

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Contract Documents

Contract Number: 201950258



Evergreen Lakehouse Bridge Replacement

May 16, 2019



NOTICE OF APPARENT LOW BIDDER

Myers and Sons Construction, LP
4600 Northgate Blvd, Suite 100
Sacramento, CA 95834

The EXECUTIVE DIRECTOR OF PUBLIC WORKS has considered the Bids submitted on June 6, 2019, for work to be done and materials to be furnished in and for:

CONTRACT #201950258 EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT

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 700-70380 (Sixty-Seven [67]) total bid items, with three of them being Forced Accounts)**, the total estimated cost thereof being: **One Million One Hundred Five Thousand Eight Hundred Forty Dollars and Eight Cents (\$1,105,840.08)**.

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
p. 720.865.8630 | f. 720.865.8795



NOTICE OF APPARENT LOW BIDDER

CONTRACT NO. 201950258

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

Dated at Denver, Colorado this 10th day of July 2019.

CITY AND COUNTY OF DENVER

By *Eulois Cleekley*
n Eulois Cleekley
Executive Director of Public Works

cc: Ramona Gallegos (CAO), Treasury (taxauditadmindenvergov.org), DSBO Inbox (dsbo@denvergov.org), Wendy Williams (CDOT) Kevin Rens, Prevailing Wage(prevailinwaeadenvergov.org) Yekaterina Shimkina (prey wage), File.

Denver Public Works/Office of the Executive Director
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CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Bid Form Package

Contract Number: 201950258



Evergreen Lakehouse Bridge Replacement

May 16, 2019

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

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This Checklist is provided solely for the assistance of the bidders and need not be returned by bidders with the 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 when 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 fee in the space provided	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
BF-8	a.) Fill in all Bid Bond blanks b.) Signatures required c.) Corporate Seal if required d.) Dated e.) Attach Surety Agent's Power of Attorney or Certified/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-9- BF-12	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"/>
BF-13 - BF-21	Complete all CDOT forms, including: a.) Form 1413: Bidder's List b.) Form 1414: Anticipated DBE Participation Plan c.) Form 1415: Commitment Confirmation d.) Form 1416: Good Faith Effort Report (if applicable, submit to CDOT within 5 calendar days of bid opening). e.) Form 605: Contractors Performance Capability Statement f.) Form 606: Anti-Collusion Affidavit g.) Form 621: Assignment of Anti-Trust Claims	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Textura® Construction Payment Management System (“Textura”)

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

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

For more information:

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

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

BID FORM AND SUBMITTAL PACKAGE ACKNOWLEDGMENT

**CONTRACT NO.: 201950258
CONTRACT NAME: EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT
FEDERAL AID PROJECT NO: NHPP C010-114 SA# 20414**

BIDDER: Myers and Sons Construction, LP
(Legal Name per Colorado Secretary of State)

ADDRESS: 4600 Northgate Blvd, Suite 100
Sacramento, CA 95834

CONTACT PERSON FOR ALL MATTERS RELATING TO THIS DOCUMENT:

NAME: Clinton W. Myers **TITLE:** Vice President
EMAIL: cwmyers@myers-sons.com **PHONE NUMBER:** (916) 283-9950

The undersigned bidder states the undersigned bidder received and had an opportunity to fully and thoroughly examine a complete set of the Contract Documents for **CONTRACT NO. 201950258, EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT**, made available to the undersigned bidder pursuant to Notice of Invitation for Bids dated May 16, 2019.

The undersigned bidder acknowledges 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 the Contract Documents as defined in Paragraph 1 of the contract and including this executed Bid Form and Submittal Package, constitute all of the terms, conditions, and requirements upon which this submission is based. The undersigned bidder further understands 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
- Bid Bond
- Bidder / Contractor / Vendor / Proposer Disclosure Form
- Applicable FHWA Contract Forms

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

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

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

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

BIDDER: Myers and Sons Construction, LP

ATTEST:

Name: Clinton W. Myers

By: 

By: 

Title: Vice President

[SEAL]



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

BID FORM

CONTRACT NO.: 201950258

**CONTRACT NAME: EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT
FEDERAL AID PROJECT NO: NHPP C010-114 SA# 20414**

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

BIDDER Myers and Sons Construction, LP

The undersigned bidder, having examined the plans, technical specifications, and remainder of the proposed Contract Documents as designated and enumerated in the General and Special Contract Conditions and any and all addenda thereto; having investigated the location of and conditions affecting the proposed Work; and being acquainted with and fully understanding the extent and character of the Work covered by this bid and all factors and conditions affecting or which may be affected by Work, HEREBY SUBMITS THIS BID, pursuant to an advertisement of a Notice of Invitation for Bids as published on **May 16, 2019**, to furnish all required materials, tools, appliances, equipment and plant; to perform all necessary labor and to undertake and complete: **NHPP C010-114 SA# 20414 CITY OF DENVER CONTRACT NO. 201950258, EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT** in Denver, Colorado, in full accordance with, and conformity to, the Plans, Technical Specifications, and Contract Documents hereto attached or by reference made a part hereof, at and for the following price(s) set forth on this Bid Form.

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

Advertisement of Notice of Invitation for Bids
Instructions to Bidders
Bid Bond
Addenda (as applicable)
CDOT DBE Documents
Equal Employment Opportunity Provisions
(Appendices A, B, E and F)
Bid Form
Prevailing Wage Rate Schedule(s)
Technical Specifications
General Contract Conditions
Special Contract Conditions
Performance and Payment Bond
Notice to Apparent Low Bidder
Notice to Proceed
Contractor's Certification of Payment Form
Final/Partial Lien Release Form
Final Receipt
Change Orders (as applicable)

Federal Requirements
Contractors Performance Capability Statement
Anti-Collusion Affidavit
Assignment of Anti-Trust Claims
On-the-Job Training (where applicable)
Required Contract Provisions Federal Aid
Construction Contracts
Contract Form
Contract Drawings
Accepted Shop Drawings
Certificate of Insurance

Item No.	Description and Price	Estimated Quantity	Estimated Cost
201-00000	Clearing and Grubbing at the unit price of \$ <u>113,600</u> per LUMP SUM.	1 LS	\$ <u>113,600.00</u>
202-00010	Removal of Tree at the unit price of \$ <u>304</u> per EACH.	6 EA	\$ <u>1,824.00</u>
202-00220	Removal of Asphalt Mat at the unit price of \$ <u>5</u> per SQUARE YARD.	635 SY	\$ <u>3,175.00</u>
202-00400	Removal of Bridge at the unit price of \$ <u>22,500</u> per EACH.	1 EA	\$ <u>22,500.00</u>
202-00810	Removal of Ground Sign at the unit price of \$ <u>75</u> per EACH.	6 EA	\$ <u>450.00</u>
202-01000	Removal of Fence at the unit price of \$ <u>19.13</u> per LINEAR FOOT.	40 LF	\$ <u>765.20</u>
203-00010	Unclassified Excavation (Complete In Place) at the unit price of \$ <u>35</u> per CUBIC YARD.	633 CY	\$ <u>22,155.00</u>
203-00100	Muck Excavation at the unit price of \$ <u>36</u> per CUBIC YARD.	10 CY	\$ <u>360.00</u>
203-01100	Proof Rolling at the unit price of \$ <u>110</u> per HOUR.	4 HR	\$ <u>440.00</u>
203-01500	Blading at the unit price of \$ <u>103</u> per HOUR.	4 HR	\$ <u>412.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
203-01597	Potholing at the unit price of \$ <u>160</u> per HOUR.	4 HR	\$ <u>640.00</u>
206-00000	Structure Excavation at the unit price of \$ <u>10</u> per CUBIC YARD.	569 CY	\$ <u>5,690.00</u>
206-00100	Structure Backfill (Class 1) at the unit price of \$ <u>26</u> per CUBIC YARD.	345 CY	\$ <u>8,970.00</u>
206-00200	Structure Backfill (Class 2) at the unit price of \$ <u>28</u> per CUBIC YARD.	105 CY	\$ <u>2,940.00</u>
206-00360	Mechanical Reinforcement of Soil at the unit price of \$ <u>30</u> per CUBIC YARD.	192 CY	\$ <u>5,760.00</u>
206-01750	Shoring at the unit price of \$ <u>6500</u> per LUMP SUM.	1 LS	\$ <u>6,500.00</u>
207-00205	Topsoil at the unit price of \$ <u>40</u> per CUBIC YARD.	69 CY	\$ <u>2,760.00</u>
207-00310	Stockpile Wetland Topsoil at the unit price of \$ <u>35</u> per CUBIC YARD.	70 CY	\$ <u>2,450.00</u>
208-00002	Erosion Log Type 1 (12 Inch) at the unit price of \$ <u>4.65</u> per LINEAR FOOT.	1,060 LF	\$ <u>4,929.00</u>
208-00035	Aggregate Bag at the unit price of \$ <u>4.25</u> per LINEAR FOOT.	96 LF	\$ <u>408.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
208-00045	Concrete Washout Structure at the unit price of \$ <u>1,550</u> per EACH.	2 EA	\$ <u>3,100.00</u>
208-00070	Vehicle Tracking Pad at the unit price of \$ <u>2,120</u> per EACH.	4 EA	\$ <u>8,480.00</u>
208-00103	Removal and Disposal of Sediment (Labor) at the unit price of \$ <u>35</u> per HOUR.	40 HR	\$ <u>1,400.00</u>
208-00105	Removal and Disposal of Sediment (Equipment) at the unit price of \$ <u>69</u> per HOUR.	40 HR	\$ <u>2,760.00</u>
208-00106	Sweeping (Sediment Removal) at the unit price of \$ <u>69</u> per HOUR.	40 HR	\$ <u>2,760.00</u>
208-00207	Erosion Control Management at the unit price of \$ <u>650</u> per DAY.	8 DAY	\$ <u>5,200.00</u>
208-00520	Temporary Stream Crossing at the unit price of \$ <u>70,000</u> per LUMP SUM.	1 LS	\$ <u>70,000.00</u>
211-03005	Dewatering at the unit price of \$ <u>17,000</u> per LUMP SUM.	1 LS	\$ <u>17,000.00</u>
212-00006	Seeding (Native) at the unit price of \$ <u>1,250</u> per ACRE.	0.1 AC	\$ <u>125.00</u>
212-00032	Soil Conditioning at the unit price of \$ <u>8,945</u> per ACRE.	0.1 AC	\$ <u>894.50</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
213-00002	Mulching (Weed Free Hay) at the unit price of \$ <u>4,450</u> per ACRE.	0.1 AC	\$ <u>445.00</u>
213-00061	Mulch Tackifier at the unit price of \$ <u>14.10</u> per POUND.	60 LB	\$ <u>846.00</u>
214-00205	Deciduous Tree (5 Gallon Container) at the unit price of \$ <u>65</u> per EACH.	9 EA	\$ <u>585.00</u>
214-00310	Deciduous Shrub (1 Gallon Container) at the unit price of \$ <u>34</u> per EACH.	30 EA	\$ <u>1,020.00</u>
214-00450	Evergreen Tree (5 Gallon Container) at the unit price of \$ <u>440</u> per EACH.	3 EA	\$ <u>1,320.00</u>
216-00101	Soil Retention Blanket (Photodegradable Class1) at the unit price of \$ <u>3.40</u> per SQUARE YARD.	144 SY	\$ <u>489.60</u>
250-00010	Environmental Health and Safety Management at the unit price of \$ <u>2,714</u> per LUMP SUM.	1 LS	\$ <u>2,714.00</u>
304-06007	Aggregate Base Course (Class 6) at the unit price of \$ <u>65</u> per CUBIC YARD.	103 CY	\$ <u>6,695.00</u>
403-34721	Hot Mix Asphalt (Grading SX) (75)(PG 58-28) at the unit price of \$ <u>228.11</u> per TON.	183 TON	\$ <u>41,744.13</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
420-00112	Geotextile (Drain)(Class 1) at the unit price of \$ <u>4.50</u> per SQUARE YARD.	460 SY	\$ <u>2,070.00</u>
502-00100	Drilling Hole to Facilitate Pile Driving at the unit price of \$ <u>570</u> per LINEAR FOOT.	108 LF	\$ <u>61,560.00</u>
502-11274	Steel Piling (HP 12X74) at the unit price of \$ <u>301</u> per LINEAR FOOT.	126 LF	\$ <u>37,926.00</u>
506-00212	Riprap (12 Inch) at the unit price of \$ <u>65.30</u> per CUBIC YARD.	300 CY	\$ <u>19,590.00</u>
515-00120	Waterproofing (Membrane) at the unit price of \$ <u>22.50</u> per SQUARE YARD.	120 SY	\$ <u>2,700.00</u>
601-03040	Concrete Class D (Bridge) at the unit price of \$ <u>600</u> per CUBIC YARD.	30 CY	\$ <u>18,000.00</u>
601-21010	Precast Concrete Unit at the unit price of \$ <u>4,800</u> per CUBIC YARD.	49 CY	\$ <u>235,200.00</u>
601-40300	Structural Concrete Coating at the unit price of \$ <u>25</u> per SQUARE YARD.	81 SY	\$ <u>2,025.00</u>
602-00020	Reinforcing Steel (Expoxy Coated) at the unit price of \$ <u>2.45</u> per POUND.	5,962 LB	\$ <u>14,606.90</u>
606-01370	Transition Type 3G at the unit price of \$ <u>4,894</u> per EACH.	4 EA	\$ <u>19,576.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
606-01390	End Anchorage Type 3K at the unit price of \$ <u>2,729</u> per EACH.	3 EA	\$ <u>8,187.00</u>
606-11030	Bridge Rail (Type 10M) at the unit price of \$ <u>340</u> per LINEAR FOOT.	74 LF	\$ <u>25,160.00</u>
607-11525	Fence (Plastic) at the unit price of \$ <u>1.15</u> per LINEAR FOOT.	825 LF	\$ <u>948.75</u>
613-00300	3 Inch Electrical Conduit at the unit price of \$ <u>15</u> per LINEAR FOOT.	75 LF	\$ <u>1,125.00</u>
618-01992	Prestressed Concrete Box (Depth Less Than 32") at the unit price of \$ <u>106</u> per SQUARE FOOT.	1,136 SF	\$ <u>120,416.00</u>
620-00001	Field Office (Class 1) at the unit price of \$ <u>6,100</u> per EACH.	1 EA	\$ <u>6,100.00</u>
620-00020	Sanitary Facility at the unit price of \$ <u>500</u> per EACH.	1 EA	\$ <u>500.00</u>
622-00024	Entry Sign at the unit price of \$ <u>725</u> per EACH.	1 EA	\$ <u>725.00</u>
625-00000	Construction Surveying at the unit price of \$ <u>16,000</u> per LUMP SUM.	1 LS	\$ <u>16,000.00</u>
626-00000	Mobilization at the unit price of \$ <u>100,000</u> per LUMP SUM.	1 LS	\$ <u>100,000.00</u>

Item No.	Description and Price	Estimated Quantity	Estimated Cost
630-00000	Flagging at the unit price of \$ <u>28</u> per HOUR.	36 HR	\$ <u>1,008.00</u>
630-80335	Barricade (Type 3 M-A)(Temporary) at the unit price of \$ <u>45</u> per EACH.	5 EA	\$ <u>225.00</u>
630-80341	Construction Traffic Sign (Panel Size A) at the unit price of \$ <u>55</u> per EACH.	22 EA	\$ <u>1,210.00</u>
630-80342	Construction Traffic Sign (Panel Size B) at the unit price of \$ <u>125</u> per EACH.	1 EA	\$ <u>125.00</u>
630-80380	Traffic Cone at the unit price of \$ <u>5</u> per EACH.	200 EA	\$ <u>1,000</u>
700-70010	FORCED ACCOUNT MINOR CONTRACT REVISIONS at the unit price of \$ _____ per FORCED ACCOUNT.	1 FA	\$ <u>22,700.00</u>
700-70016	FORCED ACCOUNT FUEL COST ADJUSTMENT at the unit price of \$ _____ per FORCED ACCOUNT.	1 FA	\$ <u>4,500.00</u>
700-70380	FORCED ACCOUNT EROSION CONTROL at the unit price of \$ _____ per FORCED ACCOUNT.	1 FA	\$ <u>2,500.00</u>

Bid Items Total Amount (201-00000 through 700-70380 (Sixty-Seven[67] total bid items, with three of them being Forced Accounts.) \$ 1,099,990.08

Textura ® Fee from table on Page BF-3 (based on Bid Items Total Amount) \$ 5,850

Bid Items Total Amount plus Textura® Fee equals Total Bid Amount \$ 1,105,840.08

Total Bid Amount
One Million, one hundred five thousand, eight hundred and forty two and 8/100 Dollars
Dollars (\$ 1,105,840.08)

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

Travelers Casualty and Surety

The Company of America, a corporation of the State of CT, is hereby offered as Surety on said bond. If such surety is not approved by the Executive Director, another and satisfactory surety company shall be furnished.

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

The following persons, firms or corporations are interested with the undersigned bidder in this bid:

Name: Myers and Sons Construction, LP Name: _____
4600 Northgate Blvd, Suite 100
Address: Sacramento, CA 95834 Address: _____

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

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

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT Myers and Sons Construction, LP, as Principal, and Travelers Casualty and Surety Company of America, a corporation organized and existing under and by virtue of the laws of the State of Connecticut, 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 Oblige, in full and just sum of Five Percent of Amount Bid Dollars, (\$ 5%), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents:


WHEREAS, the said Principal is herewith submitting its bid, dated June 6, 2019, for the construction of: **Contract No. 201950258, EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT**, as set forth in detail in the Contract Documents for the City and County of Denver, Colorado, and said Oblige 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 Oblige 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 therefor, on the prescribed form presented to him for signature, enter into a written contract with the Oblige 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 Oblige, 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 Oblige 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 3rd day of June, 2019.

ATTEST


Secretary

Myers and Sons Construction, LP
Principal
By 
Title President

Travelers Casualty and Surety Company of America
Surety
By 
Jessica L. Piccirillo, Attorney-in-Fact

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

[SEAL]



**Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company**

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Jessica L Piccirillo** of **FARMINGTON Connecticut**, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law. **IN WITNESS WHEREOF**, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February**, 2017.



State of Connecticut
City of Hartford ss.

By:
Robert L. Raney, Senior Vice President

On this the **3rd** day of **February**, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.
My Commission expires the **30th** day of **June**, 2021



Marie C Tetreault
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **3rd** day of **June**, 2019



Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.**



Office of Economic Development
 Division of Small Business Opportunity
 201 W. Colfax Ave, Dept. 807
 Denver, CO 80202
 p: 720.913.1999
 f: 720.913.1809
www.denvergov.org/dsbo

Diversity and Inclusiveness * in City Solicitations Information Request Form

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

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

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

Business Email Address: estimating@myers-sons.com

Please include the Email address of the contact person facilitating this solicitation for the City and County of Denver: estimating@myers-sons.com

Agency Name:

- | | | |
|---|---|--|
| <input type="checkbox"/> Arts and Venue | <input type="checkbox"/> Purchasing Division | <input type="checkbox"/> Sheriff Department |
| <input type="checkbox"/> Auditor Office | <input type="checkbox"/> Human Services | <input type="checkbox"/> Technology Services |
| <input type="checkbox"/> Community Planning | <input type="checkbox"/> Economic Development | <input checked="" 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 type="checkbox"/> Public Works | |

Project Name: Evergreen Lakehouse Bridge Replacement

BID / RFP No.: 201950258

Name of Contractor/Consultant: Myers and Sons Construction, LP

What industry is your business? Heavy Highway Construction

Address:
4600 Northgate Blvd, Suite 100
Sacramento, CA 95834

Business Phone No.: (916) 283-9950

Business Facsimile No.: (916) 614-9520

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 98% Part-Time 2%

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.

Please see attachment.

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

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

- Employee Training
 Pamphlets
 Public EEO postings
 Other
 Not Applicable

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

N/A

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

- Monthly Annually
 Quarterly Not Applicable Other _____

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.

As a company, Myers and Sons Construction, LP puts forth repeated good faith efforts to use DBE/DVBE suppliers at every opportunity.

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.

Not at this time.

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

If yes, please email X0101@denvergov.org.

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



Signature of Person Completing Form

6/3/19
Date

Clinton W. Myers
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."

COLORADO DEPARTMENT OF TRANSPORTATION				
BIDDERS LIST				
Project Name/Description	Project Number	Project Code/ SubAccount	Proposal Date	
Evergreen Lakehouse Bridge Replacement	201950258		6/6/2019	
Contractor Myers and Sons Construction, LP			Region	
Subcontractors/Suppliers/Vendors: The bidder must list all firms seeking to participate on the contract. This information is used by the Colorado Department of Transportation (CDOT) to determine overall goals for the Disadvantaged Business Enterprise Program. Failure to submit this form may result in the proposal being rejected.				
Firm Name	Email	Work Proposed (Select all that apply)	DBE (Y/N)	Selected (Y/N)
Cascade Environmental	communications@cascade-env.com	Environmental	N	N
Dalco Industries Inc.	mike@dalcoind.com	concrete	N	N
Denco Container LLC.	info@dencocontainer.com	containers	N	N
Adarand Constructors	Cynthia@adarand.com	Guardrail	N	Y
Green ICF	HRow@707.orgroup.com	Erosion Control	Y	Y
Loya Construction	loyaconstruction@yahoo.com	Asphalt	Y	Y
Bowman Construction Supply	BrianB@bowmanconstruction.com	Subgran Materials	N	N
Ludwig Drilling Inc.	Estimation@ludwigdrilling.com	Drilling	N	N
Lawrence Construction	Theeman@lawrence-construction.com	Piling	N	Y
DH Glabe & Associates	accounting@DHGlabe.com	Planning	Y	Y
I certify that the information provided herein is true and correct to the best of my knowledge.				
Name	Signature/Initials	Title	Date	
Clinton W. Myers		Vice President	6/3/19	
Work Proposed Categories: 1. Materials and Supplies 2. Flagging and Traffic Control 3. Trucking and Hauling 4. Precast Concrete, Foundations, and Footings 5. Concrete Paving, Flatwork and Repair 6. Lighting and Electrical 7. Signs, Signal Installation, and Guardrail 8. Fencing 9. Buildings and Vertical Structures 10. Utility, Water and Sewer Lines 11. Structural Steel and Steel Reinforcement 12. Riprap and Anchored Retaining Walls 13. Landscape and Erosion Control 14. Bridge and Bridge Deck Construction 15. Asphalt Paving 16. Road and Parking Lot Marking 17. Chip Seal, Crack Seal, Joint Seal and Crack Fill 18. Bridge Painting and Coating 19. Stairway and Ornamental Metal 20. Parking Lots and Commercial Sidewalks 21. Clearing, Demolition, Excavation and Earthwork 22. Engineering and Surveying Services 23. Public Relations and Involvement 24. Piles and Deep Foundations 25. Waste Management and Recycling 26. Site Clean Up 27. Mechanical and HVAC 28. Tunnel Construction 29. Profiling and Grading 30. Environmental Health and Safety				
This form must be submitted by the proposal deadline. For CDOT projects, submit to cdot_hq_dbefirms@state.co.us .				

CDOT Form #1413 12/16

ANTICIPATED DBE PARTICIPATION PLAN

Bidder:	Myers and Sons Construction, LP	Project:	Evergreen Lakehouse Bridge Replacement
Contact:	Clinton W. Myers	Project Code/ No.:	201950258
Phone:	(916) 283-9950	Date of Proposal:	June 6, 2019
Email:	cwmyers@myers-sons.com	Contract Goal:	5%
Preferred Contact Method:		Region:	

DBE Commitments			
DBE Firm Name	Work to Be Performed	Commitment Amount	Eligible Participation
<i>Green ICE</i>	<i>Erosion Control</i>	<i>3,563</i>	<i>3,563</i>
<i>Loya Construction</i>	<i>Paving</i>	<i>44,000</i>	<i>44,000</i>
<i>DH Glabe</i>	<i>Engineering</i>	<i>8,040</i>	<i>8,040</i>
			<i>55,603</i>

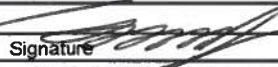
Total Eligible Participation	<i>55,603</i>
Total Bid Amount	<i>1,058,400.08</i>
Total Eligible Participation Percentage	<i>5.23%</i>

Bidder Signature

This section must be signed by an individual with the authority to bind the Bidder. By signing this form, as an authorized representative of the Bidder, you declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are true and complete to the best your knowledge. Further, you attest that you have read the Standard Special Provision Disadvantaged Business Enterprise Requirements and understand the following:

CDOT shall not award a contract until it has been determined that the contract goal has been met or that you have otherwise demonstrated good cause. Once your proposal has been submitted, commitments may not be modified or terminated without the approval of CDOT. If selected as the lowest apparent bidder, you shall submit a Form 1415 for each commitment listed above. If you have not met the contract goal, you will also be required to submit documentation of all good faith efforts to meet the contract goal.

It is your responsibility to ensure that the selected DBEs are certified for the work to be performed and that their eligible participation has been properly counted. For additional information and instructions on calculating eligible participation, see the Standard Special Provision Disadvantaged Business Enterprise Requirements.

Name Clinton W. Myers	Title Vice President	Signature 	Date 6/3/19
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This form must be submitted by the proposal deadline. For CDOT projects, submit to cdot_hq_dbeforams@state.co.us.
 Civil Rights and Business Resource Center CDOT Form # 1414 01/14

COLORADO DEPARTMENT OF TRANSPORTATION
COMMITMENT CONFIRMATION

SECTION 1. This section must be completed by the Contractor.

Project:	Evergreen Lakehouse Bridge Replacement	Project Code/No.:	201950258
Bidder/Contractor:	Myers and Sons Construction, LP	Phone:	(916) 283-9950
Contact:	Clinton W. Myers	Email:	cwmymers@myers-sons.com
DBE Firm Name:	DH Glabe	DBE Phone:	303-301-2646
DBE Address:	3835 Newkum St. West Ridge	DBE Email:	accounting@DHglabe.com

Commitment Details				
Category	Work to be Performed	DBE Work Code(s)	Commitment Amount	Eligible Participation
Construction				
Trucking				
Supplies				
Services	Engineering	541330	8,040	8,040
Total				

This section must be signed by an individual with the power to contractually bind the Bidder/Contractor. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and accurate to the best of your knowledge.

Clinton W. Myers	Vice President		0/3/19
Bidder/Contractor Representative	Title	Signature	Date

SECTION 2. This section must be completed by the DBE. (Attach additional pages if necessary).

This document is not a contract with the Bidder/Contractor; it is an acknowledgement of the obligation that the Bidder/Contractor is making to CDOT. The amounts listed above may be less than the subcontractor or purchase order amount, but can never be more, and shall not reflect any mark up by the Bidder/Contractor. All questions must be answered.

Are you contracting directly with the Bidder/Contractor or with one of its subcontractors? If with a subcontractor, provide the firm name.	Direct
Will you be purchasing supplies or materials or leasing or renting equipment from the Bidder/Contractor or its subcontractors? If so, explain.	NO
Do you intend to subcontract any portion of the work listed above? If yes, state to which firms, what work and the approximate amount. Include trucking subcontractors and owner-operators.	NO
Will you be providing trucking services on this project? If so, state how many of your own trucks and employees you will have on this project.	NO
Who within your firm will be supervising and responsible for your firm's work on this project?	Jared Thompson
Will you be acting as a broker on this project? If so, state what you will be brokering and your approximate brokerage fee.	NO
Will you be acting as a supplier on this project? If so, please state what you will be supplying and whether you will manufacture the items.	NO

This section must be signed by an individual with the power to contractually bind the DBE. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and to the best of your knowledge. You attest that you are eligible to participate as a DBE on this contract for the work listed above and have the capacity to perform the work as stated.

DBE Representative	Title	Signature	Date
--------------------	-------	-----------	------

See the DBE Standard Special provision for additional information on completing and submitting this form.

Pre-award CDOT projects: Submit this form to the CDOT Civil Rights and Business Resource Center via fax to (303)757-9019. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.

Pre-award local agency projects: Submit this form to the local agency. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.

2019-0453 - Evergreen Lakehouse Bridge Replacement

Proposal #1417 | Date: Wed, Jun 05, 2019

General Contractor: Department, Estimating

Bid Proposal:

Scope of Work:

It is the understanding of DH Glabe & Associates ("DHG") that General Contractor ("Client") requires the following construction engineering services at Evergreen Lakehouse Bridge Replacement project:

- Bridge Removal Plan
- Bridge Erection Plan
- Temporary Earth Shoring Design
- Cantilever / Overhang Design

Deliverables for the bridge removal plan will include:

- Plan view
- Typical section
- General removal notes

Deliverables for the girder erection plan will include:

- Plan view
- Typical section
- Typical details (not including manufacture details)
- General erection notes

Deliverables for the overhang / cantilever design will include:

- Typical section (not including manufactures details)
- General notes

Deliverables for the "Potential" Earth Shoring Areas will include:

- Typical Sections
- General Earth Shoring Notes

All earth shoring designs are based upon the use of sheet piles or H-pile and lagging system. Alternative earth shoring systems may be subject to additional design fees.

An optional cost of \$2,800.00 has been provided if a protective covering design is needed for the Bear Creek. The fee for the protective covering design assumes the use of steel beams and timber decking.

All documents will be stamped by a registered Colorado Professional Engineer.

Assumptions, Clarification and Exclusions:

Client will be responsible for furnishing DHG with the following prior to the start of work:

- As-built drawings of existing bridge (if available)
- Field measurements of existing bridge, if as-built drawings are not available
- Finalized structural drawings
- Removal sequencing
- Construction phasing / sequencing
- Geotechnical Report
- Preferred type of materials/equipment
- Any other specific design requests

DHG specifically excludes the following from this proposal:

- Geotechnical report
- Manufacturers details
- Engineering on pre-manufactured components
- Shop drawings and as-built drawings
- Ground anchor design
- Project meetings including phone and/or jobsite observations
- Multiple plan views
- Multiple comment and response periods
- Materials list
- Structural analysis of any existing structure
- Structural analysis of structure below crane loading

DHG will provide the client with one (1) 90% preliminary drawing for Client comments and minor changes. If multiple options or multiple revisions are requested by Client, additional charges will apply.

Estimate of Services

Milestones	Amount
MS 1.00 - Bridge Removal Plan	\$3,010.00
MS 2.00 - Girder Erection Plan	\$2,030.00
MS 3.00 - Cantilever Work Platform / Overhang Falsework	\$2,450.00
MS 4.00 - "Potential" Earth Shoring Locations Design	\$3,010.00

Milestones	Amount
MS 5.00 - Site Inspections, Meetings, Etc. (if necessary) - Billed at \$170/HR including port to port travel time	\$0.00

Total **\$10,500.00**

Terms & Conditions

All deliverables including drawings, calculations, etc. will be provided in PDF format via electronic transfer unless requested otherwise. If hard copy prints are requested, additional charges will apply. Pricing is valid for 30 days from the date of this proposal.

Payment is due in full prior to start of project: No

Standard Terms & Conditions: <http://bit.ly/DHG-STC-v2>

If you would like to accept this proposal and you agree to the DHG Standard Terms & Conditions (link provided above), please complete both below sections and sign:

Signature: _____

Name (Print): _____

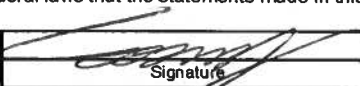
Date: _____

All DHG invoices shall be addressed to the following contact:

Name: _____

Email Address: _____

Phone Number: _____

COLORADO DEPARTMENT OF TRANSPORTATION				
COMMITMENT CONFIRMATION				
SECTION 1. This section must be completed by the Contractor.				
Project:	Evergreen Lakehouse Bridge Replacement	Project Code/No.:	201950258	
Bidder/Contractor:	Myers and Sons Construction, LP	Phone:	(916) 283-9950	
Contact:	Clinton W. Myers	Email:	cwmymers@myers-sons.com	
DBE Firm Name:	Loya Construction	DBE Phone:	720-254-3702	
DBE Address:	7077 Fox St. Denver 80221	DBE Email:	loyaconstruction@yahoo.com	
Commitment Details				
Category	Work to be Performed	DBE Work Code(s)	Commitment Amount	Eligible Participation
Construction	Paving	237310 237310	44,000	44,000
Trucking				
Supplies				
Services				
Total				
This section must be signed by an individual with the power to contractually bind the Bidder/Contractor. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and accurate to the best of your knowledge.				
Clinton W. Myers		Vice President		
Bidder/Contractor Representative		Title		
				
		Signature		0/3/19
				Date
SECTION 2. This section must be completed by the DBE. (Attach additional pages if necessary).				
This document is not a contract with the Bidder/Contractor; it is an acknowledgement of the obligation that the Bidder/Contractor is making to CDOT. The amounts listed above may be less than the subcontractor or purchase order amount, but can never be more, and shall not reflect any mark up by the Bidder/Contractor. All questions must be answered.				
Are you contracting directly with the Bidder/Contractor or with one of its subcontractors? If with a subcontractor, provide the firm name.		Direct		
Will you be purchasing supplies or materials or leasing or renting equipment from the Bidder/Contractor or its subcontractors? If so, explain.		NO		
Do you intend to subcontract any portion of the work listed above? If yes, state to which firms, what work and the approximate amount. Include trucking subcontractors and owner-operators.		NO		
Will you be providing trucking services on this project? If so, state how many of your own trucks and employees you will have on this project.		TBD		
Who within your firm will be supervising and responsible for your firm's work on this project?		Ron Summers		
Will you be acting as a broker on this project? If so, state what you will be brokering and your approximate brokerage fee.		NO		
Will you be acting as a supplier on this project? If so, please state what you will be supplying and whether you will manufacture the items.		NO		

This section must be signed by an individual with the power to contractually bind the DBE. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and to the best of your knowledge. You attest that you are eligible to participate as a DBE on this contract for the work listed above and have the capacity to perform the work as stated.

DBE Representative	Title	Signature	Date

See the DBE Standard Special provision for additional information on completing and submitting this form.

Pre-award CDOT projects: Submit this form to the CDOT Civil Rights and Business Resource Center via fax to (303)757-9019. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.

Pre-award local agency projects: Submit this form to the local agency. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.

Loya Construction

PO Box 211555 Denver, CO 80221

Office: 720.254.3702

loyaconstruction@yahoo.com

Liborio Loya 303.472.6752

Yesenia Loya 303.472.7541

DBE, Denver - SBE, EBE, M/WBE & RTD - SBE Certified

Proposal

Proposal Date: 6/5/2019

Project Bid Date: 6/5/2019

Project Number: 201950258

Project Name: Evergreen Lakehouse Bridge Replacement

Project Location: _____

Attention: Estimating Dept.

Project bid package to include complete removal and replacement of the Evergreen Lakehouse Bridge over Bear Creek (Structure D-27-MP-070). The replacement bridge is a single span structure with precast (pre-stressed) concrete box girders and abutments founded on predrilled steel H-piles.

Loya Construction, INC. would like to thank you for the opportunity to furnish the following proposal.

Description #	Quantity	UOM	Unit Cost	Total
403-34721 Hotmix Asphalt (SX) 75 PG 58-28	183	Tons	\$ 205.00	\$ 37,515.00
626-00000 Mobilization	1	Each	\$ 2,500.00	\$ 2,500.00
Base Bid Total				\$ 40,015.00

Asphalt Escalation Clause:

Due to the fluctuations in the base cost of liquid asphalt, the price may be adjusted by any increase or decrease in the price of the asphalt cement. Loya Construction, Inc. will notify GC in writing of the amount of the adjustment if any, before work is to begin, if GC is unwilling to accept the adjustment, Loya Construction, Inc. may at its option, terminate this contract, however, Loya Construction, Inc. shall be paid for any work performed prior to its termination. Upon termination, neither party shall have any further liability as a result of this contract.

Loya Construction

PO Box 211555 Denver, CO 80221

Office: 720.254.3702

loyaconstruction@yahoo.com

Liborio Loya 303.472.6752

Yesenia Loya 303.472.7541

Terms and Conditions:

- 1) This proposal is good for 30 days.
- 2) Payment due upon receipt of invoice.
- 3) Retainage if held, shall be paid upon satisfactory completion of all work.
- 4) Per standard specifications if climate conditions are not suitable (40 Degrees and rising)
Loya Construction will not be held responsible to any warranties expressed or implied.
- 5) Any rework do to inclement weather shall be priced according.
- 6) Payment will be based on actual field quantities placed and measured.
- 7) Grade, Subgrade prep or base course unless specified must be performed by others not Loya Construction.
- 8) Paving or patching areas must be considered Pave ready Loya Construction is not responsible for any overruns due to improperly placed subgrade or dirt work.
- 9) Mobilizations are not included in unit price. Per mobilization, \$2,500.00 each.
- 10) The price per ton is based on a 40 ton minimum. A trip charge and or mobilization will be added per day.
- 11) Emulsified asphalt is included unless specified as a separate pay line item.

Exclusions:

Modified asphalt, traffic control, sawcutting, grinding, removals, inspections, blue tops, testing - Q/C & Q/A, base course, striping and/or striping removal, sub grade prep, base course import or export, fees, bonds, engineering, weekend and/or night work, milling, adjustment of manholes or valves, smoothness testing/profiling, proof rolling, backfill, grout, erosion control, surveying (stringlining), reconditioning and/or recompaction. lane rental fees night plant opening fee, lighting/light plants needed for night work. permits, permit fees, dirtwork, embankment.

Signature/ Title


Date

Ron Summers

Estimator

6/5/2019

Date

COLORADO DEPARTMENT OF TRANSPORTATION				
COMMITMENT CONFIRMATION				
SECTION 1. This section must be completed by the Contractor.				
Project:	Evergreen Lakehouse Bridge Replacement	Project Code/No.:	201950258	
Bidder/Contractor:	Myers and Sons Construction, LP	Phone:	(916) 283-9950	
Contact:	Clinton W. Myers	Email:	cwmvers@myers-sons.com	
DBE Firm Name:	Green ICE	DBE Phone:	720-949-2020	
DBE Address:	2590 Washington St #101 Denver	DBE Email:	lasheita@2020group.com	
Commitment Details				
Category	Work to be Performed	DBE Work Code(s)	Commitment Amount	Eligible Participation
Construction				
Trucking				
Supplies				
Services	Erosion Control	561730	3,563	3,563
Total				
This section must be signed by an individual with the power to contractually bind the Bidder/Contractor. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and accurate to the best of your knowledge.				
Clinton W. Myers	Vice President		03/19	
Bidder/Contractor Representative	Title	Signature	Date	
SECTION 2. This section must be completed by the DBE. (Attach additional pages if necessary).				
This document is not a contract with the Bidder/Contractor; it is an acknowledgement of the obligation that the Bidder/Contractor is making to CDOT. The amounts listed above may be less than the subcontractor or purchase order amount, but can never be more, and shall not reflect any mark up by the Bidder/Contractor. All questions must be answered.				
Are you contracting directly with the Bidder/Contractor or with one of its subcontractors? If with a subcontractor, provide the firm name.	Direct			
Will you be purchasing supplies or materials or leasing or renting equipment from the Bidder/Contractor or its subcontractors? If so, explain.	NO			
Do you intend to subcontract any portion of the work listed above? If yes, state to which firms, what work and the approximate amount. Include trucking subcontractors and owner-operators.	NO			
Will you be providing trucking services on this project? If so, state how many of your own trucks and employees you will have on this project.	NO			
Who within your firm will be supervising and responsible for your firm's work on this project?	L. Sayer			
Will you be acting as a broker on this project? If so, state what you will be brokering and your approximate brokerage fee.	NO			
Will you be acting as a supplier on this project? If so, please state what you will be supplying and whether you will manufacture the items.	NO			

This section must be signed by an individual with the power to contractually bind the DBE. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and to the best of your knowledge. You attest that you are eligible to participate as a DBE on this contract for the work listed above and have the capacity to perform the work as stated.

DBE Representative	Title	Signature	Date

See the DBE Standard Special provision for additional information on completing and submitting this form.

Pre-award CDOT projects: Submit this form to the CDOT Civil Rights and Business Resource Center via fax to (303)757-9019. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.

Pre-award local agency projects: Submit this form to the local agency. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.



Evergreen Lakehouse Bridge Replacement Project ECI Overview

Bidder: Green ICE (NAICS Code 561730)
Objective: Sub-contract as an Erosion Control Inspector and SWMP Administrator
Project Name: Evergreen Lakehouse Bridge Replacement, City of Denver
Project #: 201950258
Role: Erosion Control Inspector and SWMP Administrator
Timing: July 2019 – January 2020
Number of Days: 129 Working Days, 180 Calendar Days
Bid Date: June 6, 2019

3563

Weekly Inspections & Administration: \$293
Storm Inspections: \$156
+ 1-Time Mobilization Fee: \$595 (+ \$200 if PE Oversight is needed)

Thank you for the opportunity to bid on this project.

Mobilization Includes:

- Compile Custom SWMP Notebook
- Attend Environmental Preconstruction Meeting
- Obtain Initial Site Photography
- Review Stormwater Management Plan

Our SWMP Administration Scope of Work Includes:

- Maintain & Update SWMP Weekly
- Attend Weekly Project Progress Meetings if on Inspection Day
- Participate in Headquarter & Region Inspections

Our Erosion Control Inspector Scope of Work Includes:

- Conduct 7-Day Site Inspections
- Review Site Compliance with Stormwater Permit



ECS Qualifications

Scope of Work – Our erosion control supervisor (ECS) will work with your project manager or superintendent and the project engineer to help ensure your project remains compliant with CDPHE and 404 Permit regulations for erosion control. Our scope of work includes maintenance of the project’s SWMP notebook, attendance at required meetings and the performance of required 7-day inspections. The comprehensive documentation and regular reports of findings enable us to work with the project team to identify solutions that help to keep the project compliant. We also participate in monthly audit inspections as needed.

Mobilization – This flat fee includes preparation of the project’s customized stormwater management plan notebook, assistance with permit forms, coordination of meetings and site visits before notice to proceed is issued.

Project Addenda – We have reviewed the latest version of the Specifications and its addenda.

Experience – We have provided erosion control supervisory services for city, county and state level projects:

19 th & 20 th 2-Way Conversion	Jalisco International	City of Denver
US 36 Flood Repairs	Kirkland Construction	CDOT
72 nd & Raleigh Bridge Replacement	Hamilton Construction	City of Westminster
US40 Berthoud Pass Mill & Fill	A & S Construction	CDOT
Henderson Road Bridge Micropiles	Myers & Sons Construction	Adams County
US285 Elk Creek Safety Improvements	K.E.C.I. Colorado	CDOT
Wonderland Creek Greenway Improvements	Lawrence Construction	Boulder County

Efficient and Effective – Our organizational structure gives us the flexibility to promptly respond to our client’s needs. Direct access to the founder of the company to address any concern around the project, large or small is available.

Ideal Location – We are a Colorado company, headquartered in Denver.

Certifications, Work Code and Award

Green ICE LLC is a ZoZo Group service. It is a Colorado based, minority and women-owned company. Our certifications include DBE, ESB, SBE and MBE.

Green ICE is in the process of certificate renewal:

- Certified DBE (Disadvantaged Business Enterprise) by CDOT/Denver
- Certified ACDBE by CDOT/Denver
- Certified M/WBE (Minority/Women Business Enterprise) by CDOT/Denver
- Certified Level 1 ESB (Emerging Small Business) by CDOT
- Certified SBE (Small Business Enterprise) by RTD
- Member of the Colorado Contractors Association and International Erosion Control Association
- Identified under the NAICS Code 561730
- Won **2014 Environmental Excellence Award** presented by Colorado Contractors Association in recognition of extraordinary efforts made to promote and protect the environment utilizing innovative procedures during the construction process.



Insurance Certification

We are insured with State Farm, Pinnacle, and Hartford. We carry General Liability, Auto and Workers Compensation Insurance. Our certificate of insurance can be prepared and submitted upon notification of award of the contract.

Staff Qualifications

Our degreed professionals are CDOT Certified Transportation Erosion Control Supervisors (TECS). Our team has more than 20+ years of regulatory experience in environmental inspection and project management, and specialized training in Stormwater Management (SWMP), with certifications in SWMP and HAZWOPER.

("Good Faith Effort Report")
to be submitted 5 calendar days after bid opening.)

COLORADO DEPARTMENT OF TRANSPORTATION								
GOOD FAITH EFFORT REPORT								
Section 1. Contractor and Project Information								
Bidder:	Myers and Sons Construction, LP	Project:	Evergreen Lakehouse Bridge Replacement					
Address:	4600 Northgate Blvd, Suite 100 Sacramento, CA 95834	Project Code/ No.:	201950258					
Contact Name:	Clinton W. Myers	Proposal Amount:						
Contact Phone:	(916) 283-9950	Contract Goal Percentage:						
Contact Email:	cwmyers@myers-sons.com	Contract Goal Dollar Value:						
Section 2. Efforts to Achieve DBE Participation. Attach a narrative that answers the questions below and complete Page 2 (Subcontractor Quote Summary). Provide any supporting documentation which demonstrates your good faith efforts.								
<p>a. Describe your overall plan or approach to meeting the contract goal. Include how much and what work you intend to self-perform; how much and what work you intend to subcontract; what work areas were identified as subcontracting opportunities for DBEs; and the approximate number of DBEs per area.</p> <p>b. Describe your efforts to obtain DBE participation (i.e. how you attempted to execute your plan or approach to meeting the contract goal). Include direct outreach (state the DBE solicited, date(s) and method of phone, email or fax); indirect outreach such as events, publications, and/or communication with minority and other organizations that you conducted to reach DBEs (state date(s), location and audience); other efforts you made to assist DBEs in competing for or obtaining contracts (accepting quotes from DBEs that may be higher than other subcontractors, modifications to contract scopes, unbundling, mentoring, etc.); and obstacles you encountered in assisting or contracting with DBEs. Cost alone shall not be a reason to reject a DBE and will be considered in the evaluation of Page 2.</p> <p>c. If the eligible participation submitted on the Form 1414 was miscalculated, determined to be invalid, or otherwise did not meet the contract goal, provide your justification for such deficiencies and the remedies you have taken or intend to take to avoid the issue in the future. If you have obtained any additional commitments since submission of the bid, attach the Form 1415(s) and the reason why such commitments were not obtained prior to the proposal due date.</p>								
Section 3. Affidavit of Good Faith Efforts. The Bidder must show that it took all necessary and reasonable steps to achieve the DBE contract goal which by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if not fully successful. 49 CFR Part 26, Appendix A sets forth examples and guidance for good faith efforts. The contractor is not limited to the examples provided in 49 CFR Part 26, Appendix A and may provide any documentation that demonstrates good faith efforts to obtain DBE participation on this contract.								
<p>If, at any time, CDOT has reason to believe that any person or firm has willfully and knowingly provided incorrect information or made false statements, CDOT may initiate suspension or debarment proceedings against the person or firm under 49 CFR Part 29, take enforcement action under 49 CFR Part 31, Program Fraud and Civil Remedies, and/or refer the matter to the Department of Justice or Office of the Inspector General for criminal prosecution under 18 U.S.C. 1001, which prohibits false statements in Federal program.</p> <p>By signing below, the Bidder hereby affirms that it has made good faith efforts and has documented all such efforts in this form and the attached supporting documentation.</p> <p>I, <u>Clinton W. Myers</u>, am the <u>Vice President</u> of <u>Myers and Sons Construction, LP</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">Representative Name</td> <td style="width: 33%; text-align: center;">Title</td> <td style="width: 33%; text-align: center;">Company</td> </tr> </table> <p>I have the authority to make this affidavit for and on behalf of my company. All information provided herein and attached as evidence of my company's good faith efforts is true and accurate to the best of my belief.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Signature</td> <td style="width: 50%; text-align: center;">Date</td> </tr> </table> <p>Notarization: Must be completed by a licensed notary.</p> <p>County of _____ State of _____</p> <p>Subscribed and sworn before me this _____ day of _____</p> <p style="text-align: right;">SEAL</p> <p>Notary Signature _____</p> <p>Notary Address _____</p>				Representative Name	Title	Company	Signature	Date
Representative Name	Title	Company						
Signature	Date							
<p>CDOT projects: Submit this form and all supporting documentation to the CDOT Civil Rights and Business Resource Center via fax to (303)757-9019. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.</p> <p>Local agency projects: Submit this form and all supporting documentation to the local agency. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.</p>								

Subcontractor Quote Summary (Attach additional pages if necessary.)					
Subcontractor	DBE (Y/N)	Work Type(s)	Quote Amount	Selected (Y/N)	Reason

COLORADO DEPARTMENT OF TRANSPORTATION – Form 605 CONTRACTORS PERFORMANCE CAPABILITY STATEMENT	Project # 201950258
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1. List names of partnerships or joint ventures none

Myers and Sons Construction, LP

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

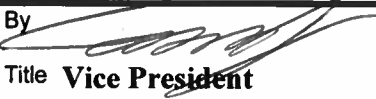
a. Key personnel changes none

b. Key equipment changes none

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

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

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

Contractor's firm or company name Myers and Sons Construction, LP	By  Title Vice President	Date 6/3/19
2 nd Contractor's firm or company name (if joint venture) N/A	By N/A Title N/A	Date N/A

Form 605

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

Project No.: **201950258**


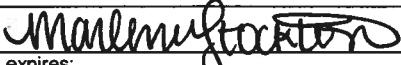

Location: **Denver, CO**

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

I further attest that:

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

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

Contractors firm or company name: Myers and Sons Construction, LP	By: 	Date: 6/3/19
	Title: Vice President	
2 nd Contractors firm or company name: N/A	By: N/A	Date: N/A
	Title: N/A	
Sworn to before me this 3rd day of June 20 19		
Notary Public 		
My commission expires: MARCH 28, 2021		
NOTE: THIS DOCUMENT MUST BE SIGNED IN INK.		

***SEE ATTACHED CALIFORNIA COMPLIANT
CERTIFICATE**

Form 606

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 Sacramento

Subscribed and sworn to (or affirmed) before me on this 3rd
day of June, 2019, by Clinton W. Myers

proved to me on the basis of satisfactory evidence to be the
person(s) who appeared before me.



(Seal)

Signature

A handwritten signature in cursive script that reads 'Marlena Stockton'.


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

Project No.:
201950258

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

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

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

Contractors firm or company name: Myers and Sons Construction, LP	By: 	Date: 6/3/19
	Title: Vice President	
2 ND Contractors firm or company name: N/A	By: N/A	Date: N/A
	Title: N/A	

Form 621

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Bid Documents Package

Contract Number: 201950258



Evergreen Lakehouse Bridge Replacement

May 16, 2019

**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

Item No.	Description	Estimated	Quantity
201-00000	Clearing and Grubbing	1	LS
202-00010	Removal of Tree	6	EA
202-00220	Removal of Asphalt Mat	635	SY
202-00400	Removal of Bridge	1	EA
202-00810	Removal of Ground Sign	6	EA
202-01000	Removal of Fence	40	LF
203-00010	Unclassified Excavation (Complete In Place)	633	CY
203-00100	Muck Excavation	10	CY
203-01100	Proof Rolling	4	HR
203-01500	Blading	4	HR
203-01597	Potholing	4	HR
206-00000	Structure Excavation	569	CY
206-00100	Structure Backfill (Class 1)	345	CY
206-00200	Structure Backfill (Class 2)	105	CY
206-00360	Mechanical Reinforcement of Soil	192	CY
206-01750	Shoring	1	LS
207-00205	Topsoil	69	CY
207-00310	Stockpile Wetland Topsoil	70	CY
208-00002	Erosion Log Type 1 (12 Inch)	1,060	LF



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

STATEMENT OF QUANTITIES

Item No.	Description	Estimated	Quantity
208-00035	Aggregate Bag	96	LF
208-00045	Concrete Washout Structure	2	EA
208-00070	Vehicle Tracking Pad	4	EA
208-00103	Removal and Disposal of Sediment (Labor)	40	HR
208-00105	Removal and Disposal of Sediment (Equipment)	40	HR
208-00106	Sweeping (Sediment Removal)	40	HR
208-00207	Erosion Control Management	8	DAY
208-00520	Temporary Stream Crossing	1	LS
211-03005	Dewatering	1	LS
212-00006	Seeding (Native)	0.1	AC
212-00032	Soil Conditioning	0.1	AC
213-00002	Mulching (Weed Free Hay)	0.1	AC
213-00061	Mulch Tackifier	60	LB
214-00205	Deciduous Tree (5 Gallon Container)	9	EA
214-00310	Deciduous Shrub (1 Gallon Container)	30	EA
214-00450	Evergreen Tree (5 Gallon Container)	3	EA
216-00101	Soil Retention Blanket (Photodegradable Class1)	144	SY
250-00010	Environmental Health and Safety Management	1	LS
304-06007	Aggregate Base Course (Class 6)	103	CY



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

STATEMENT OF QUANTITIES

Item No.	Description	Estimated	Quantity
403-34721	Hot Mix Asphalt (Grading SX) (75)(PG 58-28)	183	TON
420-00112	Geotextile (Drain)(Class 1)	460	SY
502-00100	Drilling Hole to Facilitate Pile Driving	108	LF
502-11274	Steel Piling (HP 12X74)	126	LF
506-00212	Riprap (12 Inch)	300	CY
515-00120	Waterproofing (Membrane)	120	SY
601-03040	Concrete Class D (Bridge)	30	CY
601-21010	Precast Concrete Unit	49	CY
601-40300	Structural Concrete Coating	81	SY
602-00020	Reinforcing Steel (Expoxy Coated)	5,962	LB
606-01370	Transition Type 3G	4	EA
606-01390	End Anchorage Type 3K	3	EA
606-11030	Bridge Rail (Type 10M)	74	LF
607-11525	Fence (Plastic)	825	LF
613-00300	3 Inch Electrical Conduit	75	LF
618-01992	Prestressed Concrete Box (Depth Less Than 32")	1,136	SF
620-00001	Field Office (Class 1)	1	EA
620-00020	Sanitary Facility	1	EA
622-00024	Entry Sign	1	EA



STATEMENT OF QUANTITIES

Item No.	Description	Estimated	Quantity
625-00000	Construction Surveying	1	LS
626-00000	Mobilization	1	LS
630-00000	Flagging	36	HR
630-80335	Barricade (Type 3 M-A)(Temporary)	5	EA
630-80341	Construction Traffic Sign (Panel Size A)	22	EA
630-80342	Construction Traffic Sign (Panel Size B)	1	EA
630-80380	Traffic Cone	200	EA
700-70010	FORCED ACCOUNT MINOR CONTRACT REVISIONS	1	\$22,700.00
700-70016	FORCED ACCOUNT FUEL COST ADJUSTMENT	1	\$4,500.00
700-70380	FORCED ACCOUNT EROSION CONTROL	1	\$2,500.00

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

**NOTICE OF INVITATION FOR BIDS
FEDERAL AID PROJECT NO: NHPP C010-114 SA# 20414
CITY OF DENVER CONTRACT NO: 201950258**

EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT

**BID SCHEDULE:
11:00 a.m., Local Time
June 6, 2019**

Sealed bids will be received on bid opening day beginning at 10:30 a.m. local time and ending at 11:00 a.m. local time in the Webb Building, 201 W. Colfax Ave., 6th floor, Room 6G7, Denver, CO 80202. All properly delivered bids will then be publicly opened and read aloud.

Prior to bid opening day at 10:30 a.m. local time, bids will be received the Webb Building to the attention of: Public Works Contract Administration, 201 W. Colfax Ave. 6th floor, Dept. 614, Denver, CO 80202.

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

GENERAL STATEMENT OF WORK:

Project bid package to include complete removal and replacement of the Evergreen Lakehouse Bridge over Bear Creek (Structure D-27-MP-070). The replacement bridge is a single span structure with precast (pre-stressed) concrete box girders and abutments founded on predrilled steel H-piles.

ESTIMATED CONSTRUCTION COST:

The estimated cost of construction for this project is between \$713,000.00 and \$872,000.00.

TEXTURA CONSTRUCTION PAYMENT MANAGEMENT:

Bidders are required, when preparing a bid, to agree it shall use the Textura® Construction Payment Management System ("Textura") for all payments, including those to subcontractors, inclusive of this Project. All fees associated with Textura are to be paid by the awarded Contractor. Bidders shall use the pricing scale provided in Instructions to Bidders to price the Textura service appropriately. For details on the company and service, contact the Textura® Corporation at 866-TEXTURA or www.texturacorp.com.

DOCUMENTS AND BID INFORMATION AVAILABLE:

Complete Contract Documents will be available on the first day of Bid publication at: www.work4denver.com. To download digital Contract Documents at a cost of \$15.00 per download, reference eBid Document Number #6342036. Project bid package to include complete removal and replacement of the Evergreen Lakehouse Bridge over Bear Creek (Structure D-27-MP-070). The replacement bridge is a single span structure with precast (prestressed) concrete box girders and abutments founded on predrilled steel H-piles.. Contact QuestCDN at 952-233-1632 or info@questcdn.com for assistance.

PRE-BID CONFERENCE:

A pre-bid conference will be held for this Project at 11:00 a.m., local time, on May 23, 2019. This meeting will take place at: WEBB Building, 201 W Colfax Ave, 4th floor conference room 4.I.5., Denver, Colorado 80202.

DEADLINE TO SUBMIT QUESTIONS: May 29, 2019 at 10:00 a.m., local time.

PREQUALIFICATION REQUIREMENTS: None

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION:

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

The U.S. Department of Transportation (DOT) is authorized to establish project goals for expenditures on construction, reconstruction and remodeling and professional design services work funded by FHWA and let by the City and County of Denver. The specific goal for this project is:

5% Disadvantaged Business Enterprise (DBE)

The project goal must be met with certified participants as set forth in 49 CFR Part 26. For compliance with good faith effort requirements, refer to 49 CFR 26.53.

MISCELLANEOUS:

Contracts for construction, reconstruction, and remodeling are subject to the United States Department of Labor Wage determinations requirements.

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

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

Publication Dates: May 16, 17, 20, 2019
Published In: The Daily Journal

If applicable, a shortened version of this Notice of Invitation for Bids and the Statement of Quantities can be viewed on the City and County of Denver's website at: www.work4denver.com.

**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 a bid in strict compliance with all requirements of the Contract Documents and by careful application of these instructions.

IB-2 BIDDING

The Contract Documents contain 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 the information contained in the Contract Documents as defined herein.

Each bid must be enclosed in a sealed envelope, addressed to the Executive Director, and show on the face of the envelope the full name of the bidder, the City Project number, and the 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.

For the purpose of this Agreement, the term ‘Executive Director’ and ‘Manager’ shall have the same meaning.

IB-3 CONTRACT DOCUMENTS AS PUBLISHED BY CITY

Each bidder is responsible for, and shall be deemed to have received, all 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 typing 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 fully and properly completed. If a submitted bid has words and figures as written on the Bid Form by the bidder that do not agree, the written words will govern.

On Bid Forms requiring unit price bids, the bidder shall write in the provided Bid Form spaces 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 the other persons have agency to bind the bidder.

IB-5 UNACCEPTABLE BIDS

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

IB-6 INFORMAL AND UNBALANCED BIDS

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

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

Bids so unbalanced 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 that have not acknowledged all addenda to the Contract Documents issued for this bid may also be rejected.

The City reserves the right 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 1) a certified or cashier's check made payable without condition to the order of the City and County of Denver or 2) a bid bond in a form acceptable to the City and signed by an approved corporate surety in favor of the City and County of Denver. Upon acceptance of the bid and notification by the Executive Director the bidder is considered to be the Apparent Low Bidder, bidder must execute a contract in the form prescribed, furnish a performance and payment bond with a legally responsible and approved surety, furnish the required evidence of insurance, and otherwise satisfy all conditions precedent to contract execution within five (5) days after such notice is made by the City. Should a bidder fail to complete these requirements within the time allotted, 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. The bid guarantee of the Apparent Low Bidder shall be returned after the following conditions have been met: the Apparent Low Bidder delivers to the City satisfactory performance and payment bonds and required insurance documentation, the Apparent Low Bidder has satisfied all conditions precedent to contract execution by the City, the Apparent Low Bidder fully and faithfully executes the Contract, and, if

required, the Council of the City approves the Contract. 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 based on interpretation by the design professionals from 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 Executive Director or his/her representatives.

Since the bid information cannot be guaranteed, the bidder 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 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 inconsistencies or ambiguities between different provisions of the Contract Documents, or any issue the bidder believes requires a decision or interpretation by the City, must be addressed in a formal written communication to the Executive Director of Public Works by delivering, with confirmed receipt of same, said formal written communication to the Executive Director of the Division of Public Works, 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 Executive Director, the issuance of an addendum to the bid documents, 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 their bid.

After bids are opened, all bidders must abide by the formal response of the Executive Director as to any interpretation. The City shall not be bound by, 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 to the Executive Director of Public Works. After such time, no bid may be withdrawn or modified.

Withdrawal requests must be signed by the persons authorized to bind the bidder as defined in IB-4, COMPLETING AND SIGNING BID FORMS.

IB-12 CONTRACTOR'S BULLETIN BOARD

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

IB-13 PRE-BID MEETING

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

IB-14 ADDENDA

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

IB-15 BID OPENING

Bidders are invited to be present at the bid opening. Unless otherwise suspended, delayed, or canceled by posted notice from the Executive Director, 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 reading in the open meeting at the place designated for such bid opening. All low bidders' bids will be reviewed for responsiveness per the requirements of the Contract Documents as well as whether the bids contain irregularities that could give any bidder an unfair advantage.

Selection will be made based on the lowest, total, responsible, responsive, qualified bid that includes 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. Only corrected totals will be considered as the basis of selection.

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

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

IB-17 NOTICE TO APPARENT LOW BIDDER

The Notice to Apparent Low Bidder, a form 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 the Executive Director 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 non-responsive and may constitute cause for rejection.

Issuance of such Notice shall not 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 the documents submitted by the Apparent Low Bidder into one or more executable copies. Upon notification that contract 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 will be examined by the City to determine whether or not the Apparent Low Bidder has correctly executed the Contract and has correctly provided and satisfactorily and properly completed the required supplemental documents. Once confirmed, 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 Executive Director 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, attestation by the Clerk, and countersignature and registration by the Auditor. 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 Apparent Low Bidder. Any work performed, or materials purchased, prior to the issuance of the Notice to Proceed is at the Apparent Low Bidder'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 a form similar to the one attached) to the City.

IB-20 INSURANCE REQUIREMENTS

The minimum insurance requirements for this Contract are set forth in the Special Conditions Section of the Contract Documents. Bidders are urged to consider, in preparing a bid hereunder, that each condition, requirement, or specification set forth in the form certificate must be complied with by the bidder and all subcontractors performing Work on the Project, unless such requirements are specifically accepted in writing by the City's Risk Management Office. The bidder 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 bidder shall ensure that each subcontractor complies with all 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 bidder.

IB-22 WAGE RATE REQUIREMENTS

In preparing any bid hereunder, the bidder must comply with, and should carefully consider, all requirements and conditions of the United States Department of Labor's Payment of Prevailing Wages.

At the time of the preparation of the Contract Documents, the then-current prevailing wage rates applicable to this Project shall be bound within the Contract Documents made available to potential bidders for the Project. If, prior to the date of the bid publication, it is determined that prevailing wages rates different from those bound in the Contract Documents are applicable to one or more of the various classes of laborers, mechanics and workers encompassed by this Project, such different prevailing wage rates shall be provided in an addendum. In any event, the bidder will be held, at the actual date of bid opening, to those prevailing wage rates incorporated into the Contract Documents and as modified by any such addenda.

These prevailing wage rates shall be considered the **minimum** prevailing wage rates to be paid by all contractors or subcontractors for the life of the contract.

IB-23 PAYMENT OF CITY MINIMUM WAGE

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

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

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

IB-24 TAX REQUIREMENTS

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

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

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

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

IB-25 DIVERSITY AND INCLUSIVENESS IN CITY SOLICITATIONS

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

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

Diversity and Inclusiveness information provided by City bidders 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 information provided by or obtained from bidders will be in such reports

IB-26 DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS

The Disadvantaged Business Enterprise (DBE) Program is a federally-mandated program that seeks to ensure non-discrimination in the award of U.S. Department of Transportation (DOT) assisted contracts and to create a level playing field on which DBEs can compete fairly for DOT assisted contracts. **Local Public Agencies (LPAs) that are subrecipients of FHWA funding from the Colorado Department of Transportation (CDOT) must comply with CDOT's FHWA-approved DBE Program.** To such end, CDOT sets a contract goal for DBE participation for each DOT assisted LPA Contract.

In order to be awarded the Contract, the Apparent Low Bidder shall show it has committed to DBE participation sufficient to meet the goal or has otherwise made good faith efforts to do so. CDOT will amend the goal prior to award if the Apparent Low Bidder demonstrates good faith efforts were made, but sufficient commitments to meet the goal could not be obtained.

CDOT and the LPA will monitor the progress of the Awarded Contractor (Contractor) throughout the project to ensure that the Contractor’s DBE commitments are being fulfilled. Modifications to the commitments must be approved by the CDOT Regional Civil Rights Office (RCRO). The LPA may withhold payment or seek other contractual remedies if the Contractor is not complying with the requirements of this special provision. Upon completion of the Contract, CDOT may require the LPA to reduce the final payment to the Contractor if the Contractor has failed to fulfill the commitments or made good faith efforts to meet the contract goal.

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

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

For general assistance regarding the DBE program and compliance, contact CDOT's Civil Rights and Business Resource Center (CRBRC) at (303)757-9234. For project specific issues, contact the LPA Engineer or RCRO.

All forms referenced herein can be found on the CDOT website in the forms library. Remainder of the Disadvantaged Business enterprise (DBE) Requirements (Local Agency) may be found attached herein.

IB-27 DISCLOSURE OF INFORMATION

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

IB-28 GENERAL BIDDING INFORMATION

Bidders are instructed to contact the Contract Administrator designated below for this Project for pre-bid, post-bid, and general City bidding information. Bidders may also visit www.work4denver.com for information, both general and project specific. The Contract Administrator assigned to this project is Project bid package to include complete removal and replacement of the Evergreen Lakehouse Bridge over Bear Creek (Structure D-27-MP-070). The replacement bridge is a single span structure with precast (prestressed) concrete box girders and abutments founded on predrilled steel H-piles. who may be reached via email at pw.procurement@denvergov.org.

IB-29 FEDERAL REQUIREMENTS

This project is funded, in whole or in part, by federal funding made available through the Federal Highway Administration ("FHWA") and administered by the Colorado Department of Transportation ("CDOT"). As such, each bidder must review and comply with certain bid requirements (the "Federal Forms") in formulating and submitting its bid for the Project, and, if awarded a contract pursuant to this bid, must comply with certain "Federal Requirements." The required Federal Forms are included in the Bid Package at pages BF-13 through BF-21. The Federal Requirements are attached to the Bid Document Package, pages at BDP-73 through BDP-84. The bidder shall be presumed to have considered and completed all Federal Requirements and Forms as part of its bid and shall be presumed to have carefully considered and accounted for all costs of complying with the Federal Requirements in formulating and submitting a bid hereunder.

IB-30 PAYMENT PROCEDURE REQUIREMENTS

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

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

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**RULES AND REGULATIONS
REGARDING
EQUAL EMPLOYMENT OPPORTUNITY**

Promulgated and adopted by the Executive Director 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 ensuring 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. "Executive Director" shall mean the Executive Director of Public Works for the City and County of Denver.
- C. "Manager," as referenced in the Department of Public Works Standard Specifications for Construction General Contract Conditions 2011 Edition, refers to the Executive Director of Public Works for the City and County of Denver.
- D. "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.
- E. "Contractor" means the original party to a contract with the City and County of Denver, also referred to as the "general" or "prime" contractor.
- F. "Director" means the Director of the Division of Small Business Opportunity.
- G. "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.
- H. 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.
- I. "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.
- J. "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 Executive Director and he/she 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 Executive Director will , prior to imposition of any sanctions, afford the 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 Executive Director.
- 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 Executive Director who shall make a final decision.

REGULATIONS

REGULATION NO. 1 - ORDINANCE:

The Rules and Regulations of the Executive Director 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 Executive Director. 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 Executive Director.

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 contractor or any of his subcontractors is indicated, a corrective action program will take into account the need by the 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 Executive Director 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 Executive Director 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/her 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:

- Advertise invitations for subcontractor bids in minority community news media.
- Contact minority contractor organizations for referral of prospective subcontractors.
- 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 Executive Director shall include the appropriate clauses in every contract and the contractor shall cause to be inserted in every subcontract the appropriate clauses:

- APPENDIX A: City and County of Denver Equal Opportunity Clause - ALL CONTRACTS funded only with City and County of Denver monies.
- APPENDIX B: Equal Opportunity Clause (11246) - ALL FEDERAL ASSISTED.
- APPENDIX C: Section 3 - Assurance of Compliance - HUD ASSISTED PROJECTS.
- 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 Executive Director has reasonable cause to believe that a contractor has violated Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code, he/she may issue a notice requiring the contractor to show cause, within fifteen (15) days why enforcement procedures, or other appropriate action to ensure compliance, should not be instituted.

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

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.

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 not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information
4. 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.
5. 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 Executive Director and the Director.
6. 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 Executive Director and Director or pursuant thereto, and will permit access to his books, records, and accounts by the Executive Director, Director, or their designee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

7. 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.
8. 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 Executive Director 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 Executive Director and Director. In addition, the Contractor agrees that failure or refusal to comply with these undertakings the Manager may take any or all of the following actions:

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

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

APPENDIX B
EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

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

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following:
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedure authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provision, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

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

EQUAL EMPLOYMENT OPPORTUNITY IS THE LAW

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

Title VII of the Civil Rights Act of 1964

Administered by: The Equal Employment Opportunity Commission

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

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

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

Executive Order No. 11256

Administered by: The Office of Federal Contract Compliance Programs

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

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

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

APPENDIX E

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

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

Timetables: Until Further Notice

Goals:

Minority Participation in Each Trade: 13.8 percent

Female Participation in Each Trade: 6.9 percent

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

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

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

STANDARD FEDERAL ASSURANCES

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

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

1. Compliance with Regulations. The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
2. Nondiscrimination. The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, creed or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
3. Solicitations for Subcontractors, Including Procurements of Materials and Equipment. In all solicitations either by competitive bidding or negotiations made by the contractor for work to be performed under a subcontract, including procurements or materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
4. Information and Reports. The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the sponsor, as appropriate, and shall set forth what efforts it has made to obtain the information.
5. Sanctions for Noncompliance. In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it may determine to be appropriate, including, but not limited to:
 - a. Withholding of payments to the contractor under the contract until the contractor complies, and/or
 - b. Cancellation, termination, or suspension of the contract, in whole or in part.
 - c.
6. Incorporation of Provisions. The contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the sponsor or may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the sponsor to enter into such litigation to protect the interests of the sponsor and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

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

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
 - d. "Minority" includes:
 - i. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - ii. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
 - iii. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - iv. American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing

construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor

shall provide notice of these programs to the sources compiled under 7b above.

- f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendent, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.
 9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.
 10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
 11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
 12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
 13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
 14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

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

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

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

EQUAL OPPORTUNITY PROVISIONS (Cont'd)

15. REQUIREMENTS - AN AFFIRMATIVE ACTION PLAN:

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

a. GOALS AND TIMETABLES:

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

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

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

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

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

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

b. 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:

- i. The Contractor should have notified minority and female organizations when employment opportunities were available and should have maintained records of the organization's response.
- ii. 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.
- iii. 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.
- iv. 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.
- v. 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.
- vi. 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.
- vii. 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.
- viii. The Contractor should have made sure that seniority practices and job classifications do not have a discriminatory effect.
- ix. The Contractor should have made certain that all facilities are not segregated by race.
- x. 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.

- xi. 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.

c. **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.

d. **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.

e. **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.

- a. Where the Division of Small Business Opportunity finds that a contractor failed to comply with the requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code or the implementing regulations and the obligations under these Bid Conditions, and so informs the Manager, the Manager shall take such action and impose such sanctions, which include suspension, termination, cancellation, and debarment, as may be appropriate under the Ordinance and its regulations. When the Manager proceeds with such formal action it has the burden of proving that the Contractor has not met the goals contained in these Bid Conditions. The Contractor's failure to meet its goals shall shift to it the requirement to come forward with evidence to show that it has met the good faith requirements of these Bid Conditions.
- b. 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".
- c. 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.

16. 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.

17. 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.

- a. 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.
- b. 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.
- c. 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.
- d. 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.
- e. Requests for exemptions from these Bid Conditions must be made in writing, with justification, to the Executive Director 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**

**FEDERAL AID PROJECT NO: NHPP C010-114 SA# 20414
CITY OF DENVER CONTRACT NO: 201950258**

EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT

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,

**Myers and Sons Construction, LP
4600 Northgate Blvd, Suite 100
Sacramento, CA 95834**

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

WITNESSETH, commencing on **May 16, 2019**, 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>FEDERAL AID PROJECT NO: NHPP C010-114 SA# 20414 CITY OF DENVER CONTRACT NO: 201950258 EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT</p>
--

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

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

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

1. CONTRACT DOCUMENTS

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

*Advertisement of Notice of Invitation for Bids
Instructions to Bidders
Bid Bond
Addenda (as applicable)
DBE Documents*

Equal Employment Opportunity Provisions (Appendices A, B, E and F)

Bid Form

Commitment to DBE Participation

Contract Form

General Contract Conditions

Special Contract Conditions

Performance and Payment Bond

Notice to Apparent Low Bidder

Notice to Proceed

Contractor's Certification of Payment Form

Final/Partial Lien Release Form

Certificate of Contract Release

Change Orders (as applicable)

Federal Requirements (as applicable)

Prevailing Wage Rate Schedule(s)

Technical Specifications

Contract Drawings

Accepted Shop Drawings

2. SCOPE OF WORK

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

3. TERMS OF PERFORMANCE

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

4. TERMS OF PAYMENT

The City agrees to pay the Contractor for the performance of all of the Work required under this Contract, and the Contractor agrees to accept as the Contractor's full and only compensation therefore, such sum or sums of money as may be proper in accordance with the price or prices set forth in the Contractor's Bid Form hereto attached and made a part hereof for **bid item numbers 201-00000 through 700-70380 (Sixty-Seven[67]) total bid items, with three of them being Forced Accounts**, the total estimated cost thereof being, **One Million One Hundred Five Thousand Eight Hundred Forty Dollars and Eight Cents (\$1,105,840.08)**. 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. DBE AND EQUAL OPPORTUNITY REQUIREMENTS

The Contractor agrees to comply with all requirements of the City's Equal Employment Opportunity program and the Federal Disadvantaged Business Enterprise Participation program as set out in Article III, Division 2, Chapter 28 of the Denver Revised Municipal Code, and any rules,

regulations and guidelines set forth thereunder for such programs. This compliance shall include the obligation to maintain throughout the term of the contract that level of DBE participation upon which the Contract was initially awarded, unless otherwise authorized by the law or any rules, regulations or guidelines.

7. WAGE RATE REQUIREMENTS

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

8. APPLICABILITY OF LAWS

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

9. APPROPRIATION

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

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

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

10. APPROVALS

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

11. ASSIGNMENT

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

12. DISPUTES RESOLUTION PROCESS

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

13. CONTRACT BINDING

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

14. PARAGRAPH HEADINGS

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

15. SEVERABILITY

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

16. ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS:

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

Contract Control Number: PWADM-201950258- 00
Contractor Name: Myers and Sons Construction, LP

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

SEAL

CITY AND COUNTY OF DENVER:

ATTEST:

By:

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

Attorney for the City and County of Denver

By:

By:

By:

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: 201950258

Vendor Name: Myers and Sons Construction, LP

By: 

Name: Clinton W. Myers
(please print)

Title: Vice President
(please print)

ATTEST: [if required]

By: _____

Name: _____
(please print)

Title: _____
(please print)



**CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
Construction Contract General Conditions**

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

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) ****General Contract Conditions 1801 and 1802 concerning warranties and guarantees are hereby deleted in their entirety****
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 2017 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, (5th floor), Denver, CO 80202. The *Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS* is available at: http://www.denvergov.org/dpw_contract_admin/ContractAdministration/ContractorReferenceDocuments/tabid/440535/Default.aspx. *Transportation Standards and Details for the Engineering Division* and the Wastewater Management Division – *Standard Detail Drawings*, are available at <http://www.denvergov.org>.

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

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

SC-2 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 Executive Director of Public Works. For the purpose of this Agreement, the term 'Executive Director' and 'Manager' shall have the same meaning. This Division is responsible for the planning, design, construction, operation and maintenance of all of the City's transportation facilities and the planning, design and construction of all of the City's wastewater facilities, except for the City's Municipal Airport System. All references to the Transportation Division or the Deputy Manager of Public Works for Transportation are deleted and replaced with references to the Engineering Division and City Engineer, respectively.

SC-3 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 (the "Director") as the City official responsible for those certain actions and decisions designated as the responsibility of the Deputy Manager under the General Conditions and delegates to the Director the authority necessary to undertake those responsibilities under this Contract. The Director shall have supervisory responsibility over the Project Manager. Additionally, Contractor questions concerning the Plans and Technical Specifications shall be directed to:

Denver Department of Public Works,

<u>City Project Manager</u> Kevin Rens		<u>Telephone</u> 720.865.3151
<u>Design Consultant</u> AECOM	<u>Consultant Name</u> Craig Parent	<u>Telephone</u> 303.740.3876

SC-4 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 \$1,600.00 for each Day that the Contractor exceeds the time limits herein specified, all in accordance with provisions of General Contract Condition 602, LIQUIDATED DAMAGES; ADMINISTRATIVE COSTS; ACTUAL DAMAGES.

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

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

SC-5 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-6 PREVAILING WAGE RATES

General Contract Condition 1001 Wages is replaced in its entirety with the United States Department of Labor wages and requirements and compliance therewith.

SC-7 PAYMENTS TO CONTRACTORS

The application for payment shall be submitted through Textura® Corporations Construction Management Website. Contractor recognizes and agrees that it shall be required to use the Textura Construction Payment Management System for this Project to request payment from the City and to pay subcontractors. All certified subcontractors or suppliers who are listed for participation towards any assigned program goal must be paid via Textura®. Contractor further agrees that, to the fullest extent possible within 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	Kevin Rens	720.865.3151

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.

SC-8 CONSTRUCTION INSPECTION BY THE CITY

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

1701.1 Persons who are employees of the City or who are under contract to the City or the City as lessee will be assigned to inspect and test the Work. These persons may perform any tests and observe the Work to determine whether or not designs, materials used, manufacturing and construction processes and methods applied, and equipment installed satisfy the requirements of the drawings and specifications, accepted Shop Drawings, Product Data and Samples, and the General Contractor's warranties and guarantees. The General Contractor shall permit these inspectors unlimited access to the Work and provide means of safe access to the Work, which cost

shall be included as a Cost of the Work without any increase to the Guaranteed Maximum Price. In addition, General Contractor shall provide whatever access and means of access are needed to off-site facilities used to store or manufacture materials and equipment to be incorporated into the Work and shall respond to any other reasonable request to further the inspector's ability to observe or complete any tests. Such inspections shall not relieve the General Contractor of any of its quality control responsibilities or any other obligations under the Contract. All inspections and all tests conducted by the City are for the convenience and benefit of the City. These inspections and tests do not constitute acceptance of the materials or Work tested or inspected, and the City may reject or accept any Work or materials at any time prior to the inspections pursuant to G.C. 2002, whether or not previous inspections or tests were conducted by the inspector or a City representative.

.2 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-9 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-10 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-11 TERMINOLOGY

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

SC-12 TECHNICAL SPECIFICATIONS

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

SC-13 MODIFICATION TO GENERAL CONTRACT CONDITION 405

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

G.C. 405.2 shall include the following:

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

SC-14 MODIFICATION TO GENERAL CONTRACT CONDITION 809

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

Add G.C. 809.3 as follows:

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

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

SC-15 FEDERAL REQUIREMENTS

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

SC-16 ATTORNEY'S FEES

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

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

SC-17 CONTRACT FORMS

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

1. Performance and Payment Bond

2. Performance and Payment Bond Surety Authorization Letter (Sample)

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

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

SC 18: 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) **Builder's Risk or Installation Floater:** Contractor shall maintain limits equal to the completed value of the project. Coverage shall be written on an all risk, replacement cost basis including coverage for soft costs, flood and earth movement, if in a flood or quake zone, and, if applicable, equipment breakdown including testing. The City and County of Denver, Contractor, and subcontractors shall be Additional Named Insureds under the policy. Policy shall remain in force until acceptance of the project by the City.

(10) **Professional Liability (Errors & Omissions):** Contractor shall maintain limits of \$1,000,000 per claim and \$1,000,000 policy aggregate limit.

(11) **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-19 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.

<https://www.denvergov.org/content/denvergov/en/contract-administration/contractor-resources.html>

SC-20 EXECUTIVE DIRECTOR

General Condition 112 Manager is hereby deleted in its entirety and replaced with the following:

“Executive Director” means the Executive Director of Aviation, if the Contract is entered into under the authority of the Department of Aviation; or it means the Executive Director of Public Works, if the Contract is entered into under the authority of the Department of Public Works. The department is identified in the Contract Documents. Whenever the term “Executive Director” is used in the Contract Documents, such term refers only to the Executive Director of Aviation or Public Works, as appropriate, and not to any individual to whom the Executive Director has delegated authority.

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CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS

PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned Myers and Sons Construction, LP 4600 Northgate Blvd, Suite 100 Sacramento, CA 95834, a corporation organized and existing under and by virtue of the laws of the State of California, hereafter referred to as the "Contractor", and Travelers Casualty and Surety Company of America, a corporation organized and existing under and by virtue of the laws of the State of Connecticut, and authorized to transact business in the State of Colorado, as Surety, are held and firmly bound unto the CITY AND COUNTY OF DENVER, a municipal corporation of the State of Colorado, hereinafter referred to as the "City", in the penal sum of One Million One Hundred Five Thousand Eight Hundred Forty Dollars and Eight Cents (\$1,105,840.08), lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves and our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents;

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT:

WHEREAS, the above bounden Contractor has entered into a written contract with the aforesaid City for furnishing all labor and tools, supplies, equipment, superintendence, materials and everything necessary for and required to do, perform and complete the construction of **CONTRACT NO. 201950258, FEDERAL PROJECT NO: NHPP C010-114 SA# 20414, EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT**, 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

1st day of August, 2019.

Attest:

Secretary

Myers and Sons Construction, LP
Contractor

By: [Signature]
President

Travelers Casualty and Surety Company of America
Surety

By: [Signature]
Attorney-In-Fact Jessica L. Piccirillo

(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]
EXEC DIR. OF PUBLIC WORKS
n



**Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company**

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Jessica L Piccirillo** of **FARMINGTON Connecticut**, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February**, 2017.



State of Connecticut

City of Hartford ss.

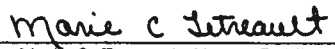
By: 
Robert L. Raney, Senior Vice President

On this the **3rd** day of **February**, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, 2021




Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this _____ day of _____, 2019




Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.**



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

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

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

RE: (Company name) Myers and Sons Construction, LP

Contract No: **201950258**
Federal Project No. **NHPP C010-114 SA# 20414**
Project Name: **Evergreen Lakehouse Bridge Replacement**
Contract Amount: **\$1,105,840.08**
Performance and Payment Bond No.: 107101489

Dear Assistant City Attorney,

The Performance and Payment Bonds covering the above captioned project were executed by this agency, through
Travelers Casualty and Surety Company of America insurance
company, on July 22, 2019.

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 860-269-2150.

Thank you.

Sincerely,
Jessica L. Piccirillo
AVP - Account Manager LEAD

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

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
7/18/2019

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).

PRODUCER Uniondale-Alliant Ins Svc Inc 333 Earle Ovington Blvd Ste 700 Uniondale NY 11553	CONTACT NAME: Laura Martino PHONE (A/C No, Ext): 516-414-8606 E-MAIL ADDRESS: Laura.Martino@alliant.com		FAX (A/C No): 877-308-1070
	INSURER(S) AFFORDING COVERAGE		NAIC #
INSURED Myers & Sons Construction, L.P. 4600 Northgate Blvd., Suite 100 Sacramento, CA 95834	STERCON-04		INSURER A : Berkshire Hathaway Specialty Insurance Company 22276
			INSURER B : Berkley Assurance Company 39462
			INSURER C : Executive Risk Indemnity Inc 35181
			INSURER D : Federal Insurance Company (Can) 20281
			INSURER E :
			INSURER F :


COVERAGES **CERTIFICATE NUMBER:** 1533221888 **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
C	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liab GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	Y	Y	54309707-01	6/1/2019	6/1/2020	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000 \$
D	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	(19)5430-97-05	6/1/2019	6/1/2020	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ \$10,000	Y	Y	47-XSF-303345-03	6/1/2019	6/1/2020	EACH OCCURRENCE \$ 25,000,000 AGGREGATE \$ 25,000,000 \$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N N/A If yes, describe under DESCRIPTION OF OPERATIONS below		Y	005 4309720 02	6/1/2019	6/1/2020	<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
B	Pollution/Professional Liability			PCADB-5004238-0619	6/1/2019	6/1/2020	Occ./Agg \$10,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: 201950258 Evergreen Lakehouse Bridge Replacement
The City and County of Denver, its Elected and Appointed Officials, Employees and Volunteers are included as Additional Insured as respects Liability arising out of work performed by the Named Insured as required by written contract. The insurance provided shall be primary and any other insurance maintained by the Additional Insured is excess and non-contributory. Waiver of Subrogation applies as required by contract.

CERTIFICATE HOLDER **CANCELLATION**

City and County of Denver Department of Public Works 201 W. Cofax Ave., Dept. 614 Denver CO 80202	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 
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NOTICE OF APPARENT LOW BIDDER
(SAMPLE)

Date:

To:

Gentlemen:

The EXECUTIVE DIRECTOR OF PUBLIC WORKS has considered the Bids submitted on June 6, 2019 for work to be done and materials to be furnished in and for:

PROJECT NO. 201950258 EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT

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, Project Management Office within the time limit set forth in the Bid Proposal.

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

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

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 Executive Director 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. 201950258
Page 2

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

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

CITY AND COUNTY OF DENVER

By

Executive Director of Public Works

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

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Project No. 201950258
ELH Bridge Replacement

BDP - 55

May 16, 2019

Current Date

(SAMPLE)

Name
Company
Street
City/State/Zip

**FEDERAL AID PROJECT NO. NHPP C010-114 SA# 20414
CITY OF DENVER CONTRACT NO. 201950258
EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT**

NOTICE TO PROCEED

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 **201950258 EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT** with the work of constructing contract number, as set forth in detail in the contract documents for the City and County of Denver.

With a contract time of 180 days (One Hundred Eighty days) calendar days, the project must be complete on or before «Project_Completion_Date».

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.

Very truly yours,

Lesley B. Thomas
City Engineer

By:

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

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DEPARTMENT OF PUBLIC WORKS

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

(CITY PROJECT NAME AND NUMBER)

Date: _____, 20__.

(NAME OF CONTRACTOR)

Subcontract #:

(NAME OF SUBCONTRACTOR/SUPPLIER)

Subcontract Value: \$ _____.

Last Progress Payment: \$ _____.

Date: _____.

Check Applicable Box:
 DBE

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

It is acknowledged that this release is for the benefit of and may be relied upon by the City and the referenced Contractor. The foregoing shall not relieve the undersigned of any obligation under the provisions of the Undersigned's subcontract, as the subcontract may have been amended, which by their nature survive completion of the Undersigned's work effort including, without limitation, warranties, guarantees, insurance requirements and indemnities.

STATE OF COLORADO) s.
CITY OF _____)

(Name of Subcontractor)

Signed and sworn before me this
day of _____, 20__.

By: _____

Notary Public/Commissioner of Oaths
My Commission Expires

Title: _____



City and County of Denver

Office of Economic Development

Compliance Unit

Division of Small Business Opportunity

201 W. Colfax Ave. Dept. 907

Denver, CO 80202

Phone: 720.913.1999

Contractor's/Consultant's Certification of Payment (CCP)

Fax: 720.913.1803

Prime Contractor or Consultant:		Phone:		Project Manager:					
Pay Application #:	Pay Period:			Amount Requested: \$					
Project #:	Project Name:								
Current Completion Date:	Percent Complete:			Prepared By:					
(I) - Original Contract Amount: \$					(II) - Current Contract Amount: \$				
		A	B	C	D	E	F	G	H
Prime/Subcontractor/Supplier Name	M/W/B/ DBE/ NON	Original Contract Amount	% B/d (A)	Current Contract Amount Including Amendments	% Revised (C/II)	Requested Amount of this Pay Application	Amount Paid on the Previous Pay Application \$	Net Paid To Date	Paid % Achieved (G/II)
Totals									
The undersigned certifies that the information contained in this document is true, accurate and that the payments shown have been made to all subcontractors and suppliers used on this project and listed herein. Please use an additional form, if more space is necessary.									
Prepared By (Signature):						Date:			
Page					of				
COMP-FRM-027 rev 022311									

COLORADO DEPARTMENT OF TRANSPORTATION			
ANTICIPATED DBE PARTICIPATION PLAN			
Bidder:		Project:	
Contact:		Project Code:	
Phone:		Date of Proposal:	
Email:		Contract Goal:	
Preferred Contact Method:		Region:	
DBE Commitments			
DBE Firm Name	Work to Be Performed	Commitment Amount	Eligible Participation
Total Eligible Participation			
Total Bid Amount			
Total Eligible Participation Percentage			
Bidder Signature			
<p>This section must be signed by an individual with the authority to bind the Bidder. By signing this form, as an authorized representative of the Bidder, you declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are true and complete to the best your knowledge. Further, you attest that you have read the Standard Special Provision Disadvantaged Business Enterprise Requirements and understand the following:</p> <p>CDOT shall not award a contract until it has been determined that the contract goal has been met or that you have otherwise demonstrated good cause. Once your proposal has been submitted, commitments may not be modified or terminated without the approval of CDOT. If selected as the lowest apparent bidder, you shall submit a Form 1415 for each commitment listed above. If you have not met the contract goal, you will also be required to submit documentation of all good faith efforts to meet the contract goal.</p> <p>It is your responsibility to ensure that the selected DBEs are certified for the work to be performed and that their eligible participation has been properly counted. For additional information and instructions on calculating eligible participation, see the Standard Special Provision Disadvantaged Business Enterprise Requirements.</p>			
Name	Title	Signature	Date

This form must be submitted by the proposal deadline. For CDOT projects, submit to cdot_hq_dbefirms@state.co.us.
 Civil Rights and Business Resource Center CDOT Form # 1414 01/14

(SAMPLE)

Date

Name
Company
Street
City/State/Zip

Certificate of Contract Release

RE: Certificate of Contract Release for
FEDERAL AID PROJECT NO. NHPP C010-114 SA# 20414
CITY OF DENVER CONTRACT NO. 201950258
EVERGREEN LAKEHOUSE BRIDGE REPLACEMENT

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

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

Contractor's Signature

Date Signed

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

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

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**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, and who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

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

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability, making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

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

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1 d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5(a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5(a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3 b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

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

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

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

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

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

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

Shall be fined under this title or imprisoned not more than 5 years or both."

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

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

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

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

This training special provision is an implementation of 23 U.S.C. 140 (a). The Contractor shall meet the requirements of the FHWA 1273 for all apprentices and trainees.

As part of the Contractor's Equal Employment Opportunity Affirmative Action Program, training shall be provided on projects as follows:

1. The Contractor shall provide on the job training aimed at developing full journey workers in the skilled craft identified in the approved training plan. The Contractor shall provide at a minimum, required training hours listed in the Project Special Provisions for each project.
2. The primary objective of this specification is to train and upgrade women and minority candidates to full journey worker status. The Contractor shall make every reasonable effort to enroll and train minority and women workers. This training commitment shall not be used to discriminate against any applicant for training whether or not the applicant is a woman or minority.
3. The Contractor may employ temporary workers from CDOT supportive services providers to meet OJT requirements. Information pertaining to supportive services providers may be obtained by calling the CDOT OJT Coordinator at the number shown on the link <http://www.coloradodot.info/business/equal-opportunity/training.html>
4. An employee shall not be employed or utilized as a trainee in a skilled craft in which the employee has achieved journey status.
5. The minimum length and type of training for each skilled craft shall be as established in the training program selected by the Contractor and approved by the Department and the Colorado Division of the Federal Highway Administration (FHWA), or the U. S Department of Labor (DOL), Office of Apprenticeship or recognized state apprenticeship agency. To obtain assistance or program approval contact:

CDOT Center for Equal Opportunity
4201 East Arkansas Avenue
Denver, CO 80222
eo@dot.state.co.us
1-800-925-3427

6. The Contractor shall pay the training program wage rates and the correct fringe benefits to each approved trainee employed on the project and enrolled in an approved program. The minimum trainee wage shall be no less than the wage for the Guardrail Laborer classification as indicated in the wage decision for the project.
7. The CDOT Regional Civil Rights Manager must approve all proposed apprentices and trainees for the participation to be counted toward the project goal and reimbursement. Approval must occur before training begins. Approval for the apprentice or trainee to begin work on a CDOT project will be based on:
 - A. Evidence of the registration of the trainee or apprentice into the approved training program.
 - B. The completed Form 838 for each trainee or apprentice as submitted to the Engineer.
8. Before training begins, the Contractor shall provide each trainee with a copy of the approved training program, pay scale, pension and retirement benefits, health and disability benefits, promotional opportunities, and company policies and complaint procedures.
9. Before training begins, the Contractor shall submit a copy of the approved training program and CDOT Form 1337 to the Engineer. Progress payments may be withheld until this is submitted and approved and may be withheld if the approved program is not followed.

10. On a monthly basis, the Contractor shall provide to the Engineer a completed On the Job Training Progress Report (Form 832) for each approved trainee or apprentice on the project. The Form 832 will be reviewed and approved by the Engineer before reimbursement will be made. The Contractor will be reimbursed for no more than the OJT Force Account budget. At the discretion of the Engineer and if funds are available, the Engineer may increase the force account budget and the number of reimbursable training hours through a Change Order. The request to increase the force account must be approved by the Engineer prior to the training.
11. Upon completion of training, transfer to another project, termination of the trainee or notification of final acceptance of the project, the Contractor shall submit to the Engineer a "final" completed Form 832 for each approved apprentice or trainee.
12. All forms are available from the CDOT Center for Equal Opportunity, through the CDOT Regional Civil Rights Manager, or on CDOT's website at <http://www.coloradodot.info/business/bidding/Bidding%20Forms/Bid%20Winner%20Forms>
13. Forms 838 and 832 shall be completed in full by the Contractor. Reimbursement for training is based on the number of hours of on the job training documented on the Form 832 and approved by the Engineer. The Contractor shall explain discrepancies between the hours documented on Form 832 and the corresponding certified payrolls.
14. The OJT goal (# of training hours required) for the project will be included in the Project Special Provisions and will be determined by the Regional Civil Rights Manager after considering:
 - A. Availability of minorities, women, and disadvantaged for training;
 - B. The potential for effective training;
 - C. Duration of the Contract;
 - D. Dollar value of the Contract;
 - E. Total normal work force that the average bidder could be expected to use;
 - F. Geographic location;
 - G. Type of work; and
 - H. The need for additional journey workers in the area
 - I. The general guidelines for minimum total training hours are as follows:

Contract dollar value	Minimum total training hours to be provided on the project
Up to 1 million	0
>1 - 2 million	320
>2 - 4 million	640
>4 - 6 million	1280
>6 - 8 million	1600
>8 - 12 million	1920
>12 - 16 million	2240
>16 - 20 million	2560
For each increment of \$5 million, over \$20 million	1280

15. The number of training hours for the trainees to be employed on the project shall be as shown in the Contract. The trainees or apprentices employed under the Contract shall be registered with the Department using Form 838, and must be approved by the Regional Civil Rights Manager before training begins for the participation to be counted toward the OJT project goal. The goal will be met by an approved trainee or apprentice working on that project; or, if a Contractor's apprentice is enrolled in a DOL approved apprenticeship program and registered with CDOT using Form 838 and working for the Contractor on a non-CDOT project. The hours worked on the non-CDOT project may be counted toward the project goal with approved documentation on Form 832. Training hours will be counted toward one project goal.
16. Subcontractor trainees who are enrolled in an approved Program may be used by the Contractor to satisfy the requirements of this specification.
17. The Contractor will be reimbursed \$2.00 per hour worked for each apprentice or trainee working on a CDOT project and whose participation toward the OJT project goal has been approved
18. The Contractor shall have fulfilled its responsibilities under this specification if the CDOT Regional Civil Rights Manager has determined that it has provided acceptable number of training hours.
19. Failure to provide the required training will result in the following disincentives: A sum representing the number of training hours specified in the Contract, minus the number of training hours worked as certified on Form 832, multiplied by the journey worker hourly wages plus fringe benefits [(A hours – B hours worked) x (C dollar per hour + D fringe benefits)] = Disincentives Assessed. Wage rate will be determined by averaging the wages for the crafts listed on Form 1337. The Engineer will provide the Contractor with a written notice at Final Acceptance of the project informing the Contractor of the noncompliance with this specification which will include a calculation of the disincentives to be assessed.

January 20, 2017

DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS
(LOCAL AGENCY)

NOTICE

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

Instructions for use on Local Public Agency construction projects:

Use this Standard Special Provision on Local Agency administered Federal-Aid Design-Bid-Build Projects. For purposes of this Standard Special Provision, Federal Aid Design Bid Build Projects only include those projects for which the construction portion is funded in whole or in part with federal funds.

Use in conjunction with the Project Special Provision Worksheet, Disadvantaged Business Enterprise (DBE) Contract Goal.

The Local Public Agency should consult with the Regional Civil Rights Office (RCRO) to determine the use of this standard special and to obtain the contract goal. A contract goal of zero still requires the use of this standard special and the worksheet. Local Public Agencies shall not set their own contract goal.

This standard special provision should not be used for CM/GC services, design-build or other innovative projects. For DBE provisions for these projects, contact the Civil Rights and Business Resource Center (CRBRC) at (303)757-9234.

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
REQUIREMENTS (LOCAL AGENCY)

1. Overview

The Disadvantaged Business Enterprise (DBE) Program is a federally-mandated program that seeks to ensure non-discrimination in the award of U.S. Department of Transportation (DOT)-assisted contracts and to create a level playing field on which DBEs can compete fairly for DOT-assisted contracts. Local Public Agencies (LPAs) that receive federal funds, must comply with CDOT's DBE program. To such end, CDOT sets a contract goal for DBE participation for each DOT-assisted LPA Contract.

In order to be awarded the Contract, the bidder shall show that it has committed to DBE participation sufficient to meet the goal or has otherwise made good faith efforts to do so. CDOT will amend the goal prior to award if the lowest apparent bidder demonstrates that good faith efforts were made but sufficient commitments to meet the goal could not be obtained.

CDOT and the LPA will monitor the progress of the Contractor throughout the project to ensure that the Contractor's DBE commitments are being fulfilled. Modifications to the commitments must be approved by the CDOT Regional Civil Rights Office (RCRO). CDOT may withhold payment or seek other contractual remedies if the Contractor is not complying with the requirements of this special provision. Upon completion of the Contract, CDOT may require the LPA to reduce the final payment to the Contractor if the Contractor has failed to fulfill the commitments or made good faith efforts to meet the contract goal.

For general assistance regarding the DBE program and compliance, contact CDOT's Civil Rights and Business Resource Center (CRBRC) at (303)757-9234. For project specific issues, contact the LPA Engineer or RCRO.

All forms referenced herein can be found on the CDOT website in the forms library.

2. Contract Assurance

By submitting a proposal for this Contract, the bidder agrees to the following assurance and shall include it verbatim in all (including non-DBE) subcontracts:

The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to: (1) Withholding monthly progress payments; (2) Assessing sanctions; (3) Liquidated damages, and/or (4) Disqualifying the contractor from future bidding as non-responsible.

3. Definitions

Terms not defined herein shall have the meaning provided in the CDOT Standard Specifications for Road and Bridge Construction.

- A. *Commitment.* A commitment is a portion of the Contract, identified by dollar amount and work area, designated by the bidder or Contractor for participation by a particular DBE. Commitments are submitted to CDOT via Form 1414, Anticipated DBE Participation Plan, or via Form 1420, DBE Plan Modification Request. Once approved, commitments are enforceable obligations of the Contract.
- B. *Commercially Useful Function (CUF).* Responsibility for the execution of the work and carrying out such responsibilities by actually performing, managing and supervising the work as further described in Section 8 below.
- C. *Contract Goal.* The percentage of the contract designated by CDOT for DBE participation. The contract goal for this contract is provided in the Project Special Provision Disadvantaged Business Enterprise Contract Goal.

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
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- (1) The bidder/Contractor shall make good faith efforts to fulfill the contract goal with eligible DBE participation. For determining whether the contract goal was met prior to award, the contract goal shall be based upon the proposal amount excluding force account items. For determining whether the contract goal was met during and upon completion of the project, the contract goal shall be based upon the total earnings amount.
 - (2) If the lowest apparent bidder demonstrates that it was unable to meet the contract goal but made good faith efforts to do so, the contract goal will be amended and the revised contract goal will be provided on Form 1417, Approved DBE Participation Plan.
- D. *Disadvantaged Business Enterprise (DBE)*. A Colorado-certified Disadvantaged Business Enterprise listed on the Colorado Unified Certification Program (UCP) DBE Directory at www.coloradodbe.org.
 - E. *DBE Program Manual*. The manual maintained by the CRBRC which details CDOT's policies and procedures for administering the DBE program. A copy of the DBE Program Manual is available on the CRBRC webpage.
 - F. *Eligible Participation*. Work by a DBE that counts toward fulfillment of the contract goal as described in Section 4 below.
 - G. *Good Faith Efforts*. All necessary and reasonable steps to achieve the contract goal which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if not fully successful. Good faith efforts are evaluated prior to award and throughout performance of the Contract. For guidance on good faith efforts, see 49 CFR Part 26, Appendix A.
 - H. *Joint Check*. A check issued by the Contractor or one of its subcontractors to a DBE firm and a material supplier or other third party for materials or services to be incorporated into the work.
 - I. *Reduction*. A reduction occurs when the Contractor reduces a commitment to a DBE. A reduction constitutes a partial termination.
 - J. *Subcontractor*. An individual, firm, corporation or other legal entity to whom the Contractor sublets part of the Contract. For purposes of this special provision, the term subcontractor includes suppliers.
 - K. *Substitution*. Substitution occurs when a Contractor seeks to find another DBE to perform work on the contract as a result of a reduction or termination.
 - L. *Termination*. A termination occurs when a Contractor no longer intends to use a DBE for fulfillment of a commitment.
 - M. *Total Earnings Amount*: Amount of the Contract earned by the Contractor, including approved changes and approved force account work performed, but not including any deductions for liquidated damages, price reduced material, work time violations, overweight loads or liens. The amount of the Contract earned does not include plan force account items (i.e. OJT, pavement incentives, etc).
 - N. *Work Code*. A code to identify the work that a DBE is certified to perform. A work code includes a six digit North American Industry Classifications System code plus a descriptor. Work codes are listed on a firm's profile on the UCP DBE Directory. The Contractor may contact the CRBRC to receive guidance on whether a work code covers the work to be performed.

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
REQUIREMENTS (LOCAL AGENCY)

4. Eligible Participation

The following rules will be used to determine whether work performed by a DBE qualifies as eligible participation on the Contract:

- A. *Work Must be Identified in Commitment.* The work performed by the DBE must be reasonably construed to be included in the work area and work code identified by the Contractor in the approved commitment.
 - (1) If the Contractor intends to use a DBE for work that was not listed in the commitment, the Contractor shall submit Form 1420, DBE Participation Plan Modification for approval of the modification. Unapproved work will not count toward the contract goal.
 - (2) A DBE commitment cannot be modified to include work for which the DBE was not certified at the time of the approval of the original commitment.
- B. *DBE Must be Certified to Perform the Work.* The DBE must be certified to perform the work upon submission of the commitment and upon execution of the DBE's subcontract.
 - (1) When a commitment has been made, but upon review of Form 205, Sublet Permit, CDOT determines that the DBE is no longer certified in the work code which covers the work to be performed, the Contractor may not use the DBE's participation toward the contract goal. The Contractor shall terminate the DBE commitment and seek substitute DBE participation in accordance with Section 9 below.
 - (2) A DBE's work will continue to count as eligible participation if the DBE was certified upon approval of Form 205, Sublet Permit and the certification status changes during the performance of the work.
 - (3) Suppliers must be certified upon execution of the purchase order.
- C. *DBE Performs the Work.* Eligible participation will only include work actually performed by the DBE with its own forces.
 - (1) Work performed by the DBE includes the cost of supplies and materials obtained by the DBE for its work on the Contract, including any equipment leased by the DBE, provided that such supplies or equipment are not purchased or leased from the Contractor or a subcontractor that is subletting to the DBE.
 - (2) The term "work actually performed by the DBE with its own forces" includes work by temporary employees, provided such employees are under the control of the DBE.
 - (3) If CDOT or the LPA determines that a DBE has not performed a CUF on the project, no participation by such DBE shall count toward the contract goal.
- D. *DBE Subcontracts to Another Firm.* When a DBE subcontracts part of the work, the value of the subcontracted work may only be counted toward the goal if the subcontractor is a DBE. Performance by non-DBE subcontractors, including non-DBE trucking firms and owner-operators, shall be deducted from the DBE's participation.
- E. *DBE Received Payment for the Work.* Eligible participation only includes work for which the DBE has received payment, including the release of its retainage.
- F. *Special Calculations for Suppliers.* When a DBE supplies goods on a project, the DBE may be classified as a manufacturer, dealer or broker. The DBE's status as a manufacturer, dealer or broker is determined

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
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on a contract-by-contract basis and is based upon the actual work performed.

- (1) When a DBE is deemed to be acting as a manufacturer, one hundred percent of the commitment will count as eligible participation.
- (2) When a DBE is deemed to be acting as a regular dealer (i.e. non-manufacturer supplier), only sixty percent of the commitment will count as eligible participation.
- (3) When a DBE is deemed to be acting as a broker, only the reasonable brokerage fee will count as eligible participation.

G. *Reasonable Fee for Contract-Specific Services.* Services shall count toward the contract goal only if they are specifically required for the performance of the Contract. Non-contract specific expenses may not be counted toward the contract goal. Fees for services must be reasonable. Services include but are not limited to professional services, public involvement, etc. In the case of temporary employment placement agencies, only the placement fee for an individual to be specifically and exclusively used for work on the contract shall count as eligible participation.

H. *Pre-Approval for Joint Venture Participation.* When a DBE is a participant in a joint venture, the DBE must apply to CDOT to determine how much of the work performed by the joint venture will count toward the contract goal. The DBE shall complete Form 893, Information for Determining DBE Participation when a Joint Venture Includes a DBE. Form 893 shall be submitted to CDOT CRBRC no less than ten days before the submission of the Proposal or to the RCRO no less than ten days before submission of the Form 205 to ensure sufficient time for review.

5. Proposal Requirements

In order to be eligible for award, the following shall be submitted with the proposal to the LPA:

- A. *Form 1413, Bidders List.* The bidder shall list each subcontractor (including both DBE and non-DBE subcontractors) that submitted a quote for participation on the project. Failure to submit a signed Form 1413 will result in rejection of the proposal.
- B. *Form 1414, Anticipated DBE Participation Plan.* If the Contract Goal is greater than zero, the bidder shall submit Form 1414 to document anticipated DBE participation.
 - (1) If the Bidder has not obtained any DBE commitments, it shall still submit Form 1414 documenting zero anticipated participation. If the Contract Goal is greater than zero, failure to submit a signed Form 1414 shall result in rejection of the proposal.
 - (2) The bidder shall list the DBE, work area(s), commitment amount and estimated eligible participation for each commitment. Once Form 1414 is submitted, a commitment may only be terminated or reduced in accordance with Section 9 below. The bidder is responsible for ensuring that commitments, and the estimated eligible participation resulting therefrom, have been properly calculated prior to submitting its proposal.
 - (3) If the bidder is a DBE, the bidder must include itself in Form 1414 and list the work area(s) and amount that it intends to self-perform and count as eligible participation on the contract.
 - (4) Commitments may be made to second tier or lower DBE subcontractors; however, the Contractor is ultimately responsible for the fulfillment of the commitment and shall sign the Form 1415, Commitment Confirmation.

6. Additional Forms Due Prior to Award.

DISADVANTAGED BUSINESS ENTERPRISE (DBE)
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If the contract goal is greater than zero, or if the bidder has voluntarily made commitments, the Bidder shall submit the following forms to the LPA within five calendar days of selection as the lowest apparent bidder. These forms must be submitted to the CDOT CRBRC concurrent with the request for concurrence to award.

- A. *Form 1415, Commitment Confirmation.* A Form 1415, Commitment Confirmation shall be obtained from each DBE listed on Form 1414. The bidder shall complete Section 1 and the DBE shall complete Section 2 of Form 1415. Form 1415s shall be consistent with the commitments listed on Form 1414. The bidder shall not modify commitments listed on Form 1414 without good cause and approval from CDOT. The bidder shall contact CDOT if any issues arise which may require the bidder to alter or terminate a commitment.
- B. *Form 1416, Good Faith Effort Report.* If the total eligible participation listed on Form 1414 does not meet the contract goal, the lowest apparent bidder shall also submit Form 1416, Good Faith Effort Report and any supporting documentation that the bidder would like considered by CDOT as evidence of good faith efforts.

7. Commitment and Good Faith Effort Review

- A. *Commitment Review.* CDOT will evaluate the Form 1414 and each Form 1415 to ensure that the commitment is valid and has been properly calculated. CDOT may investigate or request additional information in order to confirm the accuracy of a commitment. If CDOT determines that the total estimated eligible participation of the commitments does not meet the contract goal, within two business days of notice from CDOT, the bidder shall submit Form 1416 to CDOT.
- B. *Good Faith Effort Review.* If the total eligible participation of Form 1414 and all supporting Form 1415s does not meet the contract goal, CDOT will review Form 1416 and all supporting documentation submitted by the bidder in order to determine whether the bidder has demonstrated good faith efforts to obtain DBE participation. CDOT will use 49 CFR Part 26, Appendix A as a guide for determining whether the bidder made good faith efforts to meet the contract goal. A bidder will be deemed to not have made good faith efforts if the bidder lists a DBE for a work area for which the DBE is not certified and the bidder cannot establish a reasonable basis for its determination. CDOT may consider and approve commitments made after submission of the bid if the Bidder demonstrates that (1) good faith efforts were made prior to submission of the bid and (2) there is a reasonable justification for not obtaining the commitments prior to submission of the bid.
- C. *Administrative Reconsideration.* If CDOT determines that the bidder did not demonstrate good faith efforts to meet the contract goal, it will provide the bidder and LPA with written notice of its determination. The bidder will be provided an opportunity to request administrative reconsideration of the decision. The process for reconsideration is set forth in the *Good Faith Effort Appeal Process*, which is an Appendix I to the DBE Program Manual. A copy of the *Good Faith Effort Appeal Process* will be included in the written notice from CDOT.
- D. *Form 1417, Approved DBE Participation Plan.* If CDOT determines that the bidder has met the contract goal or made good faith efforts to do so, CDOT will issue to the bidder, with a copy to the LPA, Form 1417, Approved DBE Participation Plan, documenting the approved commitments. If CDOT determines that the bidder did not meet the contract goal but made good faith efforts to do so, via the Form 1417 CDOT will amend the contract goal in accordance with the commitments that were obtained and attach an explanation of its determination.

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
REQUIREMENTS (LOCAL AGENCY)

8. Ongoing Oversight of DBE Participation

- A. *Consistency Review.* CDOT will review Form 205, Sublet Permit Application to determine whether the work being sublet is consistent with the DBE commitments. CDOT may withhold approval of the sublet or direct the LPA to stop performance of the work if the Contractor has reduced, terminated, or otherwise modified the type or amount of work to be performed by a DBE without seeking prior approval.
- B. *Business to Government, (B2G).* The Contractor shall track project and participation towards the Goal via the LPA's B2G system. Contractors and subcontractors must continuously update and certify payments and participation within the system. The LPA may withhold progress payments if B2G is not updated and certification is not obtained at least quarterly. The LPA will not provide final payment on the Contract until all B2G information has been reviewed and approved by the CDOT RCRO.
- C. *Joint Checks.* All joint checks must be approved by the CDOT RCRO before they are used in payment to a DBE. Joint checks used in payments to DBEs will be monitored closely to ensure (1) the DBE is performing a CUF and (2) the joint checks are not being used in a discriminatory manner. The Contractor shall request approval for the use of a joint check in a written letter signed by the DBE and the Contractor, stating the reason for the joint checks and the approximate number of checks that will be needed.
- D. *Commercially Useful Function.* CDOT will monitor performance during the Contract to ensure each DBE is performing a CUF. If CDOT or the LPA determines that a DBE is not performing a CUF, no work performed by such DBE shall count as eligible participation. The DBE, Contractor, and any other involved third parties may also be subject to additional enforcement actions.
- (1) When determining whether a DBE is performing a CUF, CDOT and the LPA will consider the amount of work subcontracted, industry practices, the amount the firm is to be paid compared to the work performed and eligible participation claimed, and any other relevant factors.
 - (2) With respect to material and supplies used on the Contract, in order to perform a CUF the DBE must be responsible for negotiating price, determining quality and quantity, ordering the material, installing the material, if applicable, and paying for the material itself.
 - (3) With respect to trucking, in order to perform a CUF, the DBE trucking firm must own and operate at least one fully licensed, insured and operational truck used on the Contract. Additionally, the DBE trucking firm must be responsible for the management and supervision of the entire trucking operation for which it is responsible on the Contract.
 - (4) A DBE does not perform a CUF when its role is limited to that of an extra participant in a transaction, contract or project through which funds are passed in order to obtain the appearance of DBE participation. CDOT will evaluate similar transactions involving non-DBEs in order to determine whether a DBE is an extra participant.
 - (5) If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work than would be expected on the basis of normal industry practice for the type of work involved, CDOT and the LPA will presume that the DBE is not performing a CUF. The DBE may present evidence to rebut this presumption.

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
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9. DBE Participation Plan Modifications

- A. *Contractor must Use DBEs Listed in Approved Plan.* The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which it is listed unless the Contractor obtains the CDOT RCRO's written consent to terminate, reduce or modify the commitment. Unless CDOT grants such consent, the Contractor will not be entitled to payment for the work or materials. Failure to carry out the requirements of this section is a material breach of the Contract and may result in the termination of the Contract or other remedies established by CDOT or the LPA.
- B. *Form 1420, DBE Participation Plan Modification Request.* During the performance of the Contract, the Contractor shall use Form 1420, DBE Participation Plan Modification Request to communicate all requests for termination, reduction, substitution, and waivers to the CDOT RCRO. One Form 1420 may include multiple requests and must be submitted at the time of the occurrence or, if that is not possible, within a reasonable time of the occurrence requiring termination, reduction, substitution or waiver.
- C. *Commitment Terminations and Reductions.* No commitment shall be terminated or reduced without CDOT's approval. Terminations and reductions include, but are not limited to, instances in which a Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces, those of an affiliate, a non-DBE firm or with another DBE firm. In order to receive approval, the Contractor shall:
- (1) Have good cause for termination or reduction. Good cause may include:
 - (i) the DBE fails or refuses to execute a written contract;
 - (ii) the DBE fails or refuses to perform the work of its subcontract consistent with normal industry standards, provided that such failure is not the result of bad faith or discriminatory actions of the Contractor or one of its subcontractors;
 - (iii) the DBE fails to meet reasonable, nondiscriminatory bond requirements;
 - (iv) the DBE becomes bankrupt, insolvent, or exhibits credit unworthiness;
 - (v) the DBE is ineligible to work because of suspension or debarment proceedings or other state law;
 - (vi) the DBE is not a responsible contractor;
 - (vii) the DBE voluntarily withdraws from the project and provides written notice to CDOT;
 - (viii) the DBE is ineligible to receive DBE credit for the work required;
 - (ix) the DBE owner dies or becomes disabled and is unable to complete the work;
 - (x) the DBE ceases business operations or otherwise dissolves;
 - (xi) or other documented good cause that compels termination. Good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.
 - (2) Provide the DBE notice of the Contractor's intent to terminate or reduce the commitment and the reason for such termination or reduction, with a copy to the CDOT RCRO and LPA;

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
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- (3) In the notice of intent, provide the DBE at least five calendar days to respond to the notice and inform CDOT and the Contractor of the reasons, if any, why it objects to the proposed termination or reduction and any reasons that it shall not be approved. The Contractor is not required to provide the five calendar days written notice in cases where the DBE in question has provided written notice that it is withdrawing from the subcontract or purchase order. The notice period may be reduced by the CDOT RCRO if required by public necessity.
- (4) Following the notice period, if the Contractor decides to proceed, submit Form 1420 requesting approval of the termination or reduction.
- (5) When a commitment is terminated or reduced (including when a DBE withdraws), make good faith efforts to find another DBE to substitute. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the participation that was terminated or reduced up to the contract goal.

D. *Contract Changes.* In the event of a contract change:

- (1) If the LPA eliminates or reduces work committed to a DBE, such change shall be considered good cause for termination or reduction in accordance with Section 9.B above. The Contractor shall follow the processes outlined in Section 9.B.
- (2) If the LPA issues a change which increases or adds new work items, the Contractor shall ensure that it has obtained sufficient DBE participation to meet the Contract Goal, or has made good faith efforts to do so.

E. *Process for Substitution or Increase in Participation to Meet the Contract Goal.* When the Contractor must obtain additional DBE participation to meet the Contract Goal, whether resulting from an approved termination or reduction or a change to the Contract, the Contractor shall:

- (1) Increase the participation of a DBE for any work items previously identified in an approved commitment without seeking CDOT approval; provided, however, that at its discretion, the CDOT RCRO may request a Form 1420 documenting such additional participation; or
- (2) If the Contractor needs to add new work to a commitment or obtain additional participation from a DBE that is not already participating on the contract pursuant to an approved commitment, submit a Form 1420 and Form 1415 to the RCRO requesting approval of the additional participation; or
- (3) If the Contractor determines that additional DBE participation cannot be obtained, submit a Form 1420 to the RCRO requesting waiver of the participation. The Contractor shall include its justification for not obtaining additional participation and, at its discretion, CDOT may require additional information regarding the efforts of the Contractor. If the Contractor has not obtained substitute participation, the RCRO may require the Contractor to submit evidence of good faith efforts to substitute. The contractor shall have seven days to submit such information. This period may be extended at the discretion of the RCRO.

January 20, 2017

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DISADVANTAGED BUSINESS ENTERPRISE (DBE)
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10. Payment Reduction

The Contractor's retainage will not be released until the CDOT RCRO has determined whether the Contractor will be subject to a payment reduction. Payment reductions will be calculated as follows:

- A. *Failure to Fulfill Commitments.* If the Contractor terminated or reduced a commitment, the Contractor will be subject to a payment reduction for any termination or reduction which was not approved via a Form 1420.
- B. *Failure to Meet Contract Goal.* If the Contractor failed to meet the contract goal, the Contractor will be subject to a payment reduction for the portion of the contract goal that was not met and was not waived via an approved Form 1420.
- C. *Duplication.* The contractor will not be subject to duplicate reduction for the same offense.
- D. *Adjustments.* CDOT may adjust the payment reduction wherein the Contractor demonstrates that its failure to obtain DBE participation was due to circumstances outside of its control.

11. Other Enforcement

- A. *Investigations.* As it determines necessary, CDOT or the LPA may conduct reviews or investigations of participants. All participants, including, but not limited to, DBE firms and applicants for DBE certification, complainants, and contractors using DBE firms to meet contract goals, are required to cooperate fully and promptly with compliance reviews, certification reviews, investigations, and other requests for information.
- B. *Intimidation and retaliation.* Participants shall not intimidate, threaten, coerce, or discriminate against any individual or firm for the purpose of interfering with any right or privilege secured by the DBE program or because the individual or firm has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under the DBE program.
- C. *Consequences of Non-Compliance.* Failure to comply with subsections 11 A. or 11 B. shall be a ground for appropriate action against the party involved (e.g., with respect to recipients, a finding of noncompliance, with respect to DBE firms, denial of certification or removal of eligibility and/or suspension and debarment; with respect to a complainant or appellant, dismissal of the complaint or appeal; with respect to a contractor which uses DBE firms to meet goals, findings of non-responsibility for future contracts and/or suspension and debarment).
- D. *Fraud and Misrepresentation.* If CDOT or the LPA determines that a Contractor or subcontractor was a knowing and willing participant in any intended or actual subcontracting arrangement contrived to artificially inflate DBE participation or any other business arrangement determined by CDOT or the LPA to be unlawful, or if the Contractor engages in repeated violations, falsification or misrepresentation, CDOT may:
 - (1) refuse to count any fraudulent or misrepresented DBE participation;
 - (2) withhold progress payments to the Contractor commensurate with the violation;
 - (3) suspend or reduce the Contractor's prequalification status;
 - (4) refer the matter to the Office of Inspector General of the US Department of Transportation for investigation; or
 - (5) seek any other available contractual remedy.

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Davis-Bacon Wages

Contract Number: 201950258



Evergreen Lakehouse Bridge Replacement

May 16, 2019

January 04, 2019

**U.S. DEPT. OF LABOR DAVIS BACON MINIMUM WAGES
COLORADO HIGHWAY CONSTRUCTION
GENERAL DECISION NUMBER - CO190009**

NOTICE

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

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

Instructions for use on CDOT construction projects:

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

Decision Nos. CO190009 dated January 04, 2019 supersedes Decision Nos. CO180019 dated January 05, 2018.		Modifications			ID
		MOD Number	Date	Page Number(s)	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.					
General Decision No. CO190009 applies to the following counties: Denver and Douglas counties.					
General Decision No. CO190009 The wage and fringe benefits listed below reflect collectively bargained rates.					
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod	
1279	CARPENTER (Form Work Only)	25.50	9.47		
	TRAFFIC SIGNALIZATION:				
	Traffic Signal Installation				
1280	Zone 1	26.42	4.75% + 8.68		
1281	Zone 2	29.42	4.75% + 8.68		
	<u>Traffic Installer Zone Definitions</u> Zone 1 – Within a 35 mile radius measured from the addresses of the following cities: Colorado Springs - Nevada & Bijou Denver - Ellsworth Avenue & Broadway Ft. Collins - Prospect & College Grand Junction - 12th & North Avenue Pueblo - I-25 & Highway 50 Zone 2 - All work outside these areas.				
	POWER EQUIPMENT OPERATOR:				
	Hydraulic Backhoe				
1282	Wheel Mounted, under ¾ yds.	27.60	10.10		
1283	Backhoe/Loader combination	27.60	10.10		
	Drill Rig Caisson				
1284	Smaller than Watson 2500 and similar	27.60	10.10		
1285	Watson 2500 similar or larger	27.92	10.10		
	Loader				
1286	Up to and including 6 cubic yards	27.60	10.10		
1287	Denver County - Under 6 cubic yards	27.60	10.10		
1288	Denver County - Over 6 cubic yards	27.75	10.10		

General Decision No. CO190009				
The wage and fringe benefits listed below reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't.):			
	Motor Grader			
1289	Douglas county - Blade Rough	27.60	10.10	
1290	Douglas county - Blade Finish	27.92	10.10	
	Crane			
1291	50 tons and under	27.75	10.10	
1292	51 to 90 tons	27.92	10.10	
1293	91 to 140 tons	28.55	10.10	
	Scraper			
1294	Single bowl under 40 cubic yards	27.75	10.10	
1295	40 cubic yards and over	27.92	10.10	
General Decision No. CO190009				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
1296	CARPENTER (Excludes Form Work)	19.27	5.08	
	CEMENT MASON/CONCRETE FINISHER:			
1297	Denver	20.18	5.75	
1298	Douglas	18.75	3.00	
1299	ELECTRICIAN (Excludes Traffic Signal Installation)	35.13	6.83	
1300	FENCE ERECTOR (Excludes Link/Cyclone Fence Erection)	13.02	3.20	
1301	GUARDRAIL INSTALLER	12.89	3.20	
	HIGHWAY/PARKING LOT STRIPING:			
	Painter			
1302	Denver	12.62	3.21	
1303	Douglas	13.89	3.21	
	IRONWORKERS:			
1304	Reinforcing (Excludes Guardrail Installation)	16.69	5.45	
1305	Structural (Includes Link/Cyclone Fence Erection), (Excludes Guardrail Installation)	18.22	6.01	

General Decision No. CO190009				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	LABORERS:			
1306	Asphalt Raker	16.29	4.25	
1307	Asphalt Shoveler	21.21	4.25	
1308	Asphalt Spreader	18.58	4.65	
	Common or General			
1309	Denver	16.76	6.77	
1310	Douglas	16.29	4.25	
1311	Concrete Saw (Hand Held)	16.29	6.14	
1312	Landscape and Irrigation	12.26	3.16	
	Mason Tender - Cement/Concrete			
1313	Denver	16.96	4.04	
1314	Douglas	16.29	4.25	
	Pipelayer			
1315	Denver	13.55	2.41	
1316	Douglas	16.30	2.18	
	Traffic Control			
1317	Flagger	9.55	3.05	
1318	Sets Up/Moves Barrels, Cones, Install Signs, Arrow Boards and Place Stationary Flags, (Excludes Flaggers)	12.43	3.22	
	PAINTER:			
1319	Spray Only	16.99	2.87	
	POWER EQUIPMENT OPERATOR:			
	Asphalt Laydown			
1320	Denver	22.67	8.72	
1321	Douglas	23.67	8.47	
	Asphalt Paver			
1322	Denver	24.97	6.13	
1323	Douglas	25.44	3.50	

General Decision No. CO190009				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't.):			
	Asphalt Roller			
1324	Denver	23.13	7.55	
1325	Douglas	23.63	6.43	
1326	Asphalt Spreader	22.67	8.72	
	Backhoe/Trackhoe			
1327	Douglas	23.82	6.00	
1328	Bobcat/Skid Loader	15.37	4.28	
1329	Boom	22.67	8.72	
	Broom/Sweeper			
1330	Denver	22.47	8.72	
1331	Douglas	22.96	8.22	
1332	Bulldozer	26.90	5.59	
1333	Concrete Pump	21.60	5.21	
	Drill			
1334	Denver	20.48	4.71	
1335	Douglas	20.71	2.66	
1336	Forklift	15.91	4.68	
	Grader/Blade			
1337	Denver	22.67	8.72	
1338	Guardrail/Post Driver	16.07	4.41	
	Loader (Front End)			
1339	Douglas	21.67	8.22	
	Mechanic			
1340	Denver	22.89	8.72	
1341	Douglas	23.88	8.22	

General Decision No. CO190009				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't.):			
	Oiler			
1342	Denver	23.73	8.41	
1343	Douglas	24.90	7.67	
	Roller/Compactor (Dirt and Grade Compaction)			
1344	Denver	20.30	5.51	
1345	Douglas	22.78	4.86	
1346	Rotomill	16.22	4.41	
	Screed			
1347	Denver	22.67	8.38	
1348	Douglas	29.99	1.40	
1349	Tractor	13.13	2.95	
	TRAFFIC SIGNALIZATION:			
	Groundsman			
1350	Denver	17.90	3.41	
1351	Douglas	18.67	7.17	
	TRUCK DRIVER:			
	Distributor			
1352	Denver	17.81	5.82	
1353	Douglas	16.98	5.27	
	Dump Truck			
1354	Denver	15.27	5.27	
1355	Douglas	16.39	5.27	
1356	Lowboy Truck	17.25	5.27	
1357	Mechanic	26.48	3.50	
	Multi-Purpose Specialty & Hoisting Truck			
1358	Denver	17.49	3.17	
1359	Douglas	20.05	2.88	

General Decision No. CO190009				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	TRUCK DRIVER (con't.):			
	Pickup and Pilot Car			
1360	Denver County	14.24	3.77	
1361	Douglas County	16.43	3.68	
1362	Semi/Trailer Truck	18.39	4.13	
1363	Truck Mounted Attenuator	12.43	3.22	
	Water Truck			
1364	Denver County	26.27	5.27	
1365	Douglas County	19.46	2.58	

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

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

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program.

If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

Write to:

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

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

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

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

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION NO. CO190009

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Technical Specifications

Contract Number: 201950258



Evergreen Lakehouse Bridge Replacement

May 16, 2019

Evergreen Lake House ridge Replacement Project

STANDARD CONSTRUCTION SPECIFICATIONS

The Construction Specifications used for this Project shall be the Colorado Department of Transportation (CDOT) "Standard Specifications for Road and Bridge Construction," adopted in 2017 and as hereinafter modified. These specifications will be referred to as "CDOT Standard Specifications."

DETAILED CONSTRUCTION SPECIFICATIONS

The Construction Specifications for this Project shall consist of the applicable sections and subsections, numbered Section 200 through Section 700, of the CDOT Standard Specifications.

The CDOT General Provisions consist of Sections 100 through 109 of the above referenced CDOT Standard Specifications and are not applicable to this Project and are hereby deleted with the exception of the following:

1. Subsection 101.11 Certificate of Compliance
2. Subsection 106.12 Certificates of Compliance
3. Subsection 105.02 Plans, Shop Drawings, Working Drawings, Other submittals, and Construction Drawings.
4. Subsection 105.11 Cooperation with Utilities
5. Subsection 106.01 Source of Supply and Quality Requirements
6. Subsection 106.11 Buy America Requirements
7. Revision of Section 106 Suppliers List
8. Subsection 107.02 Permits, Licenses, and Taxes
9. Subsection 107.23 Archeological and Paleontological Discoveries
10. Subsection 107.25 Water Quality Control
11. Revision of Section 108 – Subletting of Contract
12. Subsection 108.09 Failure to Complete Work on Time
13. Revision of Section 109 Prompt Payment (Local Agency)
14. Section 109.06 (i) Fuel Cost Adjustment shall be added to this Project without the inclusion of all other requirements of Subsection 109.06 Partial Payments.

In place of the deleted sections, the City and County of Denver (the "City" or "CCD") "Standard Specifications for Construction, General Contract Conditions," 2011 edition, shall apply on this contract. Supplements or amendments to the Standard Specifications for Construction, General Contract Conditions are listed in the Special Contract Conditions.

Sections 401 and 403 of the CDOT Standard Specifications are replaced with the latest edition (including October 2008 version of Item 9) of the Metropolitan Government Pavement Engineers Council (MGPEC) Pavement Design Standards and Construction Specifications manual.

The following Special Project Provisions take precedence over Specifications or Plans and supplement or amend the referenced CDOT Standard Specifications, which is to be used to control construction of this Project.

References to "Department", "Division" or "CDOT" in the Standard Specifications shall be considered to mean City and County of Denver for the purposes of this Project.

STANDARD CONSTRUCTION DETAILS

Applicable City and County of Denver standard details are required to be used by the contractor. For other applicable details, except as modified or altered by the general notes on the plans to be approved or by the revisions to standard specifications and contract documents, it is the intent of the City to use the Colorado Department of Transportation M & S Standards, most recent edition. Drainage related appurtenances shall be constructed per City and County of Denver Wastewater Management Division Standards Details, most recent edition.

CONSTRUCTION LIMITS

The "construction limits" for the Site are defined as the point where the edge of pavement of Upper Bear Creek Road meets the Evergreen Lake House Access Road northeast of the Evergreen Lake House Bridge to approximately 150 feet southwest of that point along the Evergreen Lake House Access Road. Furthermore, the construction limits includes the paved parking lot south of bridge and west of Evergreen Lake House main parking area as a construction staging area. Use of this area for staging has been approved by Evergreen Park and Recreation District. Refer to the construction plans for a more detailed delineation of the construction limits. Impacts to existing landscaping, pavement, structures, fencing, signage, etc. that occur within the right-of-way, but are not specifically designated to be removed by the plans or by the Project Manager, will be repaired by the Contractor at their own expense.

PRO ECT SPECIAL PROVISIONS

Introduction	(February 27, 2019)	PSP—01
Project Special Provisions	(February 27, 2019)	PSP—03
Standard Special Provisions	(February 27, 2019)	PSP— 04
Notice to Bidders	(February 27, 2019)	PSP— 05
Time of Commencement and Completion.....	(February 27, 2019)	PSP— 06
Contract Goal (Combined).....	(February 27, 2019)	PSP— 07
On the Job Training Contract Goal.....	(February 27, 2019)	PSP— 08
Performance of Safety Critical Work	(February 27, 2019)	PSP— 09
Revision of Section 107—Permits.....	(February 27, 2019)	PSP— 11
Revision of Section 201—Clearing and Grubbing.....	(February 27, 2019)	PSP— 12
Revision of Section 202—Removal of Structures and Obstructions	(February 27, 2019)	PSP— 13
Revision of Section 202—Removal of Bridge	(February 27, 2019)	PSP— 15
Revision of Section 202—Removal of Asphalt Mat.....	(February 27, 2019)	PSP— 19
Revision of Section 203—Excavation and Embankment	(February 27, 2019)	PSP— 20
Revision of Section 206—Excavation and Backfill for Structures	(February 27, 2019)	PSP— 21
Revision of Section 207—Stockpile Wetland Topsoil.....	(February 27, 2019)	PSP— 22
Revision of Section 208—Erosion Control.....	(February 27, 2019)	PSP— 23
Revision of Section 208—Temporary Stream Crossing	(February 27, 2019)	PSP— 55
Revision of Section 209—Watering & Dust Palliatives.....	(February 27, 2019)	PSP— 56
Revision of Section 211—Dewatering and Stream Diversion.....	(February 27, 2019)	PSP— 57
Revision of Section 212—Seeding, Fertilizer, Soil Conditioner, and Sodding	(February 27, 2019)	PSP— 58
Revision of Section 250—Environmental Health & Safety Management ...	(February 27, 2019)	PSP— 59
Revision of Section 304—Aggregate Base Course.....	(February 27, 2019)	PSP— 62
Revision of Section 401 and 403—Plant Mix Pavements	(February 27, 2019)	PSP— 63
Revision of Section 502—Drilling Hole to Facilitate Pile Driving.....	(February 27, 2019)	PSP— 64
Revision of Section 506—Riprap.....	(February 27, 2019)	PSP— 65
Section 522—Duplex Coating System.....	(February 27, 2019)	PSP— 66
Revision of Section 601—Precast Concrete Unit Precast Substructure Elements.....	(February 27, 2019)	PSP— 72
Revision of Section 601—Concrete.....	(February 27, 2019)	PSP— 83
Revision of Section 602—Grouted Couplers.....	(February 27, 2019)	PSP— 84
Revision of Section 613—3 Inch Conduit	(February 27, 2019)	PSP— 91
Revision of Section 625—Construction Surveying.....	(February 27, 2019)	PSP— 92
Revision of Section 630—Construction Zone Traffic Control	(February 27, 2019)	PSP— 96
Force Account Items.....	(February 27, 2019)	PSP—99
Utilities	(February 27, 2019)	PSP— 100
 <i>Appendix A: FHWA 1273 Required Contract Provisions Federal-Aid Construction Contracts</i>		<i>14 Pages</i>
<i>Appendix B: Asbestos and Lead Based Paint Assessment Report</i>		<i>11 Pages</i>
<i>Appendix C: Subsurface Investigation and Pavement Design Report</i>		<i>53 Pages</i>

STANDARD SPECIAL PROVISIONS

Name	Date	No. of Pages
Revision of Section 105 – Disputes and Claims for Contract Adjustments	(Dec. 7, 2017)	32
Revision of Section 106 – Supplier List	(July 3, 2017)	1
Revision of Section 107 – Laws to be Observed	(October 12, 2017)	1
Revision of Sections 107 and 208 – Water Quality Control under Under One Acre of Disturbance	(November 2, 2017)	4
Revision of Section 108 – Liquidated Damages	(July 20, 2017)	1
Revision of Section 108 – Subletting of Contract	(October 12, 2017)	1
Revision of Section 109 – Prompt Payment (Local Agency)	(July 3, 2017)	2
Revision of Section 206 – Removability Modulus	(October 12, 2017)	1
Revision of Section 206 – Shoring	(July 20, 2017)	3
Revision of Section 213 – Mulching	(April 25, 2018)	1
Revision of Section 250 – Environmental, Health and Safety Management	(July 3, 2017)	3
Revision of Section 502 – Piles	(December 19, 2018)	9
Revision of Section 502 – Extensions and Splices	(July 3, 2017)	2
Revision of Section 601 – Self Consolidating Concrete	(Nov. 7, 2018)	2
Revision of Sections 601, 701 and 711 – Structural Concrete	(Nov. 8, 2018)	3
Revision of Section 606 – Guardrail	(July 17, 2018)	4
Revision of Section 618 – Prestressed Concrete	(December 13, 2018)	6
Revision of Section 703 - Classification for Aggregate Base Course	(October 12, 2017)	1
Affirmative Action Requirements – Equal Employment Opportunity	(July 3, 2017)	10
Disadvantaged Business Enterprise (DBE) Requirements (Local Agency)	(July 3, 2017)	9
Minimum Wages, Colorado, U.S. Department of Labor General Decision Number CO190009	(January 4, 2019)	7
Highway Construction for Denver and Douglas counties. On the Job Training	(August 28, 2018)	4
Required Contract Provisions – Federal-Aid Construction Contracts	(July 3, 2017)	14
Special Construction Requirements, Fire Protection Plan	(July 3, 2017)	2

NOTICE TO BIDDERS

The proposal guaranty shall be a certified check, cashier's check, or bid bond in the amount of 5 percent of the Contractor's total bid.

It is recommended that bidders on this project review the work site and plan details with an authorized Department representative. Prospective bidders shall contact one of the following listed authorized Department representatives at least 12 hours in advance of the time they wish to go over the project.

City and County of Denver Contracts Liaison

The above referenced individuals are the only representatives of the Department with authority to provide any information, clarification, or interpretation regarding the plans, specifications, and any other contract documents or requirements.

If the bidder has a question or requests clarification that involves the bidder's innovative or proprietary means and methods, phasing, scheduling, or other aspects of construction of the project, the Project Manager will address the question or clarification. The Project Manager will keep the bidder's innovation confidential and will not share this information with other bidders.

The Project Manager will determine whether questions are innovative or proprietary in nature. If the Project Manager determines that a question does not warrant confidentiality, the bidder may withdraw the question. If the bidder withdraws the question, the Project Manager will not answer the question and the question will not be documented. If the bidder does not withdraw the question, the question will be answered, and both the question and City answer will be posted on the web site. If the Project Manager agrees that a question warrants confidentiality, the Project Manager will answer the question, and keep both question and answer confidential. The City will keep a record of both question and answer in their confidential file.

All questions shall be directed to the City contact listed above no later than 7:00 A.M. Monday of the week of bid opening. Final questions and answers will be posted no later than Tuesday morning of bid opening week.

Questions and answers shall be used for reference only and shall not be considered part of the Contract.

TIME OF COMMENCEMENT AND COMPLETION

The following requirements shall be added to CCD General Condition Title 6 Time of Commencement and Completion:

The Contractor shall complete all work within 180 calendar days in accordance with the "Notice to Proceed."

Unless otherwise approved by the Department, full closure to traffic is limited to 60 calendar days from the start of demolition of existing Bridge D-27-MP-070 to the time the proposed Bridge D-27-MP-070A is safe for vehicles to pass. To be considered open to traffic, the concrete deck must be fully cured and there must be adequate temporary or permanent bridge rail installed. If temporary bridge rail is used, it shall be at no additional cost to the project.

Final Acceptance as defined in CCD General Condition 2002 includes the Final Stabilization requirements defined in Project Special Provision 208 Erosion Control Part.

Execution of the contract shall not be granted until receiving a successful award and contract execution for the General Contractor.

CONTRACT GOAL COMBINED

The Department has determined that Underutilized Disadvantaged Business Enterprises (UDBEs) will participate by contracting for a part of the work of this Contract. The contract goal for participation in this Contract by certified DBEs who have been determined to be underutilized has been established as follows:

UDBE[&] 5 Percent

The percentage will be calculated from proposals received for this project according to the following formula:

$$\text{Percentage} = 100 \times \frac{\text{*Dollar amount of work to be contracted to underutilized DBEs (UDBEs)}}{\text{Total dollar amount of the original Contract}}$$

*Based on DBE contract unit prices rather than prime contract unit prices.

& All DBEs will be considered to be UDBEs.

NOTE: Specific Good Faith Efforts required to meet the Contract Goal specified above are defined in the Standard Special Provisions. In addition, the Transportation Commission has determined an overall 12.69% annual goal for the participation of all DBEs.

ON THE O TRAINING CONTRACT GOAL

The Department has determined that On the Job Training shall be provided to trainees with the goal of developing full journey workers in the types of trade or classification involved. The contract goal for On the Job Trainees working in an approved training plan in this Contract has been established as follows:

Minimum number of total On the Job Training required __0__ hours.

PERFORMANCE OF SAFET CRITICAL OR

The following work elements are considered safety critical work for this project:

- (1) Use of existing load posted Bridge D-27-MP-070 prior to removal.
- (2) Removal of Bridge D-27-MP-070
- (3) Work requiring the use of cranes or other heavy lifting equipment to set a girder, to make overhead repairs, or includes special provisions for Removal of Bridge or Removal of Portion of Bridge. Also when construction materials are being lifted that may fall onto active traffic lanes.
- (4) Excavation and embankment adjacent to the roadway, especially if it requires shoring

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

The Construction Plan shall include the following:

- (1) Safety Critical Element for which the plan is being prepared and submitted.
- (2) Contractor or subcontractor responsible for the plan preparation and the work.
- (3) Schedule, procedures, equipment, and sequence of operations, that comply with the working hour limitations
- (4) Temporary works required: falsework, bracing, shoring, etc.
- (5) Construction loads crossing the existing bridge that exceed the load limits for the identified posting vehicles will require structural modification to support these loads. Calculations stamped by a Colorado Registered Professional Engineer shall be included in the plan to demonstrate that each construction vehicle exceeding these loads is safe to pass on the modified structure.
- (6) Additional actions that will be taken to ensure that the work will be performed safely.
- (7) Names and qualifications of workers who will be in responsible charge of the work:
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
- (8) Names and qualifications of workers operating cranes or other lifting equipment
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
- (9) The construction plan shall address how the Contractor will handle contingencies such as:
 - A. Unplanned events (storms, traffic accidents, etc.)
 - B. Structural elements that don't fit or line up
 - C. Work that cannot be completed in time for the roadway to be reopened to traffic
 - D. Replacement of workers who don't perform the work safely
 - E. Equipment failure
 - F. Other potential difficulties inherent in the type of work being performed
- (10) Name and qualifications of Contractor's person designated to determine and notify the Engineer in writing when it is safe to open a route to traffic after it has been closed for safety critical work.
- (11) Erection plan or bridge removal plan when submitted as required elsewhere by the specifications. Plan requirements that overlap with above requirements may be submitted only once.
- (12)

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PERFORMANCE OF SAFETY CRITICAL WORK

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

After the safety critical element conference, and prior to beginning work on the safety critical element, the Contractor shall submit a final construction plan to the Engineer for record purposes only. The final construction plan shall be stamped "Approved for Construction" and signed by the Contractor.

With the exception of loading the existing structure per Part 5 of the Construction Plan, the Contractor shall perform safety critical work only when the Engineer is on the project site. The Contractor's Engineer shall be on site to inspect and provide written approval of safety critical work for which he provided signed and sealed construction details. Unless otherwise directed or approved, the Contractor's Engineer need not be on site during the actual performance of safety critical work, but shall be present to conduct inspection for written approval of the safety critical work.

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

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

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

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

Nothing in the section shall be construed to relieve the Contractor from ultimate liability for unsafe or negligent acts or to be a waiver of the Colorado Governmental Immunity Act on behalf of the Department.

REVISION OF SECTION 10 PERMITS

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

Subsection 107.02 shall include the following:

This Project does not expect to disturb more than 43,560 square feet, so a Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) is not needed. The Contractor shall document on the SWMP the square footage actually disturbed. Should the Contractor disturb one or more acres (43,560 square feet), the Contractor shall obtain the CDPS-SCP. The Contractor shall modify the SWMP template to document the additional information needed for a CDPS-SCP at no additional cost to the Project. Additional BMP quantities or Erosion Control Supervisor time, needed for a project with a CDPS-SCP permit shall be paid for by the Contractor.

A CCD Construction Activities Stormwater Discharge Permit (CASDP) is required. It is the Contractor's responsibility to obtain the permit before any site disturbance occurs. The CASDP application must be signed and sealed by a Colorado Registered Professional Engineer.

Contractor is responsible for all costs involved with the application and maintenance of the permits.

**REVISION OF SECTION 01
CLEARING AND GRUBBING**

Section 01 of the Standard Specifications is hereby revised for this project as follows:

Section 01.01 is hereby revised to include the following:

This work consists of removal and disposal of trash of any kind within the areas shown in the contract or required by the work. These items shall be removed and disposed of by the Contractor during construction and prior to final acceptance of the project.

Subsection 01.0 is hereby revised to include the following:

No clearing and grubbing shall take place in areas outside of the limits of construction.

The Contractor shall not remove any shrubs or trees within the project limits without prior written approval from the Project Manager. All trees and shrubs within or adjacent to the project limits, unless otherwise noted, shall be protected. Clearing and grubbing shall include the removal of all shrubs and trees with a trunk diameter less than 6-inches within the project limits. Removal of trees with a trunk diameter 6 inches or greater shall be measured and paid for as Removal of Tree. Trunk diameter shall be determined by measuring at a point 3 feet above the existing ground line. The Contractor shall mark all trees and shrubs that are required to be removed and shall obtain written approval from the Project Manager prior to beginning clearing and grubbing. The removals and replacements shall be in accordance with Colorado Senate Bill 40 (SB40) noted in the contract drawings.

Any stockpiling of trees and shrub material in excess of one day shall not be visible from the roadway.

The Contractor shall contact the Project Manager if the Contractor thinks additional trees need to be removed. Limits of clearing and grubbing shall be field verified by the Project Manager after field staking has been completed and prior to beginning any clearing and grubbing.

Contractor shall trim trees as necessary to keep branches from becoming a hazard to detour traffic or a conflict with the proposed improvements. Trimming will not be measured and paid for separately but included in the work,

Removal of trash will not be measured and paid for separately, but shall be included in the cost of clearing and grubbing. Salvaging and placing logs and mulch will not be measured and paid for separately but shall be included in the work.

The Contractor shall remove and dispose of all visible abandoned utility appurtenances that are located within the work area and abandoned as a result of this project. These items shall not be disposed of within the project limits. Removal of utility appurtenances will not be measured and paid for separately but shall be included in the work.

**REVISION OF SECTION 0
REMOVAL OF STRUCTURES AND OTHER CONSTRUCTIONS**

Subsection 0203.01 shall be revised to include the following:

Final disposal of materials not recycled or reused is included in the work, and shall be disposed of at DADS.

After removal, the exposed subgrade surface shall be finished to a smooth and uniform surface conforming to the typical approved plan specified grade.

Subsection 0203.02 shall be revised to include the following:

The Contractor shall mark the limits of removals in the field and shall arrange for same to be verified by the Project Manager or his representative. Removed materials shall be recycled or reused where possible. Final disposal of remaining materials will be made at DADS.

Removed concrete and asphalt material may not be used to construct embankments.

Subsection 0203.03 is hereby replaced as follows:

All structures, asphalt pavement, etc., designated for removal, shall be broken into pieces and recycled, or disposed of outside the limits of the project, unless otherwise designated on the plans, or as directed by the Project Manager.

Where old asphalt construction abuts new construction, edges of asphalt pavement, patching, etc., asphalt to be left in place shall be wheel cut or sawcut to a neat vertical face with minimal jagged edges to the satisfaction of the Project Manager. The Project Manager, at his discretion, may require asphalt to be sawcut.

Subsection 0203.04 shall be revised to include the following:

Removal of asphalt mat will be measured by square yard.

Subsection 0203.05 is hereby deleted and replaced as follows:

The accepted quantities will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule. Payment shall be full compensation for saw cutting, scraping, sandblasting, removing, hauling, plugging and disposal of such items, excavation and subsequent backfill (with moisture/density control per the Revision of Subsection 203.07) to proposed subgrade elevation and soil preparation. The price shall also include salvageable materials removed, their custody, preservation, storage, haul and disposal as provided herein.

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**REVISION OF SECTION 0
REMOVAL OF STRUCTURES AND O STRUCTIONS**

The linear foot price bid for hydrant or valve removal shall include all of the Contractor's costs of whatsoever nature. The price bid shall include: excavation, including over-excavation to remove unsuitable foundation material; removal and disposal of all materials including pipe, wood, concrete, reinforcing; backfilling and compaction; and all other related and necessary materials, work and equipment required to remove the hydrant or valve in accordance with the Contract Documents. The hydrant or valve will remain the property of the Owner unless otherwise indicated in writing by the Owners field representative.

Payment will be made under:

PA ITEM

Removal of Tree
Removal of Asphalt Mat

PA UNIT

Each
Square Yard

**REVISION OF SECTION 0
REMOVAL OF RIDGE**

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 removal of the existing bridge at D-27-MP-070A. Bridge removal shall consist of the complete removal of all superstructure and substructure elements unless otherwise shown on the plans.

Subsection 202.02 shall include the following:

The removal of the existing bridge shall be performed in a safe manner.

When removal operations are located over a railroad or in proximity to any live water way , additional coordination with the railroad or other agency, (United States Army Corps of Engineers (USACE), US Fish and Wildlife Service, US Forest Service, etc.) shall be required.

The Contractor shall submit a Bridge Removal Plan to the Engineer, for review and record purposes only, at least 20 working days prior to the proposed start of removal operations. This Plan shall detail procedures, sequences, and all features required to perform the removal in a safe and controlled manner. The Bridge Removal Plan shall be stamped "Approved for Construction" and signed by the Contractor. The Bridge Removal Plan will not be approved by the Engineer.

The Bridge Removal Plan shall provide complete details of the bridge removal process, including:

- (1) The removal sequence, including staging of removal operations. Sequence of operation shall include a detailed schedule that complies with the working hour limitations.
- (2) Equipment descriptions including size, number, type, capacity, and location of equipment during removal operations.
- (3) Shoring that exceeds 5 feet in height, all falsework and bracing.
- (4) Details, locations and types of protective coverings to be used. The protective covering shall prevent any materials, equipment or debris from falling onto the property below. When removal operations are located over or in proximity to any live waterway, railroad, or pedestrian/bicycle path, additional width of protective covering sufficient to protect these facilities shall be required. Detailed methods for protection of the existing roadway facilities, including measures to assure that people, property, utilities, and improvements will not be endangered.
- (5) Detailed methods for protection of live waterways including minimization of turbidity and sedimentation, and protection of existing wetlands.
- (6) Detailed methods for mitigation of fugitive dust resulting from the demolition.
- (7) Details for dismantling, removing, loading, and hauling steel elements.
- (8) Methods of Handling Traffic, including bicycles and pedestrians, in a safe and controlled manner.

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**REVISION OF SECTION 0
REMOVAL OF RIDGE**

A Pre-Removal Conference shall be held at least seven days prior to the beginning of removal of the bridge. The Engineer, the Contractor, the removal subcontractor, the Contractor's Engineer, and the Traffic Control Supervisor (TCS) shall attend the Pre-Removal Conference. The Bridge Removal Plan shall be finalized at this Conference.

The Contractor's Engineer shall sign and seal (1) and (3) listed above in the final Bridge Removal Plan. Calculations shall be adequate to demonstrate the stability of the structure remaining after the end of each stage of removal, before traffic is allowed to resume in its normal configuration.

The final Bridge Removal Plan shall be stamped "Approved for Construction" and signed by the Contractor. The Contractor shall submit a final Bridge Removal Plan to the Engineer prior to bridge removal for record purposes only. The Contractor shall not begin the removal process without the Engineer's written authorization.

Submittal of the final Bridge Removal Plan to the Engineer, and field inspection performed by the Engineer, will in no way relieve the Contractor and the Contractor's Engineer of full responsibility for the removal plan and procedures.

Unless otherwise directed, the Contractor's Engineer need not be on site when bridge removal operations are in progress, but shall be present to conduct daily inspection for written approval of the work. The Contractor's Engineer shall inspect and provide written approval of each phase of the removal prior to allowing vehicles or pedestrians on, below, or adjacent to the structure. The Contractor's Engineer shall certify in writing that the falsework, bracing, and shoring conform to the details of the final Bridge Removal Plan. A copy of the certification shall be submitted to the Engineer.

The Contractor's Engineer shall inspect the bridge removal site and report in writing on a daily basis the progress of the operation and the status of the remaining structure. A copy of this daily report shall be available at the site of the work at all times, and a copy of the previous day's inspection report shall be submitted to the Engineer daily.

The Contractor shall have all necessary workers, materials, and equipment at the site prior to closing any lanes to traffic to accommodate bridge removal operations. While the lanes are closed to public traffic, work shall be pursued promptly and without interruption until the roadway is reopened to traffic.

Removal of hazardous material shall be in accordance with Section 250.

The Contractor shall take all steps to avoid contaminating state waters, in accordance with subsection 107.25.

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**REVISION OF SECTION 0
REMOVAL OF RIDGE**

Should an unplanned event occur or the bridge removal operation deviate from the submitted bridge removal plan, the bridge removal operations shall immediately cease after performing any work necessary to ensure worksite safety. The Contractor shall submit to the Engineer, the procedure or operation proposed by the Contractor's Engineer to correct or remedy the occurrence of this unplanned event or to revise the final Bridge Removal Plan. The Contractor shall submit his Engineer's report in writing, within 24 hours of the event, summarizing the details of the event and the procedure for correction.

Before removal of the protective covering, the Contractor shall clean the protective covering of all debris and fine material.

Bridge removal may be suspended by the Engineer for the following reasons:

- (1) Final Bridge Removal Plan has not been submitted, or written authorization has not been provided by the Engineer to begin the removal.
- (2) The Contractor is not proceeding in accordance with the final Bridge Removal Plan, procedures, or sequence.
- (3) The Contractor's Engineer is not on site to conduct inspection for the written approval of the work.
- (4) Safety precautions are deemed to be inadequate.
- (5) Existing neighboring facilities are damaged as a result of bridge removal.

Suspension of bridge removal operations shall in no way relieve the Contractor of his responsibility under the terms of the Contract. Bridge removal operations shall not resume until modifications have been made to correct the conditions that resulted in the suspension, as approved in writing by the Engineer.

The Contractor shall notify all emergency response agencies of the proposed removal work and any detours 24 hours in advance of work. This shall include the Colorado State Patrol, local Police Department, local Fire Department, all local ambulance services, and the Sheriff's Department, as appropriate.

All required traffic control devices, night time flagging stations, barricades and VMS signs shall be in place, with detours in operation, prior to the beginning of removal operations each day. Night work shall conform to the requirements of the MUTCD, Parts 1, 5, and 6.

Prior to reopening the roadway to public traffic, all debris, protective pads, materials, and devices shall be removed and the roadways swept clean.

Explosives shall not be used for removal work without the written approval of the Engineer.

Removal shall include the superstructure, the substructure, which includes the abutments and wingwalls, and the bridge rail.

The substructure shall be removed in its entirety. Except when in the limits of Structure Backfill Class 1, holes resulting from substructure removal shall be backfilled with Structure Backfill (Class 2) to the adjacent existing grades.

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**REVISION OF SECTION 0
REMOVAL OF RIDGE**

All other materials removed from the existing structure shall become the property of the Contractor and shall be properly disposed of offsite at the Contractor's expense, unless otherwise stated in the plans.

Existing structures, facilities, and surrounding roadways shall not be damaged by the removal operations. Damage that does occur shall be repaired immediately at the Contractor's expense.

Subsection 202.12 shall include the following:

Payment will be made under:

Pay Item	Unit
Removal of Bridge	Each

Payment for Removal of Bridge will be full compensation for all labor and materials required to complete the work, including, preparation and implementation of the Bridge Removal Plan, inspection, equipment, debris handling and disposal, salvaging, handling and storage of salvable materials, handling and disposal of all hazardous materials and disposal of non-salvable materials.

Lighting required for nighttime operations will not be measured and paid for separately, but shall be included in the work.

**REVISION OF SECTION 0
REMOVAL OF ASPHALT MAT**

Section 0 of the Standard Specifications is hereby revised for this project as follows:

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

The existing asphalt mat, which varies in thickness, shall be removed in a manner that minimizes contamination of the removed mat with underlying material. The removed mat shall become the property of the Contractor and be disposed of by any one or more of the following described methods:

1. Recycled into hot mix asphalt.
2. Recycled into aggregate base course.
3. Disposed of offsite.

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 required depth and accepted.

Subsection 202.12 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Removal of Asphalt Mat	Square Yard

**REVISION OF SECTION 03
EXCAVATION AND EMBANKMENT**

Section 03 of the Standard Specifications is hereby revised as follows:

Subsection 03.01 shall be revised to include the following:

Disposal of materials not recycled or reused will be made to DADS and shall be part of this contract.

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

The contractor shall protect all trees and shrubs designated to remain. Replacement of damaged trees and shrubs shall be at the Contractor's expense.

Subsection 03.0 shall be revised to include the following:

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

Subsection 03.05 c , first paragraph, shall be revised to include the following:

Approved backfill material shall structural backfill or other material as approved by the Project Manager.

Subsection 03.0 shall be revised to include the following:

Unless otherwise indicated on the plans, the density requirements for embankment material shall be: clay soils – 95% of the maximum density determined in accordance with AASHTO T-99; granular soils – 95% of the maximum density determined in accordance with AASHTO T-180.

Subsection 03.09 shall be revised as follows:

Remove and replace first paragraph with the following:

Proof rolling: Proof rolling shall be conducted with a double tandem ten-wheel end-dump truck, loaded to a minimum gross weight of 45,000 pounds, or other equipment as approved by the Project Manager. Areas found to be weak, and those areas that failed, shall be ripped, scarified, dried or wetted as necessary and re-compacted to the requirements for density and moisture at the Contractor's expense.

Subsection 03.13 shall be revised to include the following:

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

**REVISION OF SECTION 06
E CAVATION AND AC FILL
FOR STRUCTURES**

Section 06 shall include the following:

The recommended compaction details included in Section 9.0 of the Subsurface Exploration and Pavement Design Report, (Geocal April 29, 2016) are required for this project. This report is included as Appendix E of these Special Provisions. All costs associated with these details will not be paid separately and shall be included in the work.

**REVISION OF SECTION 0
STOCKPILE WETLAND TOP SOIL**

Section 207 of the Standard Specifications is hereby revised for this project as follows:

Delete the first paragraph of Subsection 207.03 and replace with the following:

The wetland soil shall be harvested in sod mats with minimum dimensions of 2' wide x 2' long x 12" deep. The mat shall be cut from the wetland with shovels and /or a front-end loader modified with a sharp-edged steel plate. Mats shall be salvaged and stockpiled prior to the construction of the road and bridge. Wetland sod mats shall be excavated to a depth of twelve inches and shall be stockpiled as specified on the plan sheets. The stockpiled wetland sod mats shall be protected from sediment transport by perimeter aggregate bags. Storage time of the sod mats shall be as short as possible. Installation of the stockpiled wetland sod shall be installed as directed by the Engineer following coordination with the contractor. Transplanted wetland sod shall be watered within one hour following installation.

REVISION OF SECTION 08 EROSION CONTROL

Section 08 of the Standard Construction Specifications is hereby removed in its entirety and replaced with the following:

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 Wastewater Capital Projects Management Standard Construction Specification. Where there are conflicting requirements, the more stringent requirement shall apply.

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 (title may be used interchangeably with Stormwater Administrator) is assigned by the Contractor to perform duties as described in this Section. The ECS shall be properly trained in BMPs per requirements stated herein, 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). For small projects the ECS, Stormwater Administrator, and inspector may be the same person.

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

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**REVISION OF SECTION 08
EROSION CONTROL**

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

- a) Make required revisions to comply with changing federal or state rulemaking if occurs within timeframe of Project
- b) Make required revisions due to unforeseen or unplanned conditions leading to deficient Drawings/SWMP (hazardous materials encountered, landfills, expansion of work limits, etc.)
- c) Prepare revised SWMP elements endorsed by 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. 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.

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

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

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

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

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**REVISION OF SECTION 08
EROSION CONTROL**

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

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.

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. When a CDPS-SCP or 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".

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.

08.01 This Work shall consist of constructing, installing, maintaining, and removing when required, Best Management Practices (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 as defined in subsection 107.25. 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.

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**REVISION OF SECTION 08
EROSION CONTROL**

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.

EROSION CONTROL PERMIT STATUS

The current SWMP status for the Project is as follows:

A SWMP (erosion control drawings) is included “for reference only” but based on the estimated land disturbance a CDPS-SCP is not required. A CASDP is required based on proximity of construction activities to Bear Creek. If 1 acre or greater is disturbed, the contractor will be required to obtain a CDPS-SCP in addition to a CASDP in accordance with the following requirements:

The Contractor shall submit a complete SWMP and application to the Permit Authority to obtain the required permits. The Contractor shall use the provided “For reference only” erosion control drawings provided in the Contract as a starting point for preparation of required SWMP elements and for general information as to the origin of pay items included in the Bid Documents. The included erosion control drawings have been previously reviewed by the Permit Authority, and the BMPs shown therein have been found to be generally acceptable by the Permit Authority.

It shall be the responsibility of the Contractor to prepare and acquire approval of a complete SWMP and obtain the required permits from the Permit Authority prior to beginning construction. The Contractor is hereby made aware that the Permit Authority allots up to 3 weeks per review cycle for permit applications (2 review cycles are not uncommon).

In accordance with permitting requirements, the Contractor shall obtain the endorsement of a Professional Engineer licensed in the State of Colorado for preparation of the initial SWMP and/ or any proposed Major or Minor SWMP Amendments. This will require the Contractor to provide or retain a Professional Engineer or subcontract with the original Professional Engineer of the “For reference only” erosion control drawings.

Per definition, a Major SWMP Modification requires the submission of revised SWMP elements to the Permit Authority for review and approval.

A SWMP consists of the following elements:

(i) SWMP narrative and plan sheet. The SWMP and supporting documents should fully address the methods to be used to prevent sediment, debris, and other pollutants from entering the MS4 and/ or State Waters in and around the Project area. Proposed structural and non-structural BMPs should be described with sufficient implementation detail to insure that the logical phases of the proposed construction Project meet the performance standards listed in the CASM and CDOT.

(ii) Proposed site drawings and Best Management Practice (BMP) installation details as they apply to the site conforming to the most current SWMP template issued by CDOT, 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.

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REVISION OF SECTION 08
EROSION CONTROL

(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.

08.0 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. Erosion control materials are subject to acceptance in accordance with subsection 106.01. Erosion control materials shall be subject to the following approval process:

Material	Approval Process	Notes:
Erosion Bales (Weed Free)	COC	The Contractor shall provide a transit certificate number or a copy of the transit certificate as supplied from the producer.
Silt Fence	COC	
Silt Berm	APL	
Erosion Log (Type 1 and 2)	COC	
Silt Dikes	COC	
Pre-fabricated Concrete Washout Structures (above ground)	APL	
Pre-fabricated Vehicle Tracking Pad	APL	
Aggregate Bag	COC	
Storm Drain Inlet Protection (Type I, II and III)	APL	

COC – Certificate of Compliance per Subsection 101.11 and 106.12

APL – CDOT Approved Products List

The material for BMPs shall conform to the following:

(a) *Erosion Bales.* Material for erosion bales shall consist of Certified Weed Free hay or straw. The hay or straw shall be certified under the Colorado Department of Agriculture Weed Free Forage Certification Program and inspected as regulated by the Weed Free Forage Act, Title 35, Article 27.5, CRS. Each certified weed free erosion bale shall be identified by blue and orange twine binding the bales.

The Contractor shall not place certified weed free erosion bales or remove their identifying twine until the Engineer has inspected and accepted them.

The Contractor may obtain a current list of Colorado Weed Free Forage Crop Producers who have completed certification by contacting the Colorado Department of Agriculture, Weed Free Forage Program, 305 Interlocken Pkwy, Broomfield, CO 80021, Contact: Weed Free Forage Coordinator at (303) 869-9038. Also available at www.colorado.gov/ag/csd.

Bales shall be approximately 5 cubic feet of material and weigh at least 35 pounds. Stakes shall be wood and shall be 2 inch by 2 inch nominal.

(b) *Silt Fence.* Silt fence posts shall be wood with a minimum length of 42 inches. Wood posts shall be 1.5 inch by 1.5 inch nominal. Geotextile shall be attached to wood posts with three or more staples per post.

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**REVISION OF SECTION 08
 EROSION CONTROL**

Silt fence geotextile shall conform to the following requirements:

Physical Requirements for Silt Fence Geotextiles

Property	Wire Fence Supported Requirements	Self-Supported Geotextile Elongation 50%	Test Method
Grab Strength, lbs	90 minimum	124 minimum	ASTM D 4632
Permittivity sec-1	0.05	0.05	ASTM D 4491
Ultraviolet Stability	Minimum 70% Strength Retained	Minimum 70% Strength Retained	ASTM D 4355

Silt Fence (Reinforced). Silt fence posts shall be metal "studded tee" T-post with a minimum length of 66 inches. Metal posts shall be "studded tee" with .095 inch minimum wall thickness. Wire fabric reinforcement for the silt fence geotextile shall be a minimum of 14 gauge, with a maximum mesh spacing of 6 inches. Geotextile shall be attached to welded wire fabric with ties or nylon cable ties 12 inch O.C. at top, mid and bottom wire. Welded wire fabric shall be attached to the post with a minimum three 12 gauge wire ties per post. Vinyl or rubber safety caps shall be installed on all T-post.

- (c) *Temporary Berms.* Temporary berms shall be constructed of compacted soil.
- (d) *Temporary Slope Drains.* Temporary slope drains shall consist of fiber mats, plastic sheets, stone, concrete or asphalt gutters, half round pipe, metal or plastic pipe, wood flume, flexible rubber or other materials suitable to carry accumulated water down the slopes. Outlet protection riprap shall conform to section 506. Erosion control geotextile shall be a minimum Class 2, conforming to subsection 712.08.
- (e) *Silt Berm.* Silt berm shall consist of an ultraviolet (UV) stabilized high-density polyethylene, shall be triangular in shape, and shall have the following dimensions:

Width	6 - 11 inches
Height	6 - 10 inches
Weight	0.3 - 1.4 lbs./sq. ft.
Percent Open Area	30 – 50%

Securing spikes shall be 10 to 12 inch x 0.375 inch diameter (minimum).

- (f) *Rock Check Dam.* Rock Check dams shall be constructed of stone. Stone shall meet the requirements of Section 506.
- (g) *Sediment Trap.* In constructing an excavated Sediment Trap, excavated soil may be used to construct the dam embankment, provided the soil meets the requirements of subsection 203.03. Outlet protection riprap shall be the size specified in the Contract and shall conform to Section 506. Erosion control geotextile shall be a minimum Class 1, conforming to subsection 712.08.

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REVISION OF SECTION 08
EROSION CONTROL

(h) *Erosion log.* Shall be one of the following types unless otherwise shown on the plans:

- (1) Erosion Log (Type 1) shall be curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, photo-degradable tube netting and shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log called for on the plans. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.
- (2) Erosion Log (Type 2) shall consist of a blend of 30-40 percent weed free compost and 60-70 percent wood chips. The compost/wood blend material shall pass a 50 mm (2 inch) sieve with a minimum of 70 percent retained on the 9.5 mm (3/8 inch) sieve and comply to subsection 212.02 for the remaining compost physical properties. The compost/wood chip blend may be pneumatically shot into a geotextile cylindrical bag or be pre-manufactured. The geotextile bag shall consist of material with openings of 1/8 to 3/8 inches of HDPE or polypropylene mesh (knitted, not extruded), and contain the compost/wood chip material while not limiting water infiltration.

Erosion log (Type 1 and Type 2) shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log.

Table 08-1
NOMINAL DIMENSIONS OF EROSION LOGS

Diameter Type 1 Inches	Diameter Type Inches	Length feet		eight minimum pounds foot	Stake Dimensions Inches
		Min.	Max.		
9	8	10	180	1.6	1.5 by 1.5 (nominal) by 18
12	12	10	180	2.5	1.5 by 1.5(nominal) by 24
20	18	10	100	4.0	2 by 2 (nominal) by 30

Stakes to secure erosion logs shall consist of pinewood or hardwood.

- (i) *Silt Dikes.* Silt dikes shall be pre-manufactured triangular shaped urethane foam covered with a woven geotextile fabric. The fabric aprons shall extend a minimum of two feet beyond each side of the triangle.

Each silt dike shall have the following dimensions:

Dimension	Length
Center height	8 to 10 inches
Base	16 to 21 inches
Section length	3 to 7 feet
Section width including fabric extensions	5.6 feet

Staples shall be 6 gauge and at least 8 inches long.

- (j) *Concrete Washout Structure.* The Contractor shall construct a washout structure that will contain washout from concrete placement and construction equipment cleaning operations. Embankment required for the concrete washout structure may be excavated material, provided that this material meets the requirements of Section 203 for embankment.

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REVISION OF SECTION 08
EROSION CONTROL

A pre-fabricated concrete washout structure shall only be used when specified in the Contract. It shall consist of a watertight container designed to contain liquid and solid waste from concrete washout.

- (k) *Vehicle Tracking Pad.* Aggregate for the vehicle tracking pad shall be crushed natural aggregate with at least two fractured faces that meets the following gradation requirements:

Sieve size	Percent by weight Passing Square Mesh Sieves
75 mm (3 inch)	100
50 mm (2 inch)	0-25
19.0 mm (¾ inch)	0-15

Recycled crushed concrete or asphalt shall not be used for vehicle tracking pads.

Erosion Control Geotextile shall be Class 2 and conform to the requirements of subsection 712.08.

Pre-fabricated vehicle tracking pads if specified in the Contract shall have the following properties.

Minimum overall dimensions of the modular systems shall be:

Width of pad along edge of roadway	14 feet
Length of pad	30 feet

Weight (min.) (lbs./sq. ft.)	8
Crush strength (min.) (psi)	400

- (l) *Aggregate Bag.* Aggregate bags shall consist of crushed stone or recycled rubber filled fabric with the following properties:

Diameter inches	weight minimum pounds per foot
6-8	6
10	10
12	15

Rubber used in bags shall be clean, 95 percent free of metal and particulates.

Crushed stone contained in the aggregate bags shall conform to subsection 703.09, Table 703-7 for Class C.

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The aggregate bag shall consist of a woven geotextile fabric with the following properties:

Property	Requirement	Test Method
Grab Tensile Strength	90 lbs. min.	ASTM D 4632
Trapezoid Tear Strength	25 lbs. min.	ASTM D 4533
Mullen Burst	300 psi	ASTM D 3786
Ultraviolet Resistance	70%	ASTM D 4355

(m) *Storm Drain Inlet Protection.* Storm drain inlet protection shall consist of aggregate filled fabric with the following dimensions:

Storm Drain Inlet Protection Properties	Protection Types		
	¹ Type I	Type II	³ Type III
Diameter	4 in.	4 in.	N/A
Minimum Section Length	7 ft.	5 ft.	5 ft.
Apron Insert	---	30 in. or sized to grate	30 in or sized to grate
¹ Type I protection shall be used with Inlet Type R. Type II protection shall be used with Combination Inlet. Option A or B ³ Type III protection Inlet Vane Grate only. Option A or B			

The storm drain inlet protection (Type I, II and III) shall consist of a woven geotextile fabric with the following properties:

Property	Test Method	Unit	Requirement
Grab tensile strength	ASTM D 4632	lbs.	minimum 350X280
Mullen Burst Strength	ASTM D 3786	lbs.	600
Trapezoid Tear Strength	ASTM D 4533	lbs.	minimum 110X95
Percent Open Area	COE-22125-86	%	28
Water Flow Rate	ASTM D 4491	gal./min./sq. ft.	250
Ultraviolet Resistance	ASTM D 4355	%	70

Curb roll for storm drain inlet protection (Type I and II) shall have an approximate weight of 7 to 10 pounds per linear foot of device. The device shall be capable of conforming to the shape of the curb. Aggregate contained in the storm drain inlet device shall consist of gravel or crushed stone conforming to Table 703-7 for Class C.

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Storm drain inlet protection (Type III) shall have insert containment (option A) or insert without storage capacity (option B).

08.03 Project Review, Schedule, and Transportation Erosion Control Supervisor. Prior to construction, an on-site Environmental Pre-construction Conference shall be held. The conference shall be attended by:

- (1) The Engineer,
- (2) The Superintendent,
- (3) The Contractor's SWMP Administrator
- (4) Supervisors or Foremen of subcontractors working on the project,
- (5) The Region Water Pollution Control Manager (RWPCM), and
- (6) CDOT personnel (e.g., CDOT Landscape Architect) who prepared or reviewed the Stormwater Management Plan (SWMP).

At this conference, the attendees shall discuss the SWMP, CASDP, CDPS-SCP, sensitive habitats on site, wetlands, other vegetation to be protected, and the enforcement mechanisms for not meeting the requirements of this specification.

Prior to beginning construction the Contractor shall evaluate the project site for storm water draining into or through the site. When such drainage is identified, BMPs (i.e., Control Measures) shall be used if possible to divert stormwater from running on-site and becoming contaminated with sediment or other pollutants. The diversion may be accomplished with a temporary pipe or other conveyance to prevent water contamination or contact with pollutants. Run-on water that cannot be diverted shall be treated as construction runoff and adequate BMPs shall be employed.

The SWMP Administrator shall evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, BMPs shall be used to protect off-site water from becoming contaminated with sediment or other pollutants.

The SWMP Administrator shall review existing inlets and culverts to determine if inlet protection is needed due to water flow patterns. Prior to beginning construction, inlets and culverts needing protection shall be protected and the location of the implemented BMP added to the SWMP site map.

Prior to construction, the Contractor shall implement appropriate BMPs for protection of wetlands, sensitive habitat and existing vegetation from ground disturbance and other pollutant sources, in accordance with the approved project schedule as described in subsection 208.03(b).

When additional BMPs are required and approved by the Engineer, the Contractor shall implement the additional BMPs and the SWMP Administrator shall record and describe them on the SWMP site map. The approved BMPs will be measured and paid for in accordance with subsections 208.11 and 208.12.

- (a) *Project Review.* The Contractor may submit modifications to the Contract's BMPs in a written proposal to the Engineer. The written proposal shall include the following information:
- (i) Reasons for changing the BMPs.
 - (ii) Diagrams showing details and locations of all proposed changes.
 - (iii) List of appropriate pay items indicating new and revised quantities.
 - (iv) Schedules for accomplishing all erosion and sediment control work.
 - (v) Effects on permits or certifications caused by the proposed changes.

The Engineer will approve or reject the written proposal in writing within 5 working days after the submittal. The Engineer may require additional control measures prior to approving the proposed modifications. Additional modifications and additional BMPs will be paid for at the Contract Unit Price for the specific items involved. If no items exist, they will be paid for as extra work in accordance with CCD General Contract Condition 1104.

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- (b) *Erosion and Sediment Control Activities.* The erosion and sediment control activities shall be included in the weekly meeting update. The project schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent erosion control features and stabilization. Project schedule shall include erosion and sediment control work for haul roads, borrow pits, storage and asphalt or concrete batch sites, and all areas within the project limits. If during construction the Contractor proposes changes which would affect the Contract's BMPs, the Contractor shall propose revised BMPs to the Engineer for approval in writing. If necessary, the SWMP Administrator shall update proposed sequencing of major activities in the SWMP. Revisions shall not be implemented until the proposed measures have been approved in writing by the Engineer.
- (c) *Erosion Control Management (ECM).* Erosion Control Management for this project shall consist of Erosion Control Inspection and the Administration of the Stormwater Management Plan (SWMP). All ECM staff shall have working knowledge and experience in construction, and shall have successfully completed the Transportation Erosion Control Supervisory Certificate Training (TECS) as provided by the Department. The Superintendent will not be permitted to serve in an ECM role. The Erosion Control Inspector and the Stormwater Administrator/Erosion Control Supervisor may be the same person in projects involving less than 40 acres of disturbed area.
- (d) *Erosion Control Supervisor/Stormwater Administrator.* 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. 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. Additionally, per definition, the ECS shall be under the direction of a Professional Engineer licensed in the State of Colorado when performing any modifications to the Project Stormwater Management Plan (SWMP).

The ECS shall be responsible for oversight of the implementation, maintenance, and revision of the SWMP for the duration of the Project. The ECS's responsibilities shall be as follows:

- (1) Ensure compliance with all water quality permits or certifications in effect during the construction work.
- (2) Supervise the installation, construction, and maintenance of all BMPs specified in the Contract and coordinate the construction of BMPs with all other construction operations.
- (3) Direct the implementation of suitable BMPs as necessary to correct unforeseen conditions or emergency situations. Direct the dismantling of those features when their purpose has been fulfilled due to completion of each Project phase unless the Permit Enforcement Authority agrees that the features be left in place.
- (4) Inspect the construction site and document inspection activities at least every seven (7) days and immediately following any precipitation or snowmelt event with the potential to cause surface erosion. If no land disturbing construction activities are present during a storm event, post-storm event inspections shall be conducted prior to commencing any new land disturbing construction activities, but no later than seventy-two (72) hours following the storm event.
- (5) Attend the preconstruction conference, erosion control preconstruction inspection, Project scheduling meetings, weekly construction/ field meetings, substantial completion and final stabilization inspections, and other meetings regarding construction that could impact water quality.
- (6) Evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, the ECS shall propose appropriate SWMP modifications to the Contractor to protect off-site water from becoming contaminated with sediment or other pollutants.
- (7) All inspection and maintenance activities or other repairs shall be documented. The SWMP and documentation shall be kept on the Project site at all times.

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- (8) Modify the site map with arrows to indicate direction of surface and storm water flowing across the Project site.
 - (i) How to install and inspect the BMP
 - (ii) Where to install the BMP
 - (iii) When to maintain the BMP
 - (9) Record on the SWMP, and implement the approved plan for concrete and asphalt saw cutting, grinding, and milling containment and removal.
 - (10) Update the potential pollutants list in the SWMP throughout construction meeting CDPS-SCP and CASDP requirements.
 - (11) 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) (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.
 - (12) Perform a thorough inspection of the stormwater management system at least every seven (7) days and within 24 hours after any precipitation or snowmelt event with the potential to cause surface erosion. The inspection records shall be kept on-site in a written or previously approved format. Inspections shall be conducted during the progress of the work, during work suspensions, or until Final Stabilization of all disturbed areas is approved by Permit Enforcement Authority and shall include the following services at a minimum:
 - (i) The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. BMPs identified in the SWMP shall be observed to ensure that they are operating correctly.
 - (ii) The description of potential pollutant sources, and the BMPs identified in the SWMP, shall be revised and modified as appropriate based on the results of the inspection as soon as practicable after such inspection. Modification to the SWMP shall be implemented in a timely manner and in accordance with applicable Permit requirements.
 - (iii) The operator shall keep a record of inspections. Uncontrolled releases of sediment or polluted storm water or measurable quantities of sediment found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measures taken to clean up the sediment that has left the site. Inspection records shall be made available to the City upon request. Note: documentation of uncontrolled releases at site DOES NOT alleviate any State or Federal requirements for reporting of discharges or upset conditions. Care should be taken to ensure compliance with all regulatory requirements at site.
 - (i) 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.
1. Stormwater Management Plan (SWMP) Administration. The SWMP Plan shall be maintained by a SWMP/Stormwater Administrator/ECS. The SWMP Administrator shall have completed the TECS certification training as provided by the Department. In the case of a project requiring only one TECS, the SWMP Administrator may also be the Erosion Control Inspector for the project. The name of the

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2. SWMP Administrator shall be recorded on SWMP Plan Section 3. B. The SWMP Administrator shall have full responsibility to maintain and update the SWMP Plan and identify to the Superintendent critical action items needed to conform to the CDPS-SCP as follows:
 - (1) Complete the SWMP Notebook as described in subsection 208.03 (d).
 - (2) Participate in the Environmental Pre-construction Conference.
 - (3) Attend weekly meetings
 - (4) Attend all Headquarter and Region water quality control inspections. The Contractor and the Contractor's SWMP Administrator will be notified a minimum of five days in advance of each inspection by the CDOT region or headquarter water quality staff.
 - (5) Coordinate with the Superintendent to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
 - (6) Coordinate with the Superintendent to ensure that all labor, material, and equipment needed to install, maintain, and remove BMPs are available as needed.
 - (iii) During construction, update and record the following items on the SWMP site map as changes occur:
 - (iv) Limits of Construction (LOC).
 - (v) Areas of disturbance (AD)
 - (vi) Limits of Disturbance (LDA)
 - (vii) Limits of cut and fill.
 - (viii) Areas used for storage of construction materials, equipment, soils, or wastes.
 - (ix) Location of any dedicated asphalt or concrete batch plants.
 - (x) Location of construction offices and staging areas.
 - (xi) Location of work access routes during construction.
 - (xii) Location of borrow and waste.
 - (xiii) Location of temporary, interim and permanent stabilization.
 - (xiv) Location of outfall(s)
 - (xv) Arrows showing direction of surface flow.
 - (xvi) Structural and non-structural BMPs
 - (xvii) LDA and LOC lines as defined in subsection 107.25
 - (7) 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.
 - (8) Complete vegetative survey transects when required in accordance with CDOT Erosion Control and Stormwater Quality Guide.
 - (9) Start a new site map before the current one becomes illegible. All site maps shall remain in the SWMP notebook.

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- (10) Document all inspection and maintenance activities or other repairs shall be documented. The SWMP and documentation shall be kept on the Project site at all times.
- (11) When adding or revising BMPs in the SWMP, amend the narrative to explain what, when, where, why, and how the BMP is being used, and add a detail to the SWMP.
 - (i) How to install and inspect the BMP
 - (ii) Where to install the BMP
 - (iii) When to maintain the BMP
- (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 to the SWMP.
- (13) Indicate BMPS in use or not in use by recording on Standard Plans M-208-1, M-216-1, and M-615-1 in the SWMP notebook.
- (14) Record on the SWMP, the approved Method Statement for Containing Pollutant Byproducts.
- (15) Update the potential pollutants list in the SWMP notebook and Spill Response Plan throughout construction.

3. EROSION CONTROL INSPECTION

Erosion control inspection shall be performed by TECS certified staff assigned as Erosion Control Inspector (ECI) to the project. One ECI is required for every 40 acres of total disturbed area which is currently receiving temporary and interim stabilization measures as defined in subsection 208.04 (e). An ECI shall not be responsible for more than 40 acres in the project. Accepted permanent stabilization methods as defined in subsection 208.04 (e) will not be included in the 40 acres.

ECI duties shall be as follows:

- (1) Coordinate with the SWMP Administrator on reporting the results of inspections
- (2) Review the construction site for compliance with the Stormwater Construction Permit
- (3) Inspect with the Superintendent and the Engineer (or their designated representatives) the stormwater management system at least every seven calendar days. Post storm event inspections shall be conducted within 24 hours after the end of any precipitation or snow melt event that may cause surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to commencing construction activities, but no later than 72 hours following the storm event. The occurrence of delay in inspections shall be documented in the inspection report. Form 1176 shall be used for all 7 day inspections and inspections following storm events. The Contractor shall notify the Erosion control inspector when a storm event occurs. Failure to perform inspections on time will result in liquidated damages in accordance with subsection 208.09.

Inspections are not required at sites when construction activities are temporarily halted, when snow cover exists over the entire site and melting conditions do not pose a risk of surface erosion. This exception shall be applicable only during the period where melting conditions do not exist, and applies to the routine 7 day, Headquarters and Region inspections, as well as the post-storm event inspections. The following information shall be documented on Form 1176 for use of this exclusion: dates when snow cover occurred, date when construction activities ceased, and date melting conditions began.

The order of precedence for required inspections shall be as follows:

- (i) Headquarter water quality inspections
- (ii) Region water quality inspections
- (iii) Post-storm event inspections

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(iv) 7 day inspections

When one of the listed inspections is performed, the inspections listed below it need not be performed on that day if the required CDOT and Contractor personnel participated in the inspection.

For example: A 7 day inspection is not required on the same day a headquarters or Region inspection is conducted. A sheet shall be placed in the inspections area of the SWMP Notebook to refer to the date inspection performed.

- (4) Follow all other agency Stormwater requirements and inspections unless a waiver or other agreement has been made.
- (5) The ECI shall immediately report to the Contractor's Superintendent and the SWMP Administrator the following instances of noncompliance:
 - (i) Noncompliance which may endanger health or the environment.
 - (ii) Spills or discharge of hazardous substance or oil which may cause pollution of waters of the State.
 - (iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
 - (iv) Upset conditions that occur on site.
- (6) Spills, leaks, or overflows that result in the discharge of pollutants shall be documented on the Form 1176 by the ECI. The ECI shall record the time and date, weather conditions, reasons for spill, and how it was remediated.

Documentation Available on the Project. The following Contract documents and references will be made available for reference at the CDOT field office during construction:

1. SWMP Notebook. The Engineer will provide a SWMP Notebook at the Preconstruction Conference, which is and shall remain the property of CDOT. CDOT will initially provide the documentation for the first four items when available. The Contractor shall provide the contents required for items (5) through (18). The notebook shall be stored in the CDOT field office or at another on-site location approved by the Engineer. The SWMP Administrator shall modify and update the notebook as needed to reflect actual site conditions, prior to or as soon as practicable but in no case more than 72 hours after the change. The following Contract documents and reports shall be kept, maintained, and updated in the notebook under the appropriate items by the SWMP Administrator:
 - (1) SWMP Plan Sheets - Notes, tabulation, sequence of major activities, area of disturbance, existing soil data, existing vegetation percent cover, potential pollutant sources, receiving water, non-stormwater discharges and environmental impacts.
 - (2) Site Map and Plan Title Sheet - Construction site boundaries, ground surface disturbance, limits of cut and fill, flow arrows, structural BMPs, non-structural BMPs, Springs, Streams, Wetlands and surface water. Also included on the sheets is the protection of trees, shrubs and cultural resources.
 - (3) Specifications - Standard and Project special provisions related to Stormwater and Erosion Control

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- (4) Standard Plans M-208-1, M-216-1 and M-615-1
- (5) BMP Details not in Standard Plan M-208-1 - Non-standard details.
- (6) Weekly meeting sign in sheet.
- (7) Calendar of Inspections -Calendar of inspections marking when all inspections take place.
- (8) Form 1176 – Weekly meeting notes and inspection report
- (9) Region and Headquarter Water Quality Reports and Form 105(s) relating to Water Quality.
- (10) Description of Inspection and Maintenance Methods - Description of inspection and maintenance methods implemented at the site to maintain all BMPs identified in the SWMP and Items not addressed in the design
- (11) Spill Response Plan - Reports of reportable spills submitted to CDPHE
- (12) List and Evaluation of Potential Pollutants - List of potential pollutants as described in subsection 107.25 and approved Method Statement for Containing Pollutant Byproducts.
- (13) Other Correspondence e.g., agreements with other MS4s, approved deferral request, CDPHE audit documentation, Water Quality Permit Transfer to Maintenance Punch List and other miscellaneous documentation.
- (14) TECS Certifications of the SWMP Administrator and all ECIs, keep current through the life of the project.
- (15) Environmental Pre-construction Conference – Conference agenda with a certification of understanding of the terms and conditions of the CDPS-SCP and SWMP. The certification shall be signed by all attendees. A certification shall also be signed by all attendees of meetings held for new subcontractors beginning work on the project that could adversely affect water quality after the Environmental Pre-construction Conference has been held.
- (16) All Project Environmental Permits - All project environmental permits and associated applications and certifications, including, CDPS-SCP, Senate Bill 40, USACE 404,temporary stream crossings, dewatering, biological opinions and all other permits applicable to the project, including any separate CDPS-SCP obtained by the Contractor for staging area on private property, asphalt or concrete plant, etc.
- (17) Photographs Documenting Existing Vegetation – Project photographs shall be time stamped on paper with a maximum of four colored images per 8 ½ inch by 11 inch sheet and/or a digital copy of all photographs on CD-ROM/Flash Drive in (JPG format), documenting existing vegetation prior to construction commencing. On the bottom of each photograph shall be a description using Station Number or Mile Post of where the photograph was taken.
- (18) Permanent Water Quality Plan Sheets - Plan sheets and specifications for permanent water quality structures, riprap.

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The Engineer will incorporate the documents and reports available at the time of award. The Contractor shall provide and insert all other documents and reports as they become available during construction. The SWMP Administrator shall finalize the SWMP for CDOT Maintenance use upon completion of the project. SWMP completeness shall be approved by the Engineer, corrections to the SWMP shall be at the Contractor's expense. The following Reference materials shall be used:

- (1) CDOT Erosion Control and Stormwater Quality Guide.
- (2) CDOT Erosion Control and Stormwater Quality Field Guide.
- (3) Urban Drainage Flood Control District (UDFCD) Volume 3

(e) *Weekly Meetings.* The Engineer, Superintendent and the SWMP Administrator shall conduct a weekly meeting with supervisors involved in construction activities that could adversely affect water quality. The meeting shall follow an agenda prepared by the Engineer or a designated representative, and have a sign in sheet on which the names of all attendees shall be recorded. The SWMP Administrator shall take notes of water quality comments and action items at each weekly meeting, and place the agenda and sign in sheet in the SWMP notebook. At this meeting the following shall be discussed and documented on Form 1176:

- (1) Requirements of the SWMP.
- (2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs.
- (3) Unresolved issues from inspections and concerns from last inspection
- (4) BMPS that are to be installed, removed, modified, or maintained.
- (5) Planned activities that will effect stormwater in order to proactively phase BMPs.
- (6) Recalcitrant inspection findings

All subcontractors who were not in attendance at the Environment Pre-construction conference shall be briefed on the project by the Engineer, Superintendent, and the SWMP Administrator prior to start of work. The SWMP Administrator shall record the names of these subcontractors as an addendum to the list of attendees, and added the SWMP Notebook

08.0 Best Management Practices BMPs for Storm ater.

The SWMP Administrator shall modify the SWMP to clearly describe and locate all BMPs implemented at the site to control potential sediment discharges.

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 function in an effective and operable manner.

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

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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 Construction 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.

Vehicle tracking control shall be used at all vehicle and equipment exit points from the site to prevent sediment exiting the Limits of Construction (LOC) of the project site. Access shall be provided only at locations approved by the Engineer. The SWMP Administrator shall record vehicle tracking control pad locations on the SWMP site map.

New inlets and culverts shall be protected during their construction. Appropriate protection of each culvert and inlet shall be installed immediately. When riprap is called for at the outlet of a culvert, it shall be installed within 24 hours of completion of each pipe. The Contractor shall remove sediment, millings, debris, and other pollutants from within the newly constructed drainage system in accordance with the CDPS-SCP, prior to use, at the Contractor's expense. All removed sediment shall be disposed of outside the project limits in accordance with all applicable regulations.

Concrete products wasted on the ground during construction shall include, but shall not be limited to: excess concrete removed from forms, spills, slop, and all other unused concrete are potential pollutants that shall be contained or protected by an approved BMP at a pre-approved containment area. The concrete shall be picked up and recycled in accordance with 6 CCR 1007-2 (CDPHE Regulations Pertaining to Solid Waste Sites and Facilities) at regular intervals, as directed. The uses of recycled concrete from approved recycling facilities shall be in accordance with Section 203.

(a) *Unforeseen Conditions.* The Contractor shall design and implement erosion and sediment BMPs for correcting conditions unforeseen during the design of the project, or for emergency situations, that develop during construction. The Department's "Erosion Control and Stormwater Quality Guide" shall be used as a reference document for the purpose of designing erosion and sediment BMPs. Measures and methods proposed by the Contractor shall be reviewed and approved in writing by the Engineer prior to installation.

In an emergency situation the Contractor shall use best judgement for immediately responding to the emergency situation as it arises.

All costs associated with revising the BMPs utilized throughout the project, for its duration, shall be included within the applicable Storm Water Management bid item. No separate or additional payment shall be made.

(b) *Other Agencies.* If CDPHE, US Army Corps of Engineers (USACE), or the Environmental Protection Agency (EPA) reviews the project site and requires additional measures to prevent and control erosion, sediment, or pollutants, the Contractor shall cease and desist activities resulting in pollutant discharge and immediately implement these measures. If the work may negatively affect another MS4, the Contractor shall cease and desist activities resulting in the discharge and shall implement appropriate measures to protect the neighboring MS4, including installing additional measures. . Implementation of these additional measures will be paid for at contract unit price.

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- (c) *Work outside of the Right of way.* Disturbed areas, including staging areas, which are outside the ROW and outside easements for construction, are the responsibility of the Contractor. These areas may be subject to a separate CDPS-SCP or other permits. The Contractor shall acquire these permits and submit copies to the Engineer prior to any disturbance. These permits, shall be acquired and all erosion and sediment control work performed at the Contractor's expense. These areas are subject to inspections by CDOT or any other agency, as agreed upon in writing.

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

- (d) *Construction Implementation.* The Contractor shall incorporate BMPs into the project as outlined in the accepted schedule.
- (e) *Stabilization.* Once earthwork has started, the Contractor shall continue erosion BMPs until permanent stabilization of the area has been completed and accepted. Clearing, grubbing and slope stabilization measures shall be performed regularly to ensure final stabilization. Failure to properly maintain erosion control and stabilization methods, either through improper phasing or sequencing will require the Contractor to repair or replace sections of earthwork at his expense. The Contractor shall schedule and implement the following stabilization measures during the course of the project:

(1) *Temporary Stabilization.* At the end of each day, the Contractor shall stabilize disturbed areas by surface roughening, vertical tracking, or a combination thereof. Disturbed areas are locations where actions have been taken to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, road bed preparation, soil compaction, and movement and stockpiling of top soils. Other stabilization measures may be implemented, as approved. The maximum area of temporary stabilization shall not exceed 20 acres.

(2) *Interim Stabilization.* Stockpiles and disturbed areas as soon as known with reasonable certainty that work will be temporarily halted for 14 days or more shall be stabilized using one or more of the specified following methods:

- (i) Application of 1.5 tons of mechanically crimped certified weed free hay or straw in combination with an approved organic mulch tackifier.
- (ii) Placement of bonded fiber matrix in accordance with Section 213.
- (iii) Placement of mulching (hydraulic) wood cellulose fiber mulch with tackifier, in accordance with Section 213.
- (iv) Application of spray-on mulch blanket in accordance with Section 213. Magnesium Chloride, Potassium Chloride and Sodium Chloride, or other salt products, will not be permitted as a stabilization method.

Protection of the interim stabilization method is required. Reapplication may be required as approved.

(3) *Summer and Winter Stabilization.* Summer and winter stabilization is defined as months when seeding will not be permitted. As soon as the Contractor knows shutdown is to occur, interim stabilization shall be applied to the disturbed area. Protection of the interim stabilization method is required. Reapplication of interim stabilization may be required as directed.

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- (4) Permanent Stabilization. Permanent stabilization is defined as the covering of disturbed areas with seeding, mulching with tackifier, soil retention coverings, and such non-erodible methods such as riprap, road shouldering, etc., or a combination thereof as required by the Contract. Other permanent stabilization techniques may be proposed by the Contractor, in writing, and shall be used when approved in writing by the Engineer. Permanent stabilization shall begin within 48 hours after topsoil placement, soil conditioning, or combination thereof starts and shall be pursued to completion.
- (5) Final Stabilization. Final stabilization is defined as when all ground disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent physical erosion reduction methods have been employed. Granting of Final Stabilization must be requested by the Contractor and be approved by the Permit Enforcement Authority. Other permanent soil stabilization techniques may be proposed, in writing, by the Contractor and used upon approval, in writing, by the Project Manager and Permit Enforcement Authority.

The contractor may reach Final Stabilization via the following procedures:

- a) The contractor shall file Inactivation Request for Construction Activities Stormwater Discharge Permit (available within CASDP guidance documents) with the Permit Enforcement Authority.
 - b) The contractor shall coordinate with the Permit Enforcement Authority to hold a Final Inactivation Inspection.
 - c) If passing, the Permit Enforcement Authority transmits a letter of approval for Final Stabilization.
 - d) If not passing, the Permit Enforcement Authority transmits a letter of denial for Final Stabilization with associated inspection report to Contractor.
 - e) 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."
- (f) Maintenance. Erosion and sediment control practices and other protective measures identified in the SWMP as BMPs for stormwater pollution prevention shall be maintained in effective operating condition until the CDPS-SCP has been transferred to CDOT. BMPs shall be continuously maintained in accordance with good engineering, hydrologic and pollution control practices, including removal of collected sediment when silt depth is 50 percent or more of the height of the erosion control device. When possible, the Contractor shall use equipment with an operator rather than labor alone to remove the sediment.

Maintenance of erosion and sediment control devices shall include replacement of such devices upon the end of their useful service life as recommended by the Contractor and approved by the Engineer. Maintenance of rock check dams and vehicle tracking pads shall be limited to removal and disposal of sediment or addition of aggregate. Damages resulting from failure to maintain BMPs shall be paid at the contractor's expense.

Complete site assessment shall be performed as part of comprehensive inspection and maintenance procedures, to assess the adequacy of BMPs at the site and the necessity of changes to those BMPs to ensure continued effective performance. Where site assessment results in the determination that new or replacement BMPs are necessary, the BMPs shall be installed to ensure continuous effectiveness. When identified, BMPs shall be maintained, added, modified or replaced as soon as possible, immediately in most cases.

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Approved new or replaced BMPs will be measured and paid for in accordance with subsections 208.11 and 208.12. Devices damaged due to the Contractor's negligence shall be replaced at Contractor's expense.

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:

- (1) 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.
- (2) All inspection sediment removal, and BMP maintenance activities to comply with all Federal, State & Local erosion control permit requirements until Final Stabilization is reached.
- (3) 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.
- (4) All required mechanical and/or manual street sweeping.
- (5) 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 the compensation due, or which may become due to the Contractor under this Contract.

From the time seeding and mulching work begins until the date the Contract work is accepted, the Contractor shall maintain all seeded areas. Damage to seeded areas or to mulch materials shall be immediately restored. Damage to seeded areas or to mulch materials due to Contractor negligence shall be immediately restored at the Contractor's expense. Restoration of other damaged areas will be measured and paid for under the appropriate bid item.

Temporary BMPs may be removed upon completion of the project, as determined by the Water Quality Partial Acceptance walk-through. If removed, the area in which these BMPs were constructed shall be returned to a condition similar to that which existed prior to its disturbance. Removed BMPs shall become the property of the Contractor.

If a project delay occurs, the Contractor shall be responsible to continue erosion and sediment control operations beyond the original contract time.

Sediment removed during maintenance of BMPs and material from street sweeping may be used in or on embankment, provided it meets conditions of Section 203 and is distributed evenly across the embankment.

Whenever sediment collects on the paved surface, the surface shall be cleaned. Street washing will not be allowed. Storm drain inlet protection shall be in place prior to shoveling, sweeping, or vacuuming. Sweeping shall be completed with a pickup broom or equipment capable of collecting sediment. Sweeping with a kick broom will not be allowed.

Material from pavement saw cutting operations shall be cleaned from the roadway surface during operations using a vacuum. A BMP, such as a berm, shall be placed to contain slurry from joint flushing operations until the residue can be removed from the soil surface. Aggregate bags, erosion logs or other permeable BMPs shall not be used. Residue shall not flow into driving lanes. It shall be removed and disposed of in accordance with subsection 107.25(b) 13. Material containment and removal will not be paid for separately, but shall be included in the work.

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08.05 Construction MPs. 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. BMPs shall be constructed in accordance with Standard Plans M-208-1, M-216-1 and with the following.

- (a) *Seeding, Mulching, Sodding, Soil Retention Blanket.* Seeding, mulching, sodding, and soil retention blanket shall be performed in accordance with Sections 212, 213, and 216.
- (b) *Erosion Bales.* The bales shall be anchored securely to the ground with wood stakes.
- (c) *Silt Fence.* Silt fence shall be installed in locations specified in the Contract prior to any grubbing or grading activity.
- (d) *Temporary Berms.* Berms shall be constructed to the dimensions shown in the Contract, and sufficiently compacted to prevent erosion or failure. If the berm erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense.
- (e) *Temporary Diversion.* Diversions shall be constructed to the dimensions shown in the Contract, and graded to drain to a designated outlet. The berm shall be sufficiently compacted to prevent erosion or failure. If the diversion erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense.
- (f) *Temporary Slope Drains.* Temporary slope drains shall be installed prior to installation of permanent facilities or growth of adequate ground cover on the slopes. All temporary slope drains shall be securely anchored to the slope. The inlets and outlets of temporary slope drains shall be protected to prevent erosion.
- (g) *Silt Berm.* Prior to installation of silt berms, the Contractor shall prepare the surface of the areas in which the berms are to be installed such that they are free of materials greater than 2 inches in diameter and are suitably smooth for the installation of the silt berms, as approved. Silt berms shall be secured with spikes. The Contractor shall install the silt berm in a manner that will prevent water from going around or under the silt berm. Silt berms shall be installed on top of soil retention blanket.
- (h) *Rock Check Dam.* Rock shall be installed at locations shown on the plans. Rock check dams shall conform to the dimensions shown on the plans.
- (i) *Riprap Outlet Protection.* Geotextile used shall be protected from cutting or tearing. Overlaps between two pieces of geotextile shall be 1 foot minimum. Riprap size shall be as shown on the plans.
- (j) *Storm Drain Inlet Protection.* Prior to installation, the Contractor shall sweep the surface of the area in which the storm drain inlet protection devices are to be installed such that the pavement is free of sediment and debris. The ends of the inlet protection Type 1 and Type 2 shall extend a minimum of 1 foot past each end of the inlet.

The Contractor shall remove all accumulated sediment and debris from the surface surrounding all storm drain inlet protection devices after each rain event or as directed. The Contractor shall remove accumulated sediment from Type II and III containment area when it is more than a maximum one third full of sediment, or as directed.

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The Contractor shall protect storm drain facilities adjacent to locations where pavement cutting operations involving wheel cutting, saw cutting, sand blasting, or abrasive water jet blasting are to take place.

- (k) *Sediment Trap*. Sediment traps shall be installed to collect sediment laden water and to minimize the potential of pollutants leaving the project site. Locations shall be as shown on the plans or as directed.

Sediment traps shall be constructed prior to disturbance of upslope areas and shall be placed in locations where runoff from disturbed area can be diverted into the trap.

The area under the embankment shall be cleared, grubbed and stripped of any vegetation and roots.

Fill material for the embankment shall be free of roots or other vegetation, organic material, large stones, and other objectionable material.

Sediment shall be removed from the trap when it has accumulated to one half of the wet storage depth of the trap and shall be disposed of in accordance with subsection 208.04(f).

- (l) *Erosion Logs*. Erosion logs shall be embedded 2 inches into the soil. Stakes shall be embedded to a minimum depth of 12 inches. At the discretion of the Engineer, a shallower depth may be permitted if rock is encountered.

The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs.

- (m) *Silt Dikes*. Prior to installation of silt dikes, the Contractor shall prepare the surface of the areas in which the silt dikes are to be installed such that they are free of materials greater than two inches in diameter and are suitably smooth for the installation of the silt dikes, as approved by the Engineer.

- (n) *Concrete Washout Structure*. The concrete washout structure shall meet or exceed the dimensions shown on the plans or be used in accordance with manufacturer's recommendations. Work on this structure shall not begin until written acceptance is provided by the Engineer.

Concrete washout structure shall conform to standard plan M-208-1 and shall meet the following requirements:

- (1) Structure shall contain all washout water.
- (2) Stormwater shall not carry wastes from washout and disposal locations.
- (3) The site shall be located a minimum of 50 horizontal feet from State waters and shall meet all requirements for containment and disposal as defined in subsection 107.25.
- (4) The site shall be signed as "Concrete Washout".
- (5) The site shall be accessible to appropriate vehicles.
- (6) Freeboard capacity shall be included into structure design to reasonably ensure the structure will not overtop during or because of a precipitation events.
- (7) The Contractor shall prevent tracking of washout material out of the washout structure.

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- (8) Solvents, flocculents, and acid shall not be added to wash water.
- (9) The structure shall be surrounded on three sides by a compacted berm.
- (10) The structure shall be fenced with orange plastic construction fencing to provide a barrier to construction equipment and to aid in identification of the concrete washout area.
- (11) Concrete waste, liquid and solid, shall not exceed 2/3 the storage capacity of the washout structure.

Pre-fabricated concrete washout structures shall meet the following requirements:

- (1) Structure shall contain all washout water.
 - (2) Structure shall be located 50 horizontal feet away from State waters, and shall be confined so that no potential pollutants will enter State waters and other sensitive areas as defined in the Contract. Locations shall be as approved by the Engineer. The site shall be delineated with orange plastic fence or other means and signed as "Concrete Washout".
 - (3) The site shall be accessible to appropriate vehicles.
 - (4) Freeboard capacity shall be included into structure design to reasonably ensure the structure will not overtop during or because of a precipitation event.
 - (5) Solvents, flocculants, and acid shall not be added to wash water.
 - (6) Concrete waste, liquid and solid, shall not exceed 2/3 the storage capacity of the washout structure.
 - (7) Prefabricated structures cannot be moved when they contain liquid, unless otherwise approved.
 - (8) The concrete washout structure shall be completed and ready for use prior to concrete placement operations.
 - (9) Washout areas shall be checked and maintained as required. On site permanent disposal of concrete washout waste is not allowed.
- All liquid and solid wastes, including contaminated sediment and soils generated from concrete washout shall be hauled away from the site and disposed of properly at the Contractor's expense.
- (o) *Vehicle Tracking Pad (VTP)*. Vehicle tracking pads shall be constructed to the minimum dimensions shown in the Contract, unless otherwise directed by the Engineer. Construction of approved vehicle tracking pads shall be completed before any disturbance of the area.

The Contractor shall maintain each vehicle tracking pad during the entire time that it is in use for the project. The vehicle tracking pad shall be removed at the completion of the project unless otherwise directed by the Engineer. Additional aggregate may be required for maintenance and will be paid for under Pay Item, Maintenance Aggregate (Vehicle Tracking Pad).

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- (p) *Detention Pond.* Permanent detention ponds shown on the construction plans may be used as temporary BMPs if all the following conditions are met:
- (1) The pond is designated as a construction BMP in the SWMP.
 - (2) The pond outfall and outlet are designed and implemented for use as a BMP during construction in accordance with good engineering, hydrologic, and pollution control practices. The stormwater discharges from the outfall shall not cause degradation or pollution of State waters, and shall have BMPs, as appropriate.
 - (3) All silt shall be removed and the pond returned to the design grade and contour prior to project acceptance
- (q) *Aggregate Bag.* Aggregate bags shall be placed on a stable surface, consisting of pavement, grass or gravel. Aggregate bags shall be placed to conform to the surface without gaps. Discharge water shall not cause erosion.
- (r) *Surface Roughening.* Surface roughening creates horizontal grooves along the contour of the slope. Roughening may be accomplished by furrowing, scarifying, ripping or disking the soil surface to create a 2 to 4 inch minimum variation in soil surface. Surface roughening will not be paid for separately, but shall be included in the work.
- (s) *Vertical Tracking.* Vertical tracking involves driving a tracked vehicle up and down the soil surface and creating horizontal grooves and ridges along the contour of the slope. Sandy soils or soils that are primarily rock need not be tracked. Vertical tracking will not be paid for separately, but shall be included in the work.

08.06 Materials Handling and Spill Prevention. The SWMP Administrator shall clearly describe and record on the SWMP, all practices implemented at the site to minimize impacts from procedures or significant material that could contribute pollutants to runoff. Areas or procedures where potential spills can occur shall have a Spill Response Plan in place as specified in subsections 107.25(b) 6 or 208.06(c). Construction equipment, fuels, lubricants, and other petroleum distillates shall not be stored or stockpiled within 50 horizontal feet of any State waters or more if the Contractor determines necessary. Equipment fueling and servicing shall occur only within approved designated areas.

- (a) *Bulk Storage Structures.* Bulk storage structures for petroleum products and other chemicals shall have impervious secondary containment or equivalent adequate protection so as to contain all spills and prevent any spilled material from entering State waters. Secondary containment shall be capable of containing the combined volume of all the storage containers plus at least 10 percent freeboard. For secondary containment that is used and may result in accumulation of stormwater within the containment, a plan shall be implemented to properly manage and dispose of all accumulated stormwater which is deemed to be contaminated (e.g., has an unusual odor or sheen).
- (b) *Lubricant Leaks.* The Contractor shall inspect equipment, vehicles, and repair areas daily to ensure petroleum, oils, and lubricants (POL) are not leaking onto the soil or pavement. Absorbent material or containers approved by the Engineer shall be used to prevent leaking POL from reaching the soil or pavement. The Contractor shall have onsite approved absorbent material or containers of sufficient capacity to contain any POL leak that can reasonably be foreseen. The Contractor shall inform all Spill Response Coordinators in accordance with the Spill Response Plan if unforeseen leakage is encountered. All materials resulting from POL leakage control and cleanup shall become the property of the Contractor and shall be removed from the site. Control, cleanup, and removal of by-products resulting from POL leaks shall be performed at the Contractor's expense.
- (c) *Spill Response Plan.* A spill Response Plan shall be developed and implemented to establish operating procedures for handling potential pollutants and preventing spills.

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The Response Plan shall contain the following information:

- (1) Identification and contact information of each Spill Response Coordinator
- (2) Locations of areas on project site where equipment fueling and servicing operations are permitted.
- (3) Location of cleanup kits.
- (4) Quantities of chemicals and locations stored on site.
- (5) Label system for chemicals and Safety Data Sheets (SDS) for products.
- (6) Clean up procedures to be implemented in the event of a spill that does not enter State waters or ground water.
- (7) Procedures for spills of any size that enter surface waters or ground water, or have the potential to do so. CDOT's Erosion Control and Stormwater Quality Guide contains Spill notification contacts and phone numbers required in the Spill Response Plan.
- (8) A summary of the employee training provided.

Information in items (1) through (8) shall be updated in the SWMP Notebook when they change.

08.0 Stockpile Management. Material stockpiles shall be located 50 horizontal feet away from State waters, and shall be confined so that no potential pollutants will enter State waters and other sensitive areas as defined in the Contract. Locations shall be approved by the Engineer.

Erodible stockpiles (including topsoil) shall be contained with acceptable BMPs at the toe (or within 20 feet of the toe) throughout construction. BMPs shall be approved by the Engineer. The SWMP Administrator shall describe, detail, and record the sediment control devices on the SWMP.

08.08 Limits of Disturbance. The Contractor shall limit construction activities to those areas within the limits of disturbance shown on the plans and cross-sections. Construction activities, in addition to the Contract work, shall include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access, and all other action which would disturb existing soil conditions. Staging areas within the LDA shall be as approved by the Engineer. Construction activities beyond the limits of disturbance due to Contractor negligence shall be restored to the original condition by the Contractor at the Contractor's expense. The SWMP Administrator shall tabulate additional disturbances not identified in the CDPS_SCP application and indicate changes to locations and quantities on the SWMP. The Contractor shall report the changes and additional disturbances to the Engineer, Water Quality Control Division of CDPHE and all other involved agencies.

The Contractor shall pursue and stabilize all disturbances to completion.

08.09 Failure to Perform Erosion Control. Failure to implement the Stormwater Management Plan is a violation of the CDPS – SCP and CDOT specifications. CDOT is obligated to implement enforcement mechanisms in accordance with CDOT's MS4 Permit COS000005 for Stormwater Management and erosion control Best Management Practices. Penalties may be assessed to the Contractor by the appropriate agencies. Penalties will be assessed by the Department as liquidated damages for failure to meet the Permit. All fines assessed to the Department for the Contractor's failure to implement the SWMP will be deducted from moneys due the Contractor in accordance with subsection 107.25(c) 2.

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The Contractor will be subject to liquidated damages for incidents of failure to perform erosion control as required by the Contract. Liquidated damages will be applied for failure to comply with the CDPS-SCP and these specifications, including the following:

- (1) Failure to include erosion control in the project schedule or failure to include erosion control in each schedule update as specified in subsection 208.03(b).
- (2) Failure of the Contractor to perform the inspections required by subsection 208.03(c) 2.
- (3) Failure of the Contractor to implement necessary actions required by the Engineer as required by subsection 208.03(c).
- (4) Failure to amend the SWMP and implement BMPs as required by subsection 208.04.
- (5) Failure to keep documentation and records current.
- (6) Failure to construct or implement erosion control or spill containment measures required by the Contract, or failure to construct or implement them in accordance with the Contractor's approved schedule as required by subsection 208.06(c).
- (7) Failure to limit temporary stabilization to 20 or fewer acres as required by subsection 208.04 (e).
- (8) Failure to replace or perform maintenance on an erosion control feature after notice from the Engineer or from a water quality inspection as required by subsection 208.04(f).
- (9) Failure to remove and dispose of sediment from BMPs as required.
- (10) Failure to install and properly utilize a concrete washout structure for containing washout from concrete placement operations.
- (11) Failure to perform stabilization as required by subsection 208.04 (e).
- (12) Failure of the Superintendent or designated representative to attend inspections as required by subsection 208.03(c) and record findings in the appropriate form.
- (13) Failure to prevent discharges not composed entirely of stormwater from leaving the Construction Site.
- (14) Failure to provide the survey of Permanent Water Quality BMPs when required on the project in accordance with 208.10.

The Engineer will immediately notify the Contractor of each incident of failure to perform erosion control in accordance with the CDPS-SCP and these specifications, including items (1) through (14) above by issuing the Form 105. Correction shall be made as soon as possible but no later than 48 hours from the date of notification to correct the failure. The Contractor will be charged liquidated damages in the amount of \$970 for each day after the 48 hour period has expired, that one or more of the incidents of failure to perform the requirements for each Form 105 remains uncorrected. Liquidated damages will begin at Midnight of the date the 48 hours has expired.

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This deduction will not be considered a penalty, but will be considered liquidated damages based on estimated additional construction engineering costs. The liquidated damages will accumulate, for each cumulative day that one or more of the incidents remain uncorrected. The number of days for which liquidated damages are assessed will be cumulative for the duration of the project; that is: the damages for a particular day will be added to the total number of days for which liquidated damages are accumulated on the project. The liquidated damages will be deducted from any monies due the Contractor.

If all other failures are not corrected within 48 hours after liquidated damages have begun to be assessed, the Engineer will issue a Stop Work Order in accordance with subsection 105.01. Work shall not resume until the Engineer has approved a written corrective action plan submitted by the Contractor that includes measures to prevent future violations and a schedule for implementation.

If the Contractor requires more than 96 hours to perform the corrective work from the date on the Form 105, the Contractor shall submit a request for deferment. The deferment request shall be in writing and shall include the specific failure, temporary measures until final correction is made, the methodology which will be employed to make the correction and interim milestones to completing the work. The Region Water Pollution Control Manager (RWPCM), Engineer, the SWMP Administrator and the Contractor shall concur on this deferral and set a proposed date of completion. If approved, the Contractor shall complete the corrective measures by Midnight of the proposed completion date. If corrective work is not corrected by the completion date the Engineer will issue a Stop Work Order. Liquidated Damages will apply retroactively back to the 48 hours after the 105 date of notification. Liquidated Damages will be assessed until the corrective work has been completed and accepted.

Deferment of work to correct failures to perform erosion control will not affect the Contractor's other contractual responsibilities, notifications for other non-compliance, nor the final completion date of the project. Liquidated Damages for other non-compliance notifications will continue to apply during the deferment period in addition to liquidated damages associated with the deferment.

Based on the submittal date of the approved deferment Liquidated Damages and a Stop Work Order may not be mandated to the Contractor.

Disagreements regarding the suggested corrective action for a BMP compliance issue between the Project Engineer, SWMP Administrator, and Superintendent, shall be discussed with the Resident Engineer and Region Water Pollution Control Manager. If after the discussions, the Project Engineer and the Contractor are still in disagreement and feel that additional compensation is owed, the Contractor will follow the decision of the Project Engineer, keep track of the costs and negotiate further with the Project Engineer. If after pursuing the issue, the Contractor is unable to reach agreement with the Project Engineer, then the Contractor can follow the dispute process outlined in subsection 105.22.

If the Contractor's corrective action plan and schedule are not submitted and approved within 96 hours of the initial notice, the Engineer will issue a Stop Work Order and have an on-site meeting with the Superintendent, SWMP Administrator, and the Superintendent's supervisor. This meeting will also be attended by the Resident Engineer, the Region Water Pollution Control Manager, and the Region Program Engineer. This meeting will identify and document needed corrective actions and a schedule for completion. If after the meeting, the unacceptable work is not remedied within the schedule as agreed to in the meeting, the Engineer will take action to effect compliance with the CDPS-SCP and these specifications by utilizing CDOT Maintenance personnel or other non-Contractor forces and deduct the cost from any moneys due or to become due to the Contractor pursuant to CCD General Condition Title 17. Delays due to these Stop Work Orders shall be considered non-excusable. The Stop Work Order shall be in place until the project is in CDPS-SCP compliance.

If the Contractor remains non-responsive to requirements of the on-site meeting, the Engineer will start default or Contract termination procedures in accordance with subsections 108.09 and the applicable CCD General Contract Conditions. CDOT will proceed with corrective or disciplinary action in accordance with the Rules for Prequalification, Debarment, Bidding and Work on Transportation, Road, Highway and Bridge Public Projects.

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When a failure meets any one of the following conditions, the Engineer will immediately issue a Stop Work Order in accordance with CCD General Condition Title 21 irrespective of any other available remedy:

- (1) It may endanger health or the environment.
- (2) It consists of a spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.
- (3) It consists of a discharge which may cause a violation of a water quality standards.

08.10 Items to be Completed Prior to Requesting Partial Acceptance of Water Quality Work.

- (a) *Reclamation of Washout Areas.* After concrete operations are complete, washout areas shall be reclaimed in accordance with subsection 208.05(n) at the Contractor's expense.
- (b) *Survey.* When Permanent Water Quality BMPs (Permanent BMP) are required on the project, the Contractor shall survey the BMPs to confirm that they conform to the configuration and grade shown on the Plans. The survey shall conform to Section 625. The results of the survey shall be submitted as Microstation or AutoCad drawing files and PDF files, showing both designed and final elevations and configurations. Paper versions of the drawings shall be submitted with the stamp and seal of the Contractor's Surveyor.

The Engineer and the CDOT Hydraulics Engineer for the region will perform a walkthrough of the Permanent BMPs to confirm conformance to material requirements, locations and dimensions of the Permanent BMPs. Permanent BMPs not meeting the Contract requirements will be identified in writing by the Engineer, and shall be repaired or replaced at the Contractor's expense. Correction surveys shall be performed at the Contractor's expense to confirm the locations and dimensions of each Permanent BMP. Final as-built plans of the Permanent BMPs shall be provided to the Engineer and the CDOT Region and Headquarter Permanent Water Quality Control Specialist for their records.

- (c) *Locations of Temporary BMPs.* The Engineer will identify locations where modification, cleaning or removal of temporary BMPs are required, and will provide these in writing to the Contractor. Upon completion of work required, the SWMP Administrator shall modify the SWMP to provide an accurate depiction of BMPs to remain on the project site.

08.11 Erosion Control Management ECM will be measured as the actual number of days of ECM work performed onsite, regardless of the number of ECIs required, including erosion control inspections, documentation, meeting participation, SWMP Administration, and the preparation of the SWMP notebook.

Erosion bales will be measured by the actual number installed and accepted.

Silt fence, silt berms, erosion logs, aggregate bags, silt dikes, temporary berms, rock check dams, temporary diversions, and temporary slope drains, will be measured by the actual number of linear feet that are installed and accepted. Measured length will not include required overlap.

Concrete washout structure will be measured by the actual number of structures that are installed and accepted.

Storm drain inlet protection will be measured by linear foot or actual number of devices that are installed and accepted.

Sediment trap quantities will be measured by the actual number installed and accepted.

Removal of trash that is not generated by construction activities will be measured by the actual number of hours that Contractor workers actively remove trash from the project. Each week the Contractor shall submit to the Engineer a list of workers and the hours spent collecting such trash.

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Removal of accumulated sediment from traps, basins, areas adjacent to silt fences and erosion bales, and other clean out excavation of accumulated sediment, and the disposal of such sediment, will be measured by the number of hours that equipment, labor, or both are used for sediment removal.

Vehicle tracking pads will be measured by the actual number constructed and accepted.

Additional aggregate required for maintaining vehicle tracking pads will be measured as the actual number of cubic yards installed and accepted.

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08.1 ECM and BMPs will be paid for at the Contract unit price for each of the items listed below that appear in the bid schedule.

Payment will be made under:

Pay Item	Unit
Aggregate Bag	Linear Foot
Concrete Washout Structure	Each
Erosion Bales (Weed Free)	Each
Erosion Control Management	Day
Erosion Log (Type 1) (____ Inch)	Linear Foot
Erosion Log (Type 2) (____Inch)	Linear Foot
Pre-Fabricated Concrete Washout Structure	Each
Pre-Fabricated Vehicle Tracking Pad	Each
Maintenance Aggregate (Vehicle Tracking Pad)	Cubic Yard
Removal and Disposal of Sediment (Equipment)	Hour
Removal and Disposal of Sediment (Labor)	Hour
Removal of Trash	Hour
Rock Check Dam	Each
Sediment Basin	Each
Sediment Trap	Each
Silt Berm	Linear Foot
Silt Dike	Linear Foot
Silt Fence	Linear Foot
Silt Fence (Reinforced)	Linear Foot
Storm Drain Inlet Protection (Type__)	Linear Foot
Storm Drain Inlet Protection (Type__)	Each
Sweeping (Sediment Removal)	Hour
Temporary Berm	Linear Foot
Temporary Slope Drains	Linear Foot
Vehicle Tracking Pad	Each
Erosion Control	F/A

Payment for Erosion Control Management (ECM) will be full compensation for all labor, materials and equipment necessary for the SWMP Administrator and Erosion Control Inspectors to perform all the work described in this specification. This includes assembling items 5-19 and required updates to the SWMP Notebook on site.

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The SWMP Administrator and ECI's commute times will not be measured and paid for separately, but shall be included in the work.

Modifications to the SWMP Notebook due to construction errors or survey errors by the contractor shall be at the Contractor's expense.

Temporary erosion control will be measured and paid for by the BMPs used. Surface roughening and vertical tracking will not be measured and paid for separately but shall be included in the work. Payment for each BMP item will be full compensation for all work and materials required to furnish, install, maintain and remove the BMP when directed.

Payment for Removal and Disposal of Sediment (Equipment) will be full compensation for use of the equipment, including the operator. Payment for Removal and Disposal of Sediment (Labor) will be full compensation for use of the labor.

Payment for concrete washout structure, whether constructed or prefabricated, will be full compensation for all work and materials required to install, maintain, and remove the item. Maintenance and relocation, as required, of these structures throughout the duration of the project will not be measured and paid for separately, but shall be included in the work.

Silt berm spikes will not be measured and paid for separately, but shall be included in the work. When required, soil retention blankets will be measured and paid for in accordance with Section 216. Silt dike staples will not be measured and paid for separately, but shall be included in the work.

Spray-on mulch blankets required by the Contract, including those used in both interim and final stabilization, will be measured and paid for in accordance with Section 213.

Payment for storm drain inlet protection will be full compensation for all work, materials, and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of the work. Aggregate will not be measured and paid for separately, but shall be included in the work.

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

Stakes, anchors, connections, geotextile, riprap and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Payment for vehicle tracking pad will be full compensation for all work, materials and equipment required to construct, maintain, and remove the entrance upon completion of the work. Aggregate and geotextile will not be measured and paid for separately, but shall be included in the work. If additional aggregate for maintenance of vehicle tracking pads is required, it will be measured by the cubic yard in accordance with Section 304 and will be paid for under this Section.

Seeding, sod, mulching, soil retention blanket, and riprap will be measured and paid for in accordance with Sections 212, 213, 216, and 506.

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**REVISION OF SECTION 08
EROSION CONTROL**

Geotextile (Erosion Control) (Class 2) will be measured and paid for in accordance with Section 420.

All work and materials required to perform the permanent BMP survey and furnish the electronic files shall be included in the original unit price bid for surveying. Surveying will be measured and paid for in accordance with Section 625.

Payment will be made for BMPs replaced as approved by the Engineer. Temporary erosion and sediment BMPs required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or ordered by the Engineer or for the Contractor's convenience, shall be performed at the Contractor's expense. If the Contractor fails to complete construction within the contract time, payment will not be made for Section 208 pay items for the period of time after expiration of the contract time. These items shall be provided at the Contractor's expense.

**REVISION OF SECTION 08
TEMPORAR STREAM CROSSING**

Section 208 of the Standard Specifications is hereby modified for this project to include the following:

DESCRIPTION

08.01 This work shall consist of constructing a temporary stream crossing to facilitate construction activities.

CONSTRUCTION RE UIREMENTS

08.03 The City and County of Denver has obtained a 404 permit for work within the creek. The Contractor is responsible for obtaining all other necessary permits, as summarized in the Permits and Licenses section of these specifications.

The Contractor's method of constructing a temporary crossing of Bear Creek must be approved by the Engineer prior to implementation. The Contractor shall submit a temporary crossing plan for review and approval 14 calendar days prior to implementation in accordance with Subsection 105.02. The temporary crossing plan submittal shall include at a minimum the following:

- (a) Method statement addressing construction sequence and all requirements including copies of relevant permits required for the temporary stream crossing.
- (b) Crossing plans for the duration of the project including how the flow of Bear Creek will be maintained at all times.
- (c) Proposed list of materials and material specifications used in construction of the crossing.
- (d) Site restoration plans showing how the stream bed will be restored to its original configuration prior to construction of the crossing.

METHOD OF MEASUREMENT

08.11 Design, construction, maintenance and removal of the temporary stream crossing; and restoration of the stream bed to its original configuration will not be measured but will be paid for on a lump sum basis.

ASIS OF PA MENT

08.1 The design, completed and accepted work for the temporary stream crossing, maintenance of the stream crossing, and the stream bed restoration to its original configuration will be paid for at the contract lump sum price. This price includes all labor, equipment and materials to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Temporary Stream Crossing	Lump Sum

**REVISION OF SECTION 09
WATERING DUST PALLIATIVES**

Section 09 of the Standard Specifications is hereby revised for this project as follows:

In Subsection 09.0 , delete the first paragraph and replace with the following:

Water will not be measured, but shall be included in the work.

In Subsection 09.08, delete the third paragraph and replace with the following:

Water required for all items of work, including dust control, will not be paid for separately, but shall be included in the work.

**REVISION OF SECTION 11
DEWATERING AND STREAM DIVERSION**

Section 211 is hereby added to the Standard Specifications for this project as follows:

DESCRIPTION

11.01 This work shall consist of temporarily diverting Bear Creek to facilitate construction activities.

CONSTRUCTION REQUIREMENTS

11.0 The City and County of Denver has obtained a 404 permit for work within the creek. The Contractor is responsible for obtaining all other necessary permits, as summarized in the Permits and Licenses section of these specifications.

The Contractor shall temporarily divert Bear Creek during construction to prevent bridge removal debris from falling into river water.

Geotextile material shall be placed in the stream to provide a barrier between the stream bed and any material placed in the stream to construct working platforms.

The Contractor's method of diverting Bear Creek must be approved by the Engineer prior to implementation. The Contractor shall submit a diversion plan for review and approval 14 calendar days prior to implementation in accordance with Subsection 105.02. The diversion plan submittal shall include at a minimum the following:

- (e) Method statement addressing all requirements including copies of relevant permits required for stream diversion.
- (f) Diversion plans for each phase of diversion.
- (g) Proposed list of materials and material specifications used in construction of the diversion.
- (h) Site restoration plans showing how the stream bed will be restored to its original configuration prior to diversion.

METHOD OF MEASUREMENT

11.03 Design, construction, maintenance and removal of the stream diversion; and restoration of the stream bed to its original configuration will not be measured but will be paid for on a lump sum basis.

BASIS OF PAYMENT

11.0 The design, completed and accepted work for the stream diversion, maintenance of the stream diversion and the stream bed restoration to its original configuration will be paid for at the contract lump sum price. This price includes all labor, equipment and materials to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Dewatering	Lump Sum

**REVISION OF SECTION 1
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING**

Section 1 of the Standard Specifications is hereby revised as follows:

Subsection 1.01 shall include the following:

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

Subsection 1.08 is hereby revised to include the following:

Soil Preparation and seeding beyond the limits outlined on the plans and/or as marked in the field by the Project Manager will not be paid for.

Payment will be made under:

<u>PA ITEM</u>	<u>PA UNIT</u>
Soil Conditioning	Acre
Seeding (Native)	Acre

**REVISION OF SECTION 50
ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT**

Section 50 of the Standard Specifications is hereby revised for this project as follows:

Subsection 50.01 shall include the following:

The Contractor shall be responsible for compliance with the Asbestos and Lead Based Paint Assessment Report as attached in the appendix. The Contractor shall also be responsible for providing a Health and Safety Officer (HSO), Monitoring Technician (MT), and a Health and Safety Plan (HASP).

The Contractor shall be responsible for the worker health and safety and environment. The Contractor HSO and/or Monitoring Technician shall be on site as necessary during the excavations to ensure proper handling, testing and disposal of contaminated media, as detailed in the CDOT Standard Specification 250 and subsection 107.25.8 and all applicable local, state and federal regulations. Contaminated water brought to the surface shall be contained in tank(s) or drums and shall not be directly discharged into a storm sewer, ditch, or any Waters of the State. Contaminated soils shall be properly handled, tested, and disposed. Costs associated with analytical work, and material disposal shall be paid as Item 250 Environmental Health and Safety Management, as specified in Section 250.

Subsection 50.03 shall include the following:

The Contractor is advised that lead based paint testing has been completed on this bridge. Lead based paint is present and therefore, this structure will require specialized handling and specialized disposal. The Contractor is notified that the removal of this structure shall require a demolition permit from the Colorado Department of Public Health and Environment.

Section 50.0 shall include the following:

Lead Paint: Paint containing greater than 0.5 percent lead by weight is considered lead-based paint (LBP), and paint containing less than 0.5 percent by weight is considered lead-containing paint (LCP). The following presents the results of the lead sampling completed (Refer to Pinyon Environmental, Inc., Asbestos and Lead-Based Paint Assessment Report at the Evergreen Lake House Bridge, Evergreen, CO, March 29, 2016):

- -
**REVISION OF SECTION 50
 ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT**

Table 1- Lead Paint Chip Sample Summary Table

Sample #	Sample Description & Location	Analytical Result (%)
ELHB-PC01	Dark brown paint on metal substrate of bridge – sampled from the southeastern portion of the bridge	<u>Lead</u> 0.42
ELHB-PC02	Gray/silver paint on metal substrate of bridge – sampled from the southeastern portion of the bridge	<u>Lead</u> 0.020
ELHB-PC03	Light brown paint on metal substrate of bridge – sampled from the southeastern portion of the bridge	<u>Lead</u> 0.25
ELHB-PC04	Green and red paint on metal substrate of bridge – sampled from handrail on eastern portion of the bridge	<u>Lead</u> Below Reporting Limit
ELHB-PC05	Beige paint on metal substrate of bridge – sampled from the western portion of the bridge	<u>Lead</u> *12.4

Notes:

% Percent

***Greater than 0.5% classifies the paint as a lead-based paint.**

Metal components painted with LCP or LBP that will be removed as part of the work on this project shall be recycled in accordance with CDOT Specification 250.04 and OSHA Regulation 1926.62. The Contractor shall notify the recycling center of the presence of LCP or LBP on these metal structures. Further, the Contractor shall avoid sanding, cutting, burning, or otherwise causing the release of lead from paint on structures or bridge components. These should be removed carefully and properly recycled. Any other components that remain and are covered in LCP or LBP shall not be disturbed. OSHA Regulation 1926.62 should be consulted for worker protection prior to removal of painted components.

Subsection 50.0 g shall include the following:

The Contractor shall submit for review and record purposes 20 days prior to beginning bridge removal a bridge removal plan including a work methods statement detailing bridge removal methods and methods for capturing loose paint. This methods statement shall detail all steps from the start of removal through final disposition of the waste. Additionally, no portion of the bridge, including but not limited to the deck, girders, and diaphragms will be allowed to fall into the stream or contact native ground below or downstream of the existing bridge.

All cost associated with this work shall be included as lump sum under Spec. 202 Removal of Bridge.

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**REVISION OF SECTION 50
ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT**

Subsection 50.09 shall include the following:

METHOD OF MEASUREMENT

All work including material sampling and handling, Health and Safety Officer, Monitoring Technician, and Health and Safety Plan will be paid using Environmental Health and Safety Management (Lump Sum). Material disposal and analytical costs will be paid by the Environmental Health and Safety Management Force Account.

BASIS OF PAYMENT

Payment will be made under:

PA ITEM
Environmental Health and Safety Management

PA UNIT
Lump Sum

**REVISION OF SECTION 30
AGGREGATE ASE COURSE**

Section 304 of the Standard Specifications is hereby revised for this project as follows:

Subsection 304.02 shall include the following:

Materials for the base course shall be Aggregate Base Course (Class 6) as shown in subsection 703.03

The Aggregate Base Course (Class 6) must meet the gradation requirements and have a Resistance value (R-value) of at least 78 when tested by the Hveem Stabilometer method.

Reclaimed asphalt pavement (RAP), asphalt millings, or asphalt in any form whatsoever shall not be substituted for or used in Aggregate Base Course (Class 6).

**REVISION OF SECTION 01 AND 03
PLANT MIX PAVEMENTS**

Sections 401 and 403 of the Standard Specifications for Road and Bridge Construction are hereby deleted and replaced with the latest edition (including October 2008 version of Item 9) of the Metropolitan Government Pavement Engineers Council (MGPEC) Pavement Design Standards and Construction Specifications manual.

Subsection 9.16 of the MGPEC Specifications is revised as follows:

MEASUREMENT

Delete First Paragraph

Add the following:

The measurement for payment of Hot Mix Asphalt Pavement will be the actual number tons of hot mix asphalt, in place, complete as pavement, and accepted by the Project Manager. No measurement for payment will be made for hot mix asphalt placed in areas not specifically approved by the Project Manager, nor required due to careless or unauthorized operation by the Contractor.

Subsection 9.1 of the MGPEC Specifications is hereby deleted and replaced with the following:

Payment will be made under:

PA ITEM

PA UNIT

Hot Mix Asphalt Pavement (Grading SX) (75) (PG 58-28)

Ton

**REVISION OF SECTION 50
DRILLING HOLE TO FACILITATE PILE DRIVING**

Section 502 of the Standard Specifications is hereby revised for this project as follows:

Subsection 502.07 shall be replaced with:

Except for end bearing piles, drilling shall be stopped at least 5 feet above the pile tip elevation shown on the plans. The pile shall then be driven with an impact hammer to the specified penetration resistance. Where piles are to be end-bearing on rock or very dense cobbles and gravels (hardpan), drilling shall be carried to the depth shown in the plans. The piles shall then be driven with an impact hammer to ensure proper seating. Any void space remaining around the pile after completion of driving shall be filled with sand, pea gravel, concrete, or other materials as specified in the Contract. If the diameter of the drilled hole is exceeded due to sloughing, drifting, over-drilling, or other causes, additional material required to fill this added void area will be at the Contractor's expense.

The Engineer will determine if shooting holes with explosives or redesign is necessary when piles cannot be driven or holes drilled.

When test piles are shown on the plans they shall be used to determine if drilling or jetting holes to facilitate pile driving is required. If the test pile or piles do not reach the minimum tip elevation shown on the plans and do not develop the required nominal resistance as specified in subsection 502.09, holes shall be drilled or jetted to facilitate pile driving.

When the plans call for drilled holes filled with slurry or mud made from clay or bentonite, the diameter of the drilled holes shall be at least two inches greater than either the pile diameter or the diagonal corner to corner measurement of the pile cross section, unless otherwise designated on the plans. Oversized holes due to sloughing, drifting, over-drilling, or other causes shall be filled with the accepted slurry or mud at the contractor's expense.

The following mixture will yield approximately 1.2 cubic yards of an acceptable slurry or mud:

50 lbs. dry bentonite powder
Approximately 125 gallons of water (or sufficient amount to make a pourable mix)
1 cubic yard of sand; (approximately 2800 lbs.) reasonably free of material larger than 1/2 inch.

The sand need not be clean. Local soil reasonably free of material larger than 1/2 inch may be substituted for the sand. Cement, lime, flyash, or other pozzolanic or highly alkaline materials shall not be added.

This mixture may be mixed by auger in the drilled hole, by paddle type mortar mixers, by portable or semiportable concrete mixers, or by drum type concrete mixer trucks.

If the mixture is placed or mixed in the hole prior to pile driving, the top two to three feet of the hole may be filled with loose local soil to prevent splashing of the slurry or mud.

Subsection 502.16 shall include the following:

The unit price shall include payment for all work and materials related to furnishing and placing the slurry or mud.

**REVISION OF SECTION 506
RIPRAP**

Section 506.03 shall include the following:

Installation of riprap around existing wetland intake structure shall be hand placed. Wetland intake structure shall be protected at all times during construction as noted within construction documents. Damage to the structure shall be repaired at the contractor's expense.

**SECTION 5
DUPLX COATING S STEM**

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

DESCRIPTION

5 .01 This work consists of hot dip galvanizing and duplex coating Item 606 Bridge Rail Type 10 as described in the contract documents.

MATERIALS AND CONSTRUCTION RE QUIREMENTS

5 .0

- (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:

Steel Thickness Type	Bevel Size inches
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, and measurements shall be taken, 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.

All galvanized surfaces shall be free from drips, slag or surface irregularities..

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 5
DUPLE COATING S STEM

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.

Re-galvanizing shall conform to ASTM A-780, Annex A1. Metalizing shall conform to ASTM A-780, 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.

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.

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SECTION 5
DUPLE COATING S STEM

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 24 hours 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.

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.

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SECTION 5
DUPLE COATING S STEM

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 ΔE^*_{ab} units from the specified color determined in accordance with ASTM D 2244.

Volatile Organic Compound (VOC) levels shall not exceed 3.5 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 ¾ 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.

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.

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SECTION 5
DUPLE COATING S STEM

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:

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.

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SECTION 5
DUPLE COATING S STEM

- (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 the work.

**REVISION OF SECTION 601
PRECAST CONCRETE UNIT
PRECAST SU STRUCTURE ELEMENTS**

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

Subsection 601.01 shall include the following:

Precast concrete abutments may be substituted for cast-in-place concrete at the contractor's option and at no additional cost to the project. Reinforcement sizes, lengths, and spacing shall remain as shown in the plans with the exception of removing grouted splice couplers. If using cast-in-place construction, the construction joint between the wingwall and the abutment shown in the plans shall be eliminated. The waterstop shall also be eliminated. Any deviations from these requirements shall be submitted for review and approval. If deviations are approved, the modified details are subject to stamping by the Contractor's Professional Engineer registered in the State of Colorado at no cost to the project.

Subsection 601.02 shall include the following:

High Early Strength Concrete

1. High Early Strength Concrete shall be Class D Concrete produced in accordance with Section 601 that meets the following criteria:
 - a. Minimum 24 hour compressive strength 3,000 psi.
 - b. Maximum shrinkage 0.04 percent at 28 days. Refer to AASHTO T 160.

Subsection 601.18.1 is hereby added as follows:

PRECAST SU STRUCTURE ELEMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. This work consists of fabricating, storing and delivery to the project site all precast concrete elements for bridge substructures including concrete, reinforcing steel, grouted splice couplers, leveling devices, structural non-shrink grout, corrugated steel pipe, lifting devices, joint seals, and all other necessary materials and equipment to complete the work as shown on the plans. Precast Substructure Elements include abutments and wing walls.
- B. Procedures for installing elements, placing structural non-shrink grout, and placing high early strength concrete at closure pours.

1.2 NOT USED

1.3 REFERENCES

- A. AASHTO M 31: Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- B. AASHTO M 36: Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains
- C. AASHTO M 111: Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- D. AASHTO T 106: Compressive Strength of Hydraulic Cement Mortars (Using 2-in. Cube Specimens)
- E. AASHTO T 160: Length Change of Hardened Hydraulic Cement Mortar and Concrete
- F. AASHTO T 161: Resistance of Concrete to Rapid Freezing and Thawing
- G. AASHTO LRFD Bridge Construction Specifications

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PRECAST SU STRUCTURE ELEMENTS**

- H. ASTM A 706: Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
- I. ASTM C 882: Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.
- J. ASTM C 928: Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs
- K. ASTM D 2240: Rubber Property – Durometer Hardness
- L. PCI Design Handbook

1.4 DEFINITIONS

- A. Grouted Splice Coupler – Mechanical devices used to splice reinforcing steel within precast concrete elements.
 - 1. These couplers are proprietary devices that are comprised of a combination of a steel sleeve and a high strength cementitious grout.
 - 2. Some couplers combine a threaded connection for the bar that is cast into the element combined with a grouted portion that is used to make the connection in the field.
 - 3. The grout used for the coupler is part of the proprietary system and is supplied by the coupler manufacturer.
- B. Working Drawings – Drawings produced by the Contractor that supplement the contract drawings to provide information not included in the contract documents but that is required to fabricate, erect, transport or temporarily support the structure or structural elements in the completion of the work.
 - 1. Working drawings do not supersede the contract drawings.
- C. Approval of Working Drawings – Acceptance by the Department for use on the project. The Department will review working drawings for general conformance with the design concept and compliance with the contract documents. Review and approval do not relieve the Contractor from responsibility for errors, correctness of details, conformance to the contract, and the successful completion of the work.
- D. Temporary Works – Facilities that are generally designed by the Contractor and employed by the Contractor in the execution of the work, and whose failure to perform properly could adversely affect the character of the contract work or endanger the safety of adjacent facilities, property, workers, or the public. Such facilities include but are not limited to falsework, forms and form travelers, cofferdams, shoring, water control systems, and temporary bridges.

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**REVISION OF SECTION 601
PRECAST CONCRETE UNIT
PRECAST SU STRUCTURE ELEMENTS**

1.5 SUBMITTALS

- A. Working Drawings
1. Detailed shop drawings of all fabricated materials for approval.
 - a. Include the following:
 - 1) Locations and details of all lifting inserts, hardware, or devices.
 - 2) Type and amount of any additional reinforcing required for lifting.
 - 3) Minimum compressive strength attained before handling the precast elements.
 - 4) Details of vertical adjusting hardware.
 - b. Provide the seal of a Professional Engineer (PE) licensed in the State of Colorado.
 - c. Include supporting engineering calculations.
 - d. Do not begin work until receiving approval of the shop drawings. The Department will reject units fabricated before shop drawing approval.
 - e. The precast concrete abutments may include one optional construction joint located near mid-length of the abutment in order to lessen shipping weight and crane loads provided the following elements are provided:
 - 1) Construction joint detail
 - 2) Additional lift points
 - 3) Additional grout ports
 - 4) Additional support points
 - 5) Grouted coupler details

Shop drawing details and calculations for the construction joint are required as previously described.
 2. Erection Drawings for all precast concrete members are to be detailed as indicated below.
 - a. Include the following:
 - 1) A work area plan depicting items such as utilities overhead and below the work area, drainage inlet structures, and protective measures.
 - 2) Equipment to be used to lift substructure elements including cranes, excavators, lifting slings, sling hooks, and jacks. Include crane locations and operation radii.
 - 3) All equipment that will be used for the assembly of the substructure.
 - 4) Methods of providing temporary support of the elements. Include methods of adjusting and securing the element after placement.
 - 5) Procedures for controlling both horizontal and vertical tolerance limits. Include details of any alignment jigs including bi-level templates for reinforcing anchor dowels.

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**REVISION OF SECTION 601
PRECAST CONCRETE UNIT
PRECAST STRUCTURE ELEMENTS**

- 6) Methods for placement of flowable bedding concrete for under precast elements. Add grout ports in to facilitate the bedding process if required.
 - 7) Method, sequence, and equipment for forming grout voids and installing the structural non-shrink grout.
 - 8) Methods of forming closure pours including the use of backer rods. Do not assume that the backer rods will restrain the pressure from the grout in vertical grout joints. Provide additional forming to retain the backer rod.
 - 9) Methods for curing grout and closure pour concrete.
 - b. Include supporting engineering calculations.
 - c. Provide the seal of a Professional Engineer (PE) licensed in the State of Colorado.
 - d. Obtain the Department's approval.
 - e. Submit 10 days before beginning erection when approval is not required.
 - f. Do not begin erection before receiving approval of the erection drawings when approval is required.
3. Drawings for Temporary Works for approval when specified in the contract or requested by the Engineer.
- a. Include detailed plans for items such as falsework, concrete forms, and shoring.
 - b. Include design calculations and supporting data.
 - c. Design temporary works according to the current edition of the AASHTO LRFD Bridge Construction Specifications, Section 3 (Temporary Works).
 - d. Provide the seal of a Professional Engineer (PE) licensed in the State of Colorado.
 - e. Submit falsework drawings when the height of falsework exceeds 14.0 ft or whenever traffic, other than workers involved in constructing the bridge, will travel under the bridge.
 - f. Do not begin work until receiving approval of the drawings and calculations.
4. Prepare drawings according to the following:
- a. Submit drawings electronically in PDF format. Use 11 x 17 inch sheets with a 1½ inch blank margin on the left edge. Place the following information in the title block in the lower right corner of each sheet:
 - 1) Federal Project Number and CDOT sub account number:
C010-114 (20414)
 - 2) CCD Project Name: Evergreen Lake House Bridge Replacement
 - 3) CCD Structure Number: D-27-MP-070A
 - 4) Contractor, Fabricator, or Erector Name
 - 5) Contractor, Fabricator, or Erector Drawing Number
 - 6) Contractor, Fabricator, or Erector Sheet Number
 - b. Revise and resubmit drawings when directed by the Department.

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PRECAST SU STRUCTURE ELEMENTS**

- c. Provide the seal of a Professional Engineer (PE) licensed in the State of Colorado when required in the contract. Place the seal in the lower right corner of each sheet when required.
 - 5. Prepare engineering calculations according to the following:
 - a. Submit calculations electronically in PDF format. Use 8½ x 11 inch sheets with a 1 inch blank margin on the left edge or 11 x 17 inch sheets with a 1½ inch blank margin on the left edge. Title block location is at the top of 8½ x 11 inch sheets or the lower right corner of 11 x 17 inch sheets. Place the following information in the title block:
 - 1) Federal Project Number and CDOT sub account number:
C010-114 (20414)
 - 2) CCD Project Name: Evergreen Lake House Bridge Replacement
 - 3) CCD Structure Number: D-27-MP-070A
 - 4) Contractor, Fabricator, or Erector Name
 - 5) Contractor, Fabricator, or Erector Drawing Number
 - 6) Contractor, Fabricator, or Erector Sheet Number
 - b. Provide the seal of a PE licensed in the State of Colorado on all engineering calculations. Place the seal on the calculation cover sheet.
 - 6. Allow the Engineer 14 calendar days to review and approve drawings and supporting calculations.
 - a. The Engineer may grant an increase in the number of working days for the project when that time is exceeded.
 - b. This review period applies each time the drawings and calculations are submitted.
 - 7. Revise the drawings and calculations and re-submit for review and approval before beginning any work if site conditions change from the time any drawings or calculations were approved.
 - 8. Do not deviate from the approved drawings unless authorized in writing by the Engineer. Assume the responsibility for costs incurred due to faulty detailing or fabrication.
- B. Materials**
- 1. Grouted Splice Couplers
 - a. Refer to Section 602.
 - 2. Structural Non-Shrink Grout
 - a. Certificate of Compliance to Engineer.
 - b. Warranty letter to the Engineer before acceptance is given stating that the structural non-shrink grout manufacturer and the Contractor jointly guarantee the grout against all bonding, cracking, and spalling failures incurred during normal traffic for a period of two years.
 - 1) The warranty period starts on the date of owner acceptance, typically the date traffic is allowed on the bridge.
 - c. Manufacturer Warranty Bond for the total price of the installed structural non-shrink grout.

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- 1) Calculate the total price by using the volume of structural non-shrink grout shown on the plans and the average installed price for grout obtained from the manufacturer.
 - 2) Warranty period covers the period of time specified in the Warranty letter submitted to the Engineer.
 - 3) Underwriting Limitation is stated in the United States Department of Treasury Circular 570, Surety Companies Acceptable on Federal Bonds. Only companies listed in the Department of Treasury Circular 570 are acceptable.
 - 4) Proof of bond to the Engineer before placing the grout.
3. Concrete
- a. Refer to Section 601.
- C. Repair Procedure
1. Written procedure for defects and breakage of precast elements for approval.
- D. Casting Schedule
1. Provide the Engineer a tentative casting schedule at least two weeks in advance to make inspection and testing arrangements. A similar notification is required for the shipment of precast elements to the job site.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete
1. Precast elements – use Class D concrete for all Precast Substructure Elements according to Section 618 and the plans.
 2. Bedding under elements – use flowable fill conforming to the requirements of Section 206.
 3. High Early Strength Concrete (Class D) – only allowed in closure pours as shown on plans.
- B. Reinforcing Steel
1. Refer to Section 602.
 - 2.
- C. Structural Non- Shrink Grout
1. Use structural non-shrink grout for joints between precast elements as shown in the plans.
 - a. Use gray, non-shrink grout concrete, containing no calcium chloride or admixture containing calcium chloride or other ingredient in sufficient quantity to cause corrosion to steel reinforcement.
 - b. Use quick-setting, rapid strength gain, non-shrink, and high-bond strength grout.
 - c. Meet all the requirements of AASHTO T 160 with the exception that the Contractor supplied cube molds will remain intact with a top firmly attached throughout the curing period.
 - d. Refer to Table 1 for structural non-shrink grout requirements.

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**REVISION OF SECTION 601
 PRECAST CONCRETE UNIT
 PRECAST SUBSTRUCTURE ELEMENTS**

Table 1

Structural Non-Shrink Grout			
Properties	Requirements	ASTM	AASHTO
Accelerated Weathering Tested Medium Accepted Weight Loss	<3% Road Salt <15% @ 300 Cycles		T 161
Compressive Strength	≥3,000 psi @ 24 hours >5,000 psi @ 7 days		T 106
Accepted Bond Strengths	>1,000 psi @ 24 Hours	C 882 as modified by C 928 8.5	
Length Change	No expansion after 7 days		T 160

* Certified test results from an AASHTO accredited testing laboratory will suffice for acceptance.

D. Grouted Splice Couplers

1. Refer to Section 602.

E. Corrugated Steel Pipe

1. Refer to AASHTO M 36.

F. Leveling Devices

1. Refer to the plans for fabricated steel leveling devices. Alternate devices may be used provided the devices can support the anticipated loads.

G. Vertical Joint Seals

1. Use natural rubber or neoprene sheet with a durometer of 50-60 according to ASTM D 2240.

H. Lifting Devices

1. Use lifting devices that can support the required vertical and horizontal forces with the applicable safety factors according to the Component Handling and Erection Bracing requirements in the PCI Design Handbook.

I. Miscellaneous Steel Items

1. Galvanize all miscellaneous steel items permanently cast into structural concrete elements. Refer to AASHTO M 111.

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**REVISION OF SECTION 601
PRECAST CONCRETE UNIT
PRECAST SU STRUCTURE ELEMENTS**

2.2 FABRICATION

- A. Do not place concrete in the forms until the Engineer has inspected and approved the placement of all the materials in the precast elements.
- B. Construct precast elements to the tolerances shown in the plans.
- C. Finish the precast elements according to Section 601. Trowel finish the top surface of all precast concrete elements.
- D. Maintain a minimum compressive strength of 500 psi before stripping the form.
- E. Permanently mark each precast element with date of casting and supplier identification. Stamp markings in fresh concrete.
- F. Wet cure elements for 14 consecutive days. Begin cure immediately after performing the final finish.
 - 1. Wet cure by covering all exposed surfaces with wet burlap, cotton mats, or both, and plastic sheets.
 - 2. Maintain a saturated condition for the burlap and cotton for the entire duration.
 - 3. The duration of the wet cure may be reduced to 7 days at a 10 percent pay disincentive.

2.3 QUALITY ASSURANCE

- A. Precast Substructure Elements
 - 1. Prevent cracking or damage of precast elements during handling and storage.
 - 2. Replace defects and breakage of precast elements.
 - a. Members that sustain damage or surface defects during fabrication, handling, storage, hauling, or erection are subject to review or rejection.
 - b. Obtain approval before performing repairs.
 - c. Repair work must reestablish the elements' structural integrity, durability, and aesthetics to the satisfaction of the Engineer.
 - d. Determine the cause when damage occurs and take corrective action.
 - e. Failure to take corrective action leading to similar repetitive damage can be cause for rejection of the damaged element.
 - f. Cracks that extend to the nearest reinforcement plane and fine surface cracks that do not extend to the nearest reinforcement plane but are numerous or extensive are subject to review and rejection.
 - g. Full depth cracking and breakage greater than 1 ft are cause for rejection.

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PRECAST SU STRUCTURE ELEMENTS**

3. Document all test results. The quality control file will contain at least the following information:
 - a. Element identification
 - b. Date and time of cast
 - c. Concrete cylinder test results
 - d. Quantity of used concrete and the batch printout
 - e. Form stripping date and repairs if applicable
 - f. Location/number of blockouts and lifting inserts
 - g. Temperature and moisture of curing period
 - h. Lifting device details, requirements, and inserts

- B. Grouted Splice Couplers
 1. Make four sets of three 2 inch cube specimens for testing.
 - a. Cure the specimens according to AASHTO T 106.
 - b. Test one set of cubes for compressive strength to determine when to release bracing. Refer to Section 602.
 - c. Test one set of cubes at 28 days for acceptance.
 - d. Store extra sets for longer term testing if necessary.

- C. Structural Non-Shrink Grout
 1. Warranty the in-place structural non-shrink grout performance and workmanship for two years.
 - a. Refer to this Section, article 1.5 B.3.
 2. Repair or refund at the Department's option any bonding failures that occur during the warranty period.

PART 3 EXECUTION

3.1 GENERAL PROCEDURE FOR ALL INSTALLATION OF ELEMENTS

- A. Review the approved erection drawings.
 1. Resubmit the drawings for review and approval if changes are warranted due to varying site conditions.

- B. Dry fit adjacent elements in the shop if noted on the plans.
 1. The fabricator may opt to dry fit elements in any case.

- C. Establish working points, working lines, and benchmark elevations before placement of all elements.

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PRECAST CONCRETE UNIT
PRECAST SUBSTRUCTURE ELEMENTS**

- D. Check the condition of the receiving bonding surface before connecting elements and take any necessary measures to remove items such as dust, rust, and debris to provide the satisfactory bonding required between the protruding reinforcing bars element and the grouted couplers.
- E. Place elements in the sequence and according to the methods outlined in the assembly plan.
 - 1. Adjust the height of each element by means of leveling devices or shims.
- F. Mix structural non-shrink grout just before its use according to the manufacturer's instruction.

3.2 CONNECTION PROCEDURE USING GROUTED SPLICE COUPLERS

- A. Refer to Section 602.

3.6 PRECAST SUBSTRUCTURE ELEMENTS

- A. Precast substructure elements consist of the following:
 - 1. Wing walls
 - 2. Integral abutment pile caps
- B. Lift precast substructure element as shown in the erection drawings using lifting devices as shown on the shop drawings.
- C. Precast substructure element supported on piles or drilled caissons (integral abutments).
 - 1. Lift precast substructure element as shown in the erection drawings using lifting devices as shown on the shop drawings.
 - 2. Set the element in the proper horizontal location.
 - a. Check for proper alignment within specified tolerances.
 - 3. Adjust the devices before full release from the crane if vertical leveling devices are used.
 - a. This will reduce the amount of torque required to turn the bolts in the leveling devices.
 - b. Check for proper grade within specified tolerances.
 - 4. Check the spacing of dowels or grouted splice couplers between adjacent elements that will support common elements in future stages of construction.
 - a. The use of bi-level templates and jigs is recommended.
 - b. Adjust the location of the element if required.
 - 5. Place concrete around pile tops as shown on the plans.
 - a. Allow concrete to flow partially under the element.
 - b. The entire underside of the element need not be filled with concrete.

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PRECAST SU STRUCTURE ELEMENTS**

6. Do not remove the installation bolts, if used, or proceed with the installation of elements above the element until the compressive test result of the cylinders for the pile connection concrete has reached the specified minimum values.
7. Place structural non-shrink grout in joints between precast abutment and backwall segments after any leveling jacks and temporary supports are removed.
8. Do not apply superimposed dead loads or live loads to the precast abutment segments until the structural non-shrink grout has reached strength of 500 psi based on manufacturer's published data.

Subsection 601.20 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Precast Concrete Unit	Cubic Yard

Precast Concrete Unit includes all items required to complete this item according to the contract, including but not limited to all inserts, lifting and leveling devices, reinforcing steel, grouted couplers, labor, materials and equipment. This includes manufacturing, storing and delivering all precast units.

**REVISION OF SECTION 601
CONCRETE**

Subsection 601.20 shall include the following:

Curing concrete and cold-weather protection of concrete including all material, equipment and labor, shall be considered essential and incidental to completing the concrete pay items. No additional payment will be made for cold-weather protection and curing concrete items.

REVISION OF SECTION 60 GROUTED COUPLERS

Section 602 of the Standard Specifications is hereby revised for this project as follows:

Subsection 602 shall include the following:

GROUTED COUPLERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Materials and procedures for installing grouted splice sleeves and butt welded hoops.
- B. Grouted splice couplers shall not be paid for separately and shall be included in the work for item 601 Precast Concrete Unit.

1.2 RELATED SECTIONS Not Used

1.3 REFERENCES

- A. AASHTO M 31: Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- B. AASHTO M 55: Steel Welded Wire Reinforcement, Plain, for Concrete
- C. AASHTO M 111: Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- D. AASHTO M 235: Epoxy Resin Adhesives
- E. AASHTO M 284: Epoxy Coated Reinforcing Bars – Materials and Coating Requirements
- F. AASHTO T 106: Compressive Strength of Hydraulic Cement Mortar (Using 50-mm or 2-in Cube Specimens)
- G. ASTM A 108: Steel Bar, Carbon and Alloy, Cold-Finished
- H. ASTM A 706: Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
- I. ASTM A 767: Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
- J. ASTM A 970: Headed Steel Bars for Concrete Reinforcement.
- K. ASTM E 1512: Testing Bond Performance of Bonded Anchors
- L. American Welding Society (AWS) Standards
- M. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice

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**REVISION OF SECTION 60
GROUTED COUPLERS**

1.4 DEFINITIONS

- A. Grouted Splice Coupler – Mechanical devices used to splice reinforcing steel within precast concrete elements.
 - 1. These couplers are proprietary devices that are comprised of a combination of a steel sleeve and a high strength cementitious grout.
 - 2. Some couplers combine a threaded connection for the bar that is cast into the element combined with a grouted portion that is used to make the connection in the field.
 - 3. The grout used for the coupler is part of the proprietary system and is supplied by the coupler manufacturer.

- B. Working Drawings – Drawings produced by the Contractor that supplement the contract drawings to provide information not included in the contract documents but that is required to fabricate, erect, transport, or temporarily support the structure or structural elements in the completion of the work.
 - 1. Working drawings do not supersede the contract drawings.

- C. Approval of Working Drawings – Acceptance by the Department for use on the project. The Department will review working drawings for general conformance with the design concept and compliance with the contract documents. Review and approval do not relieve the Contractor from responsibility for errors, correctness of details, conformance to the contract, or the successful completion of the work.

1.5 SUBMITTALS

- A. Working Drawings
 - 1. Detailed shop drawings for approval of the following:
 - a. Field bending procedure if required. Provide the seal of a Professional Engineer (PE) licensed in the State of Colorado.
 - b. Mechanical butt splice shop drawings when proposed details differ from the plans and specifications.
 - 1) Show number and location of mechanical butt splices.
 - 2) Obtain approval before ordering when splice locations or number differ from the plans and specifications.
 - 3) Provide two samples of mechanical butt splices and test to destruction in the presence of the Engineer.
 - c. Welded Splice Shop Drawings
 - 1) Show number and location of welded splices.
 - 2) Obtain approval before ordering when splice locations or number differ from the plans and specifications.
 - 3) Provide two samples of welded splices and test to destruction in the presence of the Engineer.

**REVISION OF SECTION 60
GROUTED COUPLERS**

2. Prepare drawings according to the following:
 - a. Submit drawings electronically in PDF format, 11 x 17 inch sheets with a 1½ inch blank margin on the left edge. Place the following information in the title block in the lower right corner of each sheet:
 - 1) Federal Project Number and CDOT sub account number: C010-114 (20414)
 - 2) CCD Project Name: Evergreen Lake House Bridge Replacement
 - 3) CCD Structure Number: D-27-MP-070A
 - 4) Contractor, Fabricator, or Erector Name
 - 5) Contractor, Fabricator, or Erector Drawing Number
 - 6) Contractor, Fabricator, or Erector Sheet Number
 - b. Revise and resubmit drawings when directed by the Department.
 - c. Provide the seal of a Professional Engineer (PE) licensed in the State of Colorado. Place the seal in the lower left corner of each sheet when required.
 3. Allow the Engineer 14 calendar days to review and approve working drawings and supporting calculations.
 - a. The Engineer may grant an increase in the number of working days for the project when that time is exceeded.
 - b. This review period applies each time the drawings and calculations are submitted.
 4. Do not deviate from the approved drawings unless authorized in writing. Assume the responsibility for costs incurred due to faulty detailing or fabrication.
- B. Material Submittals
1. Certificates of Compliance from the manufacturer.
 2. Supplier Certifications – Refer to this Section, article 2.4 A.
 3. Grouted Splice Couplers
 - a. Independent test report confirming the compliance of the coupler with the following requirements:
 - 1) Develop 150 percent of the specified yield strength of the connected bar.
 - 2) Determine by testing the amount of time and grout compressive strength required to provide 100 percent of the specified minimum yield strength of the attached reinforcing bar. Use this value to determine when to release bracing.
 - b. Independent test report that includes data for each supplied coupler size.
 - c. Use the same grout in the testing that will be used in the construction.
 - d. Requirements for the grout including required strength gain to develop the specified minimum yield strength of the connected reinforcing bar.

1.6 QUALITY ASSURANCE

- A. The Department may witness coating processes for project work and obtain random samples by heat number and manufacturer to conduct verification testing.

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**REVISION OF SECTION 60
GROUTED COUPLERS**

PART 2 PRODUCTS

2.1 REINFORCING STEEL

- A. Refer to AASHTO M 31, Grade 60 for deformed or plain carbon steel bars.
- B. Refer to ASTM A 706 for deformed or plain low-alloy steel bars.

2.2 EPOXY AND GALVANIZED COATINGS

- A. Refer to AASHTO M 284 or AASHTO M 111.
- B. Coat bars as shown on the plans.
 - 1. Maintain epoxy coating thickness between 8 and 12 mils.
 - 2. Maintain galvanized coating thickness according to ASTM A 767.
 - 3. Coat bars after bending unless the fabricator can show that satisfactory results can be obtained by coating before bending.
 - 4. Reject any bent bars with visible cracks or damage in the coating.

2.3 GROUTED SPLICE COUPLERS

- A. Use grouted splice couplers to join precast elements as shown on the plans.
 - 1. Provide couplers that use cementitious grout placed inside a steel casting. Grout is part of the proprietary system and is provided by the coupler manufacturer.
 - 2. Use threaded connections at the Contractor's option for the portions of the coupler that are placed within the precast element if the strength of the coupler meets or exceeds the requirements of this Section.
- B. Use one of the following grouted splice coupler manufacturers according to the requirements of this Section. Refer to the following providers for additional information:
 - 1. NMB Splice Sleeve
Splice Sleeve North America, Inc.
192 Technology Drive, Suite J
Irvine, CA 92618-2409
 - 2. Sleeve-Lock Grout Sleeve System
Dayton Superior
Corporate Headquarters
7777 Washington Village Drive, Suite 130
Dayton, OH 45459
 - 3. Erico Lenton Interlok
ERICO United States
34600 Solon Road
Solon, OH 44139

**REVISION OF SECTION 60
GROUTED COUPLERS**

- C. Use the same coating system as used for the reinforcing steel. Use grouted splice couplers that are epoxy coated and can join the reinforcing steel without removal of the epoxy coating on the spliced bar when using epoxy coated reinforcing steel.
- D. Use grouted splice couplers that provide 150 percent of the specified yield strength of the connected bar.
- E. Use grout supplied by the manufacturer of the coupler and that matches the certified test report for the coupler.

2.4 FABRICATION

- A. Use Department Certified Suppliers for all reinforcing steel products.
- B. Bend reinforcement to the shapes specified. Refer to CRSI Manual of Standard Practice.
- C. Do not heat the bars during the bending operations.
- D. Complete all bending before coating except as specified on the contract plans

PART 3 EXECUTION

3.1 CONNECTION PROCEDURE USING GROUTED SPLICE COUPLERS

- A. Use personnel familiar with installation and grouting splice couplers and have completed at least two successful projects in the last two years.
 - 1. Train new personnel within three months of installation by a manufacturer's technical representative as an acceptable substitution for the experience.
- B. Remove and clean all debris from the joints before grout application.
- C. Keep bonding surfaces free from laitance, dirt, dust, paint, grease, oil, or any contaminants other than water.
- D. Check the lengths of rebar anchor dowels to make sure they meet the minimum coupler embedment specified in the manufacturer's manual.
- E. Saturate Surface Dry (SSD) all joint surfaces before connecting the elements.
- F. Monitor shim thickness between the precast elements to ensure that the reinforcing extensions are within the manufacturers recommended tolerance.
- G. Maintain a minimum grout and sleeve temperature of 50 degrees F. Monitor the temperature of the covered grouted slice couplers until the temporary bracing is removed.
- H. Monitor the grout mixing, water to grout ratio, mixing time, and shelf life of the grout for conformance with the manufacturer's written instructions.

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**REVISION OF SECTION 60
GROUTED COUPLERS**

- I. Mix structural grout and coupler grout just before use according to the manufacturer's instructions.
- J. Follow the manufacturer's recommendations for coupler installation and grouting.
- K. Monitor the grouting operation to verify that all sleeves have been filled.
- L. Verify that all sleeves are protected from any vibration, shock, or other excessive movement until temporary bracing is removed.
- M. Conform to the following when installing couplers above a horizontal joint:
 - 1. Determine the thickness of shims to provide the specified elevation within tolerance.
 - 2. Follow non-shrink grout manufacturer's recommendations for mixing, joint surface preparation, and application.
 - 3. Place non-shrink grout on the interface between the two elements being joined before setting the element.
 - a. Crown the thickness of the grout toward the center of the joint so that the grout can be displaced outward as the element is lowered onto the joint.
 - b. Take precautions to prevent the grout from entering the coupler above elements such as grout dams or seals.
 - 4. Set the element in place.
 - a. Engage all couplers in the joint.
 - b. Allow the grout to seep out of the joint.
 - 5. Trowel off excess grout to form a neat joint once the element is set, plumbed, and aligned.
 - a. Pack grout into any voids around the joint perimeter.
 - 6. Flush out the coupler with clean potable water.
 - 7. Mix the special coupler grout according to the manufacturer's recommendations for methods and proportions of mix and water.
 - 8. Make four sets of three 2 inch cube specimens for testing.
 - a. Cure the specimens according to AASHTO T 106.
 - b. Test one set of cubes for compressive strength to determine when to release bracing. Refer to this Section; article 1.5 B, paragraph 4.a.2.
 - c. Test one set of cubes at 28 days for acceptance.
 - d. Store extra sets for longer term testing if necessary.
 - 9. Pump the coupler grout into the coupler that is cast into the element.
 - a. Start from the lower port.
 - b. Pump until the grout is flowing freely from the upper port.
 - c. Cap the upper port first and then remove the nozzle to cap the lower port.
 - 10. Cure the joint according to the grout manufacturer's recommendations.
- N. Conform to the following when installing couplers below a horizontal joint:
 - 1. Determine shim thickness to provide the specified elevation within tolerance.
 - 2. Before setting the element:
 - a. Mix the coupler grout paying strict attention to the manufacturer's recommendations for methods and proportions of mix and water.

- -
**REVISION OF SECTION 60
GROUTED COUPLERS**

- b. Clean debris from the interior using compressed air.
 - 1) Remove any rain water using a vacuum that can remove water from the confined space in the coupler.
 - c. Place the coupler grout into the coupler by pouring or pumping.
 - d. Place grout on the interface between the two elements being joined.
 - 1) Crown the thickness of the grout toward the center of the joint so that the grout can be displaced outward as the element is lowered onto the joint.
 - e. Trowel off excess grout to form a neat joint once the element is set, plumbed, and aligned.
 - 1) Pack grout into any voids around the joint perimeter.
- O. Conform to the following when installing couplers in vertical joints (horizontal bar/coupler connection):
- 1. Establish a method to provide the specified elevations, alignment, and spacing within tolerance.
 - 2. Use washers or seals to prevent mixing the joint grout and the coupler grout.
 - 3. Apply epoxy adhesive to the interface between the two elements being joined.
 - 4. Set the element in place.
 - a. Engage all couplers in the joint.
 - 5. Flush out the couplers with clean potable water once the element is set, plumbed, and aligned.
 - 6. Mix the coupler grout paying strict attention to the manufacturer's recommendations for methods and proportions of mix and water.
 - 7. Pump the coupler grout into the coupler that is cast into the element.
 - a. Start from the port closest to the joint.
 - b. Pump until the grout is flowing freely from the other port.
 - c. Cap the port farthest from the joint first and then remove the nozzle to cap the other port.
 - 8. Form the edges of the joint and place grout into the joint.
 - 9. Cure the joint according to the grout manufacturer's recommendations.

**REVISION OF SECTION 613
3 INCH CONDUIT**

Sections 613 of the Standard Specifications are hereby revised for this project as follows:

Section 613.01 shall include the following:

This work includes the furnishing and installation of the 3 inch PVC conduit placed within the curb of Bridge Rail Type 10.

Section 613.0 shall include the following:

The conduit shall extend from end to end of the bridge rail curb and project 3" beyond the end of the curb. The conduit shall be capped on each end.

METHOD OF MEASUREMENT

Subsection 613.11 shall include the following:

The measurement for payment of the 3 inch PVC conduit will be the actual linear feet of conduit, complete in place and accepted by the Engineer.

BASIS OF PAYMENT

Subsection 613.1 shall be revised to include the following:

The accepted quantities of the 3 inch conduit measured as provided above will be paid for at the Contract unit price per linear foot, which shall be compensation for all labor, equipment, and materials.

Payment will be made under:

Pay Item	Pay Unit
3 Inch Electrical Conduit	Linear Foot

**REVISION OF SECTION 6 5
CONSTRUCTION SURVEYING**

Section 6 5 of the standard specifications is hereby revised as follows:

Delete section 6 5 and replace with the following:

DESCRIPTION

6 5.01 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.

It is anticipated that the Contractor will create, submit and receive approval for the following plans:

- Survey Control
- Utility Coordination
- Traffic Control Plan
- Erosion Control Plan
- As-built Survey Record Plan

The Contractor will be required to coordinate all utility conflicts with the appropriate utility companies. It will be the Contractor's responsibility to submit all required plans and to receive all required approvals, following the City's standard plan approval process. Upon plan approval, the Contractor will be permitted to commence construction activities.

The Contractor shall reset all survey crosses, monuments, benchmarks, range points which are disturbed shown in the plans on the survey control sheets.

The Contractor and/or their surveyor shall meet with the Project Manager and City Surveyor staff prior to beginning work to collect available survey information.

All plan sheets shall be marked as-built, including any changes, and stamped by a licensed Colorado Professional Engineer.

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**REVISION OF SECTION 6 5
CONSTRUCTION SURVEYING**

MATERIALS AND EQUIPMENT

6 5.0 The Contractor shall furnish all personnel, survey equipment, safety equipment, materials, and traffic control necessary to perform the required construction surveying and staking. All surveying equipment, including Electronic Distance Meters (EDM), total stations, theodolites, levels, rods, tapes, tripods, tribrachs, and Global Positioning System (GPS) receivers and equipment.

If any survey equipment is found to be functioning outside the manufacturer's specified tolerance, certification from an approved repair facility showing that the instruments have been repaired, properly adjusted, or both if necessary shall be included in the survey records and submitted to the City Surveyor's Office before being used.

CONSTRUCTION REQUIREMENTS

6 5.03 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.

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.

6 5.0 Contractor Surveying. The Contractor's PLS shall perform all construction surveying and staking that is necessary for construction of the project.

6 5.05 Staking. It is the responsibility of the Contractor's PLS to adhere to industry standards and acceptable practices in regards to staking. Any restaking will be the responsibility of the Contractor's PLS at no cost to the City.

6 5.06 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.

6 5.0 Responsibility and Inspection. Supervision and coordination of construction surveying and staking is the Contractor's responsibility. The City Surveyor's Office or Project Manager may inspect the Contractor's surveying; however such inspection will not relieve the Contractor of any responsibility for accuracy or completeness of work. All Contractor surveying inaccuracies, errors, or omissions shall be corrected at the Contractor's expense.

**REVISION OF SECTION 6 5
CONSTRUCTION SURVEYING**

6 5.08 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.

6 5.09 Changes. All changes in lines and grades required by field conditions and all discrepancies in grades, alignment, location or dimensions detected by the Contractor shall be immediately submitted to the Project Manager in writing. No changes in given data or plans will be allowed unless approved by the Project Manager in writing. All changes shall be documented by the contractor.

6 5.10 Pay Quantities Measurements. The Project Manager will perform all interim and final measurements deemed necessary by the City to determine contract pay quantities. The Contractor shall establish and maintain Control points and stationing as required for these measurements.

6 5.11 As-built Survey Records. Survey records shall be completed as the work is done. Field survey notes for construction surveying and checking by the Contractor shall be recorded in survey records in conformance with industry standards and acceptable practices.

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

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

METHOD OF MEASUREMENT

6 5.1 Construction surveying will not be measured but will be paid for on a lump sum basis.

ASIS OF PAYMENT

6 5.13 Payment for construction surveying will be the contract lump sum bid and will be full compensation for all surveying work necessary to complete the project to include all resetting of stakes, marks, monuments and preparing survey documentation as required.

Partial payment for construction surveying, as determined by the Project Manager, will be made as the work progresses.

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**REVISION OF SECTION 6 5
CONSTRUCTION SURVEYING**

Payment will be made under:

<u>PA ITEM</u>	<u>PA UNIT</u>
Construction Surveying	Lump Sum

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

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

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

Subsection 630.01 shall be revised to include the following:

As required by, in descending order of precedence, the specifications, the Standard Specifications, as augmented by the Colorado Department of Transportation M and/or S standards, and the Manual on Uniform Traffic Control Devices for Streets and Highways.

The Contractor shall submit, in writing, the proposed Method of Handling Traffic (MHT) for review and approval of the Project Manager as indicated in the Project Special Provisions (Revision of 630 – Construction Zone Traffic Control). The MHT shall be developed according to this section and the construction plans.

Subsection 630.05 TRAFFIC CONES shall include the following:

Steel drum channelizing devices shall not be used for traffic control

Subsection 630.06 shall be modified to include the following:

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

Subsection 630.08 shall be modified to include the following:

The flagger's STOP/SLOW sign paddle shall be 18 inches with letters six inches high.

Equipment

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

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

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

Devices:

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

Subsection 630.09, second paragraph is hereby deleted and replaced with the following:

Traffic Control shall be provided as required by, in descending order of precedence, MUTCD, the plans and special provisions for this project, Colorado Department of Transportation Standard Specifications, and Colorado Department of Transportation M and/or S Standards.

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

When a different MHT is required for a subsequent construction phase, it must be submitted at least two weeks prior to starting that phase. All proposed methods of handling traffic shall be approved, in writing, by the Project Manager following approval of the Traffic Engineering Services Department.

Approval of the proposed MHT does not relieve the Contractor of liability specifically assigned to him under the contract. The Contractor shall erect and maintain warning lights, signs, barricades, and sufficient safeguards around all excavations, embankments, and obstructions.

The contractor shall notify the Project Manager by Thursday at 3:00 P.M. which streets they intend to work on the following week. This notification will be made for all phases of construction.

Subsection 630.09 shall be revised to include the following:

Access to driveways shall be maintained at all times during construction. The Contractor shall coordinate driveway work with the property owner. Appropriate signage shall be provided alerting all motorists leaving driveways that enter a work zone as to which direction the through lane is traveling and what access restrictions exist, if any.

Subsection 630.09 9 shall be added as follows

Number of hours, if needed, for uniformed traffic control shall be tabulated for submittal.

Subsection 630.09 10 shall be added as follows:

General work restrictions

The Contractor shall perform all the work on the roadway between the hours of 7:00 A.M. and 5:00 P.M. or as approved by the Project Manager. Weekend and nighttime work will be allowed with the prior written approval of the Project Manager.

Work that interferes with traffic 1] on any day of a 3 or 4 day holiday weekend; or 2] after 12:00 noon on the day preceding such holiday weekend, will only be permitted following review of a Contractor submitted request and approval by the Project Manager and the City of Denver Traffic Engineering Services Department:

The Contractor shall coordinate all of the work on the roadway during any special event with the City and County of Denver.

Subsection 630.09 11 shall be added as follows:

Access:

Contractor shall obtain all required access and construction permits from the City & County of Denver prior to initiating work along City right of way.

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

The Contractor shall maintain access to all roadways and hike/bike paths at all times unless otherwise stated in the Contract or as approved by the Project Manager. The sole exception to this requirement is during the full closure of the Bridge. Should the Contractor wish to exercise this exception, a request for same shall be submitted to the Project Manager for review and approval including proposed method for Public Notice.

All proposed lane closures shall be subject to the approval of the Project Manager, CCD Traffic Engineering Services Department, and Jefferson County Road and Bridge Administration. Requests for such lane closures shall be submitted with a Method of Handling Traffic at least 24 hours in advance of the time the lane closure is to be implemented. Lane closures will not be allowed to remain unless utilized in continuum for the duration of each working period. Contractor shall make all efforts to fashion a lane closure proposal to close no more than one lane at a given time.

Subsection 630.10 5 shall be revised to include the following:

Subsection 630.1 is hereby deleted and replaced with the following:

The Contractor shall furnish all personnel and materials necessary to perform the Construction Zone Traffic Control as required and these quantities will not be measured.

Temporary pavement markings, including removal of temporary pavement marking removals, for traffic control will not be measured and paid for separately, but shall be included in the work.

FORCE ACCOUNT ITEMS

DESCRIPTION

This special provision contains the Department's estimate for force account items included in the Contract. Force Account work shall be performed as directed by the Engineer.

BASIS OF PAYMENT

Payment will be made in accordance with the provision of General Condition Title 11. Payment will constitute full compensation for all work necessary to complete the item.

Force account work valued at \$5,000 or less, that must be performed by a licensed journeyman in order to comply with federal, state, or local codes, may be paid for after receipt of an itemized statement endorsed by the Contractor.

Item No.	Force Account Item	Quantity	Estimated Amount
F/A	Fuel Cost Adjustment	F/A	\$4,500
F/A	On-The-Job Trainee	Hours	0
F/A	Erosion Control	F/A	\$2,500
F/A	Minor Contract Revisions	F/A	\$22,700

UTILITIES

The known utilities within the limits of this project are:

UTILIT	CONTACT EMAIL	PHONE FA
Xcel Energy- Electric PO Box 640 Evergreen, CO 80437	Kelli Fries kelli.fries@xcelenergy.com	(303) 445-4540
Xcel Energy Application for Gas & Electric Services	BCLCO@xcelenergy.com	(800) 628-2121 (800) 628-2521 Fax
Evergreen Metropolitan District 30920 Stagecoach Blvd. Evergreen, CO 80437-3819	Chris Schauder, CWP cschauder@evergreenmetrodistrict.com	(303) 674-4112
Upper Bear Creek Water and Sanitation District 30920 Stagecoach Blvd. Evergreen, CO 80437-3819	Chris Schauder, CWP cschauder@evergreenmetrodistrict.com	(303) 674-4112

The work described in these plans and specifications requires full cooperation between the Contractor and the utility owners in accordance with Subsection 105.11 and CCD General Condition 804 in conducting their respective operations, to complete the utility work with minimum delay to the project.

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UTILITIES

PART 1 - CONTRACTOR SHALL PERFORM THE OR LISTED ELO :

Coordinate project construction with performance by the utility owner of each utility work element listed in Part 2 below. Perform preparatory work specified in Part 2 for each utility work element. Provide an accurate construction schedule that includes all utility work elements to the owner of each impacted utility. Provide each utility owner with periodic updates to the schedule. Conduct necessary utility coordination meetings, and provide other necessary accommodations as directed by the Engineer. Notify each utility owner in writing, with a copy to the Engineer, prior to the time each utility work element is to be performed by the utility owner. Provide notice, as specified in Part 2, immediately prior to the time the utility work must begin to meet the project schedule.

Provide traffic control, as directed by the Engineer, for any utility work performed by the utility owner within the project limits expected to be coordinated with construction. However, traffic control for utility work outside of typical project work hours shall be the responsibility of the utility owner.

Perform each utility work element for every utility owner listed here in Part 1. Notify each utility owner in advance of any work being done by the Contractor to its facility, so that the utility owner can coordinate its inspections for final acceptance of the work with the Engineer.

All Utility Companies

The Contractor will contact each utility company a minimum of 2 business days, unless otherwise noted, prior to working in the utility company's area so that the utility company can provide an inspector and/or complete any necessary adjustments or relocations.

The Contractor shall identify existing utilities (by potholing if necessary) and protect the existing buried utilities when constructing the project, including sub excavation work. If existing utilities are within close proximity horizontal or vertically, the Contractor shall alter the sub excavation work limits, construction methods or equipment to avoid impacting the existing utilities.

If a need for utility work by either the Contractor or a Utility Company arises, the following shall apply:

The Contractor shall be responsible for coordinating the adjustment of utilities on this project. The Contractor shall keep each utility company advised of any work being performed in the vicinity of their facilities, so that each utility company can coordinate any needed locates, adjustments or inspections. Contractor shall provide the appropriate utility company ample notice, but not less than two (2) working days, prior to commencing activities in the vicinity of their facilities. Any additional work performed by the Contractor on behalf of the impacted utility company shall not be paid for by the City and County of Denver, but shall be paid by the utility company requiring the work, unless otherwise agreed to in writing by the Engineer.

Evergreen Metropolitan District aterline

The Contractor shall protect in place the existing 8" waterline shown in the contract drawings.

cel Energy Electric

The Contractor shall call the Builder's Call Line 90 days prior to construction.

The Contractor shall protect in place all underground and overhead electric distribution in the project area. The Contractor shall coordinate with Xcel Energy if there are any conflicts. No contract modifications will be provided as a result of the contractor's failure to fully determine their ability to construct the project.

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UTILITIES

PART - UTILIT O NERS SHALL PERFORM THE OR LISTED ELO :

Although the Contractor shall provide traffic control for utility work expected to be coordinated with construction, traffic control for utility work outside of typical project work hours or outside of project limits shall be the responsibility of the utility owner. The utility owner shall prepare and submit to the Engineer a Method of Handling Traffic for utility work to be performed outside typical project work hours or outside of project limits. The utility owner shall obtain acceptance of the Method of Handling Traffic from the Engineer prior to beginning the utility work to be performed outside typical project work hours or outside of project limits.

This work will be performed by the utility owners as necessary to avoid conflicts with construction activities. New locations shall be as indicated in the plans. Utility owners shall comply with schedule requirements of the Contractor and make every effort not to impact the overall construction schedule. Unless otherwise approved by the Engineer, abandoned aboveground appurtenances such as pedestals shall be removed and abandoned underground utilities and manholes/handholes shall be abandoned in place.

Utility owners are responsible for obtaining all necessary permits from the City and County of Denver, as required.

GENERAL:

The Contractor shall comply with Article 1.5 of Title 9, CRS ("Excavation Requirements") when excavating or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least two (2) business days, not including the actual day of notice, prior to commencing such operations. The Contractor shall contact the Utility Notification Center of Colorado (UNCC) at phone no. **811 or 1-800-9 -198** , to have locations of UNCC registered lines marked by member companies. All other underground facilities shall be located by contacting the respective owner. Utility service laterals shall also be located prior to beginning excavation or grading.

The location of utility facilities as shown on the plan and profile sheets, and herein described, are depicted in accordance with their achieved Quality Level as defined in the American Society of Civil Engineer's document ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data". The Contractor shall cooperate with the utility owners in their relocation operations as provided in CCD General Condition 804. No guarantee is made that utility conflicts will be resolved prior to construction activities and any delays resulting from utility relocation work shall be dealt with in accordance with CCD General Conditions.

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

Appendix A

FH A 1 3 Required Contract Provisions Federal-Aid Construction Contracts

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

Attached is Form FHWA 1273 titled *Required Contract Provisions Federal-Aid Construction Contracts*. As described in Section I. General, the provisions of Form FHWA 1273 apply to all work performed under the Contract and are to be included in all subcontracts with the following modification:

For TAP (Transportation Alternatives Program) funded Recreational Trails projects, Section I (4) regarding convict labor and all of Section IV of the FHWA 1273 do not apply.

Except for Local Agency projects, the Contractor and all subcontractors who are subject to Davis-Bacon Related Acts (DBRA) requirements, shall submit all payrolls and Contractor Fringe Benefit Statements electronically via LCPtracker, utilizing the following web link:

<https://prod.lcptracker.net/WebForms/login.aspx>

The Contractor and subcontractors shall submit a Contractor Fringe Benefit Statement, either for each individual, or for groups of people, for all employees who perform work on the project and whose wages are covered by the Davis-Bacon Related Acts. Other approved deductions shall be noted within the LCPtracker system, and supporting documentation shall be attached. If for any reason the fringe benefits are altered during the life of the project, the Contractor, subcontractor, or both shall submit a revised Contractor Fringe Benefit Statement to accurately reflect the changes.

Each construction subcontractor shall submit their payrolls directly into LCP Tracker for approval by the Contractor.

The Contractor shall submit and approve their own payrolls in LCPtracker.

The Engineer will approve or reject weekly payrolls for the Contractor.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

FHWA-1273 -- Revised May 1, 2012

RE UIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's

immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

. **EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

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

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

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d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants

Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:

The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 9 CFR 6.13 b :

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

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

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

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a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS- ACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt.

Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum ages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

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(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm>

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or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or

the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable

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predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

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

journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT OR HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As

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used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

. Violation liability for unpaid wages and liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY : ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more

places where it is readily available to all persons concerned with the project:

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

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

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

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

Shall be fined under this title or imprisoned not more than 5 years or both."

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

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DISARMAMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering

into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

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

. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

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b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

I. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LO ANGING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

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

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of

REQUIRED CONTRACT PROVISIONS
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Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**REQUIRED CONTRACT PROVISIONS
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**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGH ASBESTOS OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the

use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Appendix

Asbestos and Lead Based Paint Assessment Report

March 29, 2016

Mr. Ron Vasquez, P.E.
Geocal, Inc.
7290 South Fraser Street
Centennial, CO 80112

Subject: Asbestos and Lead-Based Paint Assessment Report at the Evergreen Lake House Bridge,
Evergreen, CO

Dear Mr. Vasquez:

Pinyon representative, Mr. Tim Hagert (a Colorado-Certified Asbestos Building Inspector [CO Cert. #13915]), visited the above-referenced property on March 15, 2016, to collect suspect asbestos-containing materials (ACMs), and suspect lead-based paint chip samples on the bridge located near the Evergreen Lake House on Upper Bear Creek Road in Evergreen, Colorado. The bridge is approximately 30 feet long by 25 feet wide, and consists of a metal frame with a wood deck for vehicular transport over Upper Bear Creek to the Evergreen Lake House.

Mr. Hagert arrived at the site at approximately 09:30 A.M., and did not discover suspect ACMs associated with the bridge structure; therefore, no samples of asbestos were collected for analysis.

A total of five paint chip samples were collected from paints on the metal components of the bridge (Table 1). The first paint sampled (ELHB-PC01) was a dark brown paint covering the entirety of the metal substrates. The second and third paints were gray/silver (ELHB-PC02) and light brown (ELHB-PC03) over a metal substrate with the light brown paint over the gray/silver paint. The fourth paints (ELHB-PC04), green and red, were collected as one sample from the handrail of the bridge. The fifth paint was beige and located beneath the dark brown paint on the metal support structures. Photographs of the five paints were taken and can be found in Attachment 1.

The paint chip samples were submitted to Reservoirs Environmental, Inc., for analysis of lead content, by flame Atomic Absorption (AA), in accordance with the United States Environmental Protection Agency (US EPA) Method SW 846 3050B/AA (7420). The analytical results for one of the five paints (sample ELHB-PC05), the beige paint, indicated a lead concentration greater than 0.5 percent lead concentration (12.4%), while the other four paints sampled were below 0.5 percent lead concentration. As such, the beige paint that is greater than 0.5 percent is considered to be a lead-based paint (Table 1, Attachment 2).

Pinyon understands that metal components of the bridge that are painted will be recycled. Therefore, the project plans should include the following statement to ensure proper recycling of the metal bridge components that will be demolished:

Lead-based paint is present on components of the bridge. The selected contractor shall be notified of the potential presence of lead-based paint. The contractor shall avoid sanding, cutting, burning, or otherwise causing the release of lead from paint on selected painted components. Occupational Safety and Health Administration (OSHA) Regulation 1926.62 shall be consulted for worker protection prior to removal of painted components. If painted metal components are to be removed and recycled, they must be recycled in accordance with CDOT Specification 250.04. The recycling facility shall be notified of the potential presence of lead.

Mr. Ron Vasquez, P.E.

March 29, 2016


Page 2

The CCOD will be provided an original copy of the Colorado Department of Public Health and Environment (CDPHE) Demolition Notification Application Form under separate cover. This Form should be provided to the selected contractor for permitting the demolition of the bridge structure; it has been endorsed by Mr. Hagert, and a copy is attached as Attachment 3 for reference.

Should you have any questions or concerns regarding this survey, please do not hesitate to contact me. Thank you for giving Pinyon the opportunity to complete this work on your behalf.

Sincerely,

PINYON ENVIRONMENTAL, INC.



Tim Hagert

Colorado Asbestos Building Inspector #13915

Attachments: Table 1 - Lead Paint Chip Sample Summary Table
Attachment 1 - Photographic Log
Attachment 2 - Laboratory Results and Chain-of-Custody
Attachment 3 - Colorado Department of Public Health and Environment (CDPHE)
Demolition Notification Application Form

File Location: Z:\PROJECTS\2016\116109001 Evergreen Lake House Bridge\Report

Limitations

This report was prepared by Pinyon Environmental, Inc., at the request of Geocal, Inc. (Geocal) and for the sole benefit of Geocal or any entity controlling, controlled by, or under common control with the client. This report addresses certain physical characteristics of the Site with regards to the presence of readily visible and accessible suspect asbestos-containing building materials, and suspect lead-based paints. The material in this report reflects the best judgment of Pinyon in light of the information that was readily available at the time of preparation.

This report is for the exclusive and present use of Geocal, or any entity controlling, controlled by, or under common control with Geocal, to assist with evaluation of the Site regarding suspect asbestos-containing building materials, and suspect lead-based paints. In the event of any reuse or publication of any portion of this report, Pinyon Environmental, Inc., shall not be liable for any damages arising out of such reuse or publication. Any use a third party makes of this report, or any reliance on or decisions to be made on it, are the responsibility of such third party. Pinyon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

Table I - Lead Paint Chip Sample Summary Table

Sample #	Sample Description & Location	Analytical Result (%)
ELHB-PC01	Dark brown paint on metal substrate of bridge – sampled from the southeastern portion of the bridge	<u>Lead</u> 0.42
ELHB-PC02	Gray/silver paint on metal substrate of bridge – sampled from the southeastern portion of the bridge	<u>Lead</u> 0.020
ELHB-PC03	Light brown paint on metal substrate of bridge – sampled from the southeastern portion of the bridge	<u>Lead</u> 0.25
ELHB-PC04	Green and red paint on metal substrate of bridge – sampled from handrail on eastern portion of the bridge	<u>Lead</u> Below Reporting Limit
ELHB-PC05	Beige paint on metal substrate of bridge – sampled from the western portion of the bridge	<u>Lead</u> *12.4

Notes:

% Percent

***Greater than 0.5% classifies the paint as a lead-based paint.**

Attachment I Photographic Log

View of the
Evergreen Lake
House Bridge.



The dark brown
paint (sample ELHB-
PC01) on the metal
substrate is not
considered lead-
based paint.



The gray/silver paint (sample ELHB-PC02) under the light brown paint (sample ELHB-PC03) on the metal substrates are not considered lead-based paints.



The green and red paints (sample ELHB-PC04) on the metal substrate are not considered lead-based paints.



Attachment 2 Laboratory Results and Chain-of-Custody



March 18, 2016

Laboratory Code: RES
Subcontract Number: NA
Laboratory Report: RES 3 5085-1
Project PO : 116109001.8000
Project Description: Evergreen Lake House
ridge

Tim Hagert
Pinyon Environmental Engineering
9100 West Jewell Ave. Suite 200
Lakewood CO 80232

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the American Industrial Hygiene Association, Lab ID 101533 - Accreditation Certificate #480. The laboratory is currently proficient in both IHPAT & ELPAT programs respectively.

Reservoirs has analyzed the following sample(s) using Atomic Absorption Spectroscopy (AAS) / Atomic Emission Spectroscopy - Inductively Coupled Plasma (AES-ICP) per your request. Reported sample results were not blank corrected. The analysis has been completed in general accordance with the appropriate methodology as stated in the analysis table. Results have been sent to your office.

RES 3 5085-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those authorized by the client. The results described in this report only apply to the samples analyzed. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you should have any questions about this report, please feel free to call me at 303-964-1986.

Sincerely,

A handwritten signature in blue ink that reads "Jeanne Spencer".

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL, INC.

5801 Logan St., Suite 100
Denver CO 80216

TABLE ANALYSIS: LEAD IN PAINT

RES Job Number: **RES 345085-1**
Client: **Pinyon Environmental Engineering**
Client Project Number / P.O.: **116109001.8000**
Client Project Description: **Evergreen Lake House Bridge**
Date Samples Received: **March 15, 2016**
Analysis Type: **USEPA SW846 3050B / AA (7420)**
Turnaround: **3-5 Day**
Date Samples Analyzed: **March 17, 2016**

Client ID Number	Lab ID Number	Reporting Limit (%)	LEAD CONCENTRATION (%)
ELHB-PC01	EM 1589898	0.0039	0.42
ELHB-PC02	EM 1589899	0.0042	0.020
ELHB-PC03	EM 1589900	0.0037	0.25
ELHB-PC04	EM 1589901	0.0043	BRL
ELHB-PC05	EM 1589902	0.0049	12.4

* Unless otherwise noted all quality control samples performed within specifications established by the laboratory.

Analyst / Data QA: 
Renee A. Cortez

BRL = Below Reporting Limit

Due Date: 3-18-2011
 Due Time: 11:00

REILAB Reservoirs Environmental, Inc.

5601 Logan St. Denver, CO 80216 • Ph: 303 964-1986 • Fax: 303-477-4275 • Toll Free: 866 RESI-ENW
 Pager: 303-509-2098

INVOICE TO: (IF DIFFERENT)

Company: Pinyon Environmental
 Address: 9100 W. Jewell Avenue
 Lakewood, CO 80232

Project Number and/or P.O. #: 116 109 001-3000
 Project Description/Location: Evergreen Lake House Bridge

CONTACT INFORMATION:
 Contact: Tim Hargett
 Phone: (303) 547-8411
 Fax: NA
 Cell/pager: NA
 Final Data Deliverable Email Address: hargett@pinyon-env.com

Client sample ID number (Sample ID's must be unique)	ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm PLM / PCM / TEM ___ RUSH (Same Day) ___ PRIORITY (Next Day) ___ STANDARD (Rush PCM = 2hr, TEM = 6hr.)	CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm Metal(s) Dust ___ RUSH ___ 24 hr. ___ 3-5 Day RCRA 8 / Metals & Welding ___ RUSH ___ 5 day ___ 10 day Fume Scan / TCLP ___ 24 hr. ___ 3 day ___ 5 Day Organics ___ 24 hr. ___ 3 day ___ 5 Day	MICROBIOLOGY LABORATORY HOURS: 9am - 6pm E.coli O157:H7, Coliforms, S.aureus ___ 24 hr. ___ 2 Day ___ 3-5 Day Salmonella, Listeria, E.coli, APC, Y & M ___ 48 Hr. ___ 3-5 Day Mold ___ RUSH ___ 24 Hr. 48 Hr. 3 Day 5 Day	REQUESTED ANALYSIS			VALID MATRIX CODES			LAB NOTES:											
				PLM - Short report, Long report, Point Count	TEM - AHERA Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS Analyte(s)	ORGANICS - METH		Salmonella: +/-	Listeria: +/-	Aerobic Plate Count: +/- or Quantification	Coliforms: +/- or Quantification	S.aureus: +/- or Quantification	Y & M: +/- or Quantification	Mold: +/-, Identification, Quantification	SAMPLER'S INITIALS OR OTHER NOTES	Sample Volume (L / Area)	Matrix Code	Date Collected mm/dd/yyyy
1	ELTB-PC01																			1589898	
2	ELTB-PC02																				900
3	ELTB-PC03																				1
4	ELTB-PC04																				2
5	ELTB-PC05																				
6																					
7																					
8																					
9																					
10																					

Number of samples received: 5 (Additional samples shall be listed on attached long form.)
 NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: Tim Hargett Date/Time: 03/15/16 11:20 Carrier: Hand
 Laboratory Use Only - Dan Harbman Date/Time: 3:15 PM 110
 Results: Contact Phone Email Fax Date Time Initials Initials
 Contact Phone Email Fax Date Time Initials Initials



Attachment 3 Colorado Department of Public Health and Environment (CDPHE) Demolition Notification Application Form



Colorado Department
of Public Health
and Environment

DEMOLITION NOTIFICATION APPLICATION FORM

APPLICATION FEE MUST ACCOMPANY THIS FORM

INCOMPLETE APPLICATIONS WILL BE RETURNED

(Notice will be mailed to the demolition contractor unless specified otherwise)

Fee: \$50 + \$5 per 1000 ft² of area to be demolished = \$ _____
(See instruction #1 on reverse side)

Submit form to:
Permit Coordinator
Colorado Dept. of Public
Health and Environment
APCD-IE-B1
4300 Cherry Creek Drive
South
Denver, CO 80246-1530
Phone: 303-692-3100
Fax: 303-782-0278
Asbestos@state.co.us

Demolition Contractor	Company Name: [REDACTED]			Demolition Site	Building Name: Evergreen Lakeshore Bridge			
	Street: [REDACTED]				Square footage of footprint of facility or portion of facility to be demolished ~750 sq ft			
	City: [REDACTED]	State: [REDACTED]	Zip Code: [REDACTED]		Street: 29612 Upper Bear Creek Road			
	Telephone # () [REDACTED]	Fax # () [REDACTED]			City: Evergreen	County: Jefferson	Zip Code: 80439	
	Project Manager: [REDACTED]	Cell Phone # () [REDACTED]			Proposed Start Date [REDACTED]		Proposed Completion Date [REDACTED]	
	I certify that the Certified Asbestos Building Inspector has informed me about any remaining asbestos-containing materials in the facility to be demolished.				Method/Mean of Demolition: <input type="checkbox"/> Wrecking <input type="checkbox"/> Burning <input checked="" type="checkbox"/> Implosion <input type="checkbox"/> Moving <input type="checkbox"/> Other, specify: _____			
Signature: [REDACTED]			Print Name: [REDACTED]			† Burning requires additional authorization – Please call (303) 692-3100 and ask to speak to the Open Burning Permit Coordinator		
Landfill Receiving Building Debris: [REDACTED]								
Asbestos Removal Contractor	General Abatement Contractor (GAC)			Building Owner	Owner's Name: City & County of Denver Public Works			
	CDPHE Asbestos Permit #	Total Quantity of Asbestos Removed			Street: [REDACTED]			
	Date Removal Completed	Telephone # () [REDACTED]			City: [REDACTED]	State: [REDACTED]	Zip Code: [REDACTED]	
	Type(s) of Asbestos-Containing Material Removed:				Contact's Name: [REDACTED]			Telephone # () [REDACTED]
Certified Asbestos Inspector Certification	With my signature below, I certify that I possess current AHERA accreditation and state of Colorado certification as an Asbestos Building Inspector. I also certify that I have thoroughly inspected the facility to be demolished, as listed in the Demolition Site block above, sampled all suspect materials, had all samples analyzed for the presence of asbestos by a NVLAP-accredited laboratory, and have determined that no Regulated ACM exists anywhere in the facility.* I also certify that I have informed the owner/operator of the facility or the demolition contractor that any asbestos-containing material allowed to stay in the facility must remain non-friable during demolition. Specify type(s) of ACM remaining, below: (check appropriate box(es)) :							
	<input type="checkbox"/> Vinyl asbestos floor tile (VAT) <input type="checkbox"/> VAT mastic <input type="checkbox"/> Tar/asphalt impregnated roofing <input type="checkbox"/> Asphaltic pipe coatings <input type="checkbox"/> Spray-applied tar coatings <input type="checkbox"/> Caulking <input type="checkbox"/> Glazing <input type="checkbox"/> Other, specify: _____							
	Signature: (In Blue Ink) Tim E. Hager			Printed Name: Timothy E. Hager				
Date of Final Inspection 03/05/2016	CO Cert # 13945	Expiration Date 01/26/2017	Telephone # (303) 547-8421	Cell Phone # (303) 547-8421				
Building Owner or Contractor	I verify that all refrigerants from air conditioning/refrigeration appliances have been properly recovered in accordance with AQCC Regulation No. 15 (for information on CFC requirements call 692-3100). I further verify that all luminous exit signs (containing radioactive material) have been disposed of in accordance with 6 CCR 1007-1 subpart 3.6.4.3 (for information on luminous exit sign requirements call 303-692-3320).							
	CHECK THE APPROPRIATE BOX:							
	<input checked="" type="checkbox"/> Building Owner	<input type="checkbox"/> Contractor	<input type="checkbox"/> Other	Date: [REDACTED]				
Signature: [REDACTED]			Print Name: [REDACTED]					
THIS BOX IS FOR CDPHE USE ONLY:								
Postmark or Hand Delivery Date:		Approved By:		Code: <input type="checkbox"/> initial-310 <input type="checkbox"/> transfer-380				
Form of Payment & #:		Permit #:		Record #:		Date Issued:		

* Regulated asbestos-containing materials means (a) friable asbestos-containing material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this regulation. Note: Asbestos-containing sheet vinyl and linoleum must be properly abated/removed prior to demolition.

Appendix C

Soil and Foundation Investigation and Pavement Design

GEOCAL

GEOSCIENCES & ENGINEERING

7290 South Fraser Street

Centennial, Colorado 80112-4286

Phone: 303-337-0338



SUBSURFACE EXPLORATION AND PAVEMENT DESIGN REPORT

PROPOSED

**EVERGREEN LAKE HOUSE
BRIDGE REPLACEMENT
EVERGREEN, COLORADO**

Prepared For

AECOM
Attn: Craig Parent, P.E.
8181 East Tufts Avenue
Denver, Colorado 80237

April 29, 2016

GEOCAL

GEOSCIENCES & ENGINEERING

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SUBSURFACE EXPLORATION AND PAVEMENT DESIGN REPORT

PROPOSED

EVERGREEN LAKE HOUSE BRIDGE REPLACEMENT EVERGREEN, COLORADO

By: Walter J. Zitz, P.E.
Project Engineer

Prepared For



AECOM
Attn: Craig Parent, P.E.
8181 East Tufts Avenue
Denver, Colorado 80237

Reviewed By: Ronald J. Vasquez, P.E.
Principal Engineer

April 29, 2016
G15.1625.001

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1.0 PURPOSE AND SCOPE

This report contains the results of a soil and foundation exploration conducted for the proposed replacement bridge at the entry to the Evergreen Lake House off of Jefferson County Road 74/Upper Bear Creek Road in Evergreen, Colorado. A subsurface exploration was conducted to obtain information on the soil, bedrock, and groundwater conditions. Soil and bedrock samples were visually classified and selected samples were tested in the laboratory to evaluate classification, bedrock strength, pavement support capabilities, and other engineering properties. The results of the field and laboratory programs were evaluated to develop geotechnical recommendations for foundation types, depths, and bearing pressures for support of the proposed bridge.

This report has been prepared to summarize the data and to present our conclusions and recommendations, based on the proposed construction and the subsurface conditions encountered. Design parameters and a discussion of geotechnical engineering considerations related to the design of the proposed structure are included. Environmental considerations related to the occurrence or potential occurrence of hazardous materials are beyond the scope of this study. Our services were provided in general accordance with our agreement with AECOM dated June 5, 2014.

2.0 PROPOSED CONSTRUCTION

Based on information provided by AECOM, we understand that the proposed construction will include the removal of the existing single-span bridge (NBI Structure No. D-27-MP-070), including the substructure and shallow elements of the foundations, and replacing it with a new two-lane, single-span bridge. The new bridge is expected have a length of approximately 50 feet and have wing-walls less than 10 feet high. Mechanically Stabilized Earth embankments may be used for both approaches to the bridge. A new pavement is expected for Evergreen Lake Road extending from Jefferson County Road 74 (CR 74)

approximately 150 feet to the southwest. The new bridged deck and roadway elevations are expected to remain essentially unchanged from existing conditions.

3.0 SITE CONDITIONS

The project site is situated near the western end of Evergreen Lake, approximately ½ mile west of Evergreen, Colorado and in the floodplain of generally southeast-flowing Upper Bear Creek. The existing bridge is located in an intermontaine valley of the Rocky Mountain Front Range where the Creek has dissected the mountains and within about 1,000 feet east of where it flows into Evergreen Lake. The Upper Bear Creek is defined as a “flood-prone stream” by the U.S. Geological Survey. The creek banks downstream of the bridge are lined with riprap, and some medium to large cobbles were observed in the creek channel and on the ground surface in the project area. Natural boulders were not observed on the ground surface in the immediate project area, but were observed on the ground surface several hundred feet upstream of the bridge.

The surrounding land is occupied with Dedisse Park, the Evergreen Golf Course, and the Evergreen Lake House, located on the western end of Evergreen Lake. Dedisse Park, which adjoins the project site immediately to the west, is a Mountain Park owned and operated by Denver Parks and Recreation. The existing bridge carries Evergreen Lake Road over Bear Creek, providing access to the Evergreen Lake House, and is two-lane, undivided, and asphalt-paved. The existing asphalt pavement is in fair to poor condition in the area of the existing bridge.

The existing bridge (Structure No. D-27-MP-070) is a single-span steel girder structure with timber deck planks bearing on concrete abutments with flared concrete wingwalls. The bridge width is approximately 24 feet and the span length is approximately 28 feet. At the time of Geocal’s field work the bridge roadway was approximately 6 feet above the channel bottom, where an approximate average depth of 2 feet of water was flowing. We understand that there was significant erosion of the creek channel near the bridge during the September 2013 flood event and that the upstream side of north abutment footing

was undermined up to approximately 30 inches. At the time of our field work, the existing bridge was load posted for 13 tons.

4.0 SITE GEOLOGY

In the area of the Evergreen Lake House Bridge, published quadrangle scale geologic mapping (U.S.G.S. Map I-786 A, 1972) indicates the natural soils in the Upper Bear Creek floodplain around Evergreen Lake are mixtures of silt, sands and gravels assigned to undifferentiated Post-Piney Creek and Piney Creek Alluvium. Elsewhere in the area Post-Piney Creek Alluvium soils are described as "... bouldery alluvium having a matrix of gravel, sand, or silt... underlying modern floodplains." Nearby toe-of-slope terrace and tributary deposits mapped as Piney Creek Alluvium soils are described as floodplain soils of mostly moderately stratified humic silt and sand with common lenses of sand and gravel, particularly near the base.

October 2015 field observations by Geocal indicate river channel deposits and soils around the Evergreen Lake House Bridge are dominated by very gravelly coarse sand with common cobbles and small boulders of crystalline rock; alluvial channel fill is likely as thick as about 20 feet in this area. Canyon walls in the project area are mantled by colluvium (natural slope wash soil deposits) composed of very silty and clayey sand with gravel, cobbles and small to medium size boulders of mixed igneous, metamorphic and sedimentary rocks. This soil is not indicated on the published geologic map, likely due to its interpreted limited thickness.

Bedrock is exposed in the canyon walls near the Evergreen Lake House Bridge, north of Upper Bear Creek, and south of Upper Bear Creek along the western edge of Evergreen Golf Course. It is identified on published mapping as dominantly strongly foliated (planes of parting parallel to original pre-metamorphic bedding), fine to medium grained biotite and hornblende gneiss. Mapping shows this foliation near the project area with dips predominately between 30° and 45° to the northwest (that is, generally oriented in an upstream direction to Upper Bear Creek); this orientation is clearly visible in road cuts along

CR-74 immediately north of the bridge. An overlay pattern applied to the mapping indicates common inclusions and layers of younger intrusive igneous rocks not separately mapped; these are indicated as related to the Silver Plume Quartz Monzonite (a granite-like rock typified as generally medium crystalline with common planar alignment of mineral grains and very hard).

The principal geologic hazard at the bridge site appeared to be hydraulic scouring (of alluvium and foliated and fractured bedrock) related to episodic stormwater and snow-melt events. Potential for rockfall along the south-facing road cut of CR 74 to the north was the only other significant geohazard noted near the site. The cut is near vertical on the north side of the intersection with Evergreen Lake House Drive and includes exposures with potentially weak over-hanging fractured and foliated bedrock. Bedrock boulders are visible on the moderate steep natural slope above the road cut.

5.0 SUBSURFACE EXPLORATION

The subsurface exploration for this project was conducted on October 22, 2015, and consisted of drilling four exploratory borings at the approximate locations shown on Figure 1, Locations of Exploratory Borings. Borings P-1 and P-2 were drilled to approximately 5 feet deep for pavement design information, and Borings S-1 and S-2 were drilled to approximately 28 feet and 23 feet deep, respectively, for bridge foundation design information. The borings were drilled with a Central Mine Equipment (CME) 75 truck-mounted drill-rig equipped with 4 inch diameter solid-stem augers and a 5 inch diameter Casing Advancer (ODEX) assembly (wire-line selectable rotary diamond tri-cone bit and rotary diamond NQ diameter core bit) with water circulation. Soil samples were collected at nominally 5 foot intervals and in general accordance with the applicable ASTM standard test methods, using a 2 inch inside diameter (ID) modified California sampler with brass liners (ASTM D 3550), or a 1 $\frac{3}{8}$ inch ID split-spoon sampler (ASTM D1586). When properly evaluated, the penetration resistance values provide an indication of the relative density or consistency of the soils or bedrock hardness. Composite bulk samples of auger cuttings were collected from the upper 5 feet of Borings P-1 and P-2. Bulk samples of the creek channel material were collected upstream and downstream of the bridge, at the approximate locations shown on Figure 1.

The bedrock core sample obtained from Boring S-1 was photographed and the Rock Quality Designation (RQD) measured/calculated on a core run basis (generally 5 feet per run), a photograph of the rock core is included in Appendix A. RQD is calculated by dividing the number of inches of core material longer than 4 inches by the total length of the run and multiplying the product by 100. The higher RQD numbers represent higher rock quality (a photograph of the rock core is in Appendix A). A representative of Geocal logged the borings.

Upon completion of drilling, the borings were backfilled with auger cuttings and imported sand-gravel mixed with bentonite and grout. The borings were capped with approximately 9 inches of asphalt cold patch, compacted in lifts. Soil and core samples collected were transported to our laboratory for review by our project engineer, and selected samples were programmed for testing. Logs of the subsurface conditions encountered, including depths at which samples were collected and penetration resistance values are shown on Figures 2-A through 2-D (individual logs of exploratory borings).

6.0 SUBSURFACE CONDITIONS

The exploratory borings were drilled from Evergreen Lake Road at the approximate locations shown on Figure 1 and penetrated asphalt pavement at the surface, the asphalt thickness encountered in the borings is summarized as follows. Material descriptions including depths at which samples were taken, penetration resistance values, and groundwater levels are shown on Figures 2-A through 2-D.

<u>Location</u>	<u>Asphalt Thickness (in.)</u>
Boring P-1	3½
Boring P-2	4
Boring S-1	3½
Boring S-2	3½

Aggregate base course (ABC) was not encountered below the asphalt in the borings. Below the asphalt pavement, artificial fill was encountered in Borings P-1, P-2, and S-1 which consisted of sand with

gravel and extended to depths of approximately 3 feet. The fill was medium dense, slightly moist, and reddish brown with fine to coarse sand and fine to medium angular gravel. Natural granular soils were encountered below the pavement in Boring S-2 and below the artificial fill in the other Borings. The natural soils generally consisted of loose to medium dense poorly graded to well graded sand to silty sand with gravel. In the deeper Borings (S-1 and S-2), the natural silty sands graded to medium dense to dense poorly graded sand with gravel and gravelly sand, with depth.

Boulders were not encountered in our exploratory borings, and the probability of the contractor encountering boulders during construction is believed to be low. However, boulders do exist on the ground surface in areas proximal to the site. Therefore the occurrence of boulder sized material being encountered during construction cannot be ruled out. Cobble sized material was visible in the channel and on the ground surface of the project site, and should be expected to exist within the overburden soils and in excavations for foundations.

Groundwater was encountered while drilling in Borings S-1 and S-2 at depths of approximately 5 feet and 7½ feet below the ground surface, respectively, and near the flow level of the adjacent creek. The groundwater level can be expected to vary seasonally and with channel flow.

7.0 LABORATORY TESTING

Laboratory tests conducted on soil and bedrock samples consisted of gradation, Atterberg limits (liquid and plastic limits), unconfined compressive strength, resistance R-value, water-soluble sulfate and chloride content, laboratory pH and resistivity. The laboratory test results are shown on Figures 3 to 5 and summarized on Table 1, with a summary of chemical test results on Table 2.

Gradation Analyses and Atterberg Limits: Soil samples were classified in accordance with the American Association of State Highway and Transportation Officials (AASHTO) classification system and the Unified Soil Classification System (USCS). These classification systems are based on the Liquid Limit

(ASTM D423), Plastic Limit (ASTM D424), and grain size distribution (ASTM D422), and provide qualitative information on the suitability of the soils for use in engineering applications.

The combined gradation and Atterberg limits test results are shown on Figures 3 and 4 and indicate that the soils tested are non-plastic and classify as silty sand with gravel or poorly graded to well graded sand with silt and gravel. The majority of the soils tested had an AASHTO classification of A-1-b, with two samples of silty sand classifying as A-2-4 and A-4 with group indices of 0. The upstream and downstream scour samples of channel soils classified as poorly graded gravel with sand (AASHTO A-1-a).

Resistance R-value: The R-value is an indication of the soil's ability to transfer traffic loading in the lateral direction, and is useful in evaluating the pavement support characteristics of subgrade soils. Test results are shown on Figure 5 indicate an R-value of 59 for the combined bulk sample of auger cuttings obtained from the upper 5 feet of Borings P-1 and P-2. The test results indicate good to very good soil strength for support of pavements.

Unconfined Compressive Strength: This test is a measure of the compressive strength of a sample under axial loading and without lateral confinement. The test is useful in evaluating soil or bedrock strength and the evaluation of bearing capacity and elastic properties, such as for lateral load capacities for deep foundations. Unconfined compressive strength testing was conducted on a sample of NQ rock core (ASTM D-2938). The sample was prepared by cutting the ends of the sample parallel to each other and at right angles to the longitudinal axis of the core. Load was applied continuously and without shock to produce a constant rate of deformation so that failure occurred within 5 minutes to 15 minutes of loading. The test results are summarized on Table 1 and indicate an unconfined compressive strength of 6,920 psi for the granitic bedrock core sample tested.

Water-Soluble Sulfates: The water-soluble sulfate test is a measurement of the potential degree of sulfate attack on concrete exposed to the onsite soils and bedrock. The severity of potential exposure is based on a range of Class 0 (negligible) to Class 3 (severe) as presented in Table 601-2 of *Section 601.04 Sulfate Resistance* of the 2011 Colorado Department of Transportation (CDOT) *Standard Specifications for Road and Bridge Construction* (CDOT Standard Specifications). Water-soluble sulfates were measured on samples of natural silty sand and silty sand with gravel ranged from not-detected to 0.01%, which represents a negligible degree of attack. Based on the results a Class 0 level of severity may be assumed

for concrete exposed to the onsite soils. Fill imported to the site should have water-soluble sulfate concentrations that meet the Class 0 sulfate requirements.

Buried Metal Corrosion Potential: Electrical resistivity, water-soluble chloride concentrations, and laboratory pH tests were conducted on selected soil samples to help evaluate the potential degree of attack on buried metal. These test results are summarized in Table 2; a corrosion specialist should be consulted to interpret the results. In general, electrical resistivity values ranged from 4,900 ohm-cm to 11,500 ohm-cm, measured chloride contents ranged from 0.0255% to 0.0735%, and the pH values ranged from 6.26 to 7.67. Any fill imported to the site should be evaluated for corrosion potential.

8.0 FOUNDATION RECOMMENDATIONS

Based on the proposed construction and the subsurface conditions encountered, a spread footing foundation system bearing on the medium dense, granular soils at an elevation at least three feet below the design scour level may be considered. A deep foundation system consisting of driven piles or drilled shafts (caissons), bearing in the underlying bedrock may also be used. Wingwalls that are continuous with the abutments should be supported by the same foundation type used to support the abutments.

8.1 SPREAD FOOTINGS

The following design and construction recommendations should be observed for a spread footing foundation system.

- 1) Spread footings should be placed on the natural medium dense sands at an elevation at least 3 feet below the design scour level or be supported on bedrock, whichever is higher, and be designed for a nominal soil bearing pressure of 12,000 pounds per square foot (psf). A resistance factor of 0.45 should be applied.

- 2) Resistance to sliding for footings supported by the onsite granular soils may be calculated using a coefficient of friction of 0.57. In accordance with the LRFD methodology, a resistance factor of 0.80 should be applied.
- 3) Settlement of footings designed and constructed as discussed in this section should be less than 1 inch total and $\frac{3}{4}$ inch differential.
- 4) Loose soils exposed at the bottom of the excavations for spread footings should be removed and replaced with suitable onsite granular material. New fill should be placed in uniform lifts and be compacted to at least 100% of the maximum standard Proctor density at moisture contents within 2% of optimum, as defined by AASHTO T-99.
- 5) Boulder sized material could create a hard spot and result in differential settlement of footing. Therefore boulders exposed at bearing elevation may need to be removed depending on rock size and potential influence on the footing. This should be evaluated during construction.
- 6) The bearing surface for spread footings should be compacted with a heavy vibratory roller prior to form placement for concrete. This will require that the contractor lower the groundwater level sufficiently to allow for compaction to occur, to prevent liquefaction of the soils and to help maintain the stability of the excavation. The contractor should be experienced with construction below groundwater level. Dewatering should be done from outside the work area and may require diversions or cofferdams. The contractor should anticipate that dewatering to a depth of at least 3 feet below the bottom of the excavation for spread footing construction may be needed.
- 7) Spread footing foundations should be provided with at least 3 feet of soil cover for frost protection.
- 8) Onsite observation of the bearing materials should be performed by a representative of this office.

8.2 DRIVEN H-PILES

Based on the subsurface conditions encountered, driven H-piles may be used for support of the new bridge structure. Very hard and crystalline cobbles and potentially boulders may be encountered in the overburden soils, which could interfere with pile driving. The use of a driven pile foundation will therefore require careful observation and knowledge of the subsurface conditions by a qualified observer.

Recommendations presented in this section are based on the 2014 AASHTO LRFD Bridge Design Specifications, 7th Edition, the subsurface data obtained, our experience, and with local geotechnical engineering practice. Installation of driven piles should be in accordance with Section 502 "Piling" of the 2011 Colorado Department of Transportation Standard Specifications for Road and Bridge Construction (CDOT Standard Specifications), and applicable Special Provisions.

- 1) Piles should consist of heavy steel H-sections consisting of Grade A50 steel or higher, and be driven to refusal in the underlying bedrock. Refusal criteria should be determined during construction using the Pile Driving Analyzer (PDA) in accordance with Section 502 of the CDOT Standard Specifications.
- 2) H-piles driven to refusal in the underlying bedrock may be designed for the structural capacity of the pile. A combined side shear and end bearing nominal capacity of 38 kips per square inch (ksi) times the cross sectional area may be used for grade A50 steel. A resistance factor of 0.65 should be applied.
- 3) H-piles are expected to encounter refusal within about the upper foot of the bedrock surface, although some variation in the bedrock surface elevation and penetration should be expected. If pile tip elevations are required to extend into bedrock, pre-drilling will be needed. Pre-drilled holes should be cased to reduce the potential for the soils to cave into the hole. Pre-drilling should be done in accordance with CDOT specifications, and the contractor should expect that diamond tipped rotary, coring or other equipment will be needed to predrill the bedrock.
- 4) Large boulders may cause refusal to H-pile penetration. If refusal to penetration occurs above estimated pile tip elevation, then the contractor may need to predrill the pile location to the bedrock surface. The potential for the contractor to encounter large boulders is expected to be low, but not ruled out.
- 5) Pile tip reinforcement should be used for pile protection if predrilling is not performed.
- 6) Settlement of properly constructed driven piles is expected to be nominal, on the order of ½ inch or less.
- 7) Lateral parameters are provided in Section 8.4 “Deep Foundation Lateral Capacity Parameters”. Additional resistance to horizontal forces can be provided with battered piles. The vertical and horizontal components of the load will depend on the batter inclinations. Batter should not exceed 1H:4V (horizontal to vertical) inclination.
- 8) For pile driven to the refusal on the bedrock surface, uplift resistance will likely be limited to side shear friction above the bedrock surface. The side shear friction value may be assumed to start at a design scour depth and increase linearly to an ultimate value of 720 psf at a depth of 10 feet below design scour depth, then remain constant to the bedrock surface. No side shear uplift capacity should be assumed for the section of pile above design scour elevation. A Resistance Factor of 0.35 should be applied to the nominal value for uplift. Pile and pile cap weights may be included in the dead load resistance to uplift forces.
- 9) Pile groups will require an appropriate reduction in axial capacity, based on the effective envelope of the pile group. For axial and uplift, this reduction can be avoided by spacing the piles no closer than 3 diameters from center to center. Piles spaced closer than 3 diameters should be evaluated on an individual basis to establish the appropriate reduction in the design parameters.

- 10) The contractor should submit the equipment proposed for use along with the results of a dynamic wave equation analysis that matches the equipment with the pile blow count related to the pile capacity specified. During construction, the pile capacity estimated by the wave equation analyses should be confirmed with a Pile Driving Analyzer (PDA) on at least two piles from each abutment.
- 11) The pile driving operations should be observed by Geocal personnel on a full-time basis. Piles should be observed and checked for buckling, crimping, and alignment in addition to recording penetration resistance and general pile driving operations. The observer should be qualified and have a good understanding of the subsurface conditions.

8.3 DRILLED SHAFTS

Drilled shafts (caissons) should be drilled into and supported by the underlying very hard, high strength bedrock. Penetration into the underlying bedrock will likely require coring, rotary drilling or other specialized equipment for penetrating very hard crystalline bedrock. A contractor familiar and experienced with drilling in this granitic type bedrock and these kinds of subsurface conditions should be used.

Installation should be in accordance with Section 503 – Drilled Caissons of the CDOT Standard Specifications and applicable Standard Special Provisions.

- 1) For design purposes, drilled shafts should be designed for Nominal side shear value of 20,000 psf for that portion of shaft in competent bedrock. Using LRFD methodology, a resistance factor of 0.55 should be applied to side shear, and 0.40 should be applied to side shear for uplift resistance. Due to bedrock hardness and high strength, the side shear along the shaft will mobilize well before end bearing. Therefore all of the capacity should be assumed provided through side shear along the perimeter of the shaft.
- 2) Drilled shafts should penetrate at least 6 feet into competent bedrock for the capacities presented in Item 1 above to be valid. These are geotechnical parameters. Greater penetration depths may be needed based on the structural requirements.
- 3) Settlement of properly constructed drilled shafts is expected to be on the order of ½ inch or less.
- 4) The minimum spacing requirements between drilled shafts should be three diameters from center to center. At this spacing, no reduction in the axial design parameters is required. Drilled shafts grouped less than 3 diameters center to center should be evaluated on an individual basis to determine the appropriate reduction in axial capacity.

- 5) Lateral capacity parameters are presented in Section 8.4, "Deep Foundation Lateral Capacity Parameters".
- 6) Drilled shaft holes should be properly cleaned prior to the placement of reinforcing steel or concrete. A maximum length to diameter ratio of 25 is recommended to facilitate cleaning and the observation of the shaft hole.
- 7) The method of installation used by the contractor may adversely affect the bedrock strength. For example if a percussion type of drilling is used, then fracturing of the rock may be greater than if the rock is cored. Fracturing of the rock will reduce the overall strength. Therefore, drilling with vibratory or percussion methods should not be used.
- 8) The presence of groundwater encountered in the exploratory borings and presence of granular soils with potential for caving indicates that casing and mud slurry methods will likely be required to help control groundwater and caving when drilling through the overburden. If water cannot be removed prior to placement of concrete, then concrete should be placed with an approved tremie method. The drilling contractor should be aware that water may be encountered in the bedrock as well as the overburden soils. Concrete should be placed after the hole has been well cleaned and approved. In no case should concrete be placed through more than 2 inches of water.
- 9) Cobbles were not encountered in our exploratory borings, however, they were observed in the channel and on the ground surface in the project area, and should be expected to be encountered during construction. Boulders were also not encountered during our field work, and the likelihood of being encountered during construction is believed to be low. However if boulders are encountered above estimated bedrock surface, then the use of core barrels, rotary bits, or other methods may need to be used to penetrate the overburden. Cobble and/or boulders could interfere with drilling, casing installation, and shaft construction, and the drilling contractor should be prepared to encounter cobbles and potentially boulders within the overburden, and should be experienced working in this kind of environment.
- 10) The drilling contractor should mobilize equipment of sufficient size, type, and operating condition to penetrate the overburden material and very hard and high strength bedrock to achieve the required bedrock penetration. Bedrock penetration should be measured down from the bottom of the casing or the top of competent bedrock, whichever is the lower elevation and as determined by a qualified observer.
- 11) Installation of drilled shafts should be observed by a Geocal representative to record bedrock penetration, placement of reinforcing steel, and the condition of the bottom and sides of the drilled shaft holes prior to concrete placement.

8.4 DEEP FOUNDATION LATERAL CAPACITY PARAMETERS

The following recommendations are based on the structural engineer using the computer program LPILE for lateral load analysis. Resistance to lateral loads should be assumed zero in the upper three feet of the ground surface, to account for surface disturbances, freeze-thaw action, etc. The following recommendations are based on our judgment and the user and technical manuals for LPILE Plus 6.0.

**Lateral Capacity Parameters for
Drilled Shaft and Driven Pile Foundations**

Material Type (p-y curve model type)	Total Unit Weight (pcf)	Cohesion C_u (psf)	Friction angle degrees (ϕ)	k (pci)
Onsite Granular Soils Above Groundwater (Sand, Reese)	130	0	32	90
Onsite Granular Soils Below Groundwater (Sand, Reese)	130	0	32	60

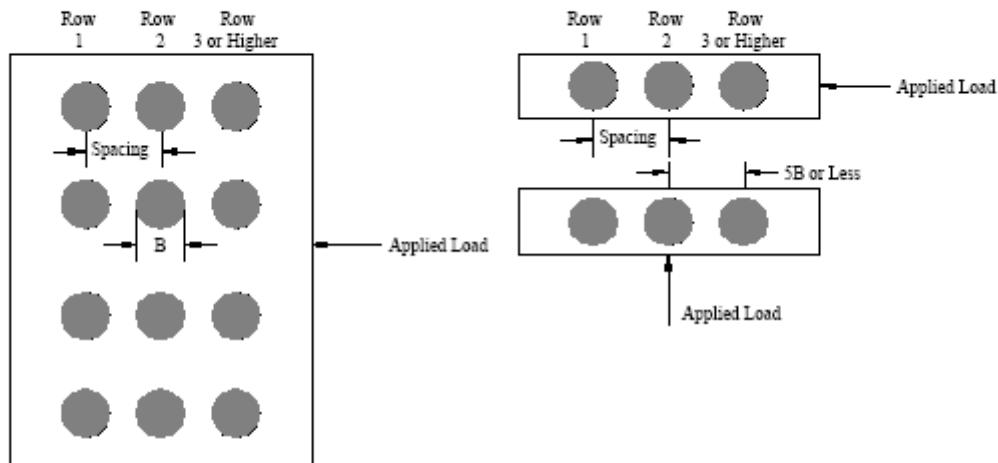
Material Type (p-y curve model type)	Total Unit Weight (pcf)	Uniaxial Compressive Strength (psi)	Friction angle degrees (ϕ)	Initial Mass Modulus (psi)	RQD (%)	k _{rm}
Granite Bedrock (Weak Rock, Reese)	160	750	35	550,000	30	0.0005

Reductions in lateral capacity for loading perpendicular to the line of shafts will not be required if center to center spacing of 6 shaft/pile diameters or more between adjacent drilled shafts/piles is maintained. For lateral loads parallel to the line of shafts/piles, reduction in lateral capacity is necessary at a spacing less than 6 diameters. LPILE uses p-multipliers to account for reduced capacity of closely spaced piles. Data presented below are based on information published in the 2014 AASHTO LRFD Bridge Design Specifications Manual. A sketch of the loading and how the rows are referenced is also shown.

**P-Multipliers
Drilled Shaft or Driven Pile Foundation**

Center to Center Spacing	p-multiplier for LPILE		
	Row 1	Row 2	Row 3 and Higher
3B*	0.8	0.4	0.3
5B	1.0	0.85	0.7

*B= Diameter of Shaft or Pile



9.0 LATERAL EARTH PRESSURES

We have assumed that wingwalls will likely be cast-in-place concrete and be supported by the same foundation type as the bridge. Retaining structures which are laterally supported and can be expected to undergo only a slight amount of deflection should be designed for lateral earth pressures based on the "at-rest" earth pressure condition. Walls which rotate and/or deflect sufficiently to mobilize the internal soil strength of the wall backfill may be designed for the "active" earth pressure condition. The following earth pressure coefficients are recommended for imported CDOT Class 1 material and for suitable onsite granular material used for wall backfill, and assume placement and compaction in accordance with the CDOT standard specifications.

<u>Material</u>	<u>Active (K_a)</u>	<u>At-Rest (K_o)</u>	<u>Passive (K_p)</u>	<u>γ_T – Unit Weight (pcf)</u>	<u>φ – Friction Angle (deg)</u>
Imported Class 1	0.28	0.44	3.54	135	34
Onsite Granular	0.33	0.50	3.00	120	30

Onsite granular material used as structure backfill should meet the following gradation:

<u>Sieve Size</u>	<u>Percent Passing (%)</u>
2 inch	100
No. 4	30 to 100
No. 50	10 to 80
No. 200	≤ 20

Imported granular material used as wall backfill should meet CDOT Standard Specifications for Class 1 Structure Backfill. The onsite granular soils are not expected to meet the Class 1 requirements. For granular backfill, lateral wall movement or rotation equal to 1% of the wall height is typically required to develop the full active case, whereas lateral movement equal to at least 2% of the wall height is normally required to establish full passive resistance. Suitable factors of safety should be applied to the above ultimate values to limit strain needed to reach the ultimate strength, particularly in the case of passive resistance, where large strains are needed to mobilize resistance.

Equivalent fluid unit weights may be assumed as follows:

$$\begin{aligned}
 \text{Above groundwater:} & \quad \gamma_{eq} = \gamma_T \times K_{a,o,p} \\
 \text{Below groundwater:} & \quad \gamma_{eq} = (\gamma_T - 62.4) \times K_{a,o,p} \\
 \text{where:} & \quad \gamma_T = \text{soil total unit weight} \\
 & \quad K_{a,o,p} = \text{appropriate earth pressure coefficient}
 \end{aligned}$$

The above parameters are for a horizontal backfill and no surcharge loading. Retaining structures should be designed for appropriate surcharge pressures such as from traffic, snow storage, etc. The buildup of water behind a wall or an upsloping backfill surface will increase the lateral pressures imposed on retaining structures. An underdrain should be provided to help reduce unbalanced hydrostatic pressure buildup, unless the wall is designed to accommodate the additional pressure.

Structure backfill should be placed and compacted in accordance with the CDOT standard specifications for structure backfill. Care should be taken not to over compact the backfill or use large equipment within 5 feet of the back side of the wall, which may cause excessive lateral loading against the

walls. Settlement of wall backfill is estimated at approximately 1% to 2% of wall height and should occur during construction assuming CDOT Class 1 Structure Backfill or similar material is used. Settlement of the bearing material supporting the backfill is estimated to be less than 1 inch. Most of that settlement should also occur during construction.

MSE Retaining Walls: We understand that the embankment approaches to the abutments may be constructed using Mechanically Stabilized Earth structures, generally less than about 10 feet high, and that the walls will impose foundation bearing pressures of up to about 1,800 psf (allowable). The onsite natural granular soils expected to be encountered at bearing elevation should be suitable to support MSE walls up to about 10 feet high. The design and construction standards provided by the Colorado Department of Transportation (CDOT) should be observed. The following additional details are recommended to help reduce settlement potential next to the abutment.

1. Prior to MSE wall construction, the bearing surface should be checked to see that all old artificial fill has been removed and that the natural granular soils or bedrock are exposed.
2. The exposed bearing surface should be uniformly scarified and re-compacted with a heavy vibratory roller to at least 95% of the maximum Modified Proctor density as defined by AASHTO T180, at moisture contents near optimum or as needed to achieve compaction.
3. The bearing surface should be uniformly proof rolled with rubber tired construction equipment, in accordance with Section 203.09 of the CDOT standard specifications. Areas that do not pass the proof rolled, should be excavated and replaced with more stable soils.
4. New soil needed to elevate the bearing surface should be granular (similar to the onsite), placed in uniform 8-inch thick lifts and compacted to the same requirement.
5. Consideration should be given to increasing the compaction frequency for Class 1 backfill used in MSE wall construction to at least 1 randomly distributed test per lift of backfill.
6. The contractor should be prepared to dewater the bearing surface to sufficient depth to provide a stable working platform, and so that compaction and proof-rolling can be accomplished without causing instability to the slopes or excavation base. A dewatering depth of 3 feet or more below bearing elevation may be needed. Deeper dewatering depths may also be needed depending on the depth to ground water. Flow rates into excavations below ground water are expected to be high.

10.0 SITE GRADING

Excavation of the onsite soils should be possible with conventional heavy duty equipment. The re-use of onsite materials will be a function of where the material is taken from and what the intended use is. Existing vegetation, debris and deleterious materials should be stripped and removed from all proposed pavement and fill areas. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction. Fill should be placed and compacted according to CDOT Standards. Flatwork areas should be stripped of existing vegetation and topsoil, uniformly scarified to a depth of 8 inches, moisture conditioned and compacted in accordance with the CDOT Standard Specifications. The existing onsite granular soils (less oversized material) should be suitable for use as engineered fill for support of pavements and for common embankments. Structure backfill material meeting CDOT Class 1 requirements should be imported. However, most of the onsite natural soils are expected to be granular and some may be suitable for use as structure backfill. The materials should be checked during construction.

Permanent fill slopes up to 15 feet high should be constructed no steeper than 3 horizontal to 1 vertical grade provided the fills are properly compacted and drained. The ground surface underlying proposed fills should be carefully prepared by removing all organic matter and oversized material (greater than 6 inches maximum dimension), scarifying to a depth of 8 inches and re-compacting in accordance with the CDOT Standard Specifications. Settlement of properly compacted embankments constructed of granular material similar to that encountered onsite should be on the order of approximately 1% to 2% of the embankment height, and that settlement should occur during construction.

Permanent cut slopes and other stripped areas should be protected against erosion by re-vegetation or other methods. Cut slopes up to 10 feet high should be possible provided the slopes do not exceed 3 horizontal to 1 vertical and seepage is not encountered. If seepage is encountered we should be advised for further evaluations. Proper surface drainage should be provided around all permanent cuts to direct surface runoff away from the cut face.

No formal stability analyses were performed to evaluate the slopes recommended above. Published literature and our experience with similar cuts and fills indicate the recommended slopes have adequate factors of safety.

Excavations are particularly susceptible to localized instabilities if seepage is encountered, and the contractor should be aware of shallow groundwater, excavation stability, and safety for workers. If sloped excavations are used, stockpiled material should be placed no closer to the top of the excavation than three times the depth of the excavation. Construction excavations should conform to applicable OSHA regulations, and the contractor should assume responsibility for excavations that are safe for workers.

Dewatering: Depending on the depth of excavation and seasonal conditions, groundwater may be encountered in excavations. If excavations are conducted during the spring and early summer months, seasonal runoff may rapidly increase the groundwater elevations and the contractor may need to be prepared with sufficient equipment to accommodate a rapid rise of groundwater. The contractor should anticipate that groundwater flow rates into excavations that are below the groundwater level will be high.

11.0 UNDERDRAIN

Below grade structures should be provided with an underdrain system which will help prevent buildup of hydrostatic pressure or an unbalanced hydrostatic condition. The underdrain system should consist of a perforated PVC pipe surrounded by free draining granular material placed at the bottom of the wall backfill and sloped at a minimum 0.5% grade to a suitable gravity outlet. Free draining granular material used in the drain system should conform to the requirements for Class B filter material as specified in the CDOT standard specifications.

12.0 SEISMIC DESIGN PARAMETERS

The project site is located at Latitude 39.632740 and Longitude -105.333529, within a deeply incised canyon cut by the Upper Bear Creek within the Front Range of the central Colorado Rocky Mountains. The borings conducted by Geocal indicate that on-site soils in the area which are below groundwater generally consist of medium dense to dense silty sands with gravel, extending to a depth of approximately 18 feet to 19 feet below the roadway level. Hard and very high strength bedrock was encountered in the exploratory borings underlying the granular soils. Based on the limited amount of overburden soils present, the Seismic Site Class utilized for analysis should be Site Class C (Very Dense Soil and Soft Rock). Due to the presence of dense granular soils at this site, there is low potential for liquefaction of the soils below groundwater table in a seismic event.

Printouts of the USGS seismic design maps web application have been included in Appendix B. Based on the American Association of State Highway and Transportation Officials (AASHTO) 2009 Guide Specifications for LRFD Seismic Bridge Design requirements, the following site factors may be utilized for design:

Peak Ground Acceleration (PGA)	0.066 g	(Site Class B)
Spectral Acceleration Coefficient at 0.2 Second Period (S_S)	0.138 g	(Site Class B)
Spectral Acceleration Coefficient at 1.0 Second Period (S_1)	0.036 g	(Site Class B)
Site Factor (F_{PGA})	1.2	(Site Class C)
Site Factor (F_a)	1.2	(Site Class C)
Site Factor (F_v)	1.7	(Site Class C)
Modified Peak Ground Acceleration (A_S)	0.079 g	(Site Class C)
Modified Spectral Acceleration Coefficient at 0.2 Second Period (S_{DS})	0.166 g	(Site Class C)
Modified Spectral Acceleration Coefficient at 1.0 Second Period (S_{D1})	0.061 g	(Site Class C)
T_0 (sec.)	0.073	(Site Class C)
T_s (sec.)	0.367	(Site Class C)

13.0 PAVEMENT DESIGN

A pavement section is a layered system designed to distribute concentrated traffic loads to the subgrade without overstressing the subgrade soils. Performance of the pavement structure is a function of several factors including but not limited to the physical properties of the subgrade soils, drainage, and traffic loadings. The pavement sections presented in this report are based on the laboratory test results and the Metropolitan Government Pavement Engineers Council Design Standards and Construction Specifications (MGPEC Standard Specifications). MGPEC designs for Portland Cement Concrete Pavement (PCCP) and Hot Mix Asphalt Pavement (HMAP) are provided.

Traffic Loading and ESAL Calculations: The 18 kip Equivalent Single Axle Load (ESAL) is the equivalent 18,000 pound single axle loading for different vehicle types, and the design period ESAL is the total number of equivalent loadings applied to pavements over the design period. A 20 year design life is used in the MGPEC procedure, which requires an estimate of the number of 18 kip ESALs that will be applied to the pavement structure during the 20 year project design life.

The 2013 Average Daily Traffic (ADT) value of 290 vehicles per day (vpd), and the projected 2033 ADT of 356 vpd were obtained from the 2014 inspection report for the existing Evergreen Lake Road Bridge over Upper Bear Creek. A 20 year Growth Factor of 1.2 was calculated from the available traffic data, and was used to calculate the projected 2016 ADT of 300 vpd and a 2036 ADT of 366 vpd. The following MGPEC vehicle factors and traffic distribution were assumed for the design ESAL calculation:

<u>Vehicle Type</u>	<u>MGPEC Vehicle Equivalency Factor</u>	<u>% of Traffic</u>
Passenger Vehicle	0.0045	97.0
Single Unit Truck	0.617	1.5
Combination Unit Truck	2.578	1.5

A design lane factor of 60% was applied, which assumes 1 travel lane in each direction. Applying the MGPEC vehicle equivalency factors, a 20 year design ESAL value (ESAL₂₀) of 76,337 was calculated for the Evergreen Lake Road bridge approaches.

Subgrade Soil Strength: Based on the gradation and Atterberg limits test results, the soils tested had AASHTO Classifications ranging from A-1-b to A-4 with a Group Index of 0 for the near surface soils. Laboratory test results indicate the combined bulk sample of auger cuttings collected from the upper 5 feet of Borings P-1 and P-2 had an R-value of 59. For design, an R-value of 53 was used, based on a 10% reduction of the laboratory R-value to account for the subgrade variability.

MGPEC design procedures utilize correlations and equations for Resilient Modulus to quantify subgrade pavement support characteristics. For sandy subgrades, the MGPEC equations are related to the R-value of the soils, whereas for clayey subgrades, the MGPEC equations are related to the unconfined compressive strength (q_u). The MGPEC procedures state that the resulting resilient modulus obtained from the above equations should be reduced by 25% unless: (1) a subdrain system is provided and properly maintained, (2) the subgrade is permeable ($K > 1,000$ ft/year), (3) for rural pavements with designated drainage ditches, or (4) the subgrade is gneiss or granitic in nature. As per the MGPEC pavement design guidelines, a resilient modulus (M_r) of 14,525 pounds per square inch (psi) was calculated using Equation 9 of the MGPEC design manual for A-1 soils; the 25% reduction was not applied because the site is generally free draining. Any imported soils used as pavement subgrade should be granular and have similar or better strength characteristics as the onsite granular soils.

Pavement Thickness Recommendations: The MGPEC software calculated the following HMAP and PCCP sections. The pavement design printouts and MGPEC Form #9 are included in the Appendix C.

<u>Pavement Section</u>	<u>New Pavement Thickness (in)</u>
Full Depth PCCP	6.0
Full Depth HMAP	5.0

A fatigue equivalent HMAP composite section consisting of 3.5 inches of HMAP over 6.0 inches of Aggregate Base Course (ABC) may also be considered. The exploratory borings generally encountered a layer of HMAP 3½ inches to 4 inches thick overlying the onsite granular subgrade soils, which is less than the minimum recommended pavement sections shown above.

Hot Mix Asphalt Pavement (HMAP): HMAP should consist of a bituminous plant mix composed of a mixture of aggregate and bituminous material that meets the requirements of a job-mix formula established by a qualified engineer.

The following mix type is suggested for asphalt pavements: Grading SX (75) PG58-28. The use of Grading SX for the full depth will help limit the cost associated with using two mixes for the small quantities expected. A fine Grading S mix would also be acceptable, placed above the maximum density and exclusion zone.

Portland Cement Concrete Pavement (PCCP): PCCP pavements should consist of an approved mix design by a qualified engineer and meet the requirements outlined in Item 11 of the MGPEC standard specifications. A 6 inch layer of ABC should be placed below the PCCP, this non-structural component of the pavement design will not reduce the recommended PCCP thickness, but is intended to help reduce the migration of fines through construction joints.

Aggregate Base Course (ABC): Material should meet specifications in accordance with Item 7 of the MGPEC Specifications and have a minimum R-value of 78. The material should be compacted to at least 95% of the maximum density as determined by AASHTO T-180.

Subgrade Preparation: Old pavement, debris and any otherwise unsuitable materials should be removed from the pavement subgrade and replaced with engineered fill meeting the minimum strength requirements. New fill needed for support of pavements should be non-expansive, granular, and have an R-value of 53 or better. Fill should be moisture conditioned, placed and compacted in accordance with CDOT standard specifications. If unsuitable materials need to be removed to a depth at which groundwater is encountered, the use of a coarse rock in combination with a geotextile or geogrid may be needed to backfill the excavation

Proof-Roll: Prior to paving, the subgrade should be proof-rolled with a heavily loaded pneumatic tired vehicle, as described in Section 7.4.4 of the MGPEC specifications. Areas of the subgrade that rut or deflect excessively under the wheel loads should be removed and replaced prior to paving. Proof-rolled areas should be paved within 48 hours unless affected by precipitation, construction traffic, or otherwise disturbed. If disturbed or subjected to heavy precipitation, the area should be repaired and proof-rolled again. The contractor should anticipate subgrade conditions that vary from optimum moisture, and the addition of water or drying of the subgrade soils to achieve proper moisture conditions will be needed.

Drainage and Frost Potential: The collection and diversion of surface drainage away from paved areas is extremely important to the satisfactory performance of the pavement. The design of surface drainage should be carefully considered to remove all water from paved areas. The soils encountered classify as low frost susceptibility. Frost heave potential can be reduced through proper surface drainage and construction control.

Maintenance: Periodic maintenance of paved areas will extend pavement life. The scheduled maintenance programs listed in Section 5 of the MGPEC specifications should be followed for “Commercial, Industrial, and Arterial” pavement designs for HMAP and PCCP.

14.0 LIMITATIONS

This report has been prepared in accordance with generally accepted geotechnical engineering practices used in this area, and has been prepared for design purposes. The conclusions and recommendations are based upon the data obtained from the borings drilled at the approximate locations shown on Figure 1 and the proposed construction. The nature and extent of the variations between borings may not become evident until excavation is performed. If during construction, soil, bedrock, fill, or groundwater conditions appear to be different from those described, this office should be advised so that re-evaluation of our recommendations may be made. On-site observation and testing of construction materials is recommended.

Our professional services were performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. No warranty expressed or implied is made. We prepared the report as an aid in the design of the proposed project. This report is not a bidding document. Any contractor reviewing this report must draw his or her own conclusions regarding site conditions and specific construction techniques to be used on this project.

This report is for the exclusive purpose of providing geotechnical engineering information and recommendations. The scope of services for this project does not include environmental assessment of the site or identification of contaminated or hazardous materials or conditions. If the owner is concerned about the potential for such contamination, other studies should be undertaken.

Geocal should conduct a general review of the final plans and specifications to evaluate that our recommendations have been properly interpreted and implemented during design. In the event Geocal is not retained to perform this recommended review, we assume no responsibility for misinterpretation of our recommendations.



0 50

APPROXIMATE SCALE (ft)

G15.1625.001

GEOCAL, INC.

EVERGREEN LAKE HOUSE BRIDGE REPLACEMENT
LOCATIONS OF EXPLORATORY BORINGS

FIGURE 1



7290 South Fraser Street
 Centennial CO 80112
 Telephone: (303)337-0338
 Fax: (303)337-0247

LOGS OF EXPLORATORY BORINGS
BORING P-1
FIGURE 2-A

CLIENT AECOM-URS **PROJECT NAME** Evergreen Lake House Bridge Replacement
PROJECT NUMBER G15.1625.001 **PROJECT LOCATION** Evergreen, Jefferson County, Colorado
DATE STARTED 10/22/15 **COMPLETED** 10/22/15 **GROUND ELEVATION** 7080.64 ft **NORTH** _____
DRILLING CONTRACTOR Elite Drilling Services **GROUND WATER LEVELS:** EAST
DRILLING METHOD SSA **HOLE SIZE** 4 inches **AT TIME OF DRILLING** --- Not Encountered
LOGGED BY Ben Walter **CHECKED BY** Walter Zitz, P.E. **AT END OF DRILLING** ---
NOTES _____ **AFTER DRILLING** ---

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DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONFINED COMP. STRENGTH (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)	% Swell (+) or Consol (-) / Swell Pressure (ksf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
0		ASPHALT PAVEMENT, 3½ inches thick											
		FILL-SAND with GRAVEL, medium dense, non-plastic, slightly moist, brown, fine to coarse sand, fine to medium gravel	MC	100	11-8								
			GB										
		SILTY SAND with GRAVEL, medium dense, non-plastic, slightly moist, light gray to black, fine to coarse sand, fine gravel	MC	100	3-9								
5		Bottom of boring at 5.0 feet.											



7290 South Fraser Street
 Centennial CO 80112
 Telephone: (303)337-0338
 Fax: (303)337-0247

LOGS OF EXPLORATORY BORINGS
BORING P-2
FIGURE 2-B

CLIENT AECOM-URS **PROJECT NAME** Evergreen Lake House Bridge Replacement
PROJECT NUMBER G15.1625.001 **PROJECT LOCATION** Evergreen, Jefferson County, Colorado
DATE STARTED 10/22/15 **COMPLETED** 10/22/15 **GROUND ELEVATION** 7081.78 ft **NORTH** _____
DRILLING CONTRACTOR Elite Drilling Services **GROUND WATER LEVELS:** EAST
DRILLING METHOD SSA **HOLE SIZE** 4 inches **AT TIME OF DRILLING** --- Not Encountered
LOGGED BY Ben Walter **CHECKED BY** Walter Zitz, P.E. **AT END OF DRILLING** ---
NOTES _____ **AFTER DRILLING** ---

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DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONFINED COMP. STRENGTH (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)	% Swell (+) or Consol (-) / Swell Pressure (ksf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
0		ASPHALT PAVEMENT, 4 inches thick											
		FILL-SAND with GRAVEL, medium dense, non-plastic, slightly moist, brown, fine to coarse sand, fine to medium gravel	MC	100	10-11								
		SILTY SAND, loose, non-plastic, slightly moist, light gray to black, fine to medium sand, micaceous	GB										
5			MC	100	6-6		73	40.5	NP	NP	NP	44	

Bottom of boring at 5.0 feet.

CLIENT <u>AECOM-URS</u>	PROJECT NAME <u>Evergreen Lake House Bridge Replacement</u>
PROJECT NUMBER <u>G15.1625.001</u>	PROJECT LOCATION <u>Evergreen, Jefferson County, Colorado</u>
DATE STARTED <u>10/22/15</u> COMPLETED <u>10/22/15</u>	GROUND ELEVATION <u>7081.17 ft</u> NORTH _____
DRILLING CONTRACTOR <u>Elite Drilling Services</u>	GROUND WATER LEVELS: EAST _____
DRILLING METHOD <u>ODEX</u> HOLE SIZE <u>8 inches</u>	▽ AT TIME OF DRILLING <u>5.00 ft / Elev 7076.17 ft 5 ft</u>
LOGGED BY <u>Ben Walter</u> CHECKED BY <u>Walter Zitz, P.E.</u>	AT END OF DRILLING <u>---</u>
NOTES <u>NX Core in Bedrock</u>	AFTER DRILLING <u>---</u>

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DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONFINED COMP. STRENGTH (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)	% Swell (+) or Consol (-) / Swell Pressure (ksf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
0		ASPHALT PAVEMENT, 3½ inches thick FILL-SAND with GRAVEL, medium dense, non-plastic, slightly moist, brown, fine to coarse sand, fine gravel											
5	▽	SILTY SAND with GRAVEL, medium dense, non-plastic, slightly moist, brown, fine to coarse sand, fine gravel	MC	100	6-8								
10		POORLY GRADED SAND with GRAVEL, medium dense, non-plastic, moist to wet, dark gray to black, fine to coarse sand, fine gravel, micaceous	SPT	100	10-13-36 (49)								
15		WELL GRADED SAND with SILT and GRAVEL, medium dense, non-plastic, wet, reddish orange to brown, fine to coarse sand, fine to medium gravel	SPT	100	18-16-13 (29)			14.6	NP	NP	NP	10	
20		BIOTITE GNEISS BEDROCK - Metamorphic, coarse crystalline, foliated (banded), low hardness to hard, moderately altered, dark gray, sub-horizontal partings (very rough, no filling) GRANITIC BEDROCK - Igneous, likely Quartz Monzonite, medium crystalline, minerals weakly lineated (about 30°), hard to very hard, unaltered, lightly pinkish to gray, open and closed fractures common (mostly 30°, occasionally 40° to 80°), planar to stepped, rough, no filling, light oxide coating	SPT	33	50/3"		162	0.1					
			RC	74 (42)									
			RC	90 (32)									

Bottom of boring at 28.0 feet.

CLIENT <u>AECOM-URS</u>	PROJECT NAME <u>Evergreen Lake House Bridge Replacement</u>
PROJECT NUMBER <u>G15.1625.001</u>	PROJECT LOCATION <u>Evergreen, Jefferson County, Colorado</u>
DATE STARTED <u>10/22/15</u> COMPLETED <u>10/22/15</u>	GROUND ELEVATION <u>7081.78 ft</u> NORTH _____
DRILLING CONTRACTOR <u>Elite Drilling Services</u>	GROUND WATER LEVELS: EAST _____
DRILLING METHOD <u>ODEX</u> HOLE SIZE <u>8 inches</u>	▽ AT TIME OF DRILLING <u>7.50 ft / Elev 7074.28 ft 7½ ft</u>
LOGGED BY <u>Ben Walter</u> CHECKED BY <u>Walter Zitz, P.E.</u>	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

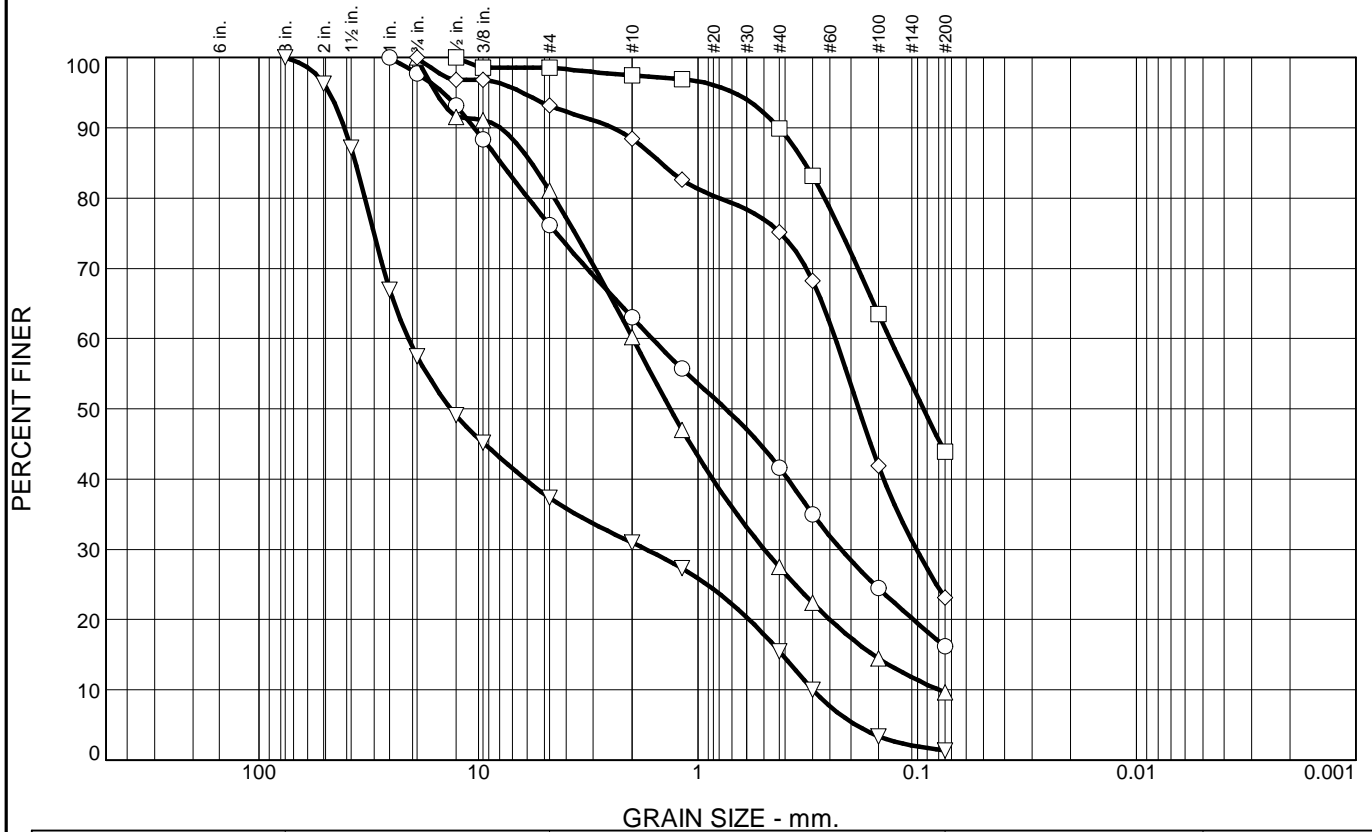
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DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONFINED COMP. STRENGTH (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)	% Swell (+) or Consol (-) / Swell Pressure (ksf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
0	ASPHALT PAVEMENT, 3½ inches thick												
	SILTY SAND with GRAVEL, medium dense, non-plastic, slightly moist, brown, fine to coarse sand, fine gravel												
5	POORLY GRADED SAND with GRAVEL, medium dense, non-plastic, moist to wet, dark gray to black, fine to coarse sand, fine gravel, micaceous	▽	SPT	100	1-1-1 (2)			42.4	NP	NP	NP	23	
10	GRAVELLY SAND, medium dense, non-plastic, wet, light to reddish brown, fine to coarse sand, fine to medium gravel	▽	SPT	100	5-6-8 (14)								
15	GRANITIC BEDROCK - Granite family, medium crystalline, extremely hard, dark gray	▽	SPT	100	10-9-8 (17)								
20	GRANITIC BEDROCK - Granite family, medium crystalline, extremely hard, dark gray	▽	SPT	64	46-50/5"								

Bottom of boring at 23.0 feet.

SPT 100 50/0"

Gradation Test Results



	% +3"	% Gravel	% Sand	% Silt	% Clay
○	0	24	60	16	
□	0	1	55	44	
△	0	19	71	10	
◇	0	7	70	23	
▽	0	63	36	1	

	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	NV	NP	7.8869	1.6164	0.7469	0.2226				
□	NV	NP	0.3254	0.1331	0.0935					
△	NV	NP	5.7405	1.9810	1.3355	0.4977	0.1588	0.0798	1.57	24.83
◇	NV	NP	1.4686	0.2360	0.1845	0.1006				
▽	NV	NP	36.3244	20.8448	13.4233	1.7171	0.4118	0.2991	0.47	69.70

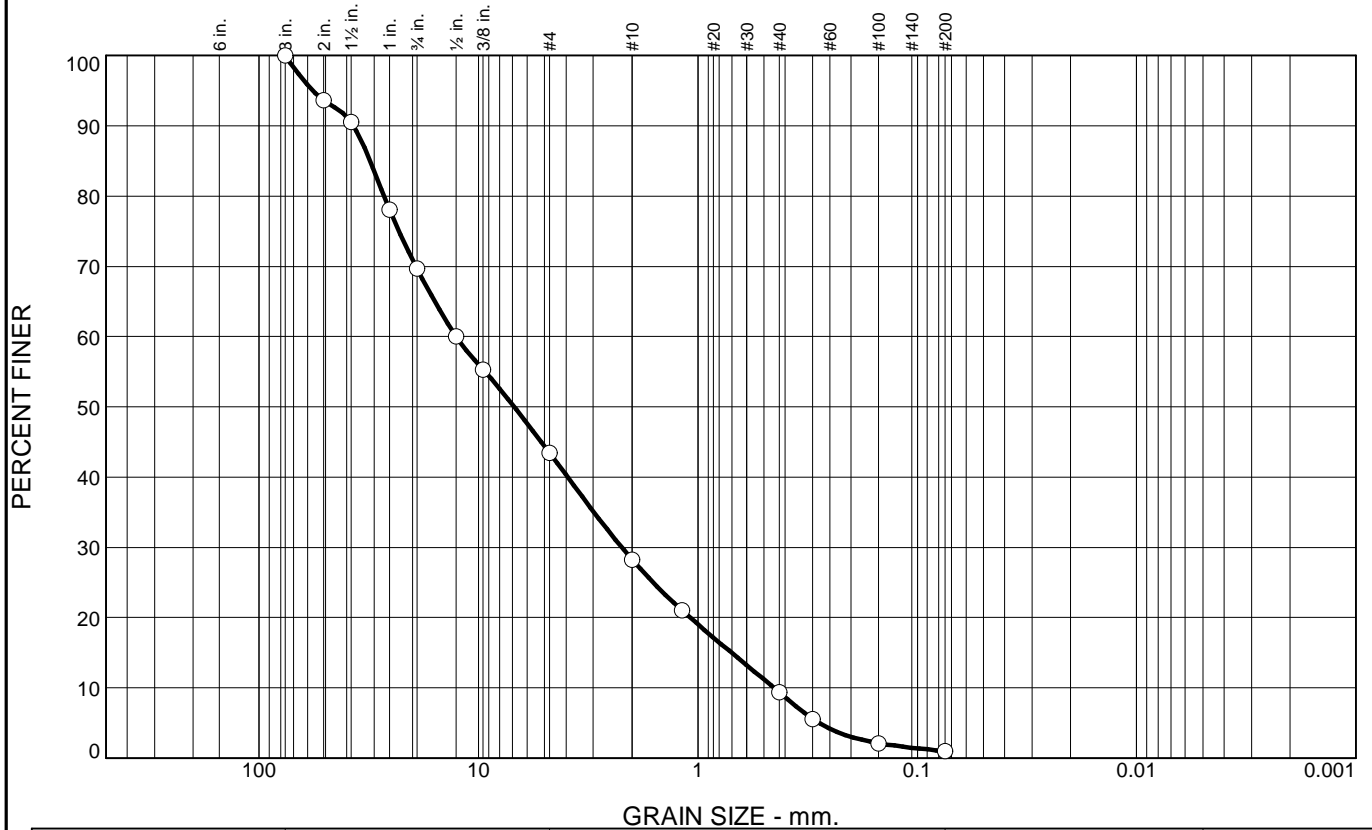
Material Description		USCS	AASHTO
○	silty sand with gravel	SM	A-1-b
□	silty sand	SM	A-4(0)
△	well graded sand with silt and gravel	SW-SM	A-1-b
◇	silty sand	SM	A-2-4(0)
▽	poorly graded gravel with sand	GP	A-1-a

Project No. G15.1621.000 **Client:** URS Corporation
Project: Evergreen Lake House Bridge Replacement
○ **Loc.:** Borings P-1 & P-2 combined **Depth:** 1-5 feet **Sample No.:** 7256-1
□ **Location:** Boring P-2 **Depth:** 4 feet **Sample Number:** 7256-2
△ **Location:** Boring S-1 **Depth:** 13 feet **Sample Number:** 7256-3
◇ **Location:** Boring S-2 **Depth:** 3 feet **Sample Number:** 7256-5
▽ **Location:** Upstream **Sample Number:** 7256-7

Remarks:

GEOCAL, INC.

Gradation Test Results



	% +3"	% Gravel	% Sand	% Silt	% Clay
○	0	57	42	1	

	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○	NV	NP	31.1305	12.6674	6.8859	2.2292	0.7022	0.4496	0.87	28.18

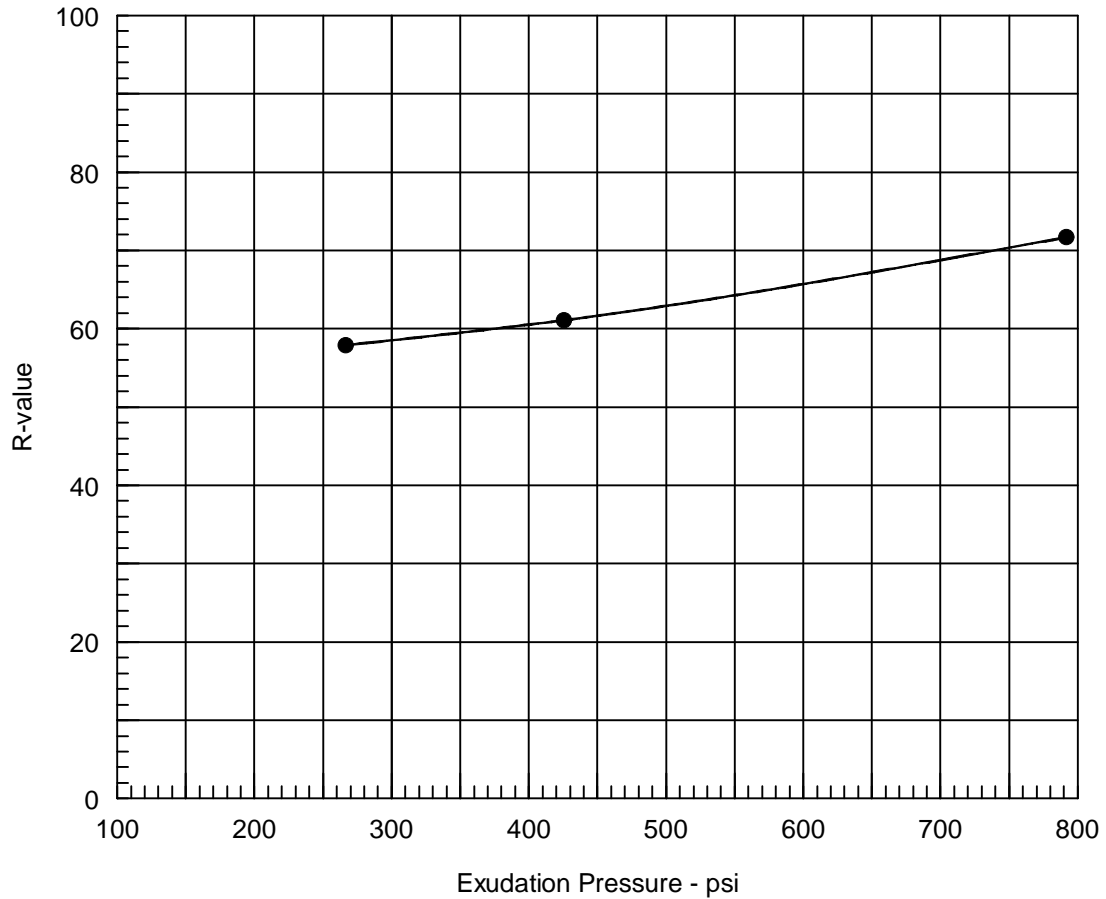
Material Description	USCS	AASHTO
○ poorly graded gravel with sand	GP	A-1-a

Project No. G15.1621.000 **Client:** URS Corporation
Project: Evergreen Lake House Bridge Replacement
 ○ **Location:** Downstream **Sample Number:** 7256-8

Remarks:

GEOCAL, INC.

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - AASHTO T 190

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	325	123.7	7.9	0.00	50	2.48	267	58	58
2	375	124.7	7.2	0.00	30	2.49	792	72	72
3	350	124.2	7.5	0.00	39	2.49	426	61	61

Test Results	Material Description
R-value at 300 psi exudation pressure = 59	silty sand with gravel
Project No.: G15.1621.000 Project: Evergreen Lake House Bridge Replacement Location: Borings P-1 & P-2 combined Sample Number: 7256-1 Depth: 1-5 feet Date: 11/9/2015	Tested by: M.Wegelin Checked by: H.Redzic Remarks: Test performed in accordance with Colorado procedure CP-L3101
R-VALUE TEST REPORT GEOCAL, INC.	Figure 5

APPENDIX A

PHOTOGRAPH OF ROCK CORE

UNCONFINED COMPRESSION
TEST SEGMENT

TOP OF RUN 1

TOP OF RUN 2

BOTTOM OF
RUN 1

BOTTOM OF
RUN 2



Run Number	Depth Interval, ft	Recovery, %	RQD, %
1	18.0—23.0	74	42
2	23.0—28.0	90	32

NX Rock Core Summary
Boring S-1
Evergreen Lake House Bridge Replacement
Evergreen, Colorado

G15.1625.001

GEOCAL

APPENDIX B

SEISMIC PRINTOUTS FROM USGS

USGS Design Maps Summary Report

User-Specified Input

Report Title Evergreen Lake House Bridge

Fri November 6, 2015 20:06:47 UTC

Building Code Reference Document 2009 AASHTO Guide Specifications for LRFD Seismic Bridge Design
(which utilizes USGS hazard data available in 2002)

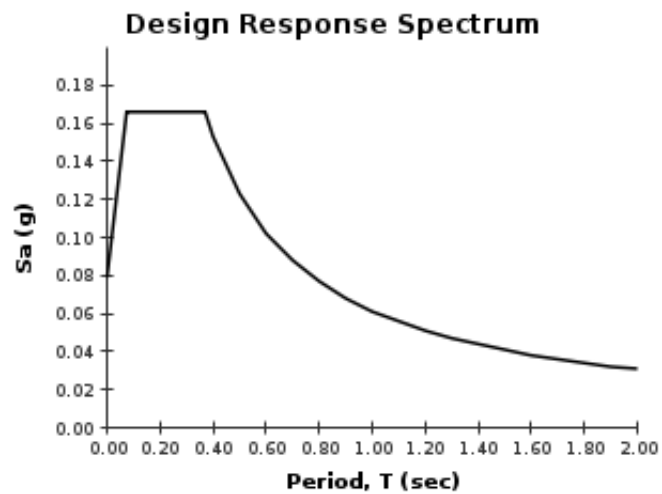
Site Coordinates 39.63274°N, 105.33353°W

Site Soil Classification Site Class C – “Very Dense Soil and Soft Rock”



USGS-Provided Output

PGA = 0.066 g	A_s = 0.079 g
S_s = 0.138 g	S_{DS} = 0.166 g
S₁ = 0.036 g	S_{D1} = 0.061 g



Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

Design Maps Detailed Report

2009 AASHTO Guide Specifications for LRFD Seismic Bridge Design (39.63274°N, 105.33353°W)

Site Class C – “Very Dense Soil and Soft Rock”

Article 3.4.1 — Design Spectra Based on General Procedure

Note: Maps in the 2009 AASHTO Specifications are provided by AASHTO for Site Class B. Adjustments for other Site Classes are made, as needed, in Article 3.4.2.3.

From [Figure 3.4.1-2](#) ^[1]

PGA = 0.066 g

From [Figure 3.4.1-3](#) ^[2]

S_s = 0.138 g

From [Figure 3.4.1-4](#) ^[3]

S_1 = 0.036 g

Article 3.4.2.1 — Site Class Definitions

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class C, based on the site soil properties in accordance with Article 3.4.2.

Table 3.4.2.1-1 Site Class Definitions

SITE CLASS	SOIL PROFILE NAME	Soil shear wave velocity, \bar{v}_s, (ft/s)	Standard penetration resistance, \bar{N}	Soil undrained shear strength, \bar{s}_u, (psf)
A	Hard rock	$\bar{v}_s > 5,000$	N/A	N/A
B	Rock	$2,500 < \bar{v}_s \leq 5,000$	N/A	N/A
C	Very dense soil and soft rock	$1,200 < \bar{v}_s \leq 2,500$	$\bar{N} > 50$	>2,000 psf
D	Stiff soil profile	$600 \leq \bar{v}_s < 1,200$	$15 \leq \bar{N} \leq 50$	1,000 to 2,000 psf
E	Stiff soil profile	$\bar{v}_s < 600$	$\bar{N} < 15$	<1,000 psf
E	—	Any profile with more than 10 ft of soil having the characteristics: <ol style="list-style-type: none"> 1. Plasticity index $PI > 20$, 2. Moisture content $w \geq 40\%$, and 3. Undrained shear strength $\bar{s}_u < 500$ psf 		
F	—	Any profile containing soils having one or more of the following characteristics: <ol style="list-style-type: none"> 1. Soils vulnerable to potential failure or collapse under seismic loading such as liquefiable soils, quick and highly sensitive clays, collapsible weakly cemented soils. 2. Peats and/or highly organic clays ($H > 10$ feet of peat and/or highly organic clay where H = thickness of soil) 3. Very high plasticity clays ($H > 25$ feet with plasticity index $PI > 75$) 4. Very thick soft/medium stiff clays ($H > 120$ feet) 		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Article 3.4.2.3 — Site Coefficients

Table 3.4.2.3-1 (for F_{pga})—Values of F_{pga} as a Function of Site Class and Mapped Peak Ground Acceleration Coefficient

Site Class	Mapped Peak Ground Acceleration				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See AASHTO Article 3.4.3				

Note: Use straight-line interpolation for intermediate values of PGA

For Site Class = C and PGA = 0.066 g, $F_{PGA} = 1.200$

Table 3.4.2.3-1 (for F_a)—Values of F_a as a Function of Site Class and Mapped Short-Period Spectral Acceleration Coefficient

Site Class	Spectral Response Acceleration Parameter at Short Periods				
	$S_s \leq 0.25$	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	$S_s \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See AASHTO Article 3.4.3				

Note: Use straight-line interpolation for intermediate values of S_s

For Site Class = C and $S_s = 0.138$ g, $F_a = 1.200$

Table 3.4.2.3-2—Values of F_v as a Function of Site Class and Mapped 1-sec Period Spectral Acceleration Coefficient

Site Class	Mapped Spectral Response Acceleration Coefficient at 1-sec Periods				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See AASHTO Article 3.4.3				

Note: Use straight-line interpolation for intermediate values of S_1

For Site Class = C and $S_1 = 0.036$ g, $F_v = 1.700$

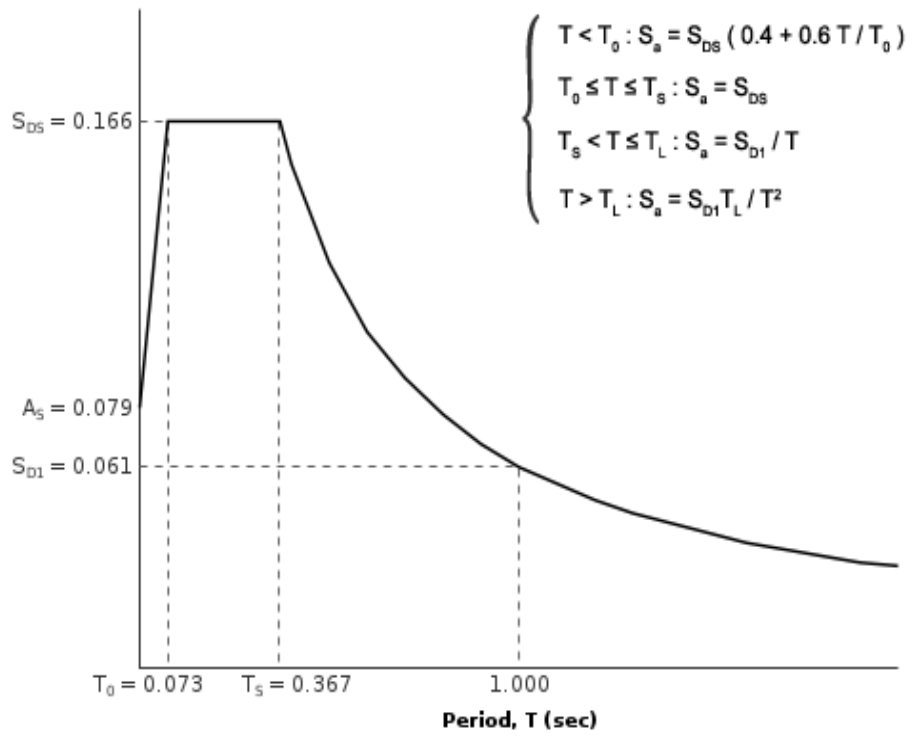
Equation (3.4.1-1): $A_S = F_{PGA} PGA = 1.200 \times 0.066 = 0.079$ g

Equation (3.4.1-2): $S_{DS} = F_a S_S = 1.200 \times 0.138 = 0.166$ g

Equation (3.4.1-3): $S_{D1} = F_v S_1 = 1.700 \times 0.036 = 0.061$ g

Figure 3.4.1-1: Design Response Spectrum

Spectral Response Acceleration, Sa (g)



Article 3.5 - Selection of Seismic Design Category (SDC)

Table 3.5-1—Partitions for Seismic Design Categories A, B, C, and D

VALUE OF S_{D1}	SDC
$S_{D1} < 0.15g$	A
$0.15g \leq S_{D1} < 0.30g$	B
$0.30g \leq S_{D1} < 0.50g$	C
$0.50g \leq S_{D1}$	D

For $S_{D1} = 0.061 g$, Seismic Design Category = A

Seismic Design Category \equiv "the design category in accordance with Table 3.5-1" = A

References

1. *Figure 3.4.1-2*: <http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/AASHTO-2009-Figure-3.4.1-2.pdf>
2. *Figure 3.4.1-3*: <http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/AASHTO-2009-Figure-3.4.1-3.pdf>
3. *Figure 3.4.1-4*: <http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/AASHTO-2009-Figure-3.4.1-4.pdf>

APPENDIX C

ESAL CALCULATIONS MGPEC DESIGN SOFTWARE PRINTOUT MGPEC FORM #9

Design Lane ESAL Calculations

EVERGREEN LAKE ROAD MGPEC DESIGN	Vehicle Type/Classification (%)				
	Cars & Pickups	Single Unit Trucks	Combination Unit Trucks		
Vehicle Type Load Factor	0.0045	0.617	2.578		
Assumed Growth Factor= 1.2					
Number of Lanes (per direction) = 1			% in Design Lane= 60%		
<i>Percent of types</i>	100.00%	<i>97.00%</i>	<i>1.50%</i>	<i>1.50%</i>	
2013 ADT Estimate	290	281	4	4	
Projected 2016 ADT	300	291	5	5	
Projected 2036 ADT	366	355	5	5	
20-Yr Design ADT	333	323	5	5	
Roadway ESAL	127,229	10,611	22,521	94,097	
Design Lane ESAL₂₀	76,337				

PAVEMENT DESIGN TO MGPEC STANDARDS

SUBDIVISION

Subdivision					
Street	Evergreen Lake House Road				
From					
To					
Formation	Qs - Colluvium				
Township	Evergreen, CO	Range	Section	0	Quarter NW

TRAFFIC

Classification	Commercial	Speed Limit	35	Entered	ESALS	76,337
Residential Lots	0	Commercial Acres	0	Industrial Acres		0

SUBGRADE

Soil Type	Sand	AASHTO	A-1	Subsurface Drainage	No		
R Value	53	UNC	0	Resilient Modulus	14525		
Swell	0%	Liquid Limit	0 %	Plasticity Index	0 %	Passing 200	20 %
Std Proctor	No	Mod Proctor	No	Optimum Moisture	15 %	Max Density	125 pcf
				Load Transfer	2.8 Doweled and Tied		

MATERIALS COSTS

Hot Mix Asphalt Concrete	1.80	\$/sqyd/in	Crack Seal - HMAP	0.32	\$/sqyd
Portland Cement Concrete	3.00	\$/sqyd/in	Milling - HMAP	1.25	\$/sqyd/in
Aggregate Base Course	0.59	\$/sqyd/in	Annual - HMAP Maintenance	0.05	\$/sqyd
Chemical Stabilized Subgrad	0.80	\$/sqyd/in	Clean/Seal Crack And Joints	0.72	\$/sqyd
Moisture Treated Subgrade	0.25	\$/sqyd/in	Portland Surface Grinding	1.50	\$/sqyd/in
Fog Seal	0.25	\$/sqyd	Annual PCCP Maintenance	0.05	\$/sqyd
Chip Seal	0.75	\$/sqyd	Annual Interest Rate	7.0	%
Slurry Seal	1.25	\$/sqyd	Annual Inflation Rate	3.0	%

PAVEMENT DESIGN OPTIONS

Option One	Portland Cement Concrete Pavement	6.0	Inches Thick
	Construction Cost	\$126,720	Per Lane Mile
	30 yr Maintenance	\$28,469	Per Lane Mile
	Total Cost	\$155,189	Per Lane Mile
Option Two	Hot Mix Asphalt Pavement	5.0	Inches Thick
	Construction Cost	\$63,360	Per Lane Mile
	30 yr Maintenance	\$78,533	Per Lane Mile
	Total Cost	\$141,894	Per Lane Mile
Option Three	Hot Mix Asphalt Pavement	0.0	Inches Thick
	Chemical Stabilized Subgrade	0.0	Inches Thick
	Construction Cost	\$0	Per Lane Mile
	30 yr Maintenance	\$0	Per Lane Mile
	Total Cost	\$0	Per Lane Mile

Agency: City & County of Denver
Date: 3/3/2016

Project Number: G15.1625.001
Project Name: Evergreen Lake House
Bridge Replacement

MGPEC
Form # 9 (1/26/2012)

• **Mixture Design Requirements for Hot Mix Asphalt Pavements (HMA)**

• Project Special Provision Sheet for Hot Mix Asphalt Pavements (HMA)

This MGPEC Form #9 is a **mandatory part of the bid documents**, and shall be filled out by the AGENCY for each mix specified. The Contractor shall include a copy of this form with each Mix Design submittal after the contract is awarded.

Street Classification: ELH Entry (examples: Residential, Collector, Arterial, Industrial, Parking Lot or actual name for Project)

→ Construction Application: Top Lift Intermediate Lift(s) Bottom Lift
 Patching Other _____

→ Aggregate Gradation: Grading ST (1.5" or less lifts, 3/8" NMPS)
 Grading SX (2.5" or less lifts)
 Grading S (2.5+ to 3.5" lifts)
 Grading SG*¹ (3.5" or thicker lifts)
SMA (Top lift only) 3/8" 1/2" 3/4"

*¹Note = Grading SG depends on approved texture of mix, Grading SG lower lift(s) only.

→ RAP Quantity, Maximum: 0% 20% 25%

Notes: A quality control plan for RAP will be required when RAP is used
 Top lift Maximum RAP content allowed is 20%

→ Superpave Gyratory Mix Design Compaction Level, Recommended usage and Recommend binder(s):

Design Level	Recommended Traffic Levels	Recommended PG Binder(s)
<input type="checkbox"/> N _{design} =50	Low volume	<input type="checkbox"/> PG 58-28 or <input type="checkbox"/> PG 64-22
<input checked="" type="checkbox"/> N _{design} =75	0 to <3 million ESALs	<input type="checkbox"/> PG 64-22 or <input checked="" type="checkbox"/> PG 58-28
<input type="checkbox"/> N _{design} =100	3 million to <30 million ESALs	<input type="checkbox"/> PG 64-22 or <input type="checkbox"/> PG 76-28

Notes: - The binders are shown in order they should be considered.
- Polymer modified PG Binders are typically used in the top lift only
- PG 58-28 Binder recommended for residential developments with less than 2 million ESAL's

- Target job Mix Optimum Asphalt Content Selection, Choose target % as close to 4.0 as possible (3.5% to 4.5% air voids per MGPEC 2008)
- Target Job Mix optimum Binder content for SMA grading at 3.0% to 4.0% air voids

**Warm mix asphalt (WMA) is allowed as an alternate to hot mix asphalt provided that all material requirements and specification standards are met and as approved by the Agency.

A completed MGPEC Form #9 shall supplement the MGPEC Construction Specifications defining the contract specific requirements of Item 9: Hot Mix Asphalt Pavement (HMA). Refer to the Specifications for details.

MGPEC Form #9

1-26-12) to be used with: MGPEC Pavement Design Standards and Construction Specifications - Project Special Provisions for Hot Mix Asphalt Pavements (HMA) Item 9 Mixture Design and Production Requirements

Agency: City & County of Denver
Date: 3/3/2016

Project Number: G15.1625.001
Project Name: Evergreen Lake House
Bridge Replacement

MGPEC
Form # 9 (1/26/2012)

• **Mixture Design Requirements for Hot Mix Asphalt Pavements (HMA)**

• Project Special Provision Sheet for Hot Mix Asphalt Pavements (HMA)

This MGPEC Form #9 is a **mandatory part of the bid documents**, and shall be filled out by the AGENCY for each mix specified. The Contractor shall include a copy of this form with each Mix Design submittal after the contract is awarded.

Street Classification: ELH Entry (examples: Residential, Collector, Arterial, Industrial, Parking Lot or actual name for Project)

→ Construction Application: Top Lift Intermediate Lift(s) Bottom Lift
 Patching Other _____

→ Aggregate Gradation: Grading ST (1.5" or less lifts, 3/8" NMPS)
 Grading SX (2.5" or less lifts)
 Grading S (2.5+ to 3.5" lifts)
 Grading SG*¹ (3.5" or thicker lifts)
SMA (Top lift only) 3/8" 1/2" 3/4"

*¹Note = Grading SG depends on approved texture of mix, Grading SG lower lift(s) only.

→ RAP Quantity, Maximum: 0% 20% 25%

Notes: A quality control plan for RAP will be required when RAP is used
 Top lift Maximum RAP content allowed is 20%

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Design Level	Recommended Traffic Levels	Recommended PG Binder(s)
<input type="checkbox"/> N _{design} =50	Low volume	<input type="checkbox"/> PG 58-28 or <input type="checkbox"/> PG 64-22
<input checked="" type="checkbox"/> N _{design} =75	0 to <3 million ESALs	<input type="checkbox"/> PG 64-22 or <input checked="" type="checkbox"/> PG 58-28
<input type="checkbox"/> N _{design} =100	3 million to <30 million ESALs	<input type="checkbox"/> PG 64-22 or <input type="checkbox"/> PG 76-28

Notes: - The binders are shown in order they should be considered.
- Polymer modified PG Binders are typically used in the top lift only
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MGPEC Form #9

1-26-12) to be used with: MGPEC Pavement Design Standards and Construction Specifications - Project Special Provisions for Hot Mix Asphalt Pavements (HMA) Item 9 Mixture Design and Production Requirements

CITY AND COUNTY OF DENVER

STATE OF COLORADO



DENVER
THE MILE HIGH CITY

DEPARTMENT OF PUBLIC WORKS

Plans/Drawings

Contract Number: 201950258



Evergreen Lakehouse Bridge Replacement

May 16, 2019

Oversight / NHS	
FHWA REGION VIII OVERSIGHT?	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
NATIONAL HIGHWAY SYSTEM?	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES

CITY AND COUNTY OF DENVER DEPARTMENT OF PUBLIC WORKS

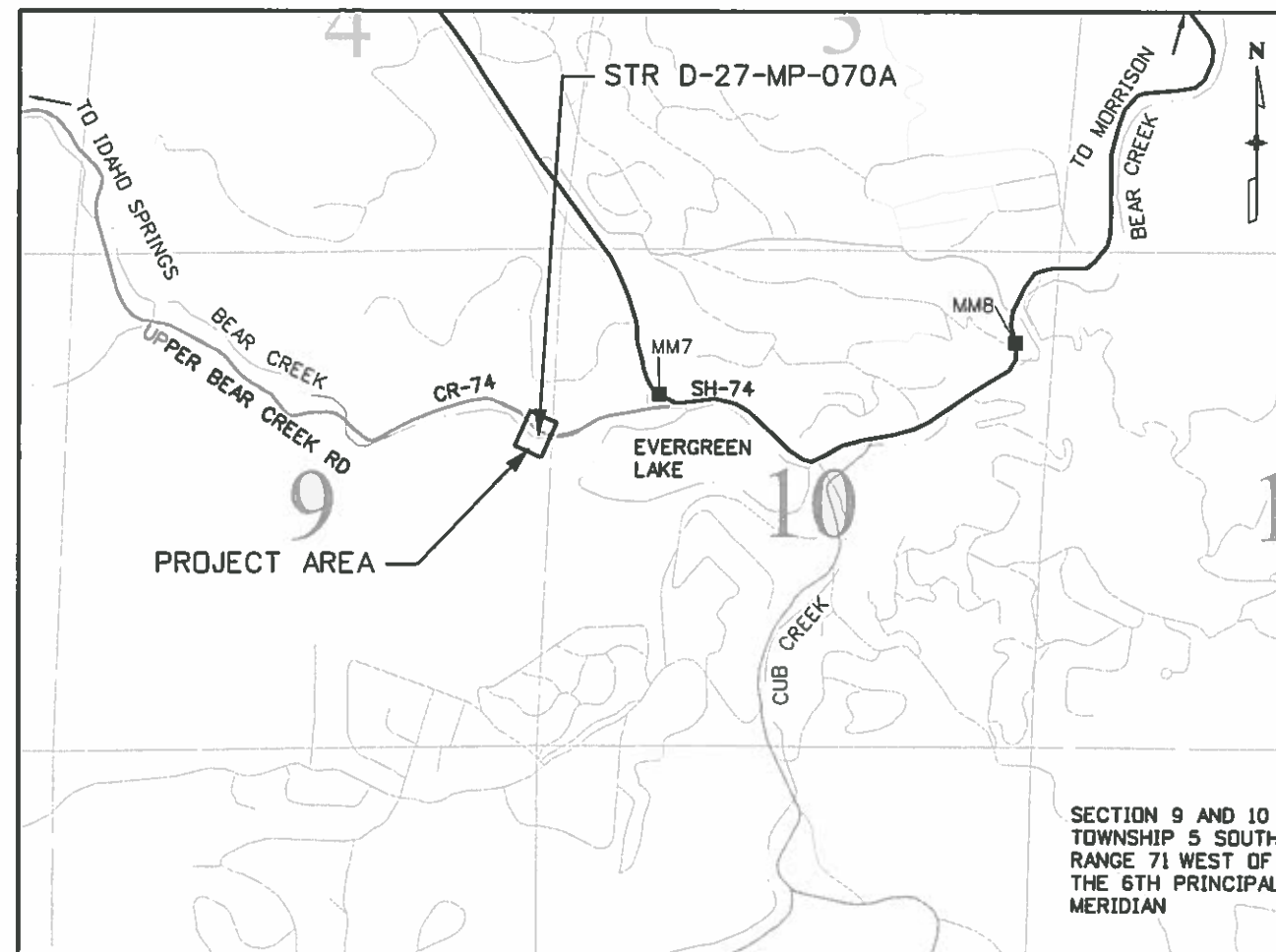
TRANSPORTATION DIVISION / CITY ENGINEER'S OFFICE
CITY AND COUNTY OF DENVER PROJECT NO. 2016-PROJMSTR-0000025
FEDERAL AID PROJECT NO. NHPP C010-114
SUB-ACCOUNT NO. 20414
EVERGREEN LAKE HOUSE BRIDGE REPLACEMENT



APPROVED BY:		4/18/19
EXECUTIVE DIRECTOR OF PUBLIC WORKS		DATE
		4/18/19
CITY ENGINEER		DATE
		4/19/19
DIRECTOR OF ENGINEERING CAPITAL PROJECTS		DATE
		4/19/19
CITY TRAFFIC ENGINEER		DATE
DIRECTOR OF SMALL BUSINESS OPPORTUNITY DIVISION		DATE

TABULATION OF LENGTH & DESIGN DATA

STATION	FEET	
	ROADWAY LAKE RD	MAJOR STR.
BEGIN PROJECT STA. 12+18.53 ON EVERGREEN LAKE HOUSE ACCESS RD	72.24	
STA. 12+90.77 BEGIN STRUCTURE NO. D-27-MP-070A		
STA. 13+27.93 END STRUCTURE NO. D-27-MP-070A		37.16
END PROJECT STA. 13+64.65 ON EVERGREEN LAKE HOUSE ACCESS RD	36.72	
TOTAL	108.96	37.16
SUMMARY OF PROJECT LENGTH	FEET	MILES
ROADWAY	108.96	.02
MAJOR STRUCTURE	37.16	.01
PROJECT GROSS LENGTH	146.12	.03
DESIGN DATA	LAKE RD	
MINIMUM RADIUS OF CURVE	93	
MAXIMUM GRADE	5.81%	
MINIMUM S.S.D. HORIZONTAL	155	
MINIMUM S.S.D. VERTICAL	155	
MAXIMUM DESIGN SPEED	25	
2036 DESIGN TRAFFIC	366 VPD	
DHV TRUCKS %	3%	
CLEAR ZONE DISTANCE	7'	



SHEET NO. INDEX OF SHEETS

1	TITLE SHEET
2	STANDARD PLANS LIST
3	TYPICAL SECTION
4-5	GENERAL NOTES
6-7	SUMMARY OF APPROX. QUANTITIES
8	ROADWAY TABULATIONS
9	PLAN AND PROFILE
10	TRAFFIC CONTROL PLAN
11	SURVEY TABULATION
12	PROJECT CONTROL DIAGRAM
13-17	STORMWATER MANAGEMENT PLAN
18	LANDSCAPE PLAN
19	RIPRAP AND GRADING DETAIL
20	BRIDGE GENERAL INFORMATION
21	BRIDGE GENERAL LAYOUT
22	BRIDGE ENGINEERING GEOLOGY
23	BRIDGE HYDRAULIC INFORMATION
24	BRIDGE CONSTRUCTION LAYOUT
25	BRIDGE FOUNDATION LAYOUT
26	DRIVEN PILE DETAILS
27-28	BRIDGE ABUTMENT DETAIL
29	BRIDGE WINGWALL DETAIL
30	ABUTMENT AND WINGWALL TOLERANCES
31	BOX GIRDER DETAIL
32	DECK REINFORCING DETAILS
33-34	BRIDGE RAIL TYPE 10M
35-36	EXCAVATION AND BACKFILL
37-38	BRIDGE DECK ELEVATIONS

PROJECT LOCATION MAP



AD

January 2019

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COLORADO
DEPARTMENT OF TRANSPORTATION
M&S STANDARDS PLANS LIST
 July 04, 2012
 Revised on September 4, 2018

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

NEW OR REVISED STANDARD PLAN SHEETS APPLICABLE TO THIS PROJECT, INDICATED BY A MARKED BOX ■, WILL BE ATTACHED TO THE PLANS.

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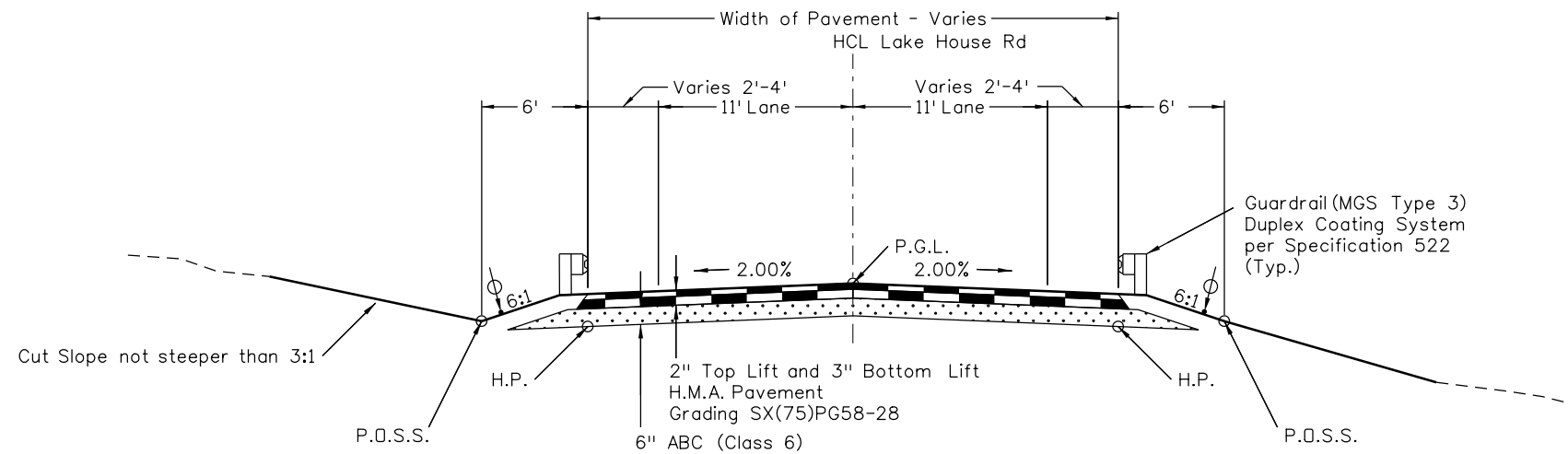
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Detailer:	G. BABOVEC		
Sheet Subset:		Subset Sheets:	

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TYPICAL SECTION LEGEND:

P.G.L.	PROFILE GRADE LINE
H.P.	HINGE POINT
P.O.S.S.	POINT OF SLOPE SELECTION
	MINIMUM 4" TOPSOIL OR SPECIFIED ALTERNATIVE
H.C.L.	HORIZONTAL CONTROL LINE



EVERGREEN LAKE HOUSE ACCESS ROAD PROPOSED

Sta. 12+18.53 to Sta. 12+90.77
Sta. 13+27.93 to Sta. 13+64.65

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TYPICAL SECTION			
Designer:	R. CRANE	Structure Numbers	D-27-MP-070A
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GENERAL NOTES

1. FOR PRELIMINARY PLAN QUANTITIES OF PAVEMENT MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
 TACK COAT DILUTED EMULSIFIED ASPHALT.....@ 0.1 GALS./SQ. YD.(DILUTED)
 HOT MIX ASPHALT.....@ 110 LBS./SQ. YD./INCH
 AGGREGATE BASE COURSE.....@ 133 LBS./CU. FT.
2. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER.TACK COAT SHALL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN THE COST OF THE WORK.
3. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.
4. THE FOLLOWING SHALL BE FURNISHED WITH EACH BITUMINOUS PAVER:
 1. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH.
 2. SHORT SKI OR SHOE.
 3. 2800 FEET OF CONTROL LINE AND STAKES.
5. ANY LAYER OF BITUMINOUS PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.
6. ASPHALT JOINTS SHALL FALL ON LINES, SHOULDER LINES OR MEDIAN LINES, EXCEPT WHERE STATED IN THE PLANS.
7. THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR EQUIPMENT IN, OR DISTURB ANY AREAS NOT APPROVED BY THE ENGINEER.
8. DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AASHTO T-180 AND AS FOLLOWS:
 FULL DEPTH OF ALL EMBANKMENTS.
 BASES OF CUTS AND FILLS 6 INCHES.
9. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.
10. TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T-180.
11. IT IS ESTIMATED THAT 4 HOURS OF PROOF ROLLING WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.
12. IT IS ESTIMATED THAT 1 EACH SANITARY FACILITY WILL BE REQUIRED ON THIS PROJECT.
13. IT IS ESTIMATED THAT 4 HOURS OF BLADING WILL BE REQUIRED ON THIS PROJECT.
14. IT IS ESTIMATED THAT ONE FIELD OFFICE (CLASS 1) WILL BE REQUIRED ON THIS PROJECT.
15. NO RIGHT-OF-WAY ACQUISITION WILL BE NEEDED FOR THIS PROJECT. ALL WORK IS ENTIRELY WITHIN CITY AND COUNTY OF DENVER PROPERTY.
16. WHERE NEW PAVEMENT IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE USING A CUTTING SAW OR OTHER METHOD AS APPROVED BY THE ENGINEER. SAW CUTTING ASPHALT WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF REMOVAL OF ASPHALT MAT.
17. THE CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTATION DESIGNATED TO REMAIN FROM DAMAGE DURING CONSTRUCTION OPERATIONS. ANY MONUMENTS DISTURBED BY THE CONTRACTOR THAT ARE NOT DESIGNATED FOR RELOCATION, SHALL BE RESET AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR AND ENGINEER SHALL NOTE THOSE MONUMENTS IN THE FIELD PRIOR TO CONSTRUCTION. SEE TABULATION OF SURVEY.
18. A TEMPORARY STREAM CROSSING MY BE REQUIRED. SEE STORMWATER MANAGEMENT PLAN SHEETS E01 PART 2C AND THE PROJECT SPECIAL PROVISIONS FOR CONSTRUCTION REQUIREMENTS.

2. THE CONTRACTOR'S ATTENTION IS DIRECTED TO CITY AND COUNTY OF DENVER GENERAL CONDITION 804, AND THE UTILITY PROJECT SPECIAL PROVISIONS CONCERNING UTILITIES. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH UTILITY OWNERS IN THEIR REMOVAL, ADJUSTMENT AND/OR RELOCATION OPERATIONS SO THAT THE UTILITY WORK CAN BE ACCOMPLISHED WITHOUT IMPACTING THE CONSTRUCTION SCHEDULE.
3. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST TWO (2) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811 OR 1-800-922-1987, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER..
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AS NECESSARY TO INSURE THE UTILITIES WILL NOT BE IMPACTED. IT IS ESTIMATED THAT 4 HOURS OF POTHOLES WILL BE REQUIRED ON THIS PROJECT AS DIRECTED BY THE PROJECT ENGINEER.

PROJECT UTILITY CONTACTS

EVERGREEN METROPOLITAN DISTRICT	CHRIS SCHAUDER, CWP PHONE: 303.674.4112 CELL: 303.301.5509 FAX: 303.674.7267
XCEL ENERGY	KELLI FRIES DESIGNER/FRONT RANGE PHONE: 303-445-4540

ENVIRONMENTAL NOTES

PERMITS

404 PERMIT.
 THE PROPOSED WORK ON THE PLANS HAS BEEN PERMITTED BY THE U.S.ARMY CORPS OF ENGINEERS UNDER SECTION 404 OF THE CLEAN WATER ACT. THE CONTRACTOR SHALL COMPLY WITH ALL SPECIAL AND GENERAL CONDITIONS ATTACHED TO THE PERMIT.

A TEMPORARY STREAM CROSSING AND STREAM DIVERSION MAY BE REQUIRED TO COMPLETE THE WORK. THESE ITEMS SHALL BE PAID FOR AS ITEM 208 TEMPORARY STREAM CROSSING AND ITEM 211 DEWATERING RESPECTIVELY. FOR MORE INFORMATION, REFER TO THE STORMWATER MANAGEMENT PLAN (SWMP) NOTES PART 2 AND THE PROJECT SPECIAL PROVISIONS.

COLORADO DISCHARGE PERMIT SYSTEM STORMWATER CONSTRUCTION PERMIT (CDPS-SCP)
 IF PROJECT ACTIVITIES RESULT IN ONE ACRE OR MORE OF EARTH DISTURBANCE A CDPS-SCP PERMIT WILL BE REQUIRED. THE CONTRACTOR SHALL NOT COMMENCE PERMIT-RELATED WORK UNTIL THE PERMIT IS RECEIVED. WORK PERFORMED MUST BE CONSISTENT WITH THAT DETAILED IN THE STORM WATER MANAGEMENT PLAN.
 IF DISTURBANCE IS LESS THAN ONE ACRE, A CDPS-SCP STORMWATER PERMIT WILL NOT BE REQUIRED. HOWEVER, THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE CITY AND COUNTY OF DENVER GENERAL CONDITIONS, SUBSECTION 107.25. REVISION OF SECTION 208 EROSION CONTROL, REVISION OF SECTION 107 PERMITS, AND REVISION OF SECTIONS 107 AND 208 - WATER QUALITY CONTROL UNDER ONE ACRE OF DISTURBANCE (NOVEMBER 2, 2017).

SB40 (COLORADO SENATE BILL 40 – 33-5-101-107, CRS 1973 (AS AMENDED))
 CDOT R1 ENVIRONMENTAL UNIT HAS RECEIVED SB40 CERTIFICATION FROM COLORADO PARKS AND WILDLIFE FOR THIS PROJECT. THE CONTRACTOR SHALL COMPLY WITH ALL GENERAL AND SPECIAL PROVISIONS OF THE CERTIFICATION. PER SB 40 GENERAL CONDITIONS, RIPARIAN TREES OVER 2 INCHES DIAMETER AT BREAST HEIGHT (DBH) THAT NEED TO BE REMOVED WILL BE REPLACED AT A 1:1 RATIO, AND RIPARIAN SHRUBS WILL BE REPLACED BASED ON THE PRE-CONSTRUCTION AERIAL COVERAGE. ALL TREE AND SHRUB REPLACEMENT WILL USE NATIVE SPECIES AND WILL OCCUR ON-SITE.

CONTRACTOR SHALL OBTAIN A BRIDGE DEMOLITION PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) AND COMPLY WITH ALL REQUIREMENTS.

CONTRACTOR SHALL OBTAIN AN AIR POLLUTANT EMISSION NOTICE (APEN) PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) AIR POLLUTION CONTROL DIVISION, WHICH INCLUDES A FUGITIVE DUST CONTROL PLAN. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS RELATED TO THE APEN.

GENERAL NOTES - UTILITY

1. ALL UTILITIES DEPICTED AT QUALITY LEVEL D (QLD).

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 8181 E. Tufts Avenue Denver, CO 80237 Phone: 303-740-2600							Sheet Subset: GEN NOTES			Subset Sheets: 1 of 2			

GENERAL NOTES (CONT.)

MBTA

THE MIGRATORY BIRD TREATY ACT (MBTA) PROTECTS MIGRATORY BIRDS AND THEIR NESTS AND EGGS. FOR PROJECTS THAT COULD POTENTIALLY HAVE AN IMPACT, THE FOLLOWING CONDITIONS APPLY:

1. TREE TRIMMING/REMOVAL. TREE TRIMMING AND REMOVAL ACTIVITIES SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IN COLORADO, MOST NESTING AND REARING ACTIVITIES OCCUR BETWEEN APRIL 1 AND AUGUST 31. HOWEVER, SINCE SOME BIRDS NEST AS EARLY AS FEBRUARY, A NESTING BIRD SURVEY SHALL BE CONDUCTED BY A BIOLOGIST (BY OTHERS) BEFORE ANY TREE TRIMMING OR REMOVAL ACTIVITIES BEGIN FROM FEBRUARY THROUGH AUGUST.
2. BRIDGE WORK THAT MAY DISTURB NESTING BIRDS SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. NO BRIDGE WORK MAY TAKE PLACE BETWEEN APRIL 1 AND AUGUST 31. IF WORK ACTIVITIES ARE PLANNED BETWEEN THESE DATES, NESTS SHALL BE REMOVED (BEFORE NESTING BEGINS) AND APPROPRIATE MEASURES TAKEN TO ASSURE NO NEW NESTS ARE CONSTRUCTED. FAILURE TO REMOVE AND KEEP NESTS FROM BECOMING ESTABLISHED MAY POSTPONE PROJECT CONSTRUCTION.
3. CLEARING/GRUBBING ACTIVITIES. CLEARING AND GRUBBING OF VEGETATION THAT MAY DISTURB GROUND NESTING BIRDS SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IF WORK ACTIVITIES ARE PLANNED BETWEEN APRIL 1 AND AUGUST 31, VEGETATION SHALL BE REMOVED AND/OR TRIMMED TO A HEIGHT OF SIX (6) INCHES OR LESS PRIOR TO APRIL 1. ONCE VEGETATION HAS BEEN REMOVED AND/OR TRIMMED, APPROPRIATE MEASURES, I.E., REPEATED MOWING/TRIMMING, SHALL BE IMPLEMENTED TO ASSURE VEGETATION DOES NOT GROW MORE THAN SIX (6) INCHES. FAILURE TO MAINTAIN VEGETATION HEIGHT OF SIX (6) INCHES OR LESS MAY POSTPONE PROJECT CONSTRUCTION.

NOXIOUS WEEDS

NOXIOUS WEEDS MAY PERSIST ON OR ADJACENT TO THE PROJECT LOCATION. CDOT MANDATES THAT ALL WEED SPECIES ON THE STATE WEED LAW LIST A AND B BE ADDRESSED ACCORDING TO STATUTE. INFORMATION REGARDING NOXIOUS WEEDS IS AVAILABLE THROUGH THE CDOT R-1 ENVIRONMENTAL OFFICE AND JEFFERSON COUNTY WEED AND PEST. CDOT STANDARD SPECIFICATION AND BMPS SHALL BE FOLLOWED TO REDUCE THE SPREAD OF NOXIOUS WEEDS, INCLUDING THE FOLLOWING:

- SOIL DISTURBANCE SHALL BE MINIMIZED TO THE EXTENT POSSIBLE;
- STAGING OF EQUIPMENT WILL NOT BE PERMITTED IN WEED-INFESTED AREAS;
- WEED MANAGEMENT EFFORTS SHALL BE COORDINATED WITH LOCAL JURISDICTIONAL AGENCIES AND ADJACENT LANDOWNERS TO THE EXTENT POSSIBLE;
- HERBICIDE MAY BE USED IMMEDIATELY ADJACENT TO WETLANDS AND/OR WATER BODIES ONLY IF THE LABEL INDICATES THAT ITS USE IS APPROPRIATE FOR SUCH AREAS;
- NOXIOUS WEEDS OBSERVED IN AND NEAR THE CONSTRUCTION AREA WILL BE TREATED WITH HERBICIDES OR MECHANICALLY REMOVED PRIOR TO THE START OF CONSTRUCTION TO MINIMIZE SPREAD;
- ALL DISTURBED AREAS WILL BE RE-SEEDED WITH A CERTIFIED WEED-FREE SEED MIX WITHIN SEVEN DAYS OF COMPLETION OF WORK DURING THE GROWING SEASON;
- FERTILIZER WILL NOT BE USED IN SEEDED AREAS BECAUSE IT CAN ENHANCE THE GROWTH OF NOXIOUS WEEDS AT THE EXPENSE OF DESIRED VEGETATION;
- "A" HORIZON SOIL MATERIAL CURRENTLY SUPPORTING NOXIOUS WEED COVER OF MORE THAN 10% SHOULD NOT BE USED AS TOPSOIL DURING RE-VEGETATION.;
- TOPSOIL WILL NOT BE IMPORTED DUE TO THE POTENTIAL FOR SPREAD OF NOXIOUS WEEDS;
- ALL AREAS TREATED FOR NOXIOUS WEEDS DURING CONSTRUCTION WILL BE MONITORED AND RE-TREATED, IF NECESSARY, TO PREVENT ESTABLISHMENT OF NOXIOUS WEEDS, AND
- ANY COMPOST OR MULCH USED SHALL BE WEED-FREE.

AQUATIC INVASIVE SPECIES

PER SB40 REQUIREMENTS, IF HEAVY EQUIPMENT TO BE USED ON THIS PROJECT HAS PREVIOUSLY BEEN USED IN ANOTHER STREAM, RIVER, LAKE, RESERVOIR, POND, OR WETLAND, ONE OF THE FOLLOWING DISINFECTION PRACTICES SHALL BE USED PRIOR TO CONSTRUCTION TO PREVENT THE SPREAD OF AQUATIC INVASIVE SPECIES. THE CONTRACTOR SHALL CLEAN HAND TOOLS, BOOTS AND OTHER EQUIPMENT THAT WILL BE USED IN THE WATER WITH ONE OF THE FOLLOWING OPTIONS AS WELL.

1. REMOVE ALL MUD, PLANTS, AND DEBRIS FROM EQUIPMENT (TRACKS, URRETS, BUCKS, DRAGS, TEETH, ETC.,) AND SPRAY/SOAK EQUIPMENT IN A 1:15 SOLUTION OF SPARQUAT CLEARING AND WATER OR SUPER HDQ NEUTRAL INSTITUTIONAL CLEANER AND WATER (KEEP EQUIPMENT MOIST FOR AT LEAST 10 MINUTES), OR

2. REMOVE ALL MUD, PLANTS, AND DEBRIS FROM EQUIPMENT (TRACKS, URRETS, BUCKS, DRAGS, TEETH, ETC.,) WITH WATER GREATER THAN 140 DEGREES F FOR AT LEAST 10 MINUTES. EQUIPMENT SHALL BE DRY BEFORE USE.

THE CONTRACTOR SHALL NOT MOVE WATER FROM ONE WATER BODY TO ANOTHER.

ENVIRONMENTAL GENERAL NOTES

PRIOR TO CONSTRUCTION, ORANGE TEMPORARY FENCE AND SEDIMENT CONTROL MEASURES OUTLINED IN THE SWMP WILL BE PLACED TO PROTECT EXISTING WETLANDS THAT ARE OUTSIDE OF THE PLANNED AREA OF DISTURBANCE BUT IN CLOSE PROXIMITY TO CONSTRUCTION ACTIVITIES.

BEST MANAGEMENT PRACTICES (BMPS) WILL BE IMPLEMENTED DURING ALL PHASES OF CONSTRUCTION TO REDUCE IMPACTS FROM SEDIMENTATION AND EROSION. MAINTENANCE AND REMOVAL OF BMP'S SHALL BE INCLUDED IN THE COST OF THE BMP'S.

THERE WILL BE NO EQUIPMENT STAGING, STORAGE OF MATERIALS, USE OF CHEMICALS, OR EQUIPMENT REFUELING WITHIN 50 FEET OF WETLANDS OR OTHER WATER FEATURES. ALL STOCKPILED PROJECT MATERIALS SHALL BE LOCATED AWAY FROM SENSITIVE AREAS AND CONFINED SO THAT NO MATERIALS OR THEIR RUNOFF ENTER WATERS OF THE US/STATE, INCLUDING WETLANDS, AND STREAMS.

ENVIRONMENTAL WALKTHROUGH. ONCE CONSTRUCTION HAS BEEN COMPLETED, DENVER CITY AND COUNTY AND THE CONTRACTOR WILL CONDUCT A WALKTHROUGH OF THE PROJECT SITE. THE PURPOSE IS TO IDENTIFY ANY AREAS WHERE BMPS NEED TO BE REMOVED OR MAINTAINED AND IDENTIFICATION OF RESPONSIBLE PARTY UNTIL CDPS PERMIT IS CLOSED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING BMP'S UNTIL 70% OF EXISTING VEGETATION IS ESTABLISHED.

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.

ANY FILL MATERIAL OR SOILS TO BE MOVED TO AND PLACED ON CCD-OWNED PROPERTY OR PLACED ON REAL PROPERTY TO BE TRANSFERRED TO THE CCD MUST BE FREE OF KNOWN CONTAMINATION (OBSERVED OR PREVIOUSLY DOCUMENTED) AND BE ACCEPTABLE FOR UNRESTRICTED RESIDENTIAL USE. CONTACT DAVE ERICKSON, DENVER ENVIRONMENTAL HEALTH (720-865-5433) FOR CLARIFICATION, IF NEEDED, REGARDING THIS CCD REQUIREMENT.

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'S EXECUTIVE ORDER 115. CONTACT DEH (720-865-5448) FOR DISPOSAL OPTIONS SHOULD THERE BE DEMINIMIS QUANTITIES GENERATED FROM THIS REMOTE LOCATION.

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.

LEAD-BASED PAINT IS PRESENT ON COMPONENTS OF THE BRIDGE. THE SELECTED CONTRACTOR SHALL BE NOTIFIED OF THE POTENTIAL PRESENCE OF LEAD-BASED PAINT. THE CONTRACTOR SHALL AVOID SANDING, CUTTING, BURNING, OR OTHERWISE CAUSING THE RELEASE OF LEAD FROM PAINT ON SELECTED PAINTED COMPONENTS. OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OSHA) REGULATION 1926.62 SHALL BE CONSULTED FOR WORKER PROTECTION PRIOR TO REMOVAL OF PAINTED COMPONENTS. IF PAINTED METAL COMPONENTS ARE TO BE REMOVED AND RECYCLED, THEY MUST BE RECYCLED IN ACCORDANCE WITH CDOT SPECIFICATION 250.04. THE RECYCLING FACILITY SHALL BE NOTIFIED OF THE POTENTIAL PRESENCE OF LEAD.

ASBESTOS IS NOT ANTICIPATED TO BE LOCATED IN THE PROJECT AREA. SEE PROJECT SPECIAL PROVISIONS.

Print Date: 1/22/2019		Sheet Revisions			 <p>City and County of Denver Capital Projects Management Kevin Rens 201 West Colfax Avenue, Department 506 Denver, Colorado 80202 Phone: 720.865.3151</p>	As Constructed		GENERAL NOTES		Project No./Code	
File Name: 60477917DES_GenNote01.dgn		Date:	Comments	Init.		No Revisions:			C010-114 (20414)		
Horiz. Scale: 1:1 Vert. Scale: As Noted						Revised:	Designer: R. CRANE	Structure Numbers	D-27-MP-070A		
Unit Information Unit Leader Initials						Void:	Detailer: G. BABDVEC			201524362-00	
 <p>8181 E. Tufts Avenue Denver, CO 80237 Phone: 303-740-2600</p>		<p align="center">AD PLANS</p> <p align="center">JANUARY 2019</p>			Sheet Subset: GEN NOTES		Subset Sheets: 2 of 2		Sheet Number 5		


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CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY ITEMS (20414)		STRUCTURE D-27-MP-070A		PROJECT TOTALS	
			PLAN	AS CONST	PLAN	AS CONST	PLAN	AS CONST
201-00000	CLEARING AND GRUBBING	L S	1				1	
202-00010	REMOVAL OF TREE	EACH	6				6	
202-00220	REMOVAL OF ASPHALT MAT	SY	635				635	
202-00400	REMOVAL OF BRIDGE	EACH			1		1	
202-00810	REMOVAL OF GROUND SIGN	EACH	6				6	
202-01000	REMOVAL OF FENCE	LF	40				40	
203-00010	UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE)	CY	633				633	
203-00100	MUCK EXCAVATION	CY	10				10	
203-01100	PROOF ROLLING	HOURL	4				4	
203-01500	BLADING	HOURL	4				4	
203-01597	POTHOLING	HOURL	4				4	
206-00000	STRUCTURE EXCAVATION	CY			569		569	
206-00100	STRUCTURE BACKFILL (CLASS 1)	CY			345		345	
206-00200	STRUCTURE BACKFILL (CLASS 2)	CY			105		105	
206-00360	MECHANICAL REINFORCEMENT OF SOIL	CY			192		192	
206-01750	SHORING	L S			1		1	
207-00205	TOPSOIL	CY	69				69	
207-00310	STOCKPILE WETLAND TOPSOIL	CY	70				70	
208-00002	EROSION LOG TYPE 1 (12 INCH)	LF	1060				1060	
208-00035	AGGREGATE BAG	LF	96				96	
208-00045	CONCRETE WASHOUT STRUCTURE	EACH	2				2	
208-00070	VEHICLE TRACKING PAD	EACH	4				4	
208-00103	REMOVAL AND DISPOSAL OF SEDIMENT (LABOR)	HOURL	40				40	
208-00105	REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT)	HOURL	40				40	
208-00106	SWEEPING (SEDIMENT REMOVAL)	HOURL	40				40	
208-00207	EROSION CONTROL MANAGEMENT	DAY	8				8	
208-00520	TEMPORARY STREAM CROSSING	LS	1				1	
211-03005	DEWATERING	L S	1				1	
212-00006	SEEDING (NATIVE)	ACRE	0.1				0.1	
212-00032	SOIL CONDITIONING	ACRE	0.1				0.1	
213-00002	MULCHING (WEED FREE HAY)	ACRE	0.1				0.1	
213-00061	MULCH TACKIFIER	LB	60				60	
214-00205	DECIDUOUS TREE (5 GALLON CONTAINER)	EACH	9				9	
214-00310	DECIDUOUS SHRUB (1 GALLON CONTAINER)	EACH	30				30	


Print Date: 1/22/2019		Sheet Revisions			 <p>City and County of Denver Capital Projects Management Kevin Rens 201 West Colfax Avenue, Department 506 Denver, Colorado 80202 Phone: 720.865.3151</p>	As Constructed		SUMMARY OF APPROXIMATE QUANTITIES			Project No./Code	
File Name: 60477917DES_SAQ01.dgn		Date:	Comments	Init.		No Revisions:	Designer: R. CRANE			C010-114 (20414)		
Horiz. Scale: 1:1 Vert. Scale: As Noted		AD PLANS <small>JANUARY 2019</small>				Revised:	Detailer: G. BABDVEC			201524362-00		
Unit Information Unit Leader Initials						Void:			Sheet Subset: SAQ			Sheet Number 6
 <p>8181 E. Tufts Avenue Denver, CO 80237 Phone: 303-740-2600</p>					Structure Numbers			D-27-MP-070A		Subset Sheets: 1 of 2		

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CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY ITEMS (20414)		STRUCTURE D-27-MP-070A		PROJECT TOTALS	
			PLAN	AS CONST	PLAN	AS CONST	PLAN	AS CONST
214-00450	EVERGREEN TREE (5 GALLON CONTAINER)	EACH	3				3	
216-00101	SOIL RETENTION BLANKET (PHOTODEGRADEABLE CLASS I)	SY	144				144	
250-00010	ENVIRONMENTAL HEALTH AND SAFETY MANAGEMENT	L S	1				1	
304-06007	AGGREGATE BASE COURSE (CLASS 6)	CY	103				103	
403-34721	HOT MIX ASPHALT (GRADING SX) (75) (PG 58-28)	TON	163		20		183	
420-00112	GEOTEXTILE (DRAINAGE) (CLASS 1)	SY	460				460	
502-00100	DRILLING HOLE TO FACILITATE PILE DRIVING	LF			108		108	
502-11274	STEEL PILING (HP 12X74)	LF			126		126	
506-00212	RIPRAP (12 INCH)	CY			300		300	
515-00120	WATERPROOFING (MEMBRANE)	SY			120		120	
601-03040	CONCRETE CLASS D (BRIDGE)	CY			30		30	
601-21010	PRECAST CONCRETE UNIT	CY			49		49	
601-40300	STRUCTURAL CONCRETE COATING	SY			81		81	
602-00020	REINFORCING STEEL (EPOXY COATED)	LB			5962		5962	
606-01370	TRANSITION TYPE 3G	EACH	4				4	
606-01390	END ANCHORAGE TYPE 3K	EACH	3				3	
606-11030	BRIDGE RAIL TYPE 10M	LF			74		74	
607-11525	FENCE (PLASTIC)	LF	825				825	
613-00300	3 INCH ELECTRICAL CONDUIT	LF			75		75	
618-01992	PRESTRESSED CONCRETE BOX (DEPTH LESS THAN 32 INCHES)	SF			1136		1136	
620-00001	FIELD OFFICE (CLASS 1)	EACH	1				1	
620-00020	SANITARY FACILITY	EACH	1				1	
622-00024	ENTRY SIGN	EACH	1				1	
625-00000	CONSTRUCTION SURVEYING	L S	1				1	
626-00000	MOBILIZATION	L S	1				1	
630-00000	FLAGGING	HOURL	36				36	
630-80335	BARRICADE (TYPE 3 M-A) (TEMPORARY)	EACH	5				5	
630-80341	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	EACH	22				22	
630-80342	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	EACH	1				1	
630-80380	TRAFFIC CONE	EACH	200				200	
700-70010	F/A MINOR CONTRACT REVISIONS	F A	1				1	
700-70016	F/A FUEL COST ADJUSTMENT	F A	1				1	
700-70380	F/A EROSION CONTROL	F A	1				1	

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 Phone: 720.865.3151

As Constructed
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Revised:
Void:

SUMMARY OF APPROXIMATE QUANTITIES

Designer:	R. CRANE	Structure	D-27-MP-070A
Detailer:	G. BABDVEC	Numbers	
Sheet Subset:	SAQ	Subset Sheets:	2 of 2

Project No./Code	C010-114 (20414)
	201524362-00
Sheet Number	7

SUMMARY OF EARTHWORK QUANTITIES

UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE)(NET)		CUBIC YARDS
ROADWAY		141
CHANNEL		492
MUCK EXCAVATION		
AS DIRECTED BY ENGINEER		10
TOTAL		643
FOR INFORMATION ONLY		
EMBANKMENT MATERIAL (COMPLETE IN PLACE)(NET)		CUBIC YARDS
ROADWAY		31
COMPACTION (AASHTO T 99)		CUBIC YARDS
TOTAL EMBANKMENT (NET)		31
BASES OF CUTS AND FILLS		108
TOTAL		139
EARTHWORK QUANTITIES BALANCE		
UNCLASSIFIED EXCAVATION		CUBIC YARDS
TOTAL		643
EMBANKMENT (NET)		
TOTAL		139
EMBANKMENT (NET) TIMES COMPACTION FACTOR		1.00
TOTAL		139
EXCESS EXCAVATION		
UNCLASSIFIED EXCAVATION		643
FACTORED EMBANKMENT MATERIAL		139
TOTAL		503

TABULATION OF GUARDRAIL

Station		Side	806-01390		606-01370	
			End Anchorage Type 3K		Transition Type 3G	
			EACH		EACH	
From	To		PLAN	AS CONST	PLAN	AS CONST
12+61.66	12+90.84	LT	1		1	
12+80.91	12+90.84	RT			1	
13+27.84	13+54.74	RT	1		1	
13+27.84	13+38.17	LT	1		1	
Project Totals			3		4	

NOTE: GUARDRAIL SHALL BE CORROSION RESISTANT PER M-606-1.

TABULATION OF REMOVALS

Station		Side	202-00010		202-00220		202-00810	
			Removal of Tree		Removal of Asphalt Mat		Removal of Ground Sign	
			SY		SY		SY	
From	To		PLAN	AS CONST	PLAN	AS CONST	PLAN	AS CONST
12+18.53	13+64.65		6		635		6	
Project Totals			6		635		6	

SCHEDULE OF TRAFFIC CONTROL DEVICES


ITEM CODE	DESCRIPTION	UNIT	TOTAL
630-80341	Construction Traffic Sign (Panel Size A)	Each	22
630-80342	Construction Traffic Sign (Panel Size B)	Each	1
630-80335	Barricade (Type 3) (Type 3 M-A) (Temporary)	Each	5
630-80380	Traffic Cone	Each	200
630-00000	Flagging	Hour	36

TABULATION OF SURFACING


Station		304-06007		403-34721		Notes
		Aggregate Base Course (Class 6)		Hot Mix Asphalt (Grading SX) (75) (PG 58-28)		
		CY		TON		
From	To	PLAN	AS CONST	PLAN	AS CONST	
12+18.53	12+90.85	41		61		Includes tie in for gravel road
12+90.85	13+27.85			20		Bridge Structure
13+27.85	13+64.65	62		102		
Project Totals		103		183		

CONSTRUCTION TRAFFIC CONTROL SIGNS

ID	SIGN CODE	SIGN PANEL SIZE			BACKGROUND COLOR	LEGEND / DESCRIPTION	630-80341	630-80342
		W"	x	H"			CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)
							EACH	EACH
1	W20-1	36	x	36	Orange	Road Work 1/2 Mile	2	
2	W20-3	36	x	36	Orange	Street Closed Ahead	2	
3	R11-2	48	x	30	White	Road Closed		1
4	G20-11	36	x	36	Orange	Road Work MM YYYY-MMYYYY	2	
5	R52-6a	24	x	30	White	Begin fines Double	2	
6	W20-4	36	x	36	Orange	One Lane Road XX FT	2	
7	G20-5P	24	x	18	White	Work Zone	2	
8	R2-1	24	x	30	White	Speed Limit XX	4	
9	W20-7A	36	x	36	Orange	Flagger Symbol	2	
10	R52-6b	24	x	30	White	End Fines Doubled	2	
11	G20-10	36	x	36	Orange	XYZ Construction Thanks You	2	
PROJECT TOTALS							22	1

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 Horiz. Scale: 1:10 Vert. Scale: As Noted
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 Phone: 720.865.3151

As Constructed	ROADWAY TABULATION	
No Revisions:	Designer: R. CRANE	Structure Numbers: D-27-MP-070A
Revised:	Detailer: G. BABDVEC	
Void:	Sheet Subset: TABS	Subset Sheets: 1 of 1

Project No./Code
 C010-114 (20414)
 201524362-00
 Sheet Number **8**

- NOTE:**
1. NO R.O.W. ACQUISITION WILL BE NEEDED FOR THIS PROJECT. ALL WORK IS ENTIRELEY WITHIN CITY AND COUNTY OF DENVER PROPERTY.
 2. PROPERTY INFORMATION CAN BE FOUND IN THE DEED FROM BOOK 210, PAGE 474.
 3. REFER TO LANDSCAPE PLAN FOR VEGETATION REMOVAL AND REPLACEMENT.
 4. GUARDRAIL TYPE 3 SHALL RECEIVE THE DUPLEX COATING SYSTEM PER SECTION 522 OF THE SPECIFICATIONS. PAYMENT IS INCLUDED IN THE COST OF THE TYPE 3 GUARDRAIL.

CURVE 1
 Sta.=11+82.76
 $\Delta c = 39^\circ 53'26''$ RT
 $Tc = 33.75$
 $Dc = 61^\circ 36'30.11''$
 $Lc = 64.75$
 $Rc = 93.00$

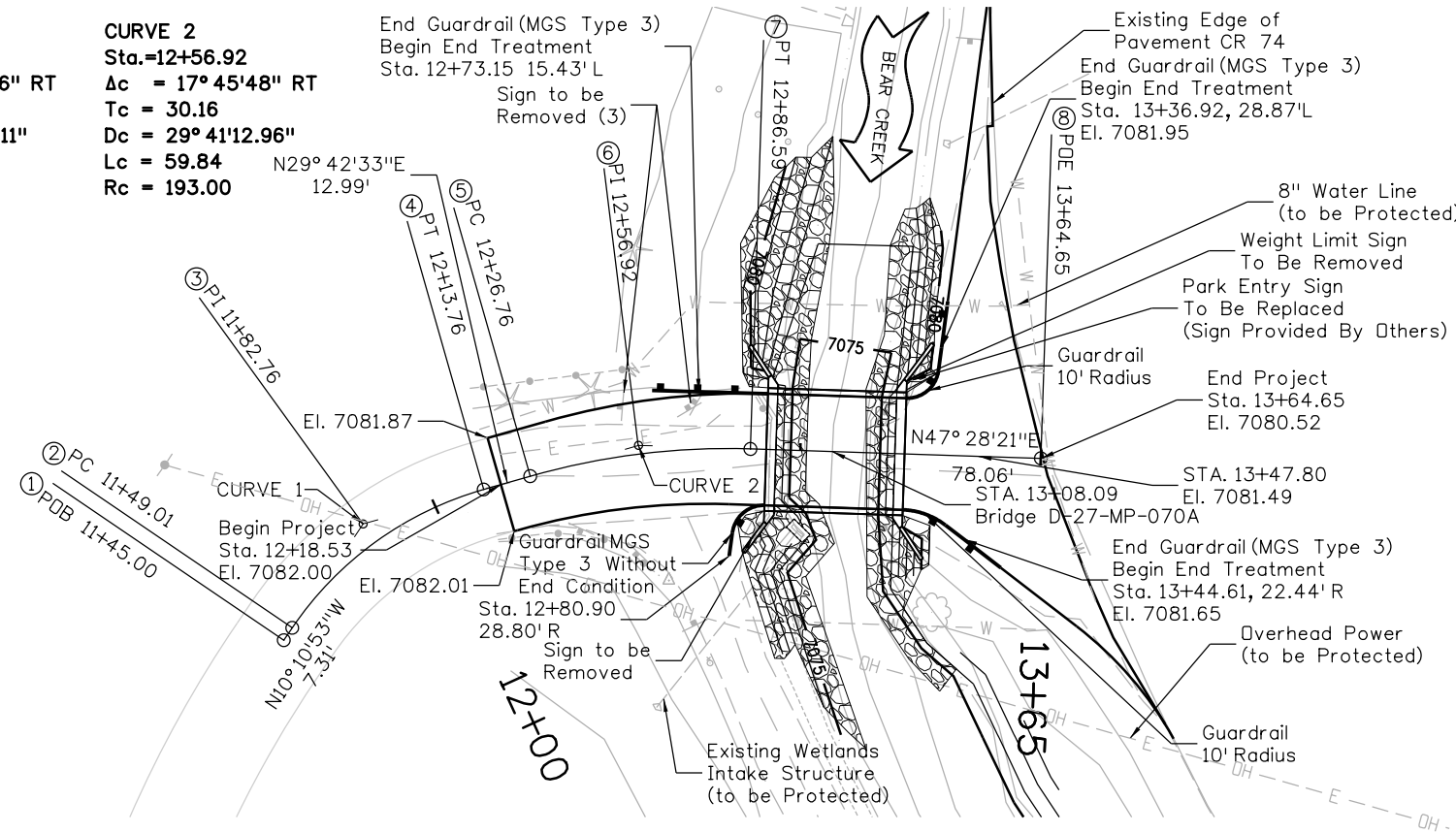
CURVE 2
 Sta.=12+56.92
 $\Delta c = 17^\circ 45'48''$ RT
 $Tc = 30.16$
 $Dc = 29^\circ 41'12.96''$
 $Lc = 59.84$
 $Rc = 193.00$

End Guardrail (MGS Type 3)
 Begin End Treatment
 Sta. 12+73.15 15.43' L
 Sign to be Removed (3)

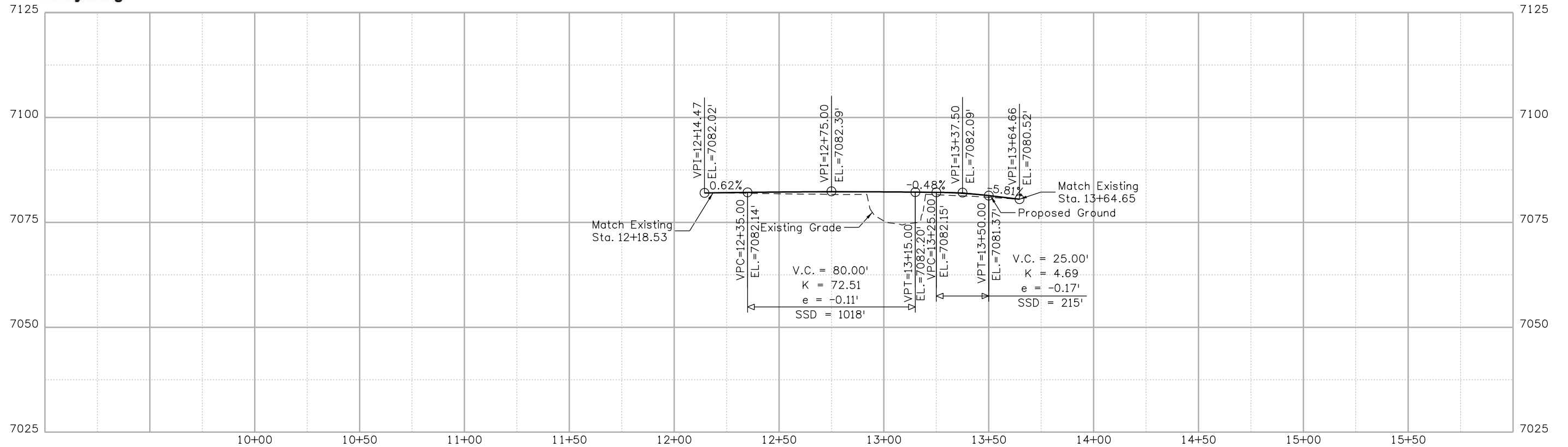
Existing Edge of Pavement CR 74
 End Guardrail (MGS Type 3)
 Begin End Treatment
 Sta. 13+36.92, 28.87' L
 El. 7081.95

EVERGREEN LAKE HOUSE ROAD ALIGNMENT DATA

POINT NO.	STATION	PROJECT COORD.		DESCRIPTION
		NORTHING	EASTING	
1	11+45.00	655852.9981	47914.2678	POB
2	11+49.01	655856.9499	47913.5581	PC
3	11+82.76	655890.1671	47907.5925	PI
4	12+13.76	655919.4796	47924.3182	PT
5	12+26.76	655930.7659	47930.7582	PC
6	12+56.92	655956.9613	47945.7054	PI
7	12+86.59	655977.3476	47967.9317	PT
8	13+64.65	656030.1092	48025.4555	POE



Know what's below.
 Call before you dig.



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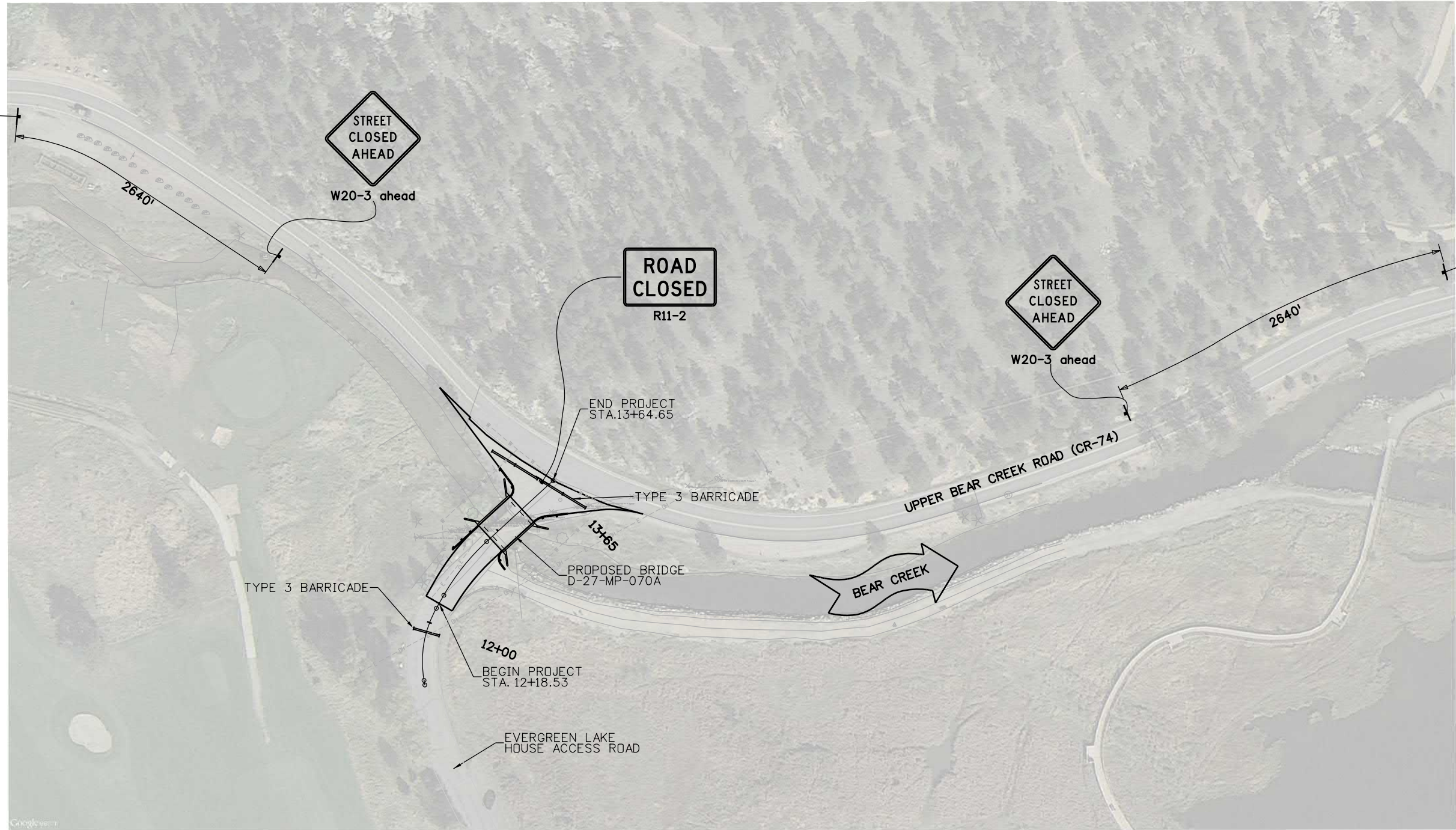
PLAN AND PROFILE
 Designer: R. CRANE
 Detailer: G. BABDVEC
 Sheet Subset: RDWY

Project No./Code
 C010-114 (20414)
 201524362-00
 Sheet Number **9**

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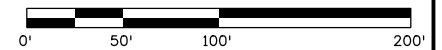


W20-1 .5mi



W20-1 .5mi

Note:
Traffic Control for Tie-in to Upper Bear Creek Road Shall Be Completed Per CDOT Std. S-630-1 Case No. 17



Print Date: 1/22/2019	
File Name: 60477917TCP_GenLayout.dgn	
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TRAFFIC CONTROL PLAN			
Designer:	R. CRANE	Structure Numbers	D-27-MP-070A
Detailer:	G. BABDVEC		
Sheet Subset:	LAYOUT	Subset Sheets:	1 of 1

Project No./Code
C010-114 (20414)
201524362-00
Sheet Number 10

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

	Format *
<input checked="" type="checkbox"/> Horizontal Control	<u>Plan Sheets</u>
<input checked="" type="checkbox"/> Vertical Control	<u>Plan Sheets</u>
<input checked="" type="checkbox"/> Roadway Alignment	<u>Plan Sheets</u>
<input type="checkbox"/> Original Terrain Data	_____
<input type="checkbox"/> Other:	_____

* Specify the information format, i.e., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- | | |
|---|--|
| <input type="checkbox"/> Landscaping | <input type="checkbox"/> Major Reconstruction |
| <input type="checkbox"/> Signalization | <input type="checkbox"/> New Roadway Construction |
| <input type="checkbox"/> Safety Improvement | <input checked="" type="checkbox"/> Bridge Replacement |
| <input type="checkbox"/> Asphalt Overlay | <input type="checkbox"/> Bridge Widening |
| <input type="checkbox"/> Concrete Overlay | <input type="checkbox"/> New Bridge |
| <input type="checkbox"/> Minor Widening | <input type="checkbox"/> Other: _____ |

SURVEY WORK TO BE PERFORMED BY OTHERS: _____

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- Verification and Maintenance of Horizontal and Vertical Control
- Verify or Determine existing grades and alignments
- Verify or Determine existing topography
- GPS/RTS (Global Positioning System/Robotic Total Station) Construction Machine Control
- Clearing and Grubbing Limits (Section 201)
- Removal Limits (Section 202)
- Reset Items (Section 210)
- Excavation and Embankment (Section 203)

- Excavation
 - Unclassified
 - Stripping
 - Muck
 - Rock
 - Borrow
 - Other: Structure
 - Potholing

- Embankment
- Site Grading
- Erosion Control (Perm)
- Other: _____
- As Staked Earthwork Quantities (See General Notes)

- Landscaping
 - Top Soil (Section 207)
 - Seeding (Section 212)
 - Mulching (Section 213)
 - Planting (Section 214)
 - Herbicide (Section 217)
 - Other: _____

- Erosion Control (Section 208)
 - Seeding (Temp)
 - Silt Fence
 - Erosion Bales
 - Erosion Logs
 - Riprap (Temp)
 - Other: _____

- Roadway Bases
 - Untreated Subgrade
 - Treated Subgrade
 - Aggregate Base Course (Section 304)
 - Reconditioning
 - PMBB - Plant Mix Bituminous Base
 - Other: _____

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Excavation	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Embankment	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
Roadway Bases	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- Pavements
 - HMA - Hot Mix Asphalt (Section 403)
 - Concrete (Section 412)
 - Heating & Scarifying Treatment
 - Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
 - Seal Coat or Chip Seal (Section 409)
 - Other: _____

	Grid (Y/N)	Special Interval	Special Offset
Pavements	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

- Roadway Elements
 - Curb and Gutter (Section 609)
 - Drop inlets - alignment and grades (Section 604)
 - Retaining Walls
 - Guard Rail (Section 606)
 - Sidewalk (Section 608)
 - Overlay Stationing
 - Other: _____

	Tangent Interval	Curve Interval	Special Offset
Curb & Gutter	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

- Riprap (Perm) (Section 506)
- Slope and Ditch Paving (Section 507)

- Minor Structures
 - Structure Excavation limits (Section 206)
 - Culverts (Section 603)
 - Culverts w/ Headwalls and Wingwalls (Section 601)
 - Concrete Box Culverts w/ Headwalls and Wingwalls
 - Pipes (Section 603)
 - Sanitary Sewer
 - Storm Sewer
 - Water
 - Irrigation
 - Miscellaneous
 - Manholes (Section 604)
 - Inlets (Section 604)
 - Permanent Water Quality BMP (Section 208)
 - Other: _____

	Left Interval	Center Interval	Right Interval
Stationing	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

- Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number
 - Structure Excavation limits (Section 206)
 - Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
 - Piling locations and cut off elevations (Section 502)
 - Caisson locations and elevations (Section 503)
 - Footing locations, alignment, and elevations
 - Abutment/Pier locations, alignment, and elevations
 - Wingwall skew angles/offsets
 - Structural concrete form locations
 - Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
 - Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
 - Deck grades at Girder 10th or "n" th point locations and elevations
 - Slope and Ditch Paving (Section 507)
 - Other: _____

- Fencing (Section 607)
 - Temporary
 - Permanent
 - Sound Barrier
 - Other: _____

- Delineators (Section 612)
 - Temporary
 - Permanent

- Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
 - Signal pole locations and elevations
 - Light pole locations and elevations
 - Sign locations
 - Field verify sign post locations, elevations, and lengths before fabrication.
 - Other: _____

- Pavement Marking (Section 627)
 - Striping (Temp)
 - Striping (Perm)
 - Symbols
 - Other: _____
- Temporary Lighting and Construction Traffic Control Devices (Section 630)
 - Signal pole locations and elevations (Temp)
 - Light pole locations and elevations (Temp)
 - Sign Locations (Temp)
 - Other: _____
- All Easements (Temp Staking by P.L.S. Only)
- Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:


- Monumentation (Section 629)
 - Control
 - Right of Way
 - Land corners, Aliquot corners
 - Easements
 - Reference the specified existing monuments: ** _____
 - Replace the specified existing monuments: ** _____
 - Locate monuments. It is estimated _____ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

- Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDDT Survey Manual.
- Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
- The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 14 days prior to the Presurvey Conference - Construction Survey.
- Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
- The Contractor shall furnish an As Staked (or GPS/RTS Construction Machine Control) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDDT Survey Manual. A printed copy of the As Staked (or GPS/RTS Construction Machine Control) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
- Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
- The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
- The Contractor shall coordinate construction staking on the project with any utility work.
- Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
- The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
 - Horizontal Control (Primary & Secondary)
 - Vertical Control (i.e. Benchmarks)
 - Property Pin Ties
 - Horizontal Alignment
 - Grading
 - Slope Staking
 - Minor Structures
 - Major Structures
 - One fieldbook for each work category shown on this sheet
 - Other Fieldbook(s): _____

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 File Name: 60477917SURV_Tab.dgn
 Horiz. Scale: 1:1 Vert. Scale: As Noted
 Unit Information Unit Leader Initials
 8181 E. Tufts Avenue
 Denver, CO 80237
 Phone: 303-740-2600

Sheet Revisions		
Date:	Comments	Init.
	AD	
	PLANS	
	JANUARY 2019	


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 Capital Projects Management
 Kevin Rens
 201 West Colfax Avenue, Department 506
 Denver, Colorado 80202
 Phone: 720.865.3151

As Constructed	SURVEY TABULATION		Project No./Code
No Revisions:			C010-114 (20414)
Revised:	Designer: R. CRANE	Structure Numbers	201524362-00
Void:	Detailer: G. BABDVEC	Sheet Subset: TABS	Sheet Number 11
		Subset Sheets: 10 OF 10	

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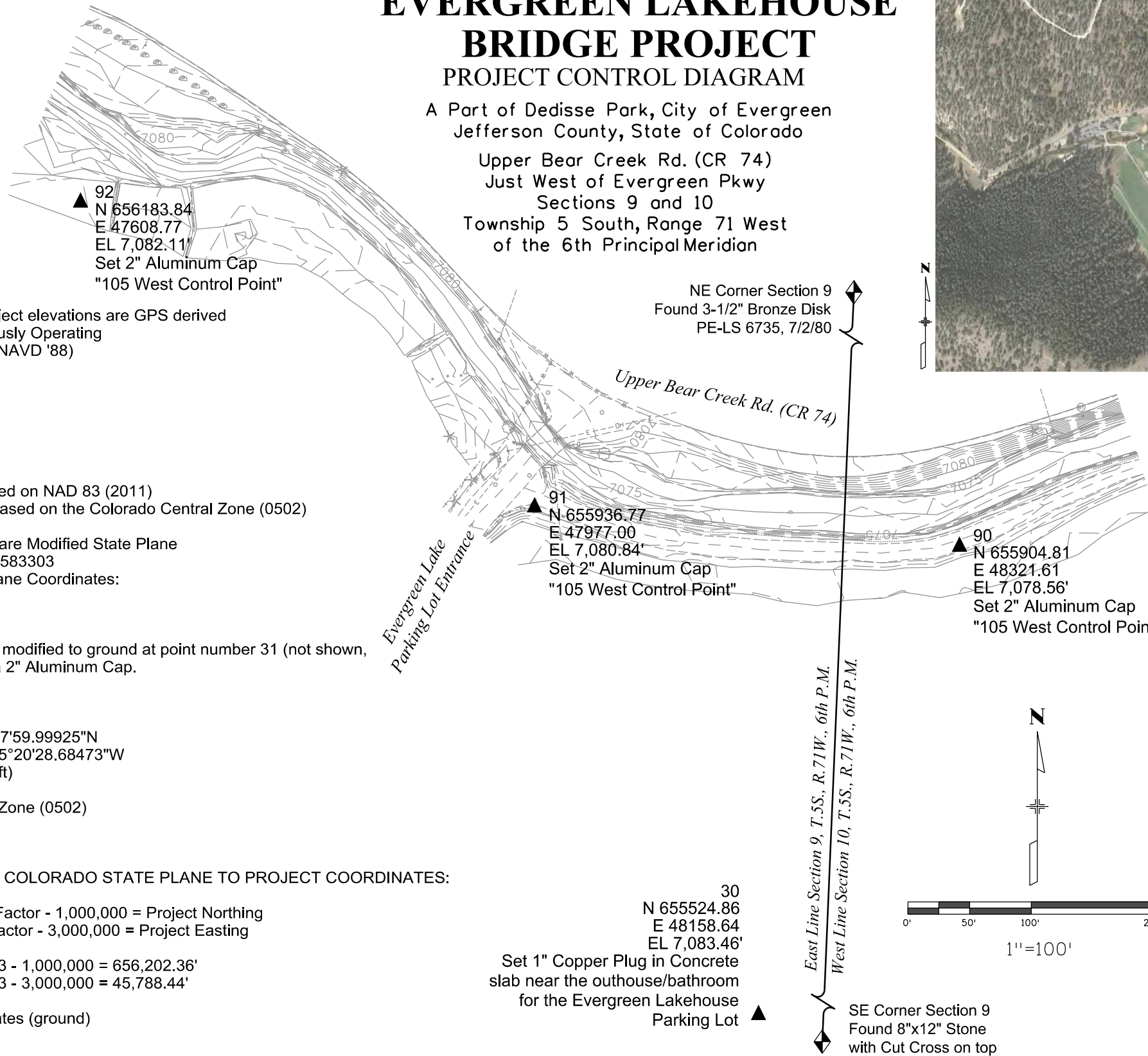
EVERGREEN LAKEHOUSE BRIDGE PROJECT PROJECT CONTROL DIAGRAM

A Part of Dedisse Park, City of Evergreen
Jefferson County, State of Colorado

Upper Bear Creek Rd. (CR 74)
Just West of Evergreen Pkwy
Sections 9 and 10
Township 5 South, Range 71 West
of the 6th Principal Meridian



Vicinity Map
N.T.S.



BASIS OF ELEVATIONS: Project elevations are GPS derived utilizing the following Continuously Operating Reference Stations (CORS). (NAVD '88)

Table Mountain (TMGO)
Marshall Field (P041)
CDOT Golden (CTMC)

COORDINATE DATUM:

Geodetic Coordinates are based on NAD 83 (2011)
State Plane Coordinates are based on the Colorado Central Zone (0502)

Project (Ground) Coordinates are Modified State Plane
Ground Scale Factor = 1.0003583303
Truncation applied to State Plane Coordinates:
Northing = 1,000, 000 sft
Easting = 3,000,000 sft

State Plane Coordinates were modified to ground at point number 31 (not shown, this survey), said point being a 2" Aluminum Cap.

POINT 31:

NAD 83(2011) Latitude = 39°37'59.99925"N
NAD 83(2011) Longitude = 105°20'28.68473"W
Ellipsoid Height = 7,068.39 (sft)
Elevation = 7,114.81 (sft)
Colorado State Plane Central Zone (0502)
N = 1,655,609.105 (sft)
E = 3,044,697.437 (sft)

CONVERSION EXAMPLE OF COLORADO STATE PLANE TO PROJECT COORDINATES:

State Plane Northing x Scale Factor - 1,000,000 = Project Northing
State Plane Easting x Scale Factor - 3,000,000 = Project Easting

1,655,609.105 x 1.0003583303 - 1,000,000 = 656,202.36'
3,044,697.437 x 1.0003583303 - 3,000,000 = 45,788.44'

Modified State Plane Coordinates (ground)
N = 656,202.36 (sft)
E = 45,788.44 (sft)

NOTES

1. This Project Control Diagram is not a boundary survey of the adjoining property.
2. UNITS: Project coordinates and elevations shown hereon are U.S. Survey Feet.
3. 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.

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: 2/9/2016	Sheet Revisions			<p>DEPARTMENT OF PUBLIC WORKS</p> <p>201 WEST COLFAX AVENUE DENVER, CO 80202 PHONE: (720) 913-4501 FAX: (720) 913-4544</p>	As Constructed		Public Infrastructure (Upper Bear Creek Rd.) Project Control Diagram		Project No./Code		
File Name: Project ControlDiagram.dgn	Date:	Comments	Init.		No Revisions:	Revised:	Void:	Designer:	Structure Numbers	Sheet Number 12	
4201 E. Yale Ave., STE 230 Denver, CO 80222						Revised:		Designer:	Structure Numbers	Sheet Subset: Control	Subset Sheets: of
TRANSPORTATION AECOM USA, Inc. 717 Seventeenth Street, Suite 500, Denver, CO 80202 T 303.376.2900 F 303.376.2999				Void:		Designer:		Structure Numbers	Sheet Number 12		

SWMP NOTES

1. SITE DESCRIPTION

- A. **PROJECT SITE LOCATION:** Project is located at Evergreen Lake House Bridge. The project is bounded by Upper Bear Creek Road to the North and Evergreen Lake House Road to the South.
- B. **PROJECT SITE DESCRIPTION:** The existing Evergreen Lake House Bridge over Bear Creek was built in 1980 and has surpassed its design life and is in need of replacement. The structure is categorized as structurally deficient in the latest bridge inspection report. This project will require removal and replacement of the existing Evergreen Lake House Bridge and minor roadway improvements, including paving, on the northeast and southwest sides of the bridge. Grading is anticipated at the face of abutment and adjacent to the wingwalls.
- C. **ACRES OF DISTURBANCE:**
 - 1. Total area of construction site (LOC): 0.96 acres
 - 2. Total area of disturbance (LDA): 0.62 acres
 - 3. Acreage of seeding: 0.10 acres
- D. **RECEIVING WATER:**
 - 1. Outfall locations: N/A
 - 2. Names of receiving water(s) on site: Bear Creek
 - 3. Ultimate receiving water: South Platte River
 - 4. Horizontal distance nearest water of the state is from project: 0 miles
- E. **EXISTING SOIL DATA:** The site is mainly composed of Type A/D rated soils as defined by the Natural Resources Conservation Service Web Soil Survey. Type D soils have a moderately high runoff potential and moderately low infiltration rate, while Type A soils have a moderately low runoff potential and moderately high infiltration rate. Specifically, the project site contains Type A/D Rosane-Venable fine sandy loam, 0-3 percent slopes.
- F. **EXISTING VEGETATION, INCLUDING PERCENT COVER:**
 A survey including general description of existing vegetation shall be conducted by the SWMP Administrator for construction prior to any ground disturbance on the project. The SWMP Administrator shall photo-document existing vegetation where all work will be occurring. The SWMP Administrator shall also perform the vegetation survey transect(s) including photo documentation as outlined in Chapter 4.11.2 of CDOT's Erosion Control and Stormwater Quality Guide.

 Pre-Construction: Date of survey: _____ %Density: _____
 Description of existing vegetation:
 Map or table showing transect locations in SWMP Notebook:

 Post-Construction: Date of survey: _____ %Density: _____
 Description of existing vegetation:
 Map or table showing transect locations in SWMP Notebook:

2. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

- A. **POTENTIAL POLLUTANT SOURCES**
 - 1. Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place any BMPs/Control Measures required to contain potential pollutants.
- B. **OFFSITE DRAINAGE (RUN ON WATER)**
 - 1. Place BMPs/Control Measures to address run-on water in accordance with subsection 208.03.
- C. **CONSTRUCTION DEWATERING:**
 - 1. 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.
 - 2. If a temporary stream crossing is required to perform the work, the work shall be paid for as Item 208 Temporary Stream Crossing. See Project Special Provisions for additional requirements.

- 3. If a temporary crossing of the stream is required to construct the bridge the following shall apply to this project:
 - A. Contractor shall submit temporary stream crossing means, methods, and drawings to the Engineer for approval prior to any construction within the Creek. See Project Special Provisions for additional requirements.
 - B. The stream crossing must remain within the Channel banks.
 - C. The stream crossing shall convey the seasonal flow estimated to be between 100 CFS and 200 CFS.
 - D. Payment shall be based on the plan quantity at the unit price bid for Item 211 Dewatering.

D. VEHICLE TRACKING PAD

- 1. BMPs/Control Measures shall be implemented in accordance with subsection 208.04.

E. PERIMETER CONTROL

- 1. 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.
- 2. Perimeter control may consist of vegetation buffers, berms, silt fence, aggregate bags, erosion logs, existing landforms, or other BMPs/Control Measures as approved.
- 3. Perimeter control shall be in accordance with subsection 208.04.

3. SWMP ADMINISTRATOR:

A. SWMP ADMINISTRATOR FOR DESIGN:

Name/Title	Contact Information
Will Carrier	303-694-2770, will.carrier@aecom.com

B. SWMP ADMINISTRATOR FOR CONSTRUCTION: (See Subsection 208 Under an Acre Specification) The Contractor shall designate a SWMP Administrator for Construction upon ownership of the SWMP. The SWMP Administrator shall become the owner/operator and assume responsibility for all design changes to the SWMP implementation and maintenance in accordance to 208.03. The SWMP Administrator shall be responsible for implementing, maintaining and revising SWMP, including the title and contact information. The activities and responsibilities of the SWMP administrator shall address all aspects of the projects SWMP. (Update the information below for each new SWMP Administrator) (Copy of TECS Certification must also be included in the SWMP Notebook.) **The SWMP Administration for construction is not a separate pay item but is included in the cost of the work.**

Name/Title	Contact Information	Certification #	Start Date	Engineer Approval



4. 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

- A. **MATERIALS HANDLING AND SPILL PREVENTION:** prior to construction commencing the Contractor shall submit a Spill Prevention, Control and Countermeasure Plan, see subsection 208.06. Materials handling shall be in accordance with subsection 208.06.
- B. **STOCKPILE MANAGEMENT:** shall be done in accordance with subsection 107.25 and 208.07
- C. **CONCRETE WASHOUT:** Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.
- D. **SAW CUTTING:** shall be done in accordance with subsection 107.25, 208.04, 208.05
- E. **STREET SWEEPING:** shall be done in accordance with subsection 208.04

5. BMP/CONTROL MEASURE MAINTENANCE

- A. Maintenance shall be in accordance with subsection 208.04 (f).

Print Date: 1/22/2019	 6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600	Sheet Revisions Date: Comments Init.			 City and County of Denver Capital Projects Management Kevin Rens 201 West Colfax Avenue, Department 506 Denver, Colorado 80202 Phone: 720.865.3151	As Constructed No Revisions:		STORMWATER MANAGEMENT PLAN		Project No./Code C010-114 (20414)	
File Name: 60477917DES_ErosNote01.dgn		AD PLANS JANUARY 2019				Revised:				Designer: L. KINDT Structure D-27-MP-070A Detailer: L. KINDT Numbers	
Horiz. Scale: 1:1 Vert. Scale: As Noted		Unit Information Unit Leader Initials				Void:		Sheet Subset: EROSION Subset Sheets: E01 of 05		Sheet Number 13	
Unit Information Unit Leader Initials		Unit Information Unit Leader Initials				Unit Information Unit Leader Initials		Unit Information Unit Leader Initials		Unit Information Unit Leader Initials	

SWMP NOTES

6. INTERIM AND FINAL STABILIZATION

A. SEEDING PLAN

Soil conditioning, topsoil, seeding (native), mulching (weed free) and mulch tackifier will be required for an estimated **0.10** acres of disturbed area within the right-of-way limits which are not surfaced or replaced with wetland soil. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	LBS. PLS PER ACRE
Blue grama	Bouteloua gracilis 'Hachita'	0.5
Arizona fescue	Festuca arizonica 'Redondo'	1.0
Sheep Fescue	Festuca ovina	0.6
Canada wildrye	Elymus canadensis	6.2
Sandberg bluegrass	Poa sanbergii	0.2
Western Wheatgrass	Pascopyrum smithii 'Rosanna'	6.5
Slender Wheatgrass	Elymus trachycaulus ssp. Trachycaulus 'Pryor'	1.0
Oats	Avena sativa	3.0
Blue flax	Linum Lewisii	0.5
Rocky Mountain penstemon	Penstemon strictus	1.0
Yarrow	Achillea millefolium	0.1
TOTAL		20.6

- B. **SEEDING APPLICATION:** Drill seed 0.25 inch to 0.5 inch into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25 inch to 0.5 inch into the soil.
- C. **MULCHING APPLICATION:** Apply a minimum of 2 tons of certified weed free straw or 2 tons of certified weed free straw per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.
- D. **SPECIAL REQUIREMENTS:**
 - 1. Due to high failure rates, hydroseeding will not be allowed for permanent stabilization.

BMP Matrix:

- 1. M-Standards have been included along with standard BMP narratives. If a Non-Standard BMP will be used or the standard narrative does not apply, the SWMP Administrator shall write a Non-Standard BMP narrative, place an "X" in the column and complete a Non-Standard BMP Specification and Narrative for the SWMP notebook.
- 2. The SWMP Administrator shall place an "X" in the column In Use on Site when the BMP/Control Measure has been installed.
- 3. Place an "X" in the column BMP/Control Measure to be located by SWMP Administrator if the SWMP Administrator shall locate the BMP/Control Measure during construction. These BMP/Control Measures are not currently located on SWMP Plans but are anticipated to be used during construction (i.e. Vehicle Tracking Pad, Batch Plants, etc.). The SWMP Administrator shall locate these prior to or during construction and reflect on SWMP Map.
- 4. Place an "X" in the column Installation BMP/Control Measure Pre-Construction if the BMP/Control Measure is to be installed prior to construction activity.

- E. **SOIL CONDITIONING AND FERTILIZER REQUIREMENTS:** Minimum requirements for all disturbances to receive seeding (native).

Soil conditioner paid for as Item 212- Soil Conditioning (Acre)		
Biological nutrient organic based fertilizer (lbs/acre)*	Humate (lbs/acre)	Compost (cys/acre) All areas <2:1
300	200	65

*Biological nutrient shall not exceed 8-8-8 (N-P-K).
Humate based material shall be in accordance to Standard Special Provision 212 and compost shall be in accordance to Standard Special Provision 212.

- F. **BLANKET APPLICATION:** On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of mulch and mulch tackifier. Place in all disturbed areas with slopes steeper than 3:1 with the exception of areas replaced with wetland topsoil, areas covered by riprap, and impervious surfaces.

7. PRIOR TO FINAL ACCEPTANCE

- A. Partial Acceptance shall be in accordance with subsection 107.25 (d) and 208.10 At the Partial Acceptance of the project, it shall be determined by the SWMP Administrator and the Engineer which temporary BMPs/Control Measures shall remain until 70% reestablishment or which shall be removed.
- B. At the end of the project, all ditch checks shall either consist of temporary erosion logs (or equivalent) or permanent rip-rap.

8. NARRATIVES:

- A. **ADDITIONAL BMPS/CONTROL MEASURES AND NARRATIVES:** BMP/Control Measure details and narratives not covered by the SWMP or Standard Plan M-208, M-216 shall be added to the SWMP notebook by the SWMP Administrator.

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Print Date: 1/22/2019		Sheet Revisions				As Constructed		STORMWATER MANAGEMENT PLAN		Project No./Code	
File Name: 60477917DES_ErosNote02.dgn		Date:	Comments	Init.		No Revisions:			C010-114 (20414)		
Horiz. Scale: 1:1 Vert. Scale: As Noted		AD PLANS				Revised:	Designer: L. KINDT	Structure Numbers	D-27-MP-070A	201524362-00	
Unit Information Unit Leader Initials		JANUARY 2019				Void:	Detailer: L. KINDT	Subset Sheets:	E02 of 05	Sheet Number	14
AECOM 6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600					City and County of Denver Capital Projects Management Kevin Rens 201 West Colfax Avenue, Department 506 Denver, Colorado 80202 Phone: 720.865.3151						

SWMP NOTES

STRUCTURAL BMPs/Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD/NON-STANDARD	IN USE ON SITE	BMP/CONTROL MEASURE TO BE LOCATED BY SWMP ADMINISTRATOR	INSTALLATION BMP/CONTROL MEASURE PRE-CONSTRUCTION	BMP/CONTROL MEASURE PHASING		
						FIRST/INITIAL CONSTRUCTION ACTIVITIES	INTERIM CONSTRUCTION ACTIVITIES	PERMANENT STABILIZATION
PROTECTION OF EXISTING WETLANDS <i>Fence (plastic) and erosion logs</i>	Fence (plastic) shall be placed in combination with erosion logs to prevent encroachment of construction traffic and sediment into state waters prior to start of construction disturbances. Fence (plastic) shall be placed adjacent to the wetlands; erosion logs shall be placed between the plastic fence and disturbance area. Logs shall be placed to direct flows away from or filter water running into wetlands from disturbance areas.					X	X	
TOE OF FILL PROTECTION <i>Erosion logs, temporary berm, silt fence, topsoil windrow*</i>	Place prior to slope/embankment work to capture sediment and protect and delineate undisturbed areas. *Can be used to stockpile topsoil for salvage.	M-208				X	X	
PERIMETER CONTROL <i>Erosion logs, silt fence, temporary berm, topsoil windrow*</i>	Placed prior to construction commencing to address potential run-on water from off site, and to divert around disturbed area. *Can be used to stockpile topsoil for salvage.	M-208				X	X	
SEDIMENT CONTROL/ SLOPE CONTROL <i>Silt fence, erosion logs</i>	Placed on the contour of a slope to contain and slow down construction runoff. Place prior to start of construction disturbances.	M-208				X	X	
CONCRETE WASHOUT <i>In-ground or fabricated</i>	Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to start of concrete activities.	M-208				X	X	
VEHICLE TRACKING PAD	Source control, placed to prevent tracking of sediment from disturbed area to offsite surface. Place prior to start of construction disturbances.	M-208				X	X	
SWEEPING	Source control, used to remove sediment tracked onto paved surfaces and to prevent sediment from entering drainage system. Sweep daily and at the end of the construction shift as needed. Kick brooms shall not be permitted.					X	X	

NON-STRUCTURAL BMPs/Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

- Erosion control devices are used to limit the amount of soil loss on site
- Sediment control devices are designed to capture sediment on the project site.
- Construction controls are BMPs/Control Measures related to construction access and staging.
- BMP/Control Measure locations are indicated on the SWMP site map.

APPLICATION, BMP/CONTROL MEASURE	NARRATIVE	M-STANDARD	IN USE ON SITE	BMP/CONTROL MEASURE TO BE LOCATED BY SWMP ADMINISTRATOR	INSTALLATION BMP/CONTROL MEASURE PRE-CONSTRUCTION	BMP/CONTROL MEASURE PHASING		
						FIRST/INITIAL CONSTRUCTION ACTIVITIES	INTERIM CONSTRUCTION ACTIVITIES	PERMANENT STABILIZATION
TOPSOIL MANAGEMENT STOCKPILE/SALVAGE <i>Windrow or stockpile</i>	Prior to embankment work commencing, existing topsoil shall be scraped to a depth of 4 inches, and placed in stockpiles or windrows. Upon completion of slope work/final grading (less 4 inches), topsoil shall be evenly distributed over embankment to a depth of 4 inches.					X	X	

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Horiz. Scale: 1:1 Vert. Scale: As Noted		AD PLANS				Revised:	Designer: L. KINDT	Structure: D-27-MP-070A	201524362-00		
Unit Information Unit Leader Initials		JANUARY 2019				Void:	Detailer: L. KINDT	Subset Sheets: E03 of 05	Sheet Number 15		
 6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600					City and County of Denver Capital Projects Management Kevin Rens 201 West Colfax Avenue, Department 506 Denver, Colorado 80202 Phone: 720.865.3151						

SWMP NOTES

SURFACE ROUGHENING / GRADING TECHNIQUES Blading, Backhoe, Dozing, Combination Loader	Temporary stabilization of disturbance and to minimize wind and erosion.										X	
MULCH/MULCH TACKIFIER	Temporary or Final Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer										X	X
SEEDING PERMANENT (NATIVE)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.											X
SOIL RETENTION BLANKET (SRB)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.	M-216										X

9. TABULATION OF STORMWATER QUANTITIES

- A. BMP/Control Measure 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/Control Measure maintenance shall be included in the cost of the BMP/Control Measure.
- B. It is estimated that labor, blading, dozing, combination loader and/or backhoe may be required for miscellaneous erosion control work as directed by the Engineer. Work shall not be paid for separately but shall be included in the cost of BMP installation.
- C. Establishment of seeded areas shall be included in the price of the work. This shall include mowing, weed control, reseeding/mulch/tackifier.

Spec.	Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity
PSP	207-00205	Topsoil	CY			69	69
PSP	207-00310	Stockpile Wetland Topsoil	CY			70	70
PSP	208-00002	Erosion Log Type 1 (12 inch)	LF	530	530		1060
PSP	208-00035	Aggregate Bag	LF	96			96
PSP	208-00045	Concrete Washout Structure	Each	1	1		2
PSP	208-00070	Vehicle Tracking Pad	Each	4			4
PSP	208-00103	Removal and Disposal of Sediment (Labor)	Hour	20	20		40
PSP	208-00105	Removal and Disposal of Sediment (Equipment)	Hour	20	20		40

10. BIOLOGIC IMPACTS

A. ENVIRONMENTAL IMPACTS:

1. Wetland Impacts: YES Temporary and permanent impacts are 0.042 and 0.0001 acres, respectively.
2. Stream Impacts: YES Approximately 280 linear feet, and 0.1 acres.
3. Threatened and Endangered Species: N/A
4. If YES to any of the above items, are any permits required or additional actions needed (404, etc.)
404 permit required

11. Notes

- A. Sediment (mud and dir) transported onto a public road, regardless of the size of the site, shall be cleaned immediately.
- B. Concrete wash water shall not be discharged to or allowed to runoff to State Waters, including any surface or subsurface storm drainage system or facilities.

Spec.	Pay Item	Description	Pay Unit	Initial Const.	Interim Const.	Permanent Stabilization	*Total Quantity
PSP	208-00106	Sweeping (Sediment Removal)	Hour	20	20		40
PSP	208-00207	Erosion Control Management	Day				8
SSP	212-00006	Seeding (Native)	Acre			0.10	0.10
SSP	212-00032	Soil Conditioning	Acre			0.10	0.10
SSP	213-00002	Mulching (Weed Free Hay)	Acre			0.10	0.10
SSP	213-00061	Mulch Tackifier	LB			60	60
SSP	216-00101	Soil Retention Blanket (Straw/Coconut) (Photodegradable Class 1)	SY			144	144
PSP	607-11525	Fence (Plastic)	LF	825			825
PSP	700-70380	Erosion Control	FA				1

*It is anticipated that additional BMPs/Control Measures and BMP/Control Measure 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 subsection 208.03 and 208.04. **Quantities for all BMPs/Control Measures shown above are estimated, and have been increased for unforeseen conditions and normal BMP/Control Measure life expectancy.** Quantities shall be adjusted according to the conditions encountered in the field as directed and approved by the Engineer. Payment shall be for the actual work completed and material used.

Erosion Control Management is shown in days. This includes a half day for the initial BMP installation, half-days for final walk through, and inspections/improvements during the final establishment period. The final establishment period is defined as, when 70% of the preconstruction vegetation has been achieved. Inspection days will take approximately 2 hours, and other days less.

- C. The Plan shall not substantially change the depth of cover, or access to existing utility lines. Acceptance of this plan does not constitute approval to grade in any utility easement or right-of-way. Approvals to grade within utility easements must be obtained from the appropriate utility company. It is not permissible for any person to modify the grade of the earth on any Utility right-of-way without their written approval. The plan shall not increase or divert water towards utility facilities. Any changes to existing utility facilities to accommodate the plan must be approved by the affected utility owner prior to implementing the plan. The cost to relocate or protect existing utilities or to provide interim access is the applicant's expense.
- D. Location of vehicle tracking, stabilized staging areas and stockpile areas will be determined during construction and will be placed by the contractor with approval in the field by the Inspector.
- E. Contractor is responsible for seeding and mulching any area that is disturbed outside of the areas shown (edge of fill or cut).
- F. All disturbed slopes will utilize surface roughening as a temporary stabilization method to help prevent soil erosion.

Print Date: 1/22/2019
 File Name: 60477917DES_ErosNote04.dgn
 Horiz. Scale: 1:1 Vert. Scale: As Noted
 Unit Information Unit Leader Initials
AECOM 6200 S. Quebec Street
 Greenwood Village, CO 80111
 Phone: 303-740-2600

Sheet Revisions		
Date:	Comments	Init.
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	PLANS	
	JANUARY 2019	



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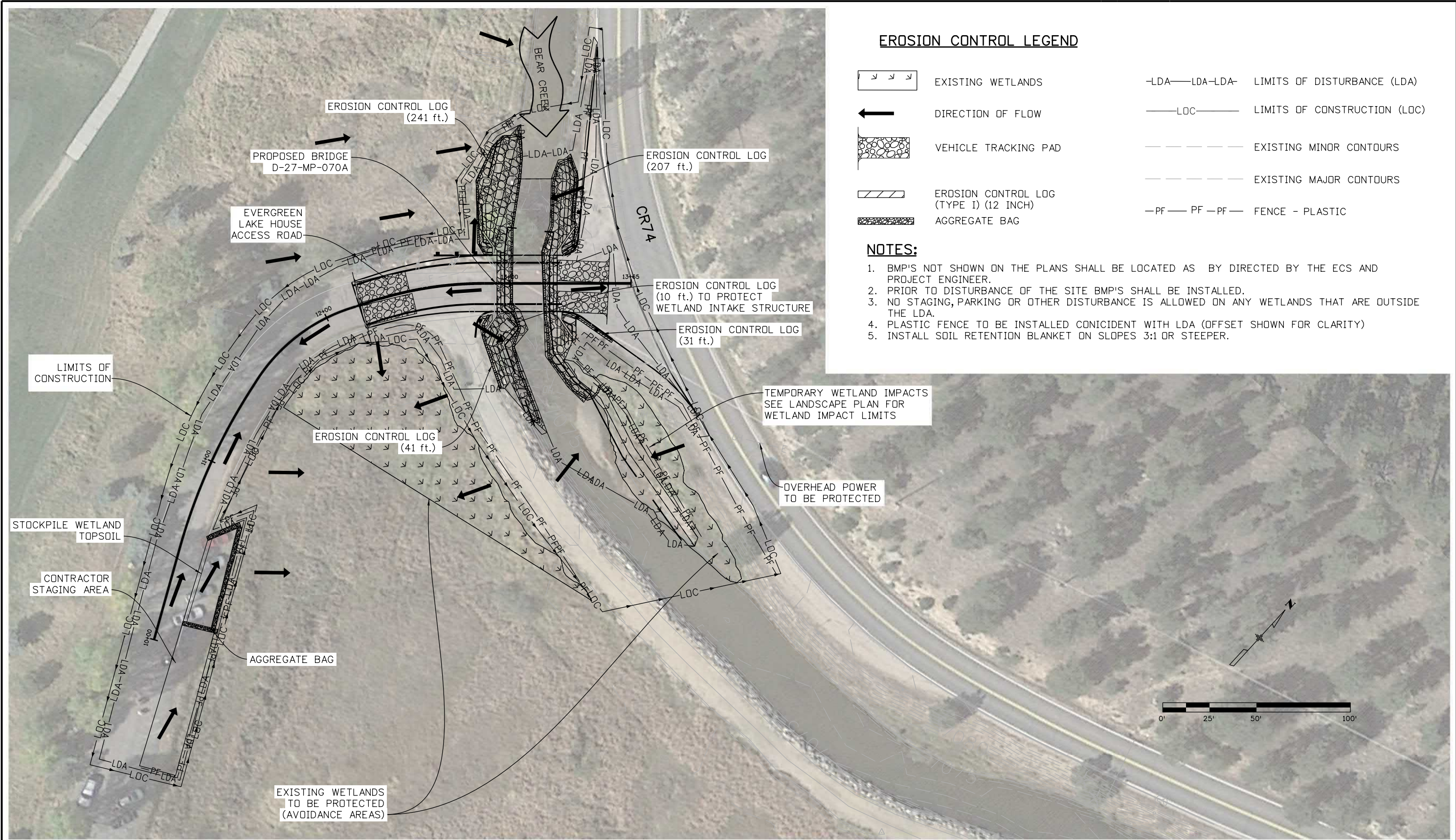
As Constructed
 No Revisions:
 Revised:
 Void:

STORMWATER MANAGEMENT PLAN
 Designer: L. KINDT
 Detailer: L. KINDT
 Sheet Subset: EROSION
 Structure Numbers
 Subsets: E04 of 05

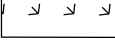




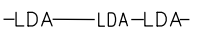
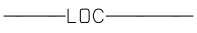


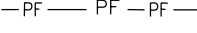
Project No./Code
 C010-114 (20414)
 201524362-00
 Sheet Number **16**

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EROSION CONTROL LEGEND

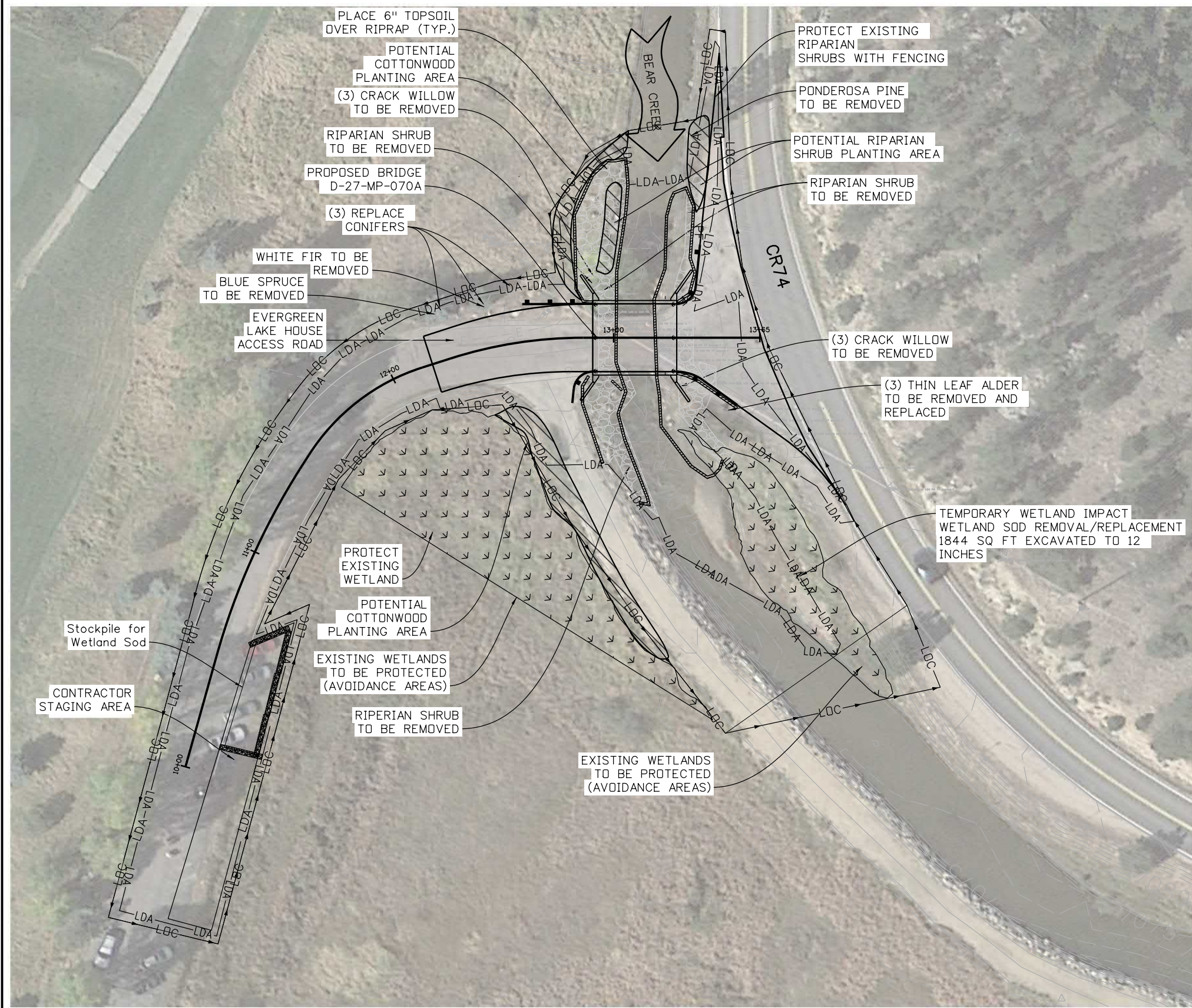
-  EXISTING WETLANDS
-  DIRECTION OF FLOW
-  VEHICLE TRACKING PAD
-  EROSION CONTROL LOG (TYPE I) (12 INCH)
-  AGGREGATE BAG
-  -LDA-LDA-LDA- LIMITS OF DISTURBANCE (LDA)
-  -LOC- LIMITS OF CONSTRUCTION (LOC)
-  - - - - - EXISTING MINOR CONTOURS
-  - - - - - EXISTING MAJOR CONTOURS
-  -PF-PF-PF- FENCE - PLASTIC

NOTES:

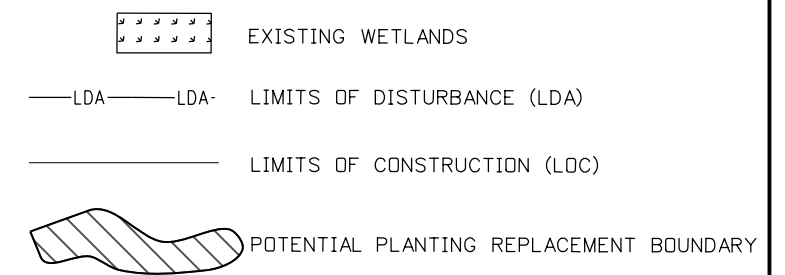
1. BMP'S NOT SHOWN ON THE PLANS SHALL BE LOCATED AS BY DIRECTED BY THE ECS AND PROJECT ENGINEER.
2. PRIOR TO DISTURBANCE OF THE SITE BMP'S SHALL BE INSTALLED.
3. NO STAGING, PARKING OR OTHER DISTURBANCE IS ALLOWED ON ANY WETLANDS THAT ARE OUTSIDE THE LDA.
4. PLASTIC FENCE TO BE INSTALLED CONICIDENT WITH LDA (OFFSET SHOWN FOR CLARITY)
5. INSTALL SOIL RETENTION BLANKET ON SLOPES 3:1 OR STEEPER.

Print Date: 1/22/2019		Sheet Revisions		 <p>City and County of Denver Capital Projects Management Kevin Rens 201 West Colfax Avenue, Department 506 Denver, Colorado 80202 Phone: 720.865.3151</p>	As Constructed		STORMWATER MANAGEMENT PLAN		Project No./Code		
File Name: 60477917DES_ErosSht.dgn		Date:	Comments		Init.	No Revisions:		Designer: L. KINDT		C010-114 (20414)	
Horiz. Scale: 1:50 Vert. Scale: As Noted						Revised:		Structure D-27-MP-070A		201524362-00	
Unit Information Unit Leader Initials						Void:		Detailer: R. PETERSEN		Sheet Number 17	
 <p>AECOM 8181 E. Tufts Avenue Denver, CO 80237 Phone: 303-740-2600</p>		 <p>AD PLANS JANUARY 2019</p>			 <p>DENVER THE MILE HIGH CITY</p>		Sheet Subset: EROSION		Subset Sheets: E05 of 05		

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LANDSCAPE PLAN

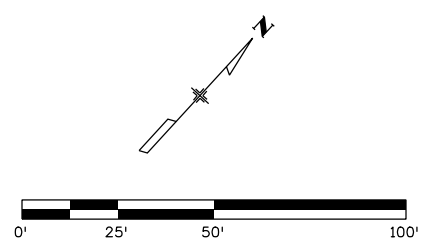


NOTES:

- TREES TO BE REMOVED AND REPLACED

Species	Type	Number to be removed	Number to be replaced
Blue spruce	Conifer	1	2
Ponderosa pine	Conifer	1	1
White fir	Conifer	1	0
Crack willow	Deciduous	6	0
Thinleaf alder	Deciduous	3	3
Narrowleaf cottonwood	Deciduous	0	6
- REPLACEMENT CONIFER TREES SHALL BE PLANTED ON 15 FOOT TO 20 FOOT CENTERS, BUT SHALL BE NO CLOSER THAN 20 FEET FROM EXISTING TREES.
- REPLACEMENT DECIDUOUS TREES SHALL BE PLANTED ON 10 FOOT TO 12 FOOT CENTERS.
- TREES SHALL BE CONTAINERIZED STOCK, 5 GALLON OR EQUIVALENT.
- REPLACEMENT TREES MUST BE ALIVE AND HEALTHY AT END OF 1 YEAR ESTABLISHMENT PERIOD, OR REPLACED BY CONTRACTOR AT THEIR OWN COST.
- RIPARIAN SHRUB PLANTING AREAS SHALL BE AT LEAST 462 SQUARE FEET. SUITABLE AREAS ARE SHOWN ON THE LANDSCAPE PLAN.
- RIPARIAN SHRUBS SHALL BE PLANTED ON 4 FOOT CENTERS.
- SHRUBS SHALL BE CONTAINERIZED STOCK, 1 GALLON OR EQUIVALENT.

Riparian Shrub Removal	Riparian shrub Replacement		
Area	Area	Species	Number
462 square feet	462 square feet	Thinleaf alder	12
		Mountain willow	9
		Sandbar willow	9
- WETLAND SOD REMOVAL/REPLACEMENT AREA (1,844 SQUARE FEET) SHALL BE EXCAVATED TO 12 INCHES.
- RIPRAP SHALL BE COVERED WITH 6 INCHES OF SOIL.
- ALL WETLAND AREAS DESIGNATED TO BE PROTECTED SHALL NOT BE USED FOR PARKING, STAGING, OR ANY OTHER CONSTRUCTION ACTIVITIES.
- SEE SWMP, SHEET 16 FOR ADDITIONAL INFORMATION.
- SEE PLAN AND PROFILE, SHEET 9 FOR ADDITIONAL INFORMATION.



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 File Name: 60477917DES_Landscape.dgn
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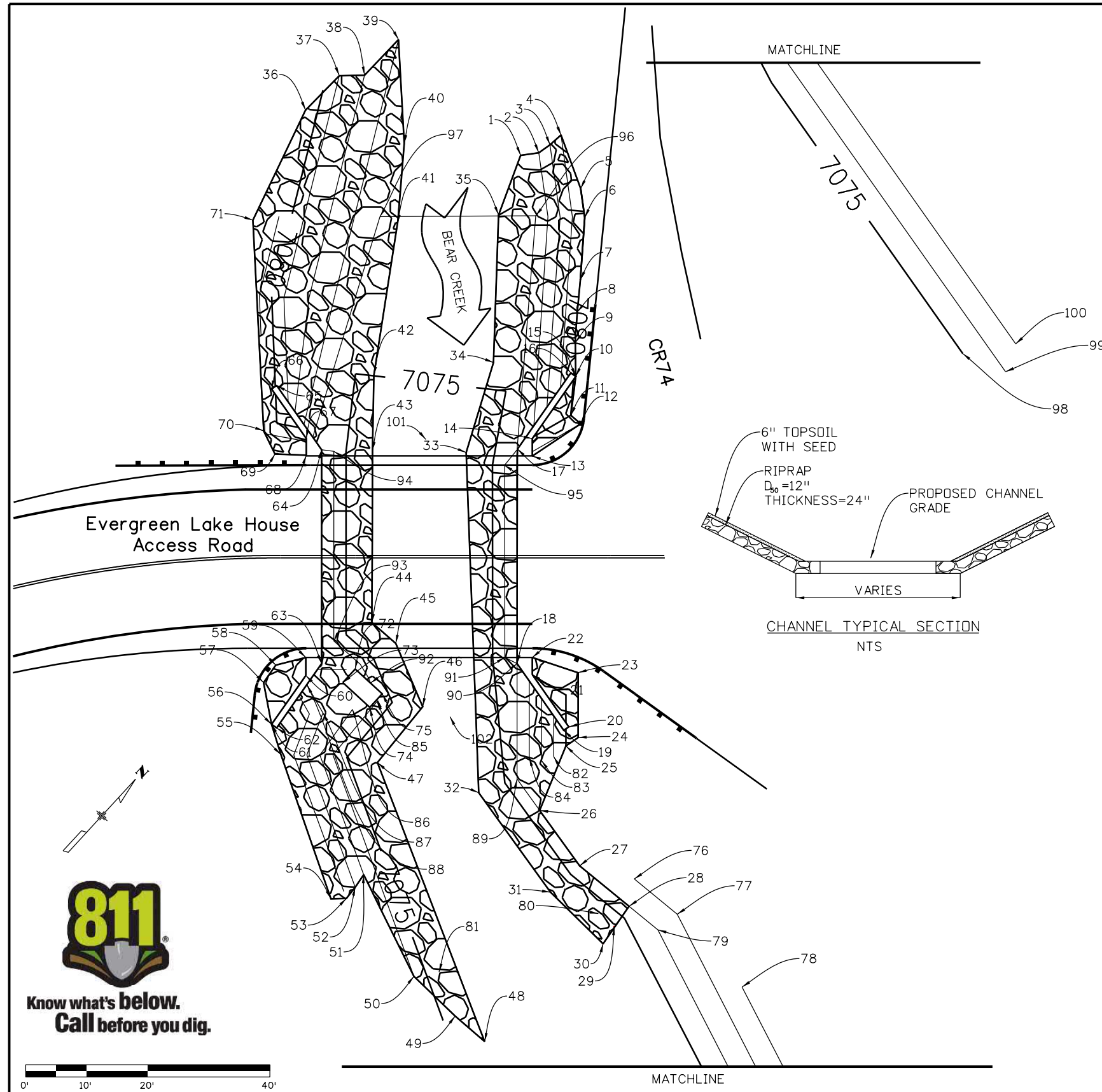
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 Capital Projects Management
 Kevin Rens
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 Denver, Colorado 80202
 Phone: 720.865.3151

As Constructed
 No Revisions:
 Revised:
 Void:

LANDSCAPE PLAN			
Designer:	J. DAWSON	Structure Numbers	D-27-MP-070A
Detailer:	G. BABOVEC	Subset Sheets:	01 of 01
Sheet Subset:	LANDSCAPE		

Project No./Code
 C010-114 (20414)
 201524362-00
 Sheet Number **18**

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Point Number	Station	Offset	Elevation	Description
1	13+25.93	-65.71	7076.20	Proposed Grade
2	13+28.90	-66.13	7077.00	Proposed Grade
3	13+30.74	-67.43	7078.00	Proposed Grade
4	13+32.54	-69.03	7079.00	Proposed Grade
5	13+35.78	-60.26	7080.00	Proposed Grade
6	13+36.44	-55.52	7080.00	Proposed Grade
7	13+35.72	-45.32	7080.00	Proposed Grade
8	13+35.22	-40.07	7079.93	Proposed Grade
9	13+34.88	-35.04	7079.94	Proposed Grade
10	13+34.96	-29.50	7080.21	Proposed Grade
11	13+34.16	-23.13	7080.00	Proposed Grade
12	13+35.77	-21.75	7081.00	Proposed Grade
13	13+27.84	-16.47	7081.50	Proposed Grade
14	13+27.84	-19.33	7080.05	Proposed Grade
15	13+34.96	-29.50	7080.21	Proposed Grade
16	13+34.14	-30.08	7079.75	Proposed Grade
17	13+25.42	-17.63	7076.03	Proposed Grade
18	13+25.34	17.50	7076.00	Proposed Grade
19	13+33.00	28.44	7079.83	Proposed Grade
20	13+33.82	27.87	7080.24	Proposed Grade
21	13+27.84	19.33	7080.05	Proposed Grade
22	13+27.84	16.50	7081.64	Proposed Grade
23	13+35.34	19.00	7081.00	Proposed Grade
24	13+35.34	29.63	7081.00	Proposed Grade
25	13+33.34	31.00	7080.00	Proposed Grade
26	13+29.04	41.58	7075.99	Proposed Grade
27	13+35.61	50.64	7076.00	Proposed Grade
28	13+43.68	57.26	7076.00	Proposed Grade
29	13+41.31	60.57	7074.30	Proposed Grade
30	13+39.44	63.38	7074.24	Proposed Grade
31	13+30.83	54.95	7074.33	Proposed Grade
32	13+19.07	38.67	7074.34	Proposed Grade
33	13+17.02	-17.06	7074.39	Proposed Grade
34	13+21.48	-31.78	7075.16	Proposed Grade
35	13+22.32	-55.91	7076.00	Proposed Grade
36	12+90.69	-73.09	7080.48	Proposed Grade
37	12+96.22	-78.74	7079.00	Proposed Grade
38	13+00.36	-78.81	7078.00	Proposed Grade
39	13+05.94	-84.66	7077.00	Proposed Grade
40	13+06.85	-67.65	7076.24	Proposed Grade
41	13+05.77	-54.59	7075.95	Proposed Grade
42	13+01.89	-29.69	7075.00	Proposed Grade
43	13+01.66	-17.41	7074.39	Proposed Grade
44	13+01.55	10.79	7074.39	Proposed Grade
45	13+05.47	14.21	7074.38	Proposed Grade
46	13+09.89	24.57	7074.34	Proposed Grade
47	13+02.48	33.70	7074.34	Proposed Grade
48	13+20.03	79.38	7074.30	Proposed Grade
49	13+15.21	75.23	7074.30	Proposed Grade
50	13+08.44	68.71	7076.00	Proposed Grade
51	13+00.23	52.07	7077.00	Proposed Grade
52	12+98.85	54.13	7078.00	Proposed Grade

Point Number	Station	Offset	Elevation	Description
53	12+97.39	55.96	7079.01	Proposed Grade
54	12+94.85	56.01	7080.00	Proposed Grade
55	12+86.66	32.41	7080.01	Proposed Grade
56	12+84.90	27.45	7081.14	Proposed Grade
57	12+83.50	20.59	7081.10	Proposed Grade
58	12+85.76	17.75	7081.53	Proposed Grade
59	12+90.75	16.52	7081.79	Proposed Grade
60	12+90.75	19.45	7081.50	Proposed Grade
61	12+84.90	27.45	7081.14	Proposed Grade
62	12+85.86	28.03	7081.05	Proposed Grade
63	12+93.34	17.50	7076.51	Proposed Grade
64	12+93.34	-17.50	7076.00	Proposed Grade
65	12+86.04	-28.03	7079.89	Proposed Grade
66	12+85.32	-27.46	7080.31	Proposed Grade
67	12+90.84	-19.33	7081.80	Proposed Grade
68	12+90.84	-16.60	7081.85	Proposed Grade
69	12+85.77	-16.80	7081.83	Proposed Grade
70	12+84.10	-20.63	7081.20	Proposed Grade
71	12+83.09	-55.13	7081.54	Proposed Grade
72	12+98.82	18.41	7076.48	Proposed Grade
73	12+96.80	20.62	7077.73	Proposed Grade
74	13+01.22	24.67	7076.23	Proposed Grade
75	13+03.25	22.46	7075.53	Proposed Grade
76	13+44.54	52.78	7077.00	Proposed Grade
77	13+51.58	58.55	7077.00	Proposed Grade
78	13+62.20	70.47	7078.00	Proposed Grade
79	13+48.40	61.12	7076.00	Proposed Grade
80	13+38.65	58.43	7074.30	Proposed Grade
81	13+12.58	68.04	7074.30	Proposed Grade
82	13+31.34	32.74	7079.00	Proposed Grade
83	13+29.34	33.38	7078.00	Proposed Grade
84	13+27.34	32.92	7077.00	Proposed Grade
85	13+02.43	23.71	7076.00	Proposed Grade
86	12+98.39	25.01	7077.00	Proposed Grade
87	12+93.55	25.59	7078.00	Proposed Grade
88	12+90.91	20.96	7078.00	Proposed Grade
89	13+25.34	36.41	7076.00	Proposed Grade
90	13+25.34	17.50	7076.00	Proposed Grade
91	13+23.34	16.50	7076.00	Proposed Grade
92	13+01.34	20.72	7076.00	Proposed Grade
93	12+95.34	13.81	7076.00	Proposed Grade
94	12+95.34	-17.25	7076.00	Proposed Grade
95	13+23.32	-15.00	7076.00	Proposed Grade
96	13+28.40	-55.82	7076.00	Proposed Grade
97	13+02.90	-55.67	7076.00	Proposed Grade
98	13+91.60	137.00	7075.00	Proposed Grade
99	13+98.60	139.98	7076.00	Proposed Grade
100	14+00.29	135.43	7077.00	Proposed Grade
101	13+10.38	-19.21	7074.40	Proposed Grade
102	13+14.38	26.21	7074.34	Proposed Grade

NOTES:
 1. Proposed grade elevation is top of topsoil or wetland sod.
 2. See Landscape Plan for wetland removal/replacement locations.
 3. 6 inches of topsoil to be placed over riprap.

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Sheet Revisions		
Date:	Comments	Init.
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	JANUARY 2019	

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 201 West Colfax Avenue, Department 506
 Denver, Colorado 80202
 Phone: 720.865.3151

DENVER
 THE MILE HIGH CITY

As Constructed	RIPRAP AND GRADING DETAIL	
No Revisions:	Designer:	L. KINDT
Revised:	Detailer:	L. KINDT
Void:	Sheet Subset:	HYDR
	Structure Numbers:	D-27-MP-070A
	Subset Sheets:	H01 of 01

Project No./Code
 C010-114 (20414)
 201524362-00
 Sheet Number **19**



Know what's below. Call before you dig.

GENERAL NOTES

Except as shown in the plans, structure excavation and backfill shall be in accordance with M-206-2 Excavation and Backfill for Bridges.

Structure excavation and backfill shall be as shown on the plans, except shoring may be required for excavation adjacent to the existing roadway. Potential shoring locations are shown in the plans however, the actual locations shall be determined by the contractor. Temporary excavation support shall be paid for by Item 206 Shoring.

Expansion joint material shall meet AASHTO Specification M213.

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 595B Color No. 20400, and is to be selected from test panels provided by the Contractor.

The following structural steel shall be AASHTO M270 Grade 50 (ASTM A-572): piling.

AASHTO M-222 (ASTM A-588) may be substituted for M270 Grade 50 (ASTM A-572) at no additional cost to the project.

See sheet B14 for Bridge Rail Type 10 material requirements.

All bolts shall be 7/8" diameter, high strength, unless otherwise noted.

Leveling pads are unlaminated bearings. They shall be cut or molded from AASHTO elastomer grade 3, 4, or 5 as described in tables 705-1 and 705-2 with a durometer (shore "A") hardness of 60.

Grade 60 reinforcing steel is required.

All reinforcing steel shall be epoxy coated unless otherwise noted.

Ⓝ denotes non coated reinforcing steel.

The Contractor shall be responsible for the stability of the structure during construction.

Refer to "Draft Final Subsurface Exploration and Pavement Design Report," by Geocal, dated March 7, 2016 for additional information.

A temporary stream crossing may be required. See Stormwater Management Plans Sheet E01 Part 2C and the Project Special Provisions for construction requirements.

Precast concrete abutments may be substituted for cast-in-place concrete at the contractor's option. Reinforcement sizes, lengths, and spacing shall remain as shown with the exception of removing grouted splice couplers. If using cast-in-place construction, the construction joint between the wingwalls and the abutment shown on sheets B10 and B11 shall be eliminated. The waterstop shall also be eliminated. Any deviations from these requirements shall be submitted for review and approval. If deviations are approved, the modified details are subject to stamping by the Contractor's Professional Engineer Registered in the State of Colorado.

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 material.

Sulfate resistance for structural concrete shall be Class 0 exposure.

All longitudinal and transverse dimensions are measured horizontally and include no correction for grade.

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.

DESIGN DATA

AASHTO, Eighth Edition LRFD with current interims

Design Method: Load and Resistance Factor Design

Live Load: HL-93 (design truck or tandem, and design lane load)
Dead Load: Assumes 36 lbs. per sq. ft. for bridge deck overlay

Reinforced Concrete:
Class D Concrete: f'c = 4,500 psi
Reinforcing Steel: fy = 60,000 psi

Precast prestressed concrete:
Class PS concrete f'c = (see details)
f's = 270,000 psi

SEISMIC DESIGN CRITERIA

Earthquake Design method: Forced Based
Latitude = 39.6327
Longitude = -105.3335

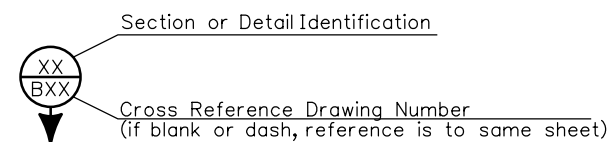
AASHTO Spectrum for 7% PE in 75 years (1000yr Return Period)
Period Sa (sec) (g)
0.0 0.066 PGA - Site Class B
0.2 0.138 Ss - Site Class B
1.0 0.036 S1 - Site Class B

Spectral Response Accelerations:
As = Fpga*PGA, SDs = Fa*Ss, and SD1 = Fv*S1
Fpga = 1.2, Fa = 1.2, Fv = 1.7
Period Sa (sec) (g)
0.0 0.079 As - Site Class C
0.2 0.166 SDs - Site Class C
1.0 0.061 SD1 - Site Class C

Operational Class: Essential

Seismic Zone 1

Response Modification Factors:
R-Factor: 2 (Abutments), R-Factor: 0.8 (Connections)



INDEX OF DRAWINGS

- B01 Bridge General Information Summary of Quantities
B02 Bridge General Layout
B03 Engineering Geology
B04 Bridge Hydraulic Information
B05 Construction Layout
B06 Foundation Layout
B07 Driven Pile Details
B08 Precast Abutment Details (1 of 2)
B09 Precast Abutment Details (2 of 2)
B10 Precast Wingwall Details
B11 Precast Abutment and Wingwall Tolerances
B12 Prestressed Concrete Box Girder
B13 Deck Reinforcing Details
B14 Bridge Rail Type 10M (1 of 2)
B15 Bridge Rail Type 10M (2 of 2)
B16 Excavation and Backfill for Bridges in Cut
B17 Mechanically Stabilized Backfill (W/O Approach Slab)
B18 Bridge Deck Elevations (1)
B19 Bridge Deck Elevations (2)

BRIDGE DESCRIPTION

Structure No. D-27-MP-070A. 1-Span (34'-6")
Precast prestressed concrete box beams (15"x5'-4"). Evergreen Lake House Access Road over Bear Creek. 30'-0" Roadway width 90°00'00" skew. Bridge Rail Type 10M

SUMMARY OF QUANTITIES

Table with 4 columns: ITEM, DESCRIPTION, UNIT, UNITS. Lists various construction items and their quantities.

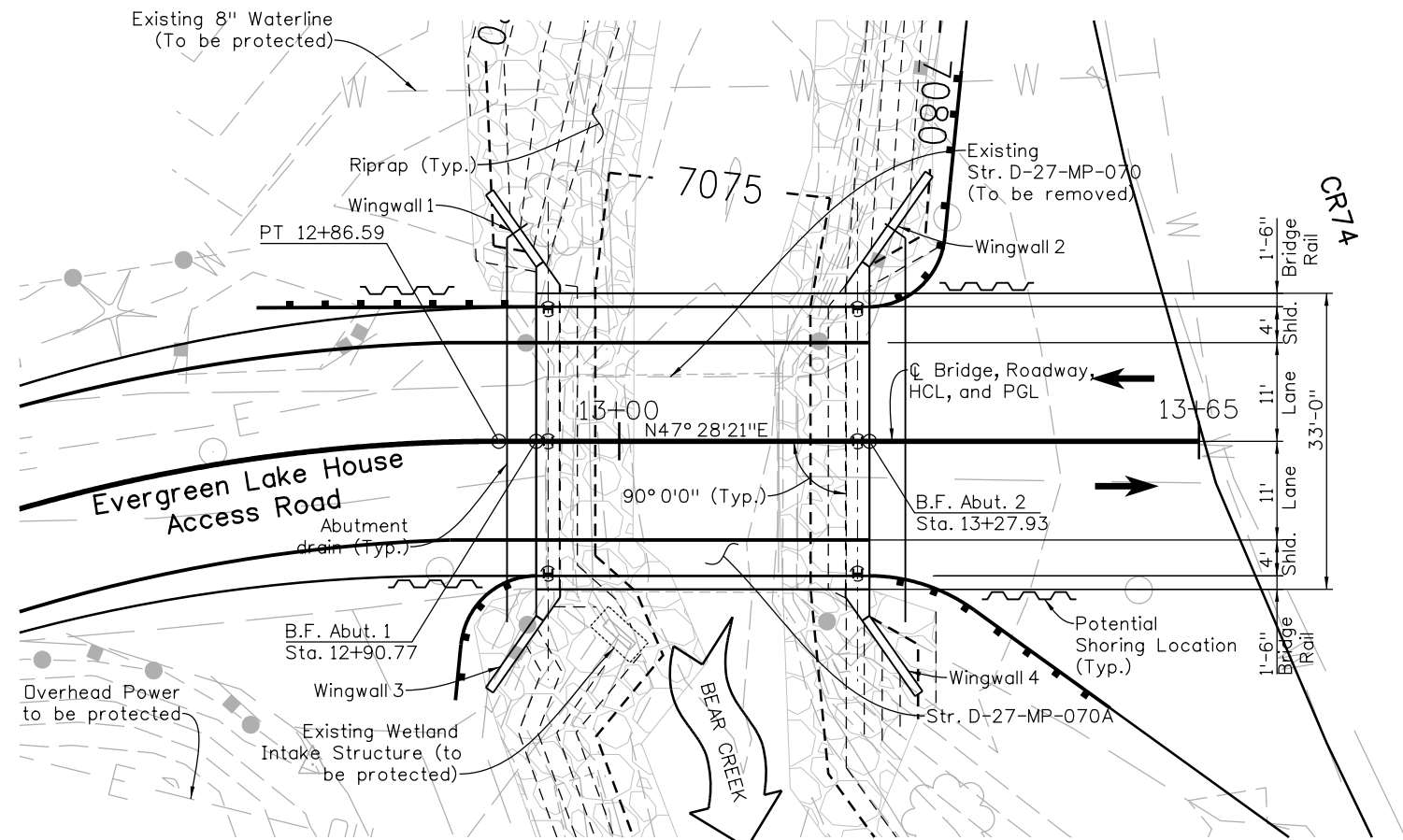
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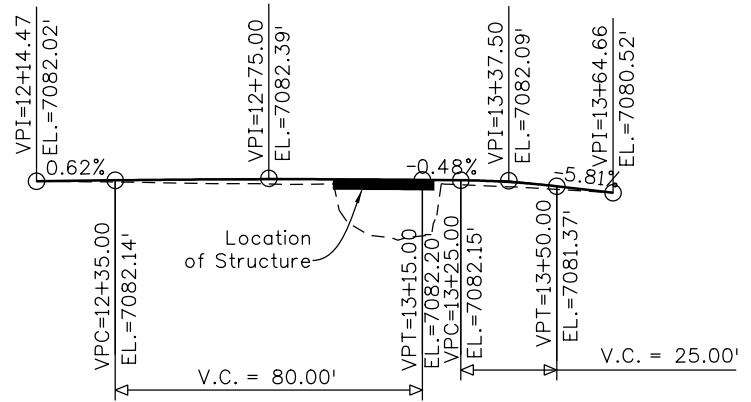
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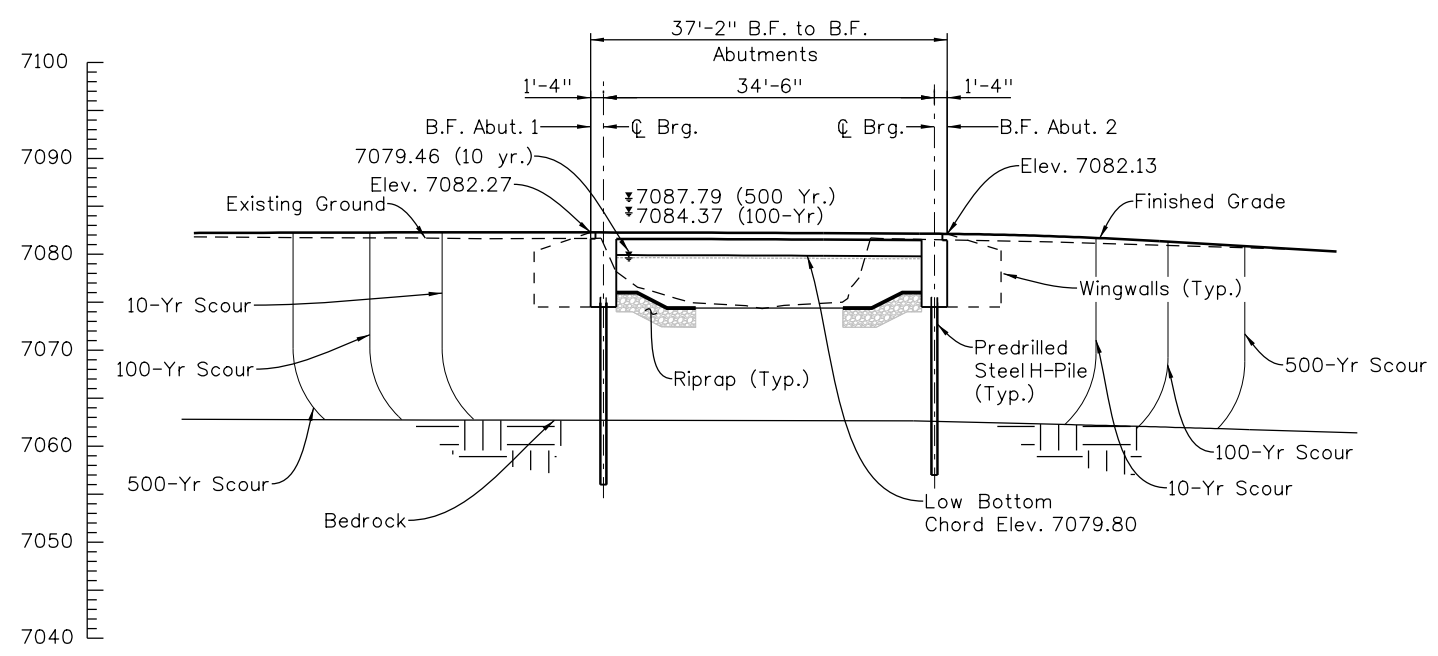
Know what's below.
Call before you dig.



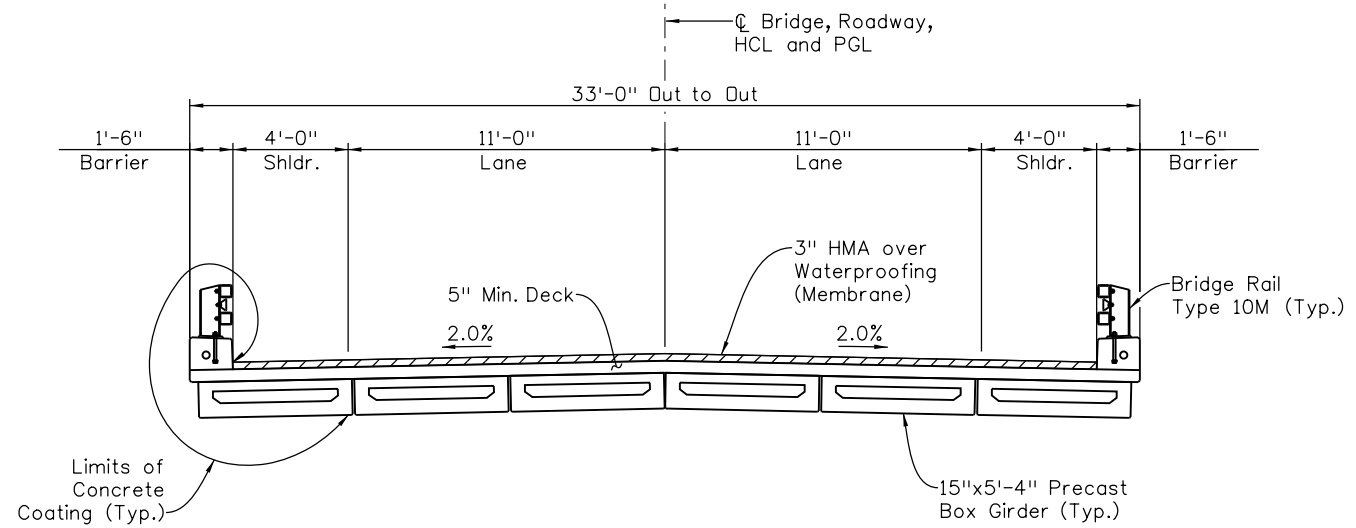
PLAN
SCALE: 1"=20'-0"



PROFILE GRADE



(Taken @ HCL Evergreen Lake House Access Road)
SCALE: 1"=20'-0"



TYPICAL SECTION

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3/16	SBH	3/16	CBP	3/16	KLP

Print Date: 1/22/2019
File Name: 60477917BRDG_GenLayout.dgn
Horiz. Scale: 1:20 Vert. Scale: As Noted
Unit Information Unit Leader Initials
AECOM 6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600

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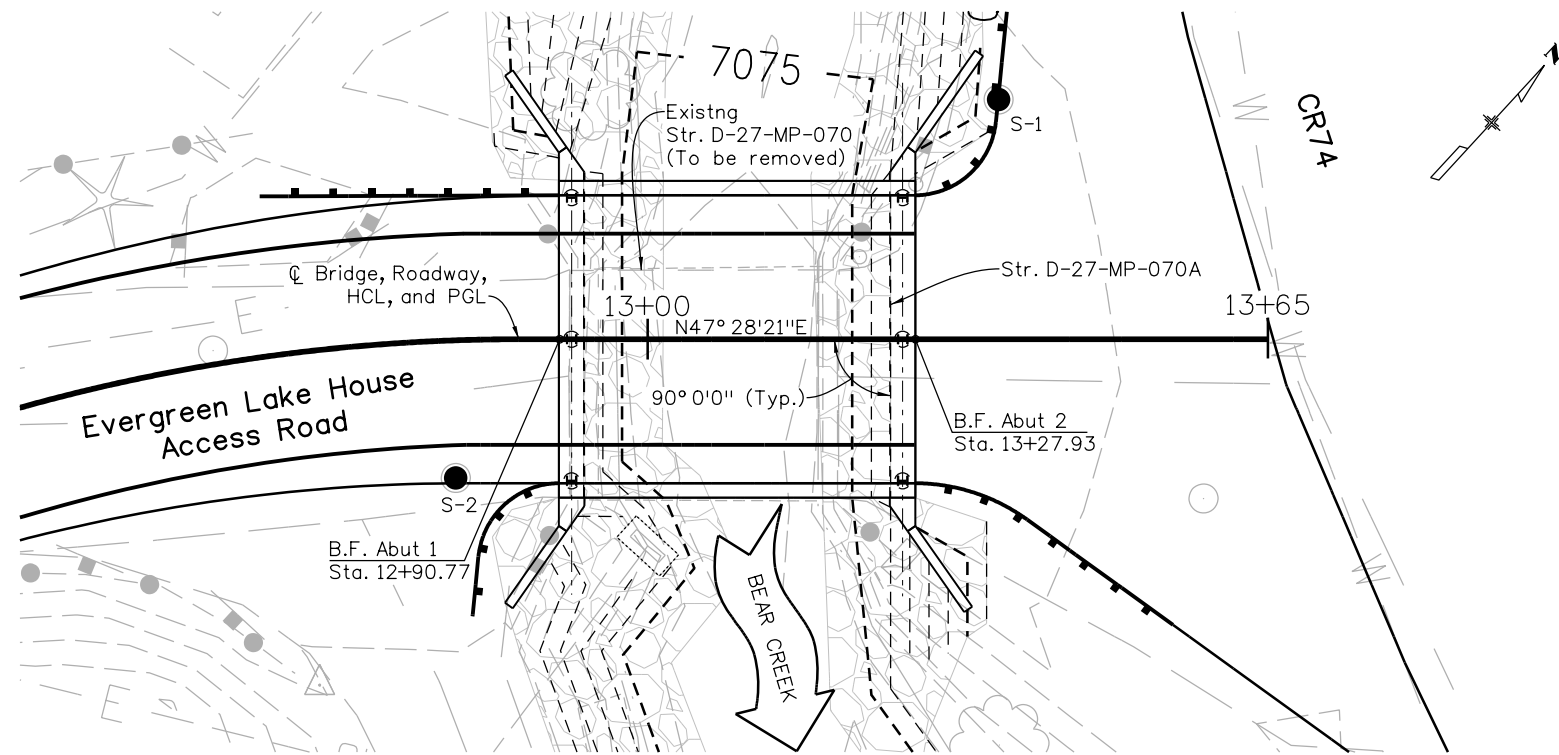
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Detailer:	R. PETERSEN	Subset Sheets:	B02 of 19
Sheet Subset:	BRIDGE		

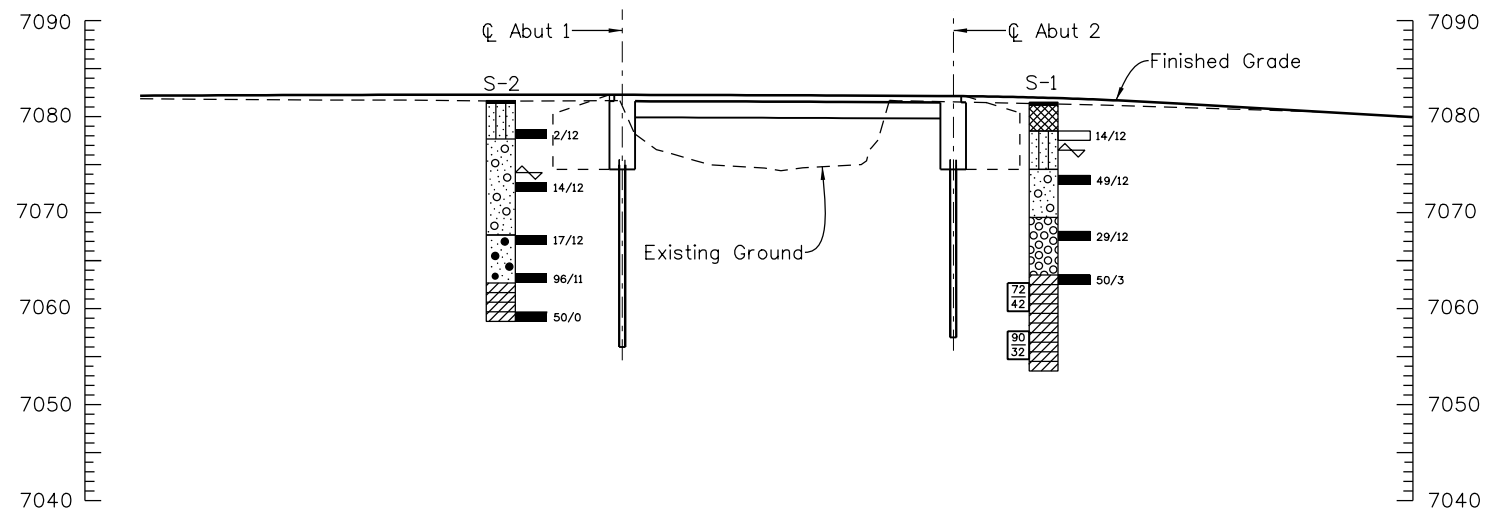
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201524362-00
Sheet Number 21

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DESIGNED BY	3/16	DETAILED BY	3/16	QUANTITIES BY	3/16
CHECKED BY	3/16	CHECKED BY	3/16	CHECKED BY	3/16



PLAN
SCALE: 1"=20'-0"



The boring logs of the above test holes are in the Geotechnical Report from GEDCAL (303) 337-0338

SUMMARY OF TEST RESULTS

TYPE OF MATERIAL

LEGEND

Boring No.	Depth (feet)	Natural Moisture Content (%)	Natural Dry Density (%)	Gradation		Percent Passing No. 200 Sieve	Atterberg Limits		Unconfined Compressive Strength (psi)	AASHTO Class. (Group Index)	Soil or Bedrock Description
				Gravel (%)	Sand (%)		Liquid Limit (%)	Plasticity Index (%)			
S-1	13	14.6	-	19	71	10	NV	NP	-	A-1-b	well graded sand with silt and gravel
S-1	19.25	0.1	162	-	-	-	-	-	6,920	-	granitic bedrock
S-2	3	42.4	-	7	70	23	NV	NP	-	A-2-4(0)	silty sand

Asphalt Pavement	Gravelly Sand
Fill Sand and Gravel	Well Graded Sand with Silt and Gravel
Silty Sand with Gravel	Biotite Gneiss Bedrock / Granitic Bedrock
Poorly Graded Sand and Gravel	

TEST BORING

- Hole Size
- 2/12 Indicates 2 Blows Required to Drive Sampler 12 inches
- Standard Penetration Test (SPT) Sampler
- Modified California Sampler
- Water Level
- NQ Rock Core Sample

Core Recovery R.Q.D. 50/25

Note: Borings were drilled through the overburden using down hole hammer (DDEX) procedures.

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 Unit Information Unit Leader Initials

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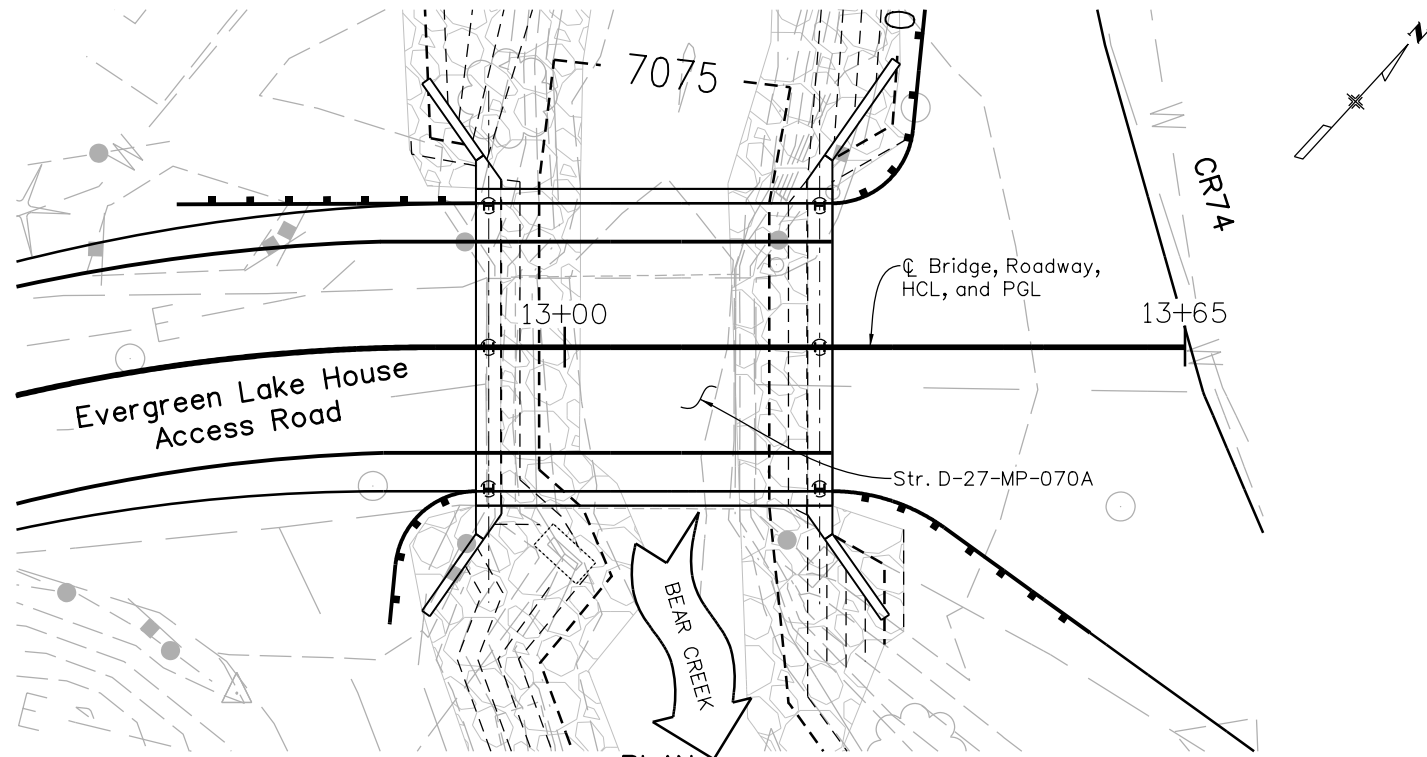
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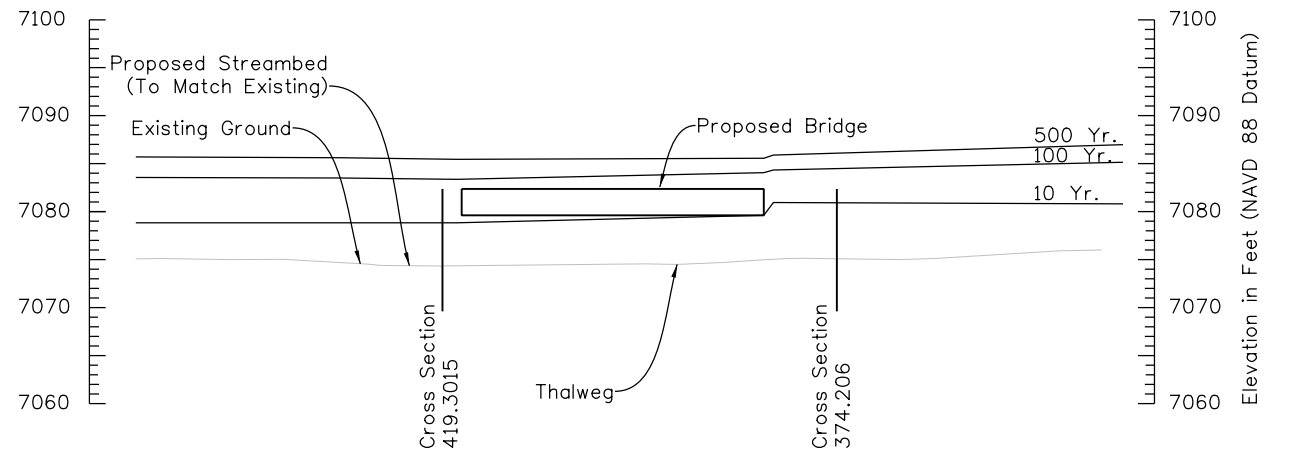
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Detailer:	R. PETERSEN	Subset Sheets:	B03 of 19
Sheet Subset:	BRIDGE		

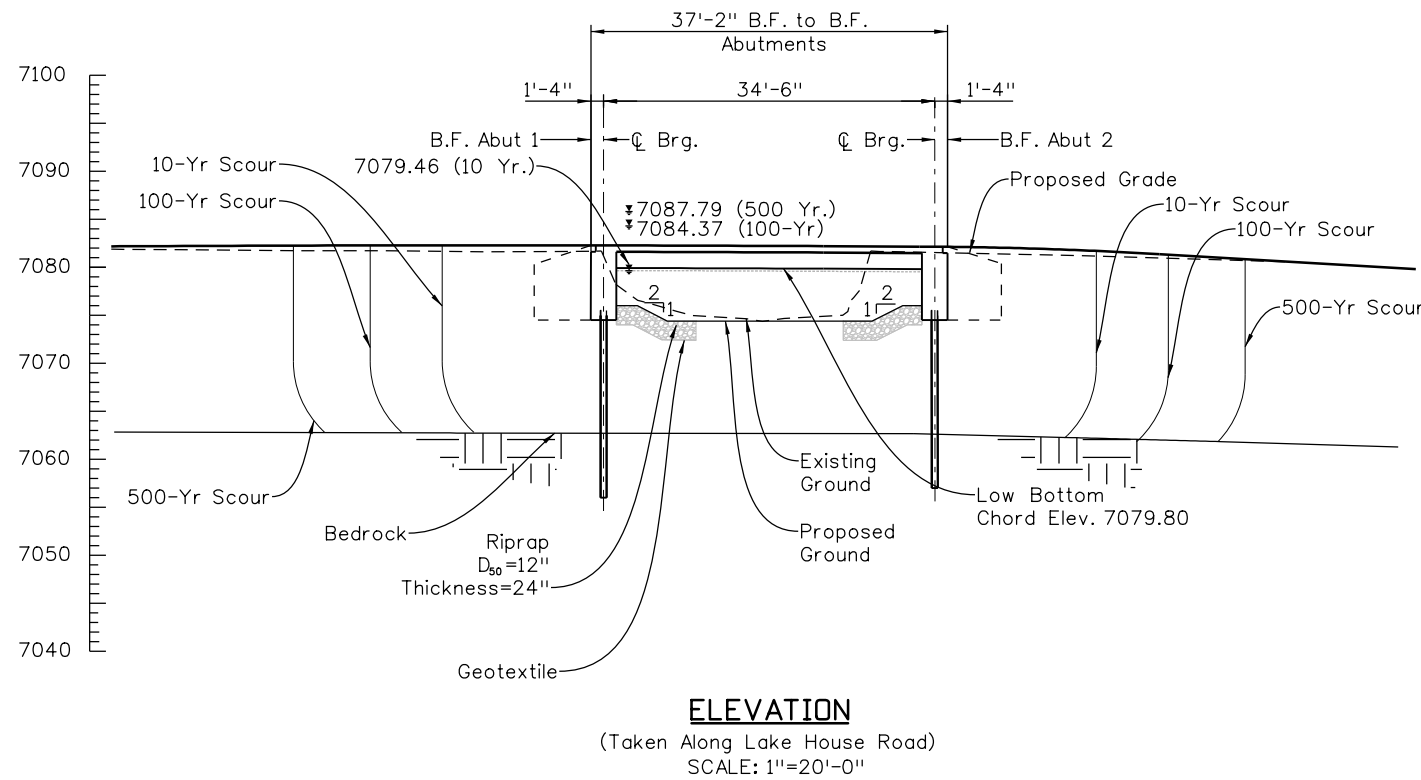
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C010-114 (20414)
201524362-00
Sheet Number 22



PLAN
SCALE: 1"=20'-0"



HYDRAULIC PROFILE

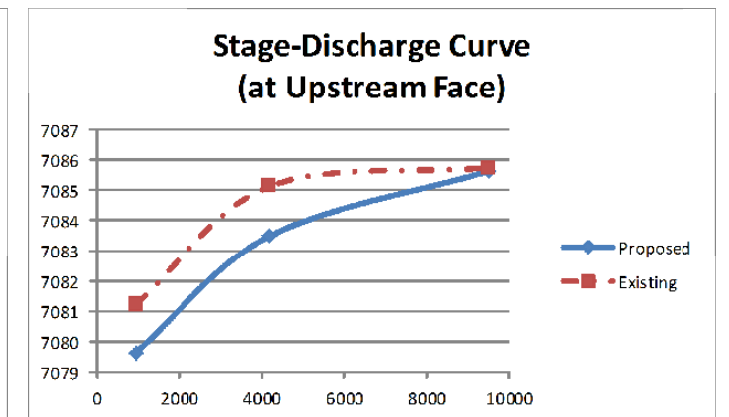
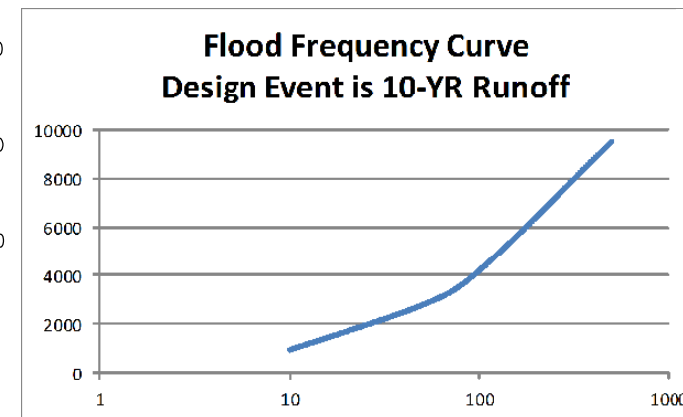


ELEVATION
(Taken Along Lake House Road)
SCALE: 1"=20'-0"

Drainage Information
 Drainage Area =104 Sq. Miles
 Flow Upstream of Bridge
 10 Yr Recurrence Interval =950 Cfs
 100 Yr Recurrence Interval =4200 Cfs
 500 Yr Recurrence Interval =9500 Cfs

Comparison of Hydraulics *			
HEC_RAS Model	Velocity (avg) (fps)	Required Freeboard (ft)**	Actual Freeboard (ft)
Existing	9.77	0	0
Proposed	6.08	0	0.34

* At proposed bridge Location During 10-year Event
 ** Per Jefferson County



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Checked By	WJC	Checked By	LLK	Checked By	KLP
Designed By	LLK	Detailed By	LLK	Quantities By	LLK
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Print Date: 1/22/2019
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 Unit Information Unit Leader Initials

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DENVER
 THE MILE HIGH CITY

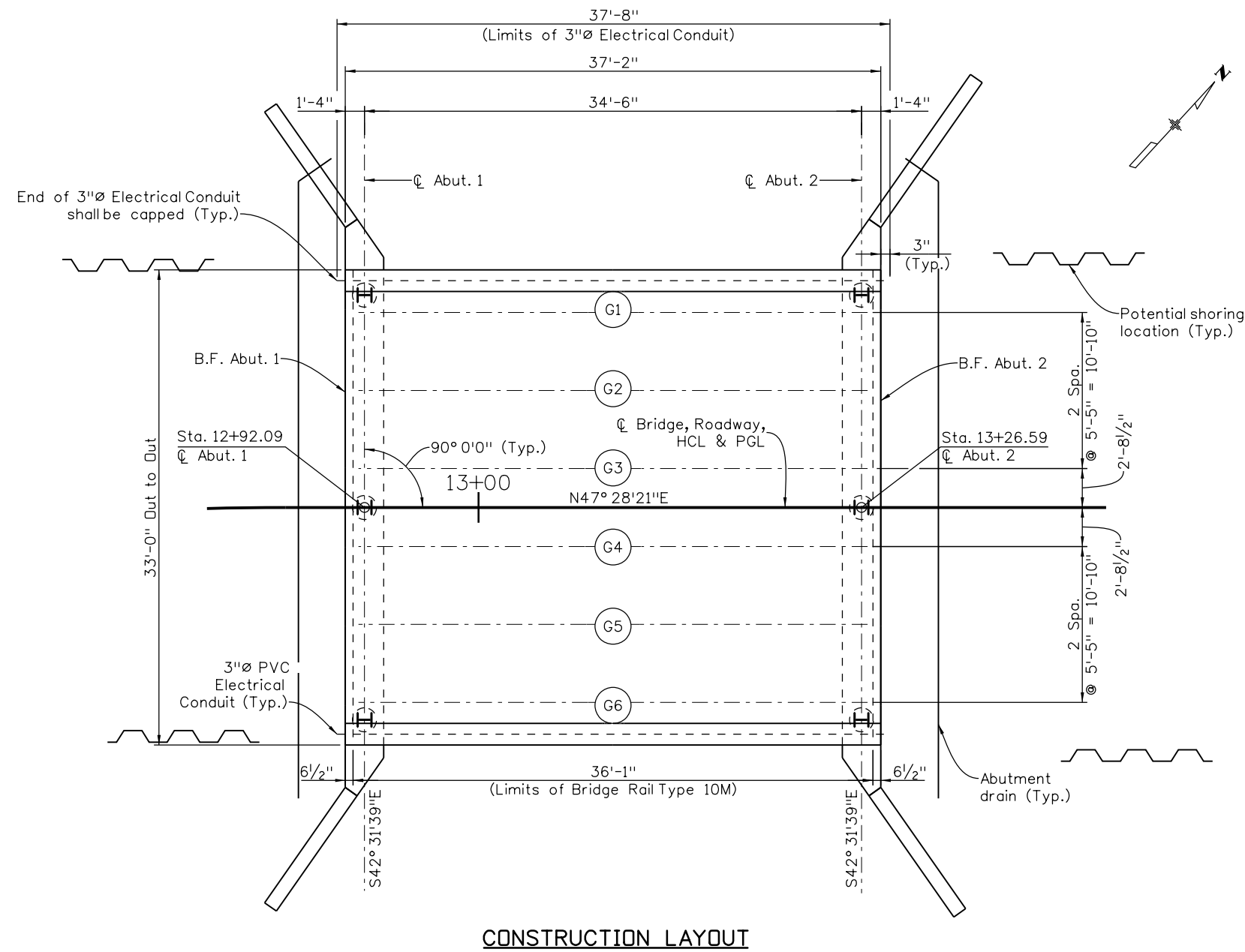
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BRIDGE HYDRAULIC INFORMATION			
Designer:	L. KINDT	Structure Numbers	D-27-MP-070A
Detailer:	R. PETERSEN	Subset Sheets:	B04 of 19
Sheet Subset:	BRIDGE		

Project No./Code
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201524362-00
Sheet Number 23

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Designed By	3/16	Detailled By	3/16	Quantities By	3/16
Checked By	SBH	Checked By	CBP	Checked By	KLP



CONSTRUCTION LAYOUT

NOTES:

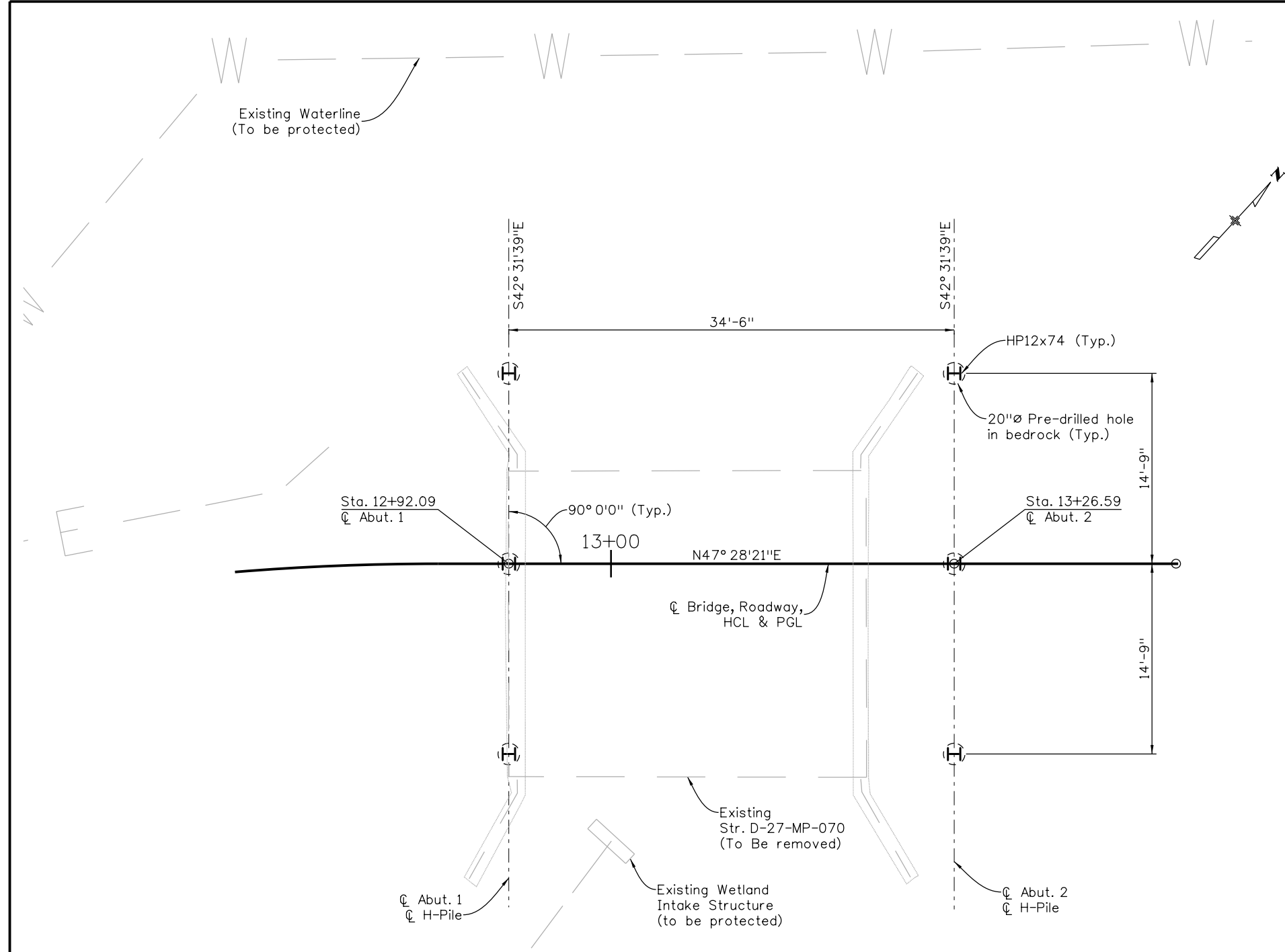
- Dimensions shown are measured horizontally and do not reflect vertical changes due to grade.
- Backfill behind abutments shall be placed simultaneously after superstructure is placed.
- For Bridge Rail Type 10M details, see sheets B14 and B15.

Overhead Power to be protected

Print Date: 1/22/2019	Sheet Revisions			<p>City and County of Denver Capital Projects Management Kevin Rens 201 West Colfax Avenue, Department 506 Denver, Colorado 80202 Phone: 720.865.3151</p>	As Constructed No Revisions: Revised: Void:	CONSTRUCTION LAYOUT Designer: R. WHITCHER Detailer: R. PETERSEN Sheet Subset: BRIDGE		Project No./Code	
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Unit Information						Unit Leader Initials		Sheet Number 24	
<p>6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600</p>		Subset Sheets: B05 of 19		Sheet Number 24					

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INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Checked By	3/16	Checked By	3/16	Checked By	3/16
Checked By	3/16	Checked By	3/16	Checked By	3/16



NOTES:

1. Estimated pile tip elevations shown on this sheet are approximate and shall be verified at the time of construction in accordance with the specifications.
2. A WEAP Pile Analysis is required. See Specifications.
3. A Pile Driving Analyzer (PDA) shall be used in accordance with Section 502 of the Specifications. The Contractor is responsible for arranging for the PDA.
4. All dimensions are horizontal.
5. Minimum embedment into competent bedrock of 6'-0" unless noted otherwise.
6. The contractor shall pothole to locate and protect all existing utilities prior to driving piles. Paid for as Item 203 Potholing.
7. If a conflict is found with the piling layout and existing utilities, the engineer shall be notified immediately.

PILING DATA

Location	Piling Size	Estimated Tip Elevation	Top of Pile Elevation	LRFD Max. Service Axial Load (Tons)	LRFD Max. Factored Axial Load (Tons)
Abut. 1	HP12x74	7055.00	7076.50	52	72
Abut. 2	HP12x74	7056.00	7076.50	52	72

① A resistance factor of 0.65 was used in determining the Pile size.

FOUNDATION LAYOUT

Overhead Power to be protected
OH

Print Date: 1/22/2019
 File Name: 60477917BRDG_FdnLayout.dgn
 Horiz. Scale: 1:10 Vert. Scale: As Noted
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JANUARY 2019

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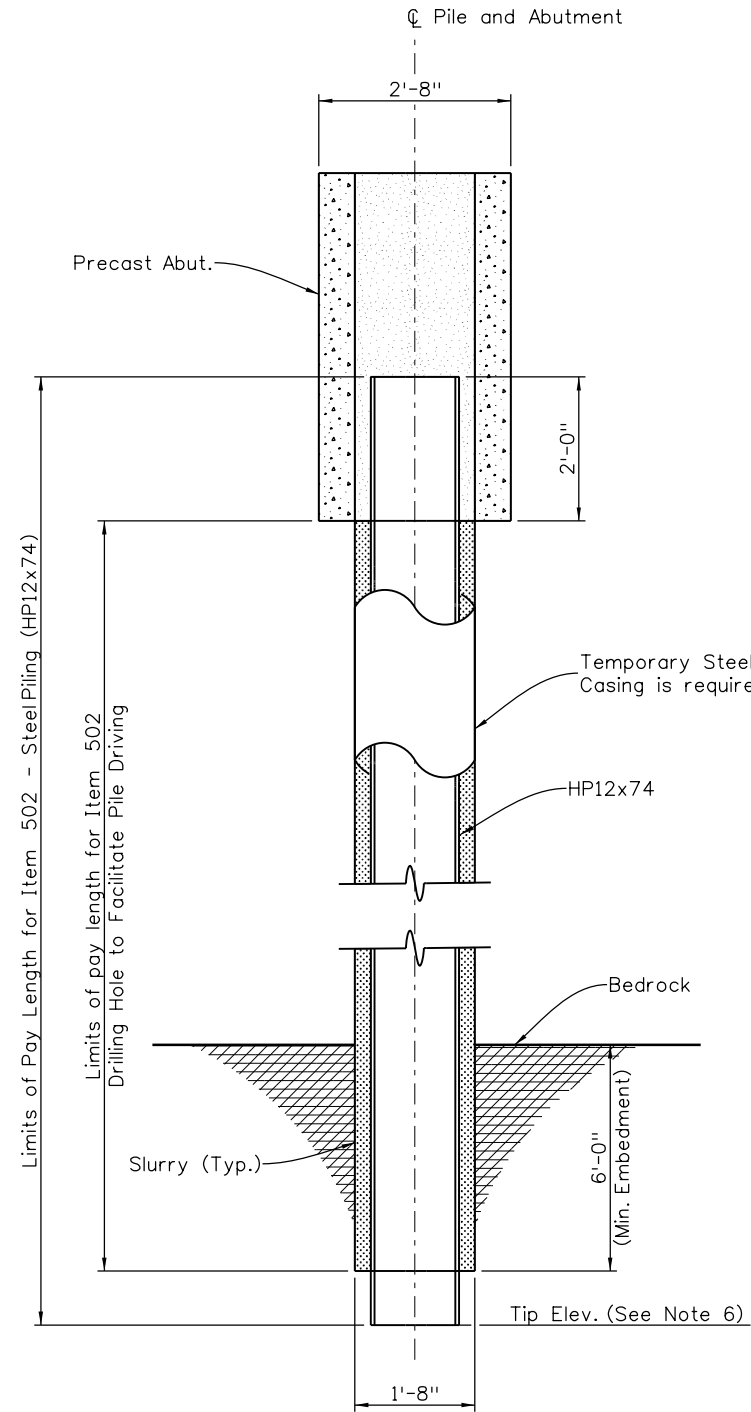
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Detailer:	R. PETERSEN	Subset Sheets:	B06 of 19
Sheet Subset:	BRIDGE		

Project No./Code
C010-114 (20414)
201524362-00
Sheet Number 25

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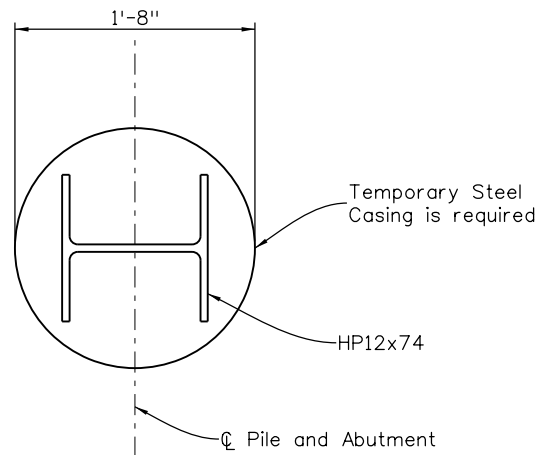
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INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	3/16	Detailed By	3/16	Quantities By	3/16
Checked By	KLP	Checked By	KLP	Checked By	KLP



ELEVATION

NOTES:

1. Foundation elevations shall be verified at the time of construction by the Consultant Geotechnical Engineer.
2. Pre-drilled holes shall be cased to reduce the potential for the soils to cave into the hole. Pre-drilling should be done in accordance with CDDT specifications, and the contractor should expect that diamond tipped rotary, coring or other equipment will be needed to predrill the bedrock.
3. The drilled hole shall be filled with slurry in accordance with Project Special Provision 502.
4. Driven piles shall be end bearing with skin friction for the portions located in undisturbed and unweathered bedrock.
5. The contractor shall obtain the Geotechnical report prior to beginning any earthwork on the site. Special consideration shall be given to the recommendations for design and construction, taking note of the bedrock hardness and potential drilling difficulties.
6. It is expected that refusal will be approximately 1 ft. into underlying bedrock. See Foundation Layout B06.



TYPICAL SECTION

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Unit Information Unit Leader Initials	
AECOM 6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600	

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	JANUARY 2019	

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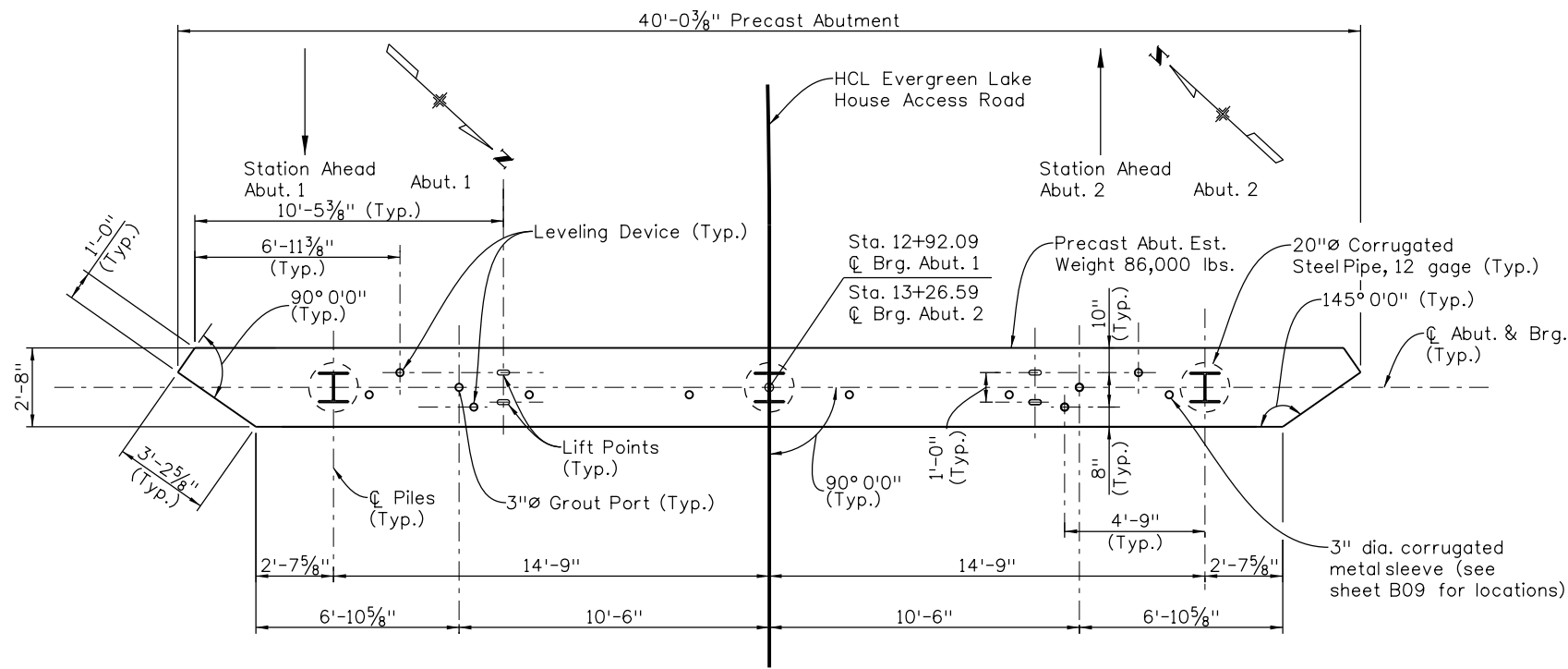
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Detailer:	R. PETERSEN	Subset Sheets:	B07 of 19
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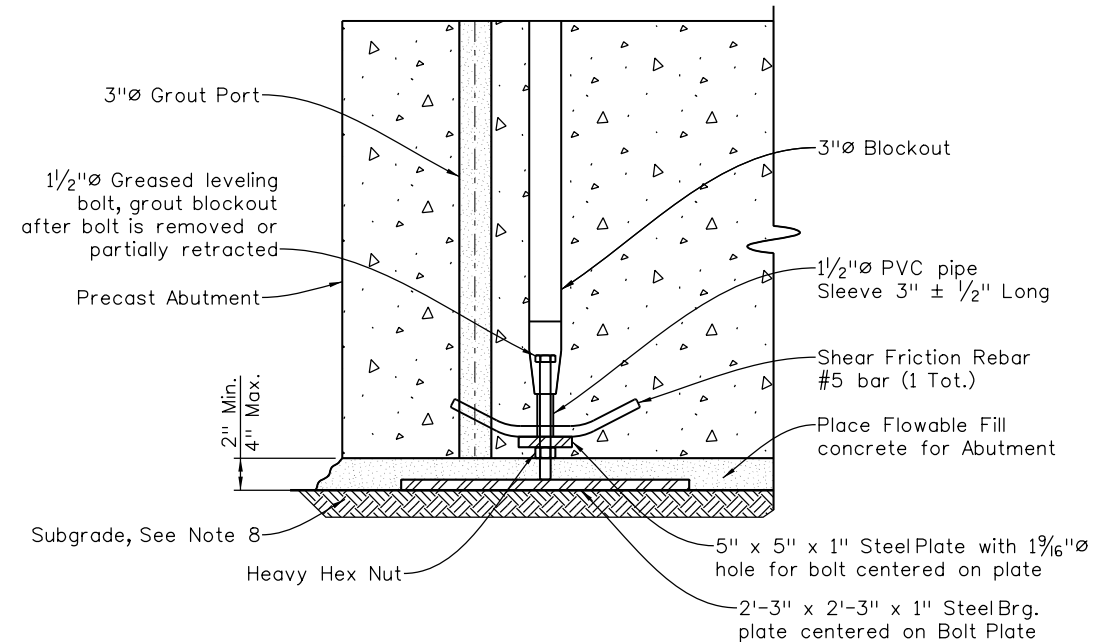
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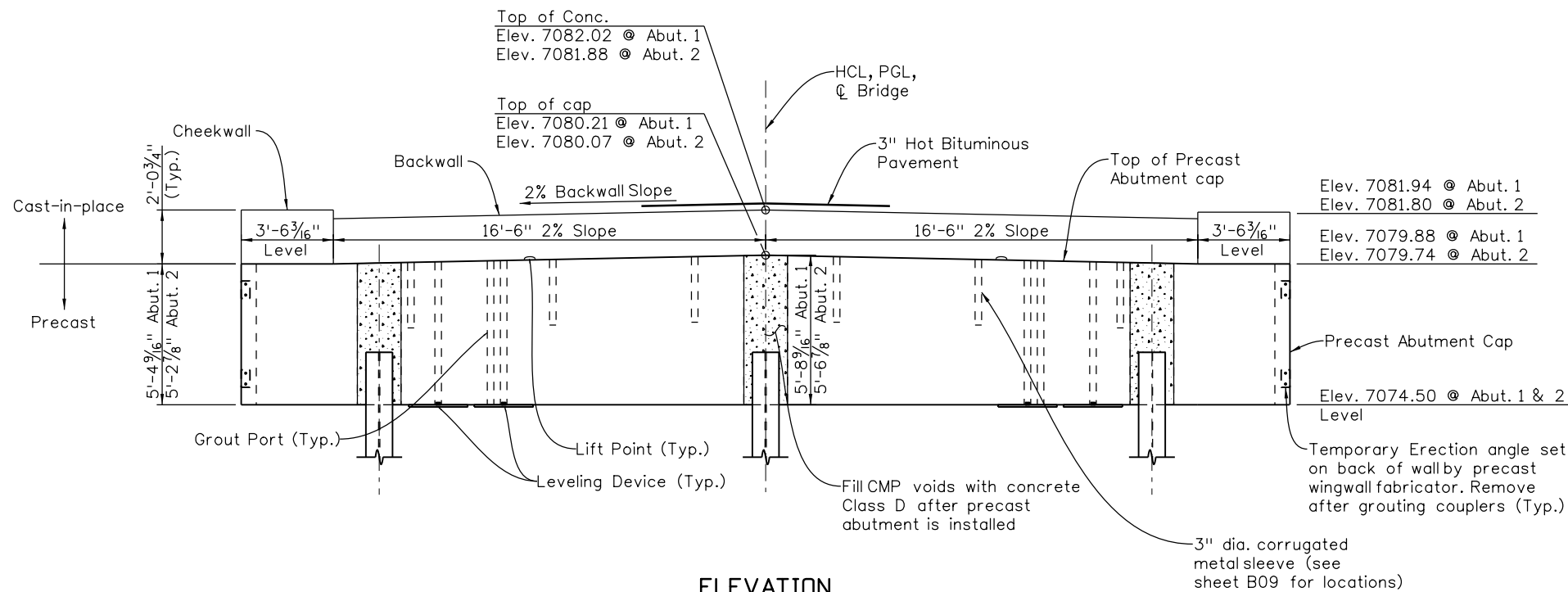
PLAN



ABUTMENT LEVELING DEVICE

NOTES:

- Abutment reinforcement not shown for clarity.
- Lift points may be shifted from locations shown. See Special Provision for Item 601.
- Grout lifting points with structural non-shrink grout after components have been leveled.
- Fill grout ports with structural non-shrink grout in accordance with Special Provision 601.
- Coat or galvanize all miscellaneous structural steel placed in structural concrete unless otherwise noted. Payment to be included with item 601 Precast Concrete Unit.
- For lifting hardware that is to be left in place, provide 2 1/2" top cover and 1" bottom cover after installation of hardware.
- Placement of flowable fill is included in Item 601 Precast Concrete Unit for payment.
- Subgrade shall be compacted to 95% maximum density in accordance with AASHTO T 180.



ELEVATION

Elevation taken along ϕ Bearing
Abutment 1 Shown, Abutment 2 similar
Wingwalls Not Shown

Print Date: 1/22/2019	
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Unit Information	Unit Leader Initials
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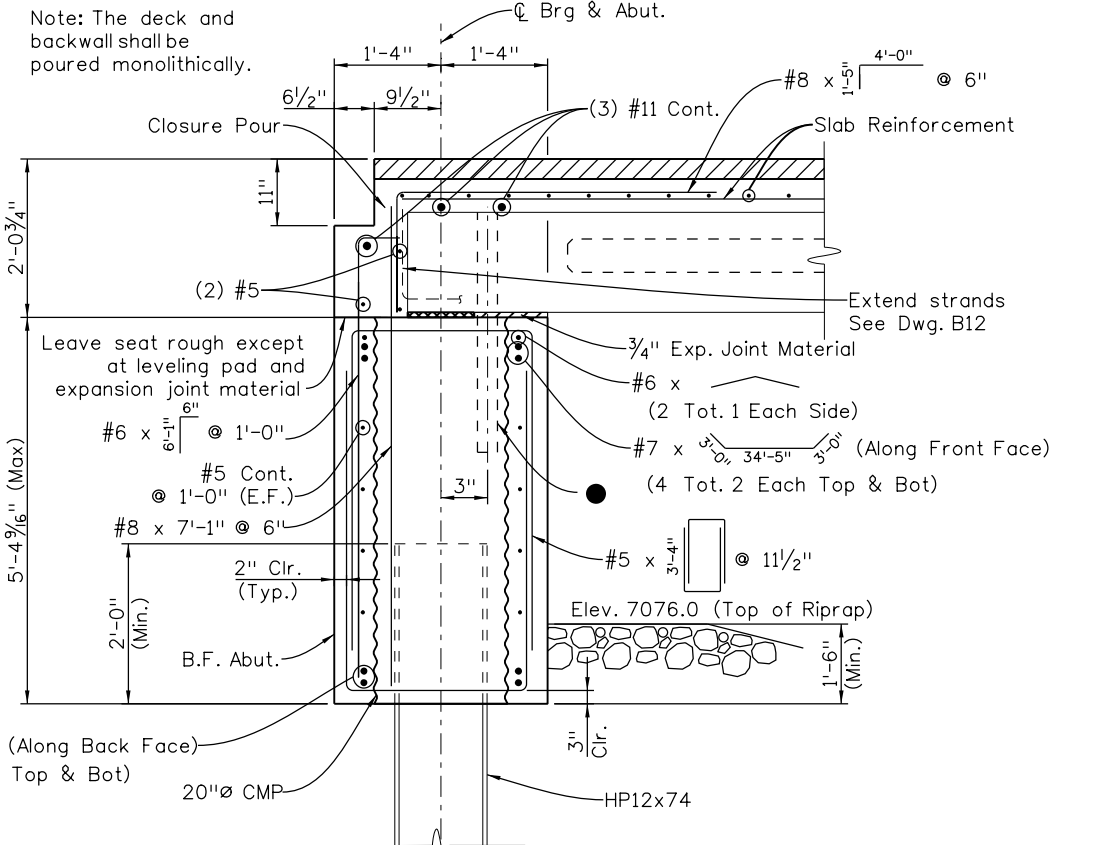
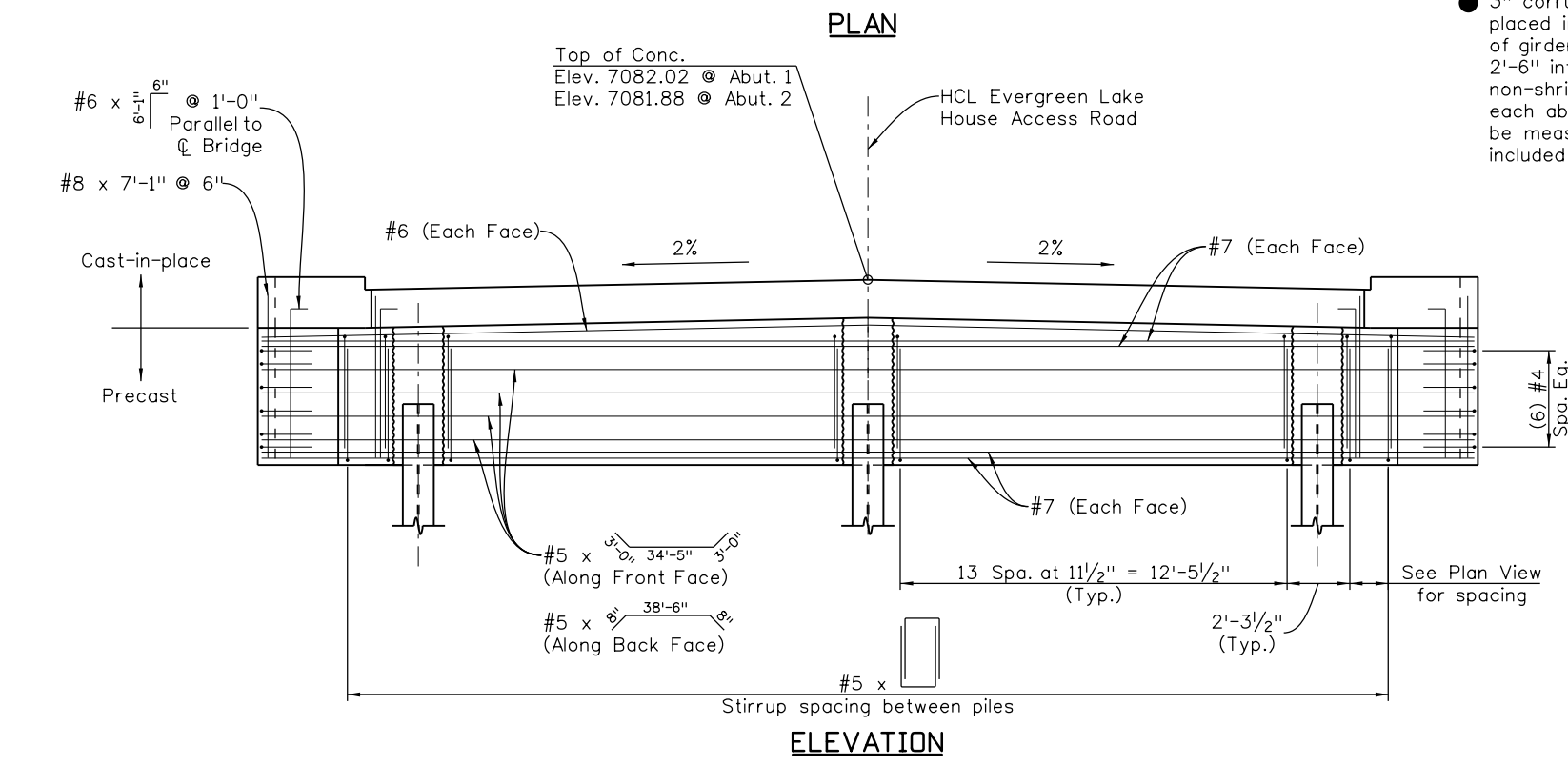
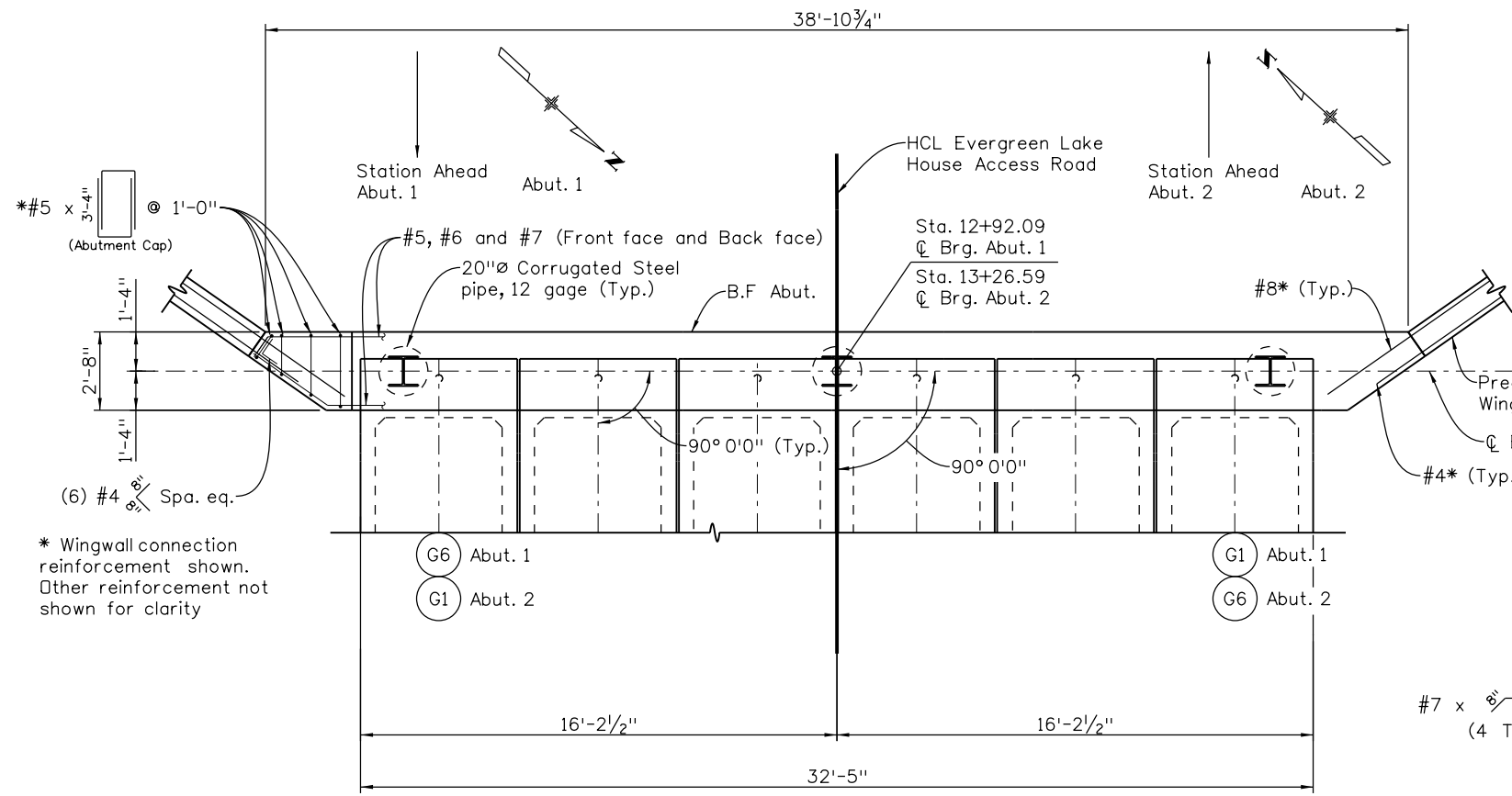
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As Constructed		PRECAST ABUTMENT DETAILS (1 OF 2)	
No Revisions:		Designer: R. WHITCHER	Structure D-27-MP-070A
Revised:		Detailer: R. PETERSEN	Numbers
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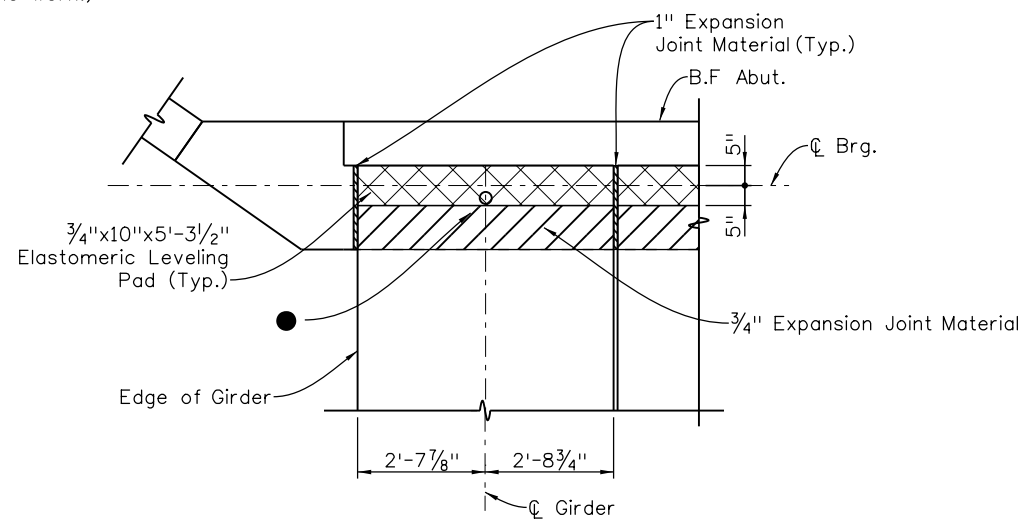
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3/16	KLP	3/16	KLP	3/16	KLP



● 3" corrugated metal sleeve, 36" long, placed in abutment cap. After placement of girder, install #9x3'-9" bar (project 2'-6" into abutment) and grout with non-shrink grout at each girder (total 6 each abutment)(Typ.)(This work will not be measured separately but shall be included in the cost of the work.)



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 Unit Information Unit Leader Initials
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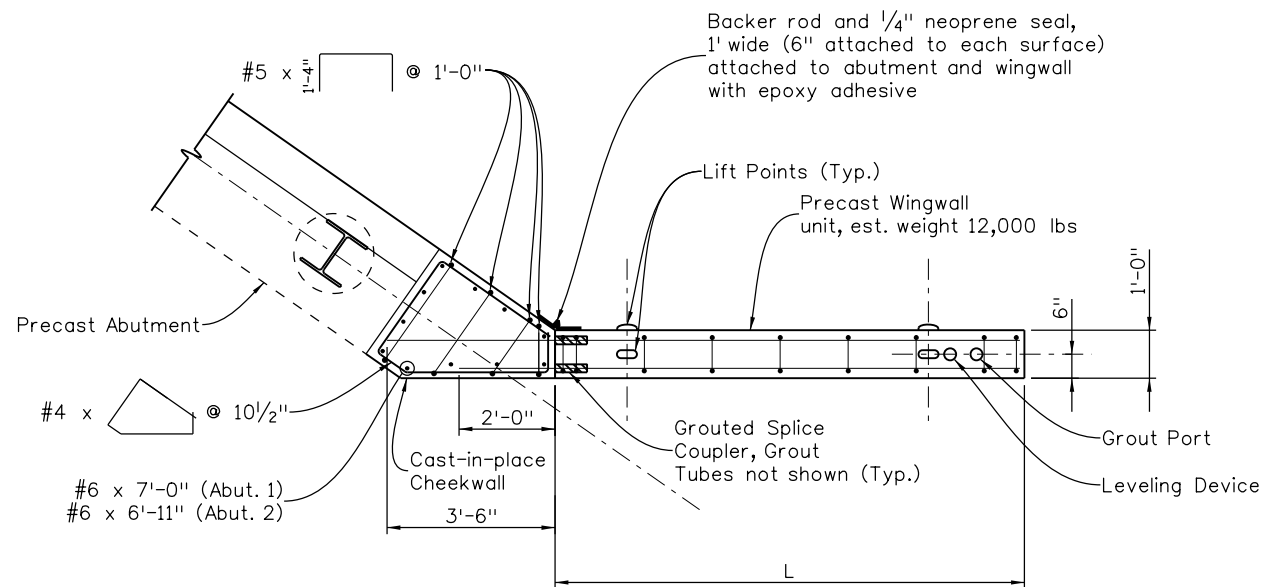
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 Detailer: R. PETERSEN
 Sheet Subset: BRIDGE

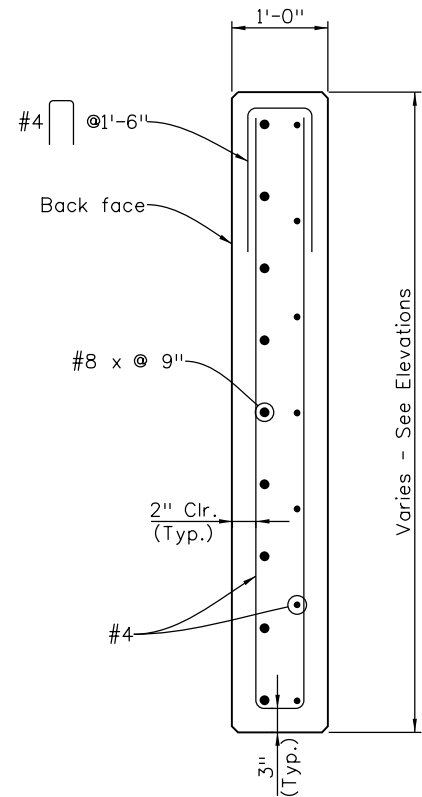
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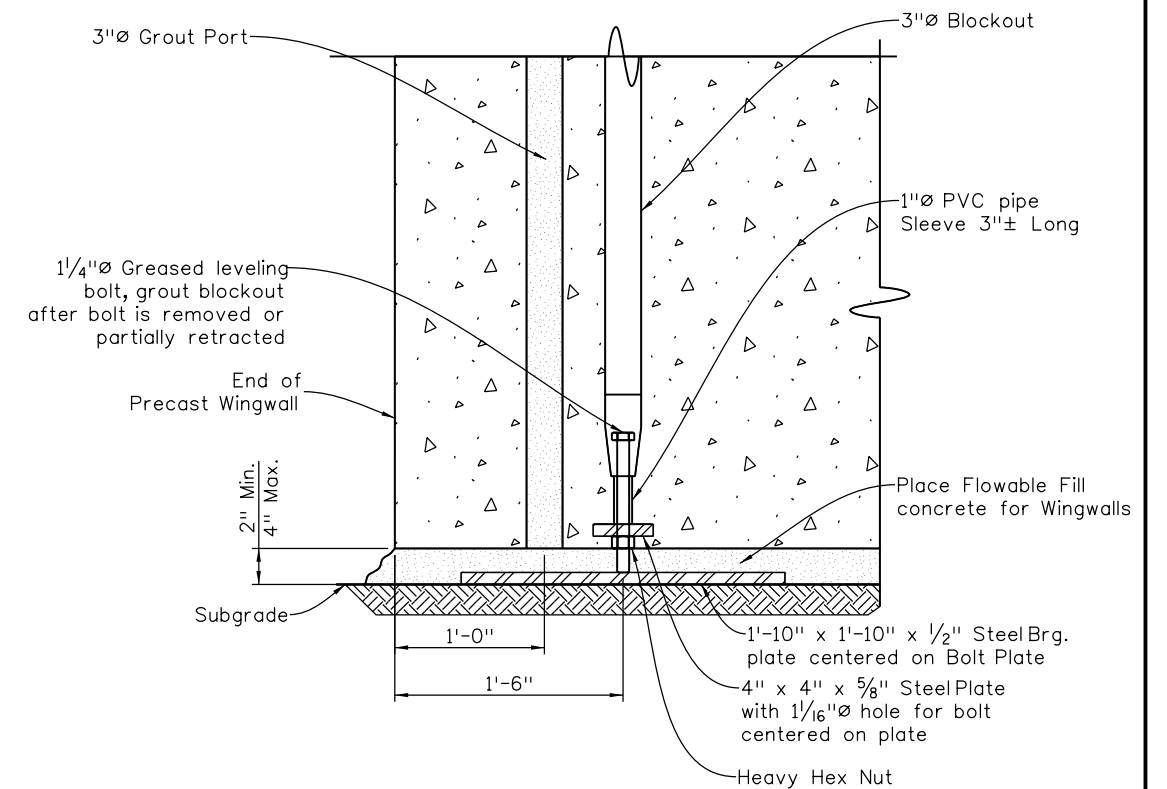
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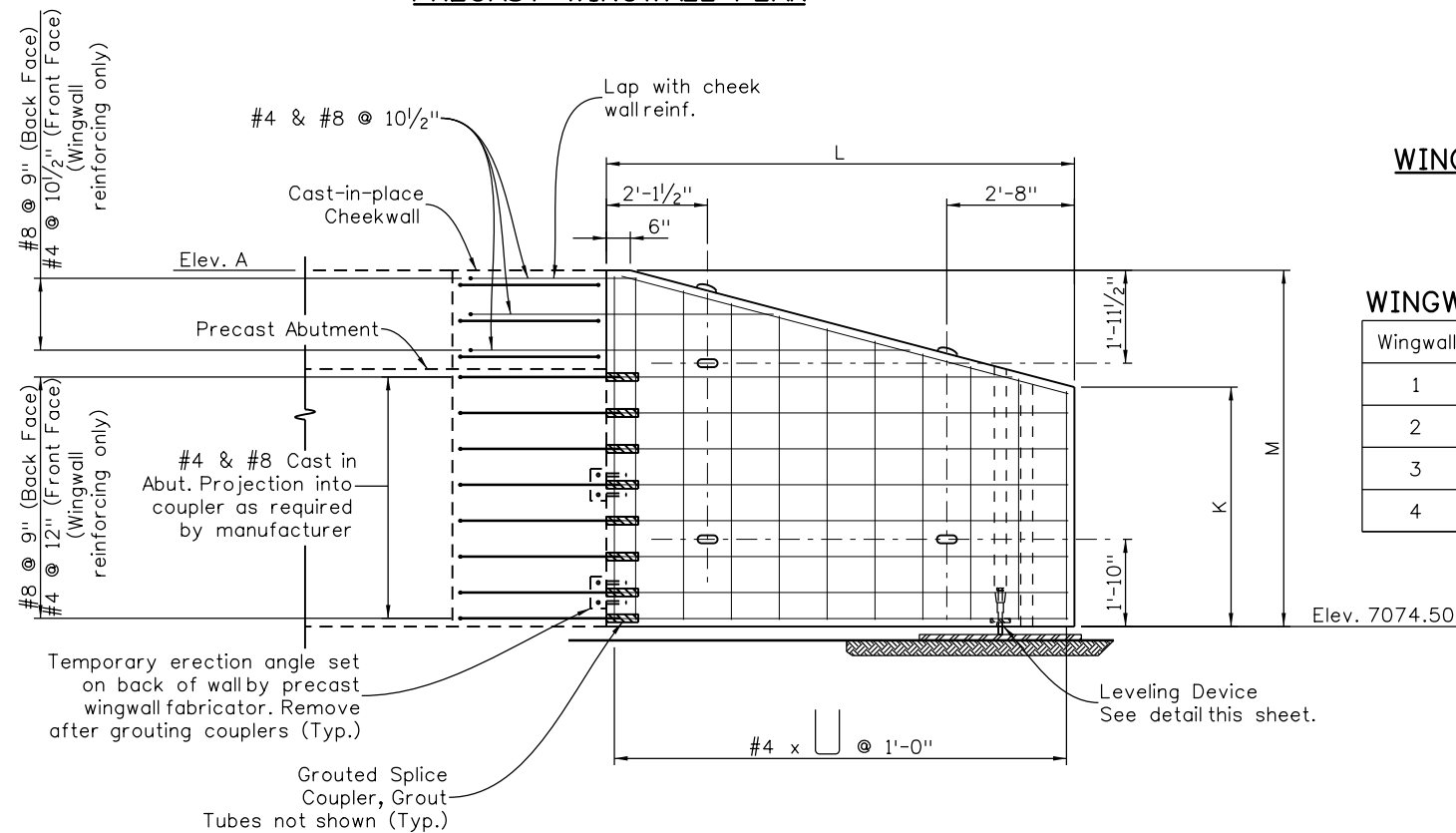
PRECAST WINGWALL PLAN



WINGWALL TYPICAL SECTION



PRECAST WINGWALL LEVELING DEVICE



PRECAST WINGWALL ELEVATION

Wingwall 1 Shown

WINGWALL ELEVATION TABLE

Wingwall	K	L	M	Elev. A
1	5'-0"	10'-0"	7'-5 1/4"	7081.94
2	4'-6"	12'-6"	7'-3 5/8"	7081.80
3	5'-0"	10'-0"	7'-5 1/4"	7081.94
4	4'-6"	10'-6"	7'-3 5/8"	7081.80

NOTES:

- The contractor may substitute alternative leveling devices provided they can produce a structure within the specified erection tolerances.
- Trowel finish the top surface of all precast elements.
- Lift points may be shifted from locations shown. Detail lift point locations and lifting devices according to 601. Grout lift points with structural non-shrink grout after components have been leveled.
- For Lifting hardware that is to be left in place, provide 2 1/2" inch top cover and 1 inch bottom cover after installation of hardware.
- Placement of flowable fill is incidental to Item 601 Precast Concrete Unit.
- Coat or galvanize all miscellaneous structural steel placed in structural concrete unless otherwise noted. Payment to be included with Item 601 Precast Concrete Unit.
- Subgrade shall be compacted to 95% maximum density in accordance with AASHTO T 180.
- Sheet Sheet B11 for grouted splice coupler details.

Print Date: 1/22/2019
 File Name: 60477917BRDG_WgwDet01.dgn
 Horiz. Scale: 1:4 Vert. Scale: As Noted
 Unit Information Unit Leader Initials
AECOM 6200 S. Quebec Street
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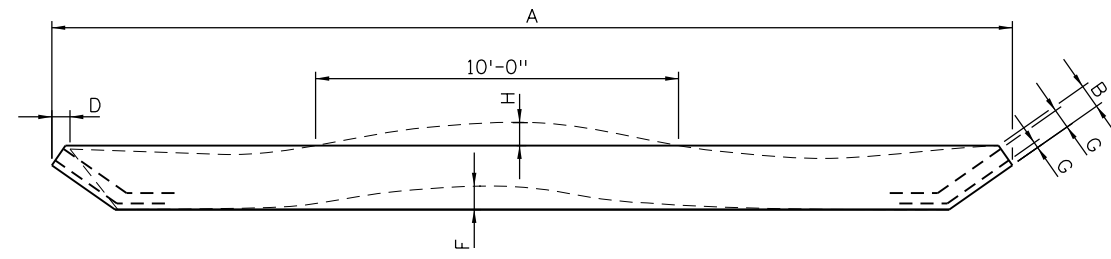
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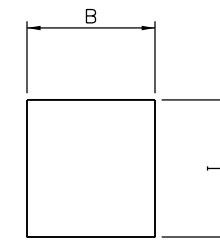
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PRECAST WINGWALL DETAILS (1 OF 2)			
Designer:	R. WHITCHER	Structure Numbers	D-27-MP-070A
Detailer:	R. PETERSEN	Subset Sheets:	B10 of 19
Sheet Subset:	BRIDGE		

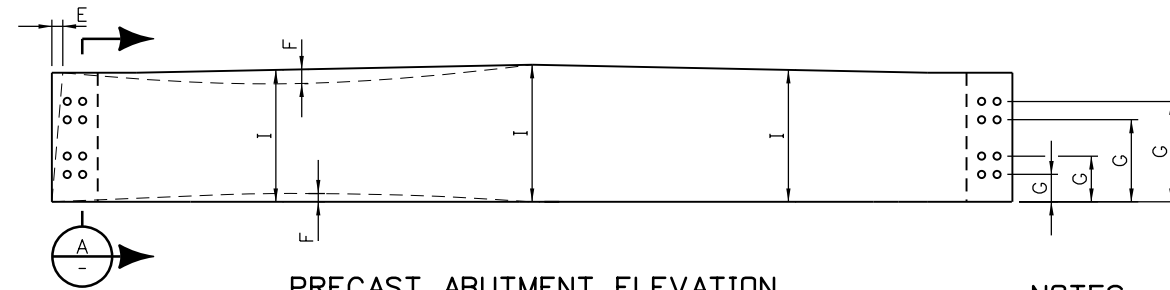
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C010-114 (20414)
201524362-00
Sheet Number 29



PRECAST ABUTMENT PLAN

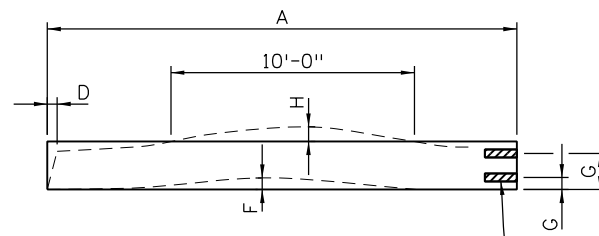


SECTION A



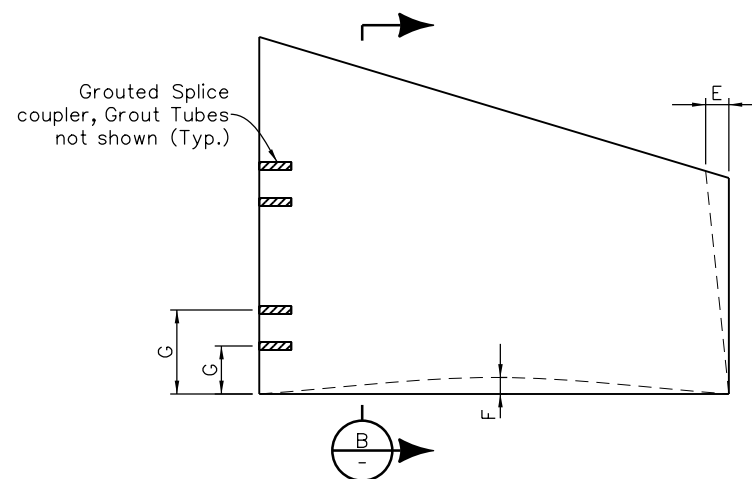
PRECAST ABUTMENT ELEVATION

Not to scale



PRECAST WINGWALL PLAN

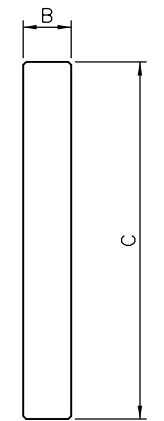
Grouted Splice coupler, Grout Tubes not shown (Typ.) (Typ.)



PRECAST WINGWALL ELEVATION

NOTES:

1. Use matching templates for the location of abutment reinforcement and grouted splice coupler placement within the wingwall to control critical dimensions "M" and "M1" which would be identical.
2. Consult manufacturer of the grouted splice coupler for proper dimensions "L", "N", and "D" for tolerances on these dimensions.
3. Before executing grouted splice coupler assemblies, always seek installation recommendations from the manufacturer of the grouted splice coupler used.
4. Dowels that extend from the abutment into wingwall may be fabricated long and field-cut to meet dimension "L" tolerances.



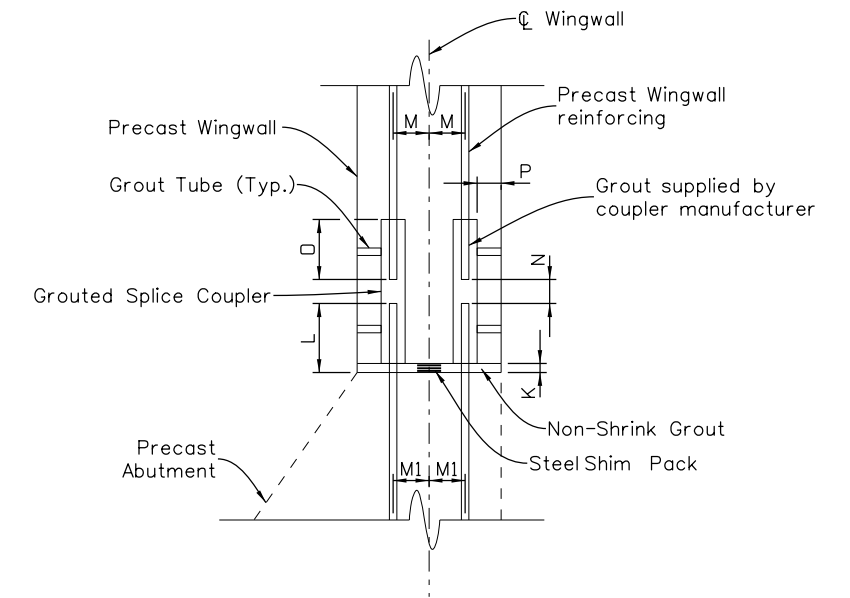
SECTION B

PRECAST ABUTMENT AND WINGWALL TOLERANCES

A	Length	$\pm 3/4"$
B	Width (Overall)	$\pm 1/4"$
C	Depth (Overall)	$\pm 1/4"$
D	Variation from specified plan end squareness or skew	$\pm 1/2"$
E	Variation from specified elevation end squareness or skew	$\pm 1/2"$
F	Sweep over member length	$\pm 1/4"$
G	Location of grouted splice coupler/rebar measured from a common ref./point	$\pm 1/4"$
H	Local smoothness of any surface	$\pm 1/4"$ in 10 ft.
I	Abutment seat	$\pm 1/8"$
J	Variation from specified camber	$\pm 1/8"$ in 10 ft.

GROUTED SPLICE COUPLER TOLERANCES

K	Shim pack height	$3/4" \pm 3/8"$
L	Dowel length	Consult Mfr.
M	Location of wingwall reinforcing, grouted spliced coupler, and abutment dowels measured from a common reference point	$\pm 1/4"$
M1		
N	Gap between dowels and column reinforcing	Consult Mfr.
O	Wingwall dowel length	Consult Mfr.
P	Clearances	$\pm 1/4"$



GROUTED SPLICE COUPLER DETAIL

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Checked By		Checked By		Checked By	
KLP		KLP		KLP	

Print Date: 1/22/2019
File Name: 60477917BRDG_PCTol.dgn
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Unit Information Unit Leader Initials
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Date:	Comments	Init.
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Denver, Colorado 80202
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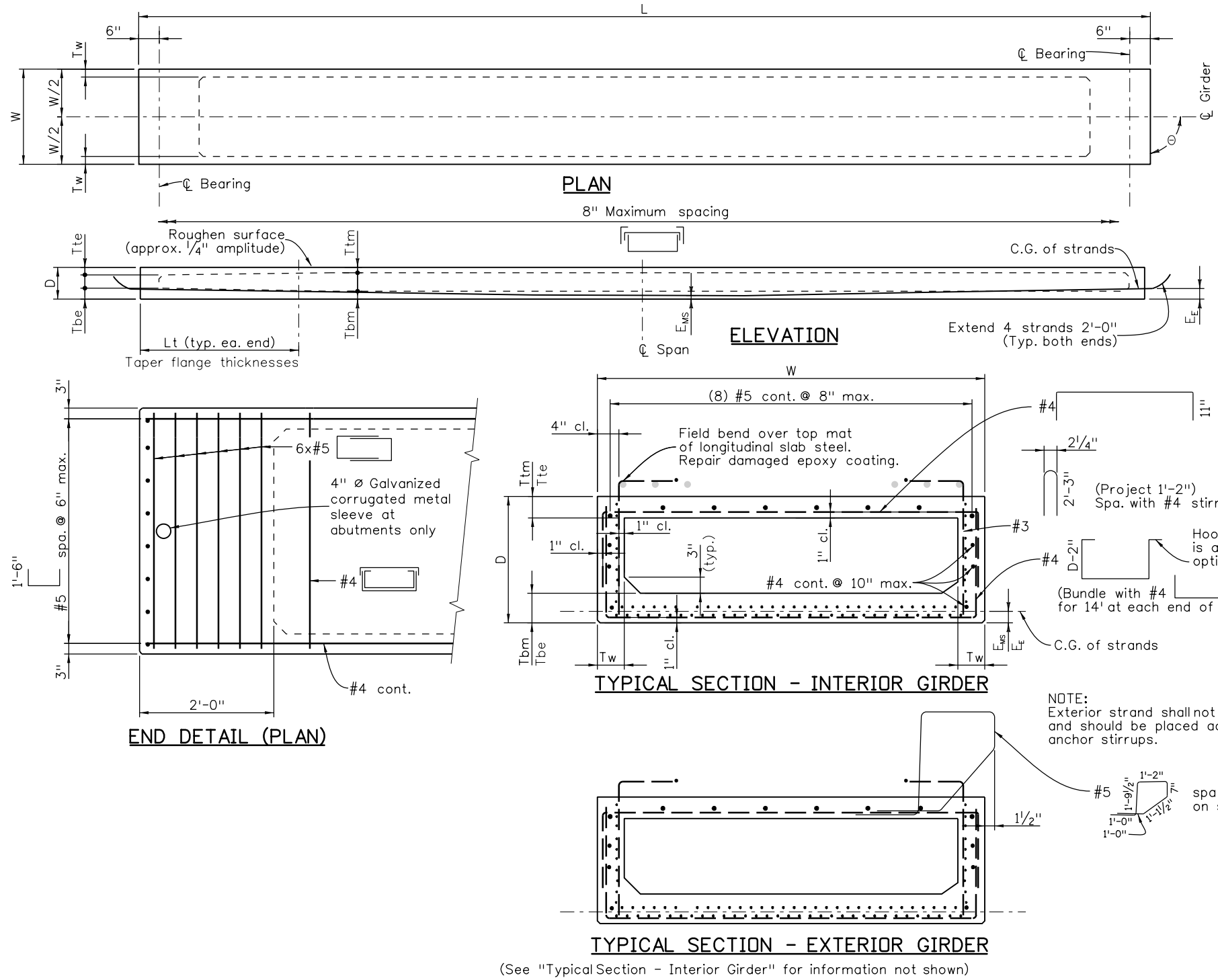
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Revised:
Void:

PRECAST ABUTMENT AND WINGWALL TOLERANCES			
Designer:	R. WHITCHER	Structure Numbers	D-27-MP-070A
Detailer:	R. PETERSEN	Subset Sheets:	B11 of 19
Sheet Subset:	BRIDGE		

Project No./Code
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Sheet Number 30

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Designed By	3/16	SBH	3/16	SBH	3/16
Checked By	3/16	RLW	3/16	RLW	3/16
		SBH	3/16	KLP	3/16



NOTES:

All work necessary to fabricate and install the integral parts of the girder (including the intermediate diaphragms, if any, and leveling pads), as shown on the plans, shall be included in the bid price for Item No. 618, Prestressed Concrete Box (Depth Less Than 32"), with a pay unit of Sq. Ft. measured by L x W.

When approved by the Engineer, a minimum of tack welding will be permitted on ASTM A706 uncoated reinforcing steel.

Reinforcing projecting from the top of the girder shall be epoxy coated. Damaged coating on girder reinforcing need not be repaired. The minimum cover for reinforcing steel is 1".

Welded wire fabric may be used with D20 wires in lieu of the #4 bars shown.

Cut strands to project 3", except as shown. Do not make cosmetic repairs (damage less than 1/2" deep) to the parts of the girders embedded in concrete.

Use low relaxation strands meeting the requirements of ASTM A-416 Grade 270. The minimum clear distance between groups or individual strands shall be 2.3(d_s) but not less than 1/4". The minimum cover for prestressing steel is 1/2".

- A_s* = minimum area of the prestressing steel.
- d_s = nominal strand diameter.
- f_s = ultimate strength of prestressing steel.
- F_j = jacking force per girder.
- F_f = final force per girder after all losses.
- f_{ci} = required concrete strength at release of prestress force.
- f_c = required concrete strength at 28 days of age.
- L = length of girder along the grade of the girder.
- Δ = deflection at centerline of span due to cast-in-place slab, diaphragms, asphalt, curbs, rails, and walks.
- θ = bridge skew angle

Concrete shall be Class PS.

Entrained air is not required for girder concrete.

End blocks shall be used on all girders unless otherwise noted.

Use 1/2" chamfer on all corners, except as noted.

Predicted camber is the camber for the girder alone at 90 days. Acceptable camber variability is limited to 50% over the predicted camber and 50% under the predicted camber or ± 1 inch, whichever is greater. The Contractor shall report to the Engineer values of camber which require remedial measures. The remedial measures shall be reviewed and approved by the Engineer. The costs associated with all remedial measures shall be borne by the Contractor

Side by side boxes shall not have cambers of adjacent boxes differ by more than 1" before the deck pour. Prior to placing deck reinforcing, the Contractor shall adjust this differential to within this limit by sorting the boxes to minimize differentials, or by pulling the high boxes down and low boxes up.

Depth (D) tolerance shall be +1/2", -1/4".

The Contractor is responsible for determining necessary bracing requirements, and for providing adequate bracing for the specific wind and weather conditions to be encountered for each specific project.

Debonded strands shall extend 4'-0" from the girder end.

Span No.	Girder No.	L (Ft)	W (In.)	D (In.)	θ (Deg.)	T _w (In.)	T _{bm} (In.)	T _{tm} (In.)	T _{be} (In.)	T _{te} (In.)	L _t (Ft)	A _s * (Sq In)	Debonded Strands (percent)	E _E (In.)	E _{MS} (In.)	F _j (Kips)	F _f (Kips)	Concrete Strength		Δ (In.)	Predicted Release Camber (In.)	Predicted Camber (In.)
																		f _{ci} (psi)	f _c (psi)			
1	2-5	35'-6"	64	15	90	6	6	4	6	4	0	4.77	9	2.00	2.00	966.7	838.8	6,500	8,500	-0.181	0.882	1.393
1	1, 6	35'-6"	64	15	90	6	6	4	6	4	0	4.77	9	2.00	2.00	966.7	836.4	6,500	8,500	-0.185	0.882	1.389

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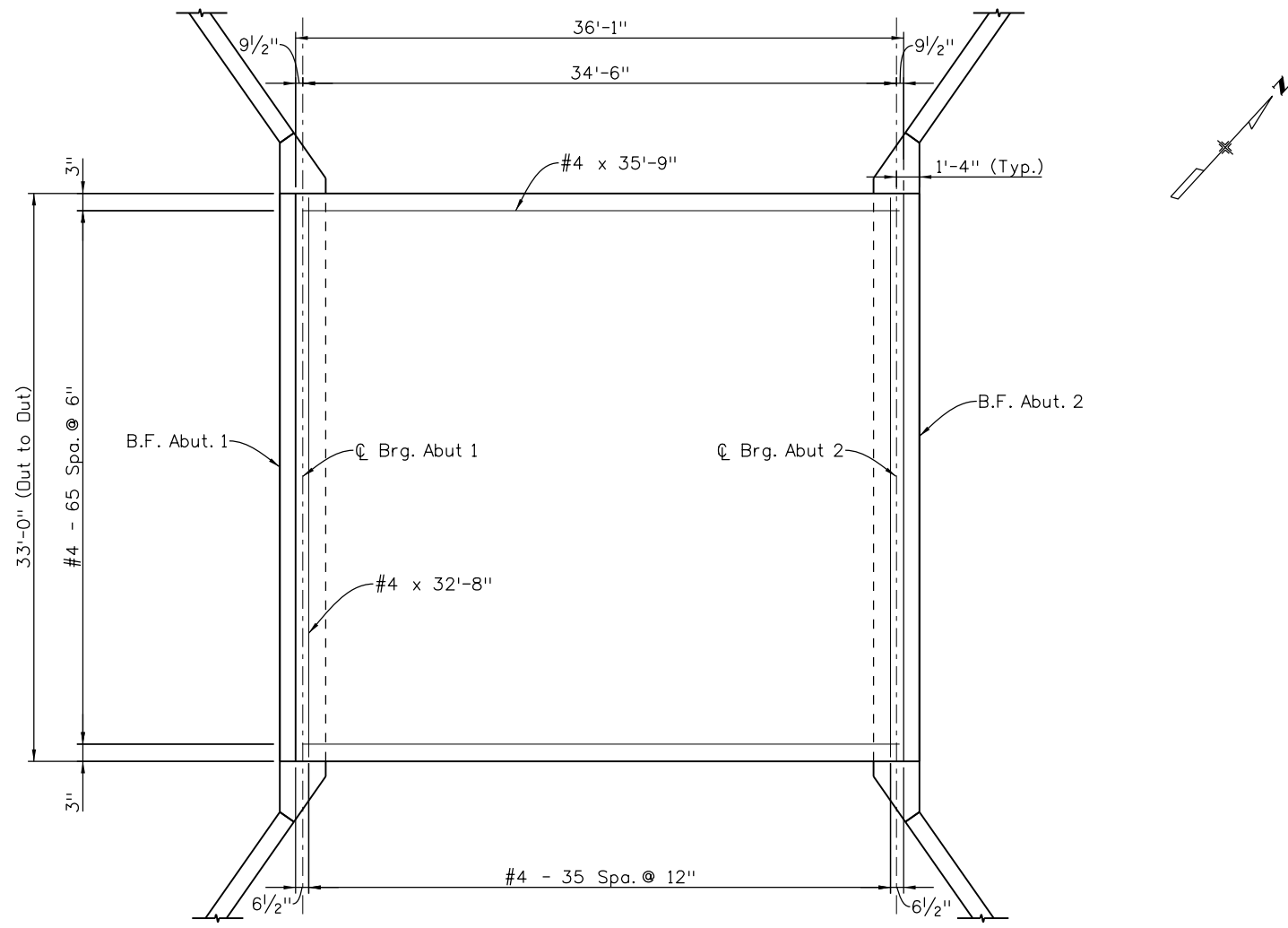
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PRESTRESSED CONCRETE BOX GIRDER			
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Detailer:	R. PETERSEN	Subset Sheets:	B12 of 19
Sheet Subset:	BRIDGE		

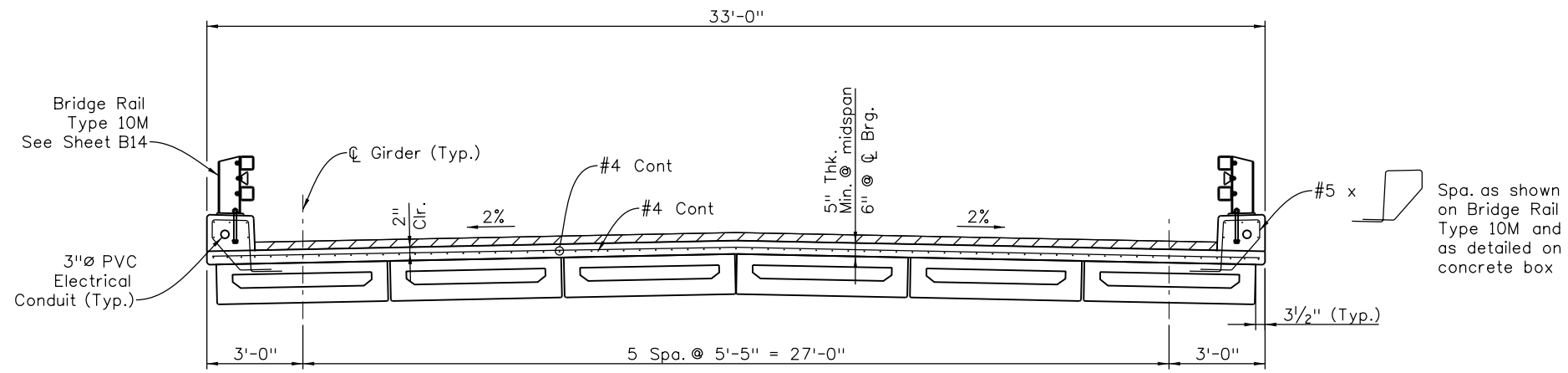
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INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	3/16	Detailled By	3/16	Quantities By	3/16
Checked By	SBH	Checked By	SBH	Checked By	KLP



DECK PLAN



TYPICAL SECTION

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Horiz. Scale: 1:10	Vert. Scale: As Noted
Unit Information	Unit Leader Initials
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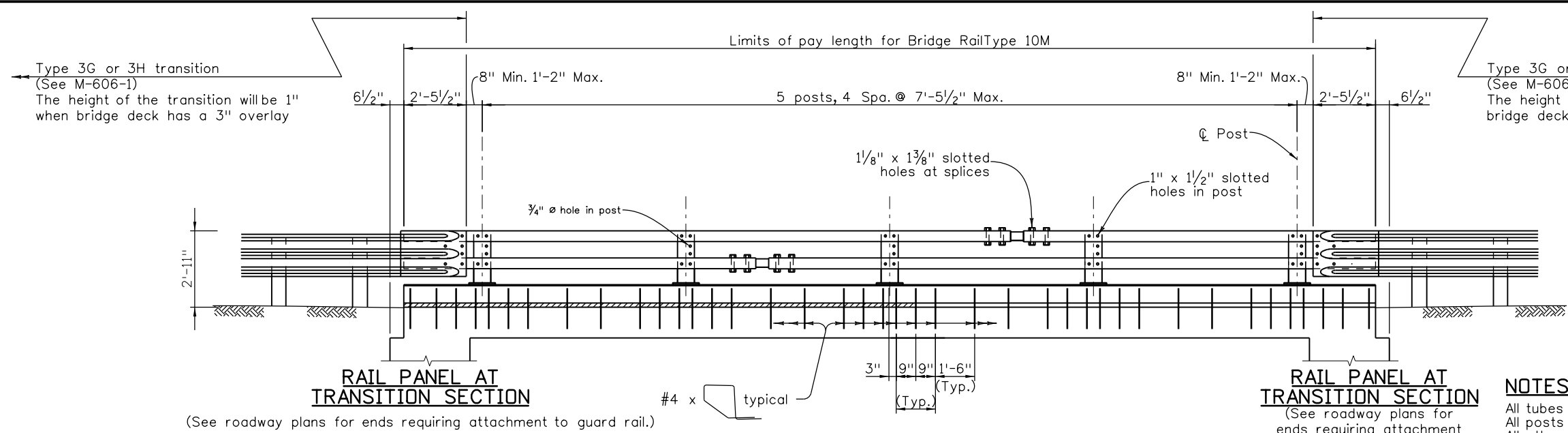
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Designer:	R. WHITCHER	Structure Numbers	D-27-MP-070A
Detailer:	R. PETERSEN	Subset Sheets:	B13 of 19
Sheet Subset:	BRIDGE		

Project No./Code
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201524362-00
Sheet Number 32

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SBH	3/16	SBH	3/16	KLP	3/16
Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By



ELEVATION - BRIDGE RAIL

NOTES:

All tubes shall be ASTM A-500 Grade B.
 All posts and base plates shall be ASTM A-572 Grade 50.
 All other steel shall be ASTM A-36 unless otherwise noted.
 The above material and all anchor bolts and miscellaneous bolts, nuts, and washers shall be galvanized after fabrication in accordance with Section 509. Concrete, reinforcing steel, and structural steel elements shall conform to the requirements of sections 601, 602 and 509, respectively.

Post anchor, encased in concrete, shall be ASTM A-36 (AASHTO M-183) steel and need not be galvanized.

The tubes shall be shop bent or fabricated to fit horizontal curve when radius is less than 1,500 feet.

All tubes, posts, base plates and exposed hardware shall be painted in accordance with Section 522 Duplex Coating System. The color shall be equivalent to Federal Standard 595B Color No. 20059, and is to be selected from test panels provided by the Contractor. Payment is included in the cost for Item 606 Bridge Rail (Type 10M).

Tubes shall be continuous over not less than two posts. No welded butt splices will be allowed in the tube sections.

The centerline of the tube splice shall be 1'-8" minimum and 2'-6" maximum from the centerline of the posts.

All bolts that have lock washers shall be tightened to snug only.

Posts shall be perpendicular to the longitudinal roadway grade.

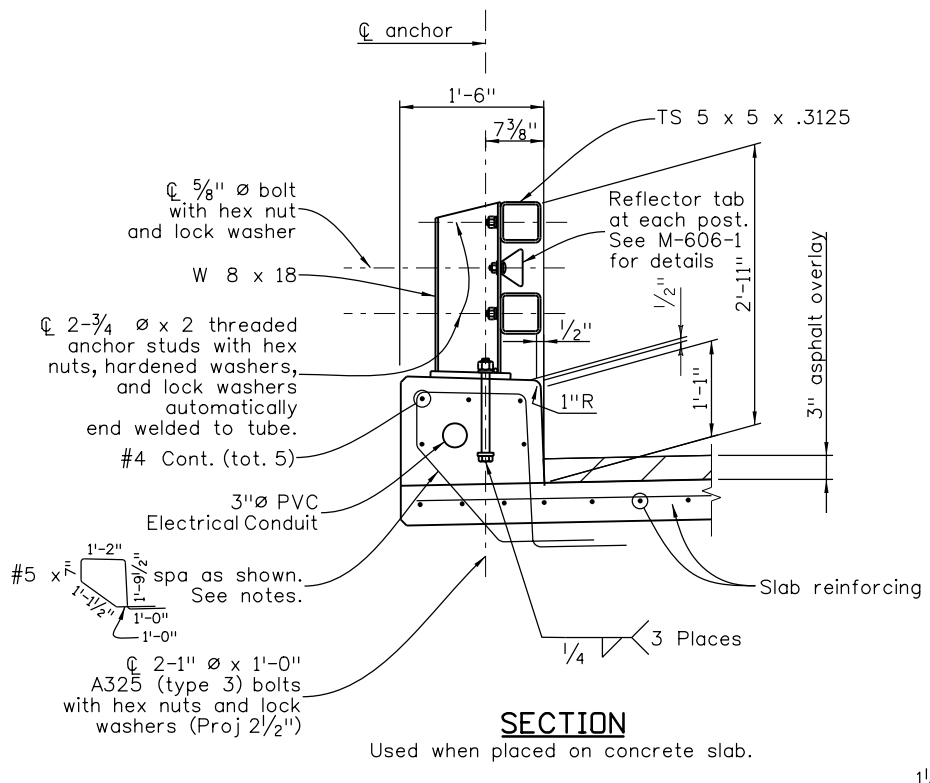
Payment will be made under item 606, Bridge Rail type 10M for all posts, post anchors, base plates, backing plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, end plates, curb concrete (Class D), curb reinforcing steel, and reflector tabs.

Prior to fabrication of this item, three sets of working drawings which comply with the requirements of section 105, shall be submitted to the Engineer for information only.

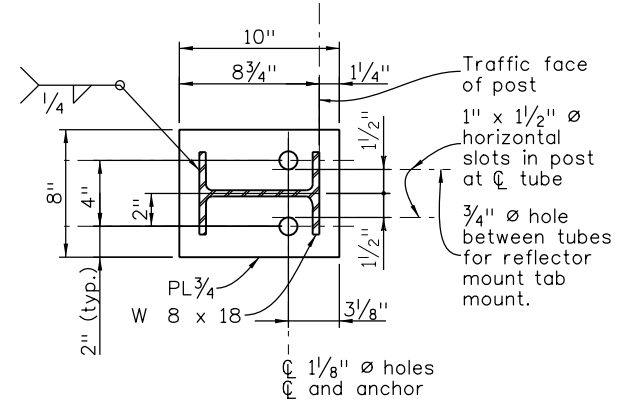
#5 stirrups embedded in the prestressed concrete box girders that extend into the bridge rail curb shall be included in item 618 Prestressed Concrete Box Girders for payment

Structural Steel:
 AASHTO M-183 (ASTM A-36) $f_y = 36,000$ psi
 AASHTO M-223 (ASTM A-572) GRADE 50 $f_y = 50,000$ psi
 COLD FORMED ASTM A-500 GRADE B $f_y = 46,000$ psi

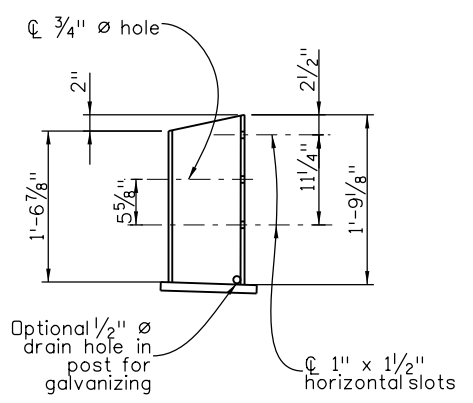
For additional details see B15.



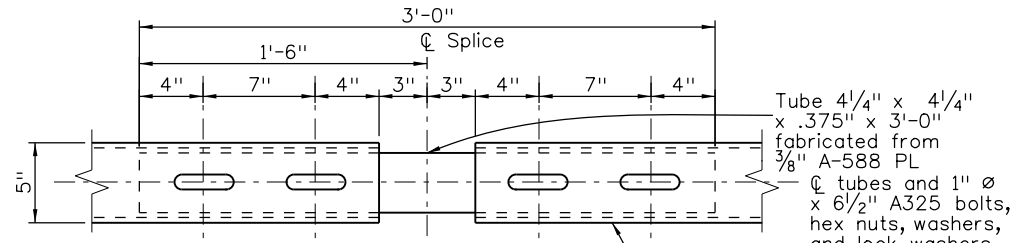
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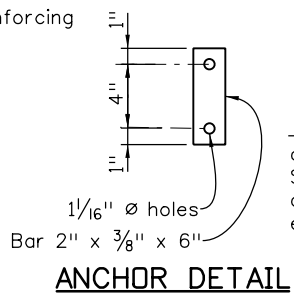
PLAN - POST DETAIL



ELEVATION



PLAN - TUBE SPLICE



ANCHOR DETAIL

at tube splice, and 1/8" x 4 1/4" slots at bridge exp'n device. Slot both inner and outer tubes. Stagger top and bottom splices into different post spacings except at expansion joint, place at opposite ends of same post space. (Range of motion = 1'-0" at bridge expansion device.)

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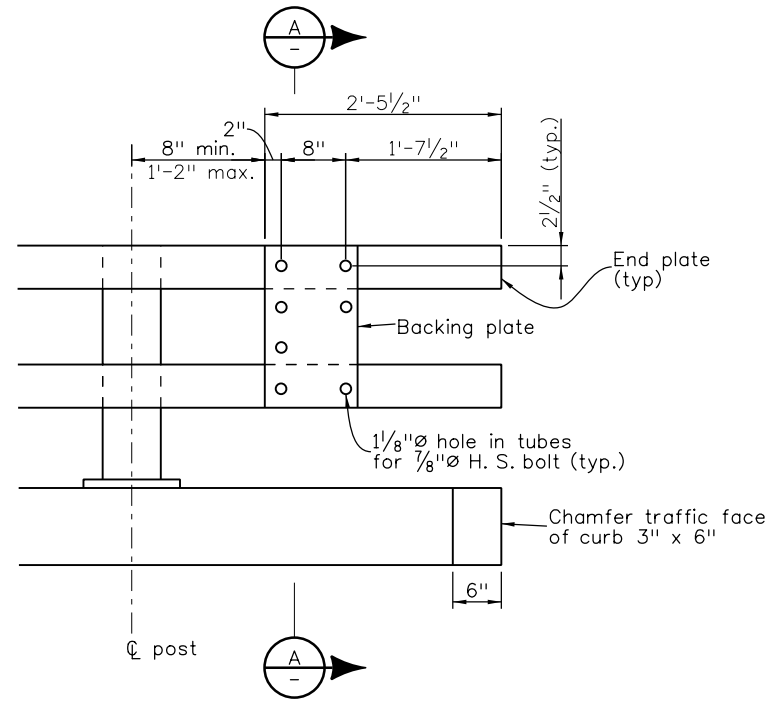
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Detailer:	R. PETERSEN	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B14 of 19

Project No./Code
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201524362-00
Sheet Number 33

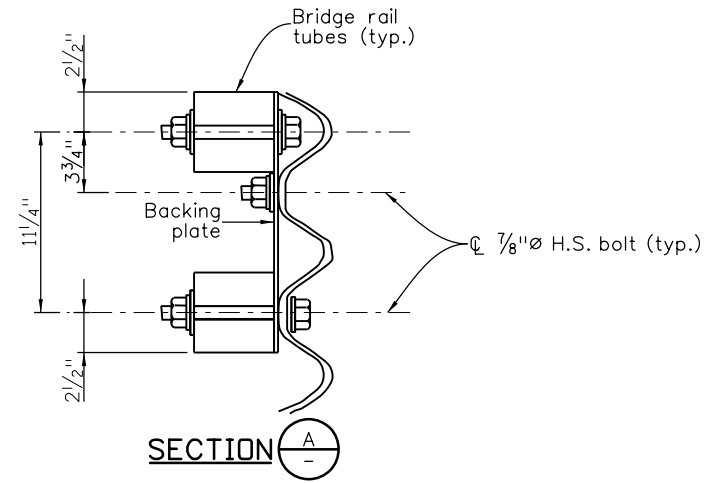
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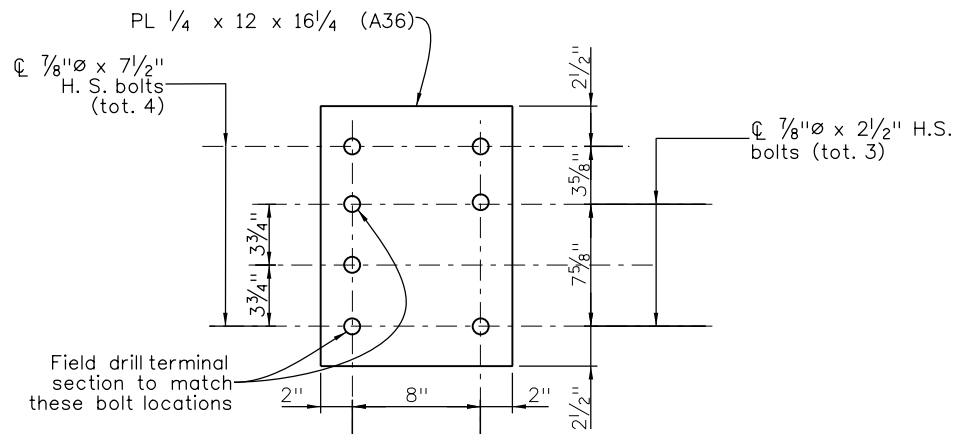


RAIL TUBE DETAILS

Thrie beam not shown.

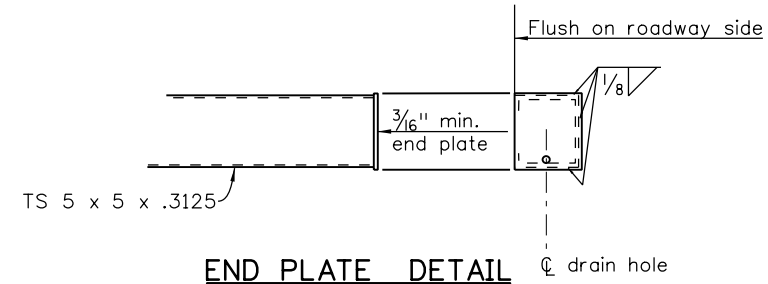


SECTION A-A



BACKING PLATE

Holes are 1/8" for 7/8" H. S. bolts with hex nuts, 2 PL washers, and 1 lock washer



END PLATE DETAIL

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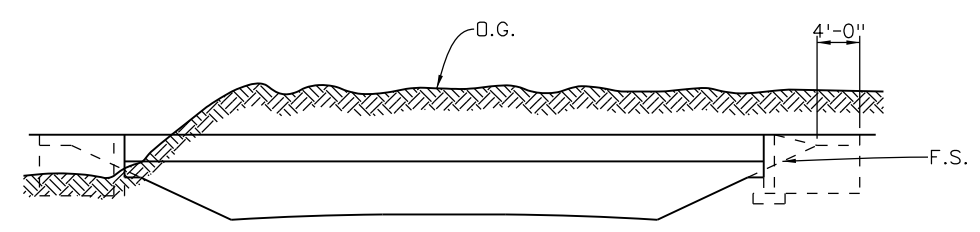
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Designer: R. WHITCHER	Structure Numbers: D-27-MP-070A
Detailer: R. PETERSEN	
Sheet Subset: BRIDGE	Subset Sheets: B15 of 19

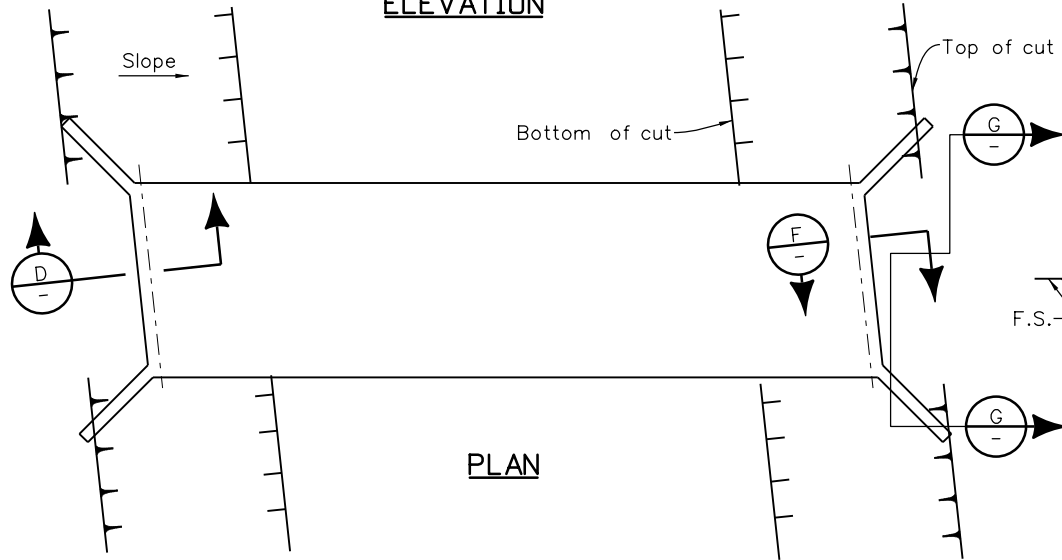
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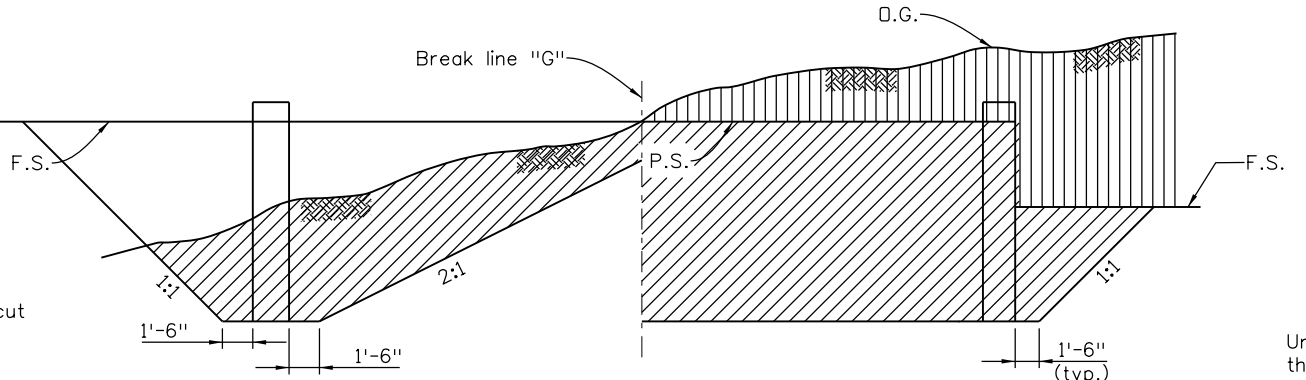
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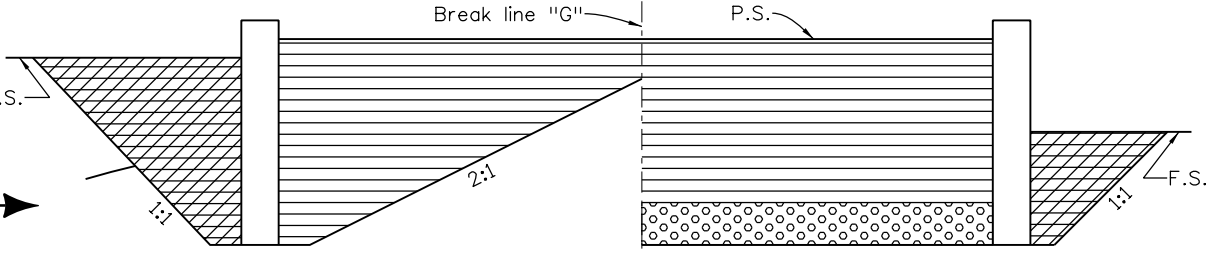
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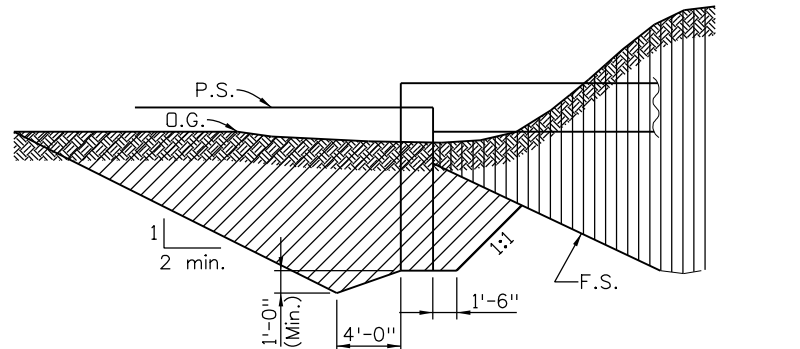
PLAN



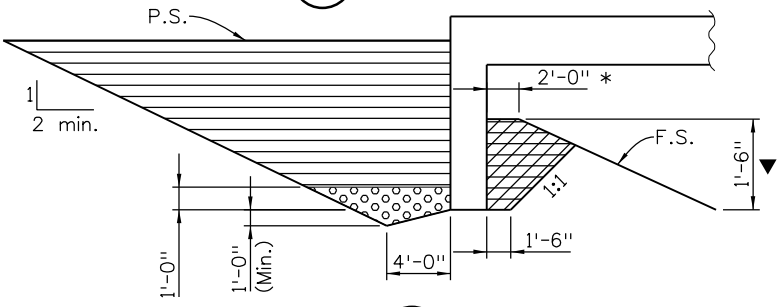
SECTION G (EXCAVATION)



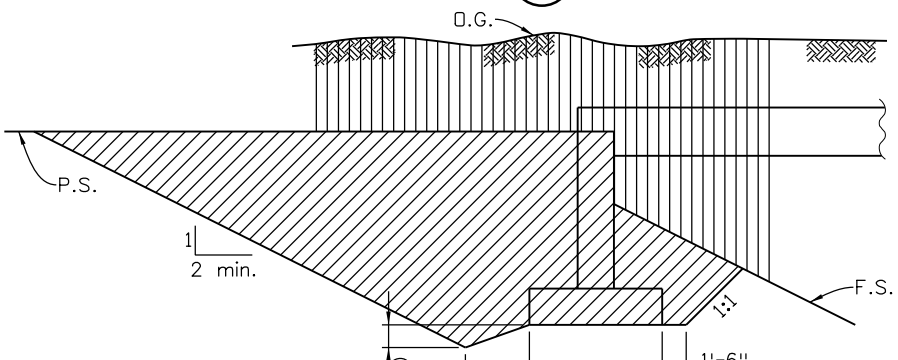
SECTION G (BACKFILL)



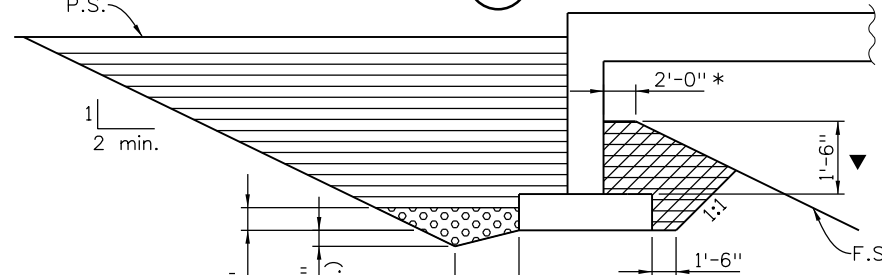
SECTION D (EXCAVATION)



SECTION D (BACKFILL)



SECTION F (EXCAVATION)



SECTION F (BACKFILL)

GENERAL NOTES

Unless shown otherwise in the plans, this drawing gives the minimum extent of Structure Excavation and Structure Backfill. The Contractor may elect to extend the Structure Excavation and Structure Backfill beyond the limits shown here. Any additional Excavation or Backfill beyond these limits will not be measured nor paid for.

Structure footings which are located in rock shall be poured out to undisturbed rock, without forming, in conformance with 601.09.

Structure Excavation for Slope Paving not shown.

★ For purposes of quantity calculations this template applies out to end of wingwall.

LEGENDS

- Roadway Excavation
- Structure Excavation
- Structure Backfill (flowfill), or Structure Backfill (Class 1) with Mechanical Reinforcement of Soil, as shown elsewhere in the plans.
- Structure Backfill (Class 2)
- Filter Material

ABBREVIATIONS

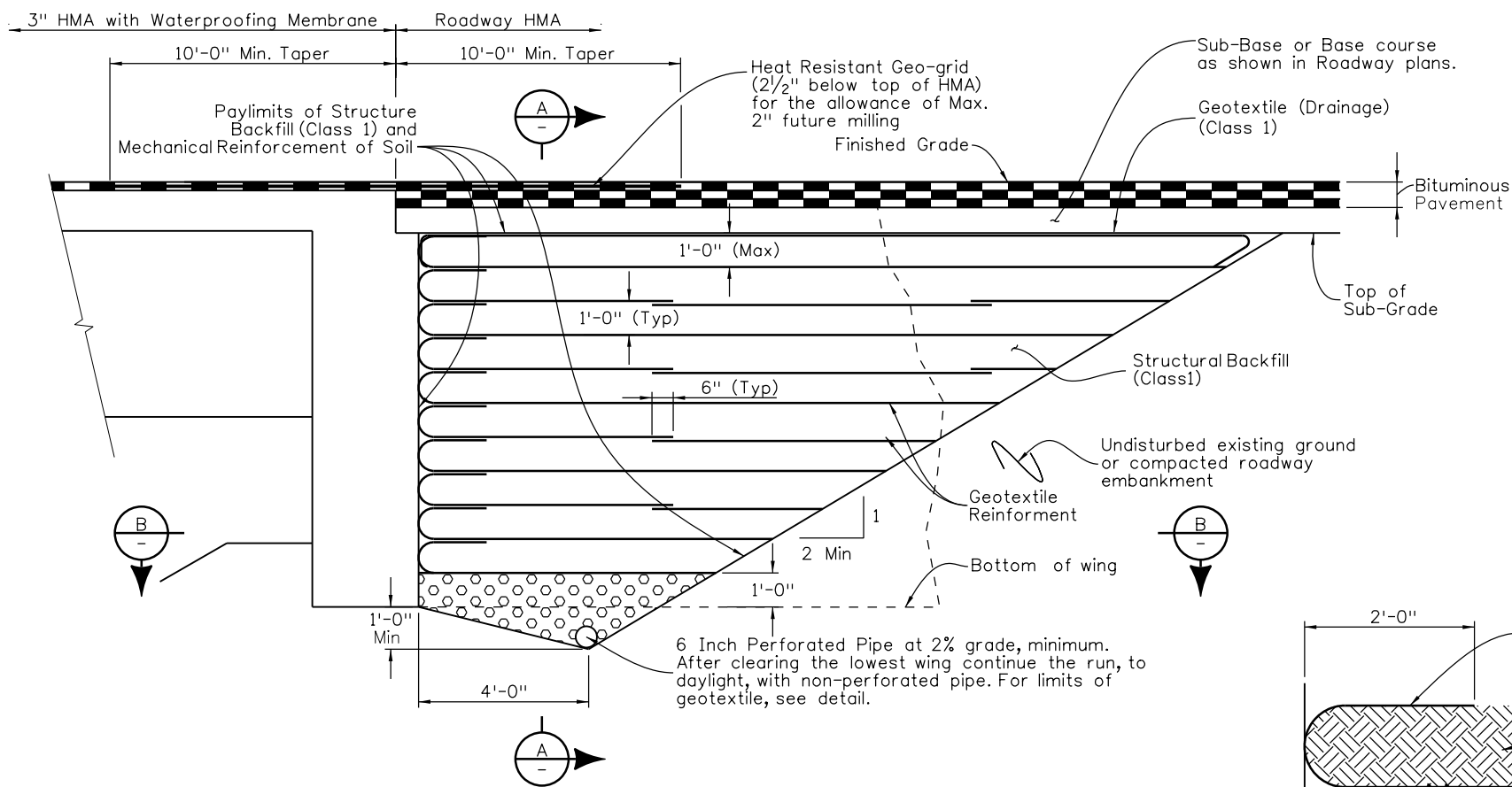
- D.G. Original Ground
- P.S. Planned Subgrade
- F.S. Planned Finished Surface

* = Minimum berm dimension.
 ▼ = Minimum embedment, of abut., in Structure Backfill.

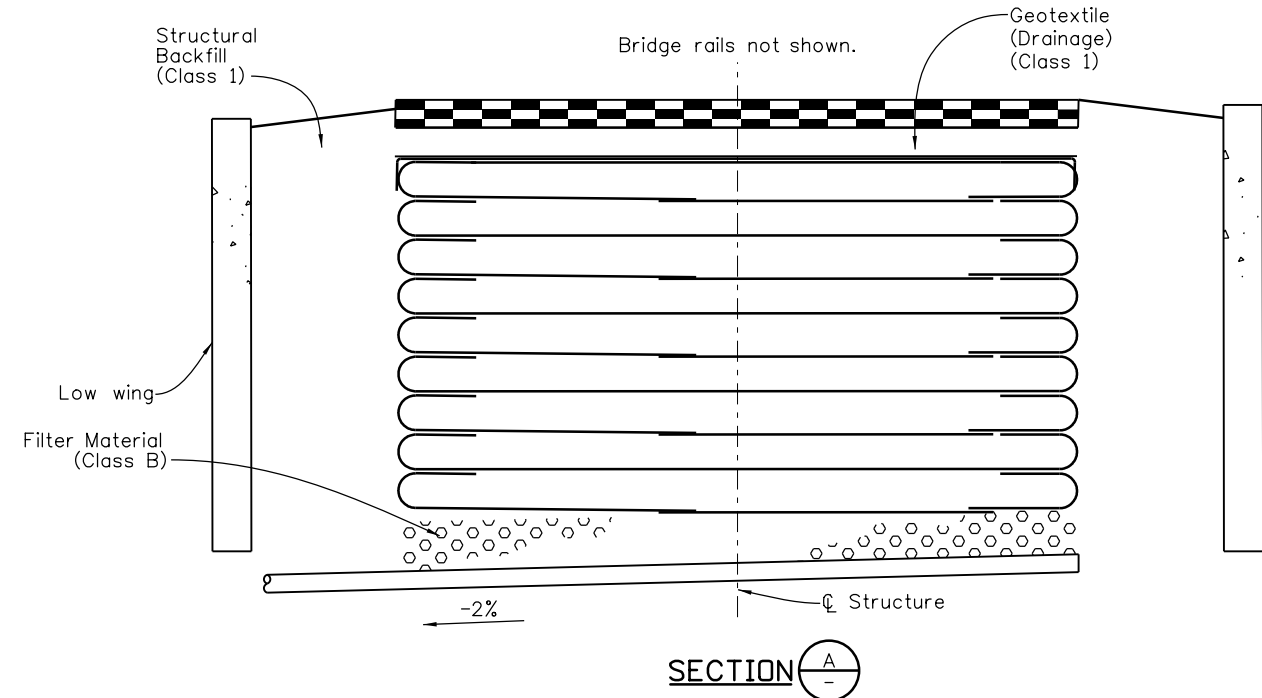
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Horiz. Scale: 1:1 Vert. Scale: As Noted		AD PLANS						201524362-00		
Unit Information Unit Leader Initials		JANUARY 2019						Sheet Number 35		
6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600								Designer: R. WHITCHER Detailer: R. PETERSEN Sheet Subset: BRIDGE Subset Sheets: B16 of 19		

ryan.petersen 3:25:54 PM M:\DCS\Projects\TRN\60477917_Evergreen_Lake_House\7.0_CAD_GIS\Plan_Sheets\Bridges\60477917BRDG_Bf102.dgn

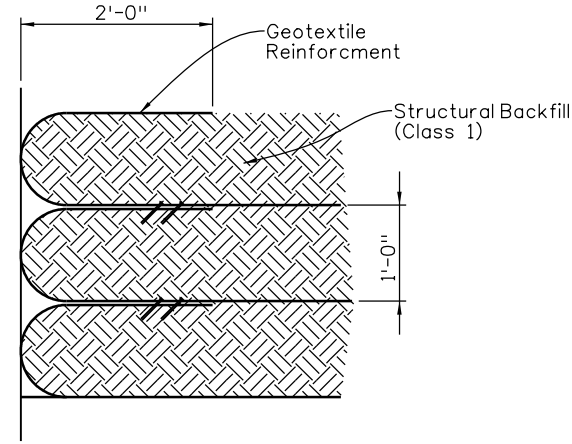
Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	3/16	RP	3/16	Quantities By	RLW
Checked By	3/16	SBH	3/16	Checked By	KLP



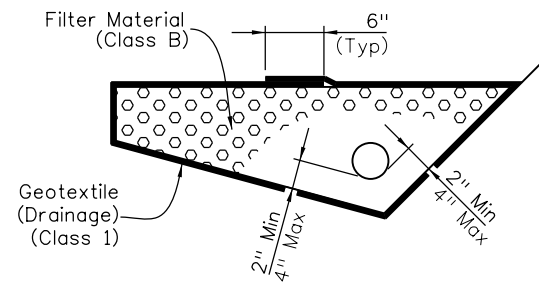
SECTION PERPENDICULAR TO ABUTMENT



SECTION A

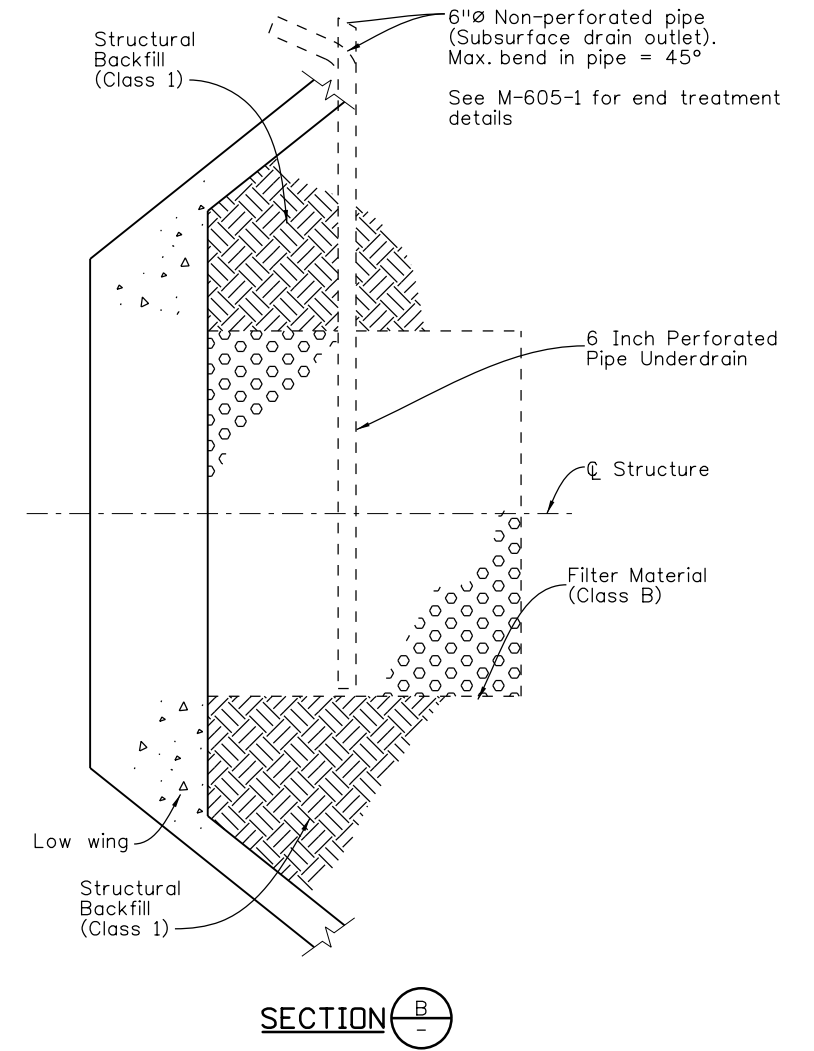


WRAP DETAIL



6 INCH PERFORATED PIPE UNDERDRAIN

6 Inch Perforated Pipe Underdrain includes all Filter Material (Class B) and Geotextile (Drainage) (Class 1) surrounding the Filter Material (Class B).



SECTION B

NOTES:

- Geotextile Reinforcement shall be woven fabric with a Minimum Average Roll Value of 2400 lb/ft based on ASTM D4595.
- Geotextile Reinforcement shall be placed by alternating Machine Direction (MD) with Cross Machine Direction (XD) from layer to layer.
- The Geotextile Reinforcement wrap at Back Face of Abutment shall be pulled back slack free with its end anchored to soil underneath with staples or pins.
- Minimum splice of all Geofabric shall consist of 6" of overlap.
- Payment for all work items shown will be made under item 206 Mechanical Reinforcement of Soil (CY) and item 206 Structure Backfill (Class 1) (CY) and shall include the cost for 6 Inch Perforated Pipe Underdrain and Subsurface Drain Outlet (6"Ø Non-Perforated Pipe).
- Installation of Pipe Underdrain and Subsurface Drain Outlet will Conform to the Construction requirements of Section 605.03 and 605.06, respectively.

Print Date: 1/22/2019	0000
File Name: 60477917BRDG_Bf102.dgn	
Horiz. Scale: 1:1 Vert. Scale: As Noted	
Unit Information Unit Leader Initials	
AECOM 6200 S. Quebec Street Greenwood Village, CO 80111 Phone: 303-740-2600	

Sheet Revisions		
Date:	Comments	Init.
	AD PLANS	
	JANUARY 2019	

City and County of Denver
Capital Projects Management
Kevin Rens
201 West Colfax Avenue, Department 506
Denver, Colorado 80202
Phone: 720.865.3151

As Constructed
No Revisions:
Revised:
Void:

MECHANICALLY STABILIZED BACKFILL (W/D APPROACH SLAB)			
Designer:	R. WHITCHER	Structure Numbers	D-27-MP-070A
Detailer:	R. PETERSEN	Subset Sheets:	B17 of 19
Sheet Subset:	BRIDGE		

Project No./Code
C010-114 (20414)
201524362-00
Sheet Number 36

Contract Control Number:

PWADM-201950258

Contractor Name:

Myers and Sons Construction, LP

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

SEAL

CITY AND COUNTY OF DENVER:

ATTEST:

By:

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

Attorney for the City and County of Denver

By:

By:

By:

Contract Control Number:
Contractor Name:

PWADM-201950258
Myers and Sons Construction, LP

By: _____

Name: _____
(please print)

Title: _____
(please print)

ATTEST: [if required]

By: _____

Name: _____
(please print)

Title: _____
(please print)