

ERIE COAL CREEK DITCH & RESERVOIR COMPANY

LICENSE AGREEMENT FOR CROSSING (Water Line)

1. PARTIES. The parties to this License Agreement are the Erie Coal Creek Ditch & Reservoir Company, a Colorado non-profit corporation (“**Company**”), and the Town of Erie, a Colorado municipal corporation (“**Licensee**”). The Company and Licensee are jointly referred to herein as the “**Parties.**”

2. RECITALS. The Company owns, operates and uses the Erie Coal Creek Ditch (the “**Ditch**”). As part of its Zone 3 Waterline Extension, the Licensee desires to obtain the permission of the Company to install over the Ditch a 24” waterline (the “**Pipeline**”) where the Ditch crosses under Vista Parkway, in the southwest ¼ of Section 30, Township 1 North, Range 68 West of the 6th P.M., Weld County as depicted in **EXHIBIT A** (the “**Licensed Activity**”). The Ditch is a Horizontal Elliptical Reinforced Concrete Pipe at this location (“**Piped Ditch Segment**”). The plans and specifications for the Licensed Activity are described in **EXHIBIT B**. The Company agrees to license the proposed crossing, subject to the terms, conditions, covenants, and agreements set forth in this License Agreement. Accordingly, in consideration of the mutual promises set forth in this License Agreement, the Parties covenant and agree as follows:

3. CONSTRUCTION.

- 3.1 Pursuant to the terms of this License Agreement, the Licensee is granted the license to install the Pipeline over the Piped Ditch Segment pursuant to the plans and specifications approved by the Company and attached hereto as **EXHIBIT B**. The Company’s review of the plans and specifications is solely for its own benefit and creates no obligation on the Company.
- 3.2 The Pipeline shall be installed over the Piped Ditch Segment with a clearance of at least 1.82 feet above the top of the Piped Ditch Segment. If the Licensee proposes any change to the means or method of installation of the Pipeline from the plans attached as **EXHIBIT B**, the Licensee shall notify the Company immediately. The Licensee must receive approval of the altered plans in writing prior to continuing the Licensed Activity.
- 3.3 Any portion of the Piped Ditch Segment and all affected portions of the Company’s easement that are disturbed by the License Activity shall be restored to their original condition so the flow of the water in the Ditch runs at the original amount and velocity. Any and all fencing and other facilities appurtenant to the Company’s easement shall be replaced in a condition at least equal to the condition of such facilities and appurtenances prior to construction.
- 3.4 The Licensee agrees that the construction of the Pipeline shall proceed expeditiously and with reasonable diligence from the commencement of construction to its completion. The Pipeline shall be completed by May 31, 2018, subject to weather delays or other conditions outside of Licensee’s control. If the Pipeline is not installed and completed by the aforementioned date (as may be extended by written agreement), this agreement shall be null and void, and of no force or effect.
- 3.5 If the Licensee’s Licensed Activity interrupts the Company’s water supply for any reason, and such interruption remains after Company has provided Licensee with notice, the Licensee shall pay as liquidated damages \$1,000.00 per day or any part of any day that the Company cannot deliver water to its shareholders who have a right to the delivery of water, have a need for water, have requested the delivery of water in accordance with the shareholders’ rights and cannot deliver water to that shareholder or shareholders as a result of the Licensed Activity.

- 3.6 The Licensee shall clearly mark the crossing along both sides of the ditch with the appropriate markings and color for this type of underground utility. All such markings shall bear the name of the structure's owner and telephone contact information.
- 3.7 The Licensed Activity or Licensee's Pipeline may require any local, state, or federal permits or approvals. It is Licensee's obligation to investigate and determine the need for any such permits or approvals. The Licensee is responsible, at its 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 construction. To the extent permitted by law, the Licensee shall indemnify the Ditch Company for any and all costs, damages, fines, and fees, including reasonable attorneys' fees incurred by the Ditch Company as a result of Licensee's failure to obtain such permits or approvals or failure to comply with all applicable laws and regulations.

4. PERMISSION OF LAND OWNERS. Licensee is responsible, at its own expense, for obtaining the permission of any other land owners, if any, or any other person or entity who may claim an interest in and to the land shown in **EXHIBIT A**, for the purposes stated herein.

5. LICENSE FEE. The Licensee shall pay to the Company a license fee of \$2,500.00. The license fee shall be paid upon execution of this License Agreement and prior to the commencement of the Licensed Activity. This license fee shall be in addition to any other costs for which the Licensee is responsible pursuant to this License Agreement.

6. INSPECTION.

- 6.1 The Licensee shall notify the Company at least three (3) days prior to commencement of the Licensed Activity, or replacement or repair of the Pipeline permitted by this License Agreement, except for emergency repairs which are provided for in paragraph 8 of this License Agreement. The Company is permitted to inspect the Pipeline or replacements and repairs during construction. Upon completion of the Pipeline, the Company may inspect the Pipeline.
- 6.2 The Company's right to inspect the Licensed Activity or the construction of the Pipeline in no way relieves the Licensee of its liability for improper construction. The Company's inspection is solely for the benefit of the Company and creates no obligation to the Company.
- 6.3 Licensee shall provide the Ditch Company with one set of "as-built" plans of the Installations upon completion of the Installations.

7. REIMBURSEMENT OF EXPENSES.

- 7.1 The Licensee agrees to reimburse the Company (or pay directly) for all reasonable engineering and legal costs incurred by the Company in preparing and approving this License Agreement and the costs of inspection as described in paragraph 6.
- 7.2 Statements for the costs chargeable to the Licensee hereunder will be forwarded to the Licensee and the same shall be paid to the Company within 30 days after the billing is received. If payment has not been received by the Company within 30 days, the Licensee shall have breached this License Agreement and the Company may institute legal proceedings to collect the amount due

and owing. In such proceeding, the Company shall be entitled to its costs and reasonable attorney fees from the Licensee. However, Company shall not be entitled to terminate this License Agreement.

8. MAINTENANCE.

- 8.1 The Licensee specifically agrees and pledges to maintain, repair, and replace the Pipeline so as not to require the Company to maintain, repair, or replace it unless damage is caused by the Company. If the Licensee fails to properly maintain, repair, or replace any portion of the Pipeline for which it is responsible and said failure results in damages or interference with flows in the Ditch or the Piped Ditch Segment, or reasonably threatens the same, after ten days' notice of the need for same, the Company may, at its own option, conduct its own maintenance, repair, or replacement. The Licensee shall reimburse the Company for the reasonable cost of such work within 30 days. In the event the Licensee fails to maintain, repair, or replace the Pipeline, it shall be held liable for any loss, damage or injury to the Company except to the extent caused by the Company. If the Company conducts its own maintenance, repair, or replacement, it does not waive the right to hold the Licensee liable for damages caused by Licensee's failure to maintain, repair or replace.
- 8.2 In the event of an emergency, the Company or the Licensee may conduct maintenance or repair immediately, giving notice to the other party as soon as possible at the emergency contacts identified below. If the Company conducts emergency work, it shall be reimbursed for the reasonable cost of the work. Under no circumstances shall the Company be responsible or held liable for damages to the Pipeline resulting from maintenance or repair to the Ditch except to the extent caused by the Company's negligence or willful misconduct.
- 8.3 If the maintenance, repair, or replacement of the Installations interrupts the Company's water supply for any reason, the Licensee shall pay as liquidated damages \$1,000.00 per day for any day that the Company has a valid request for water from a shareholder and cannot deliver water to that shareholder or shareholders as a result of the Installations.

EMERGENCY CONTACTS:

Company: Russell Pennington
Office: 303-926-2878

Jody Lambert
Office: 303-926-2882
Cell: 303-665-9420

Licensee: Director of Public Works
Office: 303-926-2871

9. WATER LOSS. The Licensee agrees that the Licensed Activity will not increase carriage or transit loss over the loss which has occurred historically. The Licensee agrees to compact any disturbed earth materials, so that such additional water losses will not occur. If the Licensee's Licensed Activity increases carriage or transit loss in the Ditch, the Licensee agrees to repair the construction to prevent such additional loss.

10. LIABILITY AND INDEMNIFICATION.

- 10.1 By virtue of entering into this License Agreement, the Company: (1) assumes no liability for use, operation, or existence of the Licensee's Pipeline except to the extent caused by the Company's negligence or willful misconduct; and (2) assumes no additional responsibilities or obligations related to the Licensed Activity, in the area described in **EXHIBIT A**, which are required by this License Agreement.
- 10.2 To the extent allowable under Colorado law, the Licensee agrees to indemnify and hold harmless the Company, from all claims and liability for damage or injury to property or persons arising or caused directly or indirectly by the Licensee's construction, restoration, maintenance of, or failure to maintain, the Pipeline and the Licensee's occupancy and use of the area located in **EXHIBIT A**, except to the extent caused by the Company's negligence or willful misconduct.
- 10.3 The Licensee does not waive or intend to waive the rights or protections guaranteed under the Colorado Governmental Immunity Act.

11. EASEMENT RIGHTS. The License granted to the Licensee herein in no way restricts the Company's right to the use of its easement to construct, operate, or maintain all existing structures and facilities of the Ditch

12.ASSIGNMENT. Licensee may not assign its rights and obligations hereunder without prior written consent of the Company, which will not be unreasonably withheld.

13. TERMINATION. The license granted herein shall terminate upon the abandonment of the Pipeline. Abandonment shall be deemed to have occurred when the Pipeline has not been used for a period of five consecutive years. However, the Licensee may avoid having said Pipeline deemed abandoned if, within five years of when the Pipeline were last used, the Licensee sends written notice to the Company, pursuant to paragraph 14 below that it is not abandoning the Pipeline. In that event, this Agreement shall continue for one (1) additional year. Thereafter, the Licensee shall either put the Pipeline in use, or it shall conclusively be deemed abandoned. Upon abandonment, the Licensee shall, upon the request of the Company, and at the Company's sole discretion, remove the Pipeline and all improvements and shall restore the Company's real property and improvements to their original condition.

14. NOTICES. Any notice required or permitted by this License Agreement shall be in writing or by facsimile and shall be deemed to have been sufficiently given for all purposes if sent by certified or registered mail, postage and fees prepaid, hand delivered, or sent via email, addressed to the party to whom such notice is intended to be given at the address set forth below. Such notice shall be deemed to have been given when deposited in the U.S. mail.

COMPANY:

Angela Swanson, Secretary
Erie Coal Creek Ditch & Reservoir Company
P.O. Box 119
Longmont, CO 80502

COPY TO:

Jeffrey J. Kahn
Lyons Gaddis
P.O. Box 978
Longmont, CO 80501
jkahn@lyonsgaddis.com

LICENSEE:

Director of Public Works
Town of Erie
645 Holbrook
Erie, CO 80516
gbehlen@erieco.gov

COPY TO:

Paul Zilis
Andrea Kehrl
Vranesh and Raisch, LLP
1720 14th Street, Suite 200
Boulder, CO 80302
pjz@vrlaw.com
aak@vrlaw.com

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

16. INTEGRATION AND AMENDMENT. This Agreement represents the entire agreement between the parties and there are no oral or collateral agreements or understandings. This Agreement may be amended only by an instrument in writing signed by both parties.

17. BINDING EFFECT. This License Agreement shall be a covenant running with the land and inures to the benefit of and is binding upon the Parties and their successors and assigns.

18. RECORDATION. This License Agreement shall be recorded at the cost of the Licensee and shall be binding on any successors of the Parties. The failure to record all or portions of exhibits because of the size of the documents shall not affect this License Agreement.

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

20. COUNTERPARTS. This Agreement may be executed in several counterparts and, as so executed, shall constitute one Agreement, binding on all the parties even though all the parties have not signed the same counterpart. Any counterpart of this Agreement which has attached to it separate signature pages, which altogether contain the signatures of all the parties, shall be deemed a fully executed instrument for all purposes. Any signature relayed by electronic means, including facsimile or email, shall be considered to be originals for purposes of this agreement.

Dated: _____

ERIE COAL CREEK DITCH & RESERVOIR COMPANY

ATTEST

By: Russell Pennington, President

By: Angela R. Swanson, Secretary

Dated: _____

TOWN OF ERIE

By: _____

Its: _____

STATE OF COLORADO)
) ss.
City and County of _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 2017
by _____, as _____ of the Town of Erie.

Witness my hand and official seal.

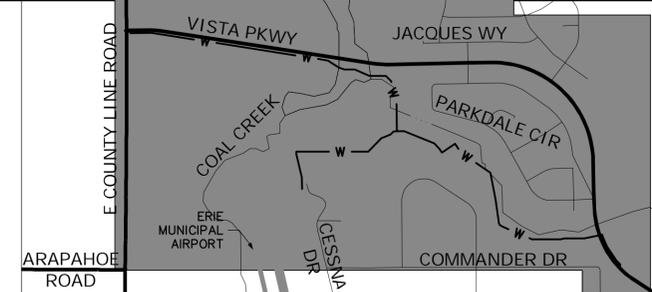
My Commission expires: _____

Notary Public

EXHIBIT A
ERIE COAL CREEK DITCH AND RESERVOIR COMPANY
LICENSE AGREEMENT

Crossing Location

(see attached map)



UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING OFFICIALS, THE USER APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
TOWN OF ERIE
DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

JR ENGINEERING
A Weidman Company
Central 303-740-9883 • Colorado Springs 719-589-2583
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=200'
V-SCALE	N/A
DATE	4/18/17
DESIGNED BY	AGR
DRAWN BY	REB
CHECKED BY	

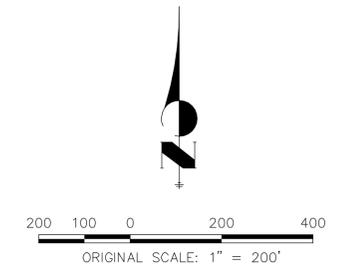
BASIS OF BEARINGS
THE SOUTH LINE OF THE NORTHEAST ¼ OF SECTION 30, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH. PRINCIPAL MERIDIAN, BEING MONUMENTED BY A 3-1/4" ALUMINUM CAP STAMPED 'LS 25369' AT THE CENTER ¼ CORNER AND A 3-1/2" ALUMINUM CAP STAMPED 'LS 7735' AT THE EAST ¼ CORNER, SAID LINE BEING ASSUMED TO BEAR N89°43'17"E A DISTANCE OF 2590.14 FEET.

BENCHMARK
THE BENCHMARK IS TOWN OF ERIE CONTROL MONUMENT 90, MONUMENTED BY A 3-1/2" BRASS CAP USGS BENCHMARK "TT-18J", HAVING A PUBLISHED ELEVATION OF 5135.14 NAVD88

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

BID SET

ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING



**EXHIBIT B
ERIE COAL CREEK DITCH AND RESERVOIR COMPANY
LICENSE AGREEMENT**

Plans and Specifications

(see attached diagrams)

ZONE 3 WATERLINE EXTENSION CONSTRUCTION PLANS

TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO

KEY CONTACTS

GOVERNING AUTHORITIES

TOWN OF ERIE
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER
303-926-2875

CIVIL ENGINEER
JR ENGINEERING
7200 SOUTH ALTON WAY, SUITE C400
CENTENNIAL, CO 80112
ATTN: ELI FARNEY
303-740-9393

ERIE COAL CREEK DITCH & RESERVOIR COMPANY
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: RUSSELL PENNINGTON
303-926-2878

ELECTRIC UTILITIES
UNITED POWER
500 COOPERATIVE WAY
BRIGHTON, CO 80601
ATTN: MONICA HANSEN
303-637-1336

XCEL ENERGY
2655 NORTH 63RD ST.
BOULDER, COLORADO 80301
(303) 245-2254

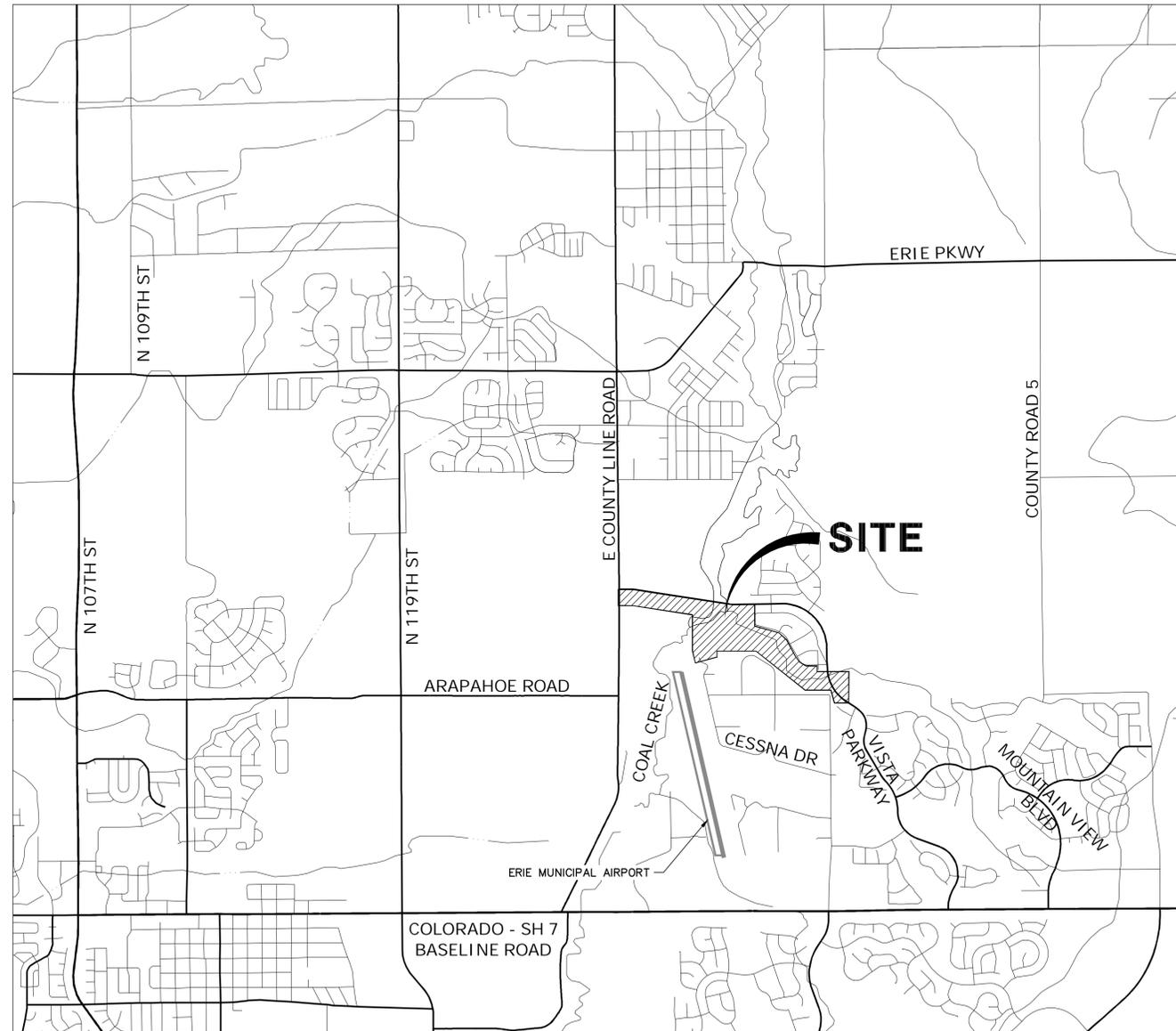
TELECOMMUNICATION UTILITIES
CENTURY LINK
5325 ZUNI STREET, #728
DENVER, CO 80221
ATTN: PEGGY ABEYTA
303-451-2098

COMCAST
903 37TH AVE CT
GREELEY CO 80634
ATTN: JOHN HAMBURG
970-336-6013

NORTHERN WATER
220 WATER AVENUE
BERTHOUD, CO 80513
ATTN: CURT GRAMBERG
888-823-6400

GAS UTILITIES
ENCANA OIL & GAS
370 - 17TH STREET, SUITE 1700
DENVER, CO 80202
ATTN: BOB BRESNAHAN
303-774-3982

KERR MCGEE OIL & GAS
1099 18TH ST.
SUITE 600
DENVER, CO 80202
720-929-6000
ATTN: RON OLSEN



VICINITY MAP

SCALE: 1"=2000'



BASIS OF BEARINGS

THE SOUTH LINE OF THE NORTHEAST ¼ OF SECTION 30, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH, PRINCIPAL MERIDIAN, BEING MONUMENTED BY A 3-1/4" ALUMINUM CAP STAMPED 'LS 25369' AT THE CENTER ¼ CORNER AND A 3-1/2" ALUMINUM CAP STAMPED 'LS 7735' AT THE EAST ¼ CORNER, SAID LINE BEING ASSUMED TO BEAR N89°43'17"E A DISTANCE OF 2590.14 FEET.

BENCHMARK

THE BENCHMARK IS TOWN OF ERIE CONTROL MONUMENT 90, MONUMENTED BY A 3-1/2" BRASS CAP USGS BENCHMARK 'TT-18J', HAVING A PUBLISHED ELEVATION OF 5135.14 NAVD88

PROJECT NUMBERS

TOWN OF ERIE PROJECT NO. P15-250
JR ENGINEERING PROJECT NO. 15708.05

SHEET INDEX

- 1 COVER SHEET
- 2 LEGEND & ABBREVIATIONS
- 3-4 GENERAL NOTES
- 5 SURVEY CONTROL DIAGRAM
- 6-13 WPO1 PLAN AND PROFILE
- 14-15 WPO2 PLAN & PROFILE
- 16-19 DETAIL SHEET

TOWN OF ERIE APPROVALS

DRAWING ACCEPTANCE

ALL WORK SHALL BE CONSTRUCTED TO TOWN OF ERIE STANDARDS AND SPECIFICATIONS. THIS DRAWING HAS BEEN REVIEWED AND FOUND TO BE IN GENERAL COMPLIANCE WITH THESE STANDARDS AND SPECIFICATIONS AND OTHER TOWN REQUIREMENTS.

THE ENGINEERING DESIGN AND CONCEPT REMAINS THE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE APPEAR HEREON.

ACCEPTED BY: _____ DEPUTY DIRECTOR OF PUBLIC WORKS DATE _____

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION



BID SET

ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING OFFICIALS, THIS DRAWING APPROVES THE USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
TOWN OF ERIE
DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

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A Weidman Company
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Fort Collins 970-491-9888 • www.jrengineering.com

BY	DATE	REVISION	No.	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
				N/A	N/A	4/18/17			

ZONE 3 WATERLINE EXTENSION
COVER SHEET
SHEET 1 OF 19
JOB NO. 15708.05

GENERAL NOTES-WATER

- AT ALL POINTS OF CONNECTION OF NEW WATER MAINS TO EXISTING MAINS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATING AND VERIFYING LOCATION OF THE EXISTING LINES PRIOR TO ANY CONSTRUCTION.
- EXCEPT IN CASE OF AN EMERGENCY, VALVES ON THE TOWN OF ERIE WATER SYSTEM SHALL BE OPERATED BY OR UNDER THE DIRECTION OF THE APPROPRIATE TOWN OF ERIE PERSONNEL. THE CONTRACTOR SHALL GIVE THE TOWN OF ERIE ENGINEERING STAFF 48 HOURS NOTICE TO ARRANGE FOR OPERATING VALVES. BOTH THE CONTRACTOR AND THE APPROPRIATE TOWN OF ERIE PERSONNEL SHALL BE PRESENT WHEN THE VALVES ARE OPERATED.
- ALL WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. WHEN A TEN (10) FOOT SEPARATION IS NOT PROVIDED OR WHEN SEWER LINES CROSS WATER LINES WITH LESS THAN ONE AND ONE-HALF (1½) FEET OF VERTICAL SEPARATION, SEWER LINE JOINTS SHALL BE CONCRETE ENCASED. FOR PERPENDICULAR CROSSINGS, ENCASED JOINTS SHALL EXTEND TEN (10) FEET, PERPENDICULAR TO THE WATER LINE IN BOTH DIRECTIONS.
- ALL WATER LINES SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4½) FEET OF COVER AND BE LOCATED A MINIMUM OF TEN (10) FEET FROM THE SANITARY SEWER AND THREE (3) FEET FROM THE EDGE OF CONCRETE CURB AND GUTTER PAN.
- WHEN IT IS NECESSARY TO DEPRESS WATER LINES AT UTILITY CROSSINGS, A MINIMUM CLEARANCE OF ONE AND ONE-HALF (1-1/2) FEET SHALL BE MAINTAINED BETWEEN OUTSIDES OF PIPE.
- DISTANCES FOR WATER LINES ARE THE HORIZONTAL DISTANCE BETWEEN THE CENTERS OF THE FITTINGS. THEREFORE, DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND FITTING DIMENSIONS.
- ALL WATER LINE VALVES SHALL BE SET ADJACENT TO THE TEE, EXCEPT FOR POINTS THAT FALL IN THE FLOW LINE OF A CONCRETE CROSS PAN. IN WHICH CASE, THE VALVE SHALL BE LOCATED SO THAT SURFACE DRAINAGE DOES NOT INFILTRATE THE VALVE BOX. VALVE BOXES SHALL BE SET AT AN ELEVATION IN ACCORDANCE WITH TOWN PAVING REQUIREMENTS.
- ALL WATER MAINS SHALL BE POLYVINYL CHLORIDE (PVC) PRESSURE PIPE UNLESS SPECIFIED OTHERWISE. NOMINAL PVC PIPE SIZES 6-INCH THROUGH 12-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-900, PRESSURE CLASS 150 (DR18). NOMINAL PVC PIPE SIZES 16-INCH THROUGH 24-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-905, PRESSURE CLASS 165 (DR25). ALL PVC PIPES SHALL HAVE OUTSIDE DIAMETERS EQUIVALENT TO CAST IRON PIPE.
- DUCTILE IRON PIPE (DIP) SHALL CONFORM TO ANSI/AWWA C151/A21.51 AND ANSI/AWWA C111/A21.11 AS FOLLOWS: PUSH-ON JOINTS UTILIZING RUBBER RING GASKETS CONFORMING TO ANSI/AWWA C104/A21.11; CEMENT MORTAR LINING CONFORMING TO ANSI/AWWA C104/A21.4; BITUMINOUS OUTSIDE COATING APPROXIMATELY ONE MIL THICK; EACH PIPE MARKED WITH THE WEIGHT AND CLASS DESIGNATION. DIP SIZES 4-INCH THROUGH 12-INCH SHALL CONFORM TO PRESSURE CLASS 350. DIP SIZE 24-INCH SHALL CONFORM TO PRESSURE CLASS 200. DIP SHALL BE WRAPPED IN CLEAR POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA C105/A21.5. THE CONTRACTOR AND DIP SUPPLIER SHALL REVIEW THE PROJECT'S GEOTECHNICAL STUDIES AND PROVIDE ADEQUATE CORROSION PROTECTION FOR BURIED METAL.
- FIRE HYDRANT ASSEMBLY INCLUDES THE FIRE HYDRANT, SIX (6) INCH VALVE, AND SIX (6) INCH PIPE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
- ALL FITTINGS SHALL BE MADE FROM DUCTILE IRON, FURNISHED WITH MECHANICAL JOINT ENDS OR INTEGRAL RESTRAINED JOINTS, AND SHALL HAVE A PRESSURE RATING OF 350 PSI.
- POLYETHYLENE WRAPPING SHALL BE INSTALLED AROUND ALL DUCTILE IRON PIPES, FITTINGS, VALVES, FIRE HYDRANT BARRELS AND ROD AND CLAMPS. THE POLYETHYLENE SHALL HAVE A MINIMUM THICKNESS OF EIGHT (8) MILS, IN ACCORDANCE WITH AWWA STANDARD C-105.
- ALL WATER LINE PIPE SHALL BE PROVIDED WITH A MINIMUM GAGE SIZE OF #12 AWG INSULATED SINGLE-STRAND COPPER WIRE. SPLICES IN TRACER WIRE SHALL BE CAPPED IN WATER PROOF GEL CAP TYPE CONNECTORS SUITED FOR DIRECT BURY APPLICATION (3M TYPE DBY-6 LOW VOLTAGE OR EQUAL). WIRE SHALL BE ATTACHED TO TOP OF WATER LINE WITH 2-INCH WIDE PVC TAPE @ 5-FT INTERVALS ALONG PIPE. TRACER WIRE SHALL EXTEND TO THE SURFACE AND BE COILED IN A LOCATE BOX AT THE BACKSIDE OF EITHER EACH FIRE HYDRANT OR VALVE. UNDER THE SUPERVISION OF TOWN OF ERIE ENGINEERING STAFF, TEST SHALL BE MADE BY THE CONTRACTOR @ THE COMPLETION OF CONSTRUCTION TO INSURE THAT THE TRACER WIRES CARRY A CONTINUOUS CURRENT BETWEEN ALL ACCESS POINTS.
- WARNING TAPE SHALL BE INSTALLED 12" MINIMUM AND 18" MAXIMUM ABOVE WATER PIPE.
- BEDDING MATERIAL SHALL CONFORM TO TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
- VALVES SHALL OPEN COUNTER CLOCKWISE. VALVES 12-INCH AND SMALLER SHALL BE RESILIENT SEAT GATE VALVES. LARGER VALVES SHALL BE BUTTERFLY VALVES.
- VALVE BOXES SHALL BE RAISED TO ONE-FOURTH (1/4) INCH BELOW GRADE AFTER COMPLETION OF SURFACE PAVING OR FINAL GRADING. VALVE BOXES IN NON-PAVED AREAS SHALL HAVE A CONCRETE COLLAR AROUND THE VALVE LID IN ACCORDANCE WITH THE DETAIL.
- ALL SERVICE LINE TAPS SHALL HAVE DOUBLE STRAP BRASS TAPPING SADDLES. (ROMAC 202B OR APPROVED EQUAL).
- ALL RESIDENTIAL WATER TAPS SHALL BE THREE-QUARTER (3/4) INCH OR AS REQUIRED BY THE CURRENT BUILDING CODE.
- ALL WATER SERVICE LATERALS SHALL EXTEND FIVE (5) FEET BEYOND RIGHT OF WAY OR UTILITY EASEMENTS, WHICHEVER IS GREATER. THE ENDS SHALL BE MARKED BY A BLUE PAINTED WOOD POST UNTIL CURB AND GUTTER IS IN PLACE. WHEN CURB AND GUTTER IS IN PLACE THE LATERALS SHALL BE MARKED ON THE CONCRETE CURB FACE WITH A "V" OR "W".
- CONCRETE THRUST BLOCKS AND/OR "MEGA-LUG" MECHANICAL RESTRAINTS ARE REQUIRED AT ALL MECHANICAL FITTINGS. THRUST BLOCKS MAY NOT BE REQUIRED IF PIPE RESTRAINT IS PROVIDED IN ACCORDANCE WITH RESTRAINED PIPE DETAIL.
- NO WORK SHALL BE BACKFILLED (INCLUDING BEDDING MATERIAL ABOVE THE SPRING LINE OF THE PIPE) UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE TOWN OF ERIE ENGINEERING STAFF.
- ONLY ONE CONNECTION TO THE EXISTING WATER DISTRIBUTION SYSTEM SHALL BE MADE UNTIL ALL HYDROSTATIC TESTING, CHLORINATION AND FLUSHING HAS BEEN COMPLETED.
- DISINFECTION AND HYDROSTATIC TESTING SHALL BE DONE IN THE PRESENCE OF A TOWN OF ERIE ENGINEERING STAFF. CONTACT THE TOWN

- OF ERIE DEPARTMENT OF PUBLIC WORKS, FORTY-EIGHT (48) HOURS PRIOR TO DISINFECTING AND/OR TESTING.
- DISINFECTION AND FLUSHING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE COLORADO DEPARTMENT OF HEALTH AND THE PROCEDURE SET FORTH IN AWWA C651, "STANDARD FOR DISINFECTING WATER MAINS". THE CHLORINATION OF THE WATER LINE SHALL BE PERFORMED PRIOR TO THE HYDROSTATIC TESTING. ALL VALVES, FIRE HYDRANTS AND OTHER APPURTANCES SHALL BE OPERATED WHILE PIPELINE IS FILLED WITH THE CHLORINATING AGENT TO INSURE THAT HIGH CHLORINE CONTACT IS MADE WITH ALL INTERNAL SURFACES.
- ALL WATER LINES SHALL BE HYDROSTATIC TESTED. PRESSURE AND LEAKAGE TESTS SHALL BE CONDUCTED ACCORDING TO THE APPLICABLE SECTIONS OF AWWA C600/605 TO A MINIMUM PRESSURE OF ONE HUNDRED AND FIFTY (150) POUNDS PER SQUARE (PSI) INCH AT THE LOW POINT OF THE SECTION BEING TESTED FOR THE DURATION OF TWO (2) HOURS. THE MAXIMUM LENGTH OF LINE TO BE TESTED SHALL BE ONE THOUSAND (1,000) FEET. ALL JOINTS IN CONNECTIONS ARE TO BE WATERTIGHT WITHIN TOLERANCES ALLOWED BY THE SPECIFICATIONS IN AWWA C600/605. ANY LEAKAGE THAT IS DISCOVERED BY OBSERVATION OR TESTS SHALL BE LOCATED AND MADE WATERTIGHT BY THE CONTRACTOR. PRESSURE AND LEAKAGE TESTS SHALL NOT BE CONDUCTED UNTIL THE LINE HAS PASSED ALL REQUIRED DISINFECTION TESTS.
- SUBSTANTIAL COMPLETION/CONSTRUCTION ACCEPTANCE OF THE NEW WATER LINES ARE CONTINGENT UPON RECEIVING COPIES OF:
 - WATER TRENCH COMPACTION TEST RESULTS
 - HYDRO STATIC TESTING OF 100% OF THE SYSTEM
 - HEALTH DEPARTMENT TESTS. (CHLORINE AND/OR CLEAR WATER AS REQUIRED)
- ALL METER PITS AND CURB STOPS SHALL BE PROTECTED AT THE TIME OF INSTALLATION WITH A MINIMUM OF THREE (3) T-POSTS AND ORANGE SAFETY FENCE. THE T-POST AND SAFETY FENCE SHALL REMAIN IN PLACE AND IN GOOD CONDITION UNTIL THE LANDSCAPING IS INSTALLED.
- ALL WATER VAULTS SHALL BE WATER TIGHT. CONTRACTOR SHALL SEAL VAULTS TO ENSURE GROUND WATER DOES NOT INFILTRATE INTO THE VAULTS. VAULT LIDS SHALL BE PLACED TO ENSURE THAT SURFACE WATER DOES NOT FLOW INTO THE VAULTS.
- ALL VALVES, BLOW-OFF ASSEMBLIES, AND AIR RELIEF VALVES PLACED OUTSIDE OF THE ROADWAY SHALL INCLUDE A MARKER POST IN ACCORDANCE WITH TOWN OF ERIE DETAIL W29.
- FOR THE HORIZONTAL RESTRAINT LENGTH, SEE DETAIL W16. FOR THE VERTICAL RESTRAINT LENGTH, SEE DETAIL W27. EXISTING PIPE RESTRAINT LENGTHS ARE NOT LABELED ON THE PLANS.
- PIPE LENGTHS ARE FROM CENTER OF FITTING TO CENTER OF FITTING.
- ALL STATIONING IS CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.

GEOTECHNICAL NOTES

- DEWATERING CONSIDERATIONS: GROUNDWATER WAS ENCOUNTERED AT DEPTHS RANGING FROM ABOUT 9 TO 17 FEET BELOW THE GROUND SURFACE AT THE TIME OF DRILLING. GROUNDWATER LEVELS ARE EXPECTED TO FLUCTUATE WITH TIME, AND MAY FLUCTUATE UPWARD AFTER WET WEATHER ESPECIALLY NEAR THE DRAINAGES. DEWATERING THE EXCAVATIONS MAY BE ACCOMPLISHED USING TRENCHES AND SUMPS; HOWEVER, A DEWATERING PLAN SHALL BE DESIGNED BY THE CONTRACTOR AND REVIEWED PRIOR TO EXCAVATION IN THE EVENT THAT TRENCHES AND SUMPS ARE NOT SUFFICIENT. DEWATERING WELL POINTS WILL LIKELY NOT BE AN EFFECTIVE MEANS OF DEWATERING DUE TO THE CLAYEY SUBSURFACE CONDITIONS. SURFACE WATER RUNOFF INTO THE EXCAVATIONS CAN ACT TO ERODE AND POTENTIALLY DESTABILIZE THE TRENCH SLOPES AND RESULT IN SOFT GROUND CONDITIONS ALONG THE TRENCH BOTTOM, AND SHALL NOT BE ALLOWED. DIVERSION BERMS AND OTHER MEASURES SHALL BE USED TO PREVENT SURFACE WATER RUNOFF INTO THE TRENCHES FROM OCCURRING.
- TUNNELING/TRENCHLESS CONSTRUCTION CONSIDERATIONS: THE SUBSURFACE CONDITIONS AT THE JACKING AND RECEIVING PITS ARE EXPECTED TO CONSIST OF COHESIVE FINE-GRAINED CLAYEY FILL AND NATURAL LEAN CLAY TO SANDY LEAN CLAY POTENTIALLY UNDERLAIN BY NATURAL GRANULAR SOILS NEAR THE BOTTOM OF THE PITS. TEMPORARY SHORING AND DEWATERING MAY BE NECESSARY AT THE JACKING AND RECEIVING PITS IF THE SLOPES CANNOT BE LAID BACK AND/OR IF PERCHED GROUNDWATER IS ENCOUNTERED AT THE TIME OF EXCAVATION. TEMPORARY SHORING WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- DEWATERING WILL NOT BE MEASURED BUT WILL BE PAID BY LUMP SUM. DEWATERING SHALL INCLUDE ALL WORK NECESSARY TO DEWATER SECTIONS OF THE PROJECT IF GROUNDWATER AND WET SUBSURFACE SOIL CONDITIONS ARE ENCOUNTERED. PREPARATION OF THE DEWATERING PLAN AND DEWATERING PERMIT FEES SHALL BE INCLUDED IN THE WORK.

FLOODPLAIN NOTES

- THE WORK SHOWN ON SHEETS 8, 9, 10, 14, AND 15 IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS.
- CONTRACTOR SHALL OBTAIN A FLOODPLAIN PERMIT FROM THE TOWN OF ERIE.

AERONAUTICAL HAZARD NOTES

- THIS PROJECT REQUIRES COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA) AND ERIE MUNICIPAL AIRPORT.
- THE PROJECT HAS BEEN FILED WITH THE FAA AS AERONAUTICAL STUDY NO. 2016-ANM-3470-OE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING AND UPHOLDING ALL REQUIREMENTS AND LIMITATIONS SET FORTH IN THE DETERMINATION OF AERONAUTICAL STUDY NO. 2016-ANM-3470-OE.
- THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE MET:
 - CONTRACTOR SHALL CONFIRM ALL PROPOSED IMPROVEMENTS CAN BE BUILT WITHIN THE WORK AREA SHOWN ON THE PLANS.
 - CONTRACTOR SHALL CONFIRM NO EQUIPMENT OVER A MAX OPERATING HEIGHT OF 45 FEET WILL BE USED.
 - ALL EQUIPMENT GREATER THAN (7) FEET IN HEIGHT SHALL BE MARKED/LIGHTED IN ACCORDANCE WITH APPLICABLE FAA STANDARDS.
 - ANY FAILURE OR MALFUNCTION THAT LASTS MORE THAN 30 MINUTES OF A TOP LIGHT OR FLASHING OBSTRUCTION LIGHT SHALL BE REPORTED TO (877) 487-6867 IMMEDIATELY.
 - A MINIMUM OF (3) DAYS PRIOR TO BEGINNING CONSTRUCTION THE FOLLOWING PERSONNEL SHALL BE NOTIFIED:
 - JASON HURD, EIK AIRPORT MANAGER: (303) 664-0633
 - BILL DUNN, SUPPORT SPECIALIST, DENVER TRACON: (303) 342-1546
 - A MINIMUM OF (5) DAYS PRIOR TO BEGINNING CONSTRUCTION THE FOLLOWING PERSONNEL SHALL BE NOTIFIED WITH THE FOLLOWING INFORMATION: 1. SUBJECT: "NOTAM ALERT 2016-ANM-3470-OE", 2. START DATE, 3. END DATE, 4. TIME RESTRICTED EQUIPMENT WILL BE USED, 5. ON-SITE CONTACT NAME AND NUMBER.
 - VEE STEWART, FAA OE SPECIALIST: VEE.STEWART@FAA.GOV / (816) 329-2508
 - DAVE MADDOX, FAA OE ALTERNATE: DAVID.MADDOX@FAA.GOV / (202) 267-4525
- PLEASE NOTE, NOTIFICATION SHALL BE MADE VIA A LIVE PHONE CALL OR EMAIL WITH A READ RECEIPT. OTHER FORMS OF NOTIFICATION ARE NOT ACCEPTABLE.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION



BID SET

ELIJAH C. FARNEY, P.E.
 COLORADO P.E. #41677
 FOR AND ON BEHALF OF JR ENGINEERING

ZONE 3 WATERLINE EXTENSION	GENERAL NOTES	UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES THEIR USE IS ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.	PREPARED FOR TOWN OF ERIE DEPT. OF PUBLIC WORKS 645 HOLBROOK STREET ERIE, CO 80516 ATTN: WENDI PALMER		
BY	DATE	NO.	REVISION	H-SCALE	V-SCALE
N/A	N/A	N/A	N/A	DATE	DESIGNED BY
4/18/17	REB	DRAWN BY	CHECKED BY		
		SHEET	4	OF	19
		JOB NO.	15708.05		



UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING OFFICIAL, THE USER APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
TOWN OF ERIE
DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

JR ENGINEERING
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Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE
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2			
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H-SCALE 1" = 200'	N/A
	V-SCALE 4/18/17
DESIGNED BY	AGR
DRAWN BY	REB
CHECKED BY	

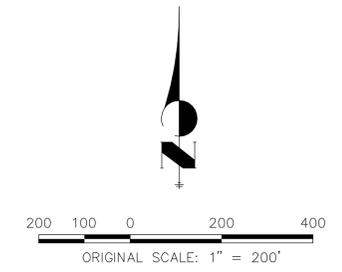
BASIS OF BEARINGS
THE SOUTH LINE OF THE NORTHEAST ¼ OF SECTION 30, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH. PRINCIPAL MERIDIAN, BEING MONUMENTED BY A 3-1/4" ALUMINUM CAP STAMPED 'LS 25369' AT THE CENTER ¼ CORNER AND A 3-1/2" ALUMINUM CAP STAMPED 'LS 7735' AT THE EAST ¼ CORNER, SAID LINE BEING ASSUMED TO BEAR N89°43'17"E A DISTANCE OF 2590.14 FEET.

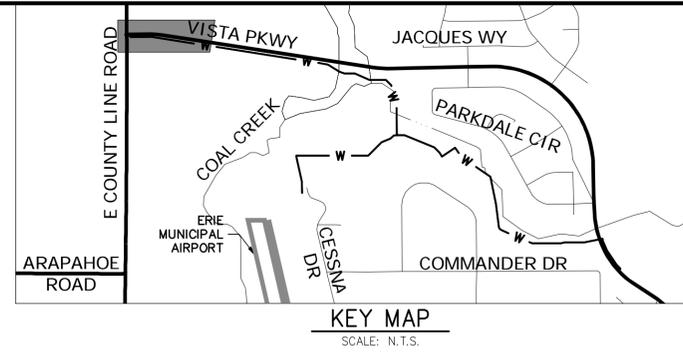
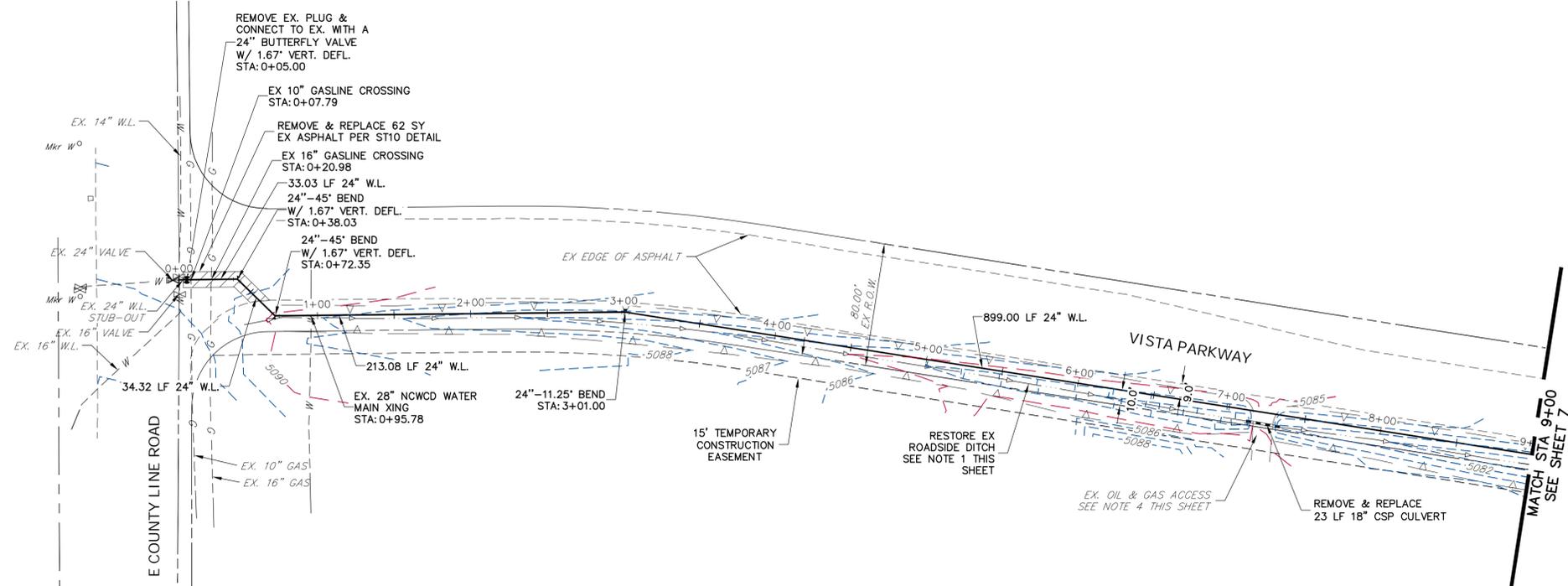
BENCHMARK
THE BENCHMARK IS TOWN OF ERIE CONTROL MONUMENT 90, MONUMENTED BY A 3-1/2" BRASS CAP USGS BENCHMARK "TT-18", HAVING A PUBLISHED ELEVATION OF 5135.14 NAVD88

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

BID SET

ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

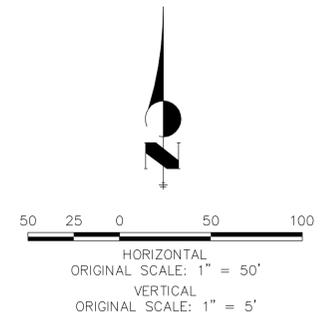
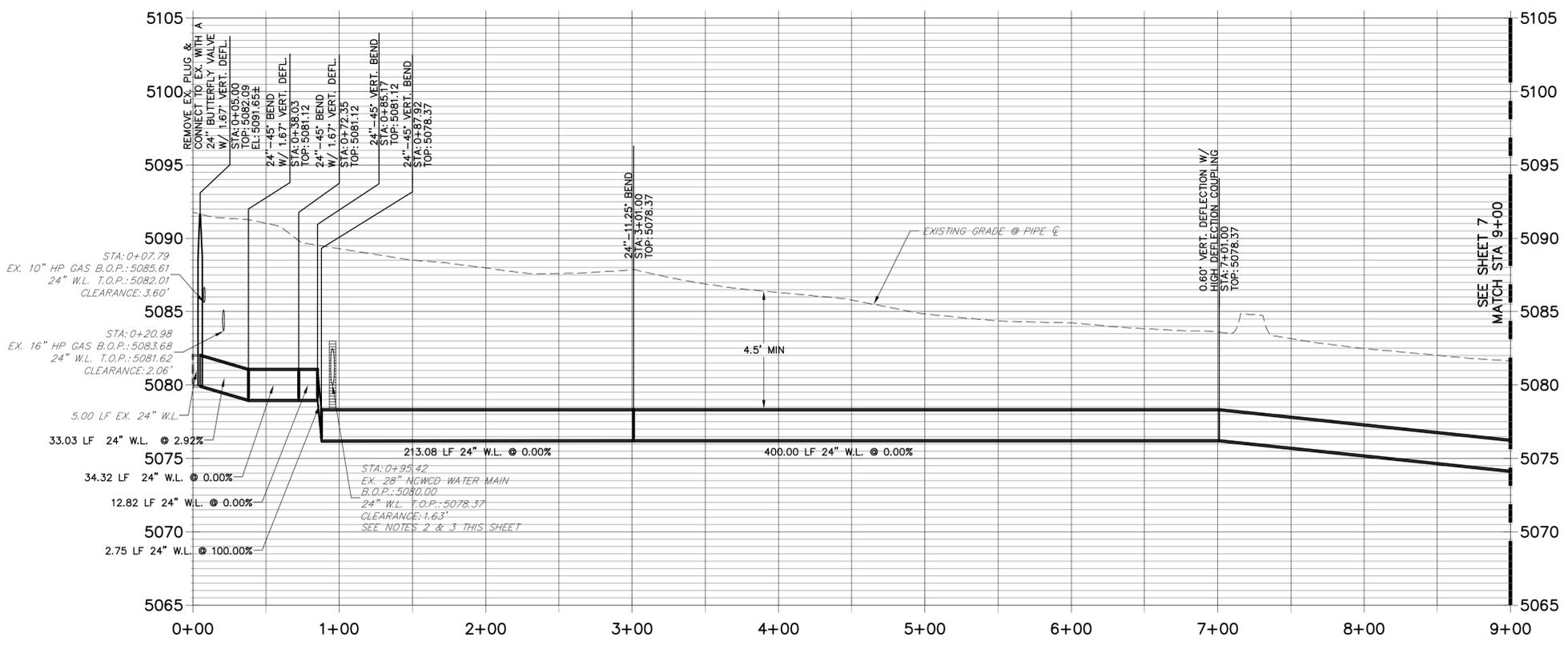




SHEET 6 NOTES

- RESTORE ROADSIDE DITCH GRADING TO EXISTING CONDITIONS OR BETTER. STABILIZE WITH EROSION CONTROL BLANKET, CHECK DAMS, AND NATIVE SEEDING.
- SPECIAL TRENCH BACKFILL INSTRUCTIONS FOR NCWCD WATER MAIN: PROVIDE LOW STRENGTH STRUCTURE FLOW-FILL BACKFILL AROUND EXISTING NCWCD WATER MAIN FOR LENGTH OF EXPOSED PIPE. MINIMUM LIMITS OF FLOW-FILL ARE AS FOLLOWS:
 - WIDTH=PIPE DIAMETER PLUS 1-FOOT EACH SIDE
 - DEPTH=2 FEET MINIMUM BELOW PIPE. IF DISTANCE FROM TOP OF ERIE ZONE 3 WATERLINE TO BOTTOM OF NCWCD WATER MAIN IS 3 FEET OR LESS, START FLOW-FILL FROM TOP OF ERIE ZONE 3 WATERLINE FOR DISTANCE 3 FEET BEYOND ERIE ZONE 3 WATERLINE EDGE THEN MAINTAIN 2-FOOT DEPTH BELOW NCWCD WATER MAIN THEREAFTER.
- HEIGHT=6-INCH MINIMUM ABOVE NCWCD WATER MAIN
- PROVIDE CONTINUOUS SUPPORT OF NCWCD WATER MAIN DURING CONSTRUCTION. NCWCD REPRESENTATIVE TO VERIFY SUPPORT STRUCTURE IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY. IF AN EXISTING NCWCD WATER MAIN JOINT IS EXPOSED AND THE PROTECTIVE WRAP BECOMES DAMAGED, COORDINATE WITH NCWCD MAINTENANCE FOR REPAIRS. REPAIRS TO JOINT WRAPPINGS ONLY WILL BE PROVIDED BY NCWCD.
- PROVIDE OIL AND GAS COMPANY A MINIMUM OF 2 WEEKS NOTIFICATION OF CROSSING AND WORK ADJACENT TO THE ACCESS.

**WP01 PROFILE
STA 0+00.00 TO 9+00.00**



ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION



ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES THEIR USE IS ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
TOWN OF ERIE
DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

JR ENGINEERING
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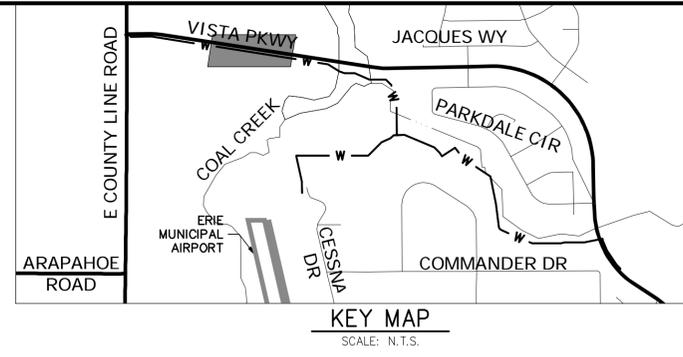
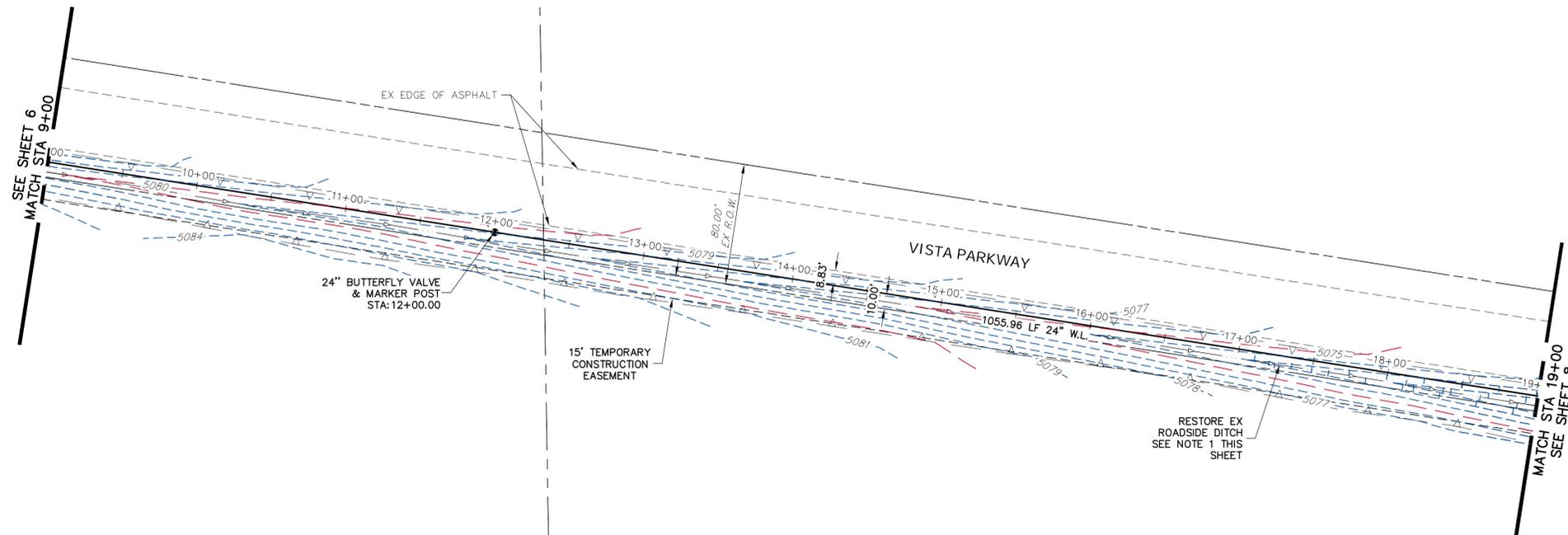
H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1"=50'	1"=5'	4/18/17	AGR	REB	

ZONE 3 WATERLINE EXTENSION

WP01 PLAN AND PROFILE

SHEET 6 OF 19

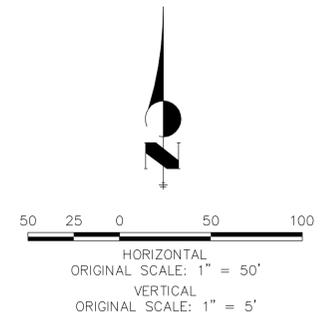
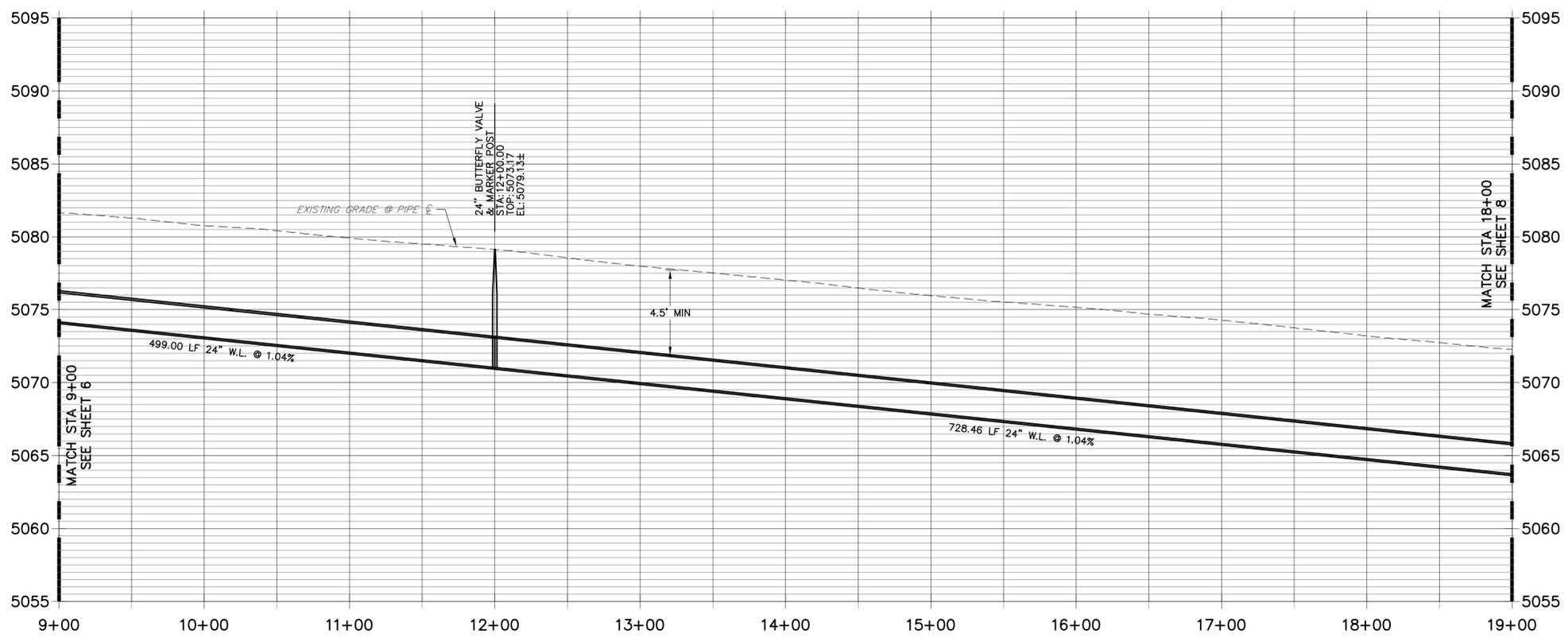
JOB NO. 15708.05



SHEET 7 NOTES

- RESTORE ROADSIDE DITCH GRADING TO EXISTING CONDITIONS OR BETTER. STABILIZE WITH EROSION CONTROL BLANKET, CHECK DAMS, AND NATIVE SEEDING.

WP01 PROFILE
STA 9+00.00 TO 19+00.00



ENGINEER'S STATEMENT

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COLORADO P.E. #41677
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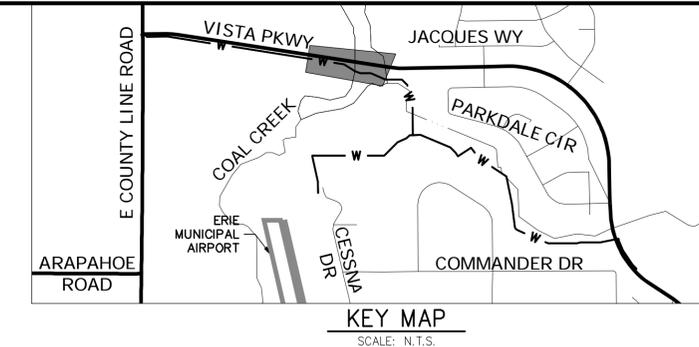
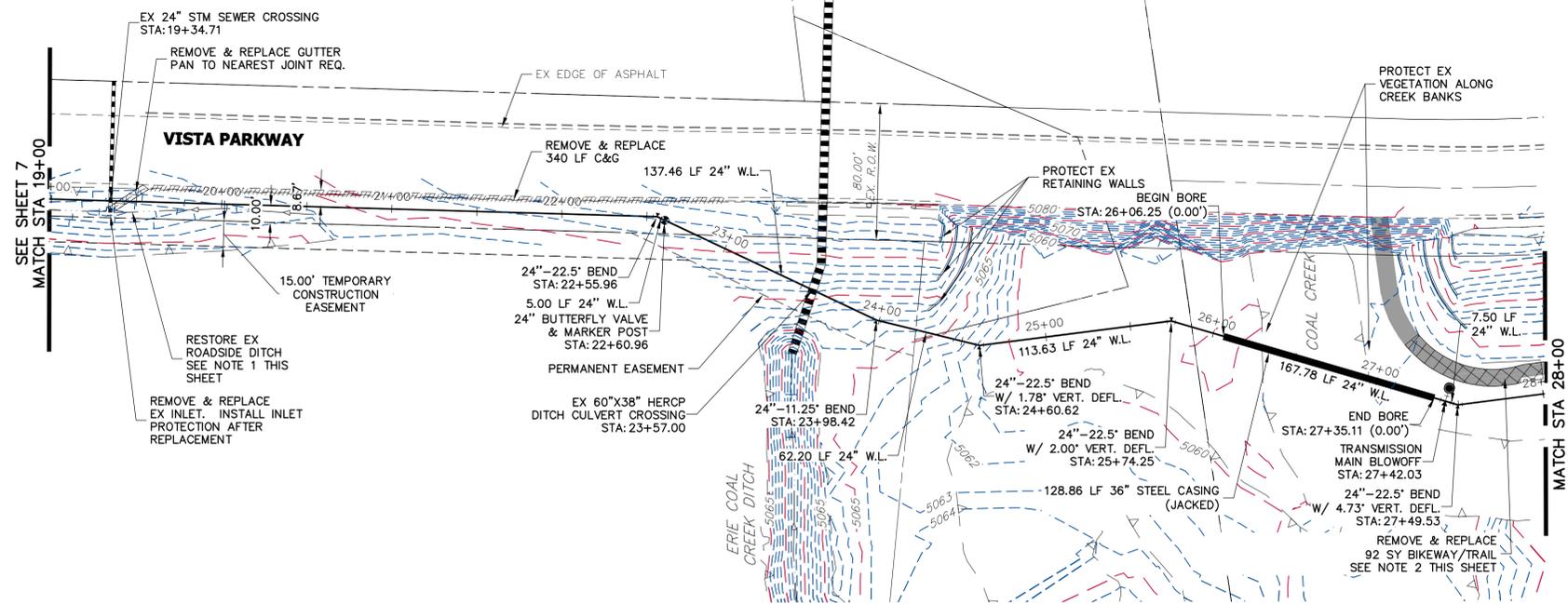
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TOWN OF ERIE
DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

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A Weidman Company

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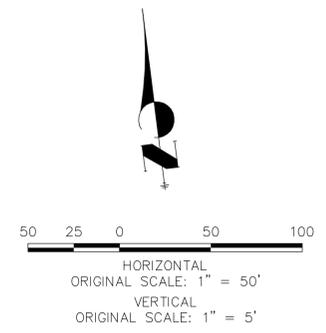
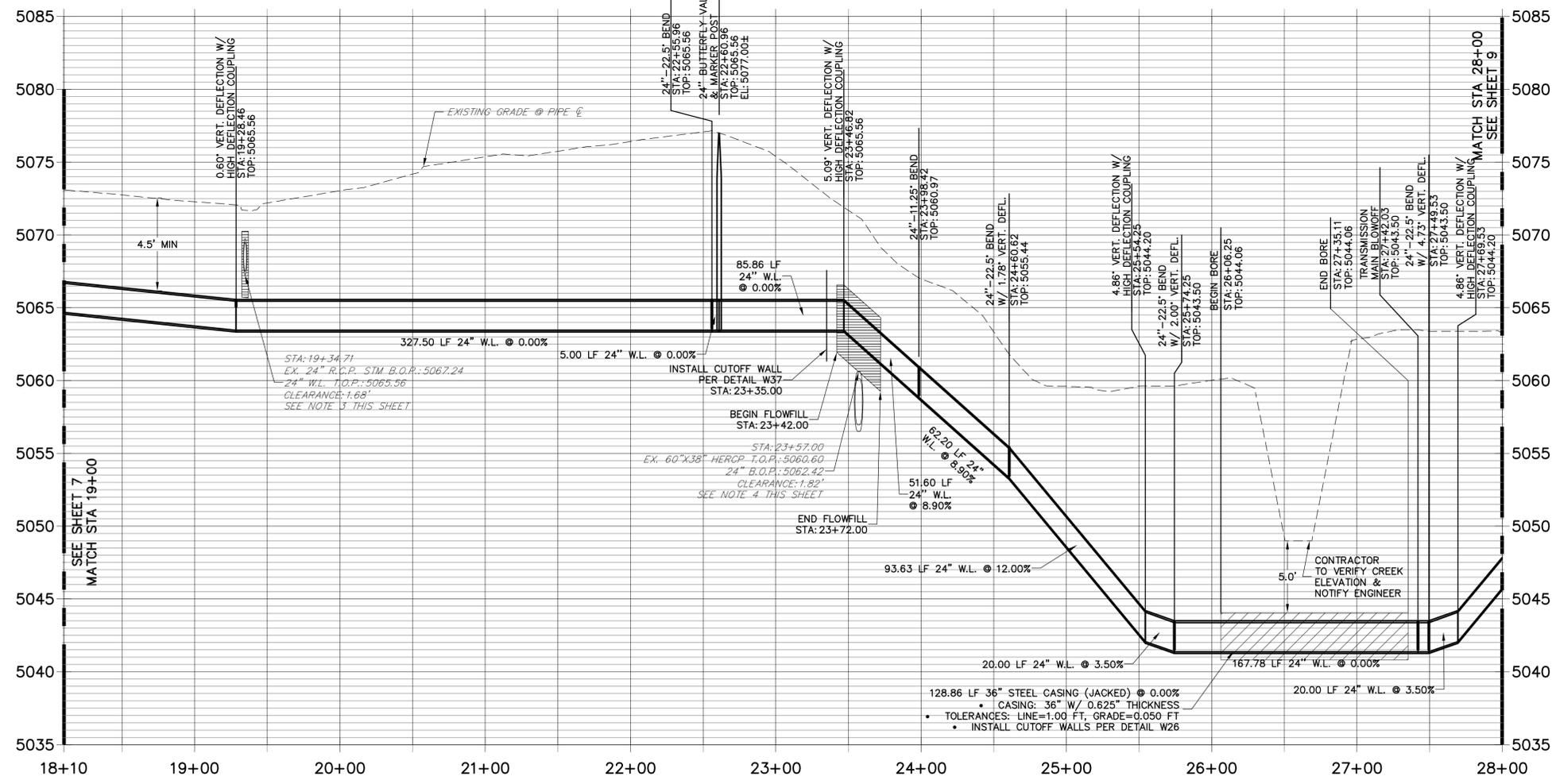
ZONE 3 WATERLINE EXTENSION	H-SCALE	1"=50'
	V-SCALE	1"=5'
WP01 PLAN AND PROFILE	DATE	4/18/17
	DESIGNED BY	AGR
SHEET 7 OF 19	DRAWN BY	REB
	CHECKED BY	
JOB NO.	15708.05	



SHEET 8 NOTES

- RESTORE ROADSIDE DITCH GRADING TO EXISTING CONDITIONS OR BETTER. STABILIZE WITH EROSION CONTROL BLANKET, CHECK DAMS, AND NATIVE SEEDING.
- REPLACE CONCRETE BIKEWAY AND CRUSHER FINE TRAIL IN ACCORDANCE WITH DETAIL P25. BIKEWAY/TRAIL REMOVAL AND REPLACEMENT OUTSIDE LIMITS SHOWN WILL BE PAID FOR BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT PEDESTRIAN AND BICYCLE DETOUR PLAN TO TOWN OF ERIE FOR APPROVAL.
- SPECIAL TRENCH BACKFILL INSTRUCTIONS FOR 24-INCH RCP: PROVIDE LOW STRENGTH STRUCTURE FLOW-FILL BACKFILL AROUND EXISTING RCP FOR LENGTH OF EXPOSED PIPE. MINIMUM LIMITS OF FLOW-FILL ARE AS FOLLOWS:
 - WIDTH=PIPE DIAMETER PLUS 1-FOOT EACH SIDE
 - DEPTH=2 FEET MINIMUM BELOW PIPE. START FLOW-FILL FROM TOP OF ERIE ZONE 3 WATERLINE FOR DISTANCE 3 FEET BEYOND ERIE ZONE 3 WATERLINE EDGE THEN MAINTAIN 2-FOOT DEPTH BELOW RCP THEREAFTER
 - HEIGHT=6-INCH MINIMUM ABOVE RCP
- TO ENSURE PROPER BACKFILL AROUND THE WATERLINE WITHOUT MECHANICAL OR MANUAL COMPACTION DIRECTLY OVER THE 60"x38" HERCP, THE WATERLINE TRENCH SHALL BE BACKFILLED WITH LOW STRENGTH STRUCTURE FLOW-FILL BACKFILL TO A HEIGHT ONE FOOT ABOVE THE CROWN OF THE WATERLINE, FOR A DISTANCE OF APPROXIMATELY 15 FEET CENTERED ON THE 60"x38" HERCP.

**WP01 PROFILE
 STA 18+10.00 TO 28+00.00**



ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

BID SET

ELIJAH C. FARNEY, P.E.
 COLORADO P.E. #41677
 FOR AND ON BEHALF OF JR ENGINEERING

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 ERIE, CO 80516
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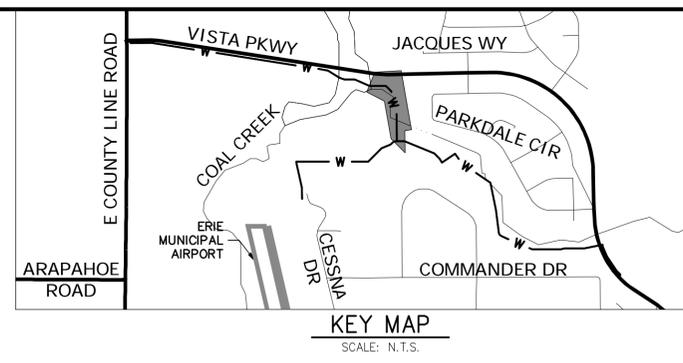
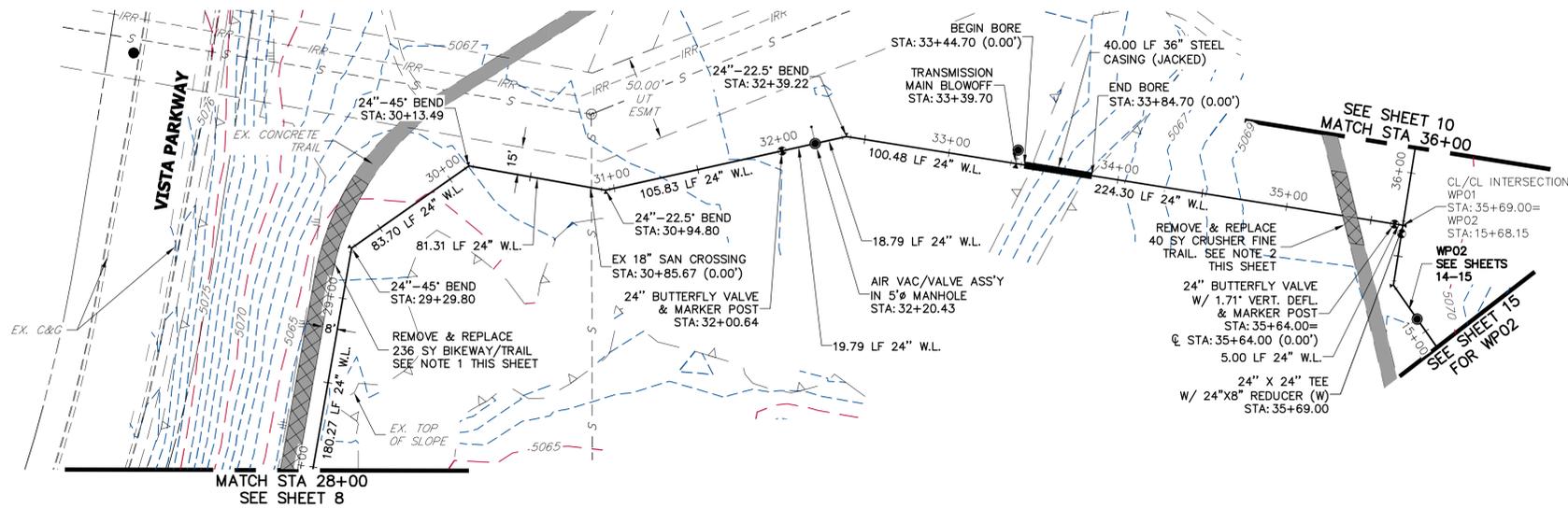
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No.	REVISION	BY	DATE

H-SCALE 1"=50'
 V-SCALE 1"=5'
 DATE 4/18/17
 DESIGNED BY AGR
 DRAWN BY REB
 CHECKED BY

ZONE 3 WATERLINE EXTENSION
WP01 PLAN AND PROFILE

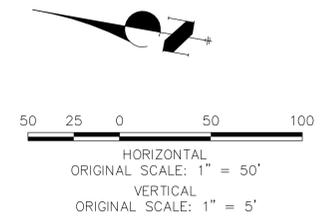
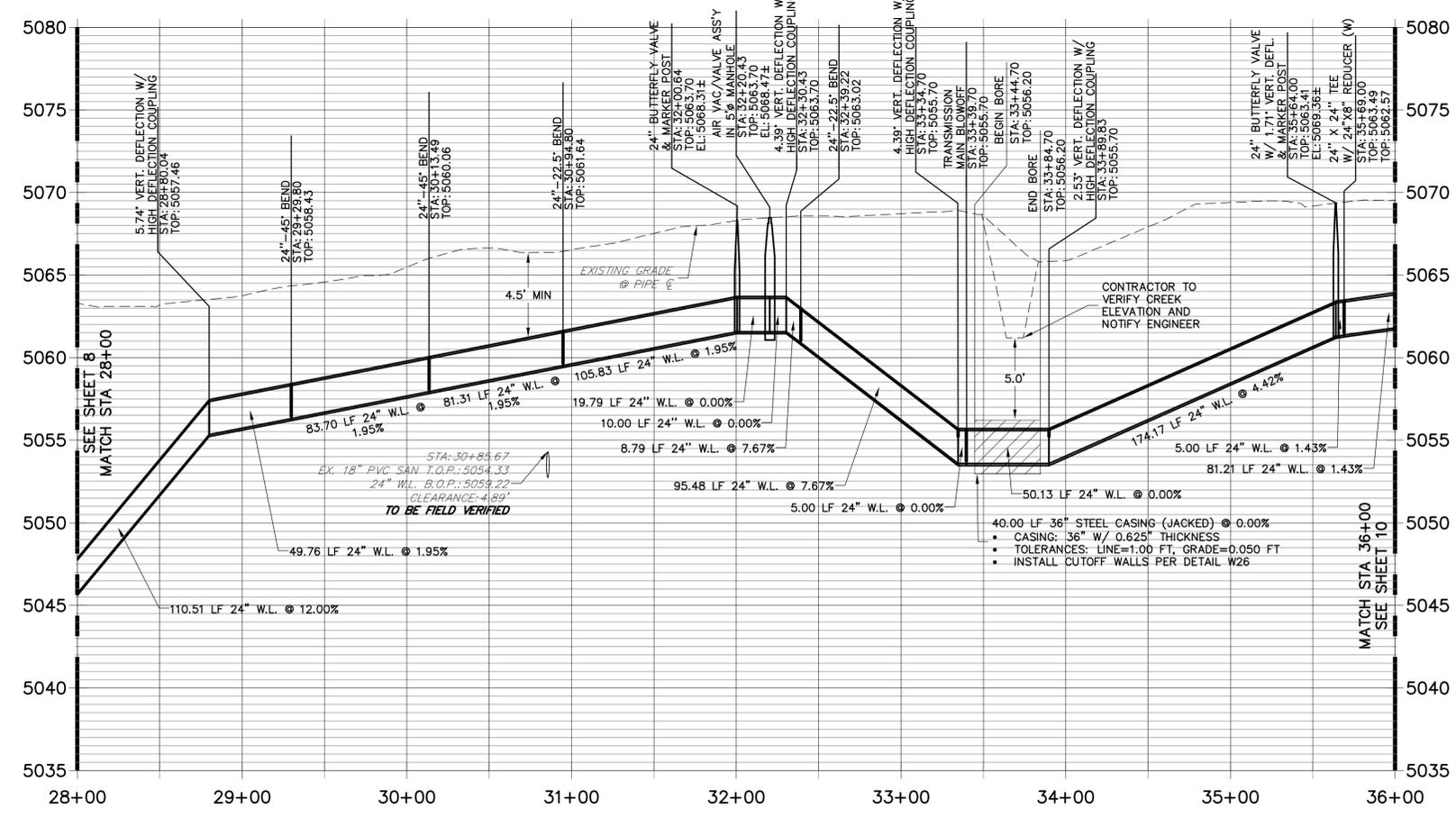
SHEET 8 OF 19
 JOB NO. 15708.05



SHEET 9 NOTES

1. REPLACE CONCRETE BIKEWAY AND CRUSHER FINE TRAIL IN ACCORDANCE WITH DETAIL P25. BIKEWAY/TRAIL REMOVAL AND REPLACEMENT OUTSIDE LIMITS SHOWN WILL BE PAID FOR BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT PEDESTRIAN AND BICYCLE DETOUR PLAN TO TOWN OF ERIE FOR APPROVAL.
2. REPLACE CRUSHER FINE TRAIL TO EXISTING CONDITIONS OR BETTER. TRAIL SHALL CONSIST OF POLYMER-STABILIZED CRUSHER FINES WITH GEOTEXTILE FABRIC UNDERLAYMENT. CONTRACTOR SHALL SUBMIT PEDESTRIAN AND BICYCLE DETOUR PLAN TO TOWN OF ERIE FOR APPROVAL.

**WP01 PROFILE
STA 28+00.00 TO 36+00.00**



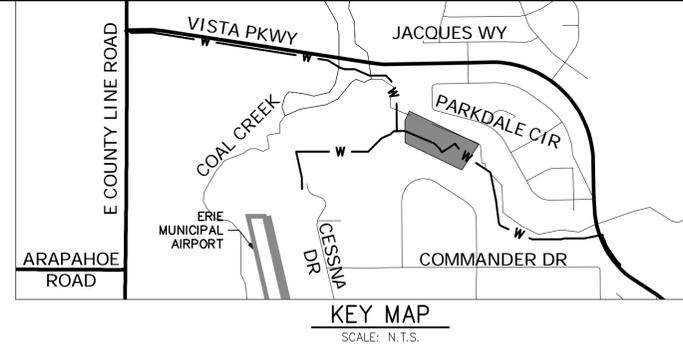
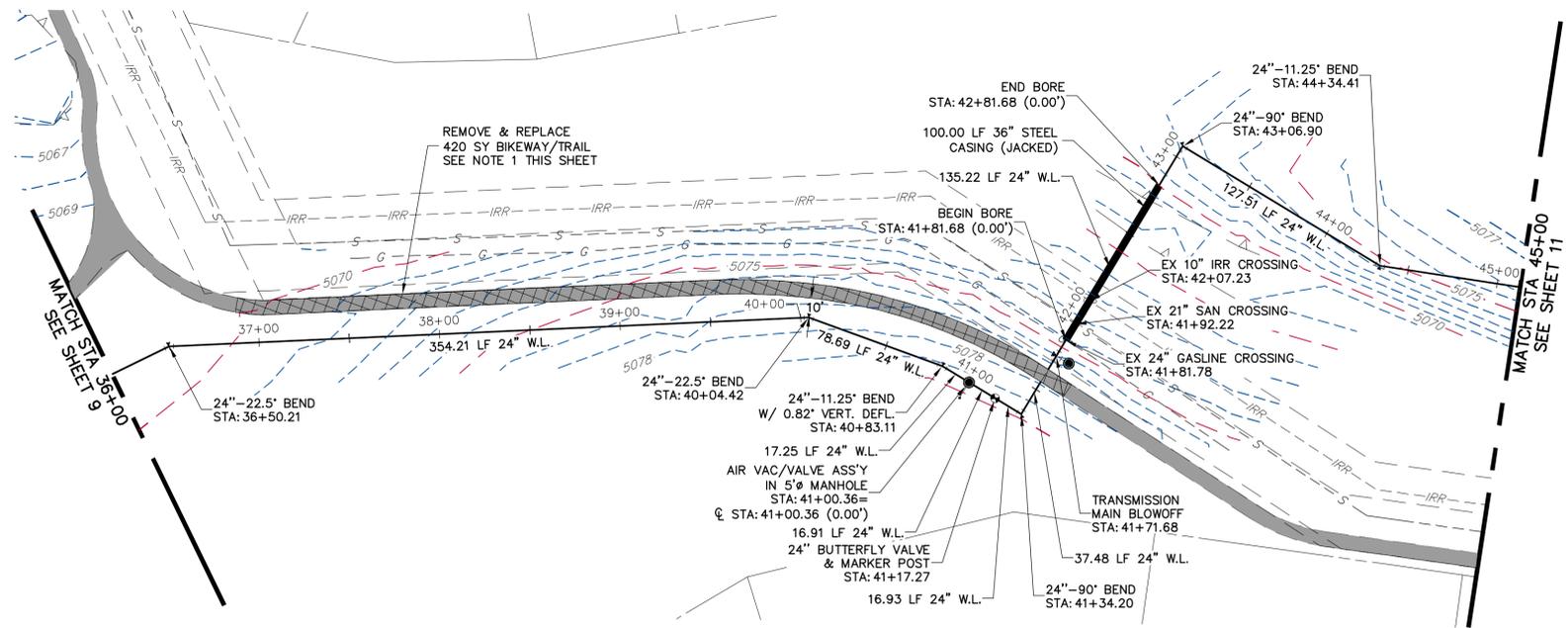
ENGINEER'S STATEMENT

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BID SET

ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

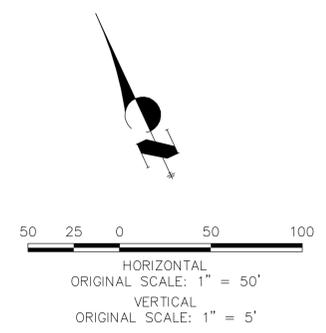
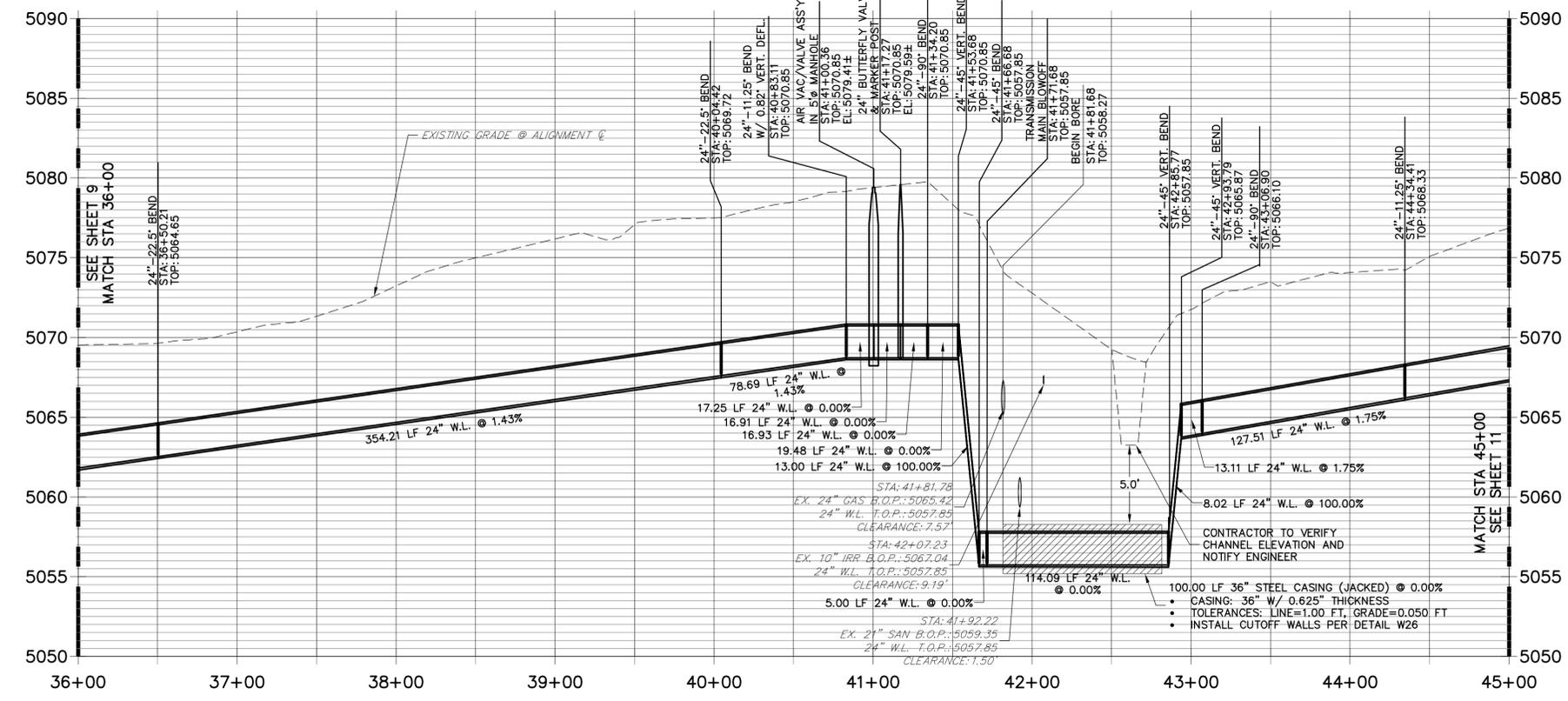
<p>UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING OFFICIALS, THESE DRAWINGS APPROVE THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.</p>	<p>PREPARED FOR TOWN OF ERIE DEPT. OF PUBLIC WORKS 645 HOLBROOK STREET ERIE, CO 80516 ATTN: WENDI PALMER</p>	<p>DATE BY REVISION</p>	<p>NO. REVISION</p>	<p>H-SCALE 1"=50' V-SCALE 1"=5' DATE 4/18/17 DESIGNED BY AGR DRAWN BY REB CHECKED BY</p>
<p>J-R ENGINEERING A Weidman Company</p> <p>Central 303-740-9883 • Colorado Springs 719-589-2583 Fort Collins 970-491-9888 • www.jrengineering.com</p>		<p>ZONE 3 WATERLINE EXTENSION</p> <p>WP01 PLAN AND PROFILE</p>		
<p>SHEET 9 OF 19</p> <p>JOB NO. 15708.05</p>				



SHEET 10 NOTES

1. REPLACE CONCRETE BIKEYWAY AND CRUSHER FINE TRAIL IN ACCORDANCE WITH DETAIL P25. BIKEYWAY/TRAIL REMOVAL AND REPLACEMENT OUTSIDE LIMITS SHOWN WILL BE PAID FOR BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT PEDESTRIAN AND BICYCLE DETOUR PLAN TO TOWN OF ERIE FOR APPROVAL.

**WP01 PROFILE
STA 36+00.00 TO 45+00.00**



ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

BID SET

ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

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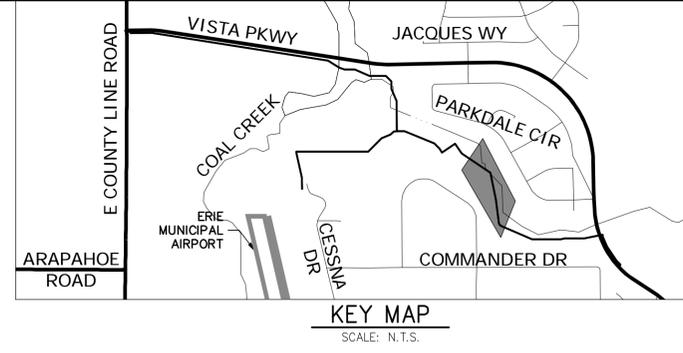
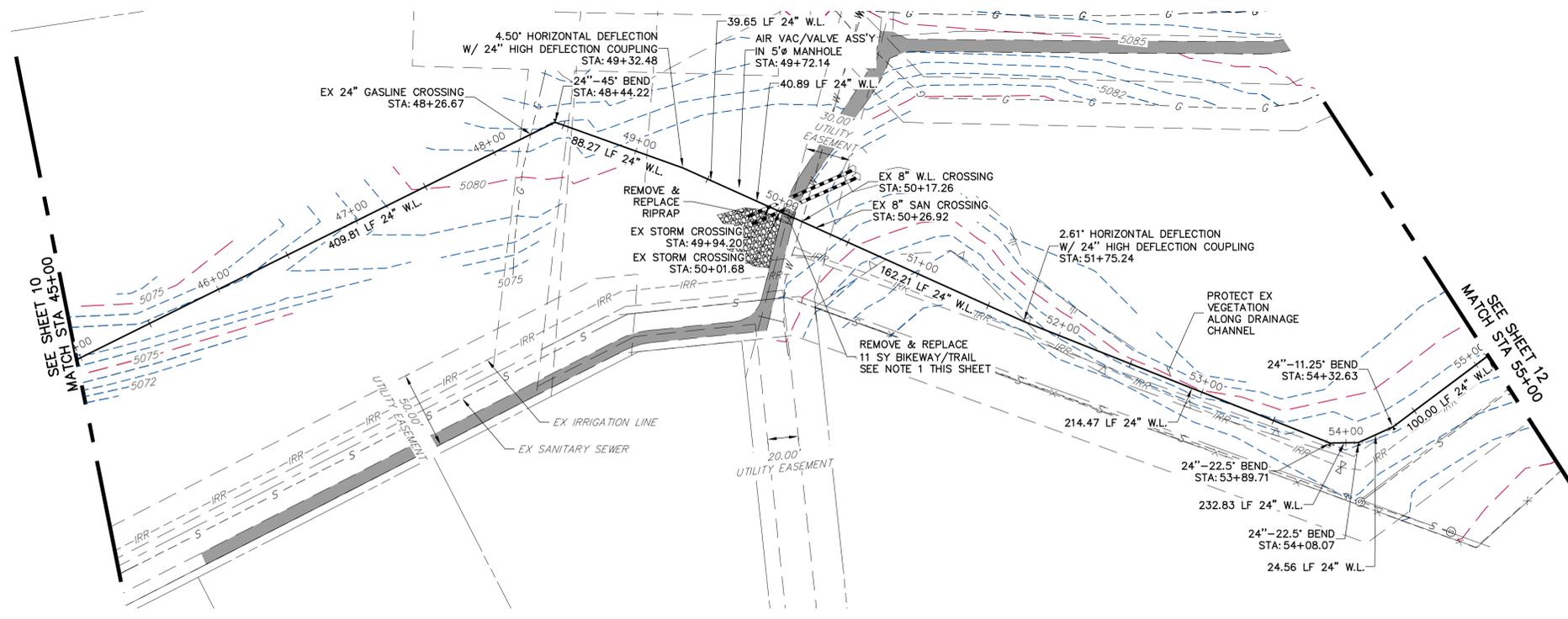
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No.	REVISION	BY	DATE

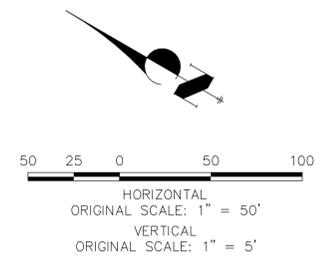
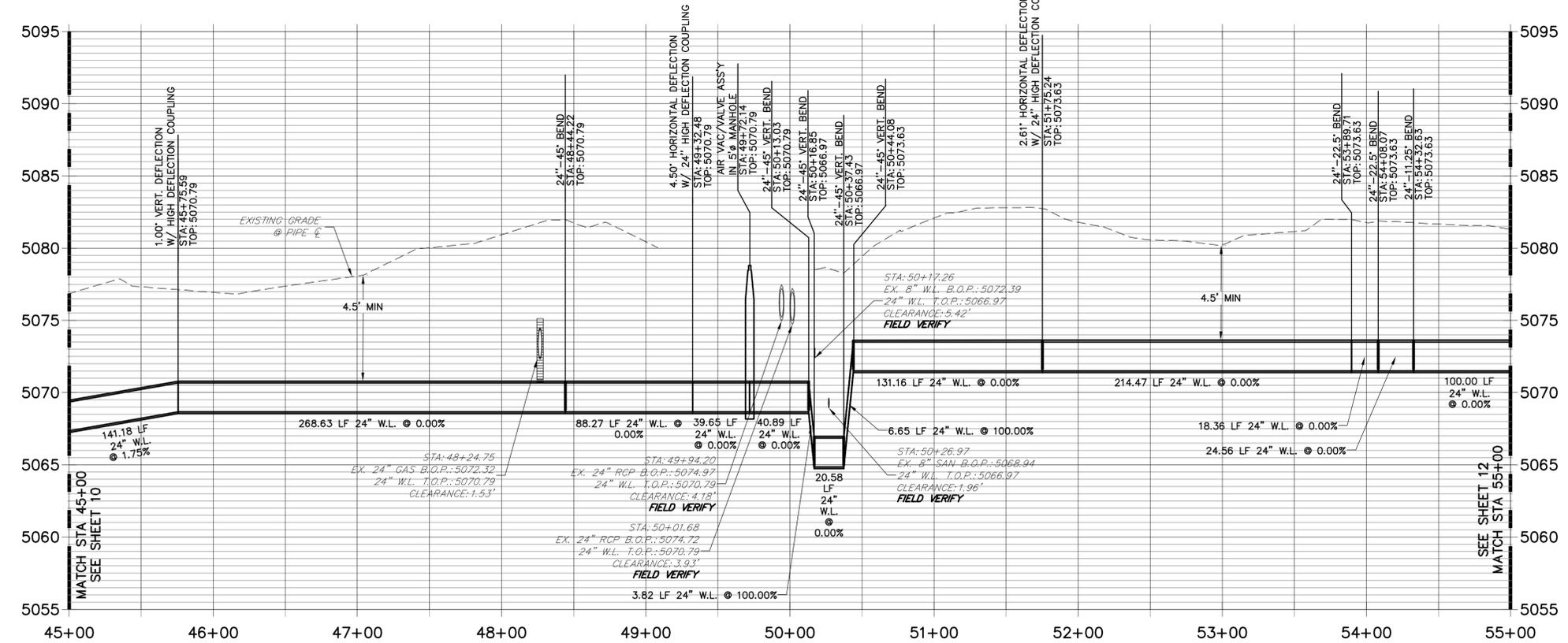
ZONE 3 WATERLINE EXTENSION	H-SCALE	1"=50'
	V-SCALE	1"=5'
WP01 PLAN AND PROFILE	DESIGNED BY	AGR
	CHECKED BY	REB
SHEET		10 OF 19
JOB NO.		15708.05



SHEET 11 NOTES

1. REPLACE CONCRETE BIKEWAY AND CRUSHER FINE TRAIL IN ACCORDANCE WITH DETAIL P25. BIKEWAY/TRAIL REMOVAL AND REPLACEMENT OUTSIDE LIMITS SHOWN WILL BE PAID FOR BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT PEDESTRIAN AND BICYCLE DETOUR PLAN TO TOWN OF ERIE FOR APPROVAL.

**WP01 PROFILE
STA 45+00.00 TO 55+00.00**



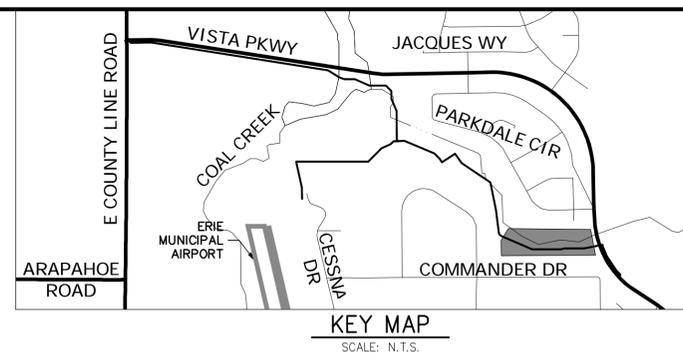
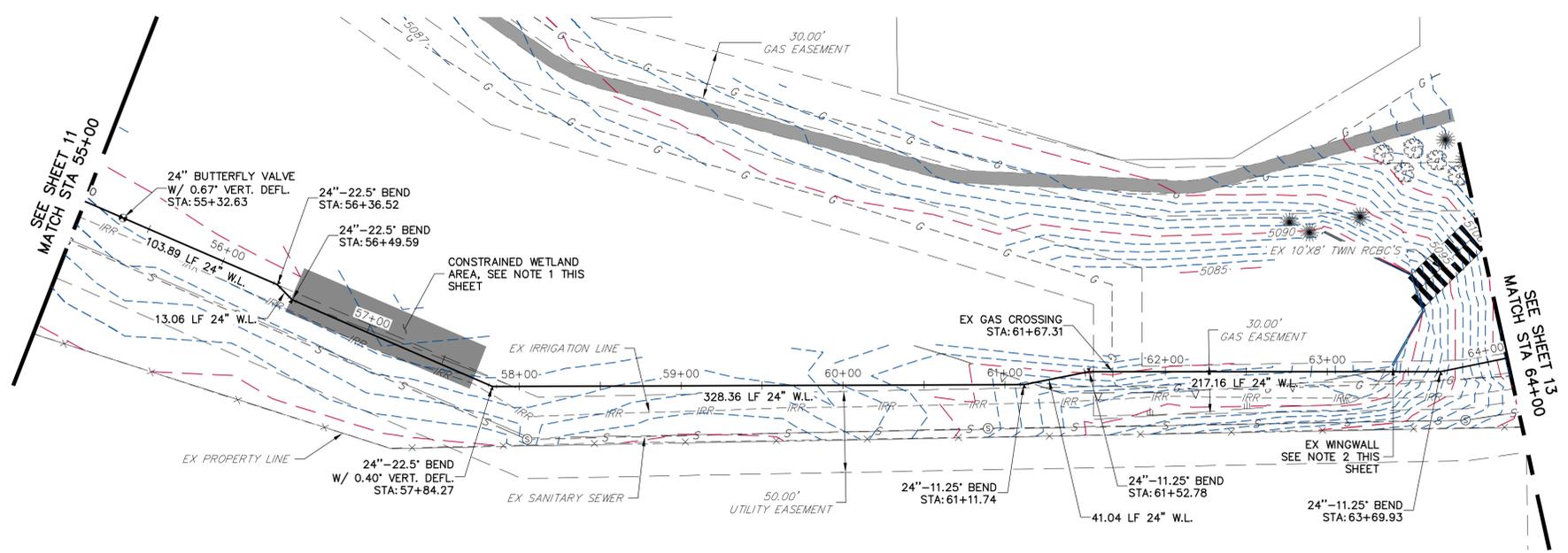
ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

BID SET

ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

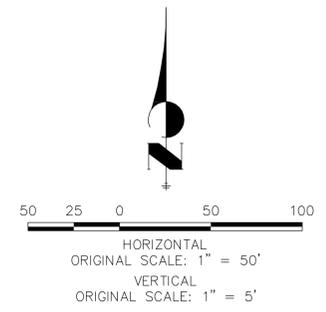
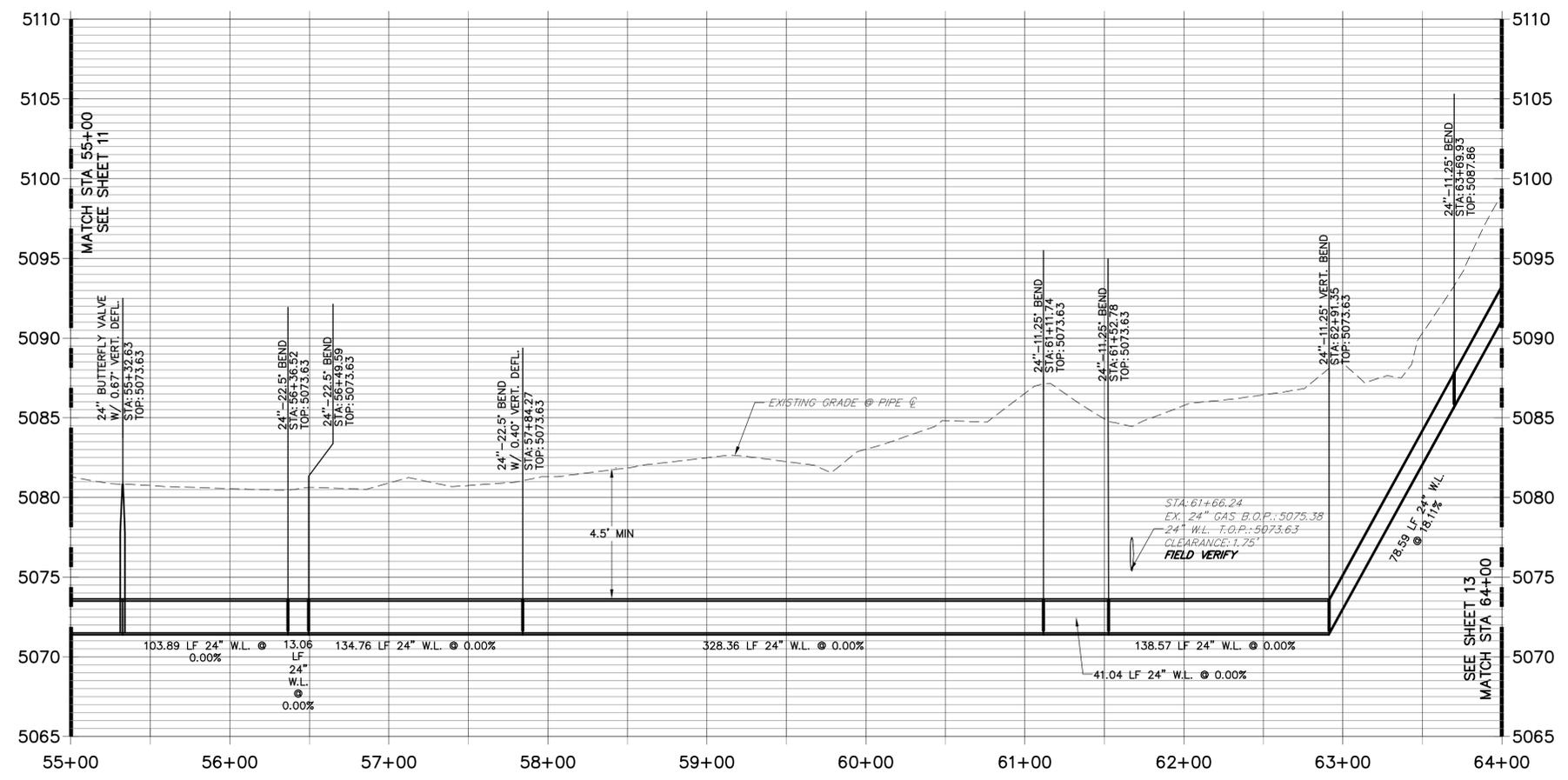
<p>UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, THE USER IS NOT TO BE USED FOR ANY PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.</p>	<p>PREPARED FOR: TOWN OF ERIE DEPT. OF PUBLIC WORKS 645 HOLBROOK STREET ERIE, CO 80516 ATTN: WENDI PALMER</p>	<p>ENGINEER'S LICENSE E.C. FARNEY #41677</p>	<p>DATE: 4/18/17 DESIGNED BY: AGR DRAWN BY: CWC CHECKED BY:</p>	<p>NO. REVISION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	REVISION				<p>ZONE 3 WATERLINE EXTENSION</p> <p>WP01 PLAN AND PROFILE</p>
NO.	DATE	REVISION									
<p>PREPARED BY: JR ENGINEERING A Weidman Company</p>		<p>Central 303-740-9883 • Colorado Springs 719-589-2583 Fort Collins 970-491-9888 • www.jrengineering.com</p>		<p>SHEET 11 OF 19 JOB NO. 15708.05</p>							



SHEET 12 NOTES

1. WATERLINE INSTALLATION WORK WILL BE CONSTRAINED AGAINST EXISTING WETLAND VEGETATION. CONTRACTOR SHALL PROTECT WETLAND VEGETATION AND NOTIFY ENGINEER IN CASE REMOVAL OF VEGETATION IS NEEDED.
2. WATERLINE INSTALLATION WORK WILL BE CONSTRAINED AGAINST EXISTING WINGWALL. CONTRACTOR SHALL PROTECT WINGWALL. TEMPORARY SHORING IS ANTICIPATED AND WILL BE INCIDENTAL TO THE PROJECT.

WP01 PROFILE
STA 55+00.00 TO 64+00.00



ENGINEER'S STATEMENT

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ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

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PREPARED FOR
TOWN OF ERIE
DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

JR ENGINEERING
A Weidman Company

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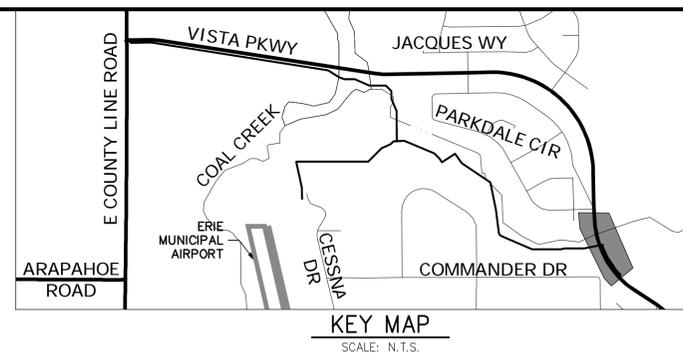
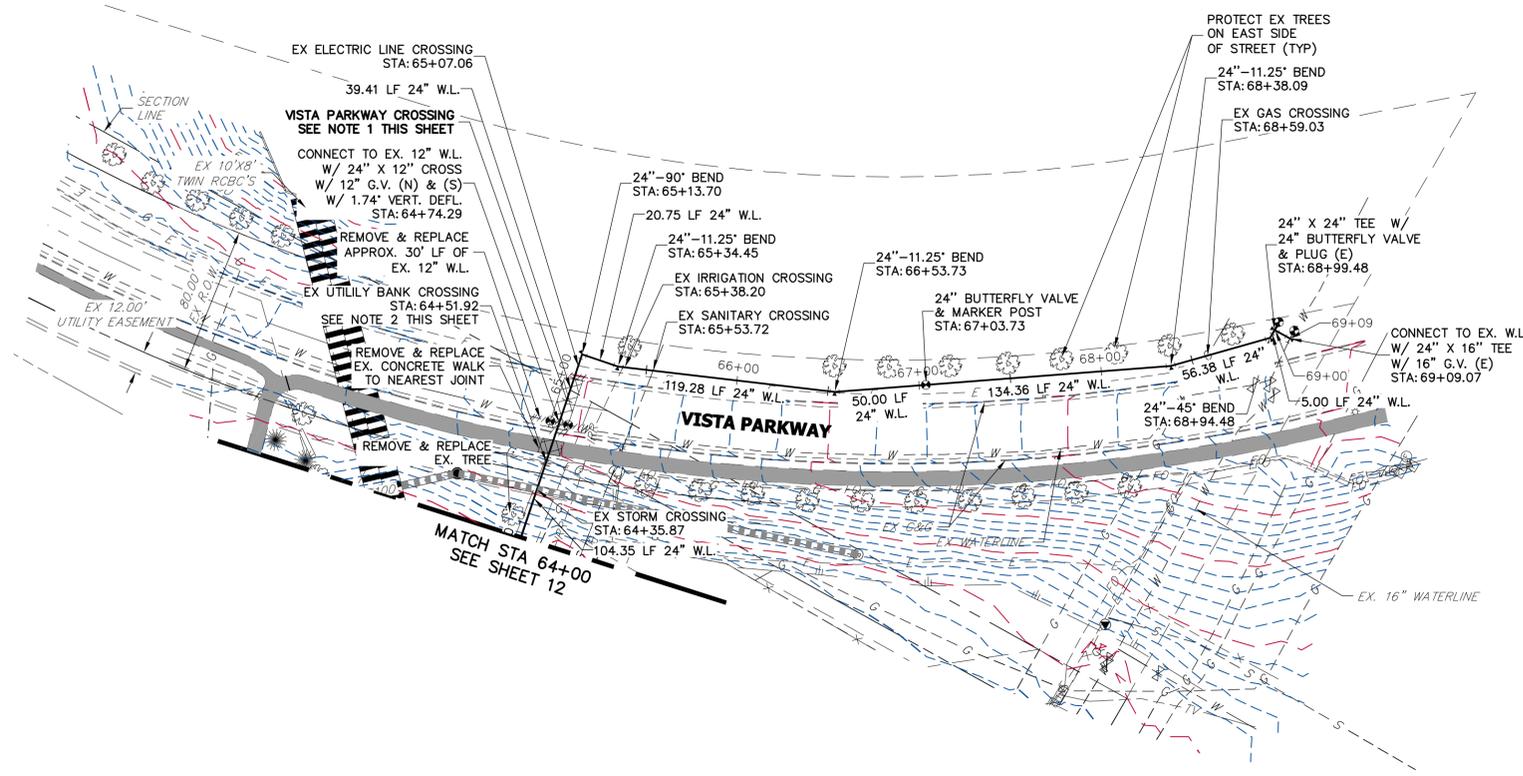
No.	REVISION	BY	DATE

H-SCALE 1"=50'
V-SCALE 1"=5'
DATE 4/18/17
DESIGNED BY AGR
DRAWN BY CWC
CHECKED BY

ZONE 3 WATERLINE EXTENSION

WP01 PLAN AND PROFILE

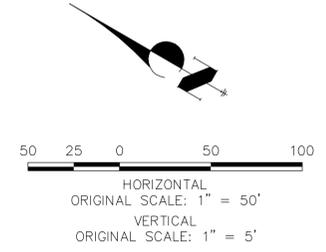
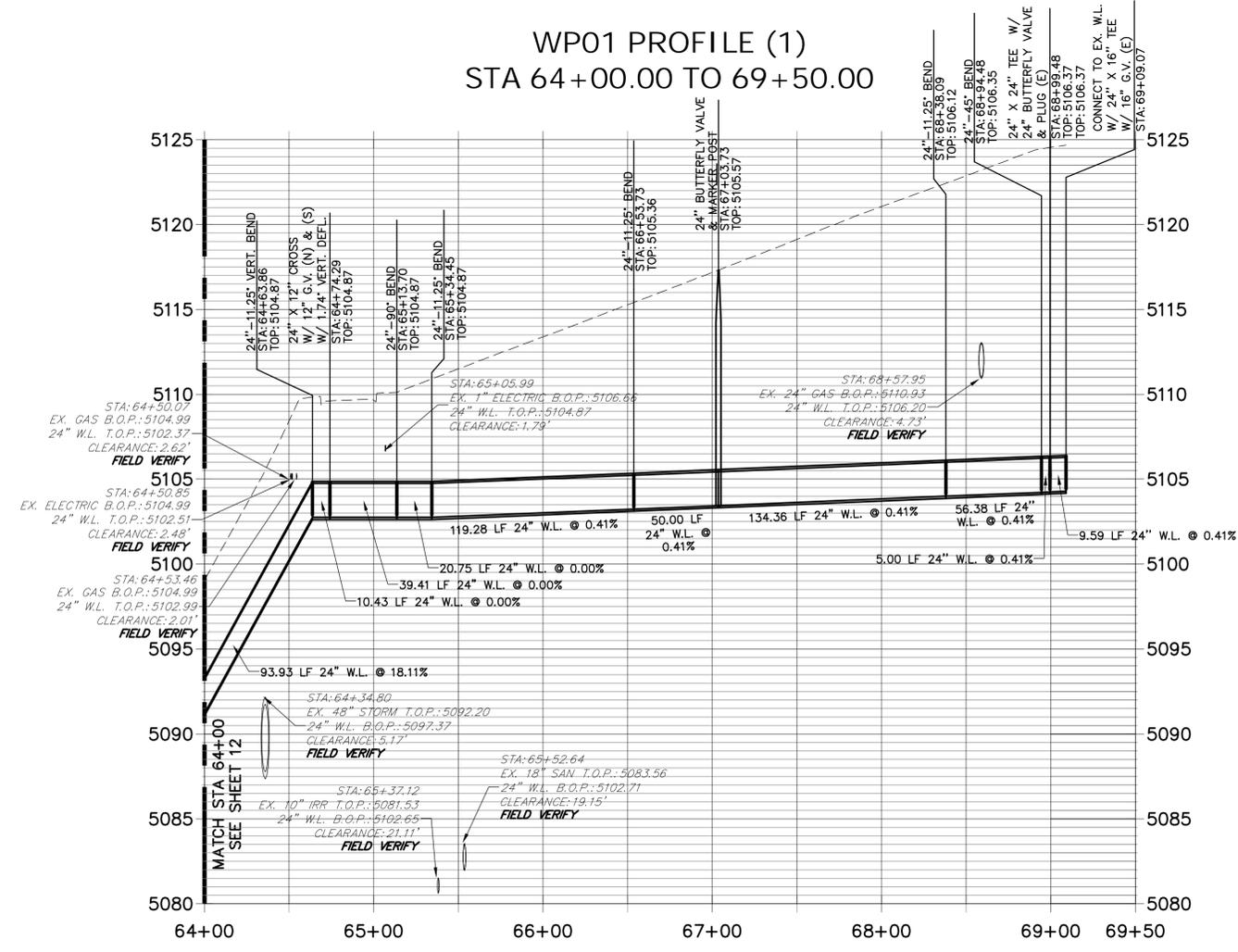
SHEET 12 OF 19
JOB NO. 15708.05



SHEET 13 NOTES

- VISTA PARKWAY CROSSING: REMOVE AND REPLACE EX ASPHALT PER DETAIL ST10. REMOVE AND REPLACE EX C&C AS NEEDED. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN TO TOWN OF ERIE ASSUMING A TWO-PHASE CROSSING AND KEEPING ONE LANE OPEN TO VEHICULAR TRAFFIC AT ALL TIMES.
- PROPOSED WATERLINE TO CROSS BANK OF UTILITIES INCLUDING GAS, ELECTRIC AND FIBER OPTIC LINES. CONTRACTOR TO FIELD VERIFY ALL UTILITIES.

**WP01 PROFILE (1)
STA 64+00.00 TO 69+50.00**



ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

BID SET

ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AUTHORITY, THESE DRAWINGS APPROVE THE USER ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
TOWN OF ERIE
DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

JR ENGINEERING
A Weidman Company

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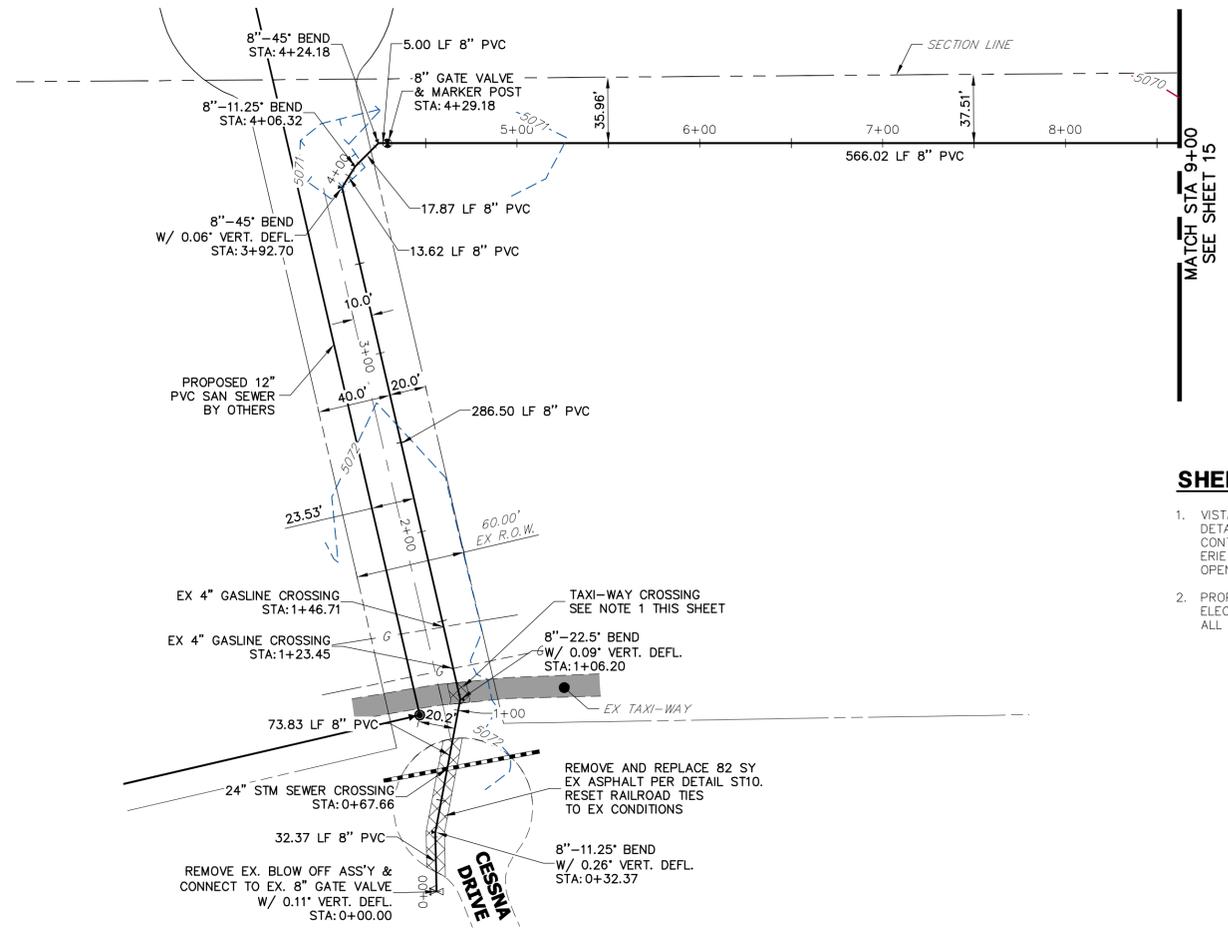
No.	REVISION	BY	DATE

H-SCALE 1"=50'
V-SCALE 1"=5'
DATE 4/18/17
DESIGNED BY AGR
DRAWN BY CWC
CHECKED BY

ZONE 3 WATERLINE EXTENSION

WP01 PLAN AND PROFILE

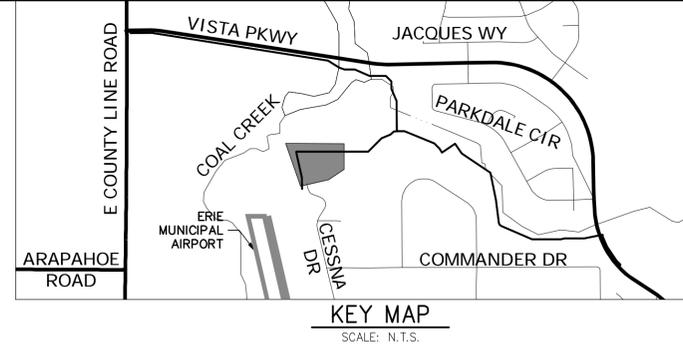
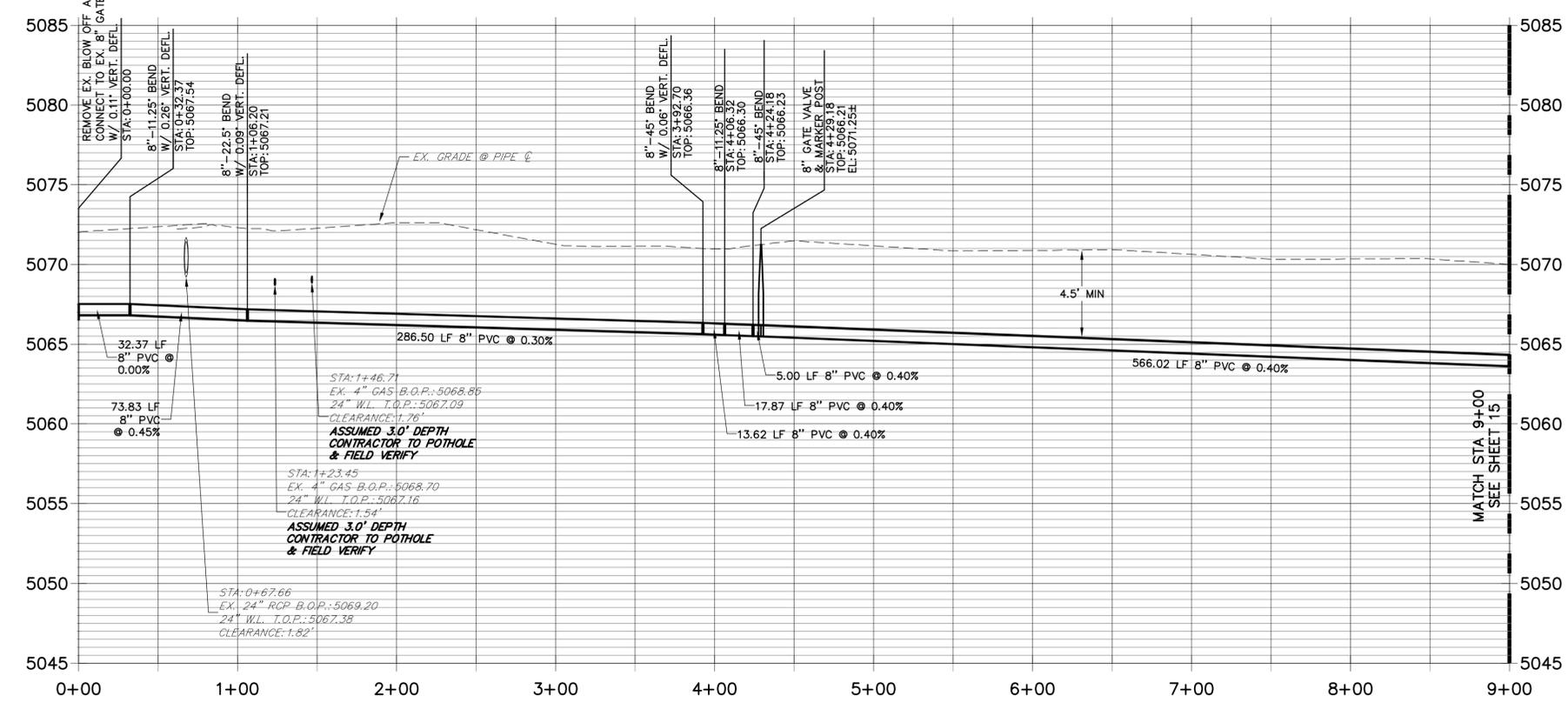
SHEET 13 OF 19
JOB NO. 15708.05



SHEET 13 NOTES

- VISTA PARKWAY CROSSING: REMOVE AND REPLACE EX ASPHALT PER DETAIL ST10. REMOVE AND REPLACE EX C&G AS NEEDED. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN TO TOWN OF ERIE ASSUMING A TWO-PHASE CROSSING AND KEEPING ONE LANE OPEN TO VEHICULAR TRAFFIC AT ALL TIMES.
- PROPOSED WATERLINE TO CROSS BANK OF UTILITIES INCLUDING GAS, ELECTRIC AND FIBER OPTIC LINES. CONTRACTOR TO FIELD VERIFY ALL UTILITIES.

**WP02 PROFILE
STA 0+00.00 TO 9+00.00**



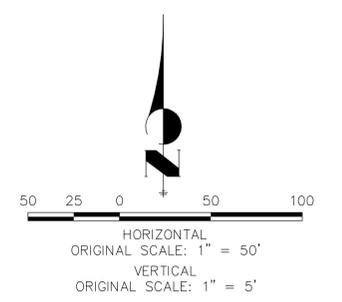
UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING OFFICIALS, THE USER APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

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DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
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No.	REVISION	BY	DATE



ENGINEER'S STATEMENT

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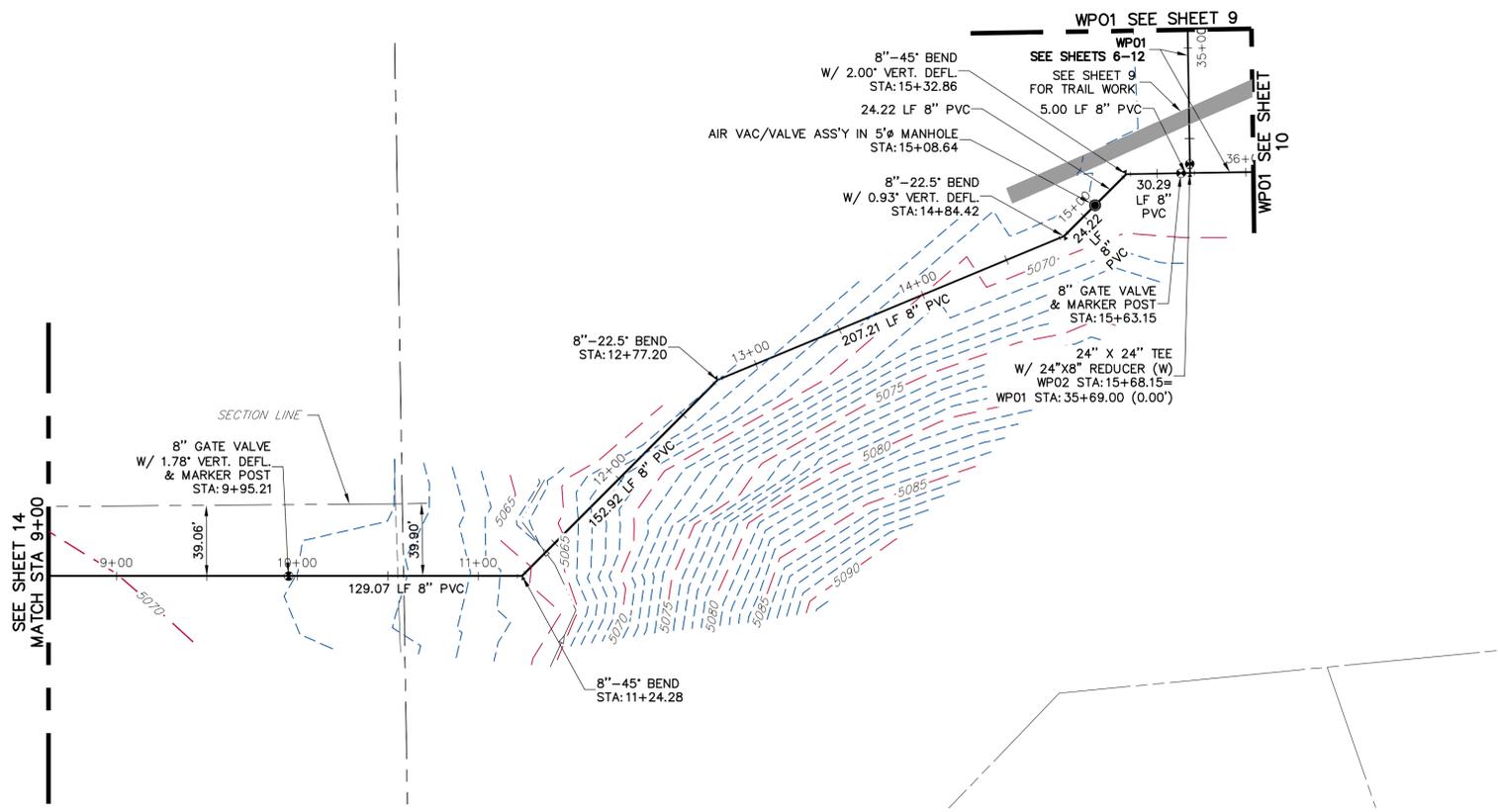
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COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING

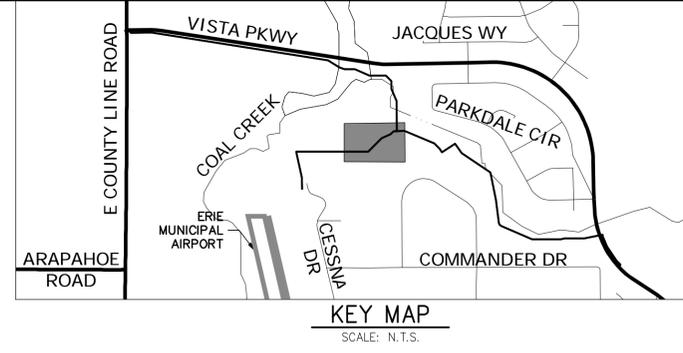
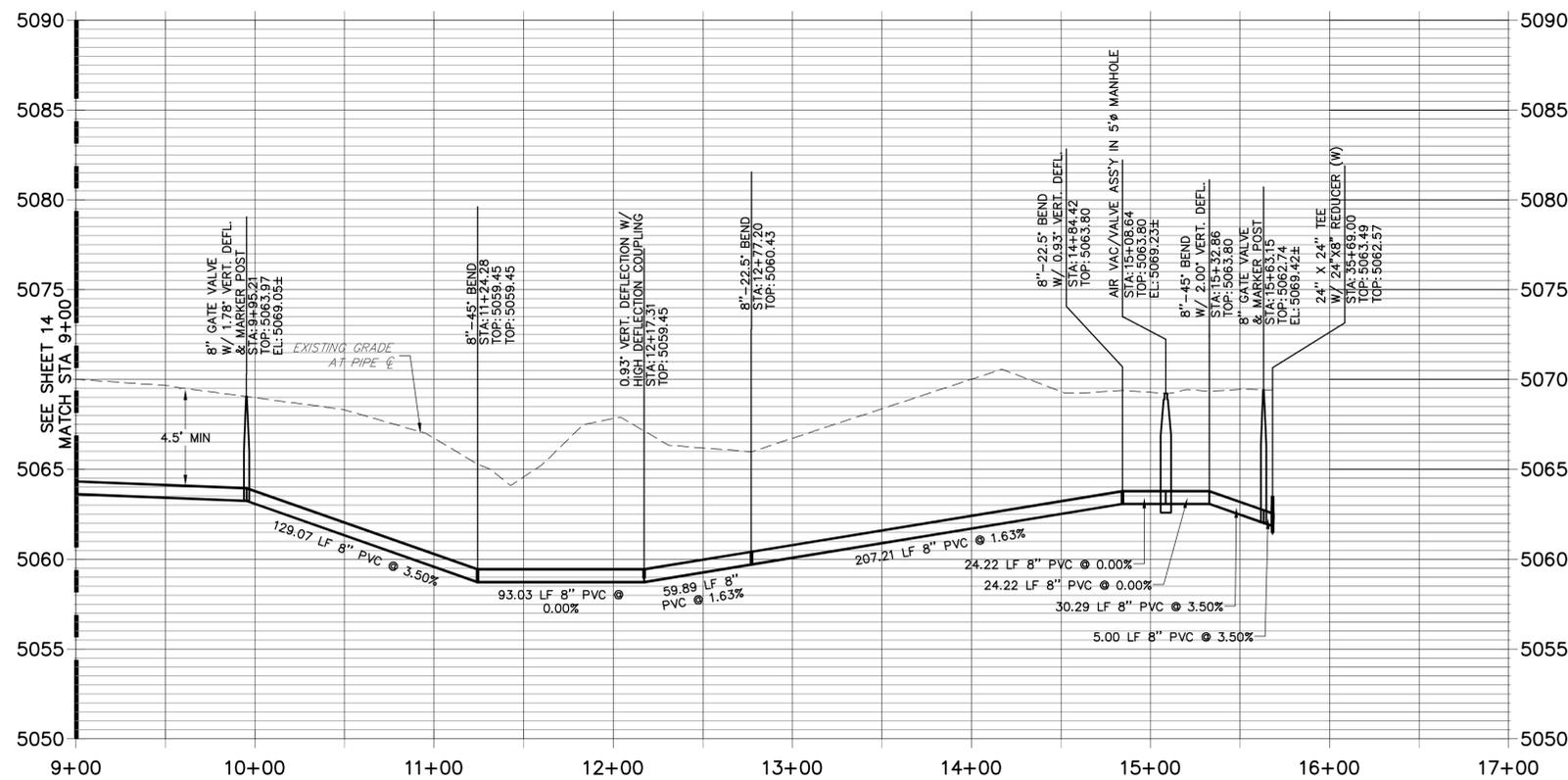
ZONE 3 WATERLINE EXTENSION

WP02 PLAN & PROFILE

SHEET 14 OF 19
JOB NO. 15708.05



WP02 PROFILE
STA 9+00.00 TO 17+00.00



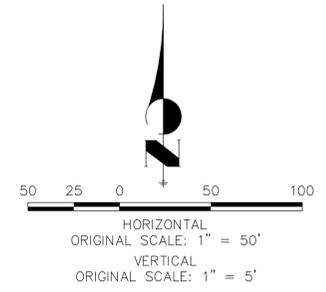
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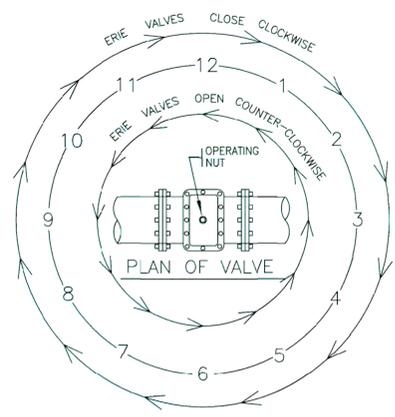


ENGINEER'S STATEMENT
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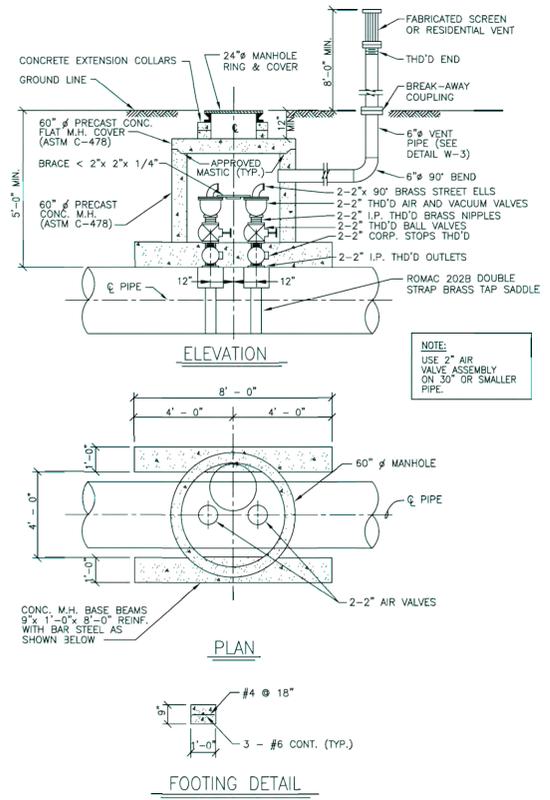
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ZONE 3 WATERLINE EXTENSION	DESIGNED BY	AGR
	DRAWN BY	REB
WP02 PLAN & PROFILE	CHECKED BY	
SHEET 15 OF 19		
JOB NO. 15708.05		



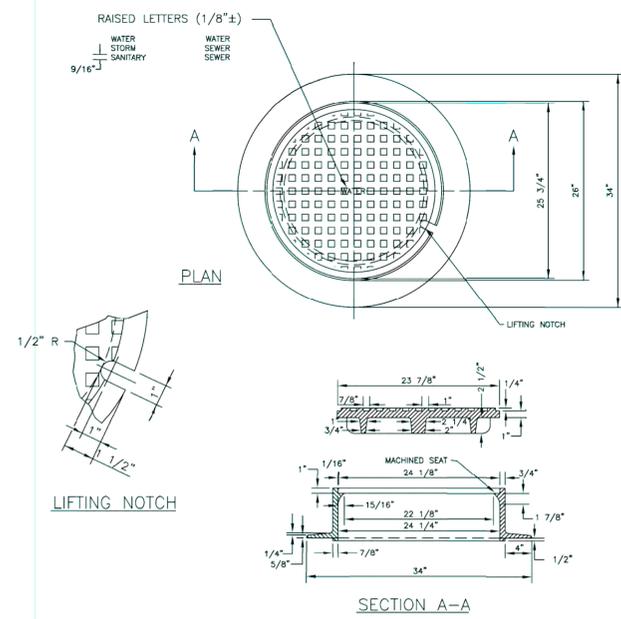
NOTE:
NORMALLY VALVES WITH A BLACK OPERATING NUT INDICATE A STANDARD ERIE VALVE. (OPEN LEFT)

VALVE OPENING & CLOSING PROCEDURE



NOTE:
USE 2" AIR VALVE ASSEMBLY ON 30" OR SMALLER PIPE.

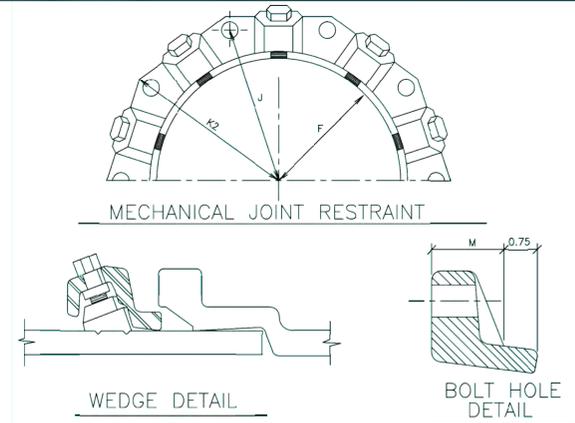
FOOTING DETAIL



LIFTING NOTCH

SECTION A-A

- CASTING SPECIFICATIONS: ASTM A-48 WITH A MINIMUM TENSILE STRENGTH OF 25 KSI (CLASS 25)
- ALL CASTINGS TO BE DIPPED IN ASPHALT BASE PAINT (OR APPROVED EQUAL)
- CASTINGS SHALL BE AS SPECIFIED BELOW OR APPROVED EQUAL:
MANUFACTURERS: CAT. #
NEENAH R-1706
CASTINGS, INC. MH-400-24 C.I.
HUTCHINSON FDRY. & STL. INC. MH-400
- ALL NEW MANHOLES MUST INCLUDE A PLASTIC OR VINYL TAG ATTACHED TO THE TOP STEP STATING THE FOLLOWING "CAUTION CONFINED SPACE; ENTRY PERMIT REQUIRED".



MECHANICAL JOINT RESTRAINT

WEDGE DETAIL

BOLT HOLE DETAIL

DIMENSIONS

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES
4"	2	2				
6"	6	3	11.12	9.50	7.00	0.88
8"	6	4	13.37	11.75	9.15	1.00
10"	8	6	15.62	14.00	11.20	1.00
12"	8	8	17.88	16.25	13.30	1.25
4"	4	2				
6"	6	3	11.12	9.50	7.00	0.88
8"	6	4	13.37	11.75	9.15	1.00
10"	8	6	15.62	14.00	11.20	1.00
12"	8	8	17.88	16.25	13.30	1.25

- NOTES:
- DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN.
 - OTHER MECHANICAL JOINT RESTRAINT DEVICES MUST BE APPROVED BEFORE INSTALLATION.

The Town of ERIE COLORADO

DRAWING TITLE: VALVE OPERATION
DRAWING NUMBER: W1
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2009

The Town of ERIE COLORADO

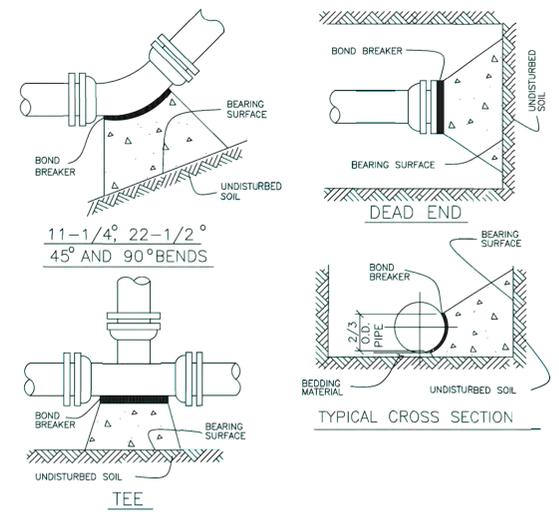
DRAWING TITLE: AIR RELIEF VALVE
DRAWING NUMBER: W2
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 06/2004

The Town of ERIE COLORADO

DRAWING TITLE: 24" MANHOLE RING AND COVER
DRAWING NUMBER: W4
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 06/2015

The Town of ERIE COLORADO

DRAWING TITLE: MECHANICAL JOINT RESTRAINT DETAIL
DRAWING NUMBER: W17
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2009



- NOTES:
- SEE THRUST BLOCKING CHART FOR MINIMUM BEARING SURFACE AREAS
 - BASED ON 150 PSI INTERNAL PIPE PRESSURE PLUS WATER HAMMER
4" 6" 8" AND 12" WATER HAMMER=110 P.S.I.
16", 20" AND 24" WATER HAMMER =70 P.S.I.
 - BASED ON 3,000 p/s SOIL BEARING CAPACITY
 - THRUST BLOCKING SHALL BE CAST AGAINST UNDISTURBED EARTH. FORMS SHALL BE USED AS REQUIRED TO OBTAIN ADEQUATE BEARING AND TO CONFINE THE CONCRETE. THRUST BLOCKING SHALL BEAR ON THE FITTING OR END CAP ONLY AND SHOULD NOT BE ALLOWED TO SPILL OVER THE JOINT OR AGAINST THE PIPE

TABLE OF BEARING AREAS IN SQ. FT. FOR CONCRETE THRUST BLOCKING
FOR 100 P.S.I. INTERNAL STATIC PRESSURE AND 1,000 LBS. PER SQUARE FOOT SOIL BEARING CAPACITY.

SIZE	BENDS				TEES *	GATE VALVES	DEAD ENDS	CROSS W/ 1 BRANCH PLUGGED	CROSS W/ 2 BRANCHES PLUGGED
	90°	45°	22-1/2°	11-1/4°					
3	1.0	0.6	0.3	1.0	0.7	0.5	0.7	0.7	0.7
4	1.8	1.0	0.5	1.0	1.3	0.5	1.3	1.3	1.3
6	4.0	2.2	1.1	1.0	2.8	0.7	2.8	2.8	2.8
8	7.1	3.8	2.0	1.0	5.0	2.4	5.0	5.0	5.0
10	11.1	6.0	3.0	1.5	7.8	4.5	7.8	7.8	7.8
12	16.0	8.6	4.4	2.2	11.3	7.3	11.3	11.3	11.3
14	21.7	11.8	6.0	3.0	15.4	11.0	15.4	15.4	15.4
15	25.0	13.5	7.0	3.5	17.6		17.6	17.6	17.6
16	28.4	15.3	8.0	4.0	20.0		20.0	20.0	20.0
18	36.0	19.4	10.0	5.0	25.4		25.4	25.4	25.4
20	44.2	24.0	12.2	6.1	31.4		31.4	31.4	31.4
21	49.0	26.5	13.5	6.8	34.6		34.6	34.6	34.6
22	54.0	29.0	14.8	7.4	38.0		38.0	38.0	38.0
24	64.0	34.5	17.7	8.8	45.0		45.0	45.0	45.0
30	100.0	54.0	27.6	13.8	71.0		71.0	71.0	71.0
36	144.0	78.0	40.0	20.0	102.0		102.0	102.0	102.0

* SIZE IS BRANCH SIZE

AREAS GIVEN IN TABLE ARE BASED UPON AN INTERNAL STATIC PRESSURE OF 100 P.S.I. AND A SOIL BEARING CAPACITY OF 1,000 LBS. PER SQUARE FOOT. BEARING AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

$$F = \frac{\text{ACTUAL SPECIFIED TEST PRESSURE IN HUNDRED OF LBS.}}{\text{ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.}}$$

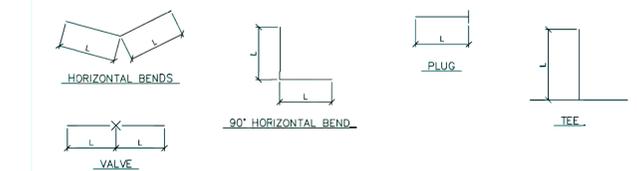
EXAMPLE: TO FIND BEARING AREA FOR 8" - 90° BEND WITH A STATIC INTERNAL PRESSURE OF 150 P.S.I. AND WITH A SOIL BEARING CAPACITY OF 3,000 LBS. PER SQUARE FOOT.

$$F = 1.5 \div 3 = 0.5 \text{ TABULATED VALUE} = 7.1 \text{ SQUARE FOOT.}$$

$$0.5 \times 7.1 = 3.56 \text{ SAY 4 SQUARE FEET OF 2 FOOT LONG BY 2 FOOT HIGH.}$$

ROD DIAMETER, GRADE & LENGTH OF RESTRAINED PIPE

PIPE SIZE	4"		6"		8"		12"		16"		20"		24"		
	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
90° BEND, TEE, PLUG	3/4"	30'	MS 3/4"	45'	MS 3/4"	60'	MS 3/4"	85'	MS 1"	108'	HS 1 1/4"	132'	HS -	155'	-
VALVE	-	-	-	-	-	-	-	-	1"	108'	HS 1 1/4"	132'	HS -	155'	-
45° BEND	3/4"	9'	MS 3/4"	13'	MS 3/4"	18'	MS 3/4"	25'	MS 1"	32'	MS 3/4"	39'	HS -	45'	-
22 1/2° BEND	3/4"	1'	MS 3/4"	4'	MS 3/4"	5'	MS 3/4"	7'	MS 3/4"	8'	MS 3/4"	10'	MS -	12'	-
11 1/4° BEND	-	-	-	-	3/4"	1'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	3'	MS -	3'	-



- NOTES:
- LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
 - CLAMPS AND RODS NOT ALLOWED FOR 24" & LARGER PIPES.
 - D=DIAMETER, L=LENGTH, G=GRADE, MS=MILD STEEL, HS=HIGH STRENGTH.
 - MIN 4.5' GROUND COVER REQD.
 - BASED ON 150 PSI INTERNAL PRESSURE.
 - MS = MILD STEEL ROD ASTM A 36.
 - HS = HIGH STRENGTH ROD ASTM A 193 GRADE B7.
 - NUTS SHALL BE ASTM A 307 GRADE A OR B HEXAGON HEAVY SERIES. HS NUTS SHALL CONFORM TO MS-22.
 - LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER.
 - LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.
 - TEES & GROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
 - 12" & SMALLER IN LINE VALVES AND TEES SHALL HAVE A MECHANICAL JOINT RESTRAINT DEVICE ON EACH SIDE OF THE FITTING OR VALVE.
 - A SECOND VALVE WILL BE REQD TO BE CLOSED WHEN EXCAVATING NEXT TO A EXIST VALVE.
 - WHEN REDUCERS ARE USED ON VALVE INSTALLATIONS THE LENGTH OF RESTRAINT SHALL BE BASED ON THE SIZE OF THE PIPE NOT THE SIZE OF THE VALVE.
 - ALL REDUCERS/INCREASERS SHALL HAVE MECHANICAL RESTRAINT DEVICES ON EACH SIDE OF FITTING.
 - PIPE JOINT RESTRAINT MAY BE ACCOMPLISHED USING HARNESS RODS, MECHANICAL JOINT RESTRAINT OR RESTRAINED JOINT PIPE AND FITTINGS.
 - AN ANALYSIS OF THE NECESSARY RESTRAINT LENGTH FOR PIPE LARGER THAN 24" SHALL BE SUBMITTED TO THE PUBLIC WORKS DEPT FOR REVIEW AND APPROVAL ON A CASE BY CASE BASIS.

The Town of ERIE COLORADO

DRAWING TITLE: THRUST BLOCK
DRAWING NUMBER: W14A
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2015

The Town of ERIE COLORADO

DRAWING TITLE: THRUST BLOCKING CHART
DRAWING NUMBER: W14B
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2015

The Town of ERIE COLORADO

DRAWING TITLE: RESTRAINED PIPE LENGTHS
DRAWING NUMBER: W16
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2015

ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REFERENCED AND FOUND TO BE APPLICABLE ON THIS PROJECT.



ELIJAH C. FARNEY, P.E.
COLORADO P.E. #41677
FOR AND ON BEHALF OF JR ENGINEERING, LLC

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AUTHORITY, THE USER AGREES THEIR USE IS ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
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DEPT. OF PUBLIC WORKS
645 HOLBROOK STREET
ERIE, CO 80516
ATTN: WENDI PALMER

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A Weidman Company

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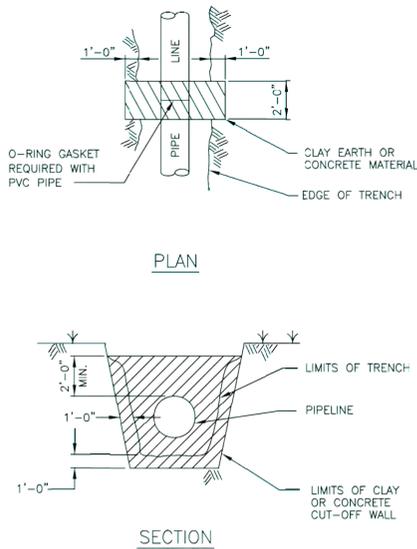
ZONE 3 WATERLINE EXTENSION
DETAIL SHEET

BY: DATE: _____

REVISION: _____

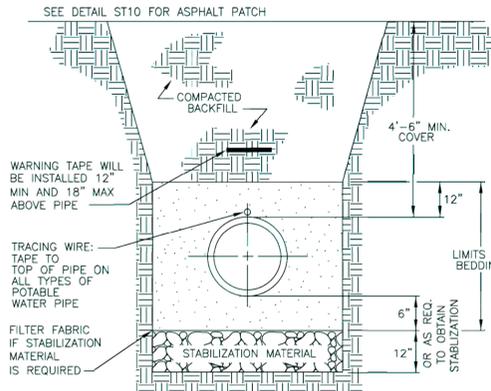
H-SCALE: N/A
V-SCALE: N/A
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DESIGNED BY: REB
DRAWN BY: REB
CHECKED BY: _____

SHEET 16 OF 19
JOB NO. 15708.05



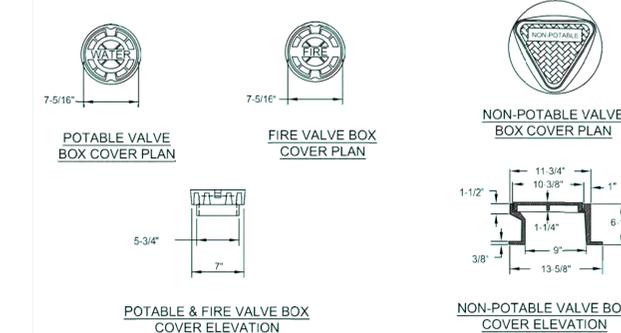
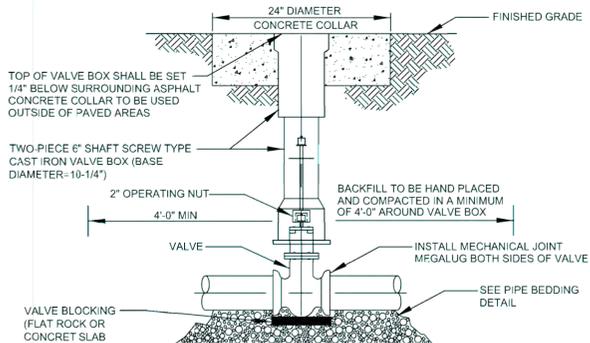
NOTES:

1. CLAY OR CONCRETE WALL EXTENDS A MINIMUM OF 12" INTO UNDISTURBED SOIL ON EACH SIDE AND ON BOTTOM OF TRENCH.
2. CLAY MATERIAL TO BE CLASSIFIED AS CL, CH, OR OH.
3. APPROVED FLOW-FILL MATERIAL MAY BE USED INSTEAD OF CLAY MATERIAL.

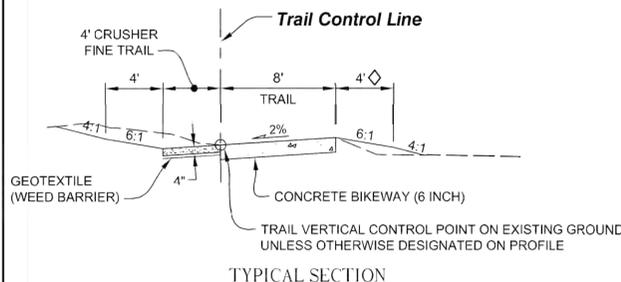


NOTES:

1. COMPACTION SHALL BE AS FOLLOWS: PIPE ZONE BEDDING 6" UNDER AND 12" OVER PIPE WILL REQUIRE 90% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, FULL TRENCH SECTION IN ROADWAY OR STREET R.O.W. LIMITS WILL REQUIRE 95% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, OUTSIDE OF STREET R.O.W. WILL REQUIRE 90% S.P.D.
2. 14 AWG. STRANDED COPPER WIRE SHALL BE INSTALLED AS TRACING WIRE ABOVE ALL POTABLE WATER PIPES. THE WIRE SHALL BE CONNECTED AND COME TO THE SURFACE BEHIND THE FIRE HYDRANTS IN A TEST BOX.
3. FILTER FABRIC IS REQUIRED IF STABILIZATION MATERIAL IS USED. THE FABRIC SHALL BE INSTALLED AS SHOWN IN THE DETAIL.
4. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
5. PIPE SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.
6. TRENCH WIDTH SHALL NOT BE MORE THAN 24" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE.



- NOTES:
1. POTABLE & FIRE VALVE BOX LID RESTS INSIDE THE UPPER VALVE BOX SECTION.
 2. NON-POTABLE VALVE BOX LID SLIDES OVER THE TOP OF THE UPPER VALVE BOX SECTION.
 3. NON-POTABLE WATER OR FIRE CAST IN TOP OF APPROPRIATE VALVE BOX COVER.
 4. VALVE BOX SHALL NOT BE SUPPORTED BY WATER LINE.
 5. VALVE BOX TO BE PLUMB AND CENTERED OVER NUT.
 6. UTILIZING A VALVE BOX ALIGNMENT DEVICE IS OPTIONAL.
 7. IF 2" OPERATING NUT IS MORE THAN 6" BELOW FINISHED GRADE, A VALT NUT EXTENDER SHALL BE INSTALLED TO PUT THE VALVE NUT AT AN ELEVATION OF 4" BELOW FINISHED GRADE.



NOTE: REPLACEMENT OF CRUSHER FINE TRAIL WILL BE INCIDENTAL TO PROJECT

The Town of ERIE COLORADO

DRAWING TITLE: CLAY OR CONCRETE CUT-OFF WALL

DRAWING NUMBER: W37

DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2015

The Town of ERIE COLORADO

DRAWING TITLE: WATER TRENCH DETAIL

DRAWING NUMBER: W35

DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2015

The Town of ERIE COLORADO

DRAWING TITLE: STANDARD VALVE AND BOX

DRAWING NUMBER: W38

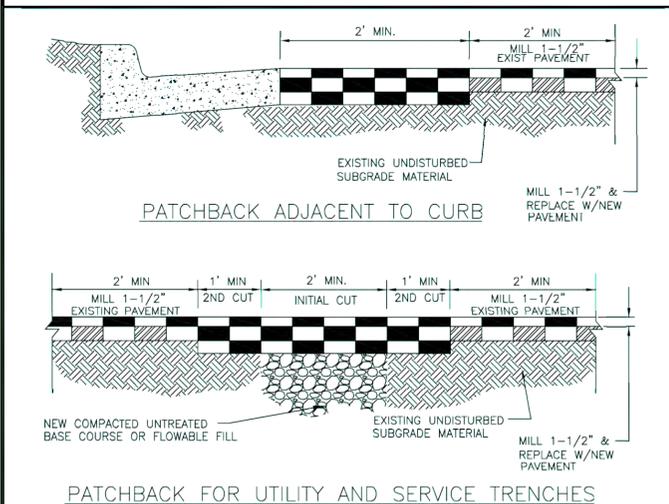
DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 1/2015

The Town of ERIE COLORADO

DRAWING TITLE: SPINE TRAIL DESIGN

DRAWING NUMBER: P25

DRAWN BY: D. JENKINS APPROVED BY: G. HEGNER DATE: 01/2012



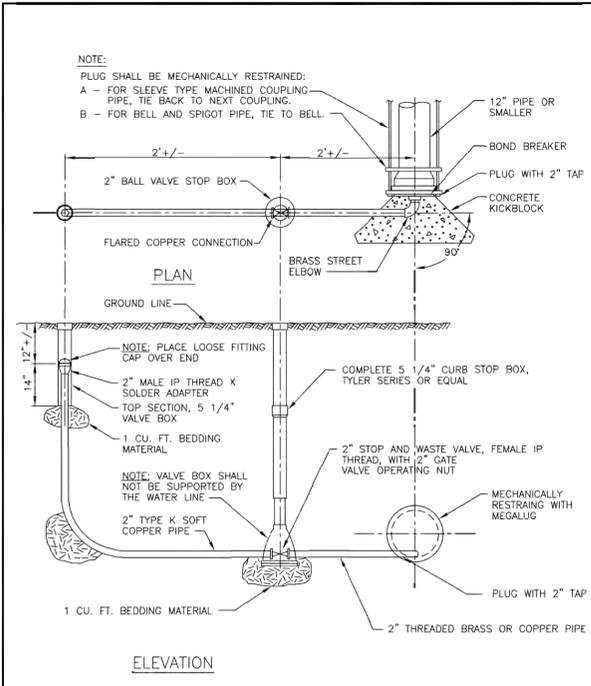
- NOTE:
1. IF ASPHALT PATCH THICKNESS IS NOT IDENTIFIED ON PLANS USE 6-1/2" MIN ASPHALT PATCH OR MATCH EXISTING, WHICH EVER THICKNESS IS GREATER.
 2. MINIMUM DEPTH OF WEARING COURSE SHALL BE 1-1/2" AND SHALL BE GRADING SX ASPHALT.
 3. MINIMUM DEPTH OF INTERMEDIATE COURSE SHALL BE 5" AND BE INSTALLED IN 2 LIFTS. INTERMEDIATE COURSE SHALL BE GRADING S OR G ASPHALT.
 4. PATCH SHALL BE PLACED AND COMPACTED IN LIFTS A MAXIMUM OF 3" IN DEPTH.
 5. APPLY SS-1 TACK COAT TO EXISTING ASPHALT AND/OR CONCRETE VERTICAL SURFACES.
 6. TRENCHES LESS THAN 2' IN WIDTH MUST RECEIVE PRIOR APPROVAL FROM THE TOWN OF ERIE ENGINEERING DEPARTMENT AND SHALL BE FLOW-FILLED.
 7. PROVIDE 28 DAY 60 PSI CONTROLLED LOW STRENGTH FLOWABLE FILL AS SPECIFIED. USE FILL THAT FLOWS EASILY AND VIBRATION IS NOT REQUIRED. CURE TO INITIAL SET BEFORE PLACING NEW UNTREATED BASE COURSE OR NEW ASPHALT PAVEMENT. USE FLOWABLE FILL IN EXCAVATIONS THAT ARE TOO NARROW TO RECEIVE COMPACTION EQUIPMENT.
 8. REMOVE ADDITIONAL PAVEMENT TO A PAINTED LANE STRIPE, A LIP OF GUTTER, A CURB, AN EXISTING PAVEMENT PATCH, OR AN EDGE OF THE PAVEMENT IF SUCH STREET FEATURE IS WITHIN TWO FEET OF THE SECOND SAW CUT.
 9. PROVIDE UNTREATED BASE COURSE MATERIAL. DO NOT USE GRAVEL OR WASHED ROCK. PLACE NEW MATERIAL IN LIFTS NOT EXCEEDING 8" AFTER COMPACTION. COMPACT TO A MODIFIED PROCTOR DENSITY OF 95% OR GREATER.
 10. STRAIGHT SAWCUT OR BLADECUT THE EXISTING ASPHALT PAVEMENT WHEN JOINING WITH NEW ASPHALT PAVEMENT.

The Town of ERIE COLORADO

DRAWING TITLE: TRENCH AND CURB PATCH

DRAWING NUMBER: ST10

DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 1/2014

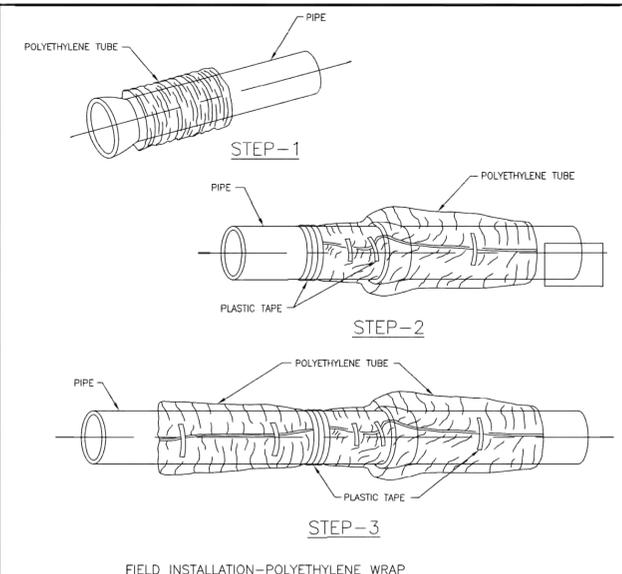


The Town of ERIE COLORADO

DRAWING TITLE: BLOW-OFF INSTALLATION FOR 12" AND SMALLER PIPE

DRAWING NUMBER: W5

DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 01/2016



- FIELD INSTALLATION-POLYETHYLENE WRAP
- STEP-1 PLACE TUBE OF POLYETHYLENE MATERIAL AROUND PIPE PRIOR TO LOWERING PIPE INTO TRENCH.
 - STEP-2 PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH THREE CIRCUMFERENTIAL TURNS OF TWO-INCH WIDE PLASTIC TAPE TO HOLD PLASTIC TUBE AROUND SPIGOT END.
 - STEP-3 ADJACENT TUBE OVERLAPS FIRST TUBE AND IS SECURED WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE WILL BE LOOSE. EXCESS MATERIAL SHOULD BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED INTO AN OVERLAP ON TOP OF THE PIPE AND HELD IN PLACE BY MEANS OF PIECES OF THE PLASTIC TAPE AT APPROXIMATELY THREE TO FIVE FOOT INTERVALS.
- NOTE: ALL RODDING TO BE ENCASED IN POLYETHYLENE SEPARATED FROM THE PIPE.

The Town of ERIE COLORADO

DRAWING TITLE: POLYETHYLENE WRAP

DRAWING NUMBER: W9

DRAWN BY: D. JENKINS APPROVED BY: G. BEHLEN DATE: 06/2004

ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REFERENCED AND FOUND TO BE APPLICABLE ON THIS PROJECT.



ELIJAH C. FARNEY, P.E.
 COLORADO P.E. #41677
 FOR AND ON BEHALF OF JR ENGINEERING, LLC

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING OFFICIALS, THE USER APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.	PREPARED FOR: TOWN OF ERIE DEPT. OF PUBLIC WORKS 645 HOLBROOK STREET ERIE, CO 80516 ATTN: WENDI PALMER		Central: 303-740-9883 • Colorado Springs 719-589-2583 Fort Collins 970-491-9888 • www.jrengineering.com	DATE	
				BY	
No.	REVISION	H-SCALE	V-SCALE	DATE	DESIGNED BY
ZONE 3 WATERLINE EXTENSION DETAIL SHEET					
SHEET 18 OF 19 JOB NO. 15708.05					

