

**LICENSE AGREEMENT BETWEEN
COLORADO AGRICULTURAL DITCH COMPANY, ADAMS COUNTY, URBAN
DRAINAGE AND FLOOD CONTROL DISTRICT, AND REGIONAL RAIL
PARTNERS, JOINT VENTURE**

1. **PARTIES.** The parties to this Agreement (“Agreement”) are the Colorado Agricultural Ditch Company, a Colorado mutual ditch company (referred to as “the Ditch Company”); Adams County, a political subdivision of the State of Colorado (“County”); Urban Drainage and Flood Control District (“District”), a quasi-municipal corporation and political subdivision of the State of Colorado; and Regional Rail Partners, Joint Venture (“RRP”). The Ditch Company, the County, the District, and RRP are sometimes referred to collectively herein as the “Parties.” The County, the District, and RRP are sometimes referred to collectively herein as the “Cooperating Parties.” The effective date of this Agreement is the date upon which all Parties have completely signed it (“Effective Date”).

2. **RECITALS.**

2.1 The Ditch Company owns the existing Colorado Agricultural Ditch (“Ditch”) and associated ditch easement and right of way (“Easement”) for the purpose of exercising its decreed Colorado water rights and operating and maintaining the Ditch to divert, carry, and deliver water to its shareholders and other lawful users of the Ditch. The County is responsible for a drainageway known as the Hoffman Drainageway, and has entered into an agreement with the District, who subsequently entered into an agreement with RRP, to construct improvements to the Hoffman Drainage, including improvements at the current location where the Hoffman Drainage crosses the Ditch. See section 6 for RRP’s Installation warranty.

2.2 In connection with constructing the improvements at the current location where the Hoffman Drainage crosses the Ditch, the Cooperating Parties desire to obtain the permission of the Ditch Company (1) to convey the Ditch in a structure over the Hoffman Drainageway, (2) to construct three, side-by-side 9-foot wide by 5-foot high reinforced concrete box culverts beneath Welby Road and the Colorado Agricultural Ditch, and (3) to construct a temporary bypass (“Temporary Bypass”) for the purpose of conveying such water and water rights of the Ditch Company and routing them around the Installation construction area during construction.

2.3 Upon expiration of RRP’s warranty period following completion of the Installation, RRP will no longer be the owner of, and responsible for, the Installation. See section 6.

2.4 The Parties agree that RRP is and shall be solely responsible for any obligations that arise during construction of the Installation, and all obligations related to the construction of the Temporary Bypass.

2.5 The Ditch at this crossing is conveyed in an existing 48-inch diameter steel pipe spanning over the Hoffman Drainageway. This existing steel pipe is to be covered in soil to a depth of approximately 10 inches over the top of the pipe once the new culverts are

in place. If for some reason the ditch is disturbed during this construction, the disturbed structures shall be restored to a condition that is comparable to that which existed before the disturbance as modified by the above-described construction. The work and structures that are the subject of the construction are shown on the plan set attached hereto in **EXHIBIT A** and referred to herein as the "Installation." The general location of the affected portion of the Ditch, the Installation, and the Temporary Bypass, is immediately south of the intersection of East 86th Avenue and Old Welby Road, Adams County, Colorado, as more specifically described in **EXHIBIT A**.

2.6 The Ditch Company desires, and Cooperating Parties agree, to mitigate all Cooperating Parties' construction impacts to the Ditch and its Easement resulting from the Installation and the Temporary Bypass. The Ditch Company agrees to permit the proposed Installation and the Temporary Bypass subject to the terms, conditions, covenants and agreements set forth in this Agreement. Accordingly, in consideration of the mutual promises set forth in this Agreement, the Parties covenant and agree as follows:

3. **CONSTRUCTION.**

3.1 Pursuant to the terms of this Agreement, the Cooperating Parties are granted a license to construct the Installation, and the Temporary Bypass, pursuant to plans and specifications that have been approved by the Ditch Company and that are included in the attached **EXHIBIT A**. Upon completion of the Installation and acceptance by the Ditch Company in accordance with section 3.10, the license granted herein shall be irrevocable, subject to the terms and conditions of this Agreement. The License includes the right to operate, use, inspect, maintain and repair the Installation and the Temporary Bypass subject to the terms and conditions of this Agreement. The Installation shall be capable of accommodating a flow rate of 83 cubic feet per second in such a manner that does not cause any pooling or backing-up of water anywhere along the Ditch.

3.2 All portions of the Ditch and all affected areas within the Easement which are disturbed by the Installation, by the maintenance, repair, or replacement of the Installation, or by the Temporary Bypass, shall be restored to a condition that is comparable to that which existed before the disturbance, or shall be improved as shown on **EXHIBIT A**, such that the flow of water in the Ditch runs at or above its amount and velocity prior to the Installation and the Temporary Bypass. All backfill shall be compacted to at least 95% of the maximum dry density as determined by the Standard Proctor method. Any and all fencing and other improvements, or appurtenances, and facilities appurtenant to the Ditch Company's Easement shall be replaced in a condition that is comparable to the condition of such facilities, improvements and appurtenances prior to any construction, maintenance, repair, or replacement allowed hereunder.

3.3 It shall be the sole responsibility of RRP to perform all engineering and planning and to obtain all authorizations needed to perform the work contemplated by this Agreement. The Ditch Company's review of the plans and specifications is solely for its own benefit and creates no obligation on the Ditch Company.

3.4 It is not known whether any of Cooperating Parties' work on the Installation and/or related portions of the Ditch requires any local, state or federal permits or approvals. It is Cooperating Parties' obligation to investigate and determine the need for any such permits or approvals. Cooperating Parties are responsible, at their own expense, for obtaining all local, state and federal permits or approvals and for compliance with all local, state and federal laws and regulations, including but not limited to land use and environmental laws and regulations, and specifically including the Endangered Species Act, prior to beginning any such work. To the extent permitted by law, RRP shall indemnify the Ditch Company, the County, and the District for any and all costs, damages, fines, and fees, including reasonable attorneys' fees, incurred as a result of Cooperating Parties' failure to obtain such permits or approvals or failure to comply with all applicable laws and regulations.

3.5 The construction, operation, maintenance, repair, and replacement of the Installation and the Temporary Bypass shall not adversely affect the Ditch Company's Easement for access, operation, maintenance, repair, and replacement of the Ditch, the Installation, and the Temporary Bypass and shall not affect the capacity of the Ditch or the flow of water in the Ditch, including amount and velocity, and including the Ditch's ability to carry the water rights of the Ditch Company, its shareholders and/or other lawful users. Nor shall it adversely affect the quality of the water that has historically existed in the Ditch. In the event there is any such effect, such condition shall be fully corrected to the satisfaction of the Ditch Company. RRP agrees to take all necessary care in excavating around structures that support the Ditch, cross the Ditch, convey its water, or are otherwise part of the Easement, including but not limited to embankments, bridges, culverts, liners, and pipelines.

3.6 The Cooperating Parties shall take care to not spill any dirt, debris or other foreign material into the Ditch. In the event that dirt, debris or other foreign material is spilled into the Ditch, whether by Cooperating Parties or others employed by or working at the direction of Cooperating Parties, RRP agrees to completely clean the affected portions of the Ditch and remove all such dirt, debris or other foreign material from the Ditch. RRP shall provide appropriate erosion controls to protect the Ditch and any surrounding property that could be affected by the construction, either directly or indirectly.

3.7 RRP shall notify the Ditch Company at least five days preceding the date of commencing any work on or relating to the Installation permitted hereunder, and at least five days preceding the date of commencing any work on or relating to the Temporary Bypass permitted hereunder. Along with each such notice, RRP shall provide the Ditch Company with a schedule of construction activities for review and approval prior to the start of work in the vicinity of the Ditch, which approval shall not be unreasonably withheld. The Ditch Company is permitted to inspect the Temporary Bypass, the Installation, and any maintenance, repair, or replacement work during construction and upon completion. The Ditch Company, at its option, may hire an engineer at RRP's expense to conduct reasonable inspections of the Temporary Bypass and the Installation (including maintenance, repair, and replacement of the Installation) during the construction thereof as it deems necessary to protect its interest. The Ditch Company's

right to inspect the Temporary Bypass and the Installation (including maintenance, repair, and replacement of the Temporary Bypass and the Installation) in no way relieves the Cooperating Parties of their liability for improper construction, maintenance, repair, or replacement. The Ditch Company's inspection is solely for the benefit of the Ditch Company and creates no obligation on the Ditch Company.

3.8 The Cooperating Parties agree that the construction permitted hereunder shall proceed with reasonable diligence from the initiation of such construction to its completion, except that construction that interrupts water flow in the Ditch will not be allowed during the period from March 15, 2017 through November 1, 2017. The Installation shall be completed by March 1, 2018. The Temporary Bypass and the Installation shall be constructed, operated, maintained, repaired, and replaced in such a manner so as not to interfere with the flow of water through the Ditch to water recipients. Cooperating Parties shall be responsible for the carriage of water across the land, including drainage water, while the Temporary Bypass and the Installation is being constructed, installed, maintained, repaired, or replaced. The Parties hereto recognize and agree that substantial damages may be suffered by the Ditch Company and its shareholders if the delivery of water is interrupted in any manner as a result of the Temporary Bypass or the Installation agreed to herein or other actions of the Cooperating Parties. The Parties further agree and acknowledge that damages resulting from such interruptions in the delivery of water are difficult to measure. In recognition of these facts, RRP agrees to pay as liquidated damages \$10,000.00 per day for any day that the Ditch Company has a request for water from a shareholder and cannot deliver water to that shareholder or shareholders as a result of the Temporary Bypass or the Installation agreed to herein. In no event, however, shall the total amount paid by RRP to the Ditch Company as liquidated damages for interruption in delivery of water exceed Ten Thousand Dollars (\$10,000.00) per day.

3.8.1 The Cooperating Parties recognize that the Ditch Company customarily does not allow any construction that interrupts water flow in the Ditch during the period from March 15th through November 1st of any given year. However, the Ditch Company is willing to make an exception to allow construction of the Temporary Bypass and the Installation during the period from March 15 through November 1, 2017, if and only if (1) the Ditch Company is able to verify that the applicable portion of the Ditch may be shut off during construction of the Temporary Bypass; (2) the Ditch Company provides written approval of the construction schedule for both the Temporary Bypass and the Installation; and (3) the Ditch Company inspects and provides written acceptance of the Temporary Bypass pursuant to section 3.10, below, prior to any work being commenced on the Installation.

3.8.2 If the Installation is completed during the period from March 15 through November 1, 2017, RRP may remove the Temporary Bypass during that same period if and only if (1) the Ditch Company inspects and provides written acceptance of the Installation pursuant to section 3.10, below; and (2) the Ditch Company is able to shut off the applicable portion of the Ditch, as necessary, to allow RRP to remove the Temporary Bypass to allow delivery of water through

the Installation. If the Temporary Bypass is not so removed during the period from March 15 through November 1, 2017, then RRP shall coordinate with the Ditch Company to remove it during the period from November 1, 2017 through March 1, 2018.

3.9 If the Cooperating Parties commence construction of the Installation but fail to complete said construction by March 1, 2018, then RRP shall pay a penalty to the Ditch Company in the amount of One Thousand Dollars (\$1,000) per day until completion. The payment of such penalty shall be in addition to any sums owed as damages hereunder, including but not limited to damages pursuant to section 3.8.

3.10 Upon completion of the Installation, or completion of any maintenance, repair, or replacement, RRP shall notify the Ditch Company. The Ditch Company may inspect and shall accept or reject the Installation using reasonable standards within 14 days of notification, except that the Ditch Company shall not be required to accept or reject until and unless all fees billed have been paid pursuant to section 4. The Ditch Company shall be entitled, but not obligated, to test the affected portions of the Ditch by running water through it. If the Installation is completed during the non-irrigation season, the 14-day notification period shall not begin until it is feasible for the Ditch Company to run water in the Ditch. Acceptance or rejection shall be in writing. If the Installation is rejected, Ditch Company or its representative shall specify the reasons for rejection, and RRP shall correct the same, and the above process shall be repeated. Acceptance does not affect the provisions of Ssection 6, below, regarding negotiations toward a Maintenance Agreement and/or seeking of a declaratory judgment.

3.11 RRP shall install 2 bollards per crossing that define the centerline of the Ditch in the vicinity of the Installation. RRP shall provide as-built drawings and a summary of QA/QC testing to the Ditch Company upon completion of the construction.

4. REIMBURSEMENT OF EXPENSES.

4.1 RRP agrees to reimburse the Ditch Company (or pay directly) for all reasonable engineering, legal, and administrative costs incurred by the Ditch Company in preparing, approving and enforcing this Agreement, costs associated with billing and collecting those amounts for the Ditch Company, and the costs of inspection allowed hereunder. For purposes of this Agreement, reimbursement shall be made by RRP at the actual hourly rate for labor and equipment incurred by the Ditch Company. The agreement to reimburse the Ditch Company shall not apply to the negotiation of a Maintenance Agreement referred to in section 6.2 below nor to a Declaratory Judgment action referred to in 6.3 below.

4.2 RRP has paid a deposit to the Ditch Company in the amount of \$5,000.00 toward payment of the Ditch Company's expenses. The Ditch Company may require additional deposits as needed to cover current and future expenses related to the Installation and Temporary Bypass, as set forth herein. The Ditch Company will provide copies of invoices to RRP, which invoices shall contain a reasonable description of the Ditch Company's expenses. All portions of the deposit that are not applied to expenses that are

reimbursable hereunder shall be reimbursed to RRP within 45 days after acceptance of the Installation pursuant to section 3.10. If the deposit is depleted before acceptance of the Installation, then the Ditch Company may require and RRP shall provide reasonable additional deposits as needed to cover current and future expenses.

4.3 In the event the Ditch Company's expenses exceed the amount of any deposit(s) paid to the Ditch Company, statements for costs chargeable to RRP hereunder will be forwarded to RRP. Such statements shall contain a reasonable description of the Ditch Company's expenses. RRP shall reimburse the Ditch Company within forty-five (45) days after the billing date. If the Ditch Company has not received payment within 45 days, RRP shall have breached this Agreement and the Ditch Company may institute legal proceedings to collect the amount due and owing. In such a proceeding, the prevailing party shall be entitled to its costs and reasonable attorneys' fees.

5. **LICENSE FEE.** RRP shall pay to the Ditch Company a license fee of \$5,000.00. The fee shall be paid prior to the commencement of any construction allowed hereunder. This fee shall be in addition to any other costs for which the Cooperating Parties are responsible pursuant to this Agreement.

6. **MAINTENANCE, REPAIR, AND REPLACEMENT.**

6.1 Following the Ditch Company's acceptance of the Installation as described in section 3.10, above, a warranty period shall commence and the Installation shall become the property of RRP during the warranty period. The warranty period shall expire at such time as (1) the Installation has been operated for two years without any defects and (2) RRP provides notice to the County, the District, and the Ditch Company of such two-year operation, and neither the County, the District, nor the Ditch Company objects to such notice. Subject to the terms and conditions of this Agreement, RRP shall remain the owner of the Installation until expiration of the warranty period. Upon the expiration of the warranty period, neither the District nor RRP shall have any ownership interest in the Installation. During the warranty period, obligations for maintenance, repair, and replacement of the Installation shall be as follows:

6.1.1 On a daily basis during times when water is being conveyed through the Ditch, the Ditch Company shall be allowed to inspect and clean the interior of the Installation, including removal of debris. Such work that may be conducted by the Ditch Company includes both manual work and work that requires the use of reasonably necessary equipment. The Ditch Company shall be responsible for its own costs associated with such daily and other routine maintenance. No notice to the Licensees is required for such daily and other routine maintenance.

6.1.2 During the two year warranty period, RRP shall be solely responsible for repairing defects and performing required maintenance and replacement of the Installation that goes beyond daily and other routine maintenance.

6.2 For one year after the Effective Date of this Agreement, the County and the Ditch Company agree to negotiate in good faith to try and reach a written agreement regarding

rights and obligations associated with ownership and responsibility for operation, maintenance, and replacement of the Installation (“Maintenance Agreement”) after expiration of the warranty period.

6.3 If no Maintenance Agreement has been reached by the one year anniversary of the Effective Date of this Agreement (“Negotiation Expiration Date”), then the County, the Ditch Company, or both may seek a declaratory judgment from the Adams County District Court in order to determine all rights and obligations associated with ownership and responsibility for operation, maintenance, and replacement of the Installation after expiration of the warranty period (“Declaratory Judgment”). Until the earlier of the date by which a Maintenance Agreement has been fully signed by both the County and the Ditch Company or the date by which a final, unappealable Declaratory Judgment has been entered by the Adams County District Court, the County and the Ditch Company agree to confer with one another regarding maintenance of the Installation. After such conferral (unless an emergency situation arises, in which case it may not be possible to confer), the County, the Ditch Company, or both may take any action deemed reasonably necessary to maintain the Installation. Each party shall pay its own attorneys fees and costs for the Declaratory Judgment contemplated by this Section 6.3.

6.4 Nothing herein shall be construed as a waiver of any claim or as any admission with respect to ownership of and responsibility for operation, maintenance, and eventual replacement of the Installation. The County and the Ditch Company each reserve all its claims and defenses with respect to such ownership and responsibility.

6.5 The County and the Ditch Company each agree: that it shall not bring any claim with respect to such ownership and responsibility before the Negotiation Expiration Date; that the running of any statute of limitations concerning any such claim shall be tolled up to and including the Negotiation Expiration Date; and that the period of time between the date of this Agreement and the Negotiation Expiration Date shall not be asserted or relied upon in any way in advancing any arguments about the passage or computation of time under any statute of limitations or other time limitations.

7. **TERM.** This Agreement shall be in effect until it is modified in writing by the Parties or by a judicial order.

8. **LIABILITY AND INDEMNIFICATION.**

8.1 By virtue of entering into this Agreement, the Ditch Company: (1) assumes no liability for use, operation, or existence of the Cooperating Parties’ engineering, preparation, installation, or construction of the Installation; and (2) assumes no additional responsibilities or obligations related to the Cooperating Parties’ future or additional activities within the area described in **EXHIBIT A** which are required by this Agreement, except for those activities associated with the routine operation and maintenance of the Ditch and which the Ditch Company engaged in prior to the construction of the Installation.

8.2 To the fullest extent permitted by Colorado law, RRP agrees to indemnify, defend, and hold harmless the Ditch Company, the County, and the District, their trustees, directors, officers, agents, employees and contractors, from all claims and liability for damage or injury to property or persons arising from or caused by: the acts or omissions of Cooperating Parties related to the engineering, preparation, or construction of the Installation; and the Cooperating Parties' use of the Installation. This obligation does not extend to any negligent act or omission of the Ditch Company, the County, or the District.

8.3 The Ditch Company shall not be responsible for any damage caused by seepage water or inadvertent damage to the Installation during the Term of this Agreement.

8.4 Cooperating Parties are responsible for contacting the Ditch Company immediately upon notification of any damage to infrastructure or land owned by the Ditch Company or to which the Ditch Company enjoys easement rights.

9. **THIRD PARTY BENEFICIARIES.** This Agreement shall not confer any benefits to any person not a party to this Agreement except for the Ditch Company's shareholders. The Ditch Company's shareholders are third party beneficiaries of this Agreement.

10. **DEFAULT.** Time is of the essence of this Agreement, and if any payment or any other condition, obligation or duty is not timely made, tendered or performed by any party, then the non-defaulting party or parties shall have the right to an action for specific performance or damages or both.

11. **RECORDATION.** This Agreement shall be recorded at the expense of the Cooperating Parties. The failure to record all or portions of any exhibit that is part of this Agreement because of the size or quality of the documents shall affect neither the validity of this Agreement nor the obligations or benefits contained in the Agreement. The original of this Agreement shall be returned to the Secretary of the Ditch Company after it has been recorded.

12. **NOTICES.** Any notice required or permitted by this Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if hand-delivered or if sent by certified or registered mail, postage and fees prepaid, addressed to the party to whom such notice is intended to be given at the address set forth below, or at such other address as has been previously furnished in writing to the other party or parties. Such notices shall be deemed to have been given three days after deposit in the United States Mail or, if hand-delivered, upon receipt.

**COLORADO AGRICULTURAL
DITCH COMPANY:**

Colorado Agricultural Ditch Company
c/o Matt Stockton, Secretary
12450 Washington Street
Thornton, CO 80241

Copy to:

Gilbert Y. Marchand, Jr., Esq.
2737 Mapleton Avenue, Suite 202
Boulder, Colorado 80304

ADAMS COUNTY:

Copy to:

Adams County
Transportation Department
4430 South Adams County Parkway
Brighton, Colorado 80601

Adams County
Attorney's Office
4430 South Adams County Parkway
Brighton, Colorado 80601

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT: Copy to:

Executive Director
Urban Drainage and Flood Control District
2480 W 26th Ave # 156B
Denver, CO 80211

Edward J. Krisor, Esq.
3900 S. Wadsworth Blvd., Suite 320
Lakewood, CO 80235-2220

REGIONAL RAIL PARTNERS, JOINT VENTURE:

Copy to:

Regional Rail Partners, Joint Venture
c/o David Trent, Project Director
1765 W 121st Avenue, Suite 400
Westminster, CO 80234

Regional Rail Partners, Joint Venture
c/o Kevin Lynch, Business Manager
1765 W 121st Avenue, Suite 400
Westminster, CO 80234

13. **WAIVER OF BREACH.** The waiver by any party to this Agreement of a breach of any term or provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach by any party.

14. **EXHIBITS.** All exhibits referred to in this Agreement are, by reference, incorporated in this Agreement for all purposes.

15. **ATTORNEYS' FEES.** If any party breaches this Agreement, the non-prevailing party shall pay all of the prevailing party's reasonable attorneys' fees and costs in enforcing this Agreement through litigation, or otherwise.

16. **ASSIGNMENT.** This Agreement may not be assigned by either party, unless the other party consents, which consent shall not be unreasonably withheld.

17. **BINDING EFFECT.** This Agreement shall inure to the benefit of, and be binding upon, the parties, and their respective legal representatives, successors, and assigns and shall run with the property described in **EXHIBIT A**.

18. **COMPLETE AGREEMENT.** This document represents the complete agreement of the parties hereto and no oral modification shall be recognized. Any amendments or additions shall be made in writing signed by the parties.

19. **APPLICABLE LAW AND VENUE.** This Agreement shall be interpreted and enforced pursuant to the laws of the State of Colorado. In the event of litigation concerning this Agreement, the Parties agree that proper venue shall be the District Court, Adams County, Colorado.

20. **PARTIAL INVALIDITY.** If any one or more of the provisions of this Agreement should be ruled wholly or partly invalid or unenforceable by a court or other government body of competent jurisdiction: the validity and enforceability of all provisions of this Agreement not ruled to be invalid or unenforceable shall be unaffected; the provision(s) held wholly or partly invalid or unenforceable shall be deemed amended, and the court or other government body is authorized to reform the provision(s), to the minimum extent necessary to render them valid and enforceable in conformity with the parties' intent as manifested herein; and if the ruling, and/or the controlling principle of law or equity leading to the ruling, is subsequently overruled, modified, or amended by legislative, judicial, or administrative action, then the provision(s) in question as originally set forth in this Agreement shall be deemed valid and enforceable to the maximum extent permitted by the controlling principle of law or equity.

21. **COUNTERPARTS.** This Agreement may be executed in several counterparts, the signatures on which may be by facsimile or by scanned originals, and, as so executed, shall constitute one Agreement, binding on each party even though each party has not signed the same counterpart. Any counterpart of this Agreement which has attached to it separate signature pages, which altogether contain the signatures of each party, shall be deemed a fully executed instrument for all purposes.

DATED: February 14, 20 17

**COLORADO AGRICULTURAL DITCH
COMPANY, a Colorado mutual ditch company**

By: Kenneth M. Tosh

Printed Name: Kenneth M. Tosh

Title: President

Date: 2-14-17

ATTEST:

By: Matthew J. Stekton

Printed Name: Matthew J. Stekton

Title: Corporate Secretary

Date: 2/14/17

**BOARD OF COUNTY COMMISSIONERS,
ADAMS COUNTY, COLORADO**

By: _____

Printed Name: _____

Title: _____

Date: _____

ATTEST:

By: _____

Printed Name: _____

Title: _____

Date: _____

APPROVED AS TO FORM:

By: _____

Printed Name: _____

Title: _____

Date: _____

**URBAN DRAINAGE AND FLOOD CONTROL
DISTRICT**

By: 

Printed Name: Ken A. MacKenzie

Title: Executive Director

Date: 2/15/17

**REGIONAL RAIL PARTNERS, JOINT
VENTURE**

By: DORAY

Printed Name: DAR-O TRENT

Title: PROJECT DIRECTOR

Date: 2/17/17

ATTEST:

By: Shawn PLO

Printed Name: SHAWN M. PLICHTA

Title: DESIGN BUILD COORDINATION MGR

Date: 2/17/17

EXHIBIT A

LICENSE AGREEMENT BETWEEN THE COLORADO AGRICULTURAL DITCH
COMPANY, ADAMS COUNTY, URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,
AND REGIONAL RAIL PARTNERS, JOINT VENTURE

- 1. LOCATION OF CROSSING AND PLANS**
- 2. PRESCRIPTIVE EASEMENT DESCRIPTION (Sheet DS-10)**

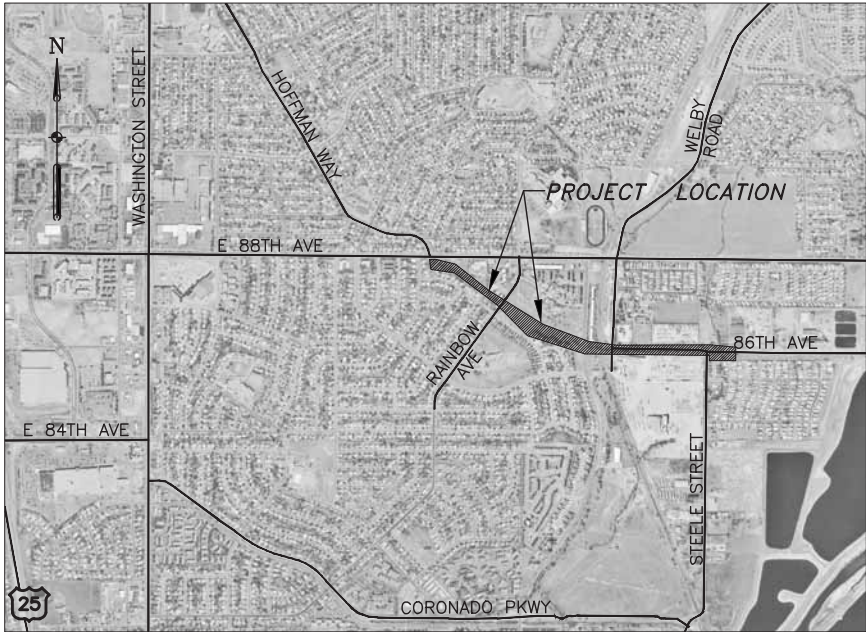
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

ADAMS COUNTY, COLORADO

LOWER HOFFMAN DRAINAGEWAY

IMPROVEMENTS PROJECT

UDFCD PROJECT NO. 106266



LOCATION MAP



PREPARED BY

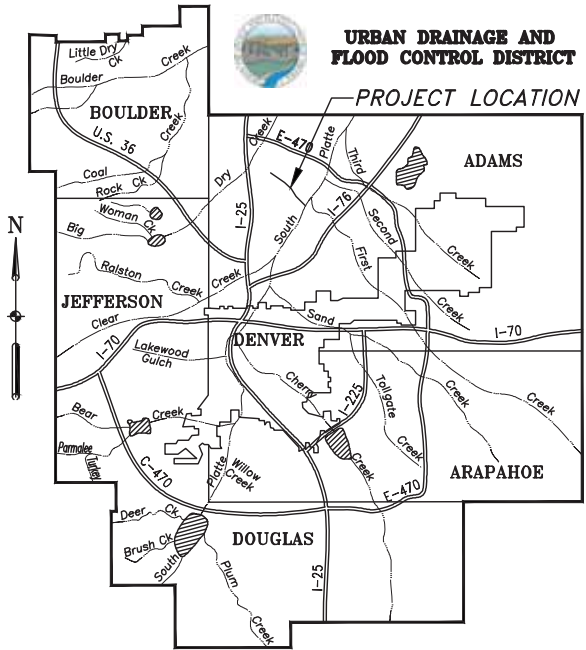
 **Stantec**

 **R-P**
REGIONAL RAIL PARTNERS

2000 South Colorado Boulevard Suite 2-300
Denver, CO U.S.A.
www.stantec.com

FEBRUARY , 2017

PHASE 1 ISSUED FOR CONSTRUCTION



VICINITY MAP

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

KEN MACKENZIE, PE – EXECUTIVE DIRECTOR	DATE
DAVID BENNETTS, PE – MANAGER DESIGN, CONSTRUCTION, AND MAINTENANCE PROGRAM	DATE
DAVID SKUODAS, PE – PROJECT MANAGER DESIGN, CONSTRUCTION, AND MAINTENANCE PROGRAM	DATE

ADAMS COUNTY

RENE VALDEZ – MANAGER STORMWATER AND INFRASTRUCTURE, TRANSPORTATION DEPARTMENT	DATE
RUSSELL T. NELSON, PE – STORMWATER ENGINEER STORMWATER AND INFRASTRUCTURE, TRANSPORTATION DEPARTMENT	DATE

STANTEC

COLIN HAGGERTY, P.E. – PROJECT MANAGER	DATE
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GENERAL NOTES:

1.

TOPOGRAPHIC MAPPING OF THE LOWER HOFFMAN DRAINAGEWAY CORRIDOR WAS COMPLETED IN 2010 AND SUPPLEMENTED WITH 2008 LIDAR DATA OUTSIDE THE CORRIDOR AS WELL AS 2016 FIELD SURVEY. ACTUAL FEATURES AND TOPOGRAPHY ENCOUNTERED IN THE FIELD AT THE TIME OF CONSTRUCTION MAY VARY FROM WHAT IS SHOWN IN THESE PLANS. ALL ELEVATIONS ARE BASED ON NAVD88.

2.

GEOTECHNICAL TEST BORINGS SHOWN IN THESE DRAWINGS WERE COLLECTED IN JULY 2010 AND NOVEMBER 2016. THE SUBSURFACE INFORMATION SHOWN IS SIMPLIFIED AND MAY NOT ACCURATELY REFLECT THE ACTUAL SUBSURFACE CONDITIONS.

3.

EXISTING FACILITIES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED IN PLACE OR REMOVED AND REPLACED IN KIND, AS APPROVED BY THE ENGINEER.

4.

ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY URBAN DRAINAGE AND FLOOD CONTROL DISTRICT (UDFCD) AND/OR ITS AUTHORIZED REPRESENTATIVES. UDFCD RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DO NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.

5.

THE CONTRACTOR SHALL NOTIFY UDFCD 48 HOURS PRIOR TO STARTING CONSTRUCTION.

6.

THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS AND SPECIFICATIONS (ACCEPTED BY UDFCD), AND ONE (1) COPY OF ALL REQUIRED PERMITS AT THE JOB SITE AT ALL TIMES.

7.

THE FINAL FILL AND EXCAVATION SLOPES, LINES AND GRADES SHOWN ON THE DRAWINGS ARE THE NEAT LINES FOR COST ESTIMATE PURPOSES AND ARE THE STEEPEST SLOPES PERMITTED UNLESS OTHERWISE APPROVED BY THE ENGINEER. FLATTER SLOPES MAY BE NECESSARY, AS DETERMINED BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING STABLE EXCAVATIONS AND TEMPORARY SLOPES AND FOR SATISFYING ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. TEMPORARY EXCAVATIONS SHALL PROVIDE AT A MINIMUM, THE TRENCH DIMENSIONS AND CLEARANCES SHOWN OR SPECIFIED. TEMPORARY CONSTRUCTION SLOPES SHALL BE SLOPED, SHORED, SHEETED, AND/OR BRACED IN ACCORDANCE WITH STABILITY REQUIREMENTS AND APPLICABLE REGULATIONS, AND SHALL BE NO STEEPER THAN THE MINIMUM SLOPES SHOWN OR SPECIFIED WITHOUT THE APPROVAL OF THE ENGINEER. ANY SUCH APPROVALS BY THE ENGINEER WILL NOT RELIEVE THE CONTRACTOR FROM SOLE RESPONSIBILITY FOR PROVIDING STABLE EXCAVATIONS AND TEMPORARY SLOPES.

8.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACCEPTANCE AND CONTROL OF DRAINAGE WATER FROM AREAS ADJACENT TO THE CHANNEL AND FOR STREAM FLOW WITHIN THE CHANNEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING METHODS BY WHICH CHANNEL FLOW, SURFACE RUNOFF, AND SUBSURFACE SEEPAGE WILL BE TEMPORARILY DIVERTED, DETAINED OR OTHERWISE CONTROLLED. WATER CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, AS WELL AS ALL APPLICABLE PERMIT CONDITIONS. TEMPORARY WATER CONTROL SYSTEMS SHALL NOT CAUSE INCREASED FLOODING OR AFFECT NORMAL FLOW CHARACTERISTICS DURING CONSTRUCTION. ANY DAMAGE TO THE WORK RESULTING FROM BASE FLOWS OR FLOOD FLOWS SHALL BE CORRECTED BY THE CONTRACTOR AT THE CONTRACTOR'S SOLE COST. UNLESS OTHERWISE SPECIFIED, WATER CONTROL SHALL BE INCIDENTAL TO THE WORK.

9.

THE CONTRACTOR IS ADVISED THAT THE STOCKPILING AND USE OF MATERIAL AND/OR EQUIPMENT WITHIN THE CHANNEL CREATES POTENTIAL OBSTRUCTIONS TO THE FLOW OF THE STREAM. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT THE WORK IN A MANNER THAT MINIMIZES THE REDUCTION IN CHANNEL CAPACITY AT ALL TIMES. THE CONTRACTOR IS ADVISED THAT THE STORAGE OF FUELS, CHEMICALS, TRASH DEBRIS, CONSTRUCTION MATERIAL, VEHICLES, AND EQUIPMENT SHALL BE PROHIBITED WITHIN THE CHANNEL AT ALL TIMES EXCEPT AS IS ESSENTIAL TO THE PROGRESS OF THE WORK. UNDER NO CIRCUMSTANCE SHALL ANY OF THE ABOVE MENTIONED MATERIALS BE STORED OVERNIGHT WITHIN THE CHANNEL.

10.

CONTRACTOR SHALL PROVIDE PEDESTRIAN AND VEHICULAR SIGNAGE THAT CLEARLY IDENTIFIES THE CONSTRUCTION ZONE THROUGHOUT THE PROJECT. CONTRACTOR SHALL PROVIDE SIGNAGE AND SAFETY FENCING AS REQUIRED TO MAINTAIN A SAFE SITE.

11.

EXCESS SOIL SHALL BE DISPOSED OFF SITE BY CONTRACTOR.

12.

CONTRACTOR SHALL PROTECT ALL EXISTING CURB, GUTTER AND PAVEMENT AT ALL ACCESS POINTS FROM DAMAGE BY EQUIPMENT OR CONSTRUCTION OPERATIONS. ALL CURB, GUTTER AND PAVEMENT DAMAGED BY THE CONTRACTOR SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

13.

CONSTRUCTION STAKING AND SURVEY SHALL BE PROVIDED BY CONTRACTOR.

14.

QUALITY CONTROL TESTING SHALL BE PROVIDED BY THE CONTRACTOR.

15.

CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FOR THIS PROJECT, INCLUDING PERMITS REQUIRED BY ADAMS COUNTY. SEE UDFCD AND CDOT PROJECT SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.

16.

CONTRACTOR SHALL BE LICENSED TO PERFORM WORK IN ADAMS COUNTY.

17.

EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS.

18.

SITE ACCESS AND STAGING SHALL BE PER THE CONSTRUCTION DOCUMENTS UNLESS ALTERNATIVE ACCESS AND STAGING IS APPROVED BY UDFCD AND ADAMS COUNTY.

19.

CONTRACTOR SHALL RESTORE ACCESS AND STAGING AREAS TO ORIGINAL GRADE, OR PROPOSED GRADE AS SHOWN ON PLANS, AND REVEGETATE AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS.

20.

ALL STORM DRAINAGE PIPE SHALL HAVE A MINIMUM COVER OF 24", UNLESS LOAD CALCULATIONS ARE PROVIDED. UNDER NO CIRCUMSTANCES WILL ANY PIPE HAVE LESS THAN 18" COVER FROM THE FINISH SURFACE TO THE OUTSIDE WALL OF THE PIPE.

21.

ALL STORM DRAINAGE PIPE SHALL BE BEDDED IN ACCORDANCE WITH CDOT STANDARD DETAIL M-603-2.

22.

ALL STORM DRAINAGE TRENCHES SHALL BE SLOPED OR BRACED AND SHEETED AS NECESSARY, FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES, AND IN COMPLIANCE WITH ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS. ALL EXCAVATION OPERATION SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR.

23.

ALL MANHOLE RIM ELEVATIONS GIVEN ON THESE PLANS ARE TO BE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL SET THE FINAL RIM ELEVATION BASED ON THE COMPLETED FINISH SURFACE.

24.

ALL STORM DRAINAGE PIPES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10' FROM ALL WATER LINES. WHERE LINES CROSS, THERE SHALL BE A MINIMUM OF 18" CLEAR VERTICAL SEPARATION OR AS APPROVED BY THE ENGINEER AND JURISDICTIONAL ENTITY.

25.

ALL INVERT ELEVATIONS ARE CONSIDERED APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO PIPE OR STRUCTURE PLACEMENT. UNDER NO CIRCUMSTANCES SHALL A PIPE OR STRUCTURE BE CONSTRUCTED SUCH THAT IT DOES NOT TIE INTO ITS INTENDED CONNECTION.
- UTILITY NOTES:
1.

UTILITIES SHOWN ON THESE PLANS WERE MAPPED FROM INFORMATION PROVIDED BY THE UTILITY COMPANIES THAT WERE IDENTIFIED BY UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811. THESE UTILITIES WERE INDEPENDENTLY VERIFIED AND DESIGN RELIES SUBSTANTIALLY ON THE ACCURACY OF THE INFORMATION PROVIDED BY THE UTILITY COMPANIES AND POTHOLE INFORMATION.

2.

THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST THREE (3) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT UNCC AT 811, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING.

3.

LOCATION AND NOTIFICATION OF BOTH UNCC MEMBER AND NON-MEMBER UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY.

4.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AT PIPES, CULVERTS, CONCRETE BOX CULVERTS AND OTHER AREAS OF EXCAVATION AS NECESSARY TO INSURE THE UTILITIES WILL NOT BE IMPACTED.

5.

THE CONTRACTOR SHALL CONDUCT WEEKLY UTILITY MEETINGS, SEPARATE FROM THE PROGRESS MEETINGS, FOR THE PURPOSE OF COORDINATING CONSTRUCTION ACTIVITIES WITH THE UTILITY OWNERS. FREQUENCY OF THE UTILITY MEETINGS MAY BE REVISED WITH THE PRIOR WRITTEN CONSENT OF THE PROJECT ENGINEER. THE CONTRACTOR SHALL PROVIDE MEETING MINUTES AND SHALL PROVIDE, AND PERIODICALLY UPDATE, AN ACCURATE CONSTRUCTION SCHEDULE THAT INCLUDES IDENTIFICATION OF CRITICAL UTILITY IMPACTS THAT COULD IMPACT THE SCHEDULE.

6.

THE CONTRACTOR SHALL PROVIDE AT LEAST ONE WEEK NOTICE TO THE APPROPRIATE UTILITY OWNERS FOR ATTENDANCE AT THE NEXT UTILITY COORDINATION MEETING WHEN THE UTILITY OWNERS' FACILITIES MAY BE AFFECTED.

7.

ADDITIONAL UTILITY POTHOLING MAY BE NEEDED FOR THIS PROJECT. POTHOLING WILL BE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CONTACT THE AFFECTED UTILITY COMPANY DIRECTLY AT LEAST THREE BUSINESS DAYS PRIOR TO POTHOLING.
- ABBREVIATIONS
- | | |
|-----------|---|
| ⊙ | AT |
| APPROX | APPROXIMATE |
| AVE | AVENUE |
| BLVD | BOULEVARD |
| ℄ | CENTERLINE |
| CSP | CORRUGATED STEEL PIPE |
| CT | COURT |
| Dso | AVERAGE DIAMETER |
| DIA, Ø | DIAMETER |
| DR | DRIVE |
| DS | DOWNSTEAM |
| E | EAST |
| EA | EACH |
| ELEV, EL | ELEVATION |
| EST | ESTIMATED |
| EW | EACH WAY |
| EXIST, EX | EXISTING |
| FT | FEET |
| GSB | GROUTED SLOPING BOULDER |
| H, HORIZ | HORIZONTAL |
| HERCP | HORIZONTAL ELLIPTICAL REINFORCED PIPE |
| HGL | HYDRAULIC GRADE LINE |
| IN | INCHES |
| MAX | MAXIMUM |
| MIN | MINIMUM |
| N | NORTHING |
| NA | NOT APPLICABLE |
| NWSWSD | NORTH WASHINGTON STREET WATER AND SANITATION DISTRICT |
| PGL | PROFILE GRADE LINE |
| PKWY | PARKWAY |
| R | RADIUS |
| RCB | REINFORCED CONCRETE BOX |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROAD |
| R.O.W. | RIGHT-OF-WAY |
| RTD | REGIONAL TRANSPORTATION DISTRICT |
| S | SLOPE, FT./FT. |
| SAN | SANITARY SEWER |
| SQ | SQUARE |
| ST | STREET |
| STA | STATION |
| T, TELE | TELEPHONE |
| TYP | TYPICAL |
| UPRR | UNION PACIFIC RAILROAD |
| US | UPSTREAM |
| V, VERT | VERTICAL |
| WL | WATER LEVEL |
- LEGEND
- | | |
|--|---|
| | EXISTING OVERHEAD POLE |
| | EXISTING SIGN |
| | EXISTING CONTROL POINT |
| | NEW TEMPORARY CONTROL POINT |
| | PROPOSED FENCE |
| | PROPOSED OVERHEAD UTILITIES |
| | PROPERTY LINE |
| | EXISTING FENCE |
| | EXISTING SANITARY SEWER |
| | EXISTING STORM SEWER |
| | EXISTING WATER |
| | EXISTING GAS |
| | EXISTING OVERHEAD UTILITIES |
| | EXISTING UNDERGROUND FIBER OPTIC |
| | EXISTING UNDERGROUND ELECTRIC |
| | EXISTING UNDERGROUND TELEPHONE |
| | EXISTING UNDERGROUND CABLE TV |
| | EXISTING INDEX CONTOUR LINE WITH CONTOUR DESIGNATION IN FEET |
| | INTERMEDIATE CONTOUR LINE |
| | EXISTING FLOWLINE |
| | CLEARING LIMITS |
| | EXCAVATION IN EARTH/ROCK |
| | INDICATES CROSS SECTION LOCATION. "A" REFERS TO THE CROSS SECTION DESIGNATION. "C-2" REFERS TO THE SHEET NUMBER WHERE THE SECTION IS SHOWN. WHEN SHOWN ON THE SECTION, THIS NUMBER REFERS TO THE SHEET NUMBER WHERE THE SECTION IS CUT. |
| | INDICATES DETAIL LOCATION. "1" REFERS TO THE DETAIL DESIGNATION. "C-2" REFERS TO THE SHEET NUMBER WHERE THE DETAIL IS INDICATED. WHEN SHOWN ON THE DETAIL, THIS NUMBER REFERS TO THE SHEET NUMBER WHERE THE DETAIL IS SHOWN. |
| | RIPRAP |
| | CONCRETE/GROUT |
| | CRUSHER FINES |
| | COMPACTED OR UNDISTURBED MATERIAL |
- | SHEET INDEX | |
|--------------|---|
| SHEET NUMBER | SHEET TITLE |
| G-1 | COVER SHEET |
| G-2 | GENERAL NOTES, SHEET INDEX, LEGEND, AND ABBREVIATIONS |
| G-3 | M-STANDARDS |
| U-1 | UTILITY CONTACT INFORMATION |
| B-1 | TEST HOLE LOCATIONS AND SUMMARY LOGS |
| B-2 | FINAL BORING LOGS |
| | |
| V-5 | SURVEY CONTROL PLAN |
| | |
| DP-1 | PLAN AND PROFILE KEY MAP |
| DS-3 | WELBY BOX CULVERT PLAN AND PROFILE |
| DS-10 | COLORADO AGRICULTURAL DITCH OVERFLOW STRUCTURE PLAN AND PROFILE |
| DS-11 | LOWER CLEAR CREEK CANAL STRUCTURE PLAN |
| | |
| S-1 | COLORADO AGRICULTURAL DITCH SPLITTER STRUCTURE PLAN AND DETAILS |
| S-2 | COLORADO AGRICULTURAL DITCH SPLITTER STRUCTURE DETAILS |
| S-3 | LOWER CLEAR CREEK CANAL GENERAL LAYOUT/TYPICAL SECTION |
| S-4 | LOWER CLEAR CREEK CHANNEL ABUTMENTS 1 AND 2 - PILE PLAN |
| S-5 | LOWER CLEAR CREEK CANAL ABUTMENT AND WINGWALL DETAILS |
| S-6 | LOWER CLEAR CREEK CHANNEL FLUME STRUCTURE DETAILS |
| S-7 | LOWER CLEAR CREEK CANAL SLOPE PAVING DETAILS |
| | |
| GC-1 | CIVIL GENERAL NOTES |
| KM-1 | ROADWAY KEY MAP |
| CP - 3 | ROADWAY PLAN & PROFILE - WELBY ROAD |
| CG - 3 | ROADWAY GRADING - WELBY ROAD |
| PH-03 | PHASING PLAN (PHASE 1) - WELBY ROAD |
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- URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266
-
- LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT
- GENERAL NOTES, SHEET INDEX,
LEGEND AND ABBREVIATIONS
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02/03/2017 |
| DRAWING NO.
G-2 |
- PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

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PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
M-100-1		STANDARD SYMBOLS (3 SHEETS)	1-3
M-100-2		ACRONYMS AND ABBREVIATIONS (4 SHEETS)	4-7
M-203-1	■	APPROACH ROADS (REVISED ON JULY 08, 2013)	8
M-203-2		DITCH TYPES	9
M-203-11		SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	10-12
M-203-12		SUPERELEVATION STREETS (2 SHEETS)	13-14
M-206-1		EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	15-16
M-206-2		EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)	17-18
M-208-1	■	TEMPORARY EROSION CONTROL (11 SHEETS) (REVISED ON MARCH 29, 2016)	19-30
M-210-1		MAILBOX SUPPORTS (2 SHEETS)	31-32
M-214-1		PLANTING DETAILS	33
M-216-1	■	SOIL RETENTION COVERING (2 SHEETS) (NEW ON JULY 16, 2015)	
M-412-1	□	CONCRETE PAVEMENT JOINTS (5 SHEETS) (REVISED ON JULY 24, 2012)	34-38
M-510-1		STRUCTURAL PLATE PIPE H-20 LOADING	39
M-601-1		SINGLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	40-41
M-601-2		DOUBLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	42-43
M-601-3		TRIPLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	44-45
M-601-10		HEADWALL FOR PIPES	46
M-601-11		TYPE "S" SADDLE HEADWALLS FOR PIPE	47
M-601-12		HEADWALLS AND PIPE OUTLET PAVING	48
M-601-20		WINGWALLS FOR PIPE OR BOX CULVERTS	49
M-603-1	□	METAL PIPE (4 SHEETS) (REVISED ON OCTOBER 02, 2014)	50-53
M-603-2	■	REINFORCED CONCRETE PIPE (REVISED ON OCTOBER 02, 2014)	54
M-603-3		PRECAST CONCRETE BOX CULVERT	55
M-603-4	□	CORRUGATED POLYETHYLENE PIPE (AASHTO M294) (REVISED ON OCT. 02, 2014)	56
M-603-5	□	POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304) (REVISED ON OCT. 02, 2014)	57
M-603-6	□	STEEL REINFORCED POLYETHYLENE RIBBED PIPE (AASHTO MP 20) (NEW ON APRIL 30, 2015)	
M-603-10		CONCRETE AND METAL END SECTIONS (2 SHEETS)	58-59
M-604-10		INLET, TYPE C	60
M-604-11		INLET, TYPE D	61
M-604-12		CURB INLET TYPE R (2 SHEETS)	62-63
M-604-13		CONCRETE INLET TYPE 13	64
M-604-20		MANHOLES (3 SHEETS)	65-67
M-604-25		VANE GRATE INLET (5 SHEETS)	68-72
M-605-1		SUBSURFACE DRAINS	73
M-606-1	□	GUARDRAIL TYPE 3 W-BEAM (20 SHEETS) (REVISED ON OCTOBER 27, 2014)	74-92
M-606-1	□	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES (20 SHEETS) (REVISED ON DECEMBER 29, 2015)	
M-606-13	□	GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS) (REVISED ON AUGUST 30, 2013)	93-96
M-606-14		PRECAST TYPE 7 CONCRETE BARRIER (3 SHEETS)	97-99

PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
M-607-1		WIRE FENCES AND GATES (3 SHEETS)	100-102
M-607-2		CHAIN LINK FENCE (3 SHEETS)	103-105
M-607-3		BARRIER FENCE	106
M-607-4	□	DEER FENCE, GATES, AND GAME RAMPS (5 SHEETS) (REVISED ON APRIL 30, 2015)	107-109
M-607-10		PICKET SNOW FENCE	110
M-607-15		ROAD CLOSURE GATE (9 SHEETS)	111-119
M-608-1	□	CURB RAMPS (7 SHEETS) (REVISED ON JUNE 16, 2014)	120-125
M-609-1	■	CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS) (REVISED ON JULY 24, 2012)	126-129
M-611-1		CATTLE GUARD (2 SHEETS)	130-131
M-611-2	□	DEER GUARD (2 SHEETS) (NEW ON APRIL 30, 2015)	
M-613-1		ROADWAY LIGHTING (4 SHEETS)	132-135
M-614-1		RUMBLE STRIPS (3 SHEETS)	136-138
M-614-2		SAND BARREL ARRAYS (2 SHEETS)	139-140
M-615-1		EMBANKMENT PROTECTOR TYPE 3	141
M-615-2		EMBANKMENT PROTECTOR TYPE 5	142
M-616-1		INVERTED SIPHON	143
M-620-1		FIELD LABORATORY CLASS 1	144
M-620-2		FIELD LABORATORY CLASS 2 (2 SHEETS)	145-146
M-620-11		FIELD OFFICE CLASS 1	147
M-620-12		FIELD OFFICE CLASS 2	148
M-629-1		SURVEY MONUMENTS (2 SHEETS)	149-150

COLORADO
DEPARTMENT OF TRANSPORTATION
M&S STANDARDS PLANS LIST
July 04, 2012

Revised on June 24, 2016

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.

PLAN NUMBER	NEW OR REVISED	S STANDARD TITLE	PAGE NUMBER
S-612-1		DELINEATOR INSTALLATIONS (7 SHEETS)	151-157
S-614-1	□	GROUND SIGN PLACEMENT (2 SHEETS) (REVISED ON DECEMBER 12, 2014)	158-159
S-614-2	□	CLASS I SIGNS (REVISED ON JUNE 24, 2016)	160
S-614-3		CLASS II SIGNS	161
S-614-4	□	CLASS III SIGNS (3 SHEETS) (REVISED ON DECEMBER 17, 2014)	162-164
S-614-5		BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS)	165-166
S-614-6	□	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS) (REVISED ON SEPTEMBER 16, 2013)	167-168
S-614-8	□	TUBULAR STEEL SIGN SUPPORT DETAILS (6 SHEETS) (REVISED ON OCTOBER 23, 2014)	169-173
S-614-9	□	PEDESTRIAN PUSH BUTTON POST ASSEMBLY (REVISED ON MAY 24, 2016)	174
S-614-10		MARKER ASSEMBLY INSTALLATIONS	175
S-614-11		MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS	176
S-614-12		STRUCTURE NUMBER INSTALLATION	177
S-614-14		FLASHING BEACON AND SIGN INSTALLATIONS (3 SHEETS)	178-180
S-614-20		TYPICAL POLE MOUNT SIGN INSTALLATIONS	181
S-614-21	□	CONCRETE BARRIER SIGN POST INSTALLATIONS (REVISED ON MAY 24, 2016)	182
S-614-22		TYPICAL MULTI-SIGN INSTALLATIONS	183
S-614-40	□	TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS (5 SHEETS) (REVISED ON JUNE 17, 2016)	184-188
S-614-40A	□	ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS (4 SHEETS) (REVISED ON JUNE 17, 2016)	189-192
S-614-41	□	TEMPORARY SPAN WIRE SIGNALS (REVISED ON APRIL 2, 2015)	193
S-614-42		CABINET FOUNDATION DETAIL (4 SHEETS)	194-197
S-614-43		TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS (10 SHEETS)	198-207
S-614-44	□	PEDESTAL POLE SIGNALS (2 SHEETS) (REVISED ON JUNE 17, 2016)	
S-614-50	□	STATIC SIGN MONOTUBE STRUCTURES (12 SHEETS) (REVISED ON JUNE 17, 2016)	208-219
S-614-60	□	DYNAMIC SIGN MONOTUBE STRUCTURES (14 SHEETS) (REVISED ON JUNE 17, 2016)	220-233
S-627-1	□	PAVEMENT MARKINGS (5 SHEETS) (REVISED ON JUNE 10, 2014)	234-238
S-630-1	□	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (24 SHEETS) (REVISED ON JUNE 23, 2016)	239-258
S-630-2	□	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) AND VERTICAL PANELS (REVISED ON JUNE 23, 2016)	259
S-630-3		FLASHING BEACON (PORTABLE) DETAILS	260
S-630-4		STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS (2 SHEETS)	261-262
S-630-5	□	PORTABLE RUMBLE STRIPS (TEMPORARY) (2 SHEETS) (REVISED ON AUGUST 13, 2015)	263-264
S-630-6		EMERGENCY PULL-OFF AREA (TEMPORARY)	265
S-630-7		ROLLING ROADBLOCKS FOR TRAFFIC CONTROL (3 SHEETS)	266-268



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URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266



LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

M STANDARDS

DATE
02/03/2017
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PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

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UTILITY SCHEDULE										
KEY NOTE NO.	DRAWING NO.	STATION	OVERHEAD / UNDERGROUND	UTILITY	SIZE	CONFLICT	ACTION	OWNER	CONTACT PERSON	PHONE NUMBER
1	DP-2	0+27	OH	ELECTRIC	THREE PHASE PRIMARY	NO	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
1	DP-2	0+27	OH	TELEPHONE	UNKOWN	NO	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
1	DP-2	0+27	OH	TELEVISION	UNKOWN	NO	PROTECT IN PLACE	COMCAST	GLEN NELSON	720-281-8488
2	DP-2, DP-3, DP-4, DP-5	0+27-10+00, 12+82-18+40 RT	OH	ELECTRIC	ONE PHASE PRIMARY, SECONDARY	NO	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
2	DP-2, DP-3, DP-4, DP-5	0+27-10+00, 12+82-18+40 RT	OH	TELEPHONE	UNKOWN	NO	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
2	DP-2, DP-3, DP-4, DP-5	0+27-10+00, 12+82-18+40 RT	OH	TELEVISION	UNKOWN	NO	PROTECT IN PLACE	COMCAST	GLEN NELSON	720-281-8488
3	DP-3, DP-4	10+00 TO 12+82	OH	ELECTRIC	THREE PHASE PRIMARY, SECONDARY	NO	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
3	DP-3, DP-4	10+00 TO 12+82	OH	TELEPHONE	UNKOWN	NO	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
3	DP-3, DP-4	10+00 TO 12+82	OH	TELEVISION	UNKOWN	NO	PROTECT IN PLACE	COMCAST	GLEN NELSON	720-281-8488
4	DP-4	12+48	UG	WATER	6" DIAM	NO	PROTECT IN PLACE	NORTH WASHINGTON STREET WATER AND SANITATION DISTRICT	JIM JAMSEY	303-288-664
5	DP-5, DP-6, DP-7	18+40 TO 23+98	OH	ELECTRIC	THREE PHASE PRIMARY, SECONDARY	NO	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
5	DP-5, DP-6, DP-7	18+40 TO 23+98	OH	TELEPHONE	UNKOWN	NO	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
5	DP-5, DP-6, DP-7	18+40 TO 23+98	OH	TELEVISION	UNKOWN	NO	PROTECT IN PLACE	COMCAST	GLEN NELSON	720-281-8488
6	DP-7, DS-2	25+21	UG	TELEPHONE	UNKOWN	YES	RELOCATE	CENTURY LINK	MARK IVERSON	303-458-2048
7	DP-7, DS-2	25+78	UG	SANITARY	8" DIAM	YES	RELOCATE AS SHOWN	NORTH WASHINGTON STREET WATER AND SANITATION DISTRICT	JIM JAMSEY	303-288-6664
8	DP-7, DS-2	25+62	UG	WATER	8" DIAM	YES	RELOCATE	NORTH WASHINGTON STREET WATER AND SANITATION DISTRICT	JIM JAMSEY	303-288-6664
9	DP-7, DS-2	26+13	UG	TELEPHONE	6 - 2" DIAM FIBER OPTICS	YES	PROTECT IN PLACE	AT&T	TOM JAKSE	720-289-5471
10	DP-7	26+33 TO 27+86, RT	OH	ELECTRIC	THREE PHASE PRIMARY	NO	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
11	DP-7	27+77	OH	ELECTRIC	THREE PHASE PRIMARY, SECONDARY	NO - RTD ROW	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
11	DP-7	27+77	OH	TELEPHONE	UNKOWN	NO - RTD ROW	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
11	DP-7	27+77	OH	TELEVISION	UNKOWN	NO - RTD ROW	PROTECT IN PLACE	COMCAST	GLEN NELSON	720-281-8488
12	DP-7, DP-8, DP-9, DP-10, DP-11 DS-3 DS-4, DS-10	27+86 TO 43+13, RT	OH	ELECTRIC	THREE PHASE PRIMARY	YES	RELOCATE	XCEL	BRANDA SLOAN	303-628-2276
12	DP-7, DP-8, DP-9, DP-10, DP-11 DS-3 DS-4, DS-10	27+86 TO 43+13, RT	OH	TELEVISION	UNKOWN	YES	RELOCATE	COMCAST	GLEN NELSON	720-281-8488
13	DP-7	27+86 TO 29+93, RT	UG	TELEVISION	2" DIAM CONDUIT	NO - RTD ROW	PROTECT IN PLACE	COMCAST	GLEN NELSON	720-281-8488
14	DP-7	28+16	UG	TELEPHONE	UNKOWN	NO - RTD ROW	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
15	DP-7, DS-3, DS-10	28+30 TO 30+00, RT	UG	TELEPHONE	UNKOWN	NO	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
16	DP-7	28+67	UG	FIBER OPTICS	8 - 1.25" DIAM HDPE	NO - RTD ROW	PROTECT IN PLACE	ABOVENET	DANIEL FORD	480-252-6203
17	DP-7	28+86	UG	TELEPHONE	UNKOWN	NO - RTD ROW	PROTECT IN PLACE	CENTURY LINK	MARK IVERSON	303-458-2048
18	DP-7, DS-3, DS-10	27+86 TO 29+93, RT	UG	TELEVISION	2" DIAM CONDUIT	YES	RELOCATE	COMCAST	GLEN NELSON	720-281-8488
19	DP-7, DS-3, DS-10	29+60	UG	WATER	8" DIAM	YES	RELOCATE	NORTH WASHINGTON STREET WATER AND SANITATION DISTRICT	JIM JAMSEY	303-288-6664
20	DP-7	29+71	UG	GAS	6" DIAM	YES	RELOCATE	XCEL	BRANDA SLOAN	303-628-2276
21	DP-7, DP-8, DP-9, DP-10, DP011, DS-3 DS-4, DS-10	29+89 TO 48+14, LT	UG	SANITARY	8" DIAM	NO	PROTECT IN PLACE	CITY OF THORNTON	PETE BREZALL	720-977-6251
22	DP-7, DP-8, DP-9, DP-10, DP-11, DS-3 DS-4, DS-10	29+89 TO 48+14, LT	UG	WATER	12" DIAM	NO	PROTECT IN PLACE	CITY OF THORNTON	PETE BREZALL	720-977-6251
23	DP-8	30+62 RT	UG	ELECTRIC	SINGLE PHASE PRIMARY	YES	RELOCATE	XCEL	BRANDA SLOAN	303-628-2276
24	DP-8	31+18	UG	SANITARY	8" DIAM	YES	ENCASE EXISTING IN AN AERIAL CROSSING	CITY OF THORNTON	PETE BREZALL	720-977-6251
25	DP-8	31+97	UG	WATER	UNKOWN	YES	RELOCATE	CITY OF THORNTON	PETE BREZALL	720-977-6251
26	DP-9	35+33	UG	WATER	UNKOWN	YES	RELOCATE	CITY OF THORNTON	PETE BREZALL	720-977-6251
27	DP-9	36+41	UG	WATER	UNKOWN	YES	RELOCATE & REMOVE MANHOLE	CITY OF THORNTON	PETE BREZALL	720-977-6251
28	DP-9	36+59	UG	ELECTRIC	THREE PHASE PRIMARY	YES	RELOCATE	XCEL	BRANDA SLOAN	303-628-2276
29	DP-10, DS-4	42+91	UG	SANITARY	8" DIAM	YES	ENCASE EXISTING IN AN AERIAL CROSSING	CITY OF THORNTON	PETE BREZALL	720-977-6251
30	DP-10, DS-4	43+55	UG	TELEPHONE	UNKOWN	YES	RELOCATE	CENTURY LINK	MARK IVERSON	303-458-2048
31	DP-10, DP-11, DS-4	43+44 TO 48+14, LT	UG	GAS	16" DIAM	YES	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
32	DP-10	43+66	UG	TELEPHONE	UNKOWN	YES	RELOCATE	CENTURY LINK	MARK IVERSON	303-458-2048
33	DP-11	46+81	UG	WATER	UNKOWN	YES	RELOCATE	CITY OF THORNTON	PETE BREZALL	720-977-6251
34	DP-11	46+97	UG	ELECTRIC	3 - SINGLE PHASE PRIMARY	NO	PROTECT IN PLACE	XCEL	BRANDA SLOAN	303-628-2276
35	DP-8	30+01	UG	SANITARY	4" FORCE MAIN	YES	RELOCATE	NORTH WASHINGTON STREET WATER AND SANITATION DISTRICT	JIM JAMSEY	303-288-6664

- IN PHASE 1

- IN PHASE 2 OR 3



DESIGNED: D.C. DATE: 2/10/17
DRAWN: S.L.H. DATE: 2/10/17
CHECKED: C.H. DATE: 2/10/17
REVISED: DATE:
REVISED: DATE:
REVISED: DATE:



URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266



LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT










UTILITY CONTACT
INFORMATION

DATE
02/03/2017

DRAWING NO.
U-1

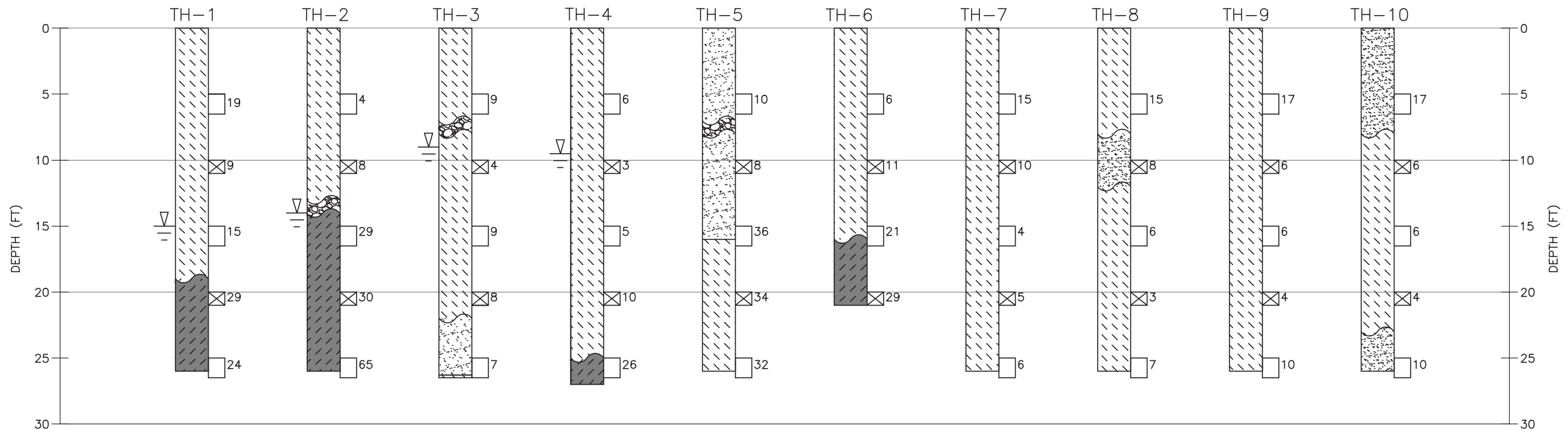
PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

LEGEND

- CLAY, SOFT TO VERY STIFF, SLIGHTLY SANDY TO VERY SANDY, MEDIUM TO HIGH PLASTICITY, DRY TO WET, BROWN (CH, CL)
- GRAVEL (SEE NOTE 1)
- SANDY, CLAYEY, SILTY, VERY LOOSE TO MEDIUM DENSE, FINE TO MEDIUM, DRY TO WET, BROWN TO TAN, (SC)
- CLAYSTONE, VERY STIFF TO HARD, MODERATELY TO HIGHLY WEATHERED, DARK GRAY TO BROWN (BEDROCK)
- TH-1
INDICATES TEST HOLE LOCATION AND NUMBER
- 19
BLOW COUNT (BLOWS/ft) AND MODIFIED CALIFORNIA SAMPLE
- 19
BLOW COUNT (BLOWS/ft) AND SPT SAMPLE
- APPROXIMATE GROUNDWATER LEVEL MEASURED AT THE TIME OF DRILLING
- INDICATES GRADUAL CHANGE IN MATERIALS, EXACT STRATA CHANGE NOT LOCATED

NOTES:

1. GRAVEL LAYERS ENCOUNTERED DURING DRILLING WERE IDENTIFIED FROM AUGER CUTTINGS AT THE SURFACE OF THE TEST HOLES. A DETAILED DESCRIPTION OF THE MATERIAL IS NOT AVAILABLE.
2. TEST HOLES TH-1, TH-3, AND TH-4 WERE DRILLED ON 06/10/10. TEST HOLES TH-2 AND TH-5 THROUGH TH-10 WERE DRILLED ON 06/30/10.
3. SUMMARY LOGS ARE SUBJECT TO LIMITATIONS, EXPLANATIONS, AND CONCLUSIONS OF STANDARD PRACTICES.
4. THESE TEST HOLES AND TEST PIT LOGS SUMMARIZE FINDINGS USED IN FORMULATING THE DESIGN THAT IS CURRENTLY BEING DEVELOPED. THE EXPLORATIONS WERE NOT MADE TO DEFINE CONDITIONS FOR CONSTRUCTION NOR IS THE INFORMATION PRESENTED HEREIN FOR THAT PURPOSE. ADDITIONAL BORING LOGS BY YEH WILL PROVIDE CONSTRUCTION INFORMATION.



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REVISED: DATE:
REVISED: DATE:



URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266



LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

PRELIMINARY BORING LOGS

DATE
02/03/2017
DRAWING NO.
B-1

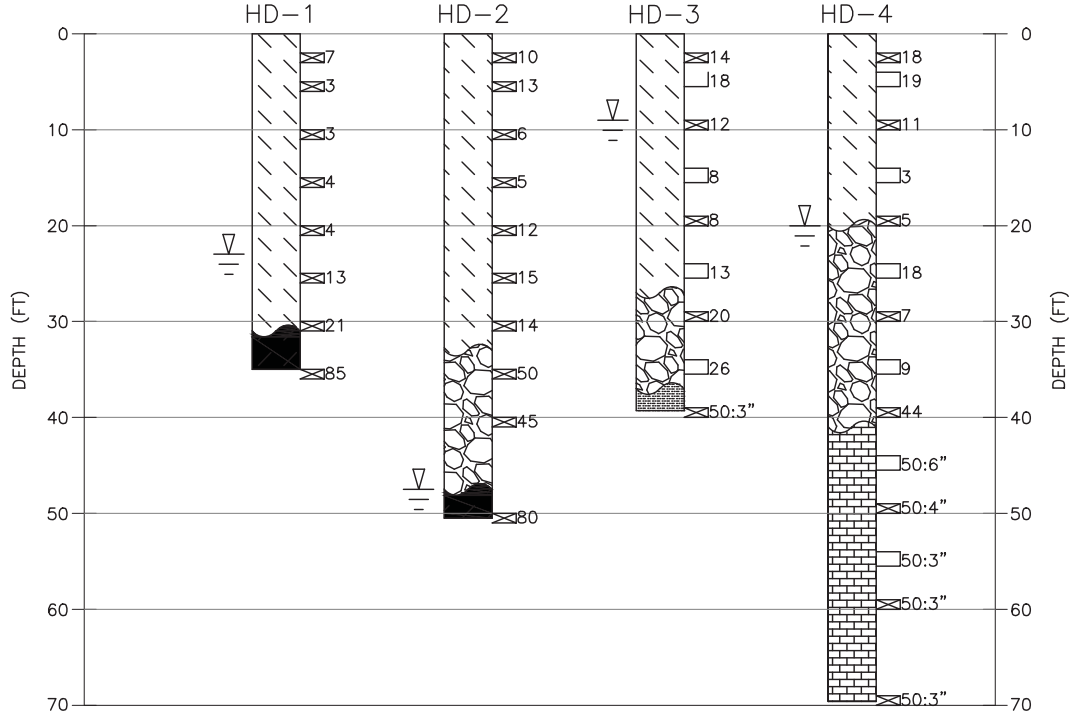
PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

LEGEND

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NOTES:

1. GRAVEL LAYERS ENCOUNTERED DURING DRILLING WERE IDENTIFIED FROM AUGER CUTTINGS AT THE SURFACE OF THE TEST HOLES. A DETAILED DESCRIPTION OF THE MATERIAL IS NOT AVAILABLE.
2. SUMMARY LOGS ARE SUBJECT TO LIMITATIONS, EXPLANATIONS, AND CONCLUSIONS OF STANDARD PRACTICES.
3. THESE TEST HOLES AND TEST PIT LOGS SUMMARIZE FINDINGS USED IN FORMULATING THE DESIGN THAT IS CURRENTLY BEING DEVELOPED. THE EXPLORATIONS WERE NOT MADE TO DEFINE CONDITIONS FOR CONSTRUCTION NOR IS THE INFORMATION PRESENTED HEREIN FOR THAT PURPOSE. ADDITIONAL BORING LOGS BY YEH WILL PROVIDE CONSTRUCTION INFORMATION.

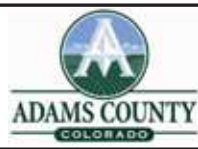


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DRAWN: S.L.H. DATE: 2/10/17
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URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266



LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

FINAL BORING LOGS

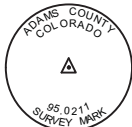
DATE
02/03/2017
DRAWING NO.
B-2

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

MONUMENT LEGEND



POINT # 109
FOUND NO. 6 REBAR WITH
3 1/4" DIAMETER BRASS
CAP STAMPED AS SHOWN



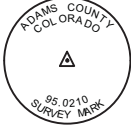
POINT # 211
FOUND 3 1/4" DIAMETER
ALUMINUM ROD AND CAP
STAMPED AS SHOWN



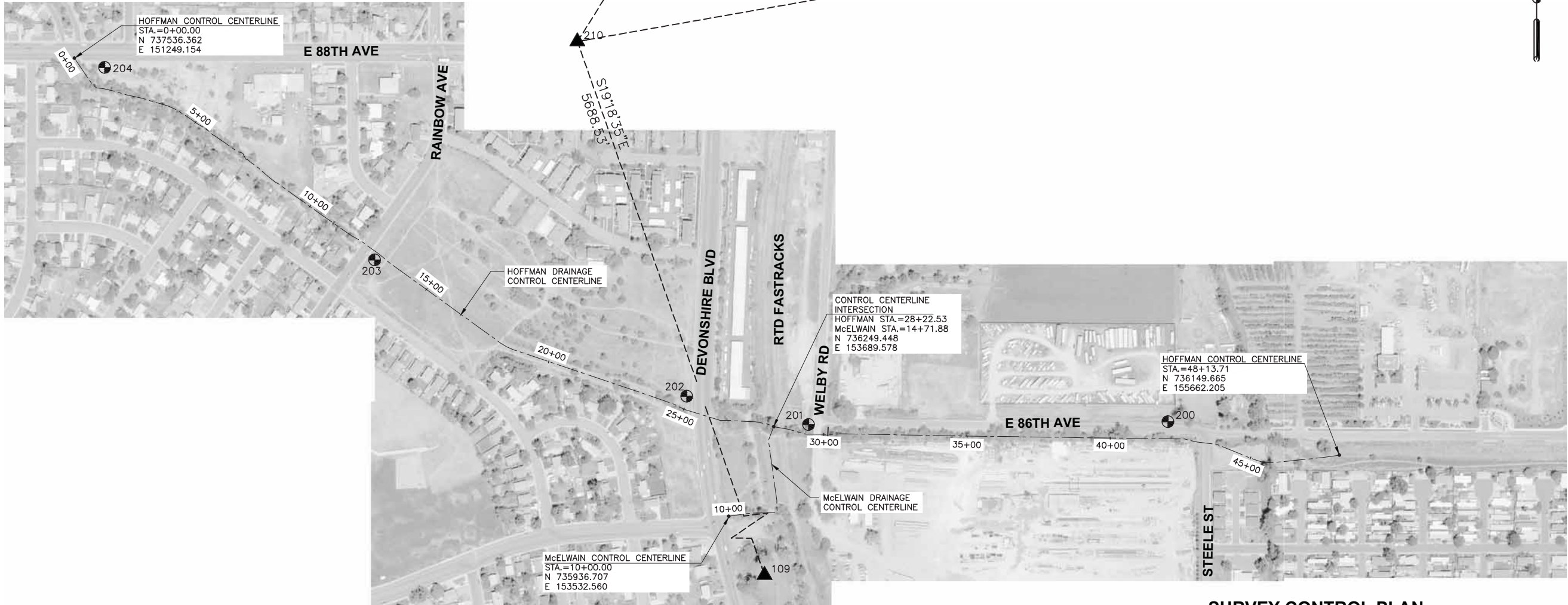
POINT # 110
FOUND NO. 6 REBAR WITH
3 1/4" DIAMETER BRASS
CAP STAMPED AS SHOWN



POINT #s 200-204
SET 36" LONG FINNED ROD
WITH A 1 1/2" DIAMETER
ALUMINUM CAP



POINT # 210
FOUND 3 1/4" DIAMETER
ALUMINUM ROD AND CAP
STAMPED AS SHOWN



NOTES:

1. BASIS OF BEARINGS: BEARINGS USED IN THE CALCULATION ARE BASED ON A GRID BEARING OF N 80°01'07" E BETWEEN THE ADAMS COUNTY CONTROL POINT NUMBERS 0210 AND 0211 AS SHOWN HEREON.
2. BASIS OF ELEVATION: PROJECT ELEVATIONS ARE BASED ON POINT NO. 109 OF THE RTD FASTRACKS GOLD LINE/NORTH METRO CORRIDORS PRIMARY CONTROL NETWORK ESTABLISHED BY JACOBS IN SEPTEMBER OF 2007. THE NAVD 88 ELEVATION OF POINT 109 IS 5120.56 FEET.
3. COORDINATE DATUM: COORDINATES ON THIS PROJECT ARE FOR THE EXCLUSIVE USE OF ADAMS COUNTY AND URBAN DRAINAGE FLOOD CONTROL DISTRICT AND ARE CONSIDERED PROJECT COORDINATES ONLY. THE PROJECT COORDINATES ARE BASED ON THE ADAMS COUNTY CONTROL NETWORK WHICH IS MODIFIED COLORADO STATE PLANE CENTRAL ZONE NAD '83, U.S. SURVEY FEET. THE PUBLISHED COMBINED FACTOR FOR THE ADAMS COUNTY CONTROL NETWORK IS 0.99979199. THE MODIFIED COORDINATES EQUALS STATE PLANE VALUES / COMBINED FACTOR THEN SUBTRACT 1,000000 FROM THE NORTHING AND 3,000,000 FROM THE EASTING.
4. THIS SURVEY CONTROL DIAGRAM IS PREPARED FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT A BOUNDARY SURVEY, LAND SURVEY PLAT, OR RIGHT OF WAY PLAT. NO EVALUATION HAS BEEN DONE TO DETERMINE THE INTEGRITY OF THE POSITIONS OF THE FOUND MONUMENT, TITLE POLICY, TITLE COMMITMENT AND TITLE RESEARCH WERE NOT A PART OF THIS SURVEY, THEREFORE EASEMENTS, RIGHTS AND RESTRICTIONS OF RECORD WERE NOT RESEARCHED AND ARE NOT SHOWN ON THIS DIAGRAM.
5. NOTICE: ACCORDING TO COLORADO 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 STATEMENT SHOWN HEREON.
6. NO GUARANTEE AS TO THE ACCURACY OF THE INFORMATION CONTAINED ON THE ATTACHED DRAWING IS EITHER STATED OR IMPLIED UNLESS THIS COPY BEARS AN ORIGINAL SIGNATURE OF THE PROFESSIONAL LAND SURVEYOR HEREON NAMED.
7. THIS SURVEY CONTROL DIAGRAM REPRESENTS THE HORIZONTAL AND VERTICAL CONTROL OF THE PROJECT ESTABLISHED BY URS DURING A FIELD SURVEY CONDUCTED IN MARCH OF 2010. IT IS POSSIBLE THAT SOME OF THE SURVEY CONTROL MONUMENTS LISTED HAVE BEEN DISTURBED OR OBLITERATED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTENCE AND STABILITY OF THE CONTROL MONUMENTS.
8. REFERENCE DRAWINGS DP-2 THROUGH DP-11 FOR DETAILED CONTROL CENTERLINE COORDINATES FOR THE HOFFMAN DRAINAGE AND DP-12 FOR DETAILED CONTROL CENTERLINE COORDINATES FOR McELWAIN DRAINAGE.

SURVEY CONTROL PLAN



POINT #	NORTHING	EASTING	ELEVATION	LATITUDE	LONGITUDE	HEIGHT	SPC NORTHING	SPC EASTING
109	732225.379	154885.725	5120.56	39°50'29.40068"N	104°57'02.79359"W	5120.53	1731865.059	3154229.477
110	742819.917	156279.828	5186.48	39°52'13.99239"N	104°56'44.09678"W	5186.27	1742457.394	3155623.290
200	736266.935	155064.631	5132.53	39°51'09.32122"N	104°57'00.18698"W	5132.47	1735905.775	3154408.346
201	736256.531	153810.937	5153.84	39°51'09.29311"N	104°57'16.25883"W	5153.84	1735895.373	3153154.912
202	736355.313	153386.510	5163.18	39°51'10.29424"N	104°57'21.69195"W	5163.18	1735994.134	3152730.574
203	736831.463	152297.812	5176.10	39°51'15.06284"N	104°57'35.61169"W	5176.13	1736470.185	3151642.102
204	737503.752	151355.562	5195.97	39°51'21.76033"N	104°57'47.63970"W	5196.05	1737142.334	3150700.049
210	737593.905	153004.683	5189.92	39°51'22.55425"N	104°57'26.49176"W	5189.92	1737232.468	3152348.826
211	738448.733	157861.832	5096.57	39°51'30.70884"N	104°56'24.15743"W	5038.83	1738087.119	3157204.965



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DESIGNED: D.C. DATE: 2/10/17
DRAWN: S.L.H. DATE: 2/10/17
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URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266

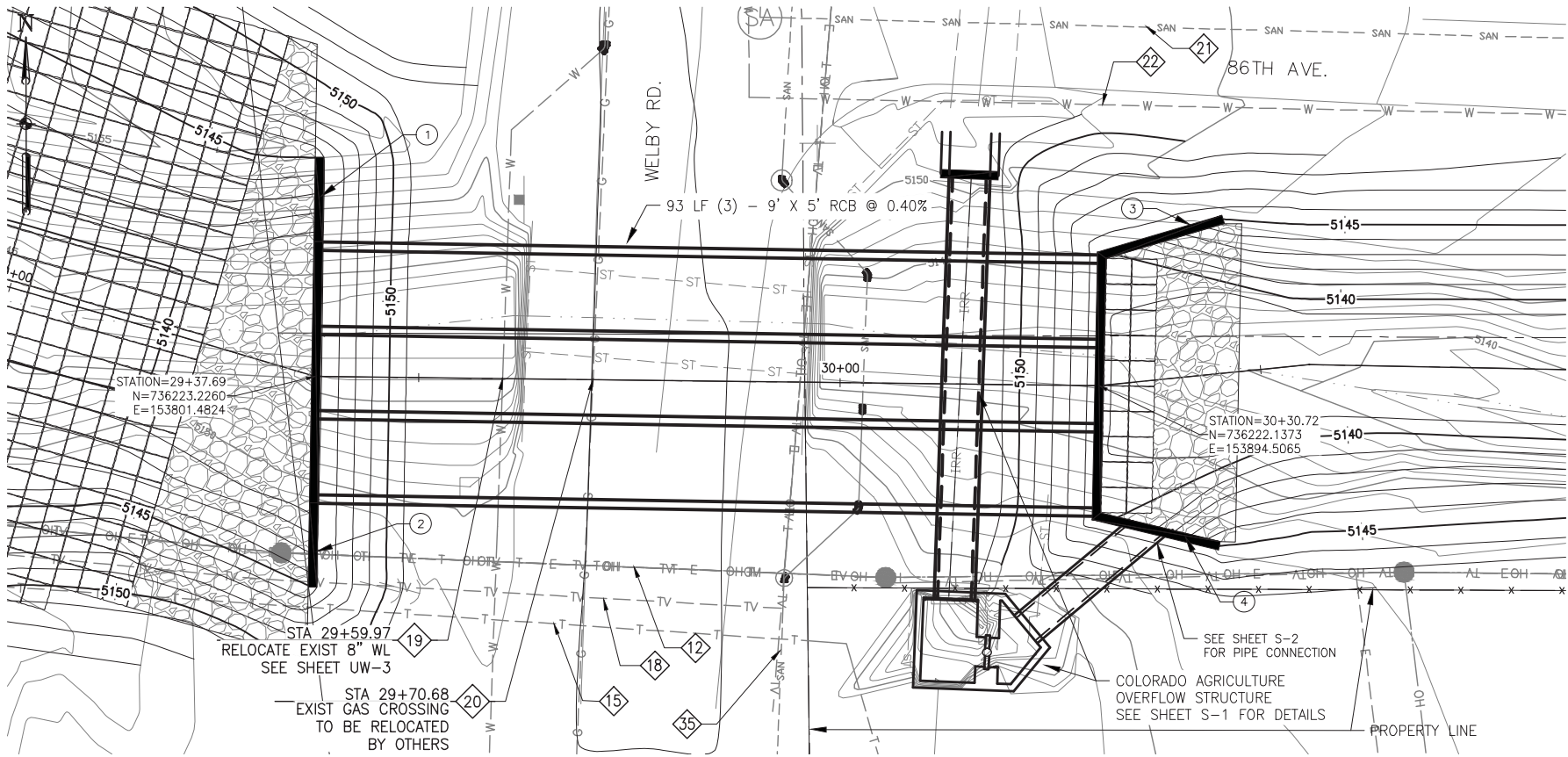


LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

SURVEY CONTROL PLAN

DATE
02/03/2017
DRAWING NO.
V-5

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS



GENERAL NOTES

- 1. LOCATION OF UTILITIES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- 2. REMOVE EXISTING 10' X 7' CONCRETE BOX CULVERT.
- 3. BOX CULVERT DESIGN PER CURRENT CDOT M-603-3
- 4. BEDDING PER CDOT M-206-1
- 5. TOE WALL ON ALL WINGWALLS PER CDOT M-601-20.
- 6. WETLAND IMPACTS PER UASCE PERMIT NWO-2016-01763-DEN

SUBGRADE TREATMENT

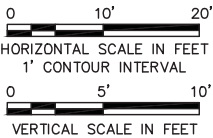
- 1. SUBGRADE TREATMENT IS PER YEH AND ASSOCIATES PROJECT NO. 216-444 GEOTECHNICAL REPORT DATED DECEMBER 2, 2016.
- 2. THE CBCS AND SHALLOW FOUNDATIONS SHOULD BE PROTECTED FROM FROST ACTION. THE MINIMUM EMBEDMENT DEPTH BELOW ADJACENT EXTERIOR GRADE SHOULD BE AT LEAST 3 FEET.
- 3. FOUNDATION SOILS IN THE TREATMENT AREA BENEATH CBCS SHOULD BE FREE OF ALL ORGANICS, TOPSOIL, DEBRIS, AND LOOSE, SOFT, OR WET MATERIAL.
- 4. ANY PONDING WATER SHOULD BE DRAINED FROM THE AREA PRIOR TO CONSTRUCTION BEGINNING, TO ALLOW CONSTRUCTION IN A DRY ENVIRONMENT.
- 5. IF RUBBLE, CONCRETE, OR ASPHALT DEBRIS LARGER THAN 3 INCHES IN EQUIVALENT DIAMETER ARE ENCOUNTERED, THEY SHOULD BE REMOVED.
- 6. THE SUBGRADE TREATMENT MAY CONSIST OF:
 - A. AT A MINIMUM, EXCAVATING TO A DEPTH OF 12 INCHES AND SCARIFYING THE EXPOSED MATERIALS TO A DEPTH OF 6 INCHES. THE EXCAVATED AND SCARIFIED MATERIAL SHALL BE MOISTURE CONDITIONED AND COMPACTED. THE SCARIFIED MATERIAL AND THE REPLACED MATERIAL SHOULD BE COMPACTED TO 95 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY (AASHTO T99) AT A MOISTURE CONTENT WITHIN 2 PERCENT OF OPTIMUM.
 - B. A 12 INCH, OR THICKER, STABILIZING LAYER OF CDOT CLASS 1 STRUCTURAL BACKFILL OR SIMILAR GRANULAR MATERIAL SHOULD BE PLACED BENEATH THE CBC, TO PROVIDE A STABILIZING LAYER OVER THE WEAKER FOUNDATION SOILS IF NECESSARY. THE MATERIALS SHOULD BE COMPACTED TO 95 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY (AASHTO T99) AT A MOISTURE CONTENT WITHIN 2 PERCENT OF OPTIMUM.
 - C. A CDOT CLASS A SEPARATOR GEOTEXTILE LAYER SHOULD BE USED NEAR THE BOTTOM OF THE CDOT CLASS 1 STRUCTURE BACKFILL TO PROVIDE ADDITIONAL STABILIZING SUPPORT. IF ONE LAYER IS NOT ENOUGH, MULTIPLE LAYERS ARE RECOMMENDED TO BE USED, SPACED AT 4 INCHES AS NECESSARY.
 - D. A THICKER STABILIZING LAYER OF CDOT CLASS 1 STRUCTURAL BACKFILL OR SIMILAR GRANULAR MATERIAL CAN BE USED INSTEAD OF THE GEOSYNTHETIC REINFORCEMENT, IF IT IS MORE COST EFFECTIVE TO CONSTRUCT.
 - E. THE CONTRACTOR MAY ELECT TO USE OTHER METHODS TO PROVIDE SUBGRADE STABILIZATION, DEPENDING ON THE MEANS AND METHODS CHOSEN, PROVIDED THE SUBGRADE SOILS PASS THE PROOF ROLL SATISFACTORILY. (SEE NOTE 8)
- 7. THE SUBGRADE TREATMENT ZONE SHOULD EXTEND AT LEAST ONE (1) FOOT FROM THE EDGES OF THE FOUNDATION OR CBC.
- 8. THE SUBGRADE SOILS AT THE SURFACE OF THE TREATED ZONE SHOULD BE VISUALLY INSPECTED AND PROOF ROLLED. AREAS WHICH DEFORM NON-UNIFORMLY UNDER THE PROOF SHOULD BE REMOVED, REPLACED, AND RECOMPACTED PRIOR TO CBC CONSTRUCTION.

WINGWALL LAYOUT TABLE

WINGWALL ID	e	k (FT.)	m (FT.)	L (FT.)
①	0'	6.5	6.5	10
②	0'	6.5	6.5	10
③	75'	6.5	6.5	15
④	75'	6.5	6.5	15

CULVERT HYDRAULIC CALCULATIONS

FLOW (Q)	1252 CFS
VELOCITY (V)	9.27 FT/SEC



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DESIGNED: D.C. DATE: 2/10/17
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URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266

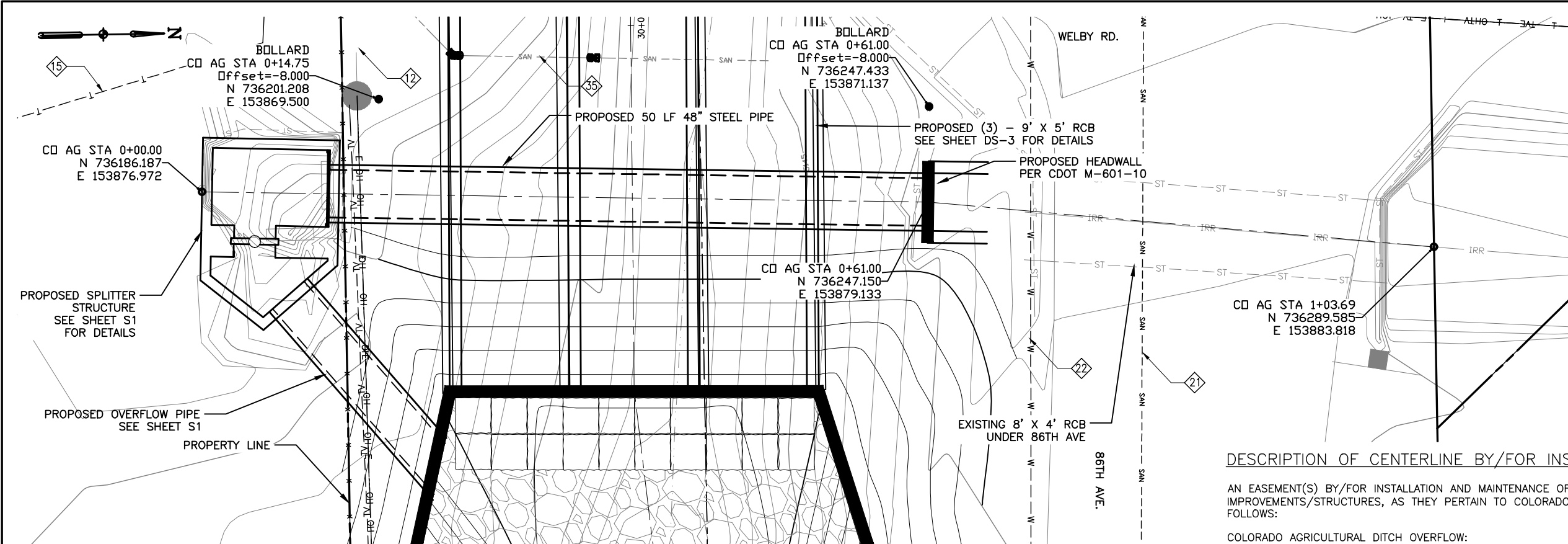


LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS PROJECT

WELBY BOX CULVERT PLAN AND PROFILE

DATE
02/03/2017
DRAWING NO.
DS-3

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS



DESCRIPTION OF CENTERLINE BY/FOR INSTALLATION OF DRAINAGE

AN EASEMENT(S) BY/FOR INSTALLATION AND MAINTENANCE OF SURFACE AND UNDERGROUND DRAINAGE IMPROVEMENTS/STRUCTURES, AS THEY PERTAIN TO COLORADO AGRICULTURAL DITCH OVERFLOW, AS FOLLOWS:

COLORADO AGRICULTURAL DITCH OVERFLOW:

BEING THAT/THOSE PORTIONS OF THE SOUTHEAST QUARTER AND THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 25, TOWNSHIP 2 SOUTH, RANGE 68 WEST OF THE 6th P.M., COUNTY OF ADAMS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

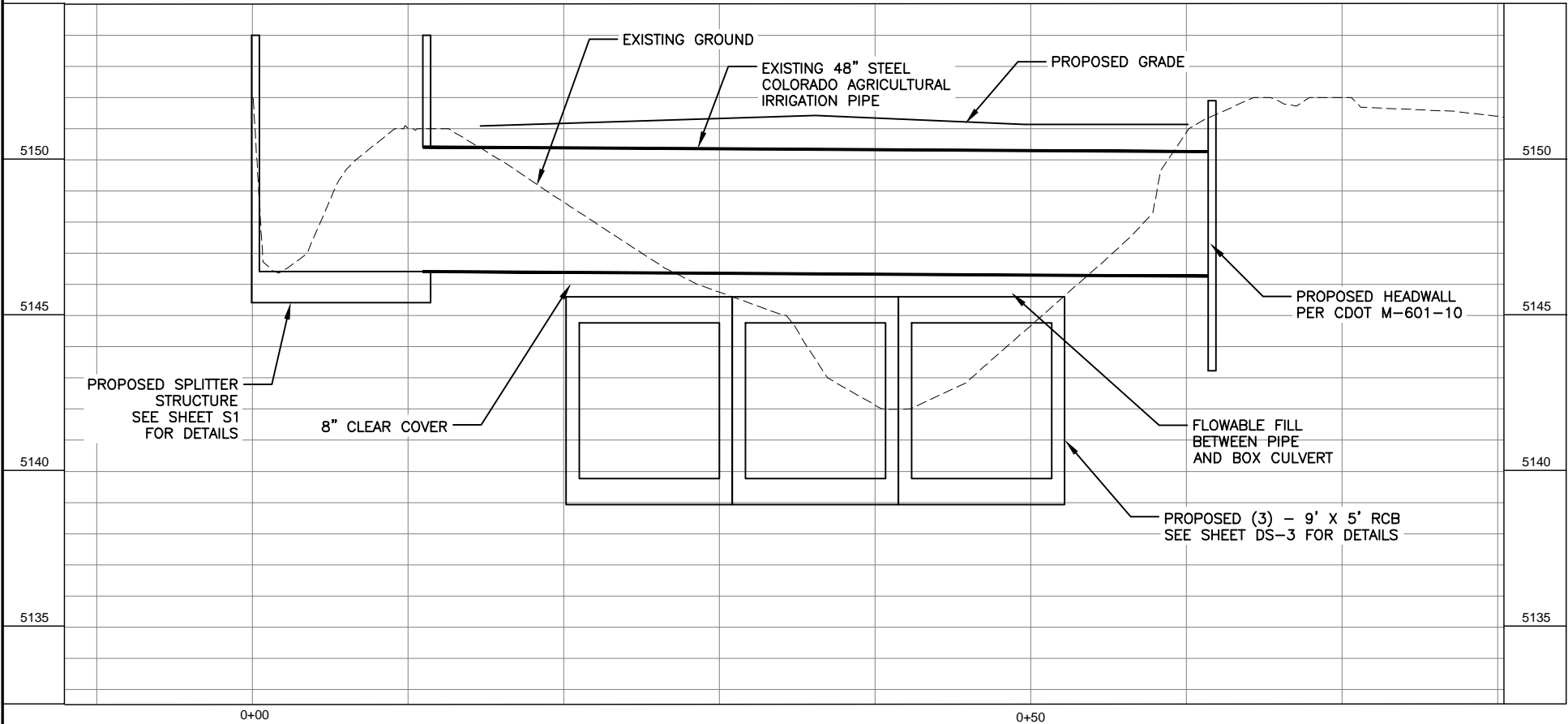
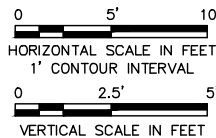
CONSIDERING THE SOUTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 25 AS BEARING AN ASSUMED SOUTH 89°39'23" EAST, AND WITH ALL BEARINGS CONTAINED HEREIN LYING RELATIVE THERETO:

COMMENCING FROM THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 25; THENCE SOUTH 14°44'54" EAST, A DISTANCE OF 61.85 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 02°01'49" EAST, A DISTANCE OF 61.00 FEET; THENCE NORTH 06°18'01" EAST, A DISTANCE OF 42.69 FEET TO THE POINT OF TERMINUS.

GENERAL NOTES

- IMPROVEMENTS SHOWN FOR THE COLORADO AGRICULTURE DITCH STRUCTURE ARE ONLY REQUIRED IF EXISTING STRUCTURE CANNOT BE MAINTAINED DURING CONSTRUCTION OF THE WELBY ROAD BOX CULVERT.
- IF NEEDED, REMOVE EXISTING 48" STEEL PIPE AND HEADWALLS.
- LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- REFERENCE SHEET V-5 FOR PT 201 CONTROL POINT INFORMATION

	NORTHING	EASTING	DISTANCE TO PT 201	BEARING TO PT 201
PT 201	736256.531	153810.937	-	-
SWSENW-25	736245.902	153861.252	51.43'	N78°04'20"W
CD AG STA 0+00	736186.187	153876.972	96.48'	N43°11'26"W
CD AG STA 1+03.69	736289.585	153883.818	80.03'	S65°36'15"W



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DESIGNED: D.C. DATE: 2/10/17
DRAWN: S.L.H. DATE: 2/10/17
CHECKED: C.H. DATE: 2/10/17
REVISED: DATE:
REVISED: DATE:
REVISED: DATE:



URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266



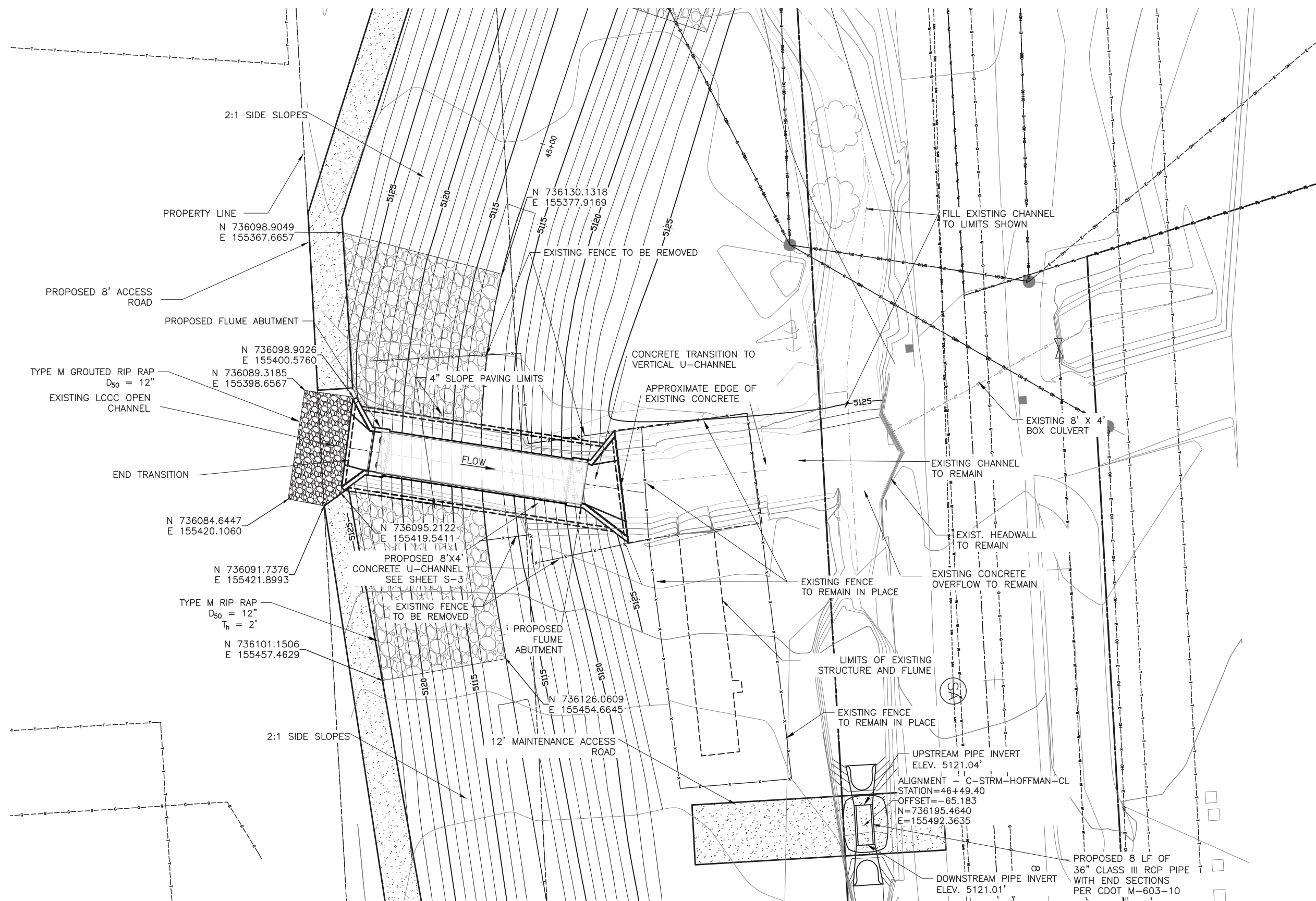
LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

COLORADO AGRICULTURAL DITCH
OVERFLOW STRUCTURE
PLAN AND PROFILE

DATE
02/03/2017
DRAWING NO.
DS-10

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

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2017/02/10 5:22 PM By: Clark, Derek



OPEN CHANNEL PLAN - LOWER CLEAR CREEK CANAL

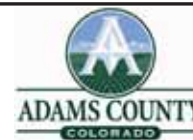
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SCALE IN FEET



DESIGNED: D.C. DATE: 2/10/17
DRAWN: S.L.H. DATE: 2/10/17
CHECKED: C.H. DATE: 2/10/17
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URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266

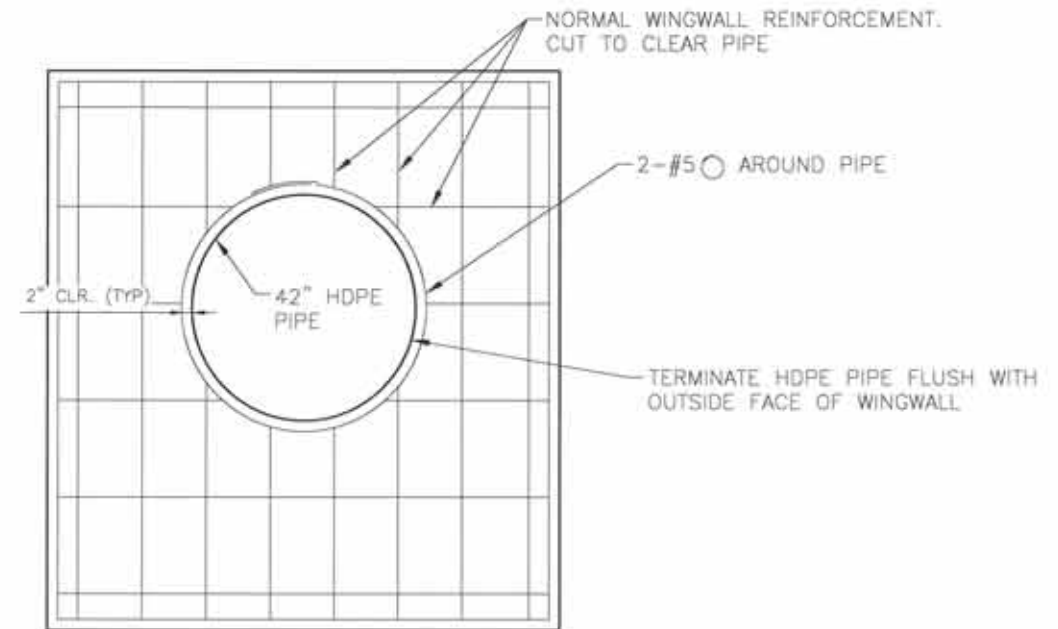


LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

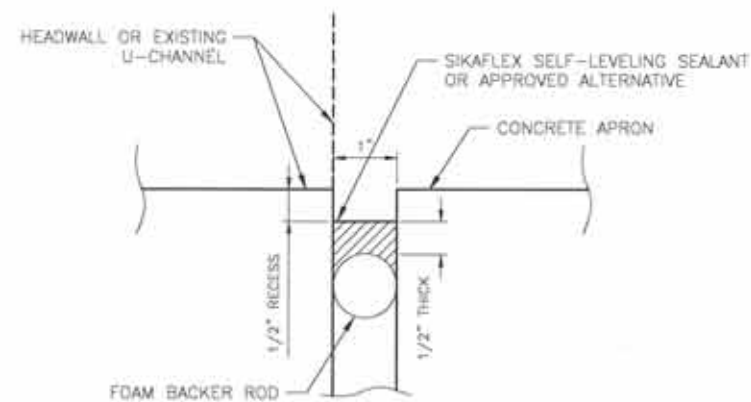
LOWER CLEAR CREEK CANAL
STRUCTURE PLAN

DATE
02/03/2017
DRAWING NO.
DS-11

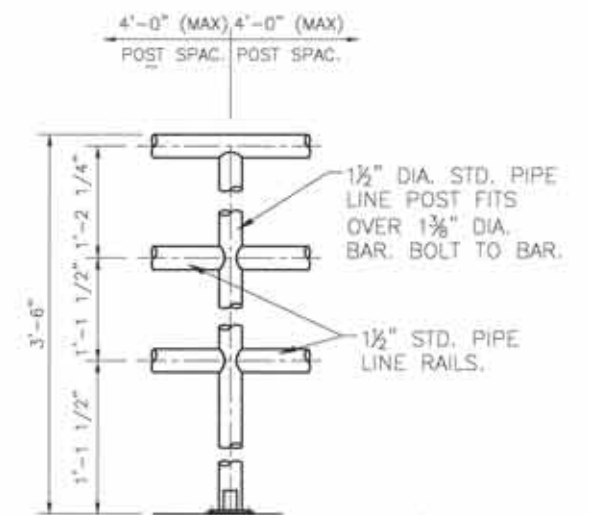
PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS



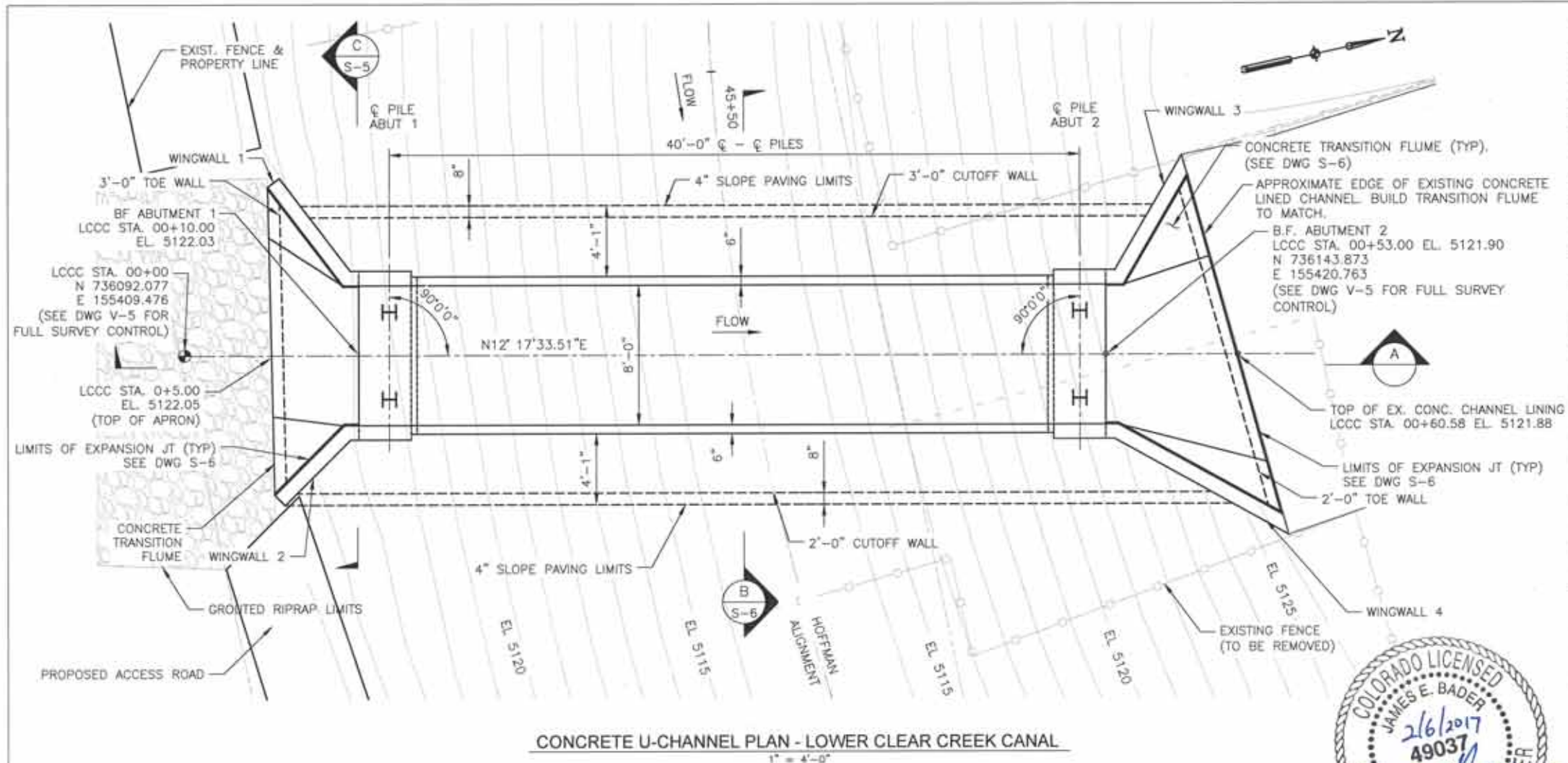
(C) WALL SECTION THRU 42" PIPE
1"=3'-0"



EXPANSION JOINT DETAIL



HANDRAIL ELEVATION
NTS



GENERAL NOTES:

SPECIFICATIONS:
DESIGN IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 7TH ED. 2016
TECHNICAL SPECIFICATIONS IN ACCORDANCE WITH COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

DESIGN METHOD:
LOAD AND RESISTANCE FACTOR DESIGN

GEOTECHNICAL:
SEE FINAL GEOTECHNICAL ENGINEERING REPORT TITLED "LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS" FOR FOUNDATION DESIGN AND INSTALLATION PARAMETERS, LABORATORY DATA AND SOIL CHARACTERISTICS.

WORKMANSHIP:
ALL WORK REQUIREMENTS SHOWN ON THESE DRAWINGS SHALL BE ACCOMPLISHED AS SPECIFIED IN THE PROJECT SPECIFICATIONS WITH ASSOCIATED SPECIAL PROVISIONS.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF EXISTING 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 1-800-922-1987 AT LEAST 3 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

STATIONS, EXISTING 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.

ALL PLAN DIMENSIONS ARE TRUE HORIZONTAL. THE CONTRACTOR AND/OR FABRICATOR IS RESPONSIBLE FOR INCORPORATING OTHER EFFECTS THAT MAY IMPACT THE FINAL DIMENSIONS AND/OR DETAILING.

STRUCTURAL STEEL PILING:
PILING SHALL CONFORM TO ASTM A709 GRADE 50.

CAST-IN-PLACE CONCRETE:
ALL STRUCTURAL CONCRETE SHALL BE CLASS D ($f'_c = 4500$ PSI)
PROVIDE STRUCTURAL CONCRETE WITH CEMENTITIOUS MATERIALS MEETING THE SULFATE RESISTANCE REQUIREMENTS OF CLASS 2 AS DESCRIBED IN THE PROJECT SPECIFICATIONS WITH ASSOCIATED SPECIAL PROVISIONS.

BEFORE CONCRETE SURFACES AT ABUTMENTS AND PIERS ARE BACKFILLED WITH SOIL, DAMPPROOFING SHALL BE PROVIDED. DAMPPROOFING SHALL BE AN ASPHALTIC PRIMER MEETING THE REQUIREMENTS OF ASTM D41 OR A COAL TAR PRIMER (FOR USE WITH COAL-TAR PITCH) MEETING THE REQUIREMENTS OF ASTM D43.

CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.

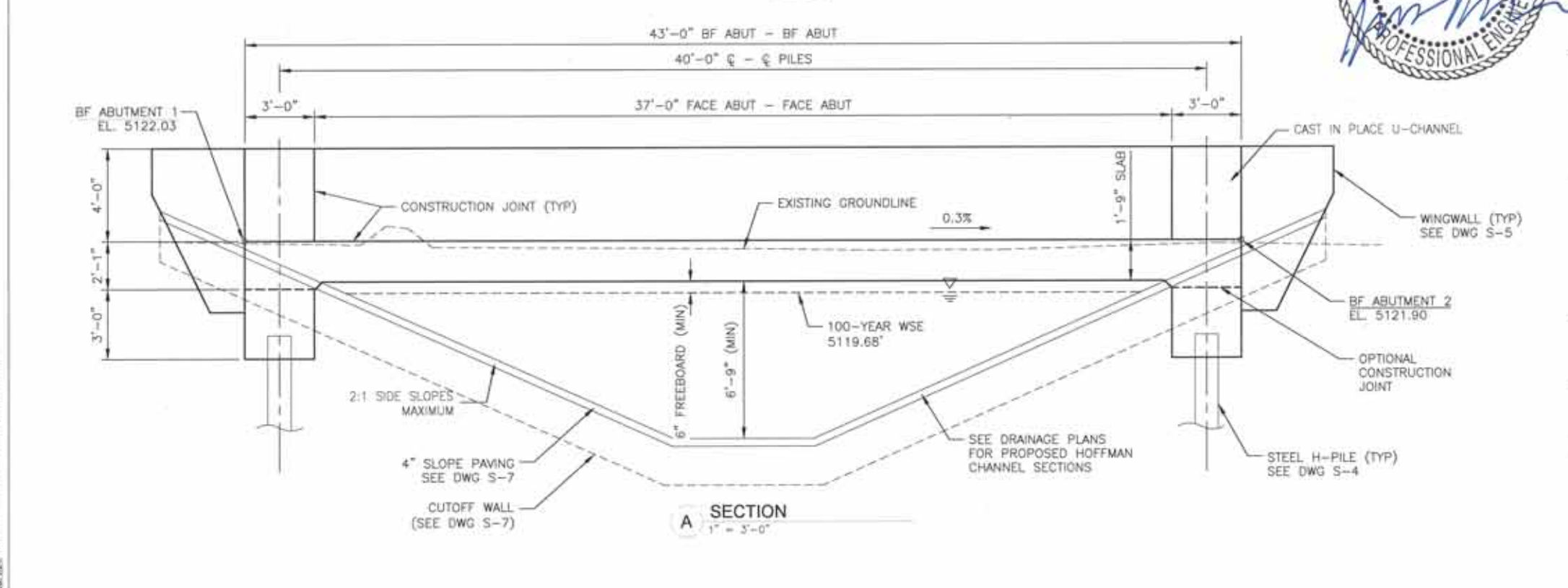
ALL CONSTRUCTION JOINTS SHALL BE INTENTIONALLY ROUGHENED TO 1/4" AMPLITUDE UNLESS NOTED OTHERWISE.

REINFORCING STEEL:
REINFORCING DIMENSIONS SHOWN IN THESE PLANS INDICATE CENTER-TO-CENTER SPACING DIMENSIONS UNLESS NOTED OTHERWISE
REINFORCING STEEL SHALL BE DEFORMED, NEW BILLET BARS PER CURRENT ASTM A615 SPECIFICATIONS. GRADE 60 REINFORCING STEEL IS REQUIRED.
ALL REINFORCING SHALL BE BLACK (UNCOATED) UNLESS OTHERWISE NOTED.
BAR BENDING DIAGRAMS WHERE SHOWN ON THESE PLANS INDICATE OUT-TO-OUT DIMENSIONS OF THE NOMINAL BAR DIAMETER.
ALL REINFORCING SHALL HAVE A CLEAR COVERAGE OF 2 INCHES UNLESS SHOWN OTHERWISE ON THE PLANS. CLEAR COVERAGE IS MEASURED FROM THE CONCRETE SURFACE TO THE OUTSIDE OF THE REINFORCEMENT.
REINFORCING BAR LAP SPLICES SHALL BE AS DETAILED ON THE PLANS.
FIELD BENDING OF REINFORCING STEEL SHALL BE PER CDOT SPECIFICATIONS SECTION 602.05.

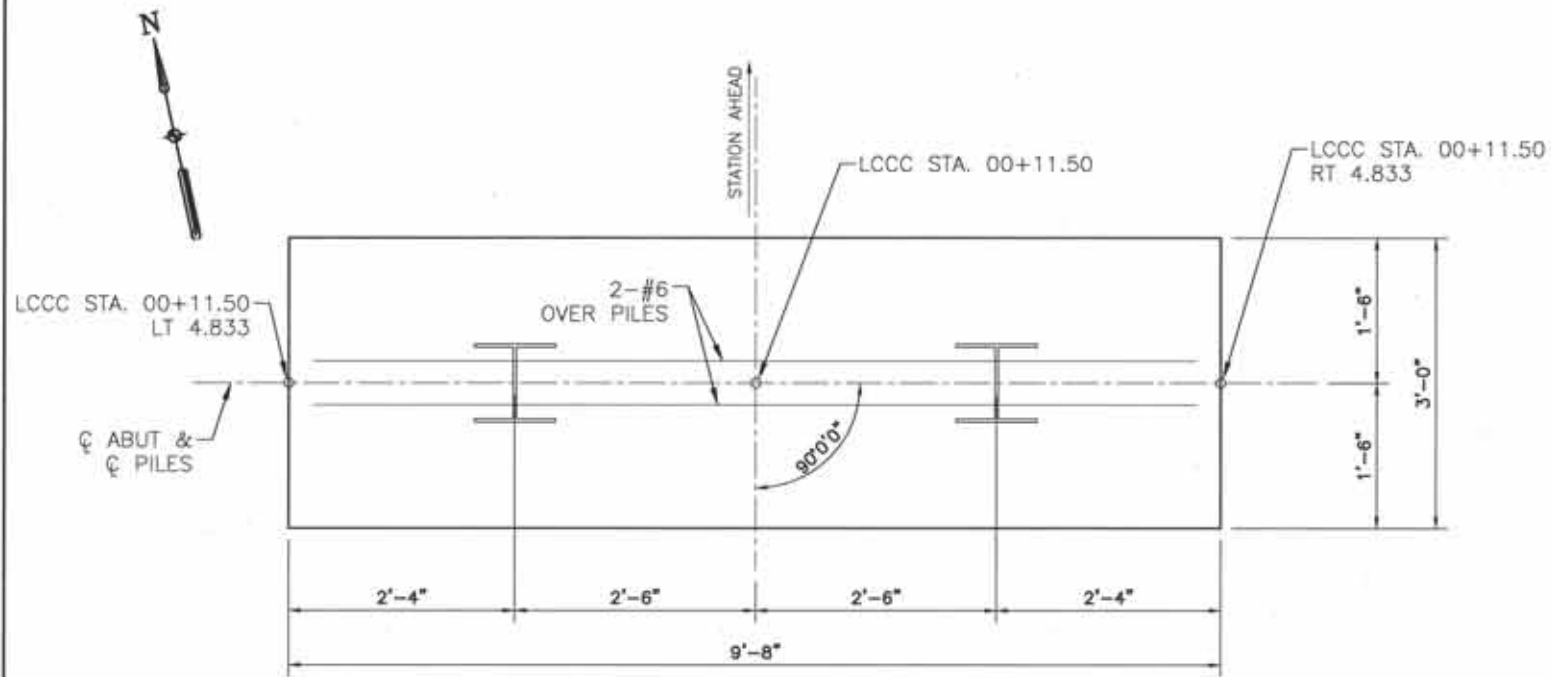
MISCELLANEOUS:
THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
WATERSTOPS SHALL BE PER CDOT SPECIFICATIONS SECTION 518.02.

EXCAVATION/BACKFILL:
EXCAVATION AND BACKFILL SHALL MEET THE REQUIREMENTS FOR CULVERTS SPECIFIED IN CDOT SPEC 206. BACKFILL MATERIAL SHALL BE STRUCTURE BACKFILL CLASS 1.

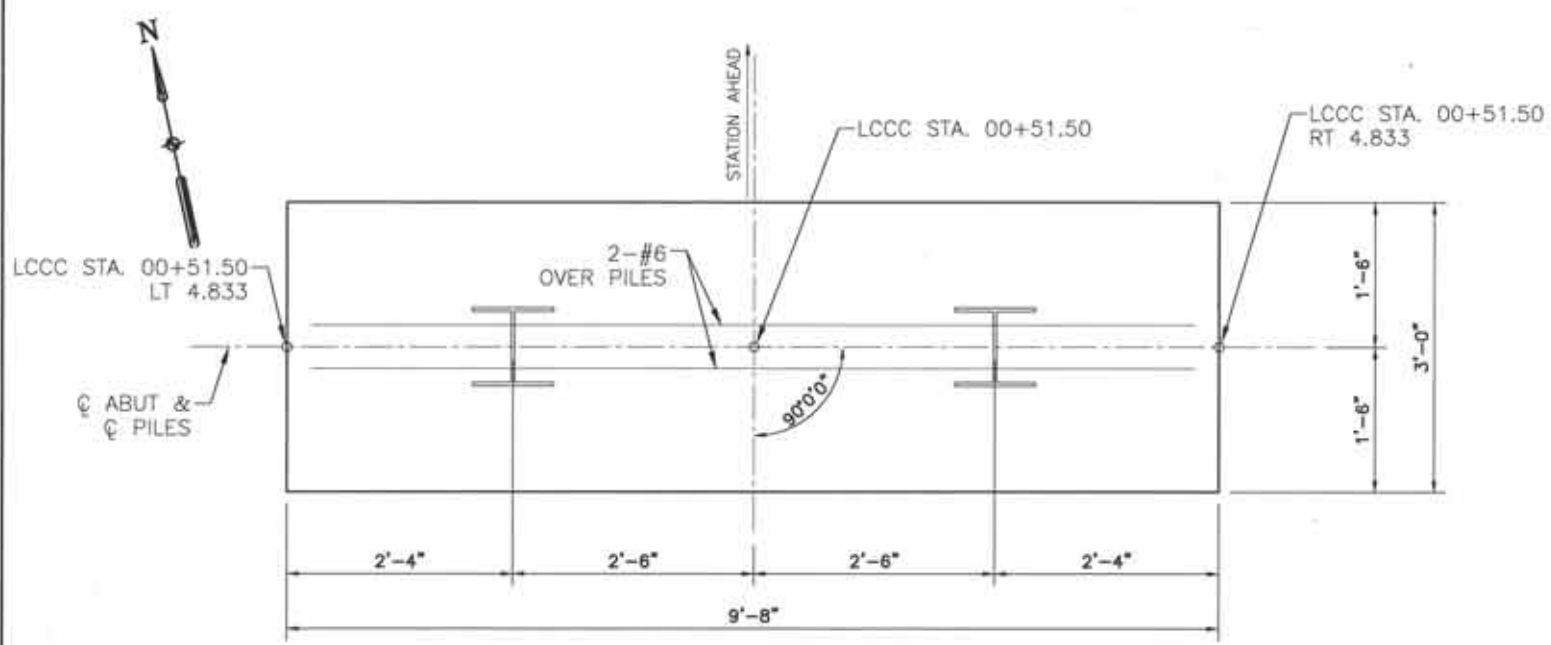
GROUTED RIPRAP:
GROUTED RIPRAP SHALL BE 24" THICK, TYPE M PER UDFCD SPECIFICATIONS.



PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS



PILE PLAN - ABUTMENT 1
1" = 2'-0"



PILE PLAN - ABUTMENT 2
1" = 2'-0"

PILE LEGEND:

⌋ DENOTES PLUMB PILE

PILE NOTES:

1. ALL PILES SHALL BE HP12x74 WITH A FACTORED DESIGN RESISTANCE OF 100 KIPS AT THE STRENGTH LIMIT STATE. THE MINIMUM NOMINAL RESISTANCE TO WHICH PILES SHALL BE DRIVEN IS 250 KIPS.
2. SHOP PLANS SHALL SHOW HOW REINFORCING IS TO BE TIED AS WELL AS HOW THEY WILL BE HELD IN PLACE ABOVE PILING WHILE POUR IS BEING MADE.
3. THE PRODUCTION PILES SHALL BE DRIVEN TO REFUSAL.
4. THE MINIMUM TIP ELEVATION SHOWN ON THESE PLANS MUST BE ACHIEVED FOR EACH PILE. IF THE MINIMUM TIP ELEVATION IS NOT REACHED BEFORE ENCOUNTERING REFUSAL, THE ENGINEER SHALL BE NOTIFIED TO DETERMINE IF PRE-DRILLING IS REQUIRED.

PILE TIP DATA						
SUBSTRUCTURE UNIT	DESIGN DATA		ACTUAL FIELD DATA			
	MINIMUM TIP ELEVATION	ESTIMATED TIP ELEVATION	ACTUAL PILE TIP ELEVATION			
			P1	P2	P3	P4
ABUTMENT 1	5086.00	5081.00				
ABUTMENT 2	5086.00	5081.00				

PILE DRIVING INFORMATION	
PILE SIZE AND TYPE:	HP12x74
ACTUAL BEARING OBTAINED:	
HAMMER TYPE:	
ACTUAL AVERAGE BLOWS/FT:	
PILE HAMMER ENERGY:	
SPECIAL DRIVING CONDITIONS AND COMMENTS:	

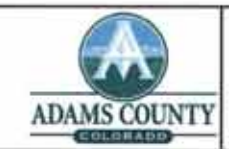


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DESIGNED: JEB DATE: 12/16/2016
 DRAWN: ZAB DATE: 12/16/2016
 CHECKED: GBO DATE: 12/16/2016
 REVISED: DATE:
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URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
 UD/CD PROJECT NO. 106266

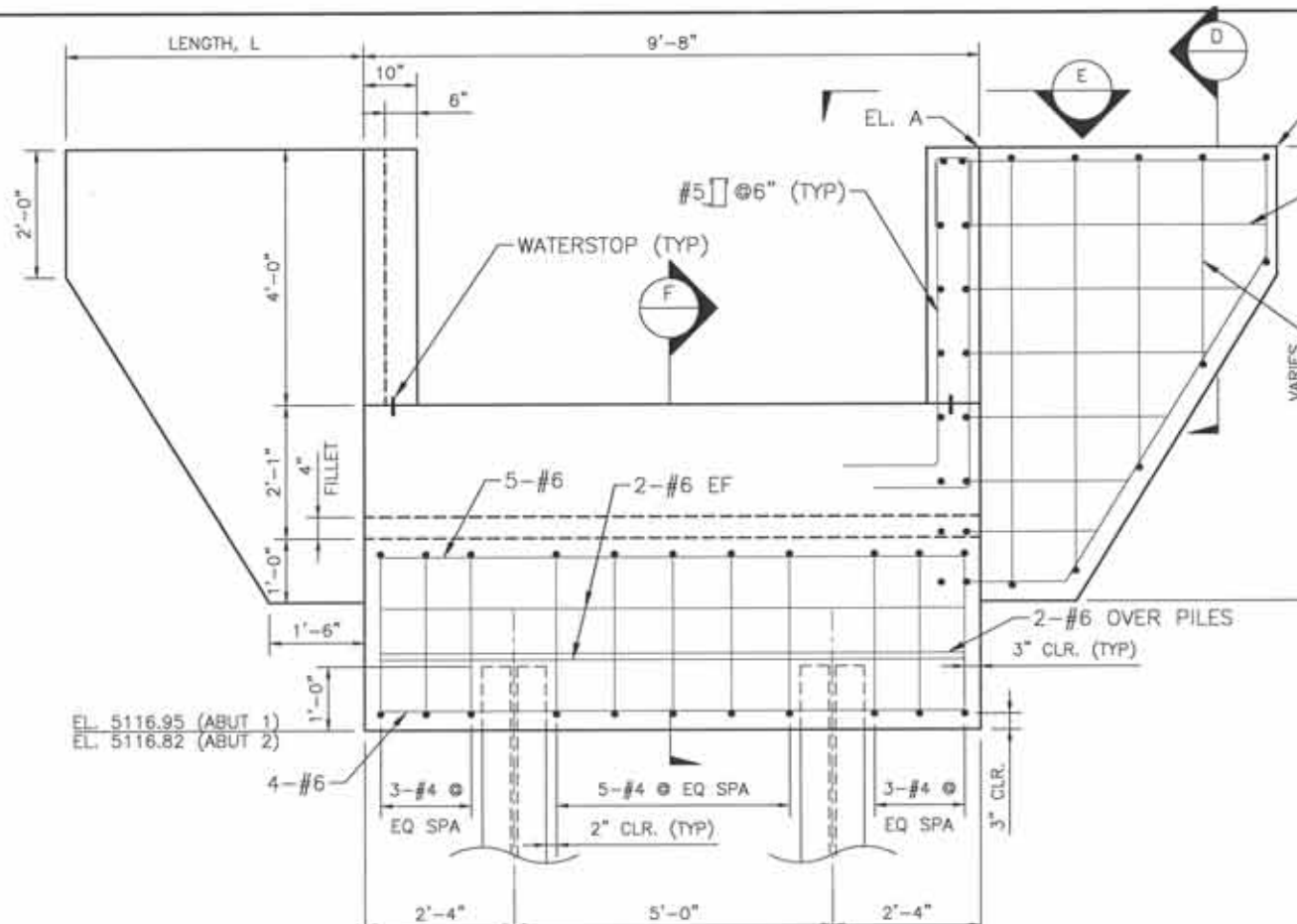


LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS PROJECT

LOWER CLEAR CREEK CANAL ABUTMENTS 1 AND 2 - PILE PLAN

DATE: 02/03/2017
 DRAWING NO.: S-4

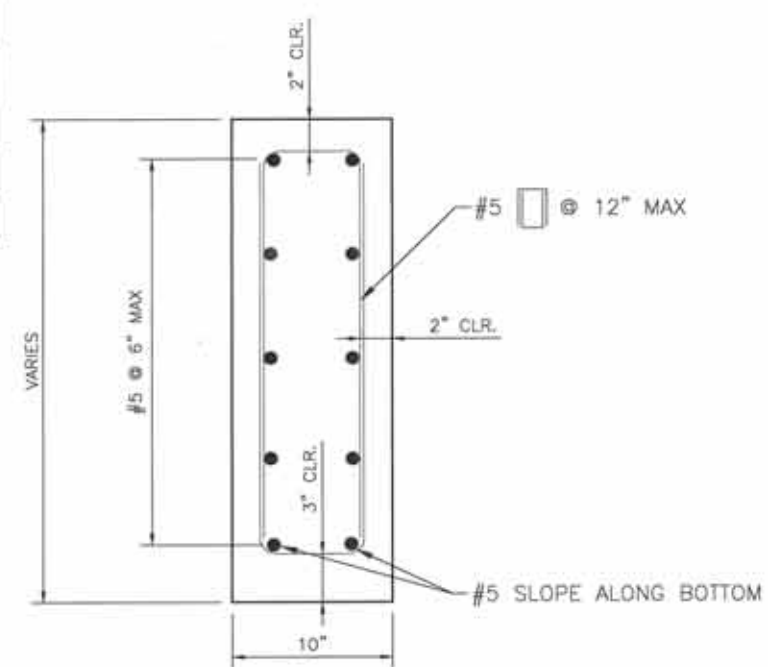
PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS



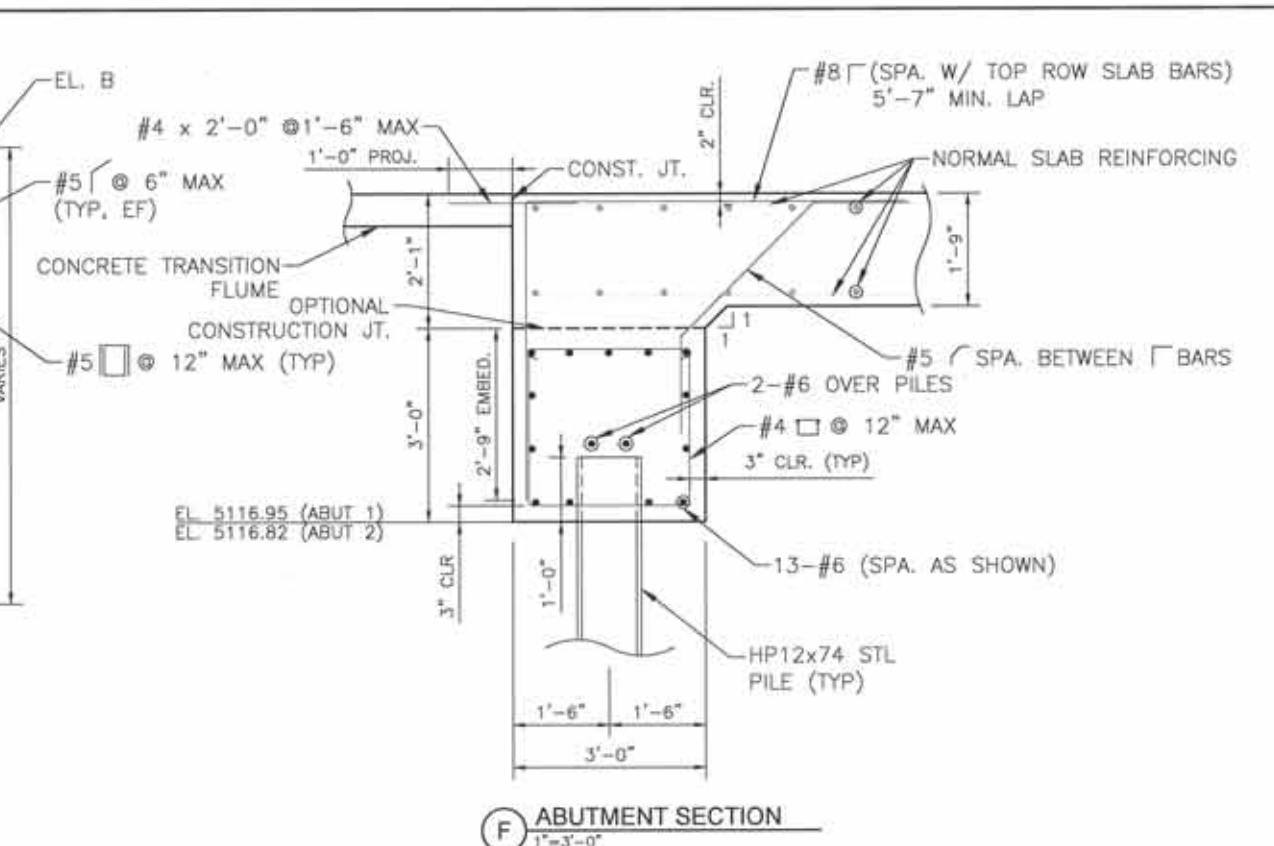
C ABUTMENT FLUME SECTION
1"=3'-0"

WINGWALL TABLE				
WALL	LENGTH, L	ANGLE, A	EL. A	EL. B
1 (SW)	6'-8"	127.33	5126.03	5126.05
2 (SE)	5'-3"	135.09	5126.03	5126.05
3 (NW)	7'-8"	120.28	5125.90	5125.88
4 (NE)	11'-5"	151.16	5125.90	5125.88

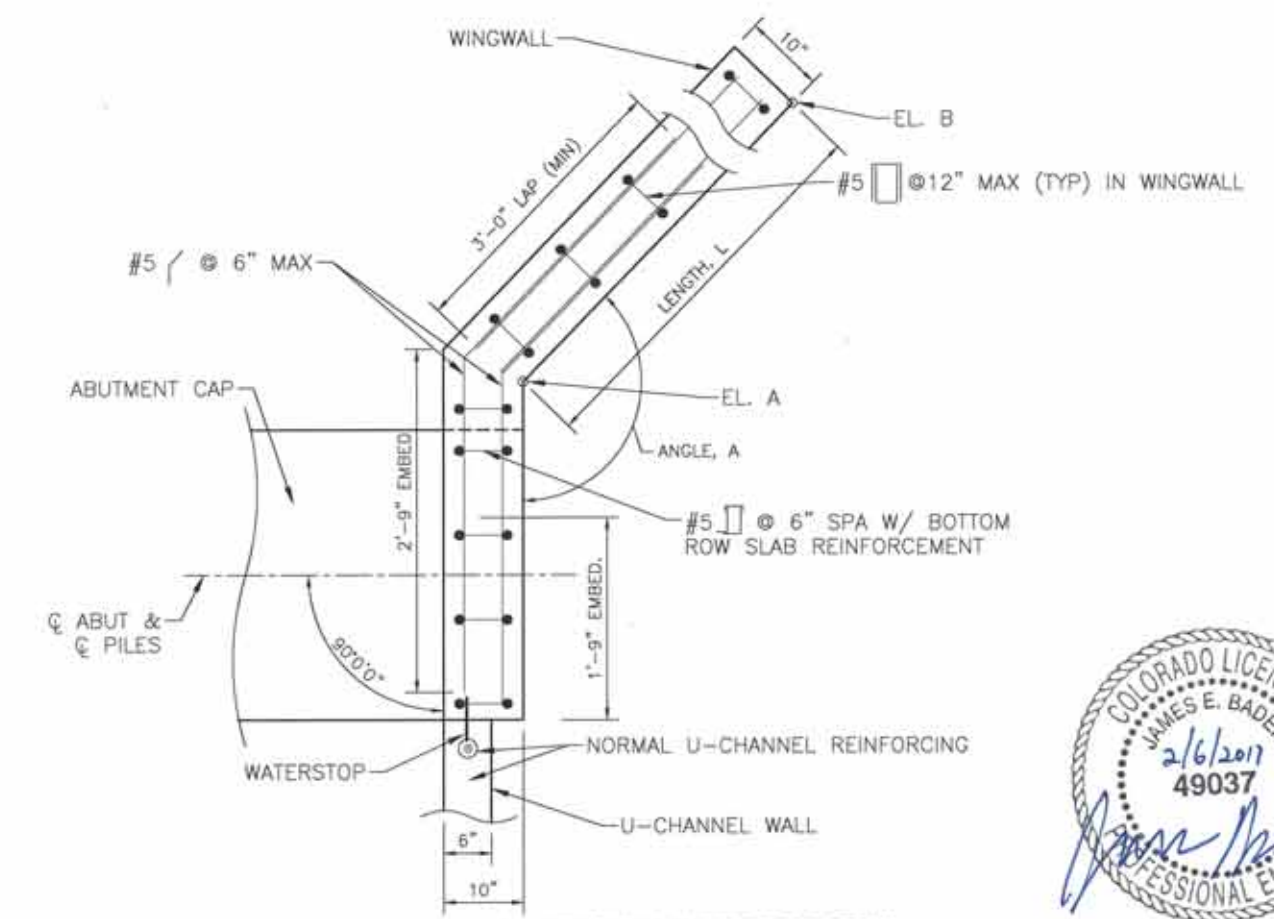
NOTE: WINGWALL TABLE DATA MEASURED ALONG OUTSIDE FACE OF WINGWALL.



D WINGWALL SECTION
1"=1'-0"

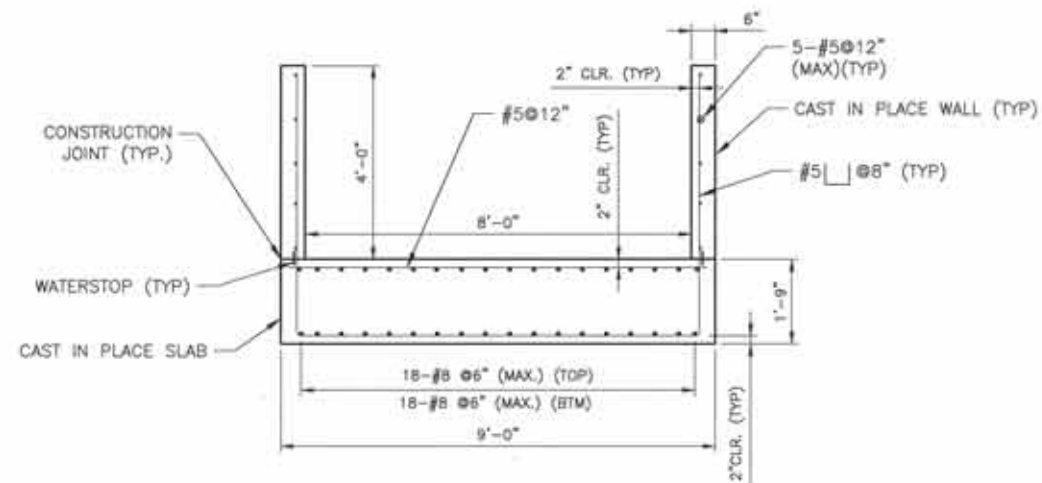


F ABUTMENT SECTION
1"=3'-0"

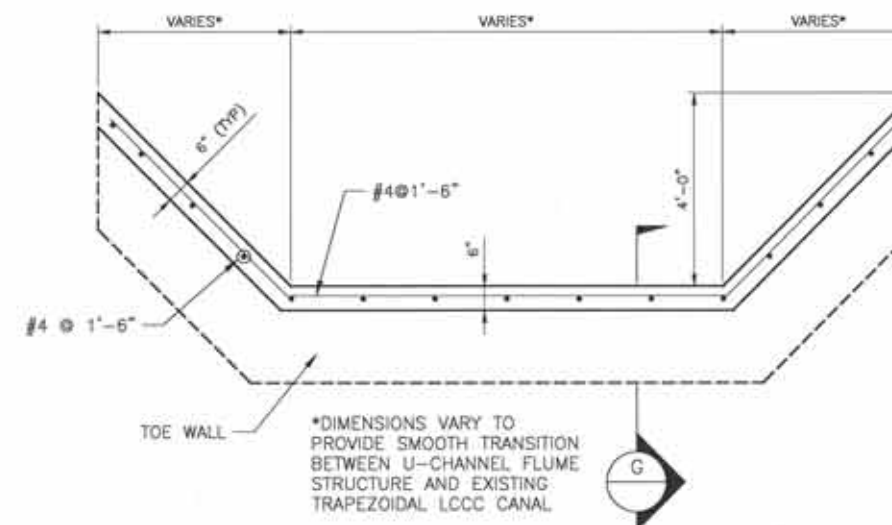


E WINGWALL INTERFACE DETAIL
1"=1'-6"

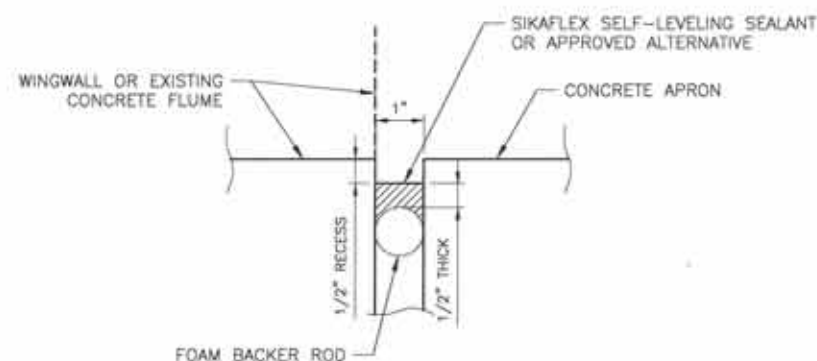




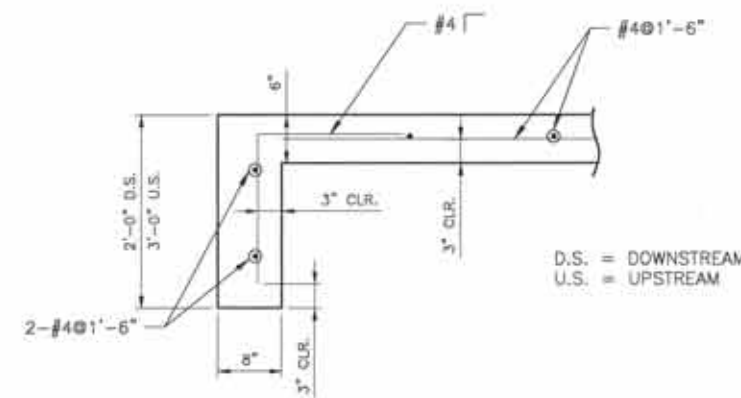
B U-CHANNEL SECTION
1" = 3'-0"



TRANSITION FLUME SECTION
1" = 3'-0"



EXPANSION JOINT DETAIL
NTS



G TRANSITION FLUME TOE WALL
1" = 1'-6"



DESIGNED: JEB DATE: 12/16/2016
DRAWN: ZAB DATE: 12/16/2016
CHECKED: GRQ DATE: 12/16/2016
REVISED: DATE:
REVISED: DATE:
REVISED: DATE:



URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106268



LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

LOWER CLEAR CREEK CANAL
FLUME STRUCTURE DETAILS

DATE
02/03/2017
DRAWING NO.
S-6

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

NOTES:

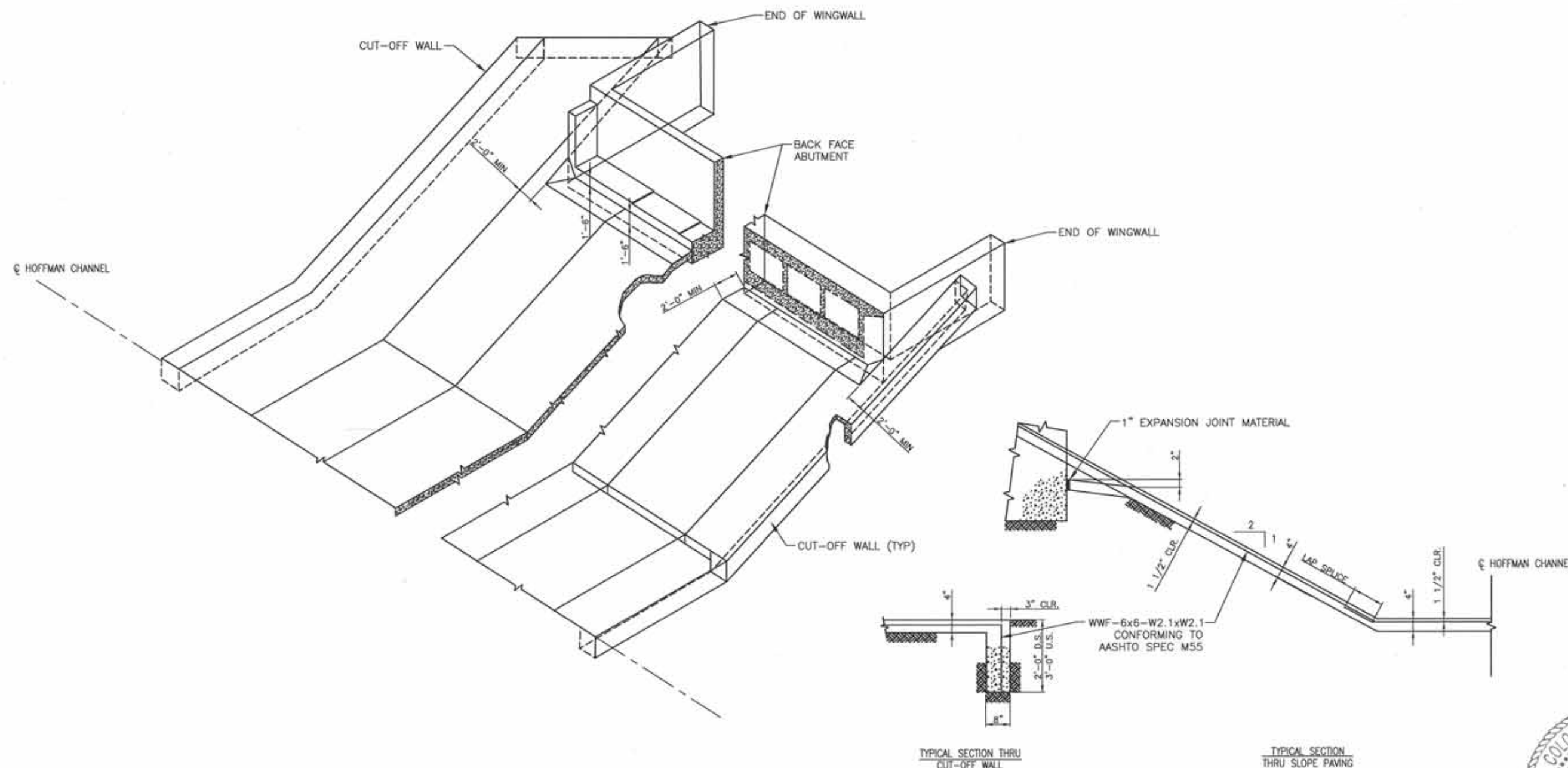
SLOPE PAVING SHALL BE POURED IN 10FT (MAX) TRANSVERSE SECTIONS WITH A TOOLED CONSTRUCTION JOINT AT EACH SECTION. WIRE FABRIC SHALL BE 2IN FROM THE END OF JOINTS AND SHALL LAP 8IN AT SPLICES.

WHERE SLOPE OR BERM PAVING BUTTS AGAINST STRUCTURAL CONCRETE, SEPARATE WITH 1IN EXPANSION JOINT MATERIAL.

STRUCTURE EXCAVATION FOR CONCRETE SLOPE AND DITCH PAVING SHALL BE LIMITED TO THE ACTUAL VOLUME OCCUPIED BY THE SLOPE PAVING CONCRETE.

D.S. = DOWNSTREAM
U.S. = UPSTREAM

THESE DRAWINGS SHOW GENERAL DETAILS ONLY. FOR LIMITS OF SLOPE PAVING SEE GENERAL LAYOUT.



PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS

DESIGNED: JER DATE: 12/16/2016
DRAWN: ZAR DATE: 12/16/2016
CHECKED: GBS DATE: 12/16/2016
REVISED: DATE:
REVISED: DATE:
REVISED: DATE:



URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266



LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

LOWER CLEAR CREEK CANAL
SLOPE PAVING DETAILS

DATE
02/03/2017
DRAWING NO.
S-7

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ADAMS COUNTY AND/OR THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AND REVISIONS THERETO, EXCEPT WHERE OTHERWISE NOTED ON THE PROJECT PLANS AND THE PROJECT SPECIAL PROVISIONS.

SITE PREPARATION

2. CONTRACTOR SHALL FIELD VERIFY PROFILE GRADES AND WILL NOTIFY FIELD ENGINEER IF AND WHEN ADJUSTMENT ARE NEEDED.
3. IF FIELD CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE FIELD ENGINEER IMMEDIATELY SO THAT APPROPRIATE ACTION CAN BE TAKEN BY THE OWNER.
4. THE CONTRACTOR SHALL NOT REMOVE ANY EXISTING SIGNS OR PAVEMENT MARKINGS DURING PROJECT WITHOUT SIGNED AUTHORIZATION OF THE ADAMS COUNTY REPRESENTATIVE.
5. TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH COLORADO DEPARTMENT OF TRANSPORTATION M & S STANDARD 630, ADAMS COUNTY AND THE MUTCD. ALL ACCESSES, BOTH PRIVATE AND COMMERCIAL ARE TO BE MAINTAINED AND REMAIN OPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLAN TO COUNTY BEFORE BEGINNING WORK AND PRIOR TO BEGINNING A NEW PHASE OF CONSTRUCTION. THE CONTRACTOR SHALL NOT USE TRAILS AS A STAGING AREA.
6. EXISTING TREES SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. TREES SHALL NOT BE REMOVED UNLESS AUTHORIZED BY THE OWNER / FIELD ENGINEER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY DISPOSING OF ALL REMOVALS OFF THE PROJECT SITE AS SPECIFIED WITHIN THE CONTRACT.

UTILITY

8. THE SIZE AND LOCATION OF ALL EXISTING UTILITIES AS KNOWN TO THE ENGINEER HAVE BEEN NOTED ON THE PLANS FOR INFORMATION AND GUIDANCE OF THE CONTRACTOR. UTILITY LOCATIONS ARE ONLY APPROXIMATE AS PROVIDED BY THE VARIOUS UTILITY COMPANIES. ALL UTILITIES MAY NOT BE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES, BOTH HORIZONTALLY AND VERTICALLY, PRIOR TO BEGINNING CONSTRUCTION. ANY DISCREPANCIES OR VARIATION IN UTILITY LOCATION FROM THAT SHOWN ON THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE FIELD ENGINEER AND RESOLVED PRIOR TO BEGINNING CONSTRUCTION IN ANY AREA. UTILITY LOCATIONS CAN BE COORDINATED THROUGH CENTRAL LOCATING AT 1-800-922-1987. THE CONTRACTOR SHALL PROTECT ALL EXISTING AND NEW UTILITIES IN THE VICINITY OF HIS WORK. IF ANY DAMAGE OCCURS TO THESE UTILITIES DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE THE UTILITY. THE CONTRACTOR IS RESPONSIBLE FOR ANY UTILITIES DISRUPTED BY THE CONSTRUCTION AND ALL EXPENSES INCURRED FOR REPAIR.
9. THE CONTRACTOR SHALL ADJUST ANY VALVES OR MANHOLES OF EXISTING UTILITIES NOT TO BE RELOCATED TO THE PROPOSED GRADE. THE COST SHALL BE INCLUDED IN THE PRICE OF THE WORK.

EARTHWORK

10. COMPACTION OF SUBGRADE SHALL MEET THE REQUIREMENT OF 95% MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-99. SUB-GRADE SHALL BE PROOF ROLLED IN ACCORDANCE WITH SECTION 203 OF THE STANDARD SPECIFICATIONS.
11. PRIOR TO PLACING NEW PAVEMENT SECTIONS, THE SUBGRADE SHALL BE RECONDITIONED IN ACCORDANCE WITH SECTION 306 OF THE CDOT STANDARD SPECIFICATIONS. THE RECONDITIONED SURFACE SHALL BE PROOF-ROLLED WITH A HEAVY LOADED PNEUMATIC-TIRED VEHICLE HAVING A SINGLE AXLE WEIGHT OF AT LEAST 18 KIPS. AREAS WHICH DEFORM UNDER HEAVY WHEEL LOADS SHALL BE REMOVED AND REPLACED TO ACHIEVE A STABLE SUBGRADE PRIOR TO PAVING.
12. DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
- FULL DEPTH OF ALL EMBANKMENTS
 - BASES OF CUTS AND FILL - 1.00 FOOT

PAVING

13. ANY LIFT OF HOT MIX ASPHALT PAVEMENT THAT IS TO HAVE A SUCCEEDING LIFT PLACED THEREON SHALL BE COMPLETED BEFORE THE SUCCEEDING LAYER IS PLACED.
14. WHERE IT IS REQUIRED TO SAW CUT EXISTING PAVEMENT AS SHOWN ON PLANS, THE CUTTING SHALL BE DONE TO A NEAT WORK LINE WITH A CUTTING WHEEL ATTACHED TO A BLADE OR OTHER METHOD AS APPROVED BY THE FIELD ENGINEER.
15. WHERE ASPHALT PAVEMENT JOINS EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE SAW CUT SQUARE AND COATED WITH ONE COAT OF UNDILUTED EMULSIFIED ASPHALT IMMEDIATELY PRIOR TO PLACEMENT OF FRESH ASPHALT PAVEMENT.
16. BEFORE PLACEMENT OF THE TACK COAT, THE CONTRACTOR SHALL CLEAN THE EXISTING PAVEMENT SURFACE BY MEANS OF A POWER BROOM VACUUM SYSTEM (PICK-UP BROOM) OR OTHER APPROVED METHOD.
17. A TACK COAT OF EMULSIFIED ASPHALT (SLOW-SETTING) IS TO BE APPLIED BETWEEN PAVEMENT COURSES TO IMPROVE THE BOND. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER.
18. THE CONTRACTOR MAY USE AN EXPOSED LONGITUDINAL JOINT FOR A MAXIMUM OF ONE DAY. THE JOINT SHALL CONSIST OF A VERTICAL FACE 1 INCH DEEP AND AT THE BOTTOM OF THE VERTICAL FACE, A 3:1 SLOPE TO THE EXISTING PAVEMENT (OR SUBGRADE). THE MAXIMUM DEPTH OF THE 3:1 SHALL BE 2 INCHES. AT THE END OF ONE DAY, LONGITUDINAL JOINTS SHALL BE ON LANE LINES AND OUT OF WHEEL PATHS.

SIGNING AND STRIPING

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NEW, TEMPORARY, AND EXISTING TRAFFIC SIGNS FROM THE START OF THE CONSTRUCTION PROJECT UNTIL ACCEPTANCE BY THE OWNER.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PAVEMENT MARKINGS INCLUDING REMOVAL OF EXISTING PAVEMENT MARKINGS (SCARRING OF EXISTING ASPHALT IS NOT PERMITTED) AND INSTALLATION OF NEW PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKINGS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
21. ALL PERMANENT PAVEMENT MARKING SYMBOLS AND WORDS SHALL BE THE PREFORMED THERMOPLASTIC TYPE. ALL OTHER MARKINGS SHALL BE EPOXY, OR AS DIRECTED BY EACH COMMUNITY.
22. ALL SIGNAGE AND STRIPING IN PUBLIC AREAS SHALL CONFORM TO THE CURRENT SPECIFICATIONS AND PRACTICES OF THE LOCAL JURISDICTIONS AND THE MUTCD AS SUPPLEMENTED BY THE STATE OF COLORADO.

ROADWAY CONSTRUCTION NOTES

- 10 REMOVAL OF ASPHALT MAT
- 11 SAWCUT
- 12 ADJUST TO GRADE
- 13 MATCH EXISTING
- 14 LIMITS OF CUTS & FILLS
- 15 LIMITS OF DISTURBANCE
- 16 LIMITS OF WORK
- 17 RELOCATION LUMINAIRES
- 18 CONSTRUCTION ASPHALT PAVEMENT
- 19 CONSTRUCTION GRAVEL ROADWAY
- 20 CONSTRUCTION ASHPHATL OVERLAY
- 21 RETAINING WALL
- 22 CONSTRUCT CURB & GUTTER TYPE 1 SECTION IB
- 23 CONSTRUCT CURB & GUTTER TYPE 1 SECTION IIB
- 24 CONSTRUCT CURB & GUTTER TYPE 2 SECTION IB (MODIFIED)
- 25 CONSTRUCT CURB & GUTTER TYPE 2 SECTION IIB (MODIFIED)
- 26 CONSTRUCT GUTTER TYPE 2 (6 FOOT)
- 27 CONSTRUCT CURB TRANSITION
- 28 CONSTRUCT 5' ASPHALT CURB TRANSITION
- 29 CONSTRUCT CURB & GUTTER TYPE 2 SECTION IB
- 30 CONSTRUCT CURB & GUTTER TYPE 2 SECTION IIB
- 31 CONSTRUCT CURB TRANSITION-BARRIER TO MOUNTABLE
- 32 CONSTRUCT CONCRETE CURB RAMP TYPE 1A
- 33 CONSTRUCT CONCRETE CURB RAMP TYPE 2A
- 34 CONSTRUCT CONCRETE CURB RAMP TYPE 2B
- 35 CONSTRUCT CONCRETE CURB RAMP TYPE 1B
- 36 CONSTRUCT CONCRETE DRIVEWAY ENTRANCE TYPE 1
- 37 CONSTRUCT CONCRETE DRIVEWAY ENTRANCE TYPE 3
- 38 CONSTRUCT 4" THICK CONCRETE SIDEWALK
- 39 CONSTRUCT GUARDRAIL TYPE 3 W-BEAM MEDIAN TERMINAL (CAT OPTION)
- 40 CONSTRUCT GUARDRAIL TYPE 3 W-BEAM TRANSITION TYPE 3G
- 41 CONSTRUCT LOW SPEED TERMAINAL - TYPE 3K
- 42 CONSTRUCT GUARDRAIL TYPE 3 (6-3 POST SPACING)

- 43 CONSTRUCT TRANSITION TYPE 3H
- 44 CONSTRUCT TRANSITION TYPE 3G
- 45 CONSTRUCT 10' TRANSITION FROM CURB TO SHOULDER
- 46 CONSTRUCT TYPE IIB INTEGRAL CURB AND GUTTER/SIDEWALK
- 47 CONSTRUCT TYPE III SIDEWALK RAMP (TEE)



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DESIGNED: CD DATE: 08/17/16
DRAWN: PF DATE: 08/17/16
CHECKED: RP DATE: 01/23/17
REVISED: DATE:
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URBAN DRAINAGE AND
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UDFCD PROJECT NO. 106266

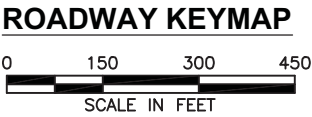
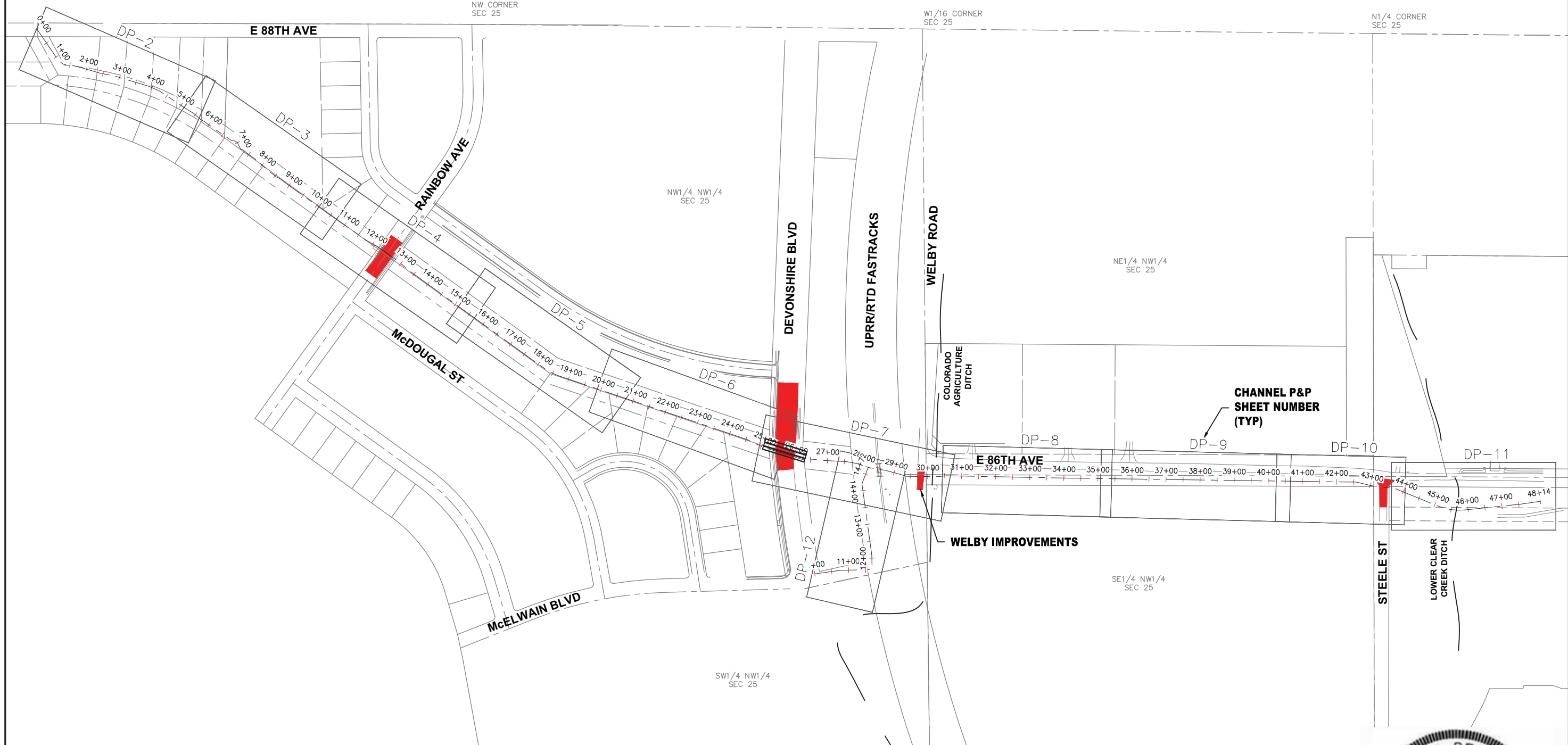


LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

CIVIL
GENERAL NOTES

DATE
02/03/2017
DRAWING NO.
GC-1

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS



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LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
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ROADWAY KEY MAP

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16 LIMITS OF WORK



EX. EDGE DRIVEWAY

5152.0 ±
MATCH EX.

16 WELBY RD

2+00

2+25

5152.0±
MATCH EX.

5152.0±
MATCH EX.

16

EX. EDGE DRIVEWAY

5152.00 ±

5151.99 ±

5151.70 ±

5151.4 ±
MATCH EX.

5151.1±
MATCH EX.

EX. EDGE DRIVEWAY

0 10' 20'
HORIZONTAL SCALE IN FEET
1' CONTOUR INTERVAL

NOTES:

1. ELEVATION CALLOUTS SHOWN ARE AT THE 50' STATIONS, POINT OF CURVATURES, CURVE MIDPOINTS, AND POINT OF TANGENTS.

LEGEND

- FULL DEPTH PAVEMENT
➔ DIRECTION OF FLOW



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CHECKED: R.P. DATE: 01/23/17
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URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266

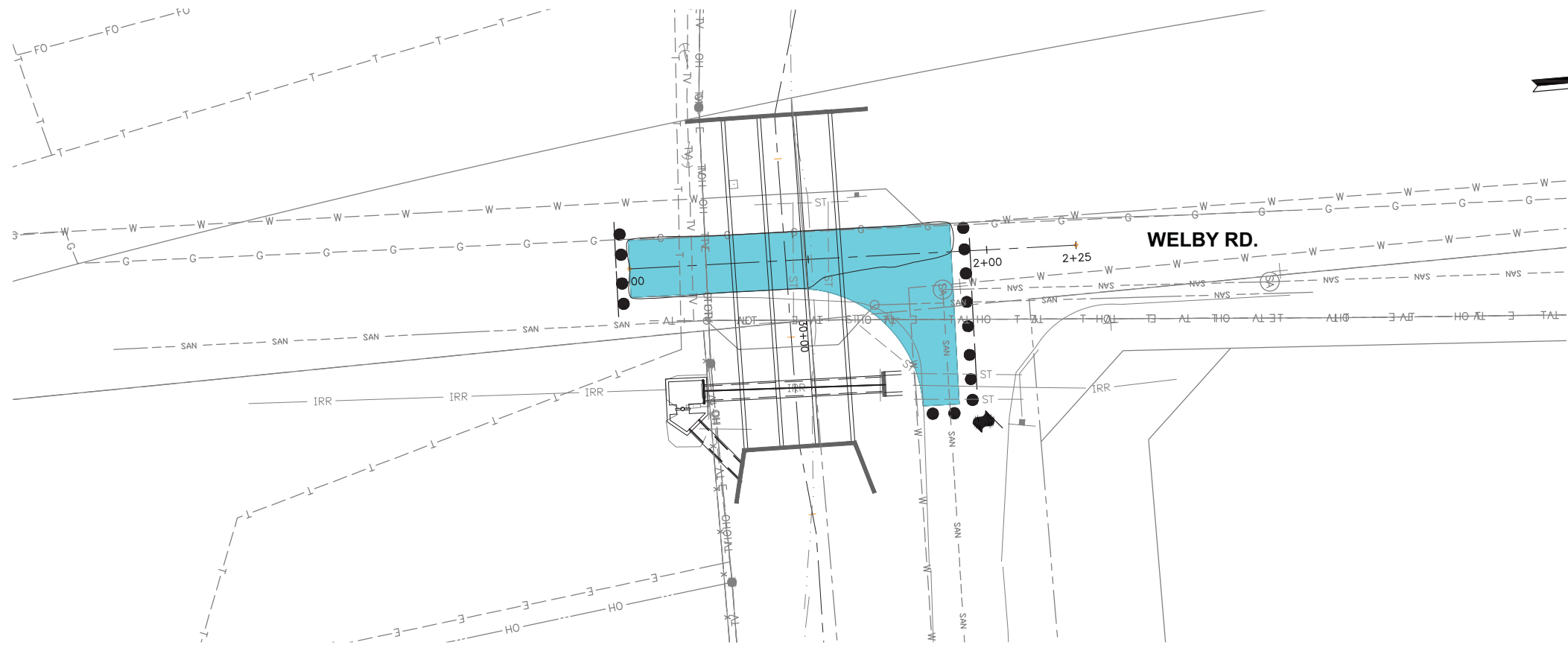


LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

ROADWAY GRADING
WELBY ROAD

DATE
02/03/2017
DRAWING NO.
CG-3

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS



NOTES:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL CREATE A SITE SPECIFIC AND DETAILED CONSTRUCTION TRAFFIC CONTROL PLAN WHICH COVERS ALL PHASES AND DAY/NIGHT SIGNAGE CONDITIONS OF WORK, INCLUDING FINAL SIGNING AND STRIPING.
2. THE CONSTRUCTION TRAFFIC CONTROL PLAN SHALL BE REVIEWED AND ACCEPTED BY THE APPLICABLE AGENCY PRIOR TO COMMENCING ANY WORK.
3. CONTRACTOR SHALL DESIGNATE A TRAFFIC CONTROL SUPERVISOR AS DESCRIBED IN THE CONTRACT DOCUMENTS. THE TRAFFIC CONTROL SUPERVISOR MUST BE AVAILABLE 24 HOURS A DAY THROUGHOUT THE DURATION OF CONSTRUCTION.
4. CONTRACTOR SHALL FOLLOW CDOT SECTION 630 AND STANDARD PLANS S-630-1 AS THE BASELINE FOR ALL TRAFFIC CONTROL OPERATIONS.
5. PHASING DOES NOT NEED TO BE SEQUENTIAL.
6. CROSS OVER LOCATION WILL BE DEFINED BY CONTRACTOR/COUNTY.
7. CONTRACTOR TO IMPLEMENT PHASING AS NEEDED.

- PHASE I
- CHANNELIZING DEVICE
- TYPE III BARRICADE — ROAD CLOSED
- FLAGGER
- TRAFFIC FLOW

PHASE I

- CLOSE EXISTING ROADWAY AT 86TH AVE
- FLAGGER NEEDED WHEN WORKING IN THE NORTHEAST PART OF THE INTERSECTION



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URBAN DRAINAGE AND
FLOOD CONTROL DISTRICT
UDFCD PROJECT NO. 106266



LOWER HOFFMAN
DRAINAGEWAY IMPROVEMENTS
PROJECT

PHASING PLAN
(PHASE I)
WELBY ROAD

DATE
02/03/2017
DRAWING NO.
PH-3

PROJECT NAME: LOWER HOFFMAN DRAINAGEWAY IMPROVEMENTS