input checked="" type="checkbox"/> S-450	INLET CONNECTIONS AND PIPELINE CLOSURES
<input checked="" type="checkbox"/> S-501.1	PRECAST MANHOLE BARRELS AND TOP SECTIONS
<input checked="" 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 checked="" type="checkbox"/> S-520	TYPICAL MANHOLE BASE CHANNELIZATION
<input type="checkbox"/> S-530	MANHOLE OUTSIDE DROP
<input checked="" type="checkbox"/> S-550	WATER STOP GASKET
<input type="checkbox"/> S-616.1	SINGLE NO. 16 INLET
<input checked="" type="checkbox"/> S-616.2	DOUBLE NO. 16 INLET
<input type="checkbox"/> S-616.3	TRIPLE NO. 16 INLET
<input type="checkbox"/> S-606V	SINGLE, DOUBLE, TRIPLE VALLEY INLET
<input checked="" type="checkbox"/> S-620.1	NO. 14 INLET (SHEET 1)
<input checked="" type="checkbox"/> S-620.2	NO. 14 INLET (SHEET 2)
<input checked="" type="checkbox"/> S-701	24" DIAMETER RING & COVER
<input checked="" type="checkbox"/> S-716	GRATE & FRAME, ADJUSTABLE CURB BOX
<input checked="" type="checkbox"/> S-750	MANHOLE STEPS

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 USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

**TRAFFIC STANDARD DRAWINGS**

NO.	TITLE
<input checked="" type="checkbox"/> 16.1.1	TRAFFIC SIGNAL NOTES
<input checked="" type="checkbox"/> 16.1.2	LEGEND/KEY NOTES
<input type="checkbox"/> 16.1.3	SPAN WIRE SIGNAL DESIGN
<input 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 checked="" 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 checked="" 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"/> 16.2.13	OVERHEAD STREET NAME SIGNS
<input type="checkbox"/> 16.2.14	PARKING METER POST INSTALLATION
<input type="checkbox"/> 16.2.15	BARRICADE DETAILS

CITY AND COUNTY OF DENVER  
STANDARD DRAWINGS LIST

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 Phone: 303.721.1440  
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Sheet Revisions			
(R-X)	Date	Comments	Initials



As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS STANDARD PLANS LIST			Project No./Code
No Revisions:				2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers		PWTRN201737616
Void:	Detailer: SED	Sheets: SP-1 of 1		Sheet Number 2

**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. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK UNLESS SPECIFIED OTHERWISE IN SECTION 629. FOR FURTHER INFORMATION CONTACT:  
PUBLIC WORKS — SURVEY DEPARTMENT  
ATTN: CITY SURVEYOR  
201 W. COLFAX AVE.  
DENVER, CO 80202  
720-865-3121
2. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

**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 ASSOCIATED WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.
5. IF ANY OF THE CONTRACTOR'S OPERATIONS DESTROY OR DAMAGE ANY PROPERTY, PUBLIC OR PRIVATE, THE CONTRACTOR SHALL PROMPTLY REPAIR OR REPLACE SUCH PROPERTY, TO THE SATISFACTION OF THE PROJECT MANAGER, BEFORE THE CITY WILL ACCEPT OR PAY FOR THE WORK PERFORMED UNDER THE CONTRACT. IF THE CONTRACTOR FAILS TO REPAIR OR REPLACE SUCH PROPERTY, THE CITY, AT THE SOLE DISCRETION OF THE MANAGER, MAY UNDERTAKE SUCH REPAIR OR REPLACEMENT AND DEDUCT THE COST OF THE SAME FROM AMOUNTS PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, IN AN AUTOCAD COMPATIBLE FORMAT, TO THE CITY. THE PRODUCTION OF THESE DOCUMENTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
7. ALL WORK SHALL CONFORM TO CURRENT CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE LATEST EDITION OF THE CITY STANDARDS SPECIFICATIONS, OR HALT CONSTRUCTION UNTIL THE CONFLICT IS RESOLVED.
8. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL STORM DRAIN INLETS, LATERALS, MAINS AND OTHER STORM RUNOFF APPURTENANCES WITHIN THE PROJECT LIMITS SHALL BE CLEARED OF SEDIMENT AND DEBRIS IN ACCORDANCE WITH DENVER WASTEWATER MANAGEMENT DIVISION STANDARDS. AFTER CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ANY SEDIMENT OR DEBRIS FROM THE STORM SEWER SYSTEM AT NO COST TO THE CITY.
9. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY ROW SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.

10. NO WORK SHALL BE PERMITTED ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR AUTHORIZATION OR UNLESS OTHERWISE SPECIFIED. THE CITY MAY RESTRICT WORK IN THE ROW DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.
11. NO CLEATED OR TRACKED EQUIPMENT MAY WORK IN OR MOVE OVER PAVED SURFACES WITHOUT MATS.

**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 (INCLUDING LATEST EDITIONS)
  - 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. FEDERAL HIGHWAY ADMINISTRATION (FHWA), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO
  - g. AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE
  - h. THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AND ITS SUPPLEMENTS. THE CDOT LATEST EDITION OF THE STANDARD PLANS (M&S STANDARDS).
2. THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, ONE COPY OF THE APPROVED PLANS, ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND COPIES OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.
3. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER IMMEDIATELY.

**UTILITIES**

1. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. RESPONSIBILITIES FOR THE RELOCATION OF UTILITY LINES ARE AS NOTED IN THE PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL COOPERATE WITH COMPANIES TRYING TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE CITY AND ITS ENGINEERS HARMLESS FOR DAMAGES ARISING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES. DAMAGED 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. WHERE IT IS REQUIRED TO REMOVE EXISTING CONCRETE OR ASPHALT, CUTTING SHALL BE DONE TO A NEAT WORK LINE TO FULL DEPTH USING A SAW, CUTTING WHEEL, OR OTHER METHOD APPROVED BY THE PROJECT MANAGER. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

3. 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.
4. 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.
5. THE CONTRACTOR SHALL USE AGGREGATE BASE COURSE OR ASPHALT MILLINGS TO FILL AREA LEFT BY REMOVAL OF DRIVEWAY OR CURB RAMP PRIOR TO PLACEMENT OF NEW SIDEWALK, DRIVEWAY OR CURB RAMP.

**PAVEMENT**

1. PATCH ASPHALT PAVEMENT AS NECESSARY TO JOIN NEW GUTTERS WITH EXISTING PAVEMENT.
2. 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. COST FOR DUST PALLIATIVE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
3. THE DEPTH OF RECONDITIONING AND FOR THE BASES OF CUTS AND FILLS SHALL BE 6 INCHES. THE PROJECT SPECIFIED MOISTURE DENSITY CONTROL SHALL BE APPLIED FOR THE SPECIFIED DEPTH. THE EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.
4. MOISTURE DENSITY CONTROL SHALL BE APPLIED FULL DEPTH FOR ALL EMBANKMENTS.
5. DURING EACH PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL SHAPE TO DRAIN AND COMPACT THE WORK AREA TO A UNIFORM CROSS-SECTION. ELIMINATE ALL RUTS AND LOW SPOTS THAT COULD HOLD WATER. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO ADDITIONAL COST TO THE CITY.
6. ALL WORK SHALL BE PROPERLY BACKFILLED PRIOR TO THE END OF THE WORKDAY. NO OPEN HOLES ARE ALLOWED OVERNIGHT.
7. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
8. MATERIAL REMOVED FROM ANY PORTION OF THE ROADWAY PRISM MUST BE REPLACED IN LIKE KIND WITH EQUAL OR BETTER COMPACTION. NO SEGREGATION OF MATERIALS WILL BE PERMITTED.

**CONCRETE**

1. IF CONCRETE REPLACEMENT IS NECESSARY, THE ENTIRE AFFECTED SLAB OR PANEL MUST BE REPLACED.
2. THE CONTRACTOR SHALL SELECT AND USE A BOXOUT AT CATCH BASINS, MANHOLES, AND OTHER ROADWAY APPURTENANCES OF SIMILAR AND LARGER SIZE. SEE CCD STD DWG NO. 11.5.
3. SIDEWALK SHALL BE CLASS P CONCRETE. THE USE OF 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.

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- THE CONTRACTOR SHALL INSTALL 1/2 IN EXPANSION JOINT MATERIAL BETWEEN THE CURB, CURB AND GUTTER AND THE SIDEWALK, AND AROUND INLET STRUCTURES OR BLOCKOUTS OR AS DIRECTED BY THE PROJECT MANAGER.
- CURB RAMPS SHALL BE CONSTRUCTED USING TRUNCATED DOMES AS SHOWN IN THE CITY AND COUNTY OF DENVER STANDARD DETAILS. TRUNCATED DOMES AND GROOVES SHALL NOT BE PAID SEPARATELY, BUT INCLUDED IN THE COST OF THE CONCRETE CURB RAMP.

**TRAFFIC**

- 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).

**LANDSCAPING**

- 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.
- ANY LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION MUST BE RESTORED (SOD OR MULCH). CONTACT DAN ROCKNE, PARKS NE MAINT DIST SUPERINTENDENT (303-373-8704), WITH THE CONSTRUCTION SCHEDULE. IN ADDITION CONTACT THE PARKS DEPT FOR UTILITY LOCATES, NAMELY FOR THE PRESENCE OF ANY IRRIGATION SYSTEM ON EACH SITE.

**DRAINAGE**

- ACCESS MUST BE MAINTAINED FOR ALL SEWER MANHOLES DURING CONSTRUCTION. MINIMUM ACCESS TO EACH MANHOLE IS A 20 FOOT WIDE LANE FROM THE NEAREST PUBLIC RIGHT OF WAY, CENTERED AT THE MANHOLE INCLUDING A 10 FOOT RADIUS AROUND THE MANHOLE AND 22.0 FEET OF VERTICAL CLEARANCE.

**EROSION CONTROL**

THE PERMITTEE SHALL ENSURE THAT ALL POTENTIAL POLLUTANTS GENERATED DURING DEMOLITION OR CONSTRUCTION WORK ASSOCIATED WITH THIS PERMIT, BE PREVENTED FROM DISCHARGE TO STORMWATER CONVEYANCE SYSTEMS IN THE VICINITY OF THIS PROJECT SITE.

THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING, OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, RECEIVING WATERS, WATERWAYS, WETLANDS, AND OR OTHER PUBLIC OR PRIVATE PROPERTIES, RESULTING FROM WORK DONE AS PART OF THIS PROJECT.

THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR ACCUMULATE IN THE FLOWLINES, STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AND COUNTY OF DENVER AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PERMIT. ALL REMOVALS SHALL BE CONDUCTED IN A TIMELY MANNER.

THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT ON PUBLIC RIGHTS OF WAY. (SEC.49-552;REVISED MUNICIPAL CODE)

THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES IS PROHIBITED. STEEL FENCE POSTS MAY BE USED ON A CASE BY CASE BASIS AND REQUIRES APPROVAL FROM THE CITY AND COUNTY OF DENVER SWMP REVIEWER OR THE STORMWATER ENFORCEMENT INVESTIGATOR PRIOR TO INSTALLATION.

THE PERMITTEE SHALL IMPLEMENT THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPS) ON SITE DURING CONSTRUCTION:

- 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.
- 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.
- 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:
  - PRESERVING EXISTING VEGETATION
  - SEEDING AND PLANTING
  - MULCHING
  - MULCHING AND SEEDING
  - TEMPORARY/PERMANENT RE-VEGETATION OPERATIONS
  - CHEMICAL SOIL STABILIZER APPLICATION (REQUIRES WMD APPROVAL)
- 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.
- 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.
- 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.
  - 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."
  - 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).
  - 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.
- 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.
- 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.

- 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.
- 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)

STRUCTURAL CONTROLS: DEVELOPMENT SITES THAT ARE REQUIRED TO PROVIDE DETENTION AND WATER QUALITY ENHANCEMENT FACILITIES FOR STORM RUNOFF NEED TO INSTALL THE DETENTION FACILITIES EARLY IN THE CONSTRUCTION BUILD-OUT OF THE SITE. PROJECTS THAT ARE USING UNDERGROUND DETENTION ARE REQUIRED TO INSTALL A PRETREATMENT STRUCTURE OR SEDIMENTATION BASINS AS A MEANS OF TREATING POTENTIALLY POLLUTED STORM WATER PRIOR TO ENTERING THE DETENTION STRUCTURE. USE OF THESE STRUCTURES IS REQUIRED FOR ENTRAPPING SEDIMENT AND CONSTRUCTION DEBRIS DURING THE ACTIVE CONSTRUCTION PHASE OF THE PROJECT. THE NARRATIVE SECTION OF THE MANAGEMENT PLAN IS ALSO REQUIRED TO ADDRESS OPERATION AND MAINTENANCE OF THE STRUCTURAL CONTROLS BEING USED AS AN ACTIVE CONSTRUCTION BMP

**ENVIRONMENTAL**

- CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE AND TO PREVENT THE VISIBLE DISCHARGE OF FUGITIVE PARTICULATE EMISSIONS BEYOND THE PROPERTY ON WHICH THE EMISSIONS ORIGINATE. THE MEASURES TAKEN MUST BE EFFECTIVE IN THE CONTROL OF FUGITIVE PARTICULATE EMISSIONS AT ALL TIMES ON THE SITE, INCLUDING PERIODS OF INACTIVITY SUCH AS EVENINGS, WEEKENDS, AND HOLIDAYS AS WELL AS ANY OTHER PERIOD OF INACTIVITY.
- 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 DURING THE PROJECT, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA OF THE DISCOVERY UNTIL DENVER ENVIRONMENTAL HEALTH (DEH) MAKES A DETERMINATION OF HOW TO PROCEED. CONTRACTOR SHALL IMMEDIATELY NOTIFY DEH OF THE DISCOVERY VIA THE PHONE NUMBER 720-460-1706.
- ANY FILL MATERIAL OR SOILS TO BE MOVED TO AND PLACED ON CCD-OWNED PROPERTY OF PLACED ON REAL PROPERTY TO BE TRANSFERRED TO THE CCD MUST BE FREE OF KNOWN CONTAMINATION (OBSERVED AND DOCUMENTED OR PREVIOUSLY DOCUMENTED) AND BE ACCEPTABLE FOR UNRESTRICTED RESIDENTIAL USE. CONTACT DAVE ERICKSON, DENVER ENVIRONMENTAL HEALTH (720-865-5433) FOR CLARIFICATION, IF NEEDED, REGARDING THIS CCD REQUIREMENT.
- THE CONTRACTOR SHALL DIRECT NON-RECYCLABLE, NON-HAZARDOUS WASTES FROM CCD-OWNED OR CONTROLLED PROPERTY OR FACILITIES TO THE DENVER ARAPAHOE DISPOSAL SITE (DADS) LANDFILL FOR DISPOSAL, FOLLOWING THE REQUIREMENT AND PROCEDURAL GUIDANCE OUTLINED IN CCD EXECUTIVE ORDER 115.
- NOISE CONTROL. EXEMPTED HOURS FOR CONSTRUCTION IN THE CITY AND COUNTY OF DENVER ARE FROM 7 A.M. TO 9 P.M. MONDAY THROUGH FRIDAY AND 8 A.M. TO 5 P.M. ON SATURDAYS AND SUNDAYS PER SECTIONS 36-6.(B)(7) AND 36-7.(5)A., B. AND C. OF DENVER'S NOISE ORDINANCE, CHAPTER 36 'NOISE CONTROL,' DENVER REVISED MUNICIPAL CODE (DRMC). IF THERE IS AN ANTICIPATED NEED TO WORK OUTSIDE OF THE EXEMPTED HOURS FOR CONSTRUCTION: 1) THE CONTRACTOR WILL NEED TO MAKE A REQUEST FOR A NIGHTTIME NOISE VARIANCE AS ALLOWED FOR IN SECTION 36-7.(5)C. FOR THE DRMC AND 2) THE VARIANCE PROCESS NEEDS TO BE STARTED A MINIMUM OF THREE MONTHS PRIOR TO THE DESIRED START DATE OF ANY WORK NEEDING TO OCCUR OUTSIDE OF EXEMPTED HOURS. ANY NOISE VARIANCE QUESTIONS SHOULD BE DIRECTED TO PAUL RIEDESEL, DEPARTMENT OF ENVIRONMENTAL HEALTH, DENVER COMMUNITY NOISE PROGRAM, (PHONE 720-856-5410; FAX 720-856-5532) A MINIMUM OF THREE MONTHS PRIOR TO THE START OF THE PROJECT.

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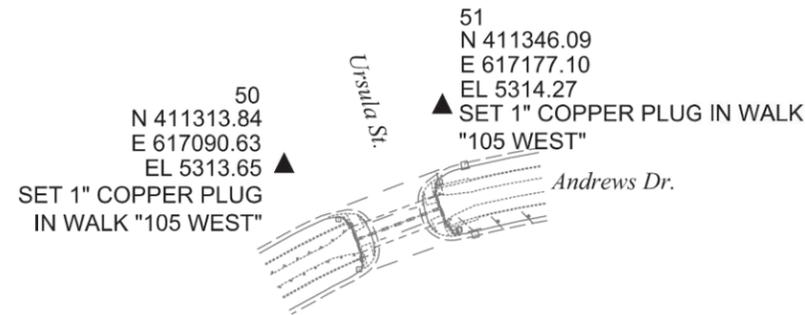
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Horizontal Scale: NTS Vertical Scale: NTS						Revised:	Designer: SED	Structure Numbers	PWTRN201737616
 6300 South Syracuse Way, Suite 600 Centennial, CO 80111 Phone: 303.721.1440 www.FHUENG.com					Void:	Detailer: SED	Sheets: GN-2 of 2	Sheet Number 4	

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REFERENCE NO.	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ANDREWS DRIVE AT URSULA STREET		ANDREWS DRIVE AT ELGIN PLACE		ANDREWS DRIVE AT ELK PLACE		PROJECT TOTALS	
				PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
	201-00000	CLEARING AND GRUBBING/INTERSECTION	EACH	1		1		1		3	
	202-00026	REMOVAL OF SLOPE AND DITCH PAVING	SY	6		6				12	
	202-00035	REMOVAL OF PIPE	LF	14		10				24	
	202-00200	REMOVAL OF SIDEWALK	SY	15		25		26		66	
	202-00203	REMOVAL OF CURB AND GUTTER	LF	161		162		161		484	
	202-00206	REMOVAL OF CONCRETE CURB RAMP	SY	31		23		23		77	
	202-00220	REMOVAL OF ASPHALT MAT	SY	48		45		39		132	
	202-00495	REMOVAL OF PORTIONS OF PRESENT STRUCTURE/INTERSECTION	EACH	1		1		1		3	
	202-04002	CLEAN CULVERT	EACH	2		3		4		9	
	203-01597	POTHOLING	HOURL			10		10		20	
	206-00000	STRUCTURE EXCAVATION	CY	106		109		105		320	
	206-00200	STRUCTURAL BACKFILL (CLASS 2)	CY	83		86		82		251	
	208	EROSION CONTROL/INTERSECTION	EACH	1		1		1		3	
	210-00810	RESET GROUND SIGN	EACH	2		2		2		6	
	210-04020	MODIFY INLET	EACH	1		1				2	
	212-00050	SOD	SF	80		80		80		240	
	213	CRUSHED ROCK (GRAY BREEZE)	SF	210		213				423	
	213-00070	LANDSCAPE WEED BARRIER FABRIC	SY	23		23				46	
	403-00720	HOT MIX ASPHALT (PATCHING)(ASPHALT)	TON	25		25		24		74	
	507-00000	CONCRETE SLOPE AND DITCH PAVING	CY	1		1		4		6	
	514-00201	PEDESTRIAN RAILING (STEEL)(SPECIAL)	LF	81		82		81		244	
	601-03050	CONCRETE CLASS D (WALL)	CY	30		31		30		91	
	601-40300	STRUCTURAL CONCRETE COATING	SY	111		112		109		332	
	602-00020	REINFORCING STEEL (EPOXY COATED)	LB	4515		4600		4530		13645	
	603-01155	15 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	LF	10		10				20	
	608-00005	CONCRETE SIDEWALK (SPECIAL)	SY	30		29		29		88	
	608-00012	CURB RAMP (SPECIAL)	SY	48		48		48		144	
	609-21023	CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL)	LF	107		108		104		319	
	620-00020	SANITARY FACILITY/INTERSECTION	EACH	1		1		1		3	
	623-00001	IRRIGATION RECONSTRUCTION (URSULA)	LS	1						1	
	623-00002	IRRIGATION RECONSTRUCTION (ELGIN)	LS			1				1	
	623-00003	IRRIGATION ADJUSTMENT (ELK)	LS					1		1	
	625-00000	CONSTRUCTION SURVEYING/INTERSECTION	EACH	1		1		1		3	
	626-00000	MOBILIZATION/INTERSECTION	EACH	1		1		1		3	
	630-10005	CONSTRUCTION TRAFFIC CONTROL/INTERSECTION	EACH	1		1		1		3	

Print Date: 4/16/2018 10:27:27 AM		<b>Sheet Revisions</b> <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> <th>Initials</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>			Date	Comments	Initials										As Constructed		<b>MONTBELLO DITCH RAILING REPLACEMENTS</b> <b>SUMMARY OF APPROXIMATE QUANTITIES</b>			Project No./Code	
Date	Comments				Initials																		
File Name: G112197-20SAQ01.dwg		No Revisions:		2016-PROJMSTR-0000707																			
Horizontal Scale: NTS      Vertical Scale: NTS		 <b>DENVER</b> THE MILE HIGH CITY		Revised:		Designer: SED      Structure Detailer: SED      Numbers		PWTRN201737616															
 <b>FELSBURG HOLT &amp; ULLEVIG</b> 6300 South Syracuse Way, Suite 600 Centennial, CO 80111 Phone: 303.721.1440 www.FHUENG.com		<input type="checkbox"/> (R-X) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Void:		Subset:      Roadway      Sheets:      SQ-1 of 1		Sheet Number <b>5</b>															

# PROJECT CONTROL DIAGRAM



### NOTES

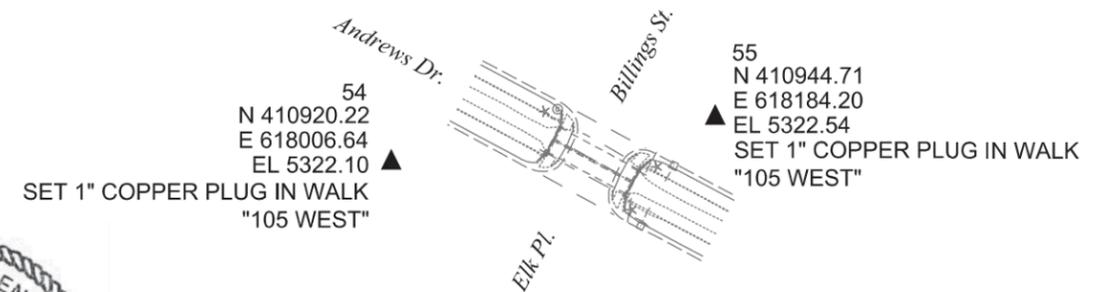
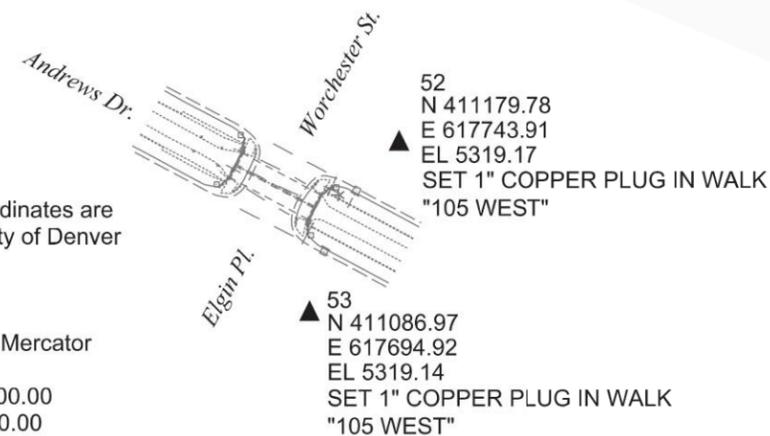
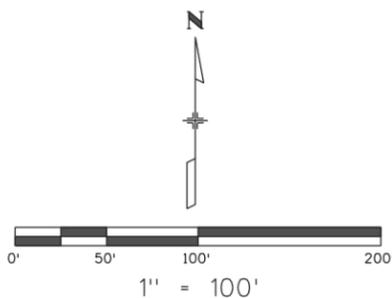
1. This Project Control Diagram is not a boundary survey of the adjoining property.
2. **PROJECT BENCHMARK:** Elevations are based on CCD Benchmark "523A", a CCD Brass Cap located in the Top Back of Curb at the Southeast Corner of E. 51st Ave. and Ursula St. NAVD88 Elevation = 5,300.39'
3. **UNITS:** 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: 11/15/2016  
 File Name: MONTBELLO CBC PROJECT CONTROL DIAGRAM.DGN

2140 S. Ivanhoe St., STE G5  
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6300 South Syracuse Way, Suite 600  
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**DEPARTMENT OF PUBLIC WORKS**

201 WEST COLFAX AVENUE  
DENVER, CO 80202  
PHONE: (720) 913-4501  
FAX: (720) 913-4544

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MONTBELLO DITCH RAILING REPLACEMENTS PROJECT CONTROL DIAGRAM			
Designer:	Structure Numbers		
Detailer:			
Subset:	Sheets: 1 of 1		

Project No./Code	XX
Sheet Number	6

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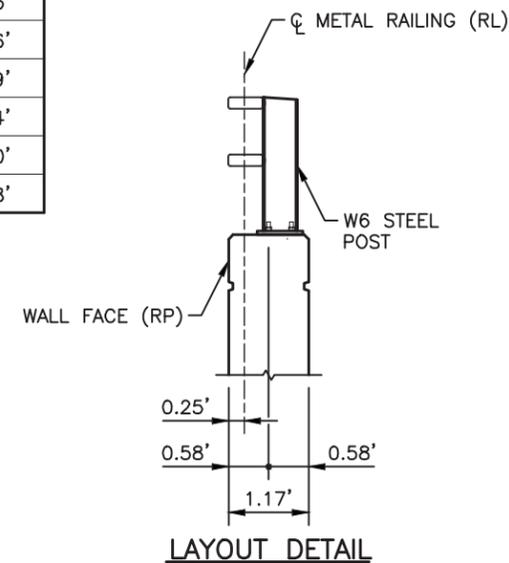
POINT TABLE – REMOVAL AND RESET PLANS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
RM-1	411247.1767	617125.3180	5313.09	MATCH EXISTING
RM-2	411251.8377	617134.9892	5313.39	MATCH EXISTING
RM-3	411273.1689	617143.7583	5313.83	MATCH EXISTING
RM-4	411282.1033	617140.4416	5313.93	MATCH EXISTING
RM-5	411292.0183	617118.3099	5313.35	MATCH EXISTING
RM-6	411287.5695	617107.7683	5313.15	MATCH EXISTING
RM-7	411273.1854	617193.5857	5313.85	MATCH EXISTING
RM-8	411271.3325	617185.9822	5313.95	MATCH EXISTING
RM-9	411281.8324	617166.0084	5314.06	MATCH EXISTING
RM-10	411291.5811	617162.3271	5314.07	MATCH EXISTING
RM-11	411314.1860	617174.5614	5313.70	MATCH EXISTING
RM-12	411316.8015	617186.3927	5313.72	MATCH EXISTING

POINT TABLE – ROADWAY PLANS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
PL-1	411250.7557	617123.5317	5312.88	FLOWLINE
PL-2	411255.4648	617133.3026	5313.19	FLOWLINE
PL-3	411271.7768	617140.0084	5313.61	FLOWLINE
PL-4	411280.7113	617136.6917	5313.72	FLOWLINE
PL-5	411288.2933	617119.7675	5313.16	FLOWLINE
PL-6	411283.9266	617109.4202	5312.94	FLOWLINE
PL-7	411279.0087	617195.6116	5314.22	SLOPE PAVING
PL-9	411277.0756	617192.6551	5313.64	FLOWLINE
PL-10	411275.2162	617185.0246	5313.75	FLOWLINE
PL-11	411283.2455	617169.7505	5313.81	FLOWLINE
PL-12	411292.9942	617166.0692	5313.86	FLOWLINE
PL-13	411310.2803	617175.4248	5313.50	FLOWLINE
PL-14	411312.8958	617187.2561	5313.51	FLOWLINE
PL-16	411312.0278	617185.6457	5313.98	SLOPE PAVING

POINT TABLE – CURB RETURN DETAILS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CD-1	411257.1382	617135.9880	5313.29	FLOWLINE
CD-2	411259.3903	617136.6065	5313.35	CURB RAMP
CD-3	411265.7494	617134.2458	5313.74	CURB RAMP
CD-4	411271.7589	617132.0149	5314.24	CURB RAMP
CD-5	411271.5849	617131.5462	5314.25	SIDEWALK
CD-6	411273.6730	617137.1711	5314.15	SIDEWALK
CD-7	411273.4990	617136.7024	5314.15	CURB RAMP
CD-8	411267.4978	617138.9557	5313.65	CURB RAMP
CD-9	411268.1070	617140.7929	5313.55	FLOWLINE
CD-10	411284.0041	617134.8915	5313.73	FLOWLINE
CD-11	411283.2668	617133.1018	5313.70	CURB RAMP
CD-12	411277.2490	617135.3103	5314.20	CURB RAMP
CD-13	411277.4230	617135.7790	5314.19	SIDEWALK
CD-14	411275.3349	617130.1541	5314.30	SIDEWALK
CD-15	411275.5089	617130.6228	5314.29	CURB RAMP
CD-16	411281.5184	617128.3920	5313.79	CURB RAMP
CD-17	411287.8775	617126.0313	5313.45	CURB RAMP
CD-18	411289.1805	617124.0930	5313.37	FLOWLINE
CD-19	411274.8471	617182.3965	5313.77	FLOWLINE
CD-20	411276.1392	617180.4509	5313.78	CURB RAMP
CD-21	411282.6883	617177.9778	5313.94	CURB RAMP
CD-22	411288.6852	617175.7133	5314.44	CURB RAMP
CD-23	411288.8619	617176.1810	5314.45	SIDEWALK
CD-24	411286.7422	617170.5679	5314.34	SIDEWALK
CD-25	411286.9188	617171.0357	5314.35	CURB RAMP
CD-26	411280.9219	617173.3002	5313.85	CURB RAMP
CD-27	411279.9629	617171.5691	5313.83	FLOWLINE
CD-28	411296.6596	617165.2640	5313.86	FLOWLINE
CD-29	411297.0842	617167.1970	5313.88	CURB RAMP
CD-30	411291.0873	617169.4616	5314.38	CURB RAMP
CD-31	411290.9107	617168.9938	5314.37	SIDEWALK
CD-32	411293.0303	617174.6069	5314.48	SIDEWALK
CD-33	411292.8537	617174.1392	5314.47	CURB RAMP
CD-34	411298.8506	617171.8746	5313.97	CURB RAMP
CD-35	411305.3997	617169.4015	5313.79	CURB RAMP
CD-36	411307.6552	617170.0074	5313.71	FLOWLINE

POINT TABLE – RAILING PLANS						
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION	ELEVATION	DESCRIPTION
RP-1	411254.5595	617123.9753	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-2	411254.2890	617128.5033	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-3	411254.8043	617129.5499	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-4	411265.4960	617133.8065	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-5	411281.0495	617128.0327	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-6	411285.9124	617116.5309	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-7	411285.4429	617115.4629	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-8	411281.6372	617112.7389	5315.73	TOP OF RAIL	5309.85	BOTTOM OF FOOTING
RP-9	411280.5459	617193.0969	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING
RP-10	411277.4042	617189.7741	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING
RP-11	411277.1320	617188.6397	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING
RP-12	411282.4386	617178.6066	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING
RP-13	411298.5620	617172.5180	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING
RP-14	411309.9797	617178.6975	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING
RP-15	411310.2315	617179.8366	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING
RP-16	411308.8496	617184.2102	5316.01	TOP OF RAIL	5310.54	BOTTOM OF FOOTING

DATA TABLE – METAL RAILING			
FEATURE	CALLOUT	RADIUS	LENGTH
CURVE	RLC1	8.34'	12.23'
LINE	RL1	-	14.26'
CURVE	RLC2	8.34'	13.59'
CURVE	RLC3	8.34'	12.04'
LINE	RL2	-	14.90'
CURVE	RLC4	8.34'	14.28'



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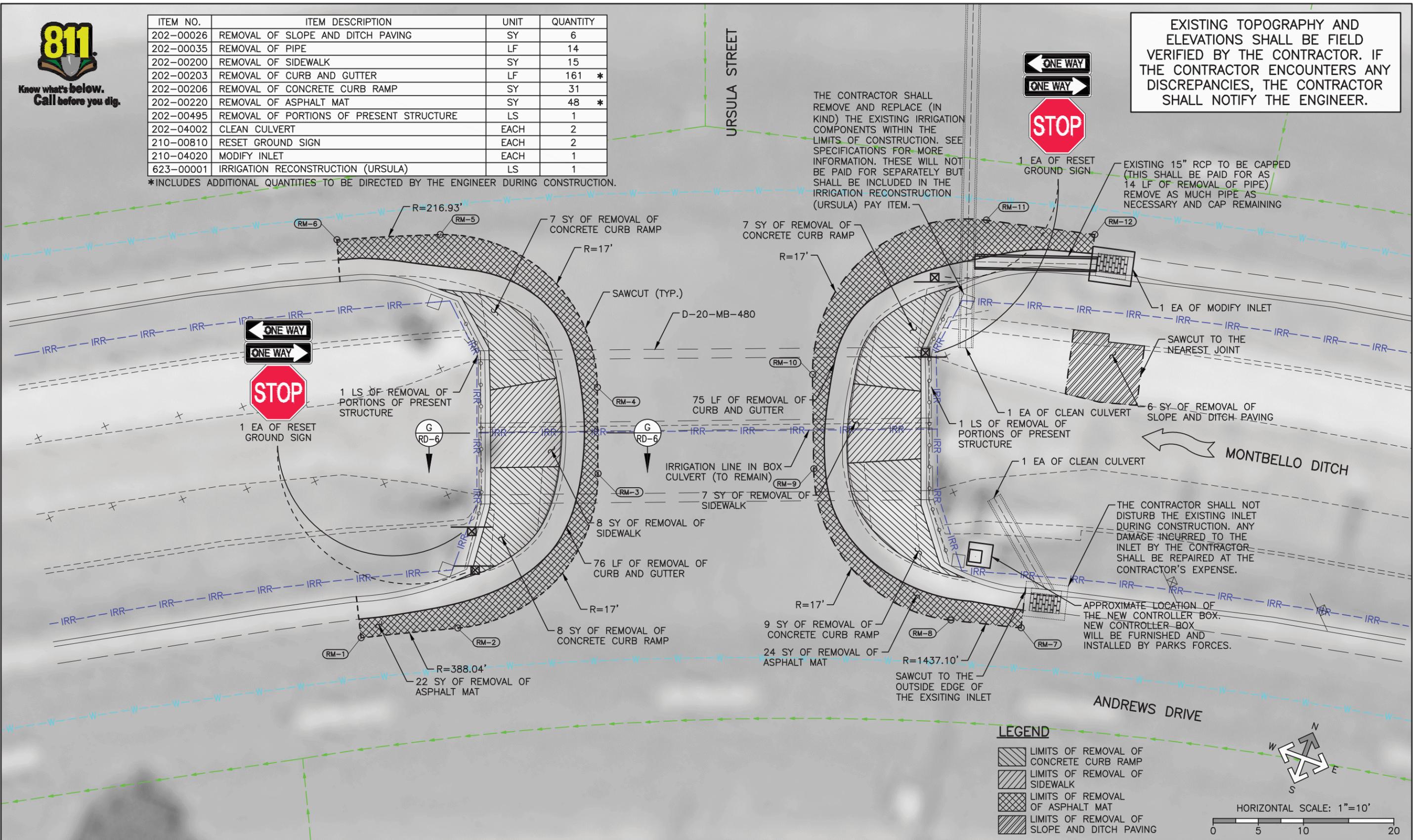


As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS ANDREWS DRIVE AT URSULA STREET POINT DATA		Project No./Code
No Revisions:			2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure: D-20-MB-480	PWTRN201737616
Void:	Detailer: SED	Numbers:	
	Subset: Roadway	Sheets: PD-1 of 1	Sheet Number 7



ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
202-00026	REMOVAL OF SLOPE AND DITCH PAVING	SY	6
202-00035	REMOVAL OF PIPE	LF	14
202-00200	REMOVAL OF SIDEWALK	SY	15
202-00203	REMOVAL OF CURB AND GUTTER	LF	161 *
202-00206	REMOVAL OF CONCRETE CURB RAMP	SY	31
202-00220	REMOVAL OF ASPHALT MAT	SY	48 *
202-00495	REMOVAL OF PORTIONS OF PRESENT STRUCTURE	LS	1
202-04002	CLEAN CULVERT	EACH	2
210-00810	RESET GROUND SIGN	EACH	2
210-04020	MODIFY INLET	EACH	1
623-00001	IRRIGATION RECONSTRUCTION (URSULA)	LS	1

\*INCLUDES ADDITIONAL QUANTITIES TO BE DIRECTED BY THE ENGINEER DURING CONSTRUCTION.



EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

THE CONTRACTOR SHALL REMOVE AND REPLACE (IN KIND) THE EXISTING IRRIGATION COMPONENTS WITHIN THE LIMITS OF CONSTRUCTION. SEE SPECIFICATIONS FOR MORE INFORMATION. THESE WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE IRRIGATION RECONSTRUCTION (URSULA) PAY ITEM.

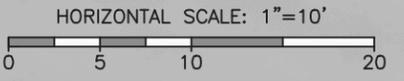
EXISTING 15" RCP TO BE CAPPED (THIS SHALL BE PAID FOR AS 14 LF OF REMOVAL OF PIPE) REMOVE AS MUCH PIPE AS NECESSARY AND CAP REMAINING

THE CONTRACTOR SHALL NOT DISTURB THE EXISTING INLET DURING CONSTRUCTION. ANY DAMAGE INCURRED TO THE INLET BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

APPROXIMATE LOCATION OF THE NEW CONTROLLER BOX. NEW CONTROLLER BOX WILL BE FURNISHED AND INSTALLED BY PARKS FORCES.

**LEGEND**

	LIMITS OF REMOVAL OF CONCRETE CURB RAMP
	LIMITS OF REMOVAL OF SIDEWALK
	LIMITS OF REMOVAL OF ASPHALT MAT
	LIMITS OF REMOVAL OF SLOPE AND DITCH PAVING



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Sheet Revisions			
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As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS		Project No./Code
No Revisions:	ANDREWS DRIVE AT URSULA STREET		2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers: D-20-MB-480	PWTRN201737616
Void:	Detailer: SED	Sheets: RM-1 of 1	Sheet Number 8

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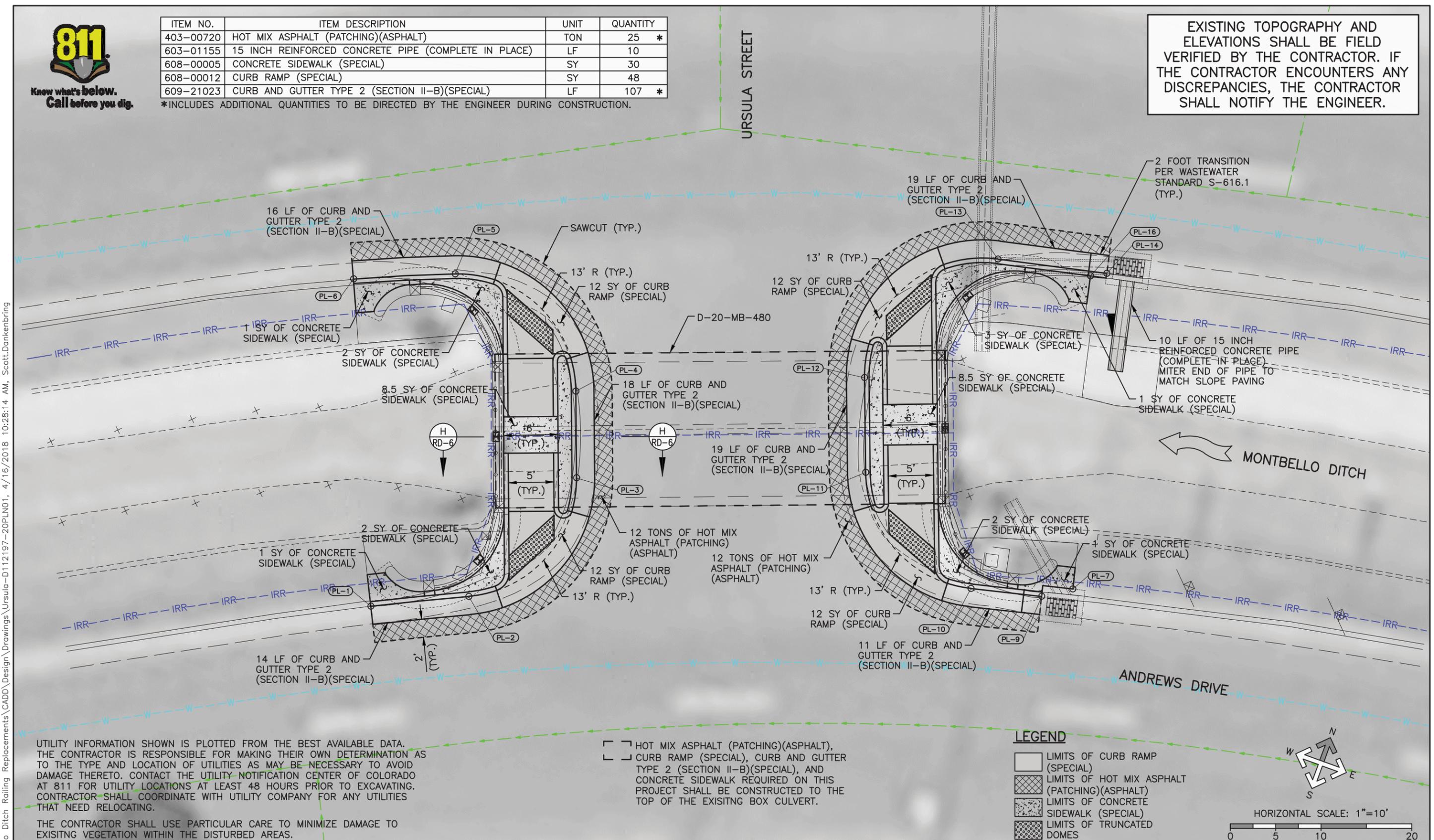


ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
403-00720	HOT MIX ASPHALT (PATCHING)(ASPHALT)	TON	25 *
603-01155	15 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	LF	10
608-00005	CONCRETE SIDEWALK (SPECIAL)	SY	30
608-00012	CURB RAMP (SPECIAL)	SY	48
609-21023	CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL)	LF	107 *

\*INCLUDES ADDITIONAL QUANTITIES TO BE DIRECTED BY THE ENGINEER DURING CONSTRUCTION.

EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

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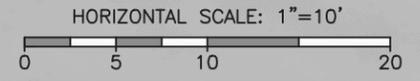
UTILITY INFORMATION SHOWN IS PLOTTED FROM THE BEST AVAILABLE DATA. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 FOR UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO EXCAVATING. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR ANY UTILITIES THAT NEED RELOCATING.

THE CONTRACTOR SHALL USE PARTICULAR CARE TO MINIMIZE DAMAGE TO EXISTING VEGETATION WITHIN THE DISTURBED AREAS.

- HOT MIX ASPHALT (PATCHING)(ASPHALT),
- CURB RAMP (SPECIAL), CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL), AND CONCRETE SIDEWALK REQUIRED ON THIS PROJECT SHALL BE CONSTRUCTED TO THE TOP OF THE EXISTING BOX CULVERT.

**LEGEND**

- LIMITS OF CURB RAMP (SPECIAL)
- ▨ LIMITS OF HOT MIX ASPHALT (PATCHING)(ASPHALT)
- ▩ LIMITS OF CONCRETE SIDEWALK (SPECIAL)
- ▧ LIMITS OF TRUNCATED DOMES



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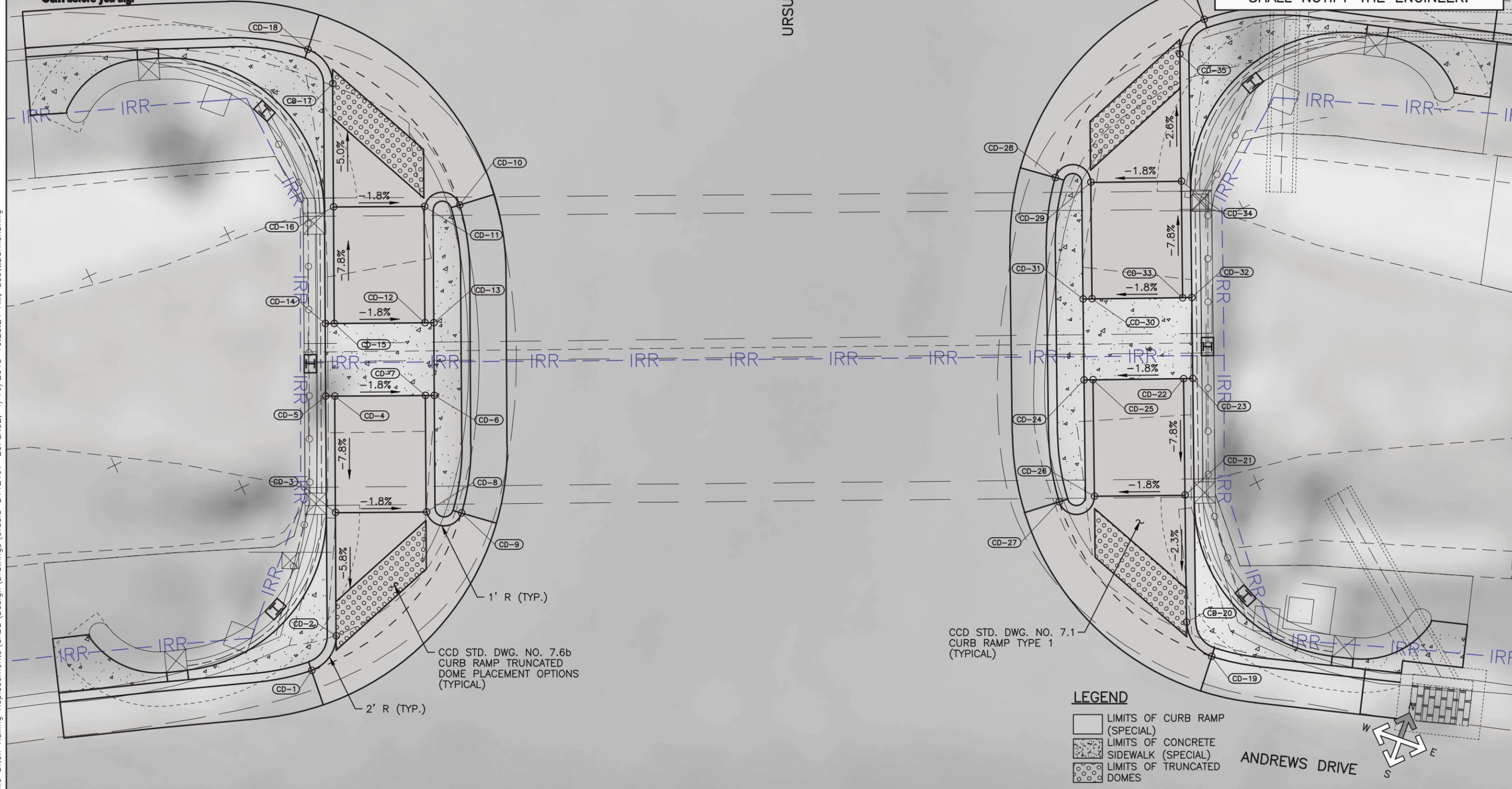
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No Revisions:	ANDREWS DRIVE AND URSULA STREET		2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers: D-20-MB-480	PWTRN201737616
Void:	Detailer: SED	Sheets: PL-1 of 1	Sheet Number 9
	Subset: Roadway		



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URSULA STREET

EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.



CCD STD. DWG. NO. 7.6b  
CURB RAMP TRUNCATED  
DOME PLACEMENT OPTIONS  
(TYPICAL)

CCD STD. DWG. NO. 7.1  
CURB RAMP TYPE 1  
(TYPICAL)

**LEGEND**

- LIMITS OF CURB RAMP (SPECIAL)
- LIMITS OF CONCRETE SIDEWALK (SPECIAL)
- LIMITS OF TRUNCATED DOMES

ANDREWS DRIVE



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No Revisions:	ANDREWS DRIVE AT URSULA STREET		2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers: D-20-MB-480	PWTRN201737616
Void:	Detailer: SED	Sheets: CD-1 of 1	Sheet Number 10
	Subset: Roadway		

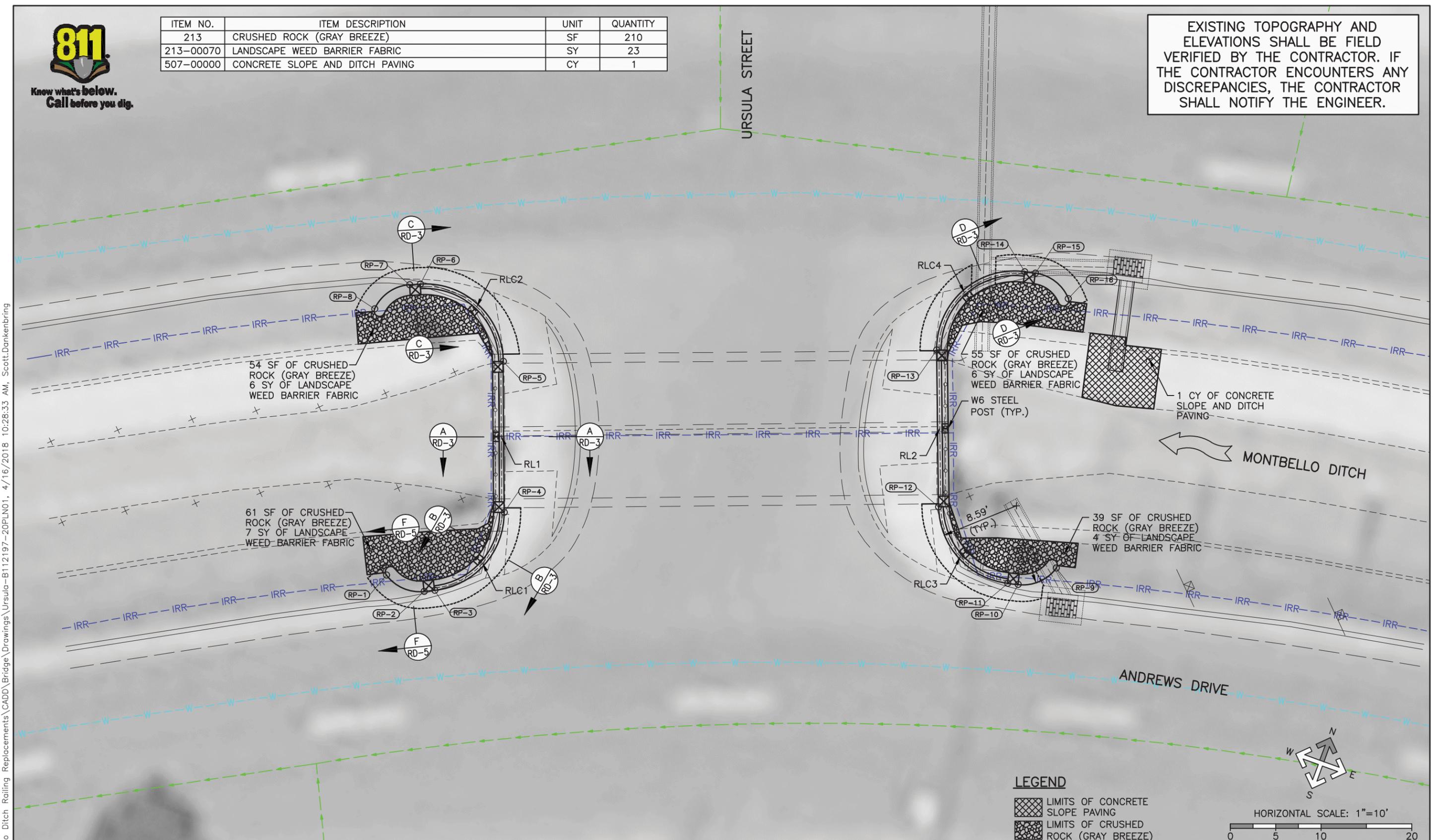


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ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
213	CRUSHED ROCK (GRAY BREEZE)	SF	210
213-00070	LANDSCAPE WEED BARRIER FABRIC	SY	23
507-00000	CONCRETE SLOPE AND DITCH PAVING	CY	1

EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

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No Revisions:	ANDREWS DRIVE AT URSULA STREET		2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers: D-20-MB-480	PWTRN201737616
Void:	Detailer: SED	Sheets: RP-1 of 1	Sheet Number 11



**CONSTRUCTION BMP PLAN SYMBOLS:**

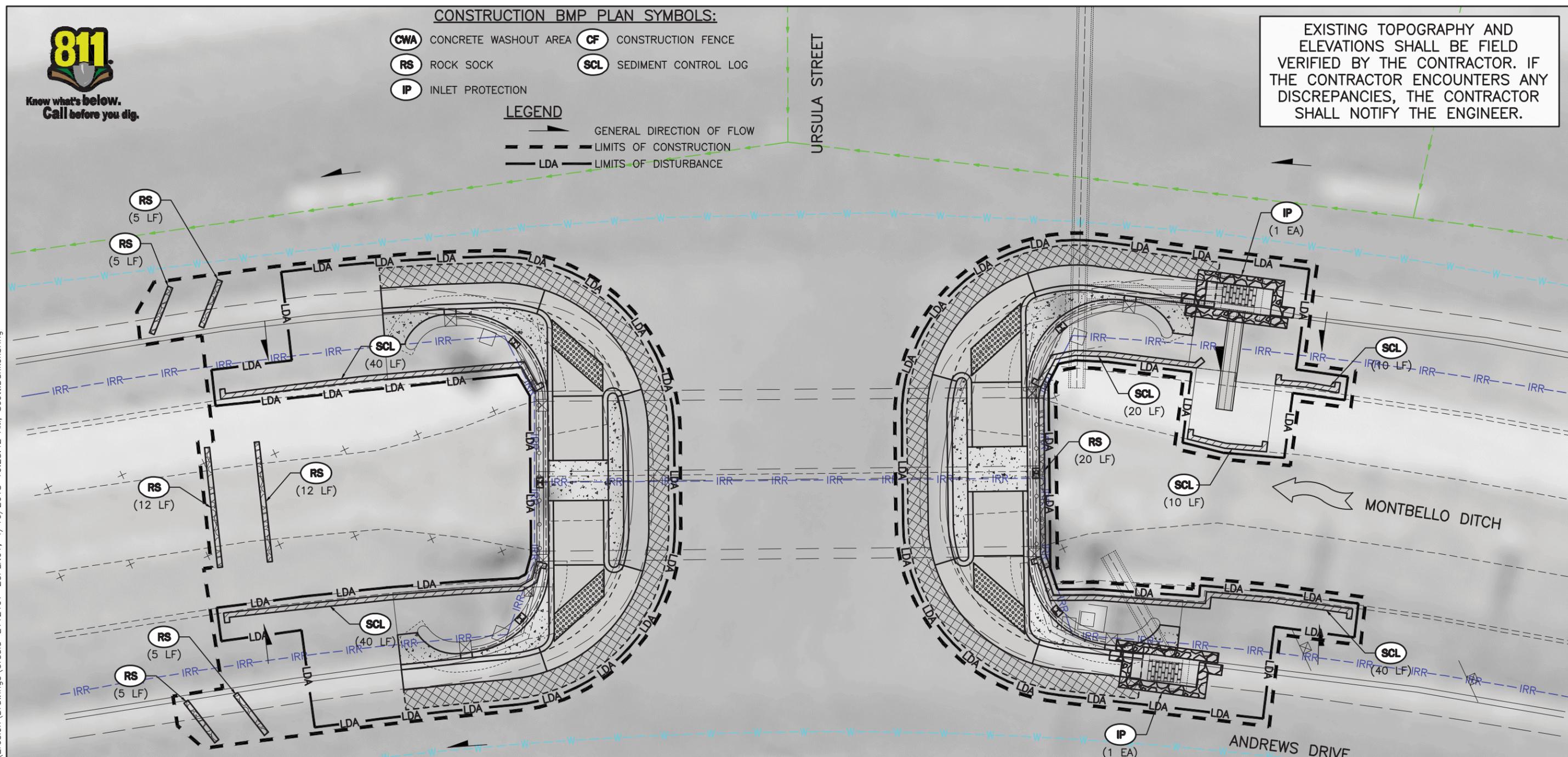
- CWA** CONCRETE WASHOUT AREA    **CF** CONSTRUCTION FENCE
- RS** ROCK SOCK    **SCL** SEDIMENT CONTROL LOG
- IP** INLET PROTECTION

**LEGEND**

- GENERAL DIRECTION OF FLOW
- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBANCE

EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

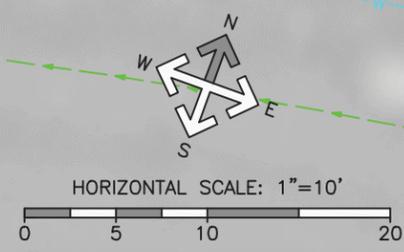
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1. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 FOR UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO EXCAVATING. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR ANY UTILITIES THAT NEED RELOCATING.
2. DISTURBED SOD AREAS SHALL BE RESODDED AT THE DIRECTION OF THE ENGINEER AND COMPLETED 48 HOURS AFTER WORK IS COMPLETED.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION BMPS IN ACCORDANCE WITH THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT (UDFCD) URBAN STORM DRAINAGE CRITERIA MANUAL, VOLUME
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5. ALL BMP'S SHOWN SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED DURING THE INTERIM PHASE OF CONSTRUCTION.



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	EROSION CONTROL PLAN			
	Designer:	Structure		
Revised:	Detailer:	Numbers	PWTRN201737616	
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			Sheet Number 12	

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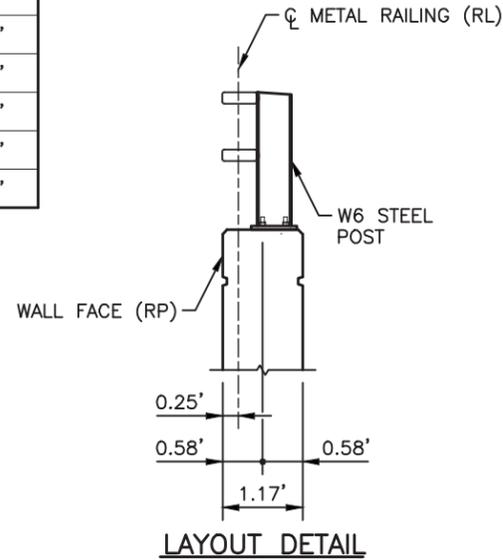
POINT TABLE – REMOVAL AND RESET PLANS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
RM-1	411155.9470	617630.8060	5318.21	MATCH EXISTING
RM-2	411150.8433	617640.3251	5318.47	MATCH EXISTING
RM-3	411157.8466	617663.3691	5318.75	MATCH EXISTING
RM-4	411166.7507	617668.1021	5318.69	MATCH EXISTING
RM-5	411189.7543	617661.0448	5318.51	MATCH EXISTING
RM-6	411194.8108	617651.4932	5318.24	MATCH EXISTING
RM-7	411119.3137	617699.3353	5318.65	MATCH EXISTING
RM-8	411123.4481	617691.4284	5318.80	MATCH EXISTING
RM-9	411146.4654	617684.2803	5318.98	MATCH EXISTING
RM-10	411155.4138	617689.0165	5319.06	MATCH EXISTING
RM-11	411162.4599	617712.0444	5318.87	MATCH EXISTING
RM-12	411158.1999	617720.0283	5318.79	MATCH EXISTING

POINT TABLE – ROADWAY PLANS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
PL-1	411159.4723	617632.6961	5318.00	FLOWLINE
PL-2	411154.3686	617642.2152	5318.27	FLOWLINE
PL-3	411159.7240	617659.8371	5318.54	FLOWLINE
PL-4	411168.6281	617664.5700	5318.48	FLOWLINE
PL-5	411186.2191	617659.1733	5318.30	FLOWLINE
PL-6	411191.2757	617649.6217	5318.03	FLOWLINE
PL-7	411123.1811	617703.4718	5319.01	SLOPE PAVING
PL-9	411122.8584	617701.1887	5318.45	FLOWLINE
PL-10	411126.9927	617693.2818	5318.60	FLOWLINE
PL-11	411144.5943	617687.8157	5318.78	FLOWLINE
PL-12	411153.5426	617692.5518	5318.85	FLOWLINE
PL-13	411158.9308	617710.1614	5318.66	FLOWLINE
PL-14	411154.6709	617718.1453	5318.58	FLOWLINE
PL-15	411152.7383	617719.1006	5319.09	SLOPE PAVING

POINT TABLE – CURB RETURN DETAILS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CD-1	411153.0017	617646.2259	5318.40	FLOWLINE
CD-2	411154.0359	617648.3199	5318.46	CURB RAMP
CD-3	411160.2174	617651.6057	5318.66	CURB RAMP
CD-4	411165.8777	617654.6144	5319.16	CURB RAMP
CD-5	411166.1124	617654.1729	5319.17	SIDEWALK
CD-6	411163.2962	617659.4709	5319.06	SIDEWALK
CD-7	411163.5309	617659.0294	5319.07	CURB RAMP
CD-8	411157.8706	617656.0207	5318.57	CURB RAMP
CD-9	411156.6992	617657.6159	5318.56	FLOWLINE
CD-10	411172.1614	617665.8347	5318.44	FLOWLINE
CD-11	411172.8283	617663.9714	5318.55	CURB RAMP
CD-12	411167.1680	617660.9627	5319.05	CURB RAMP
CD-13	411166.9333	617661.4042	5319.04	SIDEWALK
CD-14	411169.7495	617656.1062	5319.15	SIDEWALK
CD-15	411169.5148	617656.5477	5319.14	CURB RAMP
CD-16	411175.1751	617659.5564	5318.64	CURB RAMP
CD-17	411181.3566	617662.8421	5318.43	CURB RAMP
CD-18	411183.6709	617662.5279	5318.40	FLOWLINE
CD-19	411129.5551	617689.8844	5318.73	FLOWLINE
CD-20	411131.8689	617689.5661	5318.80	CURB RAMP
CD-21	411138.0561	617692.8409	5318.93	CURB RAMP
CD-22	411143.7218	617695.8396	5319.43	CURB RAMP
CD-23	411143.4879	617696.2815	5319.44	SIDEWALK
CD-24	411146.2946	617690.9785	5319.33	SIDEWALK
CD-25	411146.0607	617691.4204	5319.34	CURB RAMP
CD-26	411140.3951	617688.4217	5318.84	CURB RAMP
CD-27	411141.0588	617686.5573	5318.73	FLOWLINE
CD-28	411156.5713	617694.7677	5318.86	FLOWLINE
CD-29	411155.4028	617696.3649	5318.88	CURB RAMP
CD-30	411149.7372	617693.3663	5319.38	CURB RAMP
CD-31	411149.9711	617692.9243	5319.37	SIDEWALK
CD-32	411147.1643	617698.2274	5319.48	SIDEWALK
CD-33	411147.3982	617697.7855	5319.47	CURB RAMP
CD-34	411153.0638	617700.7841	5318.97	CURB RAMP
CD-35	411159.2511	617704.0589	5318.75	CURB RAMP
CD-36	411160.2968	617706.1031	5318.71	FLOWLINE

POINT TABLE – RAILING PLANS						
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION	ELEVATION	DESCRIPTION
RP-1	411161.3883	617636.0922	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-2	411157.4902	617638.5093	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-3	411156.9389	617639.5375	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-4	411160.4762	617651.1770	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-5	411175.3917	617659.1052	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-6	411187.0107	617655.5406	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-7	411187.5566	617654.5095	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-8	411187.3882	617649.9260	5320.67	TOP OF RAIL	5314.99	BOTTOM OF FOOTING
RP-9	411125.8760	617702.5250	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING
RP-10	411125.6843	617697.9423	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING
RP-11	411126.2249	617696.9085	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING
RP-12	411137.8509	617693.2980	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING
RP-13	411152.8065	617701.2137	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING
RP-14	411156.3655	617712.8450	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING
RP-15	411155.8163	617713.8743	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING
RP-16	411151.9230	617716.2993	5320.96	TOP OF RAIL	5315.57	BOTTOM OF FOOTING

DATA TABLE – METAL RAILING			
FEATURE	CALLOUT	RADIUS	LENGTH
CURVE	RLC1	8.34'	13.13'
LINE	RL1	-	14.56'
CURVE	RLC2	8.34'	13.11'
CURVE	RLC3	8.34'	13.14'
LINE	RL2	-	14.59'
CURVE	RLC4	8.34'	13.12'



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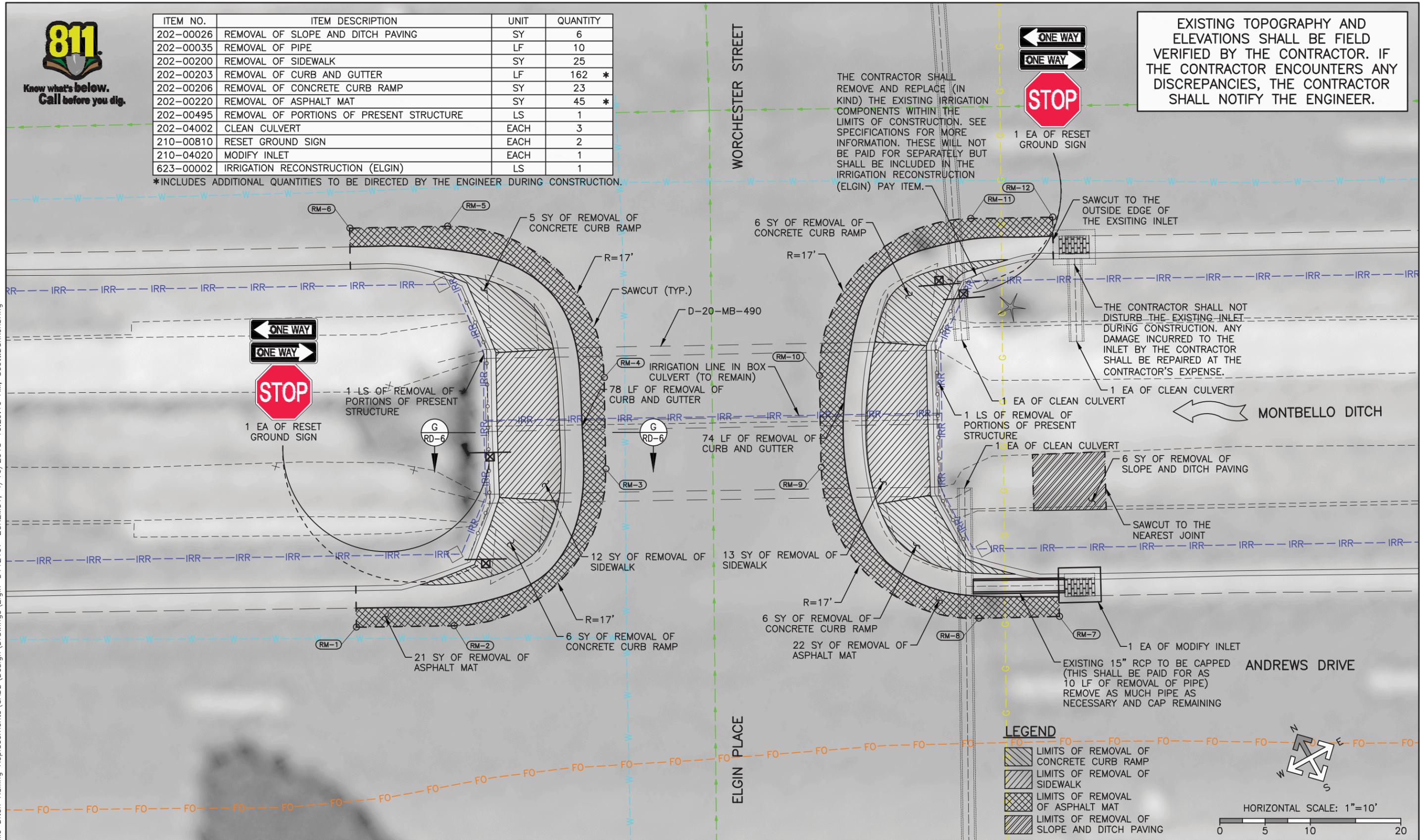


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No Revisions:	Designer: SED	Structure Numbers	PWTRN201737616
Revised:	Detailer: SED		
Void:	Subset: Roadway	Sheets: PD-1 of 1	
			Sheet Number 13



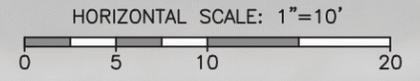
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202-00026	REMOVAL OF SLOPE AND DITCH PAVING	SY	6
202-00035	REMOVAL OF PIPE	LF	10
202-00200	REMOVAL OF SIDEWALK	SY	25
202-00203	REMOVAL OF CURB AND GUTTER	LF	162 *
202-00206	REMOVAL OF CONCRETE CURB RAMP	SY	23
202-00220	REMOVAL OF ASPHALT MAT	SY	45 *
202-00495	REMOVAL OF PORTIONS OF PRESENT STRUCTURE	LS	1
202-04002	CLEAN CULVERT	EACH	3
210-00810	RESET GROUND SIGN	EACH	2
210-04020	MODIFY INLET	EACH	1
623-00002	IRRIGATION RECONSTRUCTION (ELGIN)	LS	1

\*INCLUDES ADDITIONAL QUANTITIES TO BE DIRECTED BY THE ENGINEER DURING CONSTRUCTION.



**LEGEND**

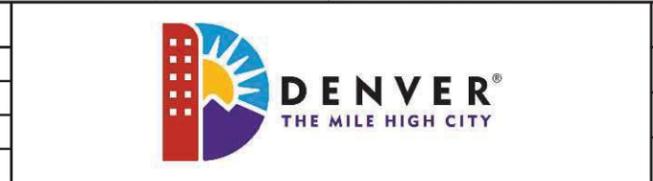
	LIMITS OF REMOVAL OF CONCRETE CURB RAMP
	LIMITS OF REMOVAL OF SIDEWALK
	LIMITS OF REMOVAL OF ASPHALT MAT
	LIMITS OF REMOVAL OF SLOPE AND DITCH PAVING



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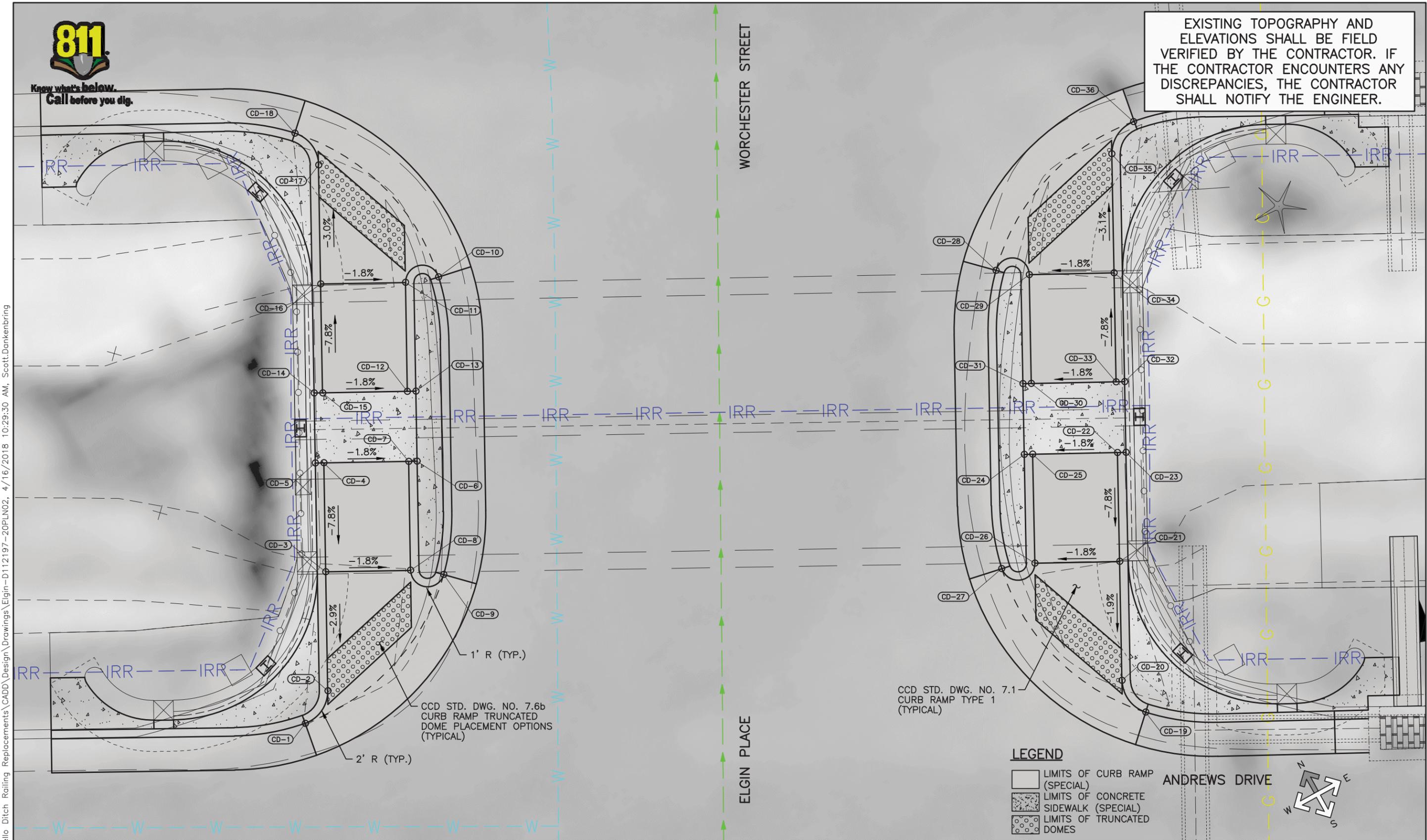
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No Revisions:	ANDREWS DRIVE AT ELGIN PLACE		2016-PROJMSTR-0000707
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	Subset: Roadway		





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No Revisions:	ANDREWS DRIVE AT ELGIN PLACE		2016-PROJMSTR-0000707
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Void:	Detailer: SED	Sheets:	PWTRN201737616
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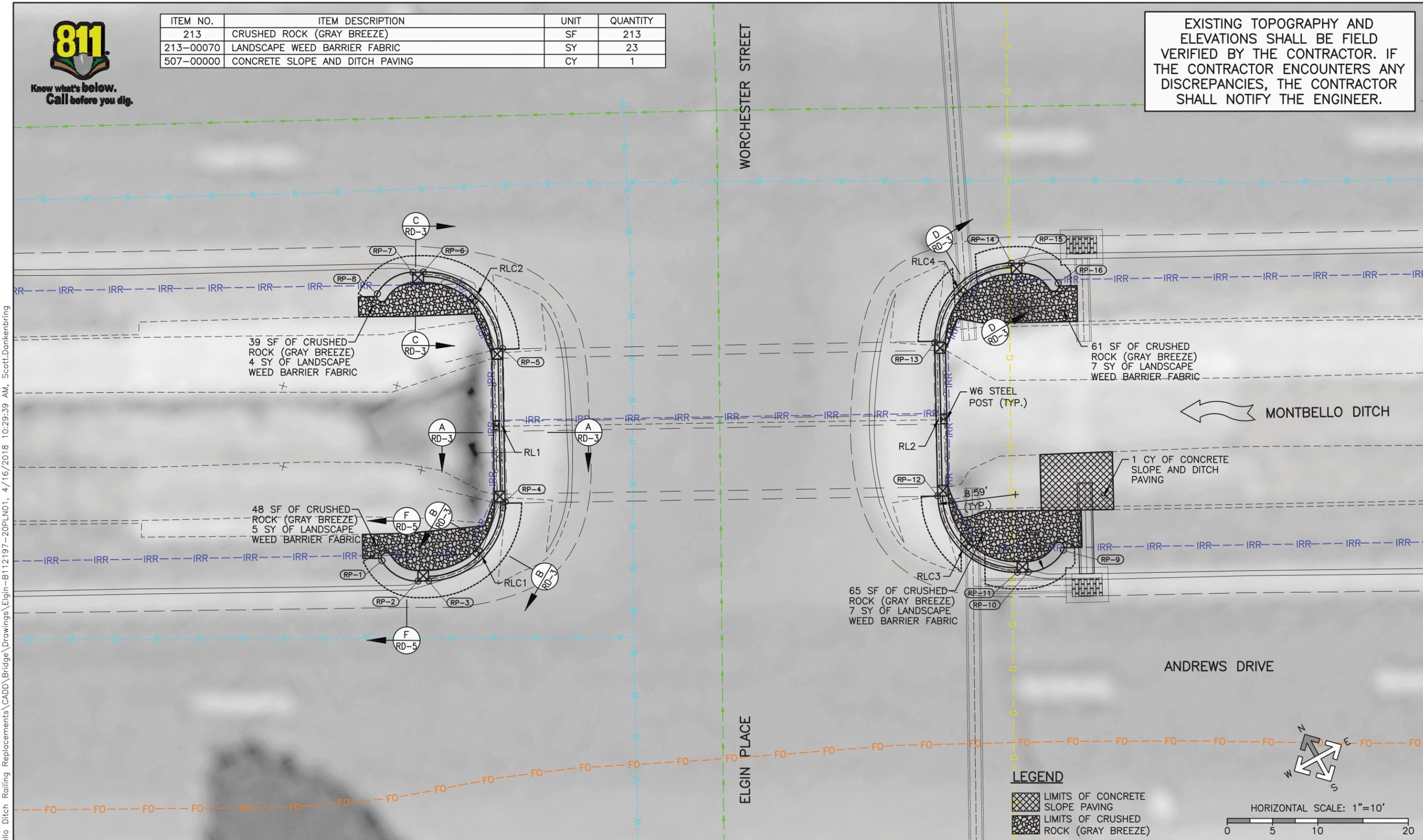
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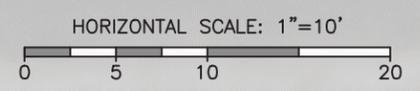
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
213	CRUSHED ROCK (GRAY BREEZE)	SF	213
213-00070	LANDSCAPE WEED BARRIER FABRIC	SY	23
507-00000	CONCRETE SLOPE AND DITCH PAVING	CY	1

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**LEGEND**

- LIMITS OF CONCRETE SLOPE PAVING
- LIMITS OF CRUSHED ROCK (GRAY BREEZE)



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MONTBELLO DITCH RAILING REPLACEMENTS ANDREWS DRIVE AT ELGIN PLACE RAILING PLAN			
Designer:	SED	Structure	D-20-MB-490
Detailer:	SED	Numbers	
Subset:	Structure	Sheets:	RP-1 of 1

Project No./Code	2016-PROJMSTR-0000707
	PWTRN201737616
Sheet Number	17



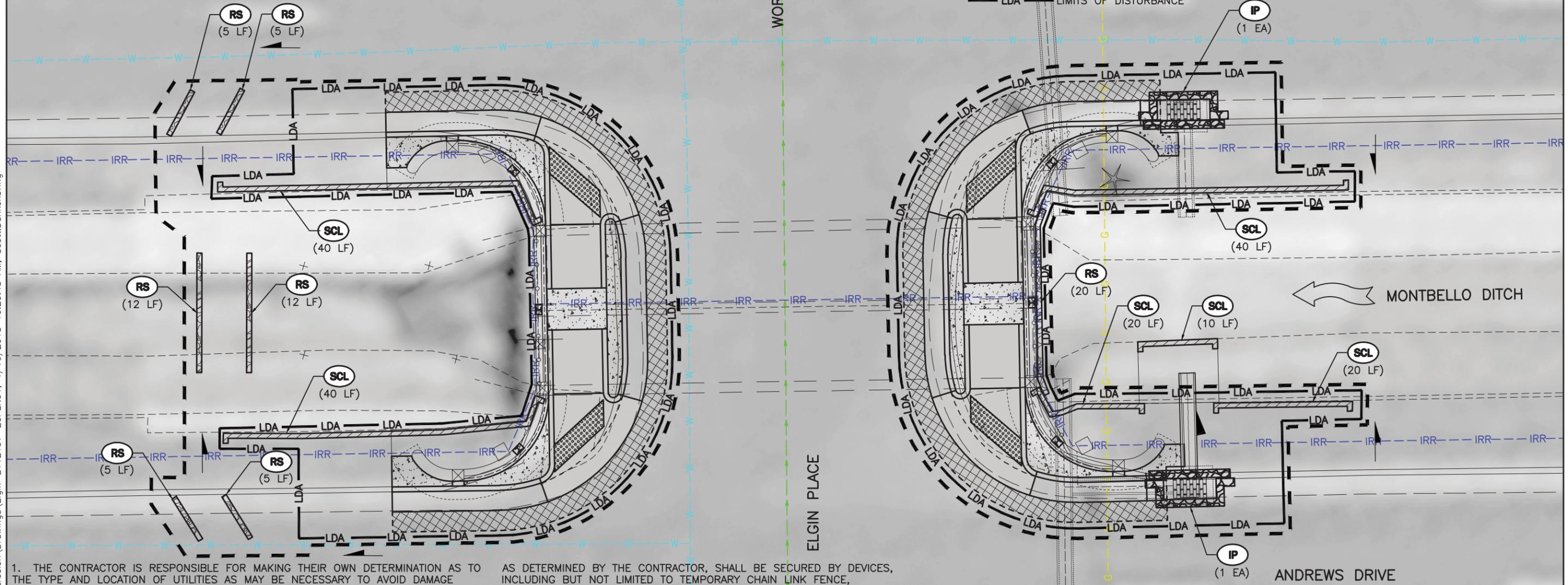
**CONSTRUCTION BMP PLAN SYMBOLS:**

- CWA** CONCRETE WASHOUT AREA
- CF** CONSTRUCTION FENCE
- RS** ROCK SOCK
- SCL** SEDIMENT CONTROL LOG
- IP** INLET PROTECTION

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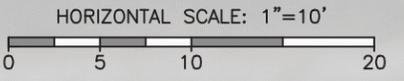
**LEGEND**

- GENERAL DIRECTION OF FLOW
- - - LIMITS OF CONSTRUCTION
- LDA — LIMITS OF DISTURBANCE



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As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS ANDREWS DRIVE AT ELGIN PLACE EROSION CONTROL PLAN		Project No./Code
No Revisions:			2016-PROJMSTR-0000707
Revised:	Designer:	Structure Numbers	D-20-MB-490
Void:	Detailer:	Sheets:	PWTRN201737616
	Subset:	Erosion	EC-1 of 1
			Sheet Number 18

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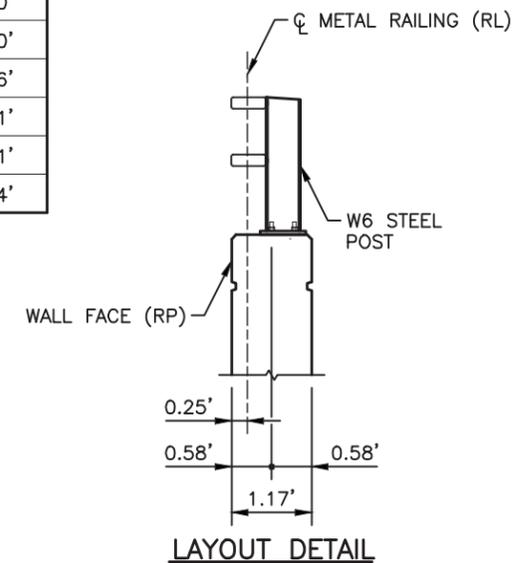
POINT TABLE – REMOVAL AND RESET PLANS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
RM-1	410920.4032	618071.9416	5322.19	MATCH EXISTING
RM-2	410915.2985	618081.4236	5322.34	MATCH EXISTING
RM-3	410922.4060	618104.5551	5322.53	MATCH EXISTING
RM-4	410931.3085	618109.1981	5322.61	MATCH EXISTING
RM-5	410954.2052	618102.0582	5322.32	MATCH EXISTING
RM-6	410959.2589	618092.4802	5322.18	MATCH EXISTING
RM-7	410884.0548	618139.9413	5322.13	MATCH EXISTING
RM-8	410887.8631	618132.5863	5322.28	MATCH EXISTING
RM-9	410911.0057	618125.4277	5322.61	MATCH EXISTING
RM-10	410919.7307	618130.1157	5322.62	MATCH EXISTING
RM-11	410926.8100	618152.8511	5322.29	MATCH EXISTING
RM-12	410922.6237	618161.0107	5322.19	MATCH EXISTING

POINT TABLE – ROADWAY PLANS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
PL-1	410923.9252	618073.8377	5321.98	FLOWLINE
PL-2	410918.8206	618083.3197	5322.14	FLOWLINE
PL-3	410924.2557	618101.0085	5322.32	FLOWLINE
PL-4	410933.1582	618105.6515	5322.41	FLOWLINE
PL-5	410950.6674	618100.1916	5322.11	FLOWLINE
PL-6	410955.7212	618090.6135	5321.98	FLOWLINE
PL-7	410887.6532	618144.5802	5322.42	SLOPE PAVING
PL-9	410887.6069	618141.7805	5321.89	FLOWLINE
PL-10	410891.4152	618134.4256	5322.07	FLOWLINE
PL-11	410909.1124	618128.9513	5322.40	FLOWLINE
PL-12	410917.8375	618133.6393	5322.42	FLOWLINE
PL-13	410923.2510	618151.0252	5322.09	FLOWLINE
PL-14	410919.0647	618159.1847	5321.98	FLOWLINE
PL-16	410917.1575	618160.1238	5322.51	SLOPE PAVING

POINT TABLE – CURB RETURN DETAILS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CD-1	410917.4270	618087.4503	5322.16	FLOWLINE
CD-2	410918.4776	618089.5362	5322.18	CURB RAMP
CD-3	410924.6846	618092.7734	5322.48	CURB RAMP
CD-4	410930.3683	618095.7377	5322.98	CURB RAMP
CD-5	410930.5995	618095.2944	5322.99	SIDEWALK
CD-6	410927.8249	618100.6143	5322.89	SIDEWALK
CD-7	410928.0562	618100.1710	5322.89	CURB RAMP
CD-8	410922.3725	618097.2067	5322.39	CURB RAMP
CD-9	410921.2136	618098.8110	5322.26	FLOWLINE
CD-10	410936.7012	618106.8885	5322.40	FLOWLINE
CD-11	410937.3536	618105.0200	5322.43	CURB RAMP
CD-12	410931.6699	618102.0557	5322.93	CURB RAMP
CD-13	410931.4387	618102.4990	5322.92	SIDEWALK
CD-14	410934.2132	618097.1791	5323.03	SIDEWALK
CD-15	410933.9820	618097.6224	5323.02	CURB RAMP
CD-16	410939.6657	618100.5867	5322.52	CURB RAMP
CD-17	410945.8727	618103.8240	5322.25	CURB RAMP
CD-18	410948.1845	618103.4917	5322.20	FLOWLINE
CD-19	410894.0607	618130.9260	5322.17	FLOWLINE
CD-20	410896.3763	618130.6222	5322.24	CURB RAMP
CD-21	410902.5166	618133.9214	5322.53	CURB RAMP
CD-22	410908.1634	618136.9554	5323.03	CURB RAMP
CD-23	410907.9267	618137.3959	5323.04	SIDEWALK
CD-24	410910.7665	618132.1105	5322.93	SIDEWALK
CD-25	410910.5299	618132.5509	5322.94	CURB RAMP
CD-26	410904.8833	618129.5165	5322.44	CURB RAMP
CD-27	410905.5849	618127.6708	5322.39	FLOWLINE
CD-28	410920.8523	618135.8740	5322.41	FLOWLINE
CD-29	410919.7005	618137.4778	5322.45	CURB RAMP
CD-30	410914.0042	618134.4310	5322.95	CURB RAMP
CD-31	410914.2901	618134.0037	5322.94	SIDEWALK
CD-32	410911.4503	618139.2891	5323.05	SIDEWALK
CD-33	410911.6869	618138.8486	5323.04	CURB RAMP
CD-34	410917.3337	618141.8826	5322.54	CURB RAMP
CD-35	410923.4739	618145.1818	5322.12	CURB RAMP
CD-36	410924.4988	618147.2804	5322.10	FLOWLINE

POINT TABLE – RAILING PLANS						
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION	ELEVATION	DESCRIPTION
RP-1	410925.8354	618077.2370	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-2	410921.9332	618079.6475	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-3	410921.3802	618080.6747	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-4	410924.9701	618092.3584	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-5	410939.8993	618100.1446	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-6	410951.4644	618096.5383	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-7	410952.0088	618095.5064	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-8	410951.8342	618090.9231	5324.39	TOP OF RAIL	5318.97	BOTTOM OF FOOTING
RP-9	410890.3580	618143.6297	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING
RP-10	410890.1445	618139.0545	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING
RP-11	410890.6778	618138.0245	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING
RP-12	410902.3671	618134.4087	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING
RP-13	410917.1184	618142.3346	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING
RP-14	410920.6971	618153.8197	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING
RP-15	410920.1744	618154.8608	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING
RP-16	410916.3180	618157.3499	5324.47	TOP OF RAIL	5318.98	BOTTOM OF FOOTING

DATA TABLE – METAL RAILING			
FEATURE	CALLOUT	RADIUS	LENGTH
CURVE	RLC1	8.34'	13.20'
LINE	RL1	-	14.50'
CURVE	RLC2	8.34'	13.06'
CURVE	RLC3	8.34'	13.21'
LINE	RL2	-	14.41'
CURVE	RLC4	8.34'	12.94'



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**FELSBURG HOLT & ULLEVIG**  
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 Centennial, CO 80111  
 Phone: 303.721.1440  
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	Date	Comments	Initials



As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS ANDREWS DRIVE AT ELK PLACE POINT DATA		Project No./Code
No Revisions:			2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure: D-20-MB-500	PWTRN201737616
Void:	Detailer: SED	Numbers:	
	Subset: Roadway	Sheets: PD-1 of 1	Sheet Number 19



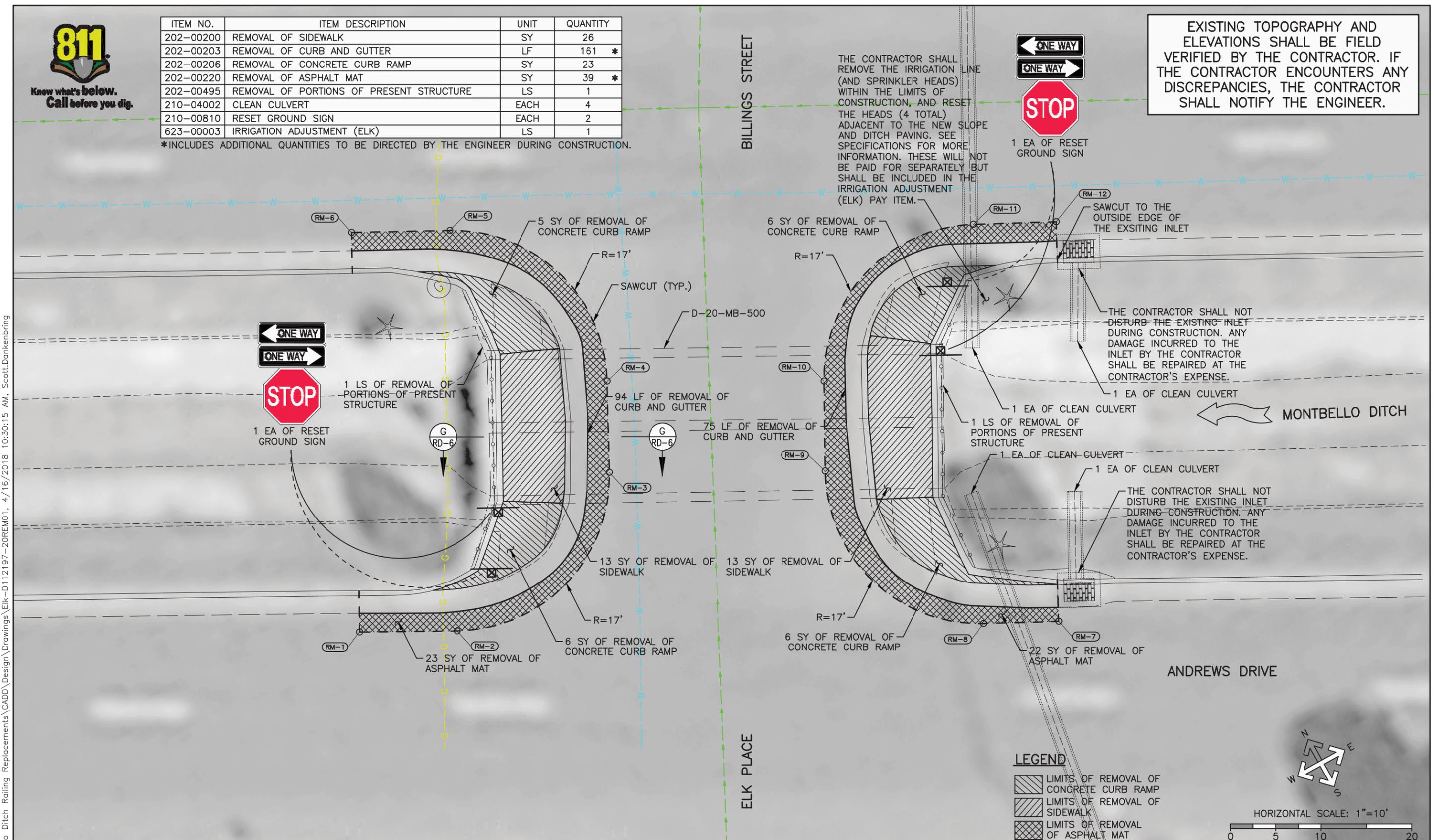
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ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
202-00200	REMOVAL OF SIDEWALK	SY	26
202-00203	REMOVAL OF CURB AND GUTTER	LF	161 *
202-00206	REMOVAL OF CONCRETE CURB RAMP	SY	23
202-00220	REMOVAL OF ASPHALT MAT	SY	39 *
202-00495	REMOVAL OF PORTIONS OF PRESENT STRUCTURE	LS	1
210-04002	CLEAN CULVERT	EACH	4
210-00810	RESET GROUND SIGN	EACH	2
623-00003	IRRIGATION ADJUSTMENT (ELK)	LS	1

\*INCLUDES ADDITIONAL QUANTITIES TO BE DIRECTED BY THE ENGINEER DURING CONSTRUCTION.

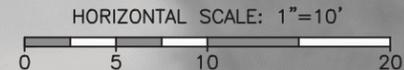
EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

THE CONTRACTOR SHALL REMOVE THE IRRIGATION LINE (AND SPRINKLER HEADS) WITHIN THE LIMITS OF CONSTRUCTION, AND RESET THE HEADS (4 TOTAL) ADJACENT TO THE NEW SLOPE AND DITCH PAVING. SEE SPECIFICATIONS FOR MORE INFORMATION. THESE WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE IRRIGATION ADJUSTMENT (ELK) PAY ITEM.



**LEGEND**

- LIMITS OF REMOVAL OF CONCRETE CURB RAMP
- LIMITS OF REMOVAL OF SIDEWALK
- LIMITS OF REMOVAL OF ASPHALT MAT



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As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS		Project No./Code
No Revisions:	ANDREWS DRIVE AT ELK PLACE		2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers: D-20-MB-500	PWTRN201737616
Void:	Detailer: SED	Sheets: RM-1 of 1	Sheet Number 20
	Subset: Roadway		



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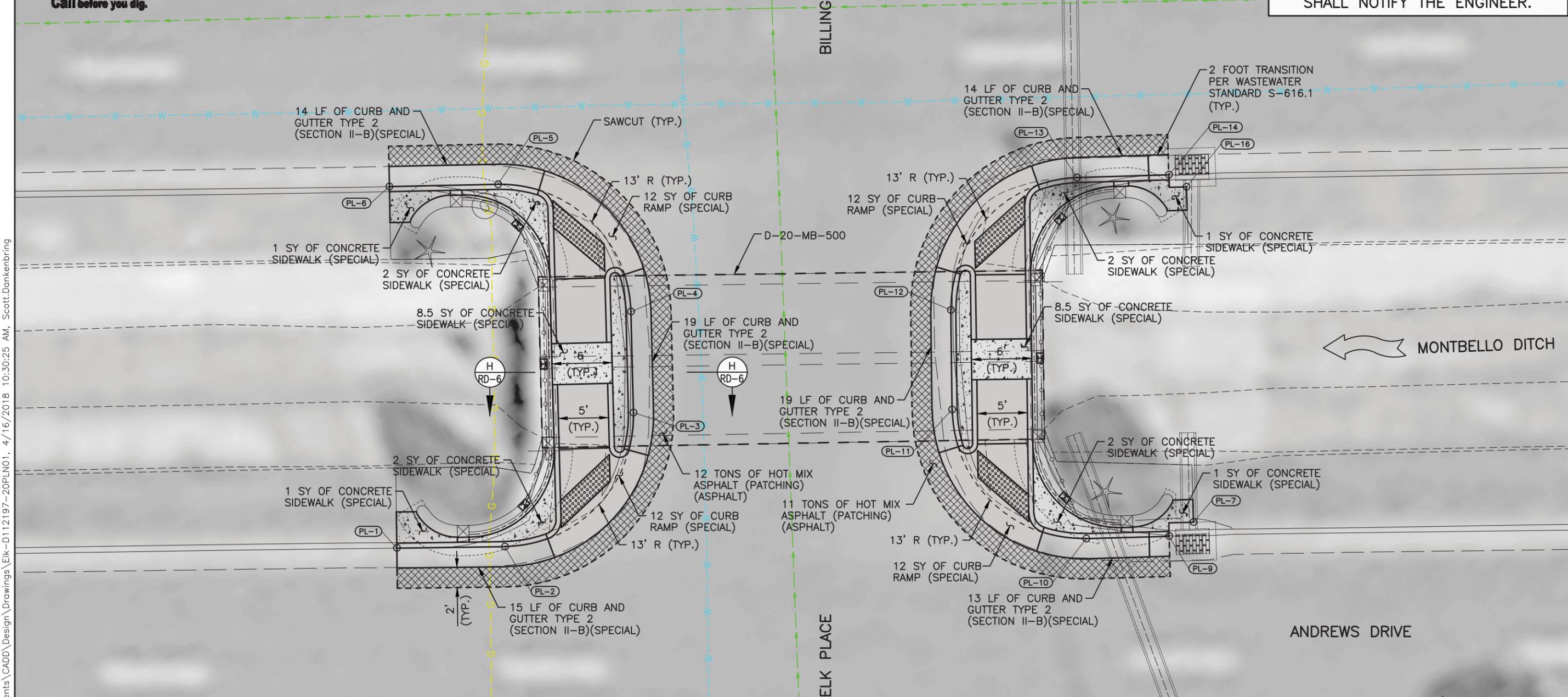
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
403-00720	HOT MIX ASPHALT (PATCHING)(ASPHALT)	TON	24 *
608-00005	CONCRETE SIDEWALK (SPECIAL)	SY	29
608-00012	CURB RAMP (SPECIAL)	SY	48
609-21023	CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL)	LF	104 *

\*INCLUDES ADDITIONAL QUANTITIES TO BE DIRECTED BY THE ENGINEER DURING CONSTRUCTION.

UTILITY CONTACT  
XCEL ENERGY  
BRETT BELL  
303-375-3500 PHONE

EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

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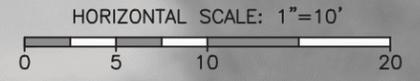
UTILITY INFORMATION SHOWN IS PLOTTED FROM THE BEST AVAILABLE DATA. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 FOR UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO EXCAVATING. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR ANY UTILITIES THAT NEED RELOCATING.

THE CONTRACTOR SHALL USE PARTICULAR CARE TO MINIMIZE DAMAGE TO EXISTING VEGETATION WITHIN THE DISTURBED AREAS.

- HOT MIX ASPHALT (PATCHING)(ASPHALT),
- CURB RAMP (SPECIAL), CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL), AND CONCRETE SIDEWALK REQUIRED ON THIS PROJECT SHALL BE CONSTRUCTED TO THE TOP OF THE EXISTING BOX CULVERT.

LEGEND

- LIMITS OF CURB RAMP (SPECIAL)
- ▨ LIMITS OF HOT MIX ASPHALT (PATCHING)(ASPHALT)
- ▤ LIMITS OF CONCRETE SIDEWALK (SPECIAL)
- ▧ LIMITS OF TRUNCATED DOMES



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 Revised:  
 Void:

MONTBELLO DITCH RAILING REPLACEMENTS  
 ANDREWS DRIVE AT ELK PLACE  
 ROADWAY PLAN

Designer: SED  
 Detailer: SED  
 Subset: Roadway

Structure Numbers: D-20-MB-500  
 Sheets: PL-1 of 1

Project No./Code  
 2016-PROJMSTR-0000707  
 PWTRN201737616  
 Sheet Number 21

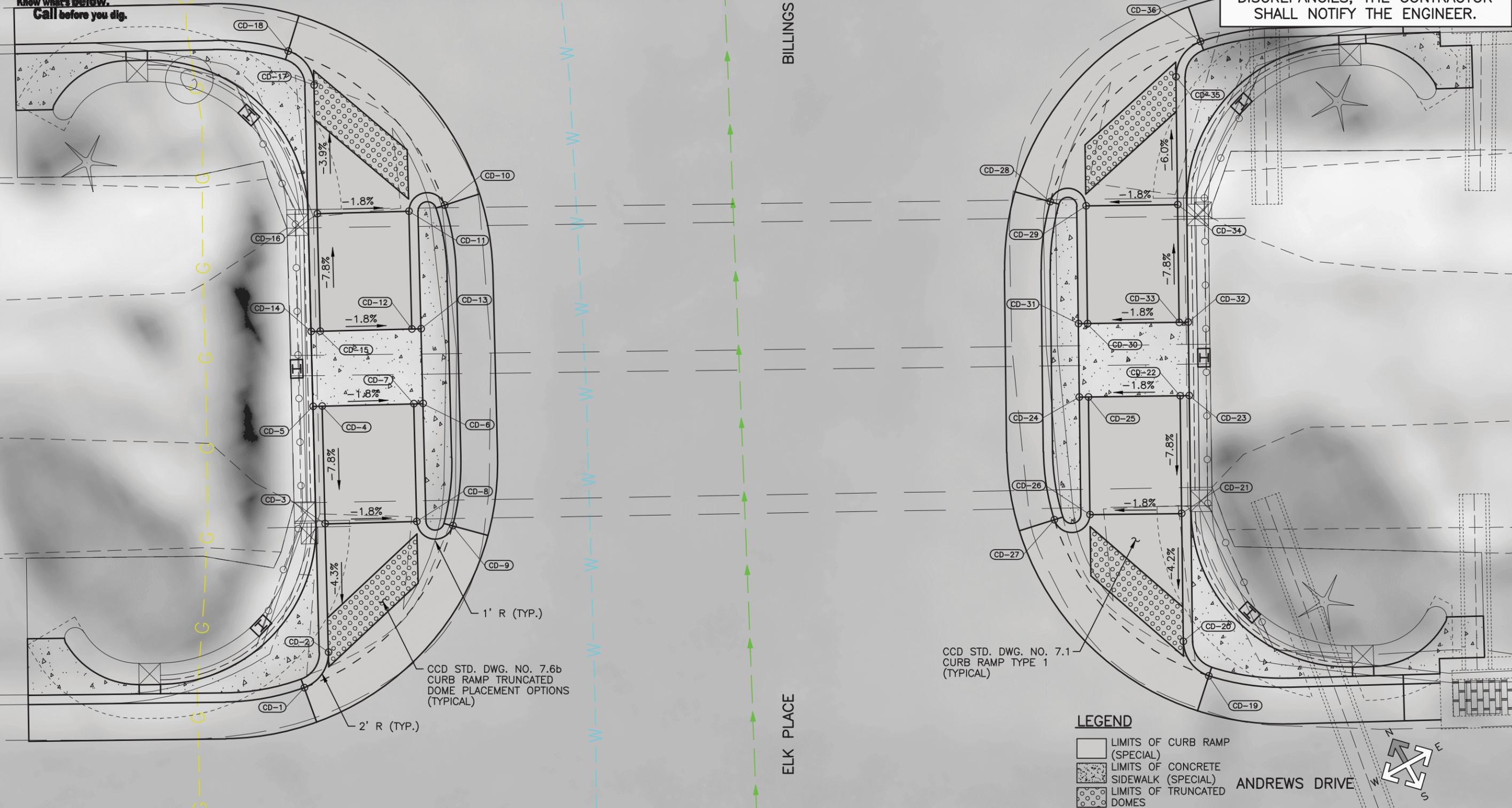


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EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

BILLINGS STREET

ELK PLACE

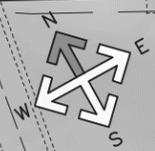


CCD STD. DWG. NO. 7.6b  
CURB RAMP TRUNCATED  
DOME PLACEMENT OPTIONS  
(TYPICAL)

CCD STD. DWG. NO. 7.1  
CURB RAMP TYPE 1  
(TYPICAL)

LEGEND

- LIMITS OF CURB RAMP (SPECIAL)
- LIMITS OF CONCRETE SIDEWALK (SPECIAL)
- LIMITS OF TRUNCATED DOMES



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Date	Comments	Initials	



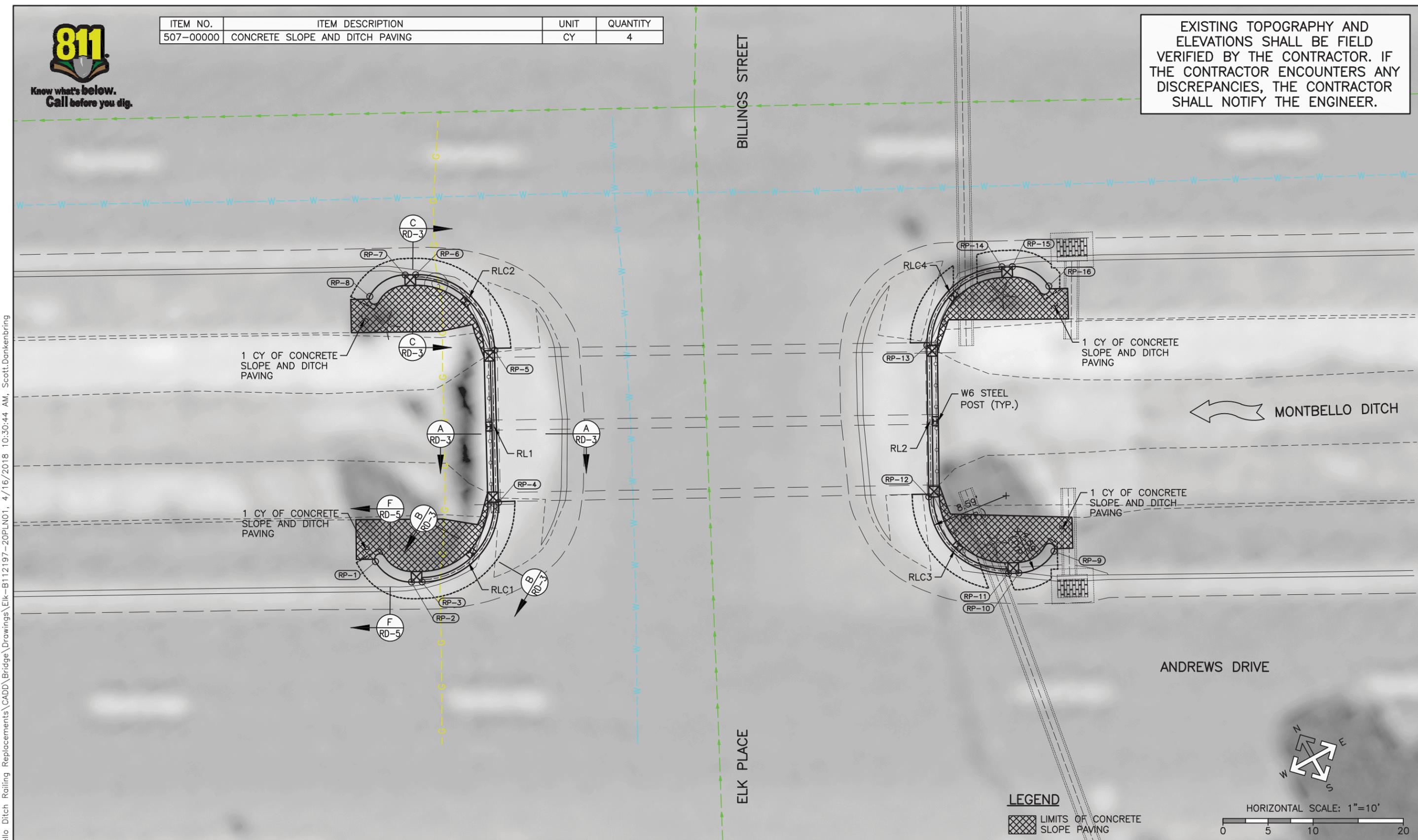
As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS		Project No./Code
No Revisions:	ANDREWS DRIVE AT ELK PLACE		2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers: D-20-MB-500	PWTRN201737616
Void:	Detailer: SED	Sheets: CD-1 of 1	Sheet Number 22



ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
507-00000	CONCRETE SLOPE AND DITCH PAVING	CY	4

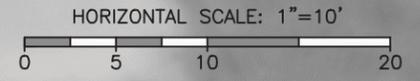
EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

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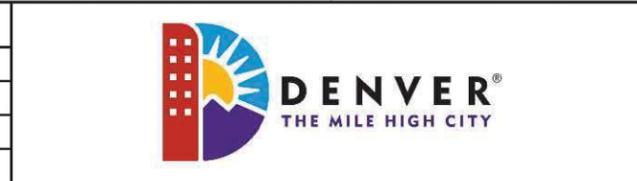
**LEGEND**

LIMITS OF CONCRETE SLOPE PAVING



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(R-X)	Date	Comments	Initials



As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS		Project No./Code
No Revisions:	ANDREWS DRIVE AT ELK PLACE		2016-PROJMSTR-0000707
Revised:	Designer: SED	Structure Numbers: D-20-MB-500	PWTRN201737616
Void:	Detailer: SED	Sheets: RP-1 of 1	Sheet Number 23



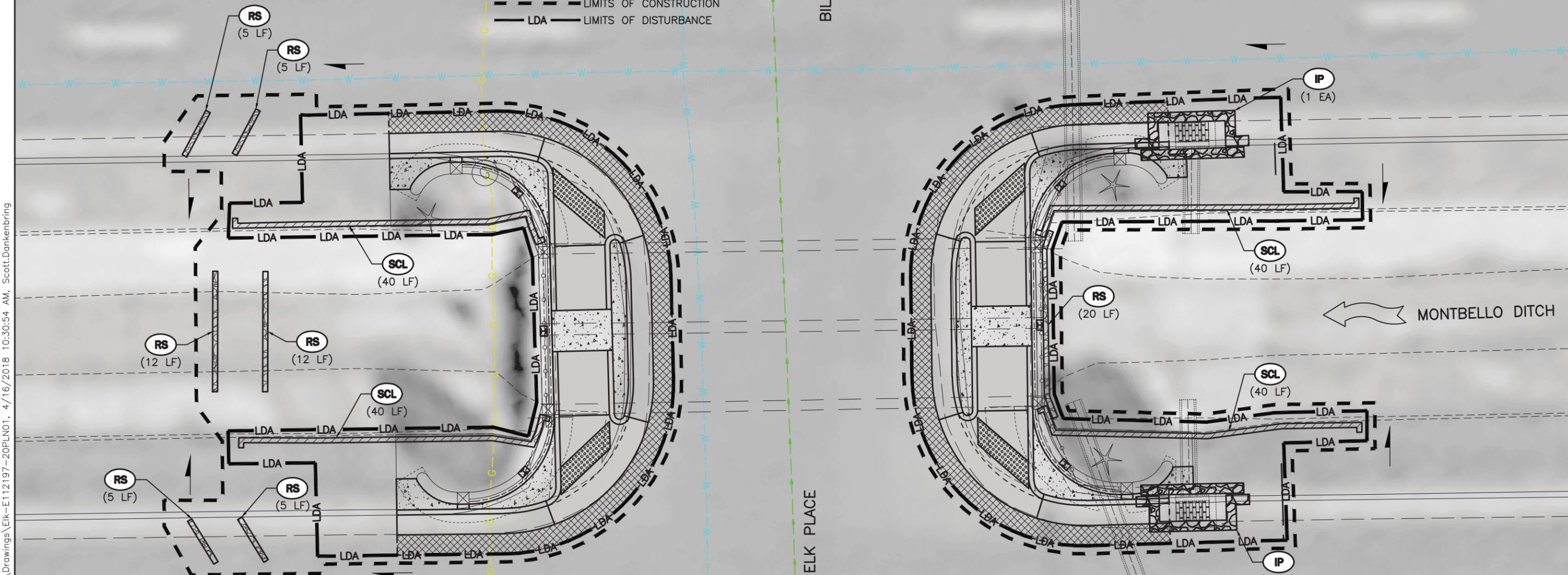
**CONSTRUCTION BMP PLAN SYMBOLS:**

- CWA** CONCRETE WASHOUT AREA    **CF** CONSTRUCTION FENCE
- RS** ROCK SOCK    **SCL** SEDIMENT CONTROL LOG
- IP** INLET PROTECTION

**LEGEND**

- GENERAL DIRECTION OF FLOW
- LIMITS OF CONSTRUCTION
- LDA LIMITS OF DISTURBANCE

EXISTING TOPOGRAPHY AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF THE CONTRACTOR ENCOUNTERS ANY DISCREPANCIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.



1. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 FOR UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO EXCAVATING. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR ANY UTILITIES THAT NEED RELOCATING.
2. DISTURBED SOD AREAS SHALL BE RESODDED AT THE DIRECTION OF THE ENGINEER AND COMPLETED 48 HOURS AFTER WORK IS COMPLETED.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION BMPS IN ACCORDANCE WITH THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT (UDFCD) URBAN STORM DRAINAGE CRITERIA MANUAL, VOLUME
4. STAGING AREAS REQUIRED OUTSIDE OF THE SHOWN LIMITS OF CONSTRUCTION SHALL CONFORM TO SPECIFICATION 208 PART V (G). STAGING AREA IS TO BE PLACED ON A PAVED SURFACE (REFER TO SHEET CTC 2 OF 6, SHEET NUMBER 33), AND SHALL CONFORM TO SPECIFICATION 208. THE PERIMETER OF THE STAGING AREA,

5. ALL BMP'S SHOWN SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED DURING THE INTERIM PHASE OF CONSTRUCTION.
- AS DETERMINED BY THE CONTRACTOR, SHALL BE SECURED BY DEVICES, INCLUDING BUT NOT LIMITED TO TEMPORARY CHAIN LINK FENCE, CONSTRUCTION FENCE AND EROSION CONTROL MEASURES NECESSARY TO AID AGAINST THE POTENTIAL FOR SEDIMENT RUNOFF FROM THE STAGING AREA. THE ITEMS NECESSARY FOR THIS PERIMETER CONTROL SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK. THE CONCRETE WASHOUT **CWA** SHALL BE LOCATED IN THE STAGING AREA.



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 0 5 10 20

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As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS ANDREWS DRIVE AT ELK PLACE EROSION CONTROL PLAN		Project No./Code
No Revisions:			2016-PROJMSTR-0000707
Revised:	Designer:	Structure Numbers	D-20-MB-500
			PWTRN201737616
Void:	Subset:	Erosion	Sheets: EC-1 of 1
			Sheet Number 24

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**GENERAL NOTES**

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2011 EDITION, AS AMENDED AND SUPPLEMENTED WITH SPECIAL PROVISIONS, AND CURRENT CITY AND COUNTY OF DENVER SPECIFICATIONS, AS APPLICABLE TO THE PROJECT.

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213. EXPANSION JOINT MATERIAL SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF ITEM 601 - CONCRETE CLASS D (WALL).

SEALANT SHALL BE A SILICONE MATERIAL.

A COLORED STRUCTURAL CONCRETE COATING FINISH WILL BE REQUIRED, AS SHOWN ON THE PLANS, ON EXPOSED CONCRETE SURFACES. THE COLOR SHALL BE TAN, EQUIVALENT TO FEDERAL STANDARD 595C COLOR NO. 17855, AND IS TO BE SELECTED FROM TEST PANELS PROVIDED BY THE CONTRACTOR.

STRUCTURAL CONCRETE EXPOSED SOIL SHALL CONFORM TO CEMENTITIOUS MATERIALS REQUIREMENTS CLASS 0, CORRESPONDING TO SULFATE EXPOSURE CLASS 0.

THE FINAL FINISH FOR ALL EXPOSED CONCRETE SURFACES SHALL BE CLASS 2, UNLESS OTHERWISE NOTED.

ALL STRUCTURAL STEEL OF PEDESTRIAN RAILING SHALL BE GALVANIZED AND DUPLEX COATED. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN PAY ITEM 514 PEDESTRIAN RAILING (STEEL) (SPECIAL). THE COLOR SHALL BE FEDERAL GREEN, EQUIVALENT TO FEDERAL STANDARD 595C COLOR NO. 14062.

UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36 (ASTM A-36):

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIALS.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND ROUGHENED BEFORE FRESH CONCRETE IS PLACED.

ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4", UNLESS SHOWN OR OTHERWISE NOTED.

GRADE 60 REINFORCING STEEL IS REQUIRED.

ALL REINFORCING STEEL SHALL BE EPOXY COATED REINFORCING BARS, UNLESS OTHERWISE NOTED.

THE FOLLOWING TABLE GIVES THE MINIMUM CLASS B LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

ALL REINFORCEMENT SHALL HAVE A CLEAR COVERAGE OF 2", EXCEPT AS SHOWN ON THE PLANS. CLEAR COVERAGE SHALL BE MEASURED FROM THE SURFACE OF THE CONCRETE TO THE OUTSIDE OF THE REINFORCEMENT.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. 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.

**ABBREVIATIONS:**

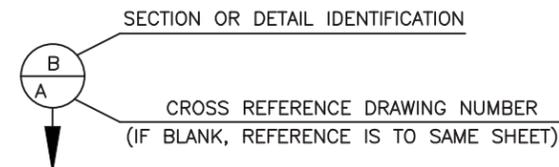
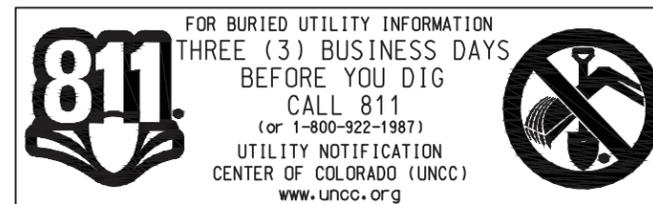
E.F. = EACH FACE  
 F.F. = FRONT FACE  
 B.F. = BACK FACE  
 C.J. = CONSTRUCTION JOINT  
 H.C.L. = HORIZONTAL CONTROL LINE  
 CLR. = CLEAR  
 CONT. = CONTINUOUS  
 EL. = ELEVATION  
 TYP. = TYPICAL  
 MAX. = MAXIMUM  
 MIN. = MINIMUM

**DESIGN DATA**

REINFORCED CONCRETE:

CLASS D CONCRETE:  $f'_c = 4,500$  psi  
 REINFORCING STEEL:  $f_y = 60,000$  psi

DESIGN LEVEL FOR RAILING: TL-1



SLOPE PAVING AND RAILING QUANTITIES (ESTIMATED)						
CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ANDREWS DRIVE AT URSULA STREET (D-20-MB-480)	ANDREWS DRIVE AT ELGIN PLACE (D-20-MB-490)	ANDREWS DRIVE AT ELK PLACE (D-20-MB-500)	PROJECT TOTALS
206-00000	STRUCTURE EXCAVATION	CY	106	109	105	320
206-00200	STRUCTURE BACKFILL (CLASS 2)	CY	83	86	82	251
514-00201	PEDESTRIAN RAILING (STEEL) (SPECIAL)	LF	81	82	81	244
601-03050	CONCRETE CLASS D (WALL)	CY	30	31	30	91
601-40300	STRUCTURAL CONCRETE COATING	SY	111	112	109	332
602-00020	REINFORCING STEEL (EPOXY COATED)	LB	4515	4600	4530	13645

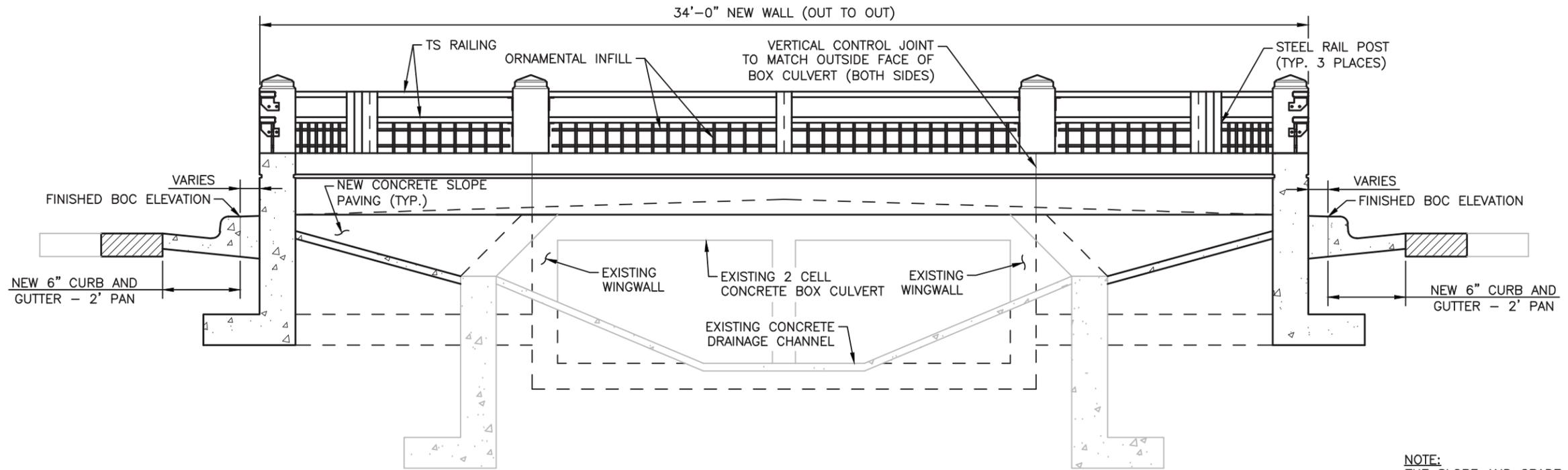
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	No Revisions:			2016-PROJMSTR-0000707
	Revised:	Designer: KSF	Structure Numbers	PWTRN201737616
	Void:	Detailer: CDM	Sheets: RD-1 of 6	Sheet Number 25



SECTION AT E. ANDREWS DRIVE

**NOTE:**  
 THE SLOPE AND GRADE OF THE NEW CONCRETE SLOPE PAVING IS DETERMINED BY A LINE PROJECTED FROM THE FINISHED BOC ELEVATION TO A POINT 1" BELOW THE TOP OF EXISTING WINGWALLS OR TO THE TOP EDGE OF EXISTING SLOPE PAVING.

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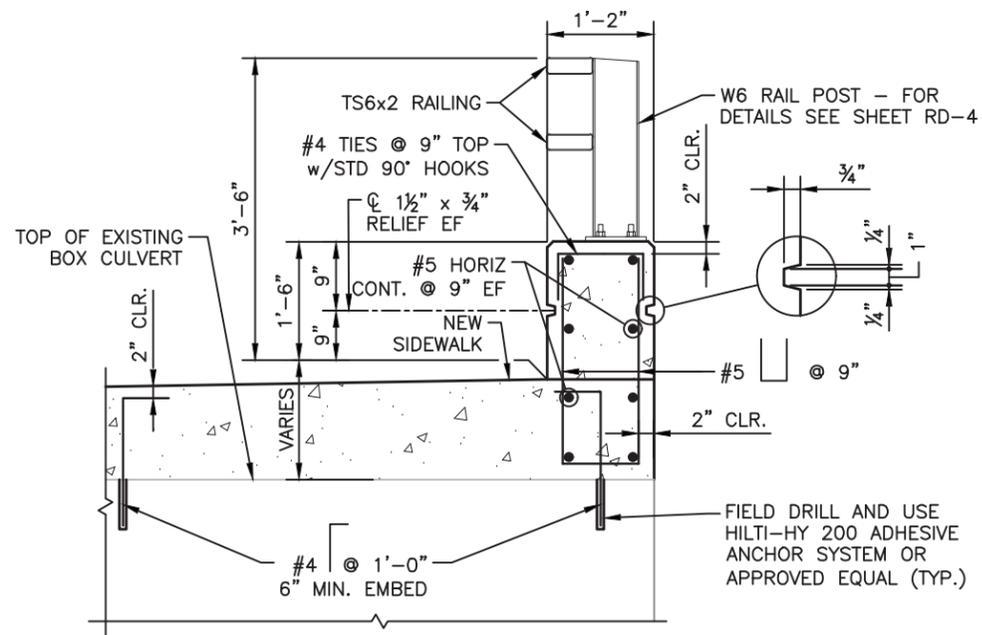


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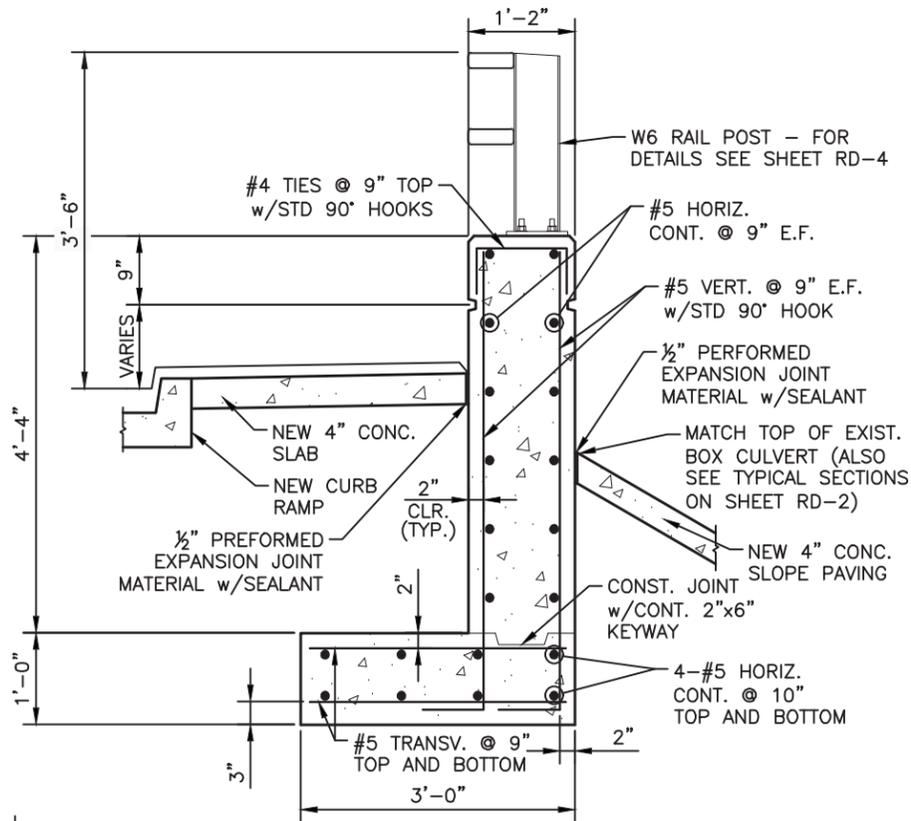
MONTBELLO DITCH RAILING REPLACEMENTS TYPICAL SECTIONS			
Designer:	KSF	Structure	Numbers
Detailer:	CDM	Structure	Numbers
Subset:	Structure	Sheets:	RD-2 of 6

Project No./Code	2016-PROJMSTR-0000707
Sheet Number	26

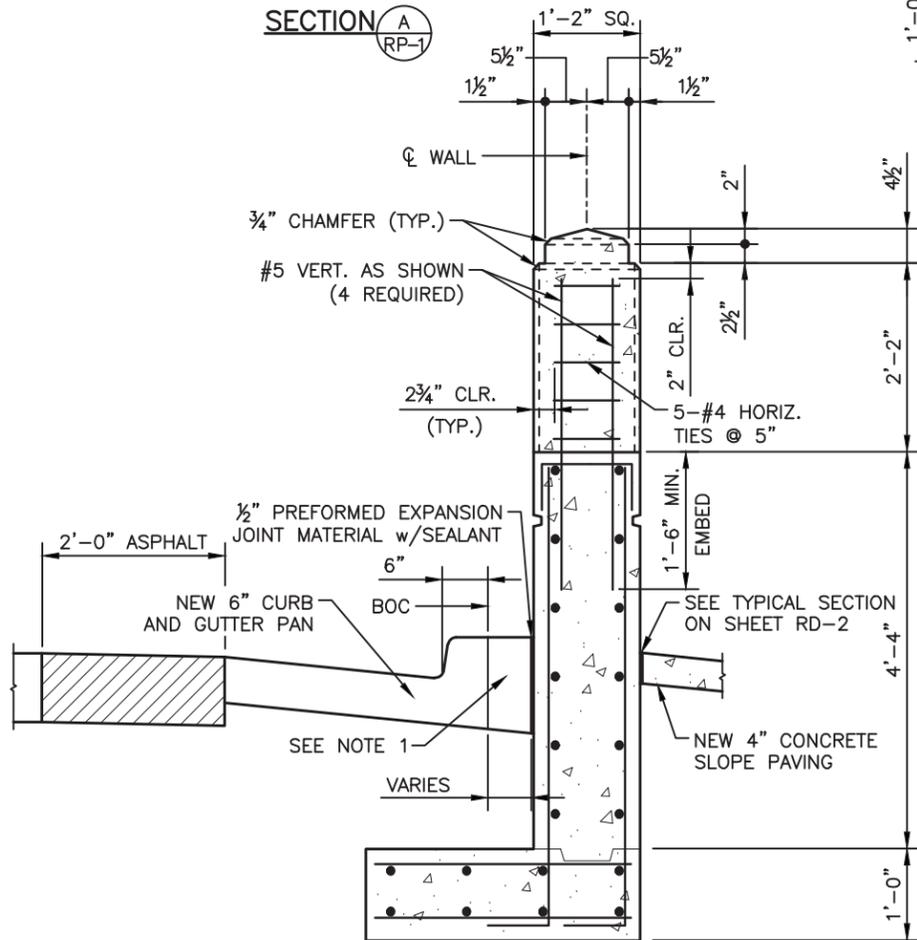
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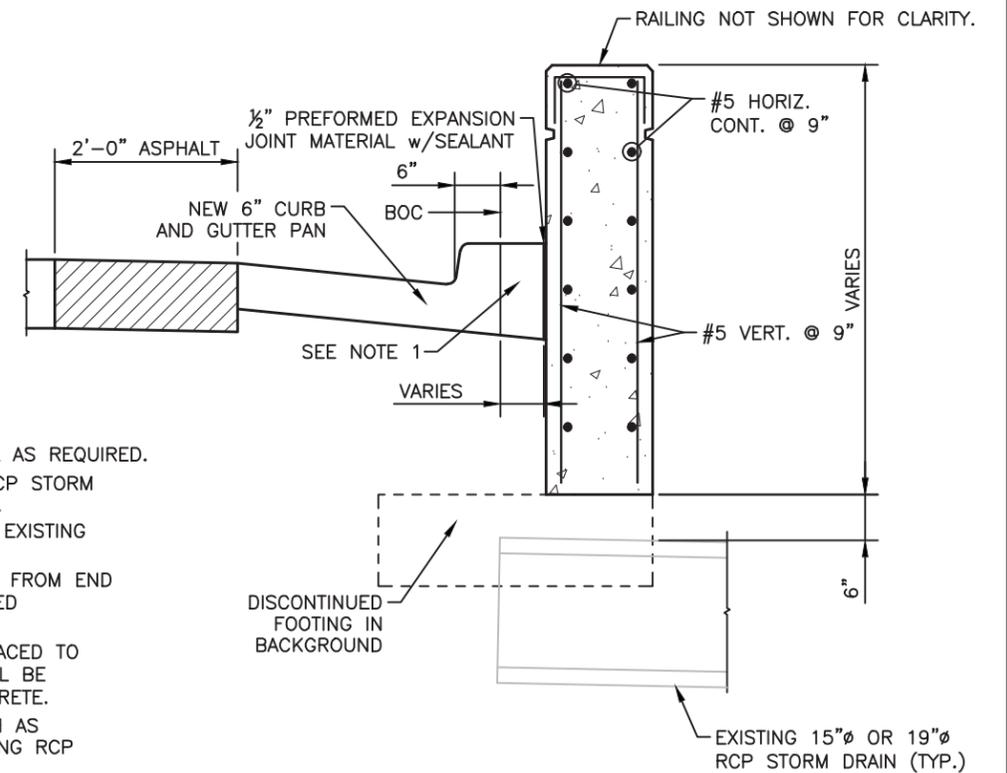
SECTION A  
RP-1



SECTION B  
RP-1



SECTION C  
RP-1



SECTION D  
RP-1

**NOTES:**

1. CURB MAY BE THICKENED ADJACENT TO NEW WALL AS REQUIRED.
2. CONTRACTOR SHALL VERIFY DEPTH OF EXISTING RCP STORM DRAIN PRIOR TO FABRICATION OF REINFORCING STEEL.
3. CONTRACTOR SHALL COORDINATE WORK CLOSE TO EXISTING INLETS WITH DWMD.
4. ALL REINFORCING STEEL SHALL BE TERMINATED 3" FROM END OF INTERRUPTED CONCRETE FOOTING AND INTERRUPTED CONCRETE WINGWALL AT DRAINAGE INLETS.
5. SEALANT SHALL BE A NON-SAG MATERIAL AND PLACED TO MANUFACTURER'S RECOMMENDATIONS. THE COST SHALL BE INCLUDED IN THE COST OF ITEM 601 CLASS D CONCRETE.
6. PROVIDE APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM BETWEEN BOTTOM OF RAILING AND EXISTING RCP STORM DRAIN.

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**MONTBELLO DITCH RAILING REPLACEMENTS  
RAILING DETAILS (1 OF 3)**

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Detailer:	CDM	Numbers	
Subset:	Structure	Sheets:	RD-3 of 6

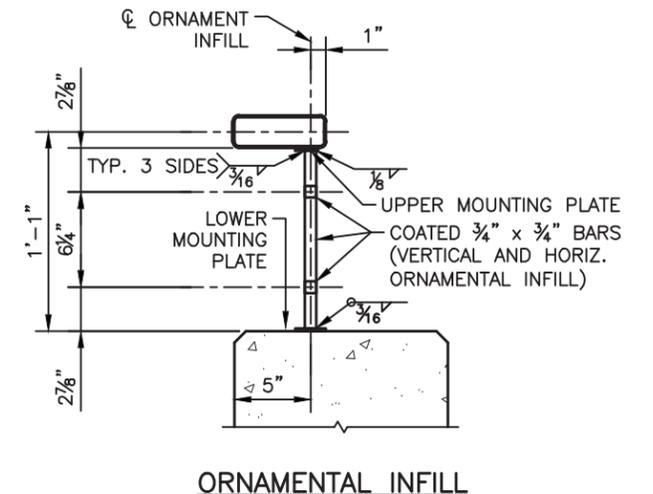
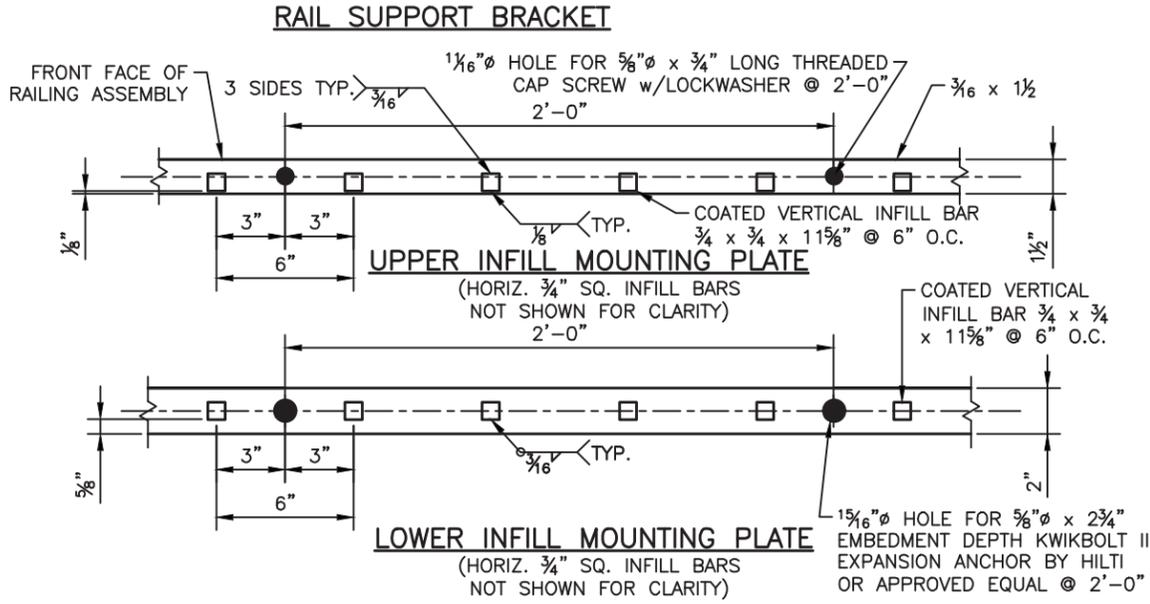
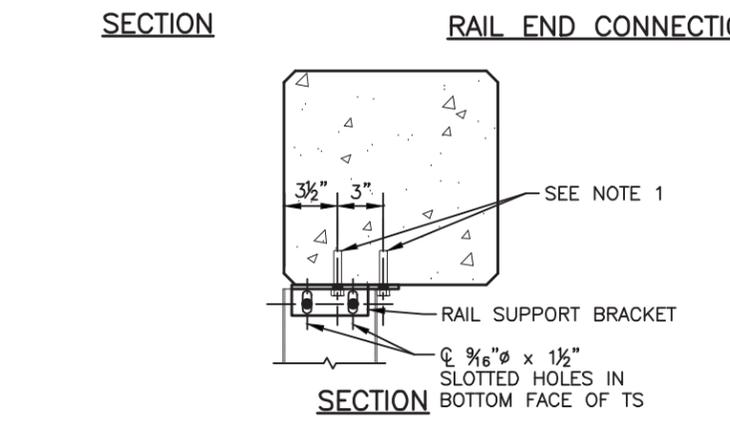
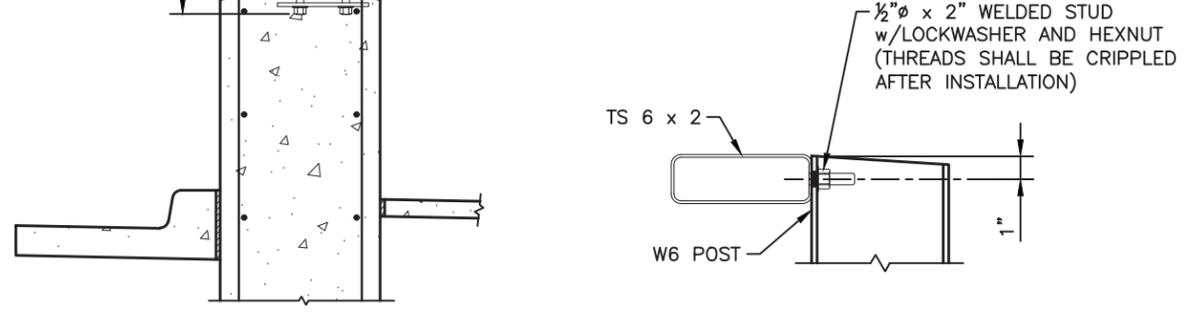
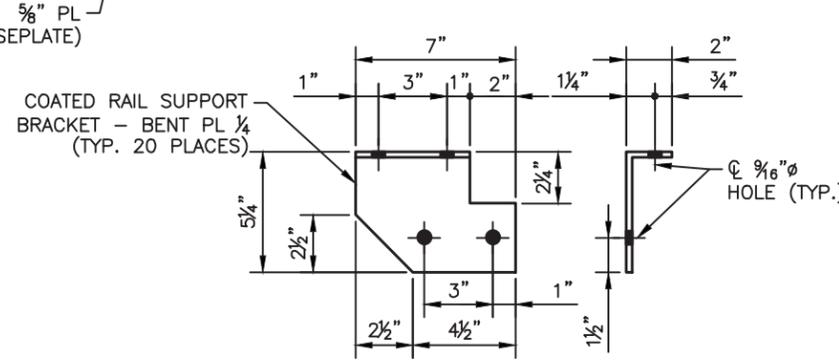
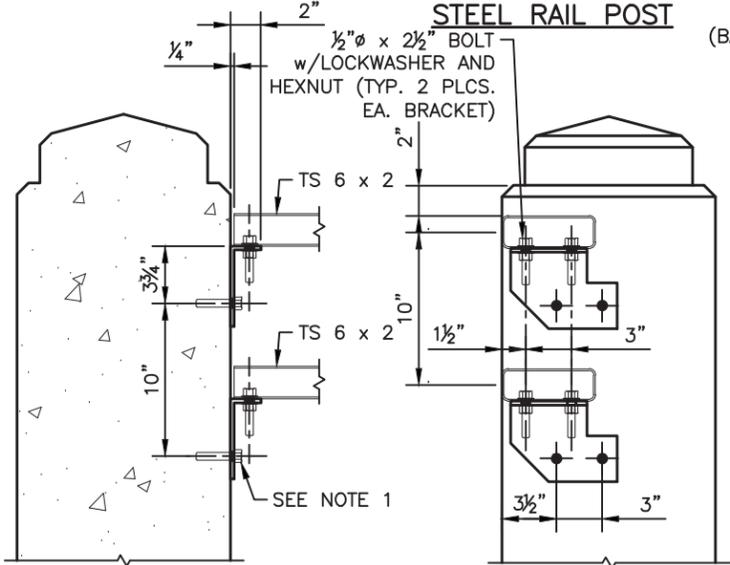
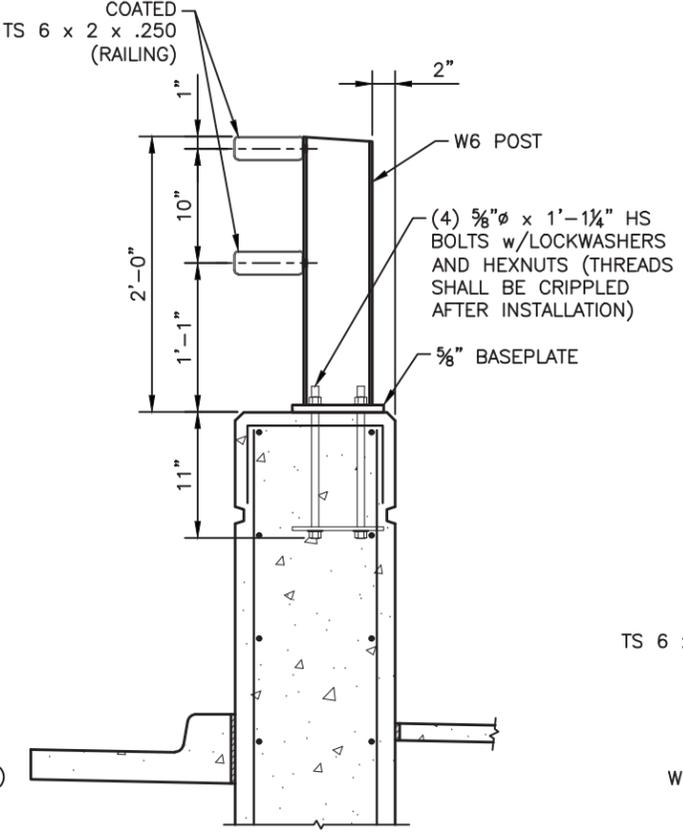
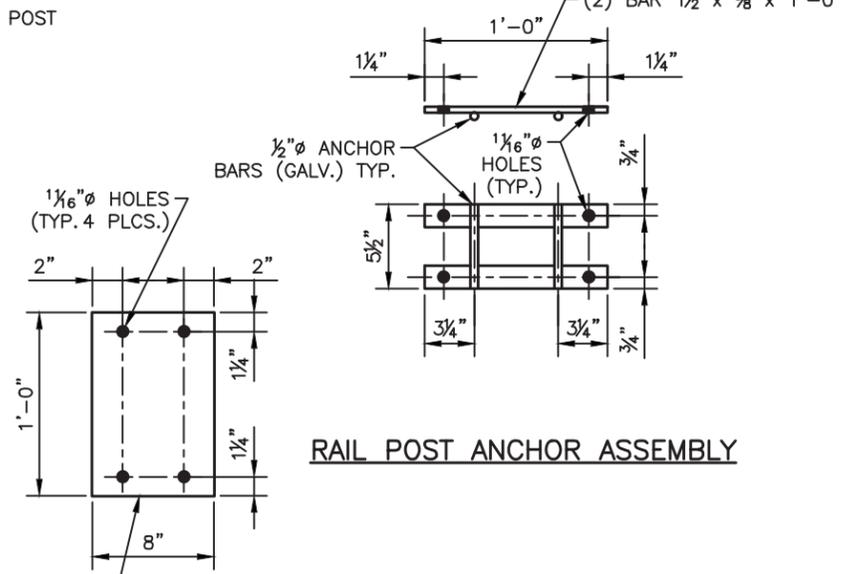
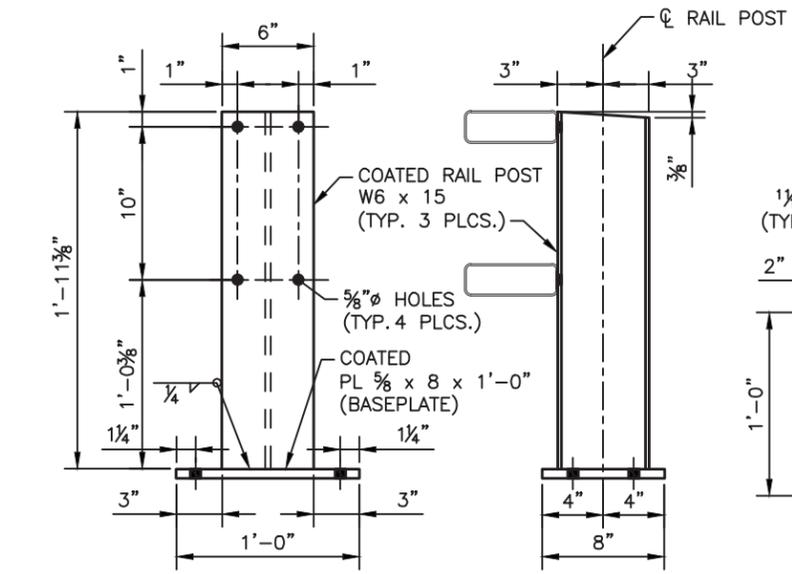
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Sheet Number 27

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- NOTES:**
1. 1/2" diameter x 2 1/4" embedment depth KWIK BOLT III EXPANSION ANCHOR BY HILTI OR APPROVED EQUAL (2 PER BRACKET).
  2. FIELD DRILL ANCHOR HOLES USING THE SUPPORT BRACKET AS A TEMPLATE.
  3. ALL THREADED CONNECTOR THREADS SHALL BE CRIPPLED AFTER INSTALLATION.
  4. ALL METAL RAIL ELEMENTS AND ANCHOR BOLTS TO BE PAINTED IN ACCORDANCE WITH 514.
  5. COST OF RAIL SUPPORTS, ANCHOR BOLTS AND MECHANICAL RAIL CONNECTORS SHALL BE INCLUDED IN THE COST OF THE RAILING QUANTITY UNDER ITEM 514-00201 "PEDESTRIAN RAILING (STEEL) (SPECIAL)".
  6. ALL STRUCTURAL STEEL OF PEDESTRIAN RAILING SHALL BE GALVANIZED AND DUPLEX COATED AND SHALL BE INCLUDED IN THE COST UNDER ITEM 514-00201 "PEDESTRIAN RAILING (STEEL) (SPECIAL)".

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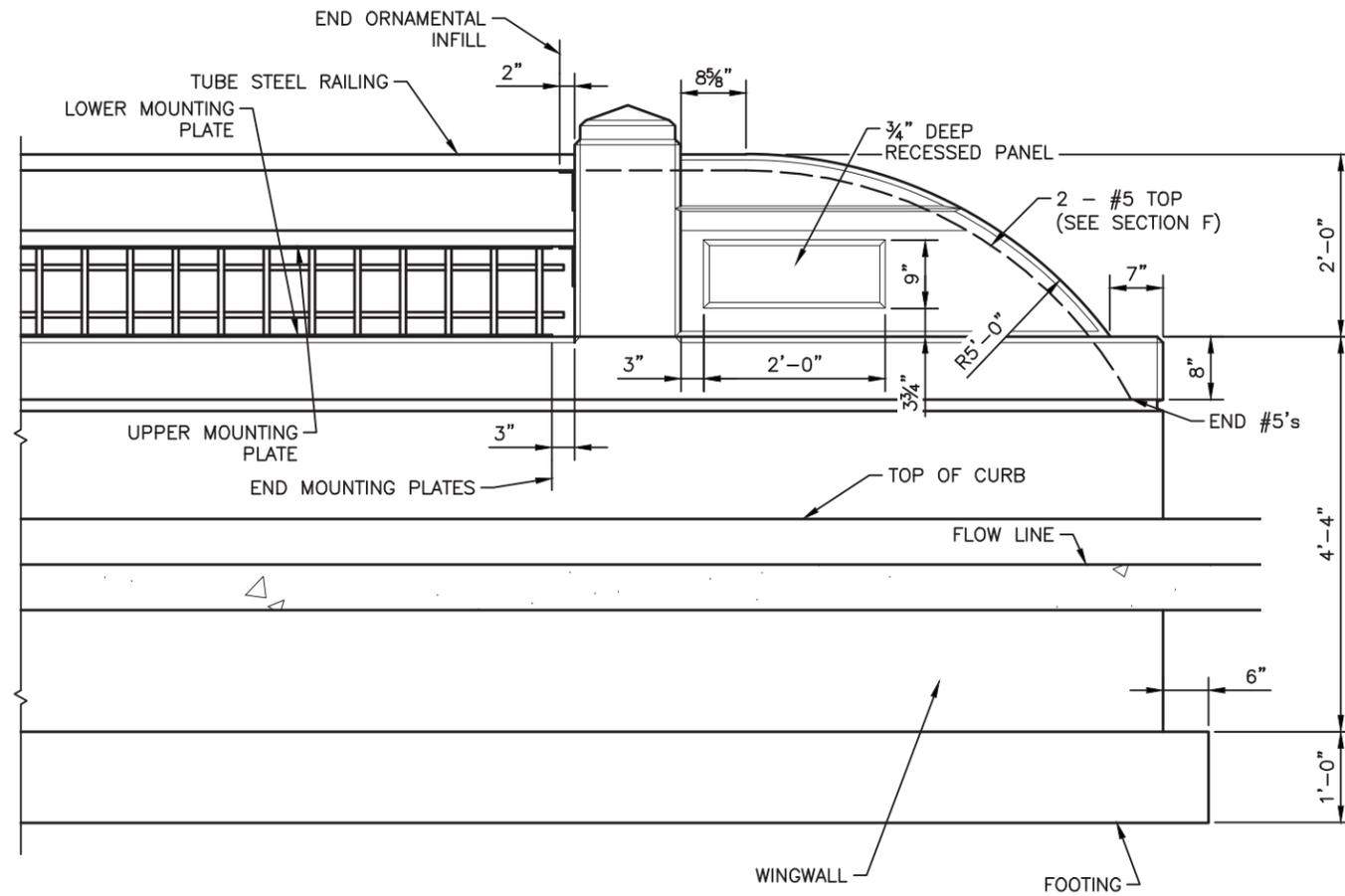
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**MONTBELLO DITCH RAILING REPLACEMENTS RAILING DETAILS (2 OF 3)**

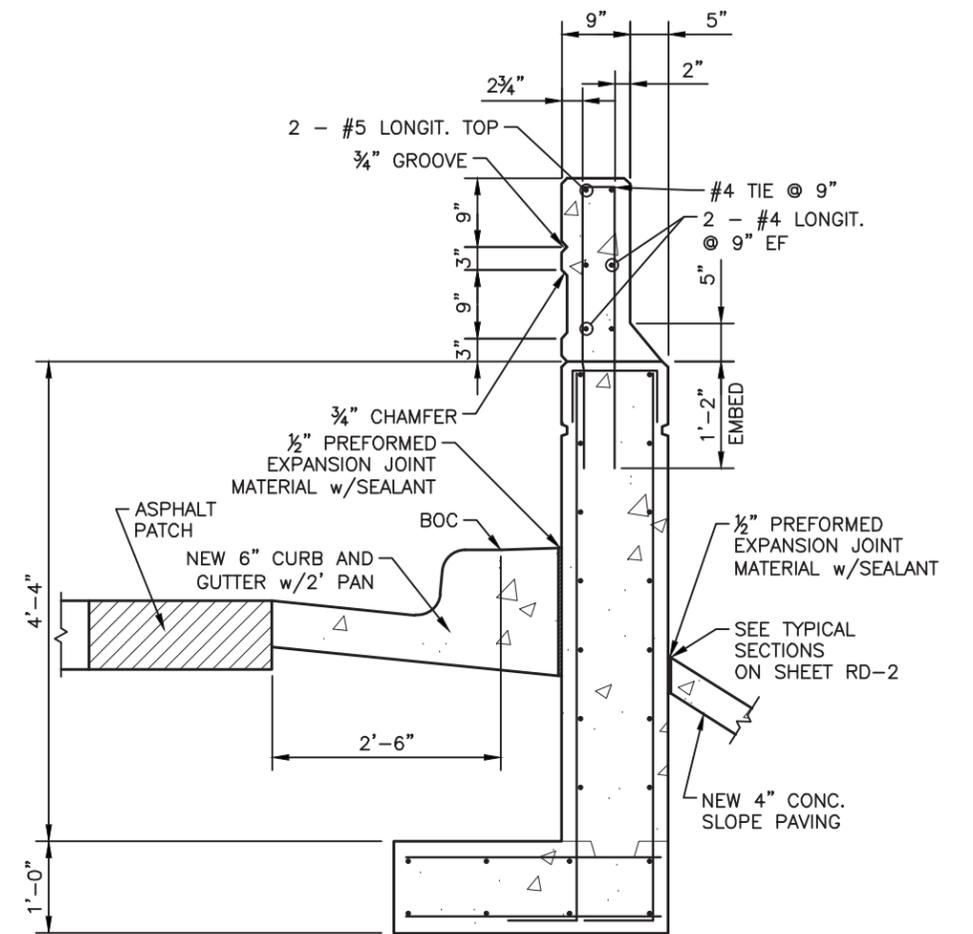
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Detailer:	CDM	Sheets:	RD-4 of 6

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 Sheet Number 28

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SECTION E  
RP-1



SECTION F  
RP-1

NOTE:  
FOR DETAILS NOT SHOWN SEE SECTION B ON SHEET RD-3.

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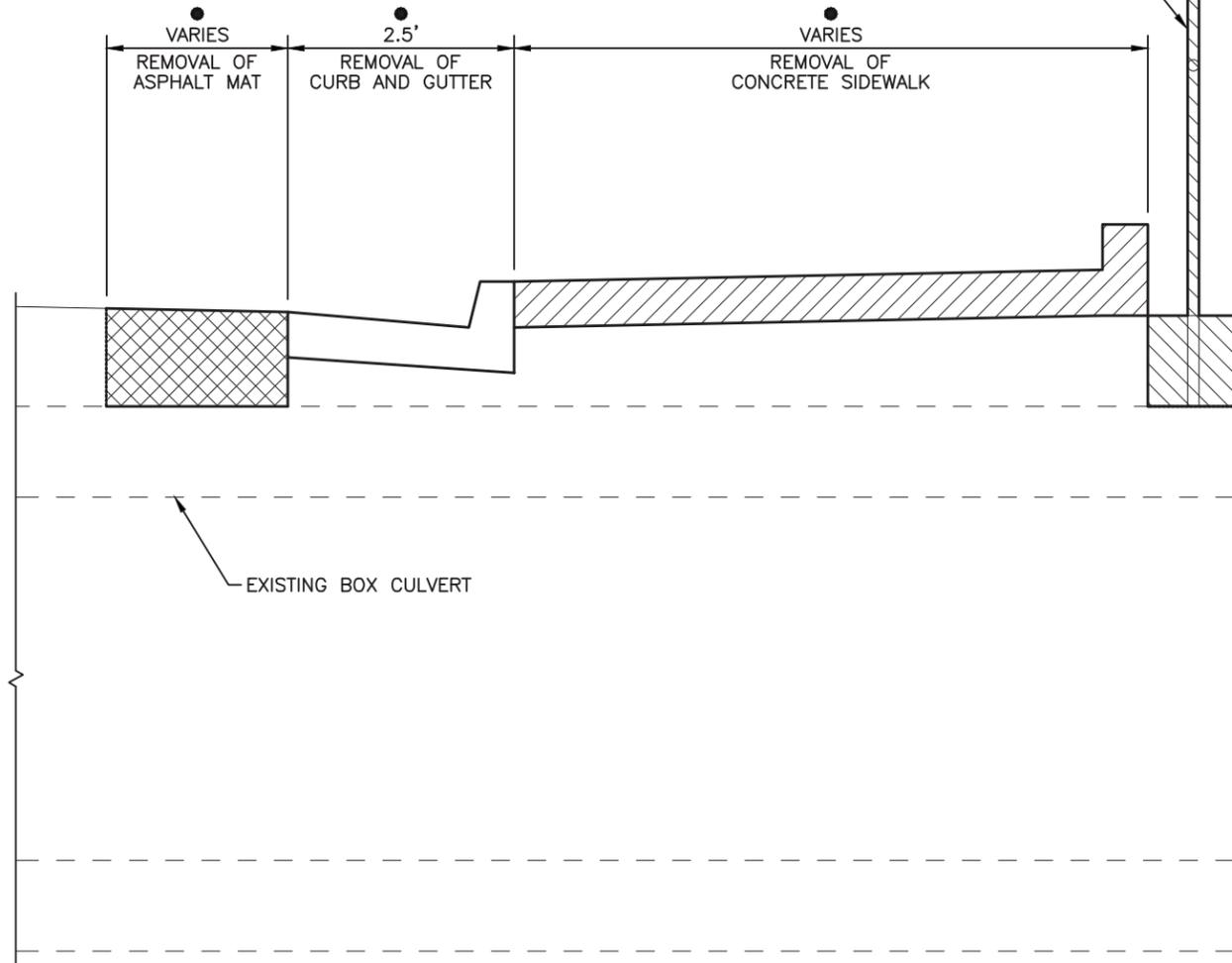


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● REMOVAL OF ASPHALT MAT, CONCRETE CURB RAMP, CURB AND GUTTER, AND CONCRETE SIDEWALK REQUIRED ON THIS PROJECT SHALL BE REMOVED TO THE TOP OF THE EXISTING BOX CULVERT.

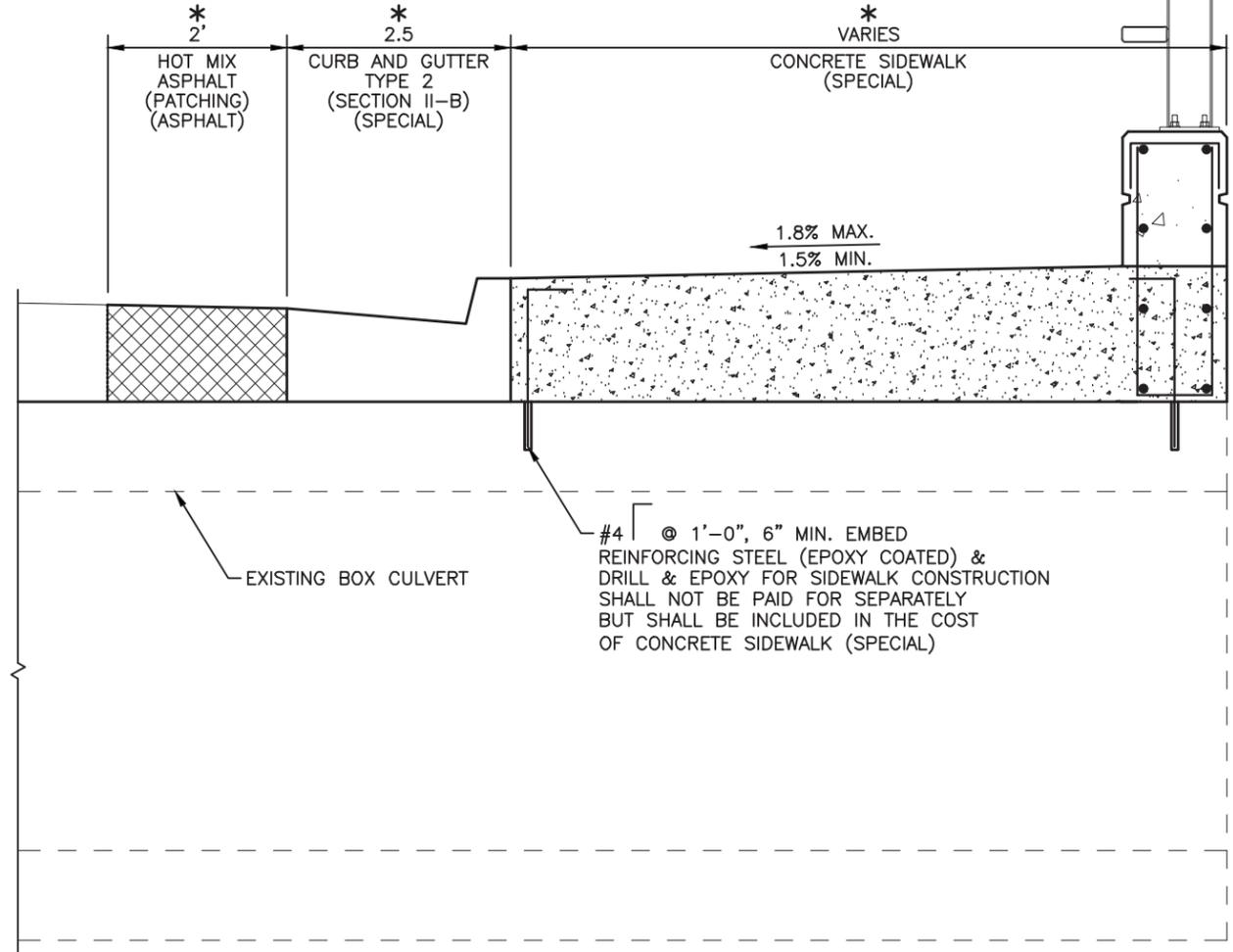
REMOVAL OF PORTIONS OF PRESENT STRUCTURE SHALL INCLUDE REMOVING THE HEADWALL AND RAILING ON THE EXISTING BOX CULVERT AND REMOVING THE WINGWALLS AND RAILING ON THE EXISTING WINGWALLS



SECTION G  
RM-1

\*HOT MIX ASPHALT (PATCHING)(ASPHALT), CURB RAMP (SPECIAL), CURB AND GUTTER TYPE 2 (SECTION II-B)(SPECIAL), AND CONCRETE SIDEWALK REQUIRED ON THIS PROJECT SHALL BE CONSTRUCTED TO THE TOP OF THE EXISTING BOX CULVERT.

SEE RAILING DETAILS FOR ADDITIONAL INFORMATION



SECTION H  
PL-1

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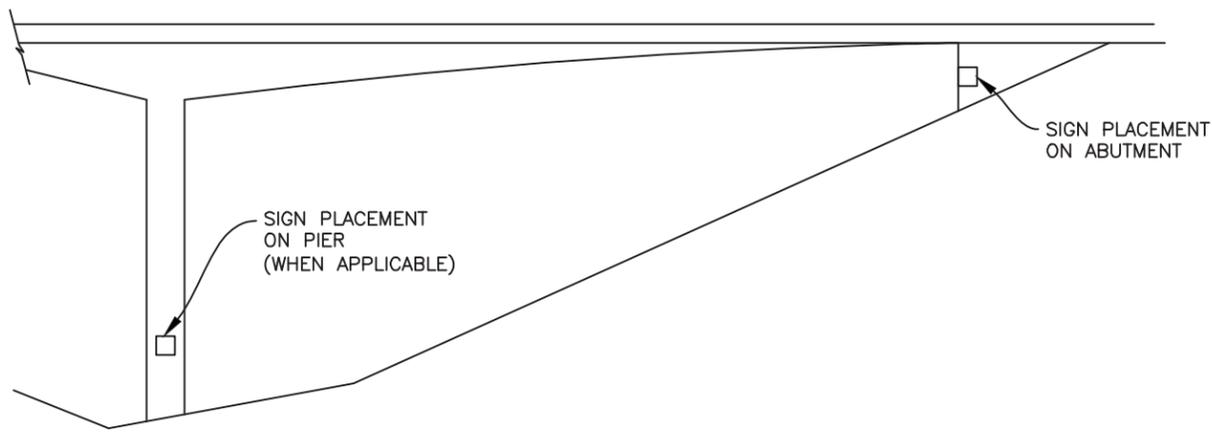
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Revised:	Designer: KSF	Structure Numbers	PWTRN201737616
Void:	Detailer: SED	Sheets: RD-6 of 6	Sheet Number 30

DESIGN		DETAIL		QUANTITIES	
Designed by	Initial Date	Detailed by	Initial Date	Quantities by	Initial Date
X	X	VM	X	X	X
Checked by	X	Checked by	X	Checked by	X
	X	KSF	X		X

Revision Dates (Preliminary Stage Only)



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. 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

STRUCTURE	STRUCTURE IDENTIFICATION NUMBER
URSULA STREET	D-20-MB-480
ELGIN PLACE	D-20-MB-490
ELK PLACE	D-20-MB-500

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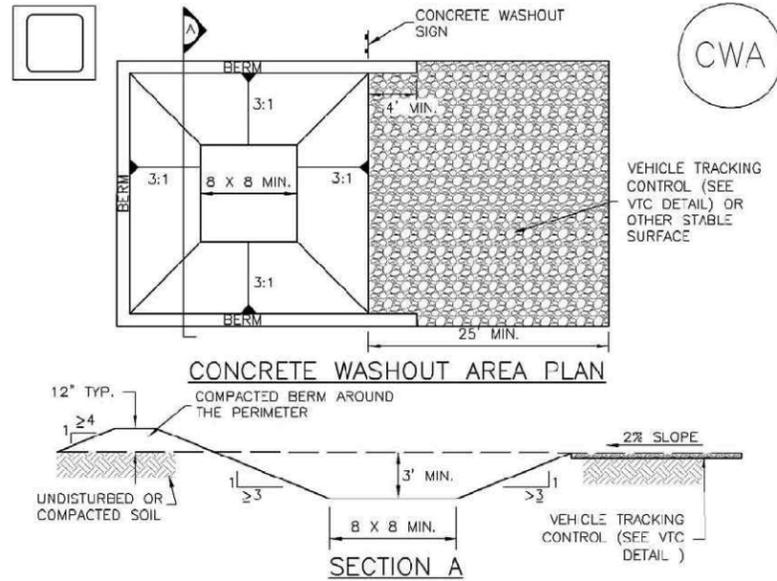
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	Subset:	Structure Sheets: IP-1 of 1	Sheet Number 31

**Concrete Washout Area (CWA)**

**MM-1**



**CWA-1. CONCRETE WASHOUT AREA**

**CWA INSTALLATION NOTES**

1. SEE PLAN VIEW FOR:  
-CWA INSTALLATION LOCATION.
2. 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.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. 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.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. 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.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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Urban Storm Drainage Criteria Manual Volume 3

CWA-3

**MM-1**

**Concrete Washout Area (CWA)**

**CWA 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. 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'.
5. 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.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. 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

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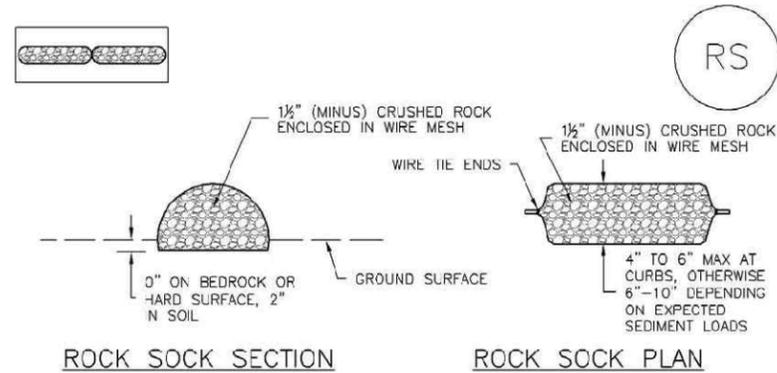
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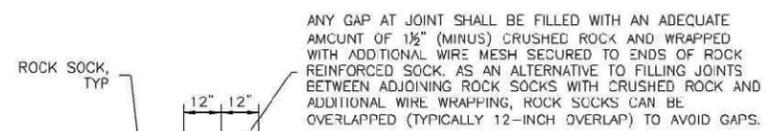
SC-5

Rock Sock (RS)



ROCK SOCK SECTION

ROCK SOCK PLAN



ROCK SOCK JOINTING

ANY GAP AT JOINT SHALL BE FILLED WITH AN ADEQUATE AMOUNT OF 1 1/2" (MINUS) CRUSHED ROCK AND WRAPPED WITH ADDITIONAL WIRE MESH SECURED TO ENDS OF ROCK REINFORCED SOCK. AS AN ALTERNATIVE TO FILLING JOINTS BETWEEN ADJOINING ROCK SOCKS WITH CRUSHED ROCK AND ADDITIONAL WIRE WRAPPING, ROCK SOCKS CAN BE OVERLAPPED (TYPICALLY 12-INCH OVERLAP) TO AVOID GAPS.

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

RS-2

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Rock Sock (RS)

SC-5

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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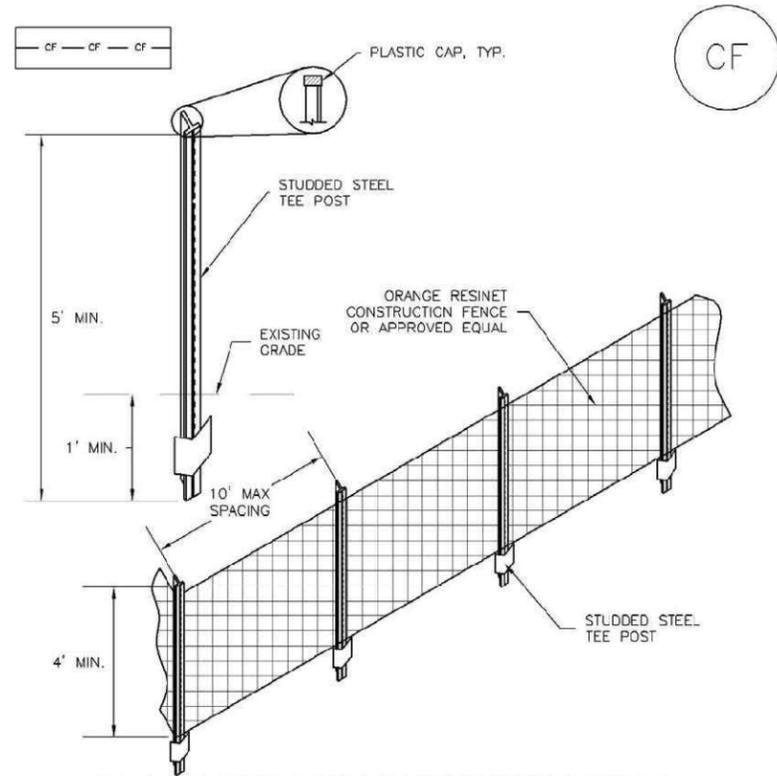


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Revised:	Designer: KMG	Structure Numbers	PWTRN201737616
Void:	Detailer: DAL		
	Subset: Erosion	Sheets: ED-2 of 9	Sheet Number 33

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SM-3

**Construction Fence (CF)**



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:  
-LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4" HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CF-2

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**Construction Fence (CF)**

SM-3

CONSTRUCTION FENCE MAINTENANCE NOTES

1. 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.
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. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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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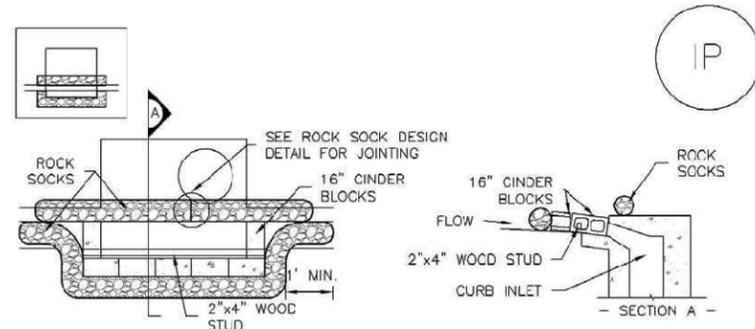
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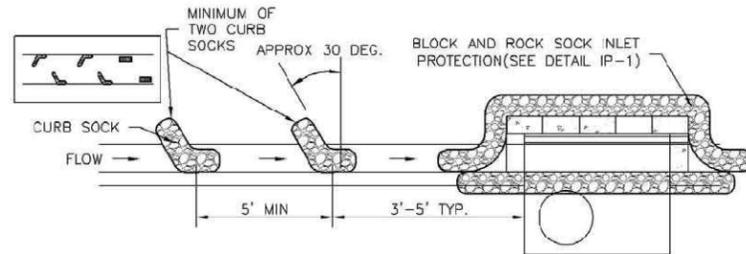
Inlet Protection (IP)



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 JOINED 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.

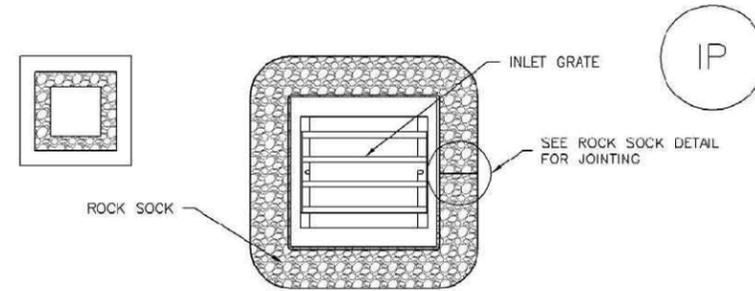
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Inlet Protection (IP)

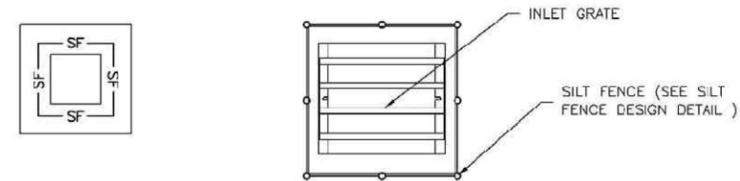
SC-6



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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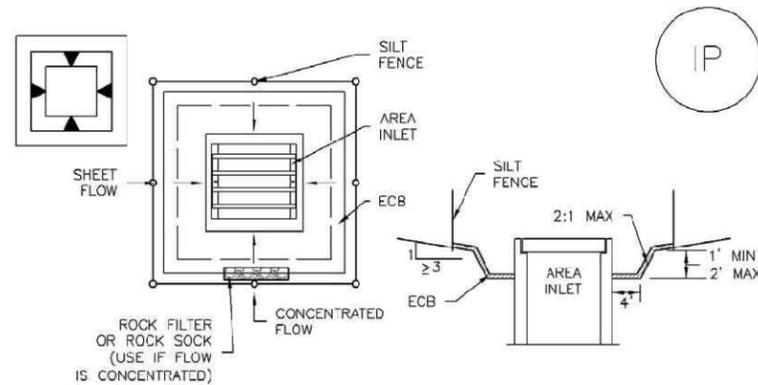
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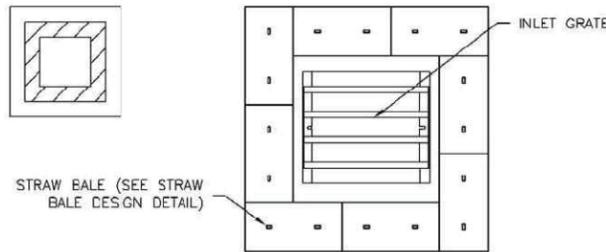
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	Subset: Erosion	Sheets: ED-4 of 9		Sheet Number 35

**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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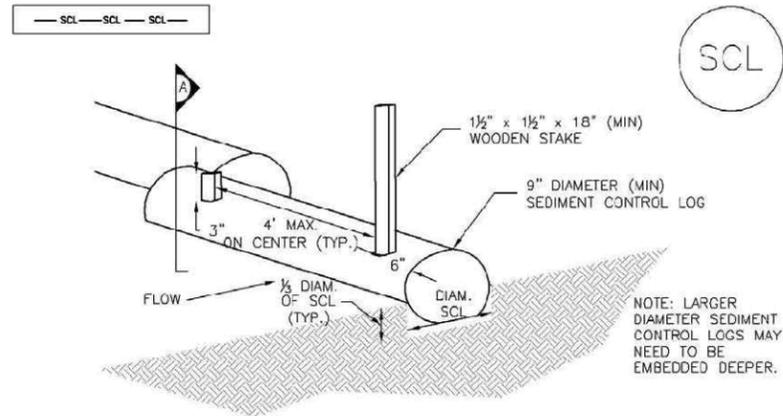


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	Subset: Erosion	Sheets: ED-5 of 9	Sheet Number 36

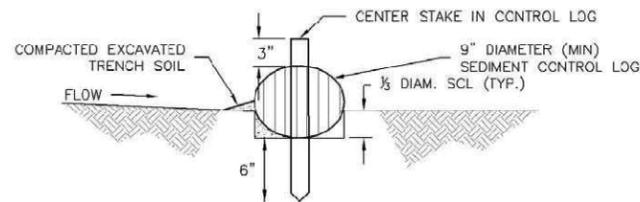
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**Sediment Control Log (SCL)**

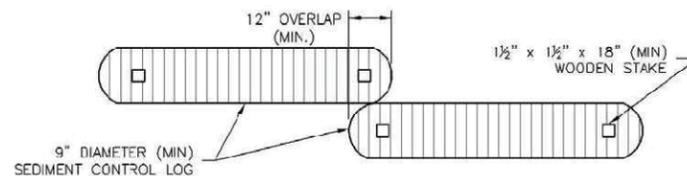
**SC-2**



**SEDIMENT CONTROL LOG**



**SECTION A**



**SEDIMENT CONTROL LOG JOINTS**

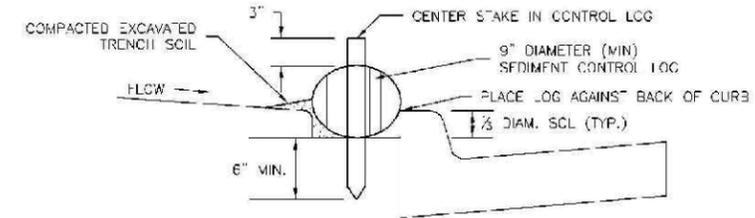
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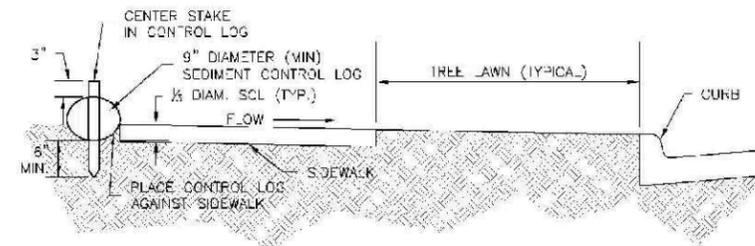
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**SC-2**

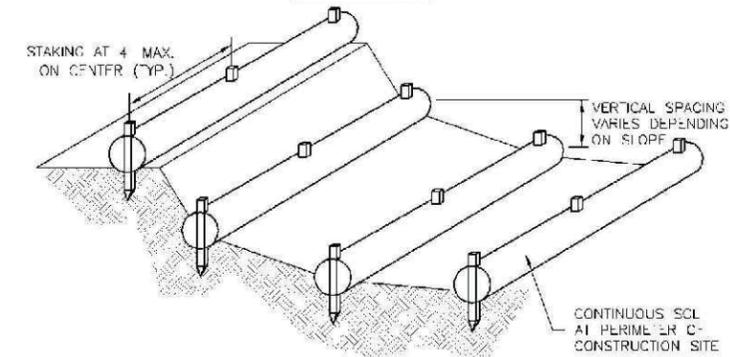
**Sediment Control Log (SCL)**



**SCL-2. SEDIMENT CONTROL LOG AT BACK OF CURB**



**SCL-3. SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN**



**SCL-4. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH**

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SCL-4

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Void:	Detailer: DAL	Sheets: ED-6 of 9	Sheet Number 37
	Subset: Erosion		

## Sediment Control Log (SCL)

SC-2

### SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADE LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.
5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/2 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING.
6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACK-FILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

### SEDIMENT CONTROL LOG MAINTENANCE NOTES

- EVERY 7 DAYS**
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 SEDIMENT CONTROL LOG 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 SEDIMENT CONTROL LOG.
  5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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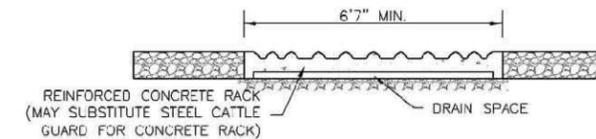
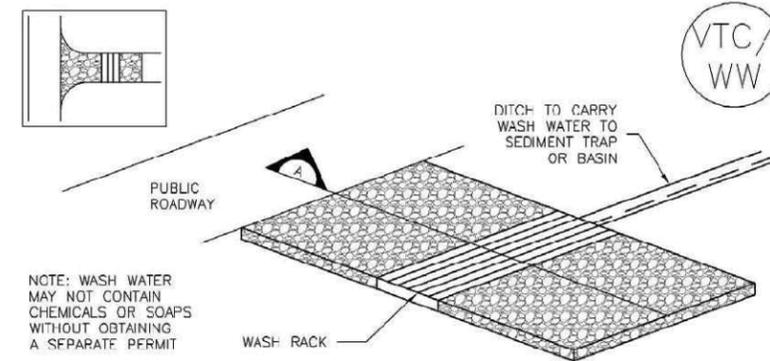
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SC-5

SM-4

## Vehicle Tracking Control (VTC)



SECTION A

### VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

VTC-4

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MONTBELLO DITCH RAILING REPLACEMENTS  
EROSION CONTROL  
DETAILS

Designer:	KMG	Structure Numbers	
Detailer:	DAL		
Subset:	Erosion	Sheets:	ED-7 of 9

Project No./Code

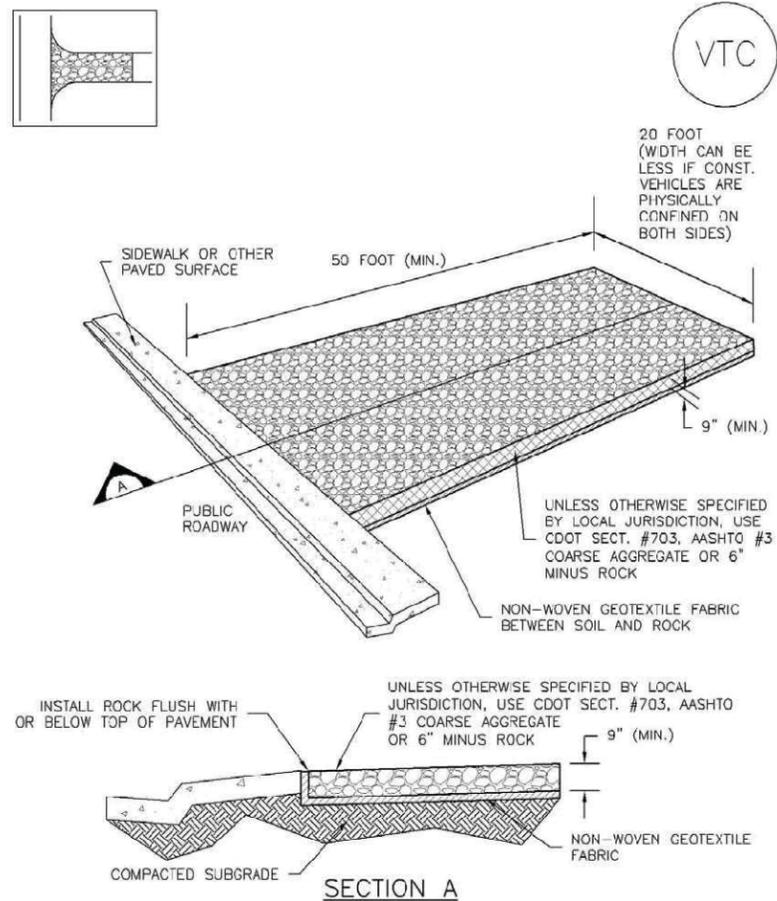
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Sheet Number 38

**Vehicle Tracking Control (VTC)**

**SM-4**

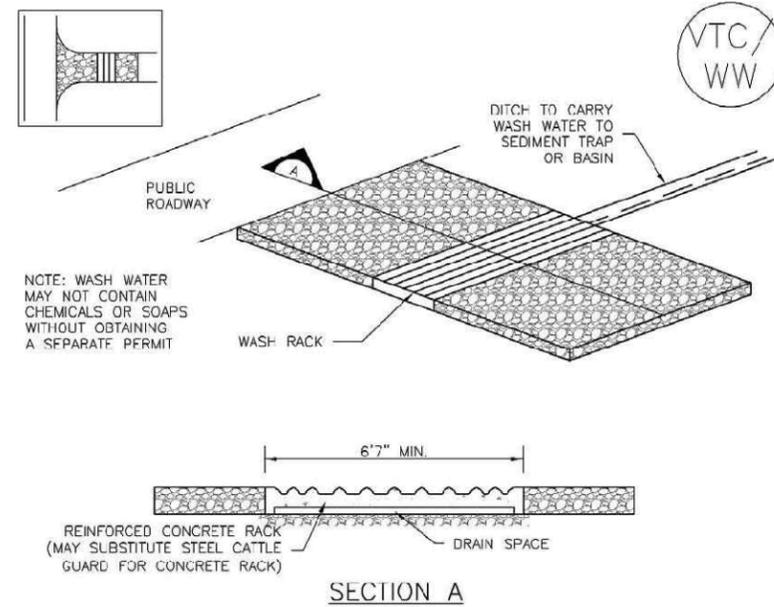


**VTC-1. AGGREGATE VEHICLE TRACKING CONTROL**

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**Vehicle Tracking Control (VTC)**



**VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK**

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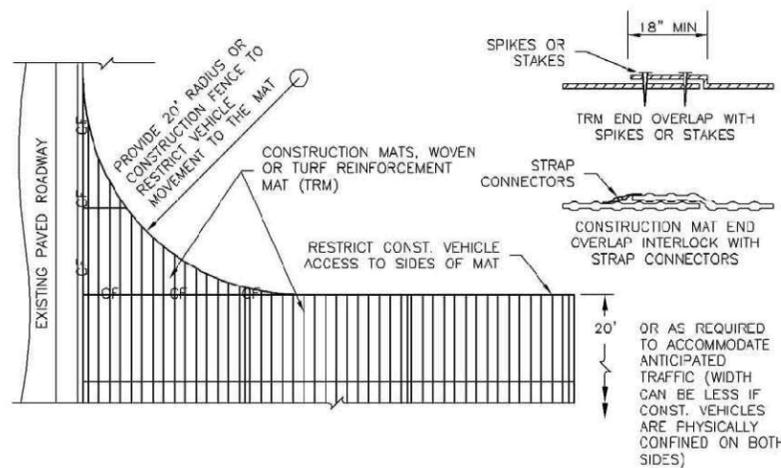
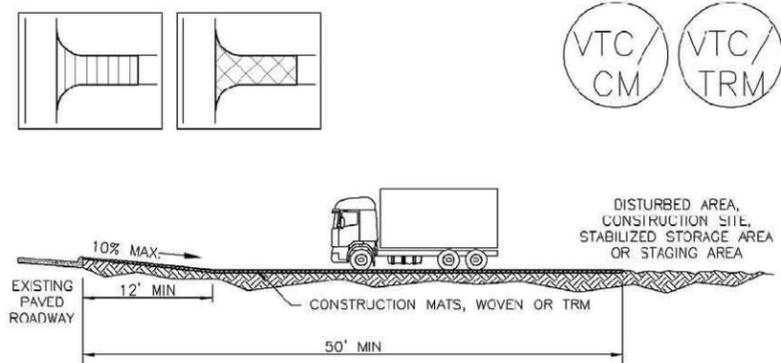
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(R-X)	Date	Comments	Initials

As Constructed	MONTBELLO DITCH RAILING REPLACEMENTS EROSION CONTROL DETAILS		Project No./Code
No Revisions:			2016-PROJMSTR-0000707
Revised:	Designer: KMG	Structure Numbers	PWTRN201737616
Void:	Detailer: DAL		
	Subset: Erosion	Sheets: ED-8 of 9	Sheet Number 39

**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**

- EVERY 7 DAYS**
- 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 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.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

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**STORMWATER MANAGEMENT PLAN 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)

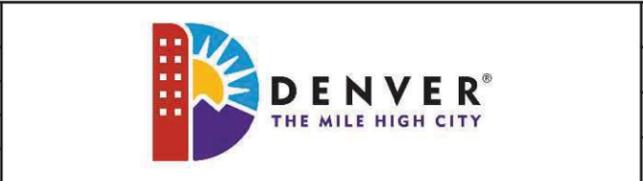
**STANDARD NOTE # 10**

"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)

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MONTBELLO DITCH RAILING REPLACEMENTS STORMWATER MANAGEMENT PLAN NOTES			
Designer:	SPF	Structure	
Detailer:	DAL	Numbers	
Subset:	SWMP	Sheets:	SW-1 of 2

Project No./Code	2016-PROJMSTR-0000707
	PWTRN201737616
Sheet Number	41

STORMWATER MANAGEMENT PLAN FOR PROJECT No. D-02-PR-220

1. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. POTENTIAL POLLUTANT SOURCES

- Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place any BMPs required to contain potential pollutants.

B. BEST MANAGEMENT PRACTICES (BMPs) FOR STORMWATER POLLUTION PREVENTION

This Project will rehabilitate the Mississippi Bridge over the South Platte River. The repairs / rehabilitation work includes: Mill and Overlay asphalt surface; Patching, Coating and Sealing of concrete elements; Repair and Painting of Steel Railing; Reconstruction of a sidewalk Ramp; Clean and unplug drains; and Slope Stabilization at the west abutment of the Mississippi Avenue bridge.

All BMPs shown in the plan, as well as required BMPs during construction shall conform to UDFCD's Urban Storm Drainage Criteria Manual (USDCM) Volume 3-Best Management Practices guidance and details.

C. OFFSITE DRAINAGE (RUN ON WATER)

- Place BMPs to address run-on water in accordance with section 208.

D. CONSTRUCTION DEWATERING:

- Obtain a dewatering permit from CDPHE if conditions of their low risk guidance for Discharges of Uncontaminated Groundwater to Land are not met; see subsection 107.25(b) 8.

E. PERIMETER CONTROL

- Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.
- Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, inlet protection, temporary diversion methods, or other BMPs as approved.
- Perimeter control shall be in accordance with section 208.

2. DURING CONSTRUCTION

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the Contractor in accordance with Section 208

- MATERIALS HANDLING AND SPILL PREVENTION - prior to construction commencing the Contractor shall submit a Spill Prevention, Control and Countermeasure Plan, see section 208. Materials handling shall be in accordance with section 208.
- STOCKPILE MANAGEMENT - shall be done in accordance with subsection 107.25 and 208.
- CONCRETE WASHOUT - Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with section 208.
- SAW CUTTING - shall be done in accordance with subsection 107.25, 208
- STREET CLEANING - shall be done in accordance with section 208

3. INTERIM AND FINAL STABILIZATION

A. REMOVAL OF ACCUMULATED SEDIMENT AND BMP REMOVAL

Includes items like inlet protection, rock socks, silt fence, sediment control logs, vehicle tracking control, concrete washout area and other items installed during construction.

B. SEEDING PLAN

Sod will be required for an estimated 2605 square feet of disturbed area within the project limits. The sod shall be a Kentucky Bluegrass blend approved by Denver Parks.

4. TABULATION OF STORMWATER QUANTITIES

FOR INFORMATION ONLY:

Pay Item	Description	Pay Unit	*Andrews Dr. at Ursula St.	*Andrews Dr. at Elgin Pl.	*Andrews Dr. at Elk Pl.	
208-00002	Erosion Log (12 Inch)	LF	160	170	160	(SCL)
208-00035	Aggregate Bag	LF	64	64	64	(RS)
208-00045	Concrete Washout Structure	Each	1	1	1	(CWA)
208-00050	Storm Drain Inlet Protection	Each	2	2	2	(P)
208-00103	Removal and Disposal of Sediment (Labor)	Hour	5	5	5	
208-00105	Removal and Disposal of Sediment (Equipment)	Hour	5	5	5	
208-00106	Sweeping (Sediment Removal)	Hour	5	5	5	
208-00205	Erosion Control Supervisor	Hour	16	16	16	
212-00050	Sod	SF	80	80	80	

\*It is anticipated that additional BMPs and BMP quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see section 208. Items shown above may not be all inclusive.

\*\*Quantity has been doubled

- BMP sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other BMP maintenance is included in the BMP Device.
- Maintenance of sodded areas shall be included in the cost of the work.
- Sediment Control Log shall be paid for as CDOT pay item 208-00002 Erosion Log (12 inch). Rock Sock shall be paid for as CDOT pay item 208-00035 Aggregate Bag. Concrete Washout Area shall be paid for as CDOT pay item 208-00045 Concrete Washout Structure. Permanent Seeding shall be paid for as CDOT pay item 212-00006 Seeding (Native). Vehicle Tracking Control shall be paid for as CDOT pay item 208-00070 Vehicle Tracking Pad. Street Sweeping shall be paid for as CDOT pay item 208-00106 Sweeping (Sediment Removal). Construction Fence shall be paid for as CDOT pay item 607-11525 Fence (Plastic). Tree Protection shall be paid for as CDOT pay item 212-00100 Tree Retention and Protection.

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Horizontal Scale: N/A Vertical Scale: N/A		Revised:		Designer: SPF	Structure Numbers	PWTRN201737616	
 6300 South Syracuse Way, Suite 600 Centennial, CO 80111 Phone: 303.721.1440 www.FHUENG.com	(R-X) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Date	Comments	Initials	Subset: SWMP	Sheets: SW-2 of 2	Sheet Number 42

