

ADDENDUM NO. ONE
2024 PIPELINE REHABILITATION
PROJECT NO. 24-196
CITY OF THORNTON, CO

TO: Prospective Bidders and all others concerned

DATE: May 2, 2024

PURPOSE: To provide additional information and clarification to the solicitation documents for the above-referenced Project.

1. The following shall Add to, Modify, and/or Delete portions of the Project Manual and Drawings for the Project-noted above.

A. The 2022/2023/2024 Pipeline Rehabilitation Technical Specifications shall be modified as follows:

- Bidders shall add the attached Table of Content (ADDENDUM 1) AND Division 01 SPECIFICATION (Addendum 1) issued via this Addendum One.

B. The Project Manual shall be modified as follows:

- Exhibit D “SCHEDULE OF CONTRACT PAY ITEMS AND PRICES” shall be deleted in its entirety and replaced with the attached, “Exhibit D SCHEDULE OF CONTRACT PAY ITEMS AND PRICES Addendum Two”.
- Bidders shall delete the first paragraph of the Invitation for Bid Proposals which reads;

“Sealed Bid Proposals for Construction of the 2024 Pipeline Rehabilitation, Project No. 24-196 will be received in the Contract Administration Office at the City of Thornton (Thornton) City Hall (2nd floor), 9500 Civic Center Drive, until 4:00 p.m., May 10.2024. At that time, the bid will be publicly opened and read aloud.”

And replace with the following;

Sealed Bid Proposals for Construction of the 2024 Pipeline Rehabilitation, Project No. 24-196 will be received in the Contract Administration Office at the City of Thornton (Thornton) City Hall (2nd floor), 9500 Civic Center Drive, until 4:00 p.m., **May 24.2024**. At that time, the bid will be publicly opened and read aloud.

B. The Drawings shall be modified as follows:

- Attached revised drawings PP003, PD001, PD002, PD006, and PD009 shall replace original drawings and changes are summarized below;

PP003

1. CLSM as backfill is required for the entirety of Site 3
Callout removed specifying CLSM as backfill for 24" Storm crossing (entire trench will now be CLSM)

PP004

1. CLSM as backfill is required for the entirety of Site 3
Callout removed specifying CLSM as backfill for the two 18" Storm crossings (entire trench will now be CLSM)

PD001

1. Note the two details moved from PD006 to PD001

PD002 detail

1. Note the moved from PD006 to PD002

PD006

1. Note the additional details specifying typical trench backfill, including CLSM as backfill and pipe embedment zone

PD009

1. Note the additional text to the clouded callout. "Contractor to Verify depth of tee prior to furnishing pipe or fittings"

2. This Addendum becomes part of the Contract Documents. All other conditions and requirements of the Contract Documents will remain unchanged. Receipt of this Addendum must be acknowledged in the space provided on the Bid Proposal Form in the Project Manual.

END OF ADDENDUM NO. ONE

DocuSigned by:
Dennis Laurita 5/2/2024
A459F4FFA8C24E5...
Dennis Laurita Date
Contracts Supervisor

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section summarizes the Work covered in detail in the complete Contract Documents.
- B. For related items, See Thornton's General and Special Conditions in the Contract Documents.

1.02 WORK SEQUENCE:

- A. General: Construction sequence shall be determined by Contractor subject to Owner's need for continuous operation of existing facilities.
- B. Continuous Service of Existing Facilities: Exercise caution and schedule operations to ensure that functioning of present facilities will not be disrupted. Shutdown of Owner's operating facilities to perform the Work shall be held to a minimum length of time and shall be coordinated with Owner who shall have control over the timing and schedules of such shutdowns.
- C. Scheduled Events: Schedule the Work to conform to the following events and dates in addition to those specified in Thornton's General and Special Conditions.
 - 1. Construction Start (Notice to Proceed): To be determined (TBD).
 - 2. (Site 3) Glacier Peak Elementary School Dates for the school year 2023-2024: Monday, August 14, 2023, through Thursday, May 30, 2024. Construction activities must avoid conflicting with these dates.
 - 3. (Site 7) Mapleton School District Dates for the school year 2023-2024: Monday, August 14, 2023, through Thursday May 30, 2024. Construction activities must avoid conflicting with these dates.
 - 4. Contractor shall consider scheduling the Work to conform to 2024-2025 school dates for those schools mentioned above if necessary.
- D. All sites will be placed into service upon completion and will act independent of each other.
- E. Scheduled Delays: Schedule the Work to conform to the following delays.
 - 1. Adverse Weather Days per City of Thornton General Conditions, Section X.
- F. Required Phases: Construct work in following phases to provide the least possible interference to the activities of Owner or water delivery to customer.
 - 1. First: Construct, test, disinfect, and flush waterline. Install temporary plugs and blow off assemblies as required for testing. Encountered water service lines in the way of the new waterline shall be adjusted, extended, and/or relocated to provide continuous service.
 - 2. Second: Place the new waterline into service. The new line and the existing water system should both be functioning as potable water delivery sources.
 - 3. Third: Reestablish water service lines, water laterals, and fire lines as to cause the least disturbance to property owners.
 - 4. Fourth: Disconnect existing system as to cause the least disturbance to existing customers.

5. Sixth: Abandon existing waterline. Remove above-grade appurtenance on existing waterline including abandoning existing valve boxes and fire hydrant removal. Plug existing waterline.

1.03 MEASUREMENT AND PAYMENT:

- A. See Section 01 29 00 – “Measurement and Payment” in addition to the Special Conditions, Section III.

1.04 LIST OF DRAWINGS (AND SCHEDULES):

- A. Contract Drawings: See Index Sheet of Drawing Set
- B. Contract Documents are described in the Construction Contract, Section II, Paragraph D.

1.05 CONSTRUCTION SURVEYING:

- A. Contractor shall furnish and set all control points and construction stakes establishing all lines, grades, and measurements necessary to the prosecution of the Work. Construction staking shall also clearly define the limits of construction and Site access. Any additional surveying required for construction of the Project shall also be provided by the Contractor. All surveying shall be conducted under the direct supervision of a land surveyor registered in the State of Colorado. All costs associated with the above shall be considered incidental to the Project and as such no additional cost will be paid to Contractor.

PART 2 - PRODUCTS - NOT APPLICABLE.

PART 3 - EXECUTION - NOT APPLICABLE.

END OF SECTION 01 11 00

SECTION 01 29 00 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 SCOPE:

- A. This Section covers methods of measurement and payment for items of Work under this Contract.
- B. The Contract Price shall cover all Work required by Contract Documents. All costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction plant, equipment, and tools; and performing all necessary labor and supervision to fully complete the work, shall be included in the unit and lump sum prices. All work not specifically set forth as a pay item in the Bid Schedule shall be considered a subsidiary obligation of the Contractor, and all costs in connection therewith shall be included in the schedule prices.
- C. Compliance with all permits required for the Project including but not limited to those listed in Section 01 11 00 - "Summary of Work" and General Conditions Section III Paragraph N, shall be considered incidental to the work, and no additional payment will be made to the Contractor. This includes all work necessary to comply with such permits and any fees associated with obtaining permits.
- D. Contractor shall submit a schedule of values for each lump sum item so that verification of work value completed can be calculated.
- E. See the Special Conditions, Section III for related requirements.

1.02 ESTIMATED QUANTITIES:

- A. All estimated quantities stipulated in the Contract Documents for this portion of Work are approximate and are to be used as a basis for estimating the probable cost of the Work and for the purpose of comparing bids submitted for the Work. The actual amounts of Work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished. See the BID PROPOSAL Contract Document for related information.

1.03 EARTHWORK, EXCAVATION, AND TRENCHING:

- A. Except where otherwise specified, the unit or lump sum price bid for each item of work that involves earthwork, excavation, and trenching, which is classified as common excavation, shall include all costs for such work. No direct payment shall be made for excavation and trenching. All excavation and trenching shall be unclassified as to materials which may be encountered, and trenches shall be unclassified as to depth. Any rock encountered shall be removed and disposed of at no additional cost to the Owner. Contractor shall comply with all OSHA Safety Standards including all work necessary for the Contractor to comply with trench and excavation safety systems according to OSHA Part 1926 – Subpart P. All labor, materials, equipment, etc. required to meet these Standards shall be incidental to the Work and therefore no additional payment will be made under any circumstances.

1.04 DEWATERING:

- A. Except where otherwise specified, the unit or lump sum price bid for each item of work that involves dewatering shall include all costs for such work. No direct payment shall be made for dewatering. Dewatering shall include construction dewatering, un-watering, or water control as used to described the removal, draining, or control of groundwater or surface water from a riverbed, reservoir, pond, lowland, or wetland from the excavation area. All dewatering shall be at no additional cost to the Owner. All labor, materials, equipment, etc. required to construct the Project under wet conditions are incidental to the Work and therefore no additional payment will be made under any circumstances. See Exhibit I of the Contract Documents.

1.05 SITE SAFETY:

- A. Site safety measures as required in the General Conditions are required on this Project. No direct payment shall be made for site safety.

1.06 MOBILIZATION AND DEMOBILIZATION: (BID ITEM 1)

- A. See Thornton Special Conditions Section IV.

1.07 CONTRACT BONDS AND INSURANCE: (BID ITEM 2)

- A. See Thornton Special Conditions Section IV.

1.08 TRAFFIC CONTROL: (BID ITEM 3)

- A. The measurement and payment for this item will be based on the completion of the Work. No quantity measurement will be made of any of the work and materials required to complete this item of the Project.
- B. Payment will be based on a percentage equal to the percentage of the original Contract Price earned (PCE) excluding the amount paid for Materials Stored on Site.
- C. The lump sum price bid for this item shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include, but not be limited to: crushed rock surfacing, furnishing, installing, moving, maintaining and removing all temporary traffic signs including: barricades, channelizing devices, warning lights, delineator, and any other equipment or personnel as required by the latest revision of the "Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways" and the requirements of the Colorado Department of Transportation (CDOT); all signs, emergency replacements, warning lights, traffic cones, barricades, traffic maintenance plans that may be required by any entity, concrete barriers, line markings, flagging, notification of property owners; traffic control management; and all other related and necessary materials, work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
- D. Measurement and payment for this item shall also include all of the Contractor's cost whatsoever for establishing and maintaining the traffic control devices according to the requirements set forth the latest edition of the Quality Guidelines for Temporary Traffic Control Devices and Features published by the American Traffic Safety Services Association (ATSSA).

- E. The lump sum price bid shall also include the furnishing, mobilizing, and placement of Variable Messaging Boards (VMBs) prior to the commencement of construction and during construction at any site where required.
- F. See the Special Conditions Section XVII for related information.

1.09 CONSTRUCTION SURVEYING: (BID ITEM 4)

- A. The measurement and payment for this item will be the lump sum required for construction surveying and includes all costs for surveying, modeling, and providing survey deliverables for the pre-construction survey and as-constructed survey, and all other costs incurred or labor and operations.
- B. Payment will be according to the Owner formula for mobilization as described in the City of Thornton's General and Special Conditions. The price shall not exceed ten percent (10%) of the original Contract Price.

1.10 CONFORMANCE WITH EROSION PROTECTION AND SEDIMENT CONTROL PLAN, PERMITS, AND MAINTENANCE: (BID ITEM 5)

- A. The measurement and payment for development, implementation, conformance, and compliance with the approved Colorado Department of Public Health and Environment (CDPHE) construction stormwater permit and associated Storm Water Management Plan (SWMP) will be based on a lump sum.
- B. The lump sum bid for this item shall include all labor, materials, costs, and fees associated with planning, designing, developing, applying, and achieving a stormwater discharge permit from the CDPHE. The lump sum bid shall also cover all costs in planning, designing, engineering, and developing a SWMP.
- C. The lump sum bid for this item shall include all of the Contractor's costs of whatsoever nature. The lump sum bid for development, implementation, conformance, and compliance with CDPHE construction stormwater permit and associated Storm Water Management Plan (SWMP) shall include all labor, materials, work, and all costs of whatsoever nature to implement and maintain the Project Site in compliance with the stormwater discharge permit and per the SWMP. This shall include, but not be limited to: permitting, preparing and revising SWMP drawings, preparing and revising SWMP report, furnishing, installing, maintaining and removing erosion control measures (ECMs) including but not limited to: silt fence, construction fence, erosion control blankets, seeding, mulching, vehicle tracking pads, inlet protection, concrete washout areas, erosion control bales, sediment control logs, reinforced rock berms, and all other necessary material, work, and equipment required to complete this item in accordance with the jurisdictional requirements relating to storm water and pollution controls.
- D. The lump sum bid for this item shall include all maintenance of seeded and landscaped areas in conformance with the erosion & sediment control (ESC) permit and revegetation requirements therein.
- E. The lump sum bid for this item shall also include all labor, equipment, and materials required to perform regular and special erosion & sediment control (ESC) inspections and reporting by a certified, trained, and competent specialist.
- F. The Grading, Erosion, and Sediment Control Plans (GESC) show areas of restoration relating to gravel roads, asphalt driveways, asphalt roads, concrete

- driveways, and concrete trails. Restoration of these “hardscaped” areas are measured and paid for under different bid items.
- G. Payment will be based on a percentage equal to the percentage of the original Contract Price earned (PCE) excluding the amount paid for materials stored on Site.
 - H. See Exhibit I of the Contract Documents for related requirements.
- 1.11 TRENCH STABILIZATION MATERIAL: (BID ITEM 6)
- A. If required, the measurement and payment of this item will be the actual tonnage of trench stabilization material installed. Delivery tickets will confirm the amount of material provided and shall be provided to City of Thornton’s Construction Coordinator.
 - B. The unit price bid for trench stabilization material shall include all of the Contractor’s costs of whatsoever nature. The unit price shall include but not be limited to: furnishing and installation of trench stabilization material, placement in the bottom of an unstable excavation or trench upon direction of the City of Thornton’s Construction Coordinator and/or Engineer, geotextile or polyethylene material, and all other necessary material, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
 - C. The use and payment for trench stabilization material shall be only where required and as approved by the City of Thornton’s Construction Coordinator.
- 1.12 CLSM AS BACKFILL MATERIAL: (BID ITEM 7)
- A. The measurement and payment for this item will be the actual number of cubic yards of controlled low strength material (CLSM) installed. Delivery tickets will confirm the amount of flow fill or flash fill installed and shall be provided to the City of Thornton’s Construction Coordinator.
 - B. The unit price bid for CLSM shall include all of the Contractor’s costs of whatsoever nature. The unit price bid shall include but not be limited to: delivering, furnishing, and installing flow fill or flashfill, installation by pumping (if necessary), formwork, and all other necessary material, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
 - C. This item shall cover the installation of flow fill or flashfill as a compacted backfill substitute; specifically when pipeline installation crosses under dense or critical utilities and at locations as specified in the Contract Drawings, or as directed by the Engineer or City of Thornton Construction Coordinator.
- 1.13 ASPHALT SURFACE RESTORATION: (BID ITEM 8)
- A. The measurement and payment for this item will be the weight in tons of hot mix asphalt pavement permanently replaced due to pipe installation, trenching, and trench overcuts within areas identified in the Contract Drawings.
 - B. The unit price bid for asphalt surface restoration shall include all of the Contractor’s costs of whatsoever nature. The unit price for this item shall include but not be limited to: sawcutting, asphalt milling, temporary asphalt surfacing, any and all extra compaction for backfill beneath surfacing, aggregate base course, compaction of aggregate base course, hauling and delivery of hot mix asphalt, tack coat, asphalt placement, compaction of surface material, pavement markings

- (both temporary and permanent), disposal of excess material, and all other necessary materials, work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
- C. Payment at the contract unit price shall constitute full compensation for additional compaction of trench backfill, aggregate base course, and asphalt surface material, furnishing and installing all base course and surface material as specified, sawcutting and/or jackhammering of existing pavement, removal and disposal of existing pavement, and all tools, equipment, labor, performance and incidentals necessary to satisfactorily complete this item in accordance with the Contract Drawings and Specifications.
 - D. Temporary pavement and pavement markings are considered incidental to this pay item. No additional or separate payment shall be made for temporary pavement or pavement markings.
- 1.14 CONCRETE SURFACE RESTORATION: (BID ITEM 9)
- A. The measurement and payment for this item will be the actual number of square yards of concrete pavement or drainage gutters (flow pans) permanently replaced due to pipe installation, trenching, and trench overcuts.
 - B. The unit price bid for concrete surface restoration shall include all of the Contractor's costs of whatsoever nature. The unit price for this item shall include but not be limited to: sawcutting, temporary surfacing, any and all extra compaction for backfill beneath surfacing, aggregate base course, compaction of aggregate base course, hauling and delivery of concrete removal to the nearest control joint and dowling new concrete surface into undisturbed existing surface, placement, compaction, finishing, disposal of excess and existing material, and all other necessary materials, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
 - C. Payment at the contract unit price shall constitute full compensation for additional compaction of trench backfill, aggregate base course, and asphalt surface material, furnishing and installing all base course and surface material as specified, sawcutting and/or jackhammering of existing concrete, removal and disposal of existing concrete, and all tools, equipment, labor, performance and incidentals necessary to satisfactorily complete this item in accordance with the Contract Drawings and Specifications.
- 1.15 CONCRETE CURB & GUTTER RESTORATION: (BID ITEM 10)
- A. The measurement and payment for this item will be the actual number of linear feet of concrete curb and gutter permanently replaced due to pipe installation, trenching, and trench overcuts.
 - B. The unit price bid for concrete curb & gutter restoration shall include all of the Contractor's costs of whatsoever nature. The unit price for this item shall include but not be limited to: sawcutting, temporary surfacing, any and all extra compaction for backfill beneath surfacing, hauling and delivery of concrete, removal to the nearest control joint and dowling new curb and gutter into undisturbed existing curb and gutter, formwork placement, compaction, finishing, curing, disposal of excess and existing material, and all other necessary materials, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications.

- C. Payment at the contract unit price shall constitute full compensation for additional compaction of trench backfill, sawcutting and/or jackhammering of existing concrete curb and gutter, removal and disposal of existing concrete curb and gutter, and all tools, equipment, labor, performance and incidentals necessary to satisfactorily complete this item in accordance with the Contract Drawings and Specifications.
- 1.16 PAYMENT FOR SOIL, ASPHALT, CONCRETE, AND OTHER TESTING: (BID ITEM 11)
- A. The measurement and payment for this item will be the lump sum required for soil, asphalt, and other testing.
- B. Required testing, testing procedures, reports, certificates, and costs associated with all phases of securing required satisfactory test information which may be required by individual sections of Contract Specifications or Drawings are the full responsibility of the Contractor.
- 1.17 SEEDING AND SURFACE RESTORATION: (BID ITEM 12)
- A. The measurement and payment for this item will be per acre of area disturbed, restored, and maintained through seeding.
- B. The unit price bid for this item shall include all of the Contractor's costs of seeding and surface restoration and maintenance of whatsoever nature. The unit price bid shall include but not be limited to: rut removal, fine grading, rock removal, coordination with landowner on seed mix type, furnishing and installing seed, mulch, tackifier, soil preparation, surface preparation, soil amendments, watering, mowing, weed spraying and seed reapplication, for up to one (1) year from Project acceptance, and all other necessary material, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
- C. The unit price bid for this item shall also include, all work, materials, coordination, and labor required to replace or repair damaged or removed irrigation systems. This shall include, but not be limited to: coordination with the system owner, repair or replacement of irrigation lines, irrigation valves, sprinkler heads, irrigation control boxes, irrigation control wiring, and all other necessary material, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications and city irrigation Design Guidelines.
- D. The unit price bid shall also include the Contractor's cost of whatsoever nature to maintain newly seeded areas until the time of acceptance and shall include but not be limited to: watering, fertilization, re-seeding thin areas, weed control, mowing, and all other maintenance to ensure and maintain adequate growth coverage as outlined in the Contract Specifications.
- E. Surface preparation and soil amendments shall be per Contract Specifications and City of Thornton's *Standards and Specifications for the Design and Construction of Public and Private Improvements*, October 2012, Section 800 and Design Guidelines, whichever is more stringent.
- 1.18 TREE REMOVAL, DISPOSAL, AND REPLACEMENT: (BID ITEM 13)
- A. The measurement and payment of this item will be the actual number of trees removed, disposed of, and replaced.

- B. The unit price bid shall include all of the Contractor's cost to remove trees conflicting with the water line installation. Contractor shall protect any vegetation in close proximity to the water line installation that can be reasonably protected.
- C. The unit price bid shall include all of the Contractor's cost of whatsoever nature. The unit price bid shall include but not be limited to: tree cutting, stump removal, removal of excess soil material, excavation, site cleanup, litter and debris removal, and all other related and necessary materials, work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
- D. Replacement with a comparable species in a location specified by the City Forester of a minimum 3-inch caliper specimen from nursery stock for each specimen removed.

1.19 TREE AND VEGETATION TRIMMING AND DISPOSAL: (BID ITEM 14)

- A. The measurement and payment of this item will be lump sum
- B. The lump sum price bid shall include all of the Contractor's cost to trim trees and vegetation conflicting with the water line installation as approved by the City Forester & performed by certified Arborist. Contractor shall protect any vegetation in close proximity to the water line installation that can be reasonably protected.
- C. The unit price bid shall include all of the Contractor's cost of whatsoever nature. The unit price bid shall include but not be limited to: trimming, tree cutting, site cleanup, litter and debris removal, and all other related and necessary materials, work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.

1.20 PVC WATERLINE: (BID ITEMS 15 THROUGH 18)

- A. The measurement and payment for this item will be the actual number of linear feet of waterline for each size installed. Waterline shall be measured for payment on a horizontal plane after installation of the pipe. Where lines are laid to conform to stationed profiles, payment shall be made on linear quantities based on the pipeline stationing as determined by the surveys made after installation.
- B. The unit price for waterline and appurtenances shall include all of the Contractor's cost of whatsoever nature. The unit price for this item shall include, but not be limited to: all costs for furnishing and installation of the pipe and fittings, excavation, pipe installation, bedding material, dewatering, potholing of all existing utilities (as necessary), backfill, warning tape, tracer wire, tracer wire access boxes, installation of thrust blocks, repair of all sewer laterals encountered and impacted during the installation of waterline, repair, lowering or relocation of gas service lines, polyethylene wrap where applicable, removal and disposal of excess soil materials, and any and all extra compaction for backfill beneath surfacing, existing utility protection and support, material testing, filling, hydrostatic testing, flushing, disinfecting, commissioning, and all other necessary materials, work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
- C. The measurement of the length of each line or run of pipe of each size will begin and end at:
 - 1. The end of the pipe where connected to an existing pipe, fitting, or valve; or at the end of a dead-end run.

- D. The measurement of waterline, which is to be paid for on a unit price basis, will be continuous through and shall include the full laying lengths of all fittings and valves installed between the ends of each line; except that the laying lengths of reducers and increasers will be divided equally between the connected pipe sizes.
- E. The unit price submitted for waterline and appurtenances shall also include any other items necessary for a completely functioning piping system and to bring the Site to original conditions which are not specifically called for in other bid items. Any such items shall be at no additional cost to Owner.
- F. Other Contractor's Responsibilities:
1. In addition to those inspections and tests called for in the GENERAL CONDITIONS, Contractor shall also be responsible for and shall pay all costs in connection with testing required for the following:
 - a. Testing of PVC waterlines.
 - b. All performance and field testing specifically called for by the Contract Specifications.
 - c. All retesting for work or materials found defective or unsatisfactory
 2. The Contractor is responsible for providing all test data needed to verify that the material provided on the job meet the Contract requirements.
 3. The Contractor shall provide manpower and equipment necessary to explore selected portions of the Project for testing. No extra compensation will be awarded for these services.
 4. The Contractor is required to coordinate the work schedule with the Owner so that key testing points, as determined by the Owner, may be observed. If the Contractor fails to provide reasonably adequate notice or proceeds without the required testing, the subject work shall be re-exposed or redone in its entirety, while the City of Thornton's Construction Coordinator is present. No extra compensation will be awarded to the Contractor when they are required to redo work due to the Contractor's failure to coordinate testing with the Owner or City of Thornton's Construction Coordinator.
 5. When required by the Owner, the Manufacturer shall furnish the Owner a sworn statement that the inspection and all the specified tests, as set forth in these and referenced specifications, have been made, and the results thereof comply with the requirements of the applicable standard(s) herein specified.
- 1.21 HYDRANT SERVICE LINES - DIP WATERLINE: (BID ITEMS 19)
- A. The measurement and payment for this item will be the actual number of linear feet of DIP waterline as hydrant service lines installed. Waterline shall be measured for payment on a horizontal plane after installation of the pipe from the center of the swivel tee to the center of the hydrant bonnet.
 - B. The unit price for waterline and appurtenances shall include all of the Contractor's cost of whatsoever nature. The unit price for this item shall include, but not be limited to: all costs for furnishing and installation of the pipe and fittings, excavation, pipe installation, bedding material, dewatering, potholing of all existing utilities (as necessary), backfill, warning tape, tracer wire, installation of thrust blocks, polyethylene wrap where applicable, removal and disposal of excess soil materials, and any and all extra compaction for backfill beneath surfacing, existing utility protection and support, material testing, filling, hydrostatic testing, flushing, disinfecting, commissioning, and all other necessary materials, work and

equipment required to complete this item in accordance with the Contract Drawings and Specifications.

- C. The unit price submitted for waterline and appurtenances shall also include any other items necessary for a completely functioning piping system and to bring the Site to original conditions which are not specifically called for in other bid items. Any such items shall be at no additional cost to Owner.
- D. Other Contractor's Responsibilities:
 - 1. In addition to those inspections and tests called for in the GENERAL CONDITIONS, Contractor shall also be responsible for and shall pay all costs in connection with testing required for the following:
 - a. Testing of waterlines.
 - b. All performance and field testing specifically called for by the Contract Specifications.
 - c. All retesting for work or materials found defective or unsatisfactory
 - 2. The Contractor is responsible for providing all test data needed to verify that the material provided on the job meet the Contract requirements.
 - 3. The Contractor shall provide manpower and equipment necessary to explore selected portions of the Project for testing. No extra compensation will be awarded for these services.
 - 4. The Contractor is required to coordinate the work schedule with the Owner so that key testing points, as determined by the Owner, may be observed. If the Contractor fails to provide reasonably adequate notice or proceeds without the required testing, the subject work shall be re-exposed or redone in its entirety, while the City of Thornton's Construction Coordinator is present. No extra compensation will be awarded to the Contractor when they are required to redo work due to the Contractor's failure to coordinate testing with the Owner or City of Thornton's Construction Coordinator.
 - 5. When required by the Owner, the Manufacturer shall furnish the Owner a sworn statement that the inspection and all the specified tests, as set forth in these and referenced specifications, have been made, and the results thereof comply with the requirements of the applicable standard(s) herein specified.

1.22 CONNECTION TO EXISTING WATERLINE - VARIOUS SIZES: (BID ITEMS 20 THROUGH 24)

- A. The measurement and payment for this item will be based per each of the connections and waterline modifications from the existing system to the new waterline. Connections at each site are unique and will be paid for separately. All work shall conform to the Contract Drawings and Specifications.
- B. The unit price bid for each of the connections to each of the existing water lines shall include all of the Contractor's costs of whatsoever nature. The lump sum price bid shall include but not be limited to: sawcutting, removal of concrete, removal of asphalt, excavation, furnishing and installation of all piping to the connection with the existing waterline, restraint, fittings, couplings, bends, disposal of excess material and pavement, connection to existing piping, asbestos removal and abatement (as necessary), connection to new piping, installation of thrust blocks, temporary piping such as flanges, compaction, marking tape, tracer wire, existing utility protection and support, dewatering, testing, and flushing, temporary pavement, concrete flatwork removal, and all other necessary materials, work and

equipment required to complete this item in accordance with the Contract Drawings and Specifications.

1.23 DIRECT-BURY GATE VALVES: (BID ITEM 25 THROUGH 28)

- A. The measurement and payment for this item will be the actual number of gate valves installed of varying diameters.
- B. The unit price bid for the plug valves shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing gate valves, valve operator, valve boxes, valve covers, operator extensions (as necessary), connection to other appurtenances, polyethylene encasement, excavation, dewatering, field painting, backfill around the valve, compaction and all other necessary material, work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.

1.24 FIRE HYDRANT ASSEMBLY (BID ITEM 29)

- A. The measurement and payment for this item will be the actual number of fire hydrant systems replaced including the associated gate valve and fire hydrant lateral.
- B. The unit price bid for the fire hydrant systems shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: removal and abandonment of existing fire hydrant assembly and restoration of surface, furnishing and installing fire hydrant, gate valves, valve operator, valve boxes, valve covers, connections to waterline, polyethylene encasement, excavation, dewatering, field painting, backfill, compaction and all other necessary material, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications.

1.25 2-INCH BLOWOFF ASSEMBLY: (BID ITEM 30)

- A. The measurement and payment for this item will be the actual number of 2-inch blowoff assemblies installed.
- B. The unit price bid for the 2-inch blowoff assemblies shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing 2" tapped plug, 2" piping, 2" thrust block per detail, valve box, valve cover, threaded connection port, excavation, dewatering, furnishing and installing all piping, fittings, backfill around the assembly, bedding, compaction, material testing and all other necessary material, work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.

1.26 WATER SERVICE LINE REACTIVATION: (BID ITEM 31)

- A. The measurement for payment of this item will be the actual number of water service taps to be reactivated and reestablished for any size service line.
- B. The unit price bid shall include all of the Contractor's costs of whatsoever nature. The price bid shall include, but not limited to: furnishing and setting up all equipment and labor necessary to locate and reactivate existing water services. This shall include, but not be limited to: sawcutting, removal of asphalt, removal of concrete, excavation, protection of existing utilities, wet tapping the PVC waterline, provide direct tap, providing tapping saddle, providing corporation stop, seamless copper tubing, compression fittings, compression couplings, reducers, bushings,

compacted backfill, asphalt removal and replacement, temporary pavement, concrete flatwork removal and replacement, surface restoration, and all other necessary materials, work, and equipment required to complete this item in accordance with the Contract Drawings and Specifications.

- C. The unit price bid shall be applicable regardless of whether the existing service line is truncated or extended to complete the connection to the new water distribution piping.
- D. The unit price provided water service line (tap) reactivation shall also include coordination of such work with affected property owners. Contractor shall coordinate his work to provide the least inconvenience to property owners.

1.27 ABANDONMENT OF EXISTING WATERLINE IN PLACE: (BID ITEM 32)

- A. The measurement and payment for this item will be lump sum per site. All work shall conform to the Contract Drawings and Specifications.
- B. The unit price bid shall include but not be limited to: excavation, protection of existing utilities, isolation, completely draining the existing waterline, cutting and capping the line, and all other work and equipment required to complete this item in accordance with the Contract Drawings and Specifications.
- C. Existing pipe shall not be abandoned until new pipeline is installed, tested, accepted by Engineer and Owner, and placed into service.

1.28 ABANDONMENT OF EXISTING PRV IN VAULT (SITE 3): (BID ITEM 33)

- A. The measurement and payment for this item will be for the complete abandonment of the existing PRV vault identified in the Drawings.
- B. The lump sum price bid for removing abandoning existing PRV vault shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include, but not be limited to: saw cutting, removal of manhole ring and cover, filling entire vault void space with CLSM, asphalt patch, concrete flatwork removal and replacement, road markings, surface restoration, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- C. Existing PRV shall not be abandoned until new pipeline is installed, tested, accepted by Engineer and Owner, and placed into service.

1.29 EXISTING VALVE BOX REMOVAL: (BID ITEM 34)

- A. The measurement and payment for this item will be the actual number of existing valve boxes removed.
- B. The unit price for removing existing valve boxes shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include, but not be limited to: saw cutting, removal of lid and top section of valve box, filling entire valve box void space with CLSM, asphalt patch, concrete flatwork removal and replacement, road markings, surface restoration, landscaping restoration, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

PART 2 - PART 2 - PRODUCTS – NOT APPLICABLE.

PART 3 - PART 3 - EXECUTION – NOT APPLICABLE.

END OF SECTION 01 29 00

SECTION 01 32 33 - CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section specifies administrative and procedural requirements for construction photographs.

1.02 SUBMITTALS:

- A. Submit prints as specified in Section 01 33 00 - "Submittals" and in PART 3 - this Section.
- B. Photographer shall submit two sample prints of the type and quality required during construction, for review and acceptance by Engineer.

1.03 QUALITY ASSURANCE (QA):

- A. All photographs shall be taken with 8 megapixel (MP) camera, at minimum.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHIC REQUIREMENTS:

- A. Specified in PART 3, this Section.

PART 3 - EXECUTION

3.01 PROGRESS SITE PHOTOGRAPHS:

- A. Contractor shall be responsible for photographs of the Site to show the existing and general progress of the Work. Engineer will advise as to which views are of interest. Photographs shall be taken of the following areas and at the following times.
 - 1. Existing Site conditions before Site work is started. Number of views shall be adequate to cover the Site.
 - 2. Progress of the Work from clearing throughout construction. There shall be forty-five (45) different views taken throughout the month.
 - 3. Finished Project after completion of Work. Number of views shall be adequate to show the finished Work.
 - 4. If Project is not completed during the Contract Time or authorized extensions, photographs shall continue to be taken at no increase in Contract Price.
 - 5. Site conditions and Progress of the Work at the time of Contractor's application for payment.
 - a. The City of Thornton requires one set of the above mentioned forty-five (45) progress photographs (minimum 8 MP quality) to process application for payment.
- B. Digital Images:
 - 1. Submit a complete set of digital image electronic files with each submittal of photographic prints.
 - a. Provide images in JPEG format, with minimum sensor size of 8.0 MP.
 - b. Provide image resolution of not less than 1600 by 1200 pixels.
 - c. Submit images that have same aspect ratio as the sensor, uncropped.
- C. Identification: Identify electronic media with date digital photographs were taken.

- D. Deliver electronic media files to Engineer.

3.02 ROUTE PHOTOGRAPHS:

- A. Contractor shall be responsible for photographs along the entire construction route showing the condition of the terrain previous to any alterations by Contractor and before construction is started. These same views shall be rephotographed after completion of all construction. Three (3) days' notice shall be given to Engineer and Owner prior to this Work to allow them to accompany photographer.
- B. The principal reason for obtaining photographs is so that items such as cracked curbs, shrubs, lawns, broken pavement or sidewalks, plugged culverts in driveways, or other problems along the construction route may be more clearly shown and recorded. This will to some degree preclude the possibility of post construction litigation with property owners adjacent to the Work.
- C. Photographs shall be taken at intervals of not more than fifty feet (50') and at other intervals deemed necessary to record detailed conditions, possible field conflicts, and as may be designated by Engineer.
- D. Each photograph shall be identified in the view using an identification board stating the Contract name and Contract number, station number, street or other suitable identification, date, and sequential view number.
- E. Contractor shall keep a log of all photographs noting detailed information or comments pertinent to each photograph.
- F. Digital Images:
 - 1. Submit a complete set of digital image electronic files as a Project record document.
 - a. Provide images in JPEG format, with minimum sensor size of 8.0 MP.
 - b. Provide image resolution of not less than 1600 by 1200 pixels.
 - c. Submit images that have same aspect ratio as the sensor, uncropped.
- G. Identification:
 - 1. Identify electronic media with date digital photographs were taken.

3.03 AUDIO/VIDEO RECORDINGS:

- A. Audio/video recordings shall be made of the entire Site and along the entire construction route showing the condition of the Site or terrain previous to any alterations by Contractor and before disturbing of the Site is started. A second audio/video recording shall be produced after completion of all construction operations, showing the same view or views as close as possible, to illustrate "before" and "after" conditions. This is the responsibility of Contractor. Three (3) days' notice shall be given to Engineer and Owner prior to this Work to allow them to accompany a professional videographer contracted by the Contractor.
- B. The principal reason for producing video tapes is so that items such as cracked or broken curbs, pavement, or sidewalks; plugged culverts in driveways; condition of shrubs or lawns and conditions of Site or other problems along the construction route may be more clearly shown and recorded. This will to some degree preclude the possibility of post construction litigation with property owners adjacent to the Work.
- C. All required equipment, accessories, materials, and labor for the timely production of this documentation shall be arranged/furnished through Contractor.

1. The audio/video system camera-recorder used by the professional videographer shall have the following capabilities and features:
 - a. Playback capability (in-the-field) with a B/W viewfinder built-in.
 - b. Built-in microphone.
 - c. 6:1 zoom lens ratio with automatic focusing system and automatic iris.
 2. The audio/video system shall be capable of producing bright, sharp, clear visual images which render accurate colors free from imperfections and distortions that might obscure recorded information during playback. The simultaneous audio record shall be made directly onto the original recording and shall record narration of the professional videographer clearly and audibly, with adequate volume, free from unnecessary interruptions and distortions that might eliminate recorded information during playback.
- D. Zone of Influence: Unless otherwise indicated by Engineer or Owner, the "Zone of Influence" which might be affected by the construction operations and, therefore, shall be documented in these tape recordings, shall be whichever of the following includes the greatest area.
1. All areas within the temporary construction right-of-ways and grading limits, as indicated on the Contract Drawings.
 2. The permanent easement for the completed improvements, as indicated on the Contract Drawings.
 3. All areas within thirty-five feet (35') of the proposed improvements.
 4. All areas within the Project Site.
- E. Audio/Video Recording Production Procedures:
1. It is recommended that the audio/video recordings be produced while actually walking the construction Site and route – NOT through the use of wheeled vehicles.
 2. All video recordings shall display digital information continuously; this information shall include the current time and date, showing the month, day, and year. This information shall be audibly acknowledged by the professional videographer at appropriate times during recording sequences.
 3. Each recording shall begin with a visual of the professional videographer's name or business trademark, followed by the current date and time on digital display, plus audible and visual indication of Contract name and numbers, municipality, name of Contractor, and other pertinent information. Thereafter, each recording sequence should begin with the current time and date, followed by the location of the professional videographer, direction of view, and description of the scene being recorded. Continuous updates of this information, plus other pertinent comments, shall be given throughout the recording sequence. Such audio and video records shall include, but not be limited to, conditions of existing pavement, curbs, sidewalks, driveways, culverts, ditches, mailboxes, fences, shrubs and landscaping, major structural conditions of residences and commercial buildings, fences, signs, headwalls, general terrain, and similar items.
 4. A representative of the Engineer, Owner, and Contractor shall accompany the professional videographer during recording sessions, to assist with location of the alignment and areas of construction activity, and identification of items and conditions to be recorded. A log sheet showing the recording sequences shall be maintained; it shall list the start and stop time/date for each

sequence, plus a brief description of the areas documented. The end of each recording tape shall include a visual record of the original log sheet to preserve this information in the event of loss or damage.

5. All recordings shall be completed during periods of adequate lighting and visibility. Sufficient lighting must be available to provide proper illumination of shadowed areas, and proper exposure adjustments shall be made where required. No taping shall be completed during precipitation, mist, fog, or when more than ten percent (10%) of the ground surface has snow cover.

END OF SECTION 01 32 33

SECTION 01 33 00 - SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes definitions, descriptions, transmittal, and review of Submittals.

1.02 RELATED REQUIREMENTS:

- A. Section 01 32 33 - "Construction Photographs."
- B. Section I of the Special Conditions

1.03 GENERAL INFORMATION:

- A. Definitions:
 - 1. Shop Drawings, product data, and Samples are technical Submittals prepared by Contractor, Subcontractor, manufacturer, or Supplier and submitted by Contractor to Owner as a basis for approval of the use of Equipment and Materials proposed for incorporation in the Work or needed to describe installation, operation, maintenance, or technical properties, as specified in each Division of the Contract Specifications.
 - a. Shop Drawings include custom-prepared data of all types including drawings, diagrams, performance curves, material schedules, templates, instructions, and similar information not in standard printed form applicable to other projects.
 - b. Product data includes standard printed information on materials, products, and systems; not custom-prepared for this Project, other than the designation of selections from available choices.
 - c. Samples include both fabricated and unfabricated physical examples of materials, products, and Work; both as complete units and as smaller portions of units of Work; either for limited visual inspection or (where indicated) for more detailed testing and analysis. Mock-ups are a special form of Samples which are too large to be handled in the specified manner for transmittal of Sample Submittals.
 - 2. Informational Submittals are those technical reports, administrative Submittals, certificates, and guarantees not defined as Shop Drawings, product data, or Samples.
 - a. Technical reports include laboratory reports, tests, technical procedures, technical records, and Contractor's design analysis.
 - b. Administrative Submittals are those nontechnical Submittals required by the Contract Documents or deemed necessary for administrative records. These Submittals include maintenance agreements, bonds, Project photographs, physical work records, statements of applicability, copies of industry standards, Project record data, schedules, security/protection/safety data, and similar type Submittals.
 - c. Certificates and guarantees are those Submittals on Equipment and Materials where a written certificate or guarantee from the manufacturer or Supplier is called for in the Contract Specifications.
 - 3. Refer to ARTICLES 1.03 and 1.04 of this Part for detailed lists of Submittals and specific requirements.

- B. Quality Requirements:
1. Submittals such as Shop Drawings and product data shall be of suitable quality for legibility and reproduction purposes. Every line, character, and letter shall be clearly legible. Shop Drawings such as reproducible shall be useable for further reproduction to yield a legible hard copy.
 2. Documents submitted to Engineer that do not conform to specified requirements shall be subject to rejection by Engineer, and upon request by Engineer, Contractor shall resubmit conforming documents. If conforming Submittals cannot be obtained, such documents shall be retraced, redrawn, or photographically restored as may be necessary to meet such requirements. Contractor's or his/her Subcontractor's failure to initially satisfy the legibility quality requirements will not relieve Contractor or his/her Subcontractors from meeting the required schedule for Submittals.
- C. Language and Dimensions:
1. All words and dimensional units shall be in the English language.
- D. Submittal Completeness:
1. Submittals shall be complete with respect to dimensions, design criteria, materials of construction, and other information specified to enable Engineer to review the information effectively.
 2. Where standard Shop Drawings are furnished which cover a number of variations of the general class of Equipment, each drawing shall be annotated to indicate exactly which parts of the drawing apply to the Equipment being furnished. Use hatch marks to indicate variations that do not apply to the Submittal. The use of "highlighting markers" will not be an acceptable means of annotating Submittals. Annotation shall also include proper identification of the Submittal permanently attached to the drawing.
 3. Reproductions or copies of Contract Drawings or portions thereof will not be accepted as complete fabrication or erection drawings. Contractor may use a reproduction of Contract Drawings for erection drawings to indicate information on erection or to identify detail drawing references. Whenever the Contract Drawings are revised to show this additional Contractor information, Engineer's title block shall be replaced with Contractor's title block, and Engineer's professional seal shall be removed from the drawing. Contractor shall revise these erection drawings for subsequent Engineer revisions to the Contract Drawings.
- E. Form of Submittals:
1. Submittals and other Project documents shall be transmitted in electronic format as specified.
 - a. Equipment instruction books and operating manuals shall be provided in paper copies in addition to specified electronic format.
 2. Electronic Format:
 - a. Scanned Submittals and documents are not acceptable. Transmit Submittal and Project documents in:
 - (1) PDF files created directly from native electronic format, or
 - (2) Electronic submittal PDF files are not to be combined files or collections of files/drawings. Each drawing document must stand alone.

- (3) Each file will be right reading and oriented the same for all consecutive resubmissions.
 - (4) For any given Submittal, the filename and format shall be consistent for initial submission and subsequent revisions of the same. Use consistent naming convention throughout. Reference to revision or dates shall not be included in a filename.
 - (5) Nonconforming Submittals are subject to rejection by Engineer.
3. Provide "as-constructed" Submittals, record documents, Equipment instruction books and operating manuals, and other documents in PDF format as required and approved by Owner.
 - a. Equipment instruction books and operating and maintenance (O&M) manuals shall be in PDF format combined in one (1) PDF file for the complete O&M manual, or divided into PDF files that represent entire volumes (corresponding to hardcopy volumes). The PDF files shall be completely bookmarked with links within the index sheet to the different sections within the manuals/volumes, corresponding to the defined tabs within the hardcopy version. The PDF files shall be searchable.

1.04 TECHNICAL SUBMITTALS:

- A. Items shall include, but not be limited to, the following:
 1. Manufacturer's specifications.
 2. Catalogs, or parts thereof, of manufactured Equipment.
 3. Shop fabrication and erection drawings.
 4. General outline drawings of Equipment showing overall dimensions, location of major components, weights, and location of required building openings and floor plates.
 5. Detailed Equipment installation drawings, showing foundation details, anchor bolt sizes and locations, baseplate sizes, location of Owner's connections; and all clearances required for erection, operation, and disassembly for maintenance.
 6. Schematic diagrams for electrical items, showing external connections, terminal block numbers, internal wiring diagrams and one-line diagrams.
 7. Bills of material and spare parts list.
 8. Instruction books and operating manuals.
 9. Material lists or schedules.
 10. Performance tests on Equipment by manufacturers.
 11. Concrete mix design information.
 12. Samples and color charts.
 13. All drawings, catalogs or parts thereof, manufacturer's specifications and data, Samples, instructions, and other information specified or necessary:
 - a. For Engineer to determine that Equipment and Materials conform to the design concept and comply with intent of the Contract Documents.
 - b. For proper erection, installation, operation, and maintenance of Equipment and Materials which Engineer will review for general content but not for basic details.
 - c. For Engineer to determine what supports, anchorages, structural details, connections, and services are required for Equipment and Materials, and effects on contiguous or related structures and Equipment and Materials.
- B. Schedule of Submittals:

1. Prepare for Engineer's concurrence, a schedule for submission of all Submittals specified or necessary for Engineer's approval of the use of Equipment and Materials proposed for incorporation in the Work or needed for proper installation, operation, or maintenance. Submit the schedule with the procurement schedule and construction progress schedule. Schedule submission of all Submittals to permit review, fabrication, and delivery in time so as to not cause a delay in the Work of Contractor or his Subcontractors or any other contractors as described in the Contract Documents.
 2. In establishing schedule for Submittals, refer to the Special Conditions Section I for Owner and Engineer review timeline.
 3. The schedule shall indicate the anticipated dates of original submission for each item and Engineer's approval thereof and shall be based upon at least one resubmission of each item.
 4. Schedule all Submittals (Shop Drawings, product data, and Samples) required prior to fabrication or manufacture for submission within ninety (90) days of the Notice to Proceed (NTP). Schedule Submittals pertaining to storage, installation, and operation at the Site for Engineer's approval prior to delivery of the Equipment and Materials.
 5. Resubmit Submittals the number of times required for Engineer's "Submittal Approved." However, any need for resubmittals in excess of the number set forth in the accepted schedule, or any other delay in obtaining approval of Submittals, will not be grounds for extension of the Contract Times, provided Engineer completes his reviews within the times specified.
 6. Where a Submittal is required by the Contract Documents or the accepted schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertaining Submittal will be at the sole expense and responsibility of Contractor.
- C. Transmittal of Submittals:
1. All Submittals (Shop Drawings, product data, and Samples) for Equipment and Materials furnished by Contractor, Subcontractors, manufacturers, and Suppliers shall be submitted to Owner by Contractor.
 2. Utilize a 9-character submittal identification numbering system in the following manner:
 - a. The first three (3) digits shall be the numbers 001 to 999 sequentially number each initial separate item or submittal under each specific Section number.
 - b. The next character shall be a letter (A to Z) indicating the submission or resubmission of the same Submittal, ie " A = 1st submission, B = 2nd submission (first resubmission), C – 3rd submission, etc."
 - c. The last six (6) digits shall be the applicable specification section number
 - d. A typical submittal number would be as follows:
 - (1) Submittal 008-A-033050
 3. After checking and verifying all field measurements, transmit all Submittals to Engineer for approval as follows:
 - a. Submittal Information Block:
 - (1) Affix to all copies whether Submittal is prepared by Contractor, Subcontractor, or Supplier

- (2) Electronic file of Submittal Information Block will be provided to Contractor for use on Submittals.
 - b. Check and approve Submittals of Subcontractors, Suppliers, and manufacturers prior to transmitting them to Engineer. Contractor's submission shall constitute a representation to Owner and Engineer that Contractor approves Submittals and has determined and verified all design criteria, quantities, dimensions, field construction and installation criteria, materials, catalog numbers, compliance with Laws and Regulations, and similar data, and Contractor assumes full responsibility for doing so; and Contractor has coordinated each Submittal with the requirements of the Work and the Contract Documents.
 - c. At the time of each submission, call to the attention of Engineer in the letter of transmittal any deviations from requirements of the Contract Documents.
 - d. Make all modifications noted or indicated by Engineer and return the required number of revised Submittals until approved. Direct specific attention in writing, or on revised Submittals, to changes other than the modifications called for by Engineer on previous Submittals. After paper copy Submittals have been approved, submit copies thereof for final distribution. Previously approved Submittals transmitted for final distribution will not be further reviewed and are not to be revised. If errors are discovered during manufacture or fabrication, correct the Submittal and resubmit for review.
 - e. Following completion of the Work and prior to final payment, furnish record documents and approved Samples and Shop Drawings necessary to indicate "as constructed" conditions, including field modifications, in the number of copies specified. Furnish additional copies for insertion in Equipment instruction books and operating manuals as required. All such copies shall be clearly marked "PROJECT RECORD."
 - (1) Contractor shall maintain Record Drawings and keep redline comments current.
 - (2) Record Drawing set, as maintained by the Contractor, shall be submitted to the Owner upon Project completion.
 - (3) The Red Lined set shall be reviewed by the City of Thornton's Construction Coordinator prior to payment of application for payment
 - (4) Submit a final record copy of the Master Field Drawing list which shall indicate the final revision status of each drawing on the list.
 - f. Keep a copy or sample of each Submittal in good order at the Site.
4. Quantity Requirements:
- a. Except as otherwise specified, transmit all Shop Drawings electronically to the Owner.
 - b. Transmit Submittals of product data electronically to the Owner.
 - c. Transmit Submittals of Material Samples, color charts, and similar items to the Owner.
 - d. Transmit Submittals of Equipment instruction books and operating manuals electronically to the Owner.

- e. When all Submittals have been updated to "as-constructed" conditions, transmit to Engineer and to Owner in electronic format.
 - f. Owner may copy and use for internal operations and staff training purposes any and all document Submittals required by this Contract and approved for final distribution, whether or not such documents are copyrighted, at no additional cost to Owner. If permission to copy any such Submittal for the purposes stated is unreasonably withheld from Owner by Contractor or any Subcontractor, manufacturer, or Supplier, Contractor shall provide to Engineer twenty-five (25) copies plus the number of copies required by Contractor at each final distribution issue.
5. Equipment erection drawings and other Submittals required for installation of Equipment furnished by others under separate contract for installation under this Contract will be transmitted to Contractor by Engineer in the final distribution of such Submittals.
- D. Information to Manufacturer's District Office: Contractor shall arrange for manufacturers and Suppliers of Equipment and Materials to furnish copies of all agreements, drawings, specifications, operating instructions, correspondence, and other matters associated with this Contract to the manufacturer's district office servicing Owner. Insofar as practicable, all business matters relative to Equipment and Materials included in this Contract shall be conducted through such local district offices. Engineer's Review:
1. Owner and Engineer will review and take appropriate action on Submittals in accordance with the accepted schedule of Submittals. Engineer's review and approval will be only to determine if the items of Equipment and Materials covered by the Submittals will, after installation or incorporation in the Work, conform to information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Owner and Engineer's review and approval will not extend to design data reflected in Submittals which is peculiarly within the special expertise of Contractor or Contractor's Subcontractors or Suppliers. Review and approval of a component item as such will not indicate approval of the assembly in which the item functions.
 3. Owner and Engineer's review and approval of Shop Drawings, product data, or Samples will not relieve Contractor of responsibility for any deviation from requirements of the Contract Documents unless Contractor has in writing called Engineer's attention to such deviation at the time of submission, and Engineer has given written concurrence in and approval of the specific deviation. Approval by Engineer shall not relieve Contractor from responsibility for errors or omissions in Submittals.
 4. Owner and Engineer shall review each submittal a maximum of two (2) times, not including record copies of submittals at no cost to the Contractor. Contractor shall be responsible for the cost of Engineer's review of any submittal after the second review of a particular submittal. The cost of any such reviews will be billed to the Contractor at a rate of two hundred dollars (\$200.00) per hour and at a minimum of four (4) hours each review after the second submittal. Any outstanding amount due to Engineer shall be withheld from the final payment to the Contractor.

E. Submittal Action Stamp:

1. Owner and Engineer's review action stamp, appropriately completed, will appear on all Submittals of Contractor when returned by Engineer. Review status designations listed on Engineer's action stamp are defined as follows:
 - A - SUBMITTAL APPROVED: Signifies Equipment or Material represented by the Submittal conforms with the design concept and complies with the intent of the Contract Documents and is approved for incorporation in the Work. Contractor is to proceed with fabrication or procurement of the items and with related Work. Copies of the Submittal are to be transmitted to Engineer for final distribution.
 - B - SUBMITTAL APPROVED AS NOTED (RESUBMIT): Signifies Equipment and Material represented by the Submittal conforms with the design concept and complies with the intent of the Contract Documents and is approved for incorporation in the Work in accordance with Engineer's notations. Contractor is to proceed with fabrication or procurement of the items and with related Work in accordance with Engineer's notations and is to submit a revised Submittal responsive to notations marked on the returned Submittal or written in the letter of transmittal.
 - C - SUBMITTAL RETURNED FOR REVISION (RESUBMIT): Signifies Equipment and Material represented by the Submittal appears to conform with the design concept and comply with the intent of the Contract Documents, but information is either insufficient in detail or contains discrepancies which prevent Engineer from completing his review. Contractor is to resubmit revised information responsive to Engineer's annotations on the returned Submittal or written in the letter of transmittal. Fabrication or procurement of items represented by the Submittal and related Work is not to proceed until the Submittal is approved.
 - D - SUBMITTAL NOT APPROVED (SUBMIT ANEW): Signifies Equipment and Material represented by the Submittal does not conform with the design concept or comply with the intent of the Contract Documents and is disapproved for use in the Work. Contractor is to provide Submittals responsive to the Contract Documents.
 - E - PRELIMINARY SUBMITTAL: Signifies Submittals of such preliminary nature that a determination of conformance with the design concept or compliance with the intent of the Contract Documents must be deferred until additional information is furnished. Contractor is to submit such additional information to permit layout and related activities to proceed.
 - F - FOR REFERENCE, NO APPROVAL REQUIRED: Signifies Submittals which are for supplementary information only; pamphlets, general information sheets, catalog cuts, standard sheets, bulletins, and similar data, all of which are useful to Engineer or Owner in design, operation, or maintenance, but which by their nature do not constitute a basis for determining that items represented thereby conform with the design concept or comply with the intent of the Contract Documents.

Engineer reviews such Submittals for general content but not for basic details.

G - DISTRIBUTION COPY (PREVIOUSLY APPROVED): Signifies Submittals which have been previously approved and are being distributed to Contractor, Owner, the City of Thornton's Construction Coordinator, and others for coordination and construction purposes.

F. Instruction Books and Operating Manuals:

1. In addition to electronic Submittals specified above, Equipment instruction books and operating manuals prepared by the manufacturer shall include the following:
 - a. Index and tabs.
 - b. Instructions for installation, start-up, operation, inspection, maintenance, parts lists and recommended spare parts, and data sheets showing model numbers.
 - c. Applicable drawings.
 - d. Warranties and guarantees.
 - e. Address of nearest manufacturer-authorized service facility.
 - f. All additional data specified.
2. Information listed above shall be provided electronically in PDF format
 - a. The following information shall be included:
 - (1) Owner's name.
 - (2) Owner's facility or plant name.
 - (3) Equipment item name.
 - (4) Volume number (if applicable).
 - (5) Contract number.
 - (6) Manufacturer's name and address.
 3. Equipment item name.
 4. Owner's name and Owner's facility or plant name.
 5. Manufacturer's name.
 6. Contract number.
 7. Volume number (if applicable).

G. Samples:

1. Office Samples shall be of sufficient size and quantity to clearly illustrate the following:
 - a. Functional characteristics of the product, with integrally related parts and attachment devices.
 - b. Full range of color, texture, and pattern.
 - c. Material, manufacturer, pertinent catalog number, and intended use.
2. Field Samples and Mock-ups:
 - a. Erect field Samples and mock-ups at the Project Site and at a location acceptable to Engineer.
 - b. Size or area shall be as specified in respective Specification Section.
 - c. Fabricate each Sample and mock-up complete and finished.
 - d. Remove mock-ups at conclusion of Work or when acceptable to Engineer if not a permanent part of construction.

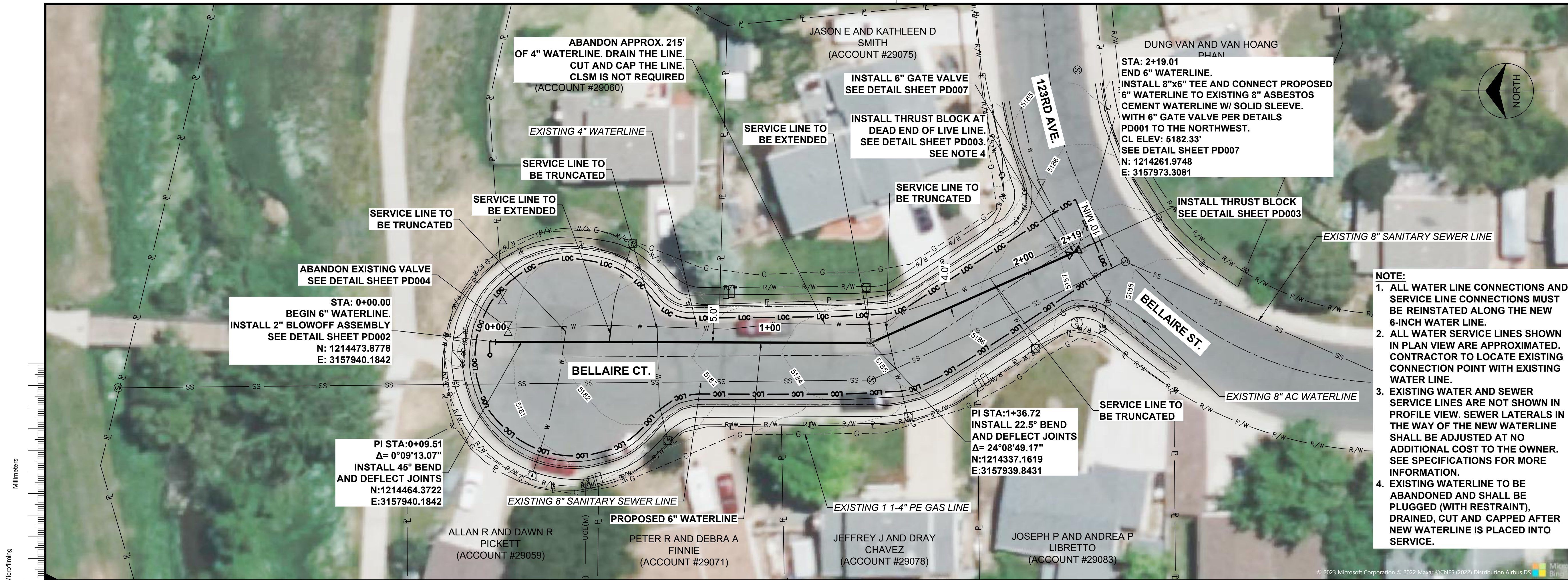
1.05 INFORMATIONAL SUBMITTALS:

- A. Informational Submittals are comprised of technical reports, administrative Submittals, and guarantees which relate to the Work, but do not require Engineer approval prior to proceeding with the Work. Informational Submittals include:
1. Hydrostatic testing of pipes.
 2. Field test reports.
 3. Concrete cylinder test reports.
 4. Soil test reports.
 5. Job progress schedules.
 6. Equipment and Material delivery schedules.
 7. Progress photographs.
 8. Warranties and guarantees.
- B. Transmittal of Informational Submittals:
1. All informational Submittals furnished by Subcontractors, manufacturers, and Suppliers shall be submitted to Owner and Engineer by Contractor unless otherwise specified.
 - a. Identify each informational Submittal by Project name and number, Contract title and number, and Specification Section and Article number marked thereon or in letter of transmittal. Unidentifiable Submittals will be returned for proper identification.
 - b. At the time of each submission, call to the attention of Engineer in the letter of transmittal any deviations from requirements of the Contract Documents.
 2. Quantity Requirements:
 - a. Technical reports and administrative Submittals except as otherwise specified:
 - (1) Electronic: One (1) to Engineer.
 - b. Written Certificates and Guarantees:
 - (1) Electronic: One (1) copies to Engineer.
 3. Test Reports:
 - a. Responsibilities of Contractor, Owner, and Engineer regarding tests and inspections of Equipment and Materials and completed Work are set forth elsewhere in these Contract Documents.
 - b. The party specified responsible for testing or inspection shall in each case, unless otherwise specified, arrange for the testing laboratory or reporting agency to distribute test reports as follows:
 - (1) Electronic: One (1) copy to Owner, Engineer, the City of Thornton's Construction Coordinator, Contractor, Manufacturer or Supplier (if applicable) each.
- C. Engineer's Review:
1. Engineer will review informational Submittals for indications of Work or Material deficiencies.
 2. Engineer will respond to Owner and Contractor on those informational Submittals which indicate Work or Material deficiency.

PART 2 - PRODUCTS – NOT APPLICABLE.

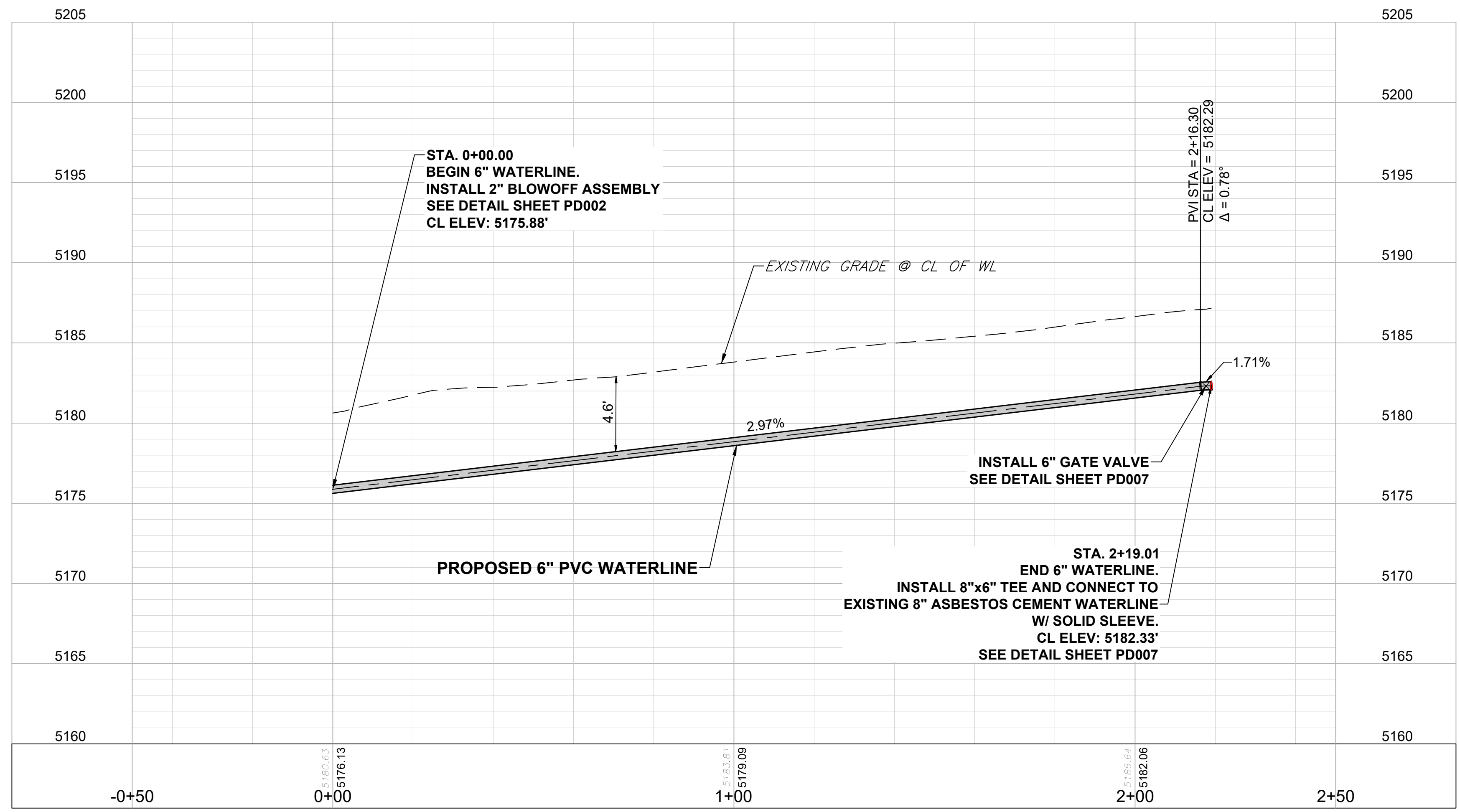
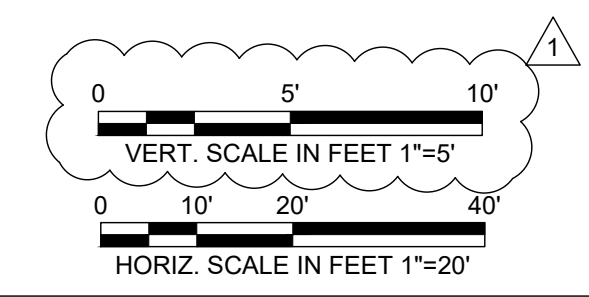
PART 3 - EXECUTION – NOT APPLICABLE.

END OF SECTION 01 33 00



Scale For Microfitting
 Millimeters
 Inches

no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1



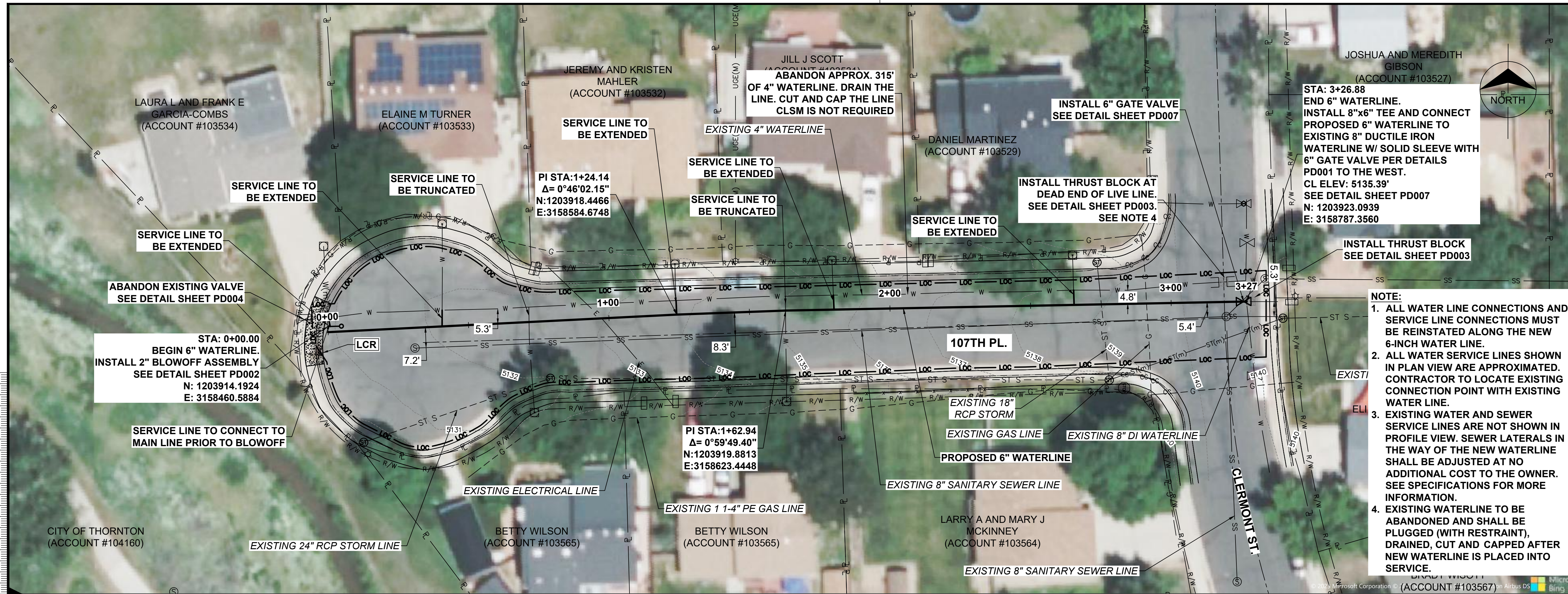
PRELIMINARY- NOT FOR CONSTRUCTION



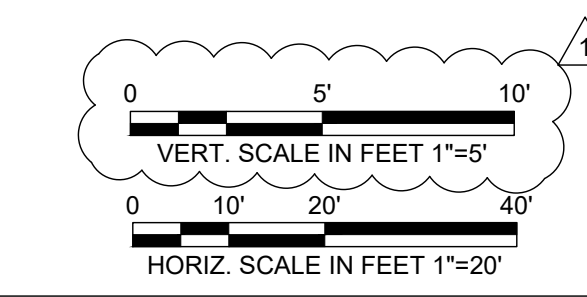
date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



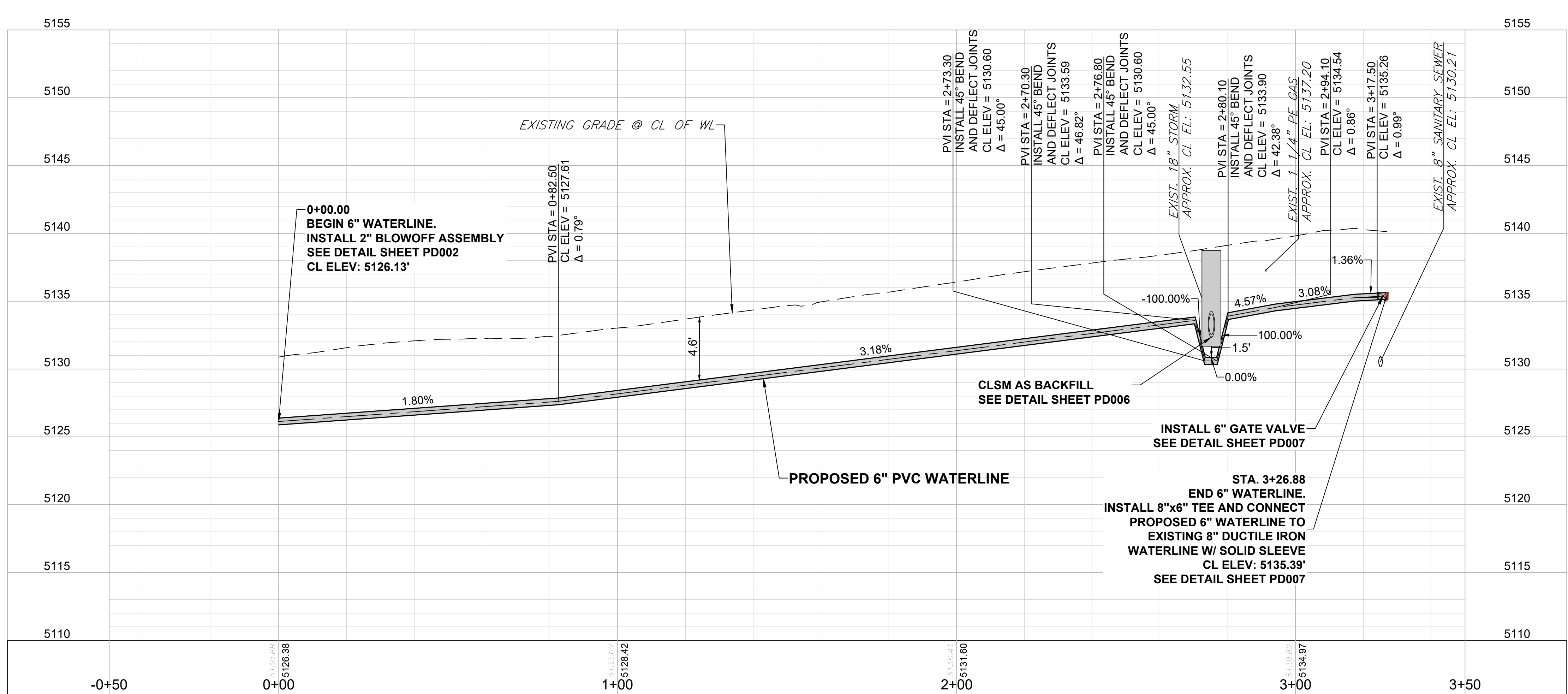
CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #1 BELLAIRE COURT STA. 00+00 TO 2+19.01	
project 154303	contract
drawing PP001	rev. 1
sheet 5	of 39
file 154303_PP001_SITE 1.dwg	



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1



Millimeters
Scale For Microfining
Inches



PRELIMINARY- NOT FOR CONSTRUCTION



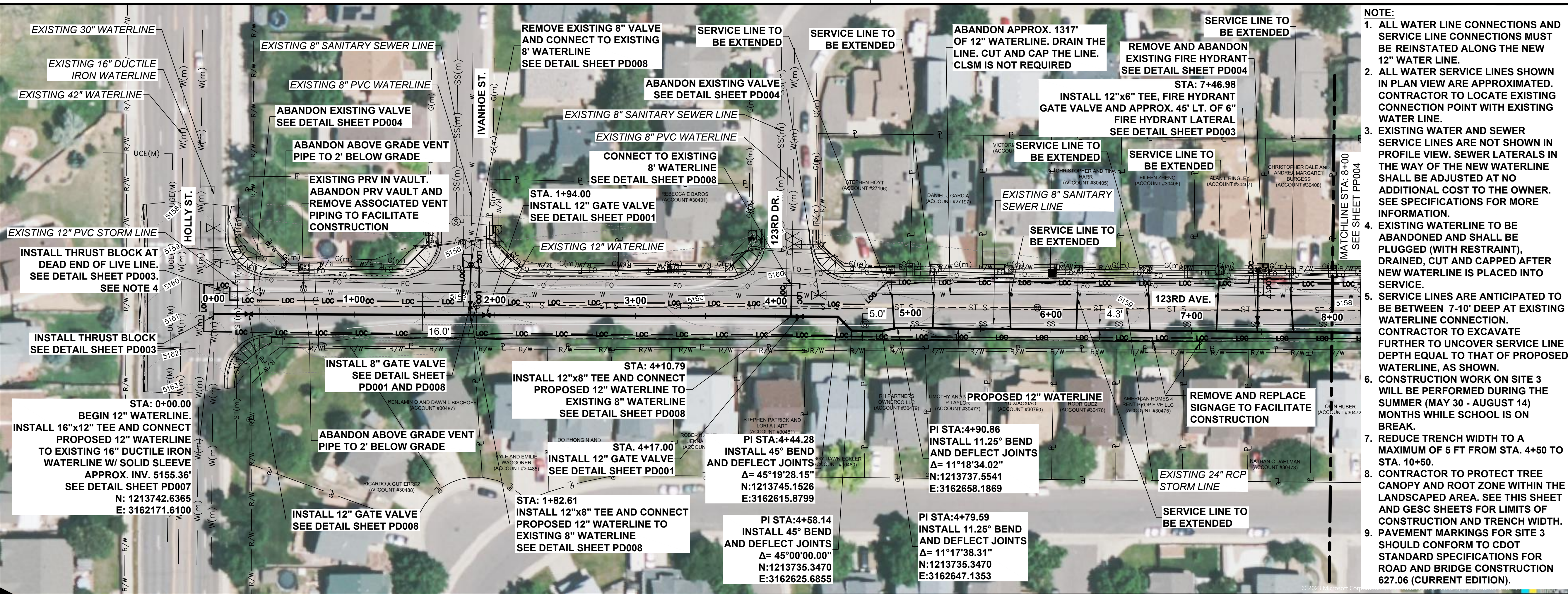
9191 SOUTH JAMAICA STREET, ENGLEWOOD, COLORADO 80112 303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



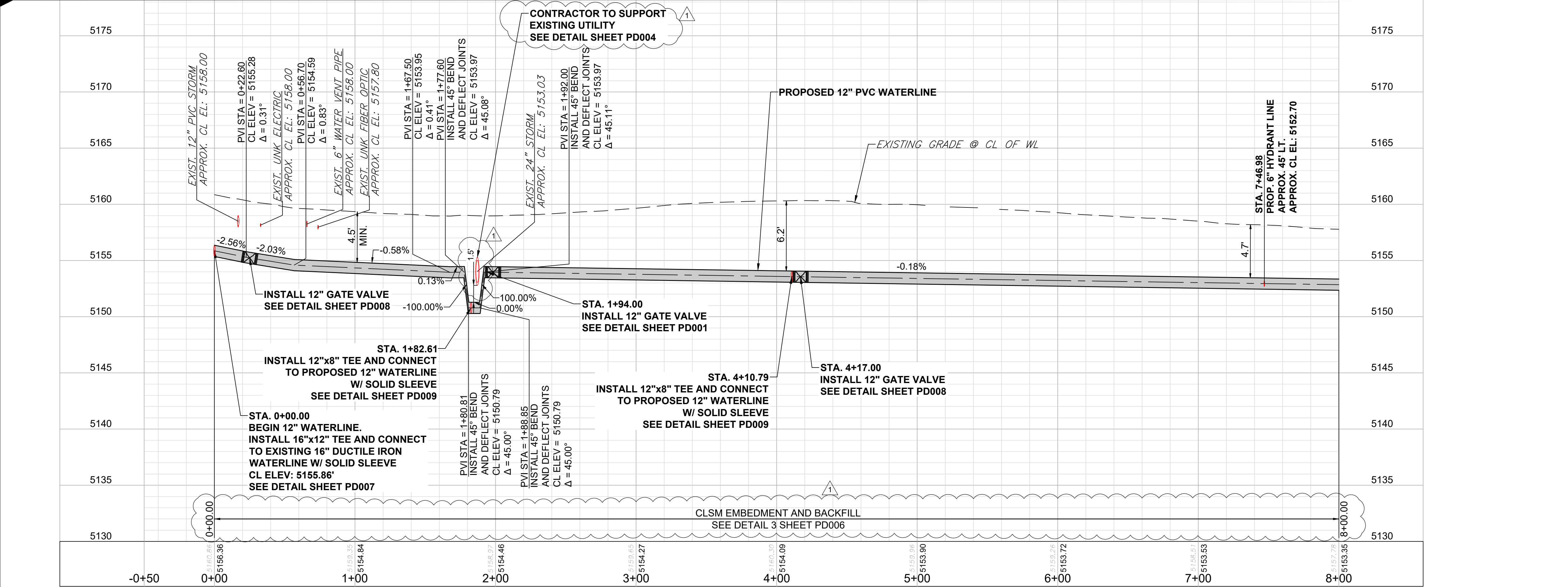
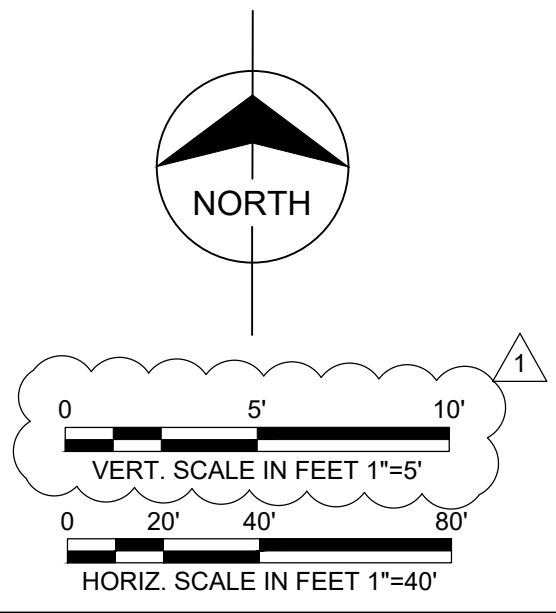
CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
SITE #2 107TH PLACE & CLERMONT STREET
STA. 00+00 TO 3+26.94

project 154303	contract
drawing PP002	rev. 1
sheet 6	of 39
file 154303_PP002_SITE 2.dwg	sheets



- NOTE:
- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 12" WATER LINE.
 - ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
 - EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
 - EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.
 - SERVICE LINES ARE ANTICIPATED TO BE BETWEEN 7-10' DEEP AT EXISTING WATERLINE CONNECTION. CONTRACTOR TO EXCAVATE FURTHER TO UNCOVER SERVICE LINE DEPTH EQUAL TO THAT OF PROPOSED WATERLINE, AS SHOWN.
 - CONSTRUCTION WORK ON SITE 3 WILL BE PERFORMED DURING THE SUMMER (MAY 30 - AUGUST 14) MONTHS WHILE SCHOOL IS ON BREAK.
 - REDUCE TRENCH WIDTH TO A MAXIMUM OF 5 FT FROM STA. 4+50 TO STA. 10+50.
 - CONTRACTOR TO PROTECT TREE CANOPY AND ROOT ZONE WITHIN THE LANDSCAPED AREA. SEE THIS SHEET AND GESC SHEETS FOR LIMITS OF CONSTRUCTION AND TRENCH WIDTH.
 - PAVEMENT MARKINGS FOR SITE 3 SHOULD CONFORM TO CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 627.06 (CURRENT EDITION).

no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1



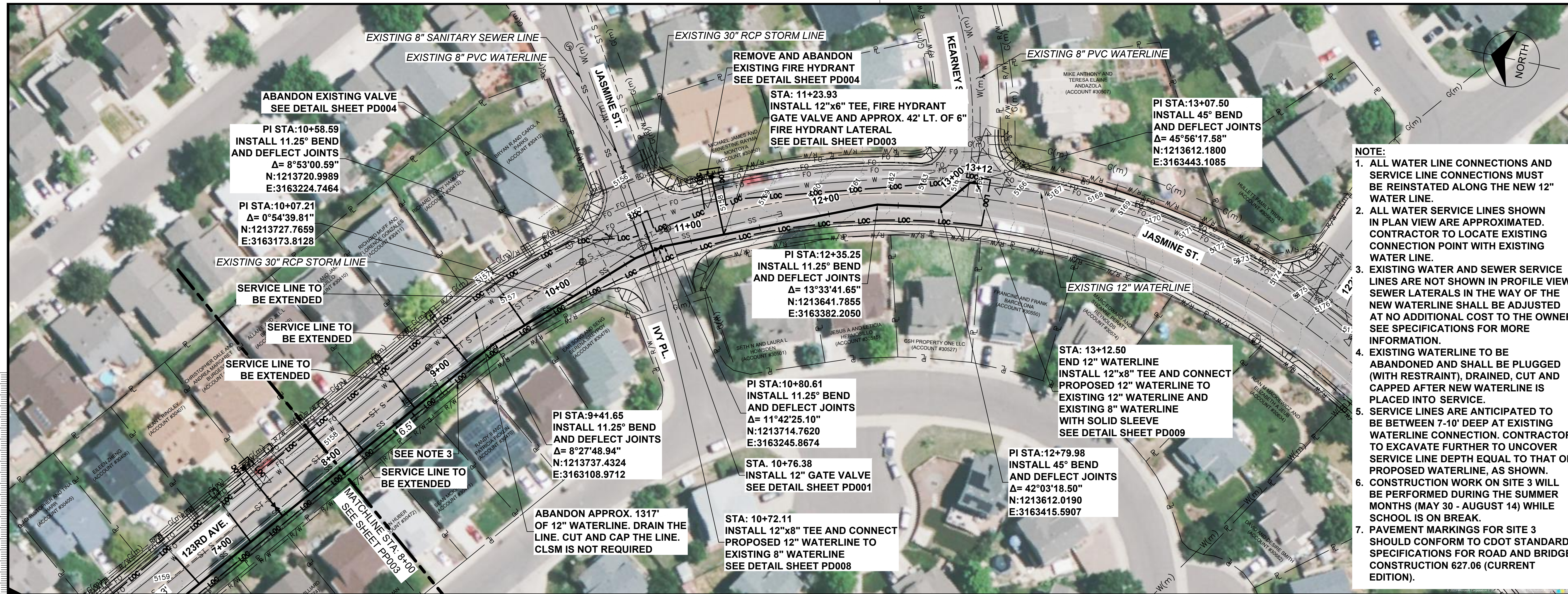
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE



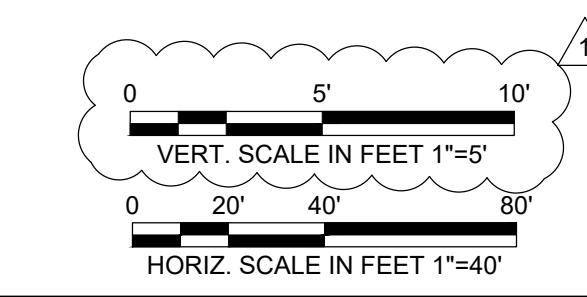
CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION SITE #3 123RD AVE & JASMINE STREET STA. 00+00 TO STA. 8+00	
project	154303
contract	
drawing	PP003 - 1
sheet	7 of 39 sheets
file	154303_PP003_SITE 3.dwg



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

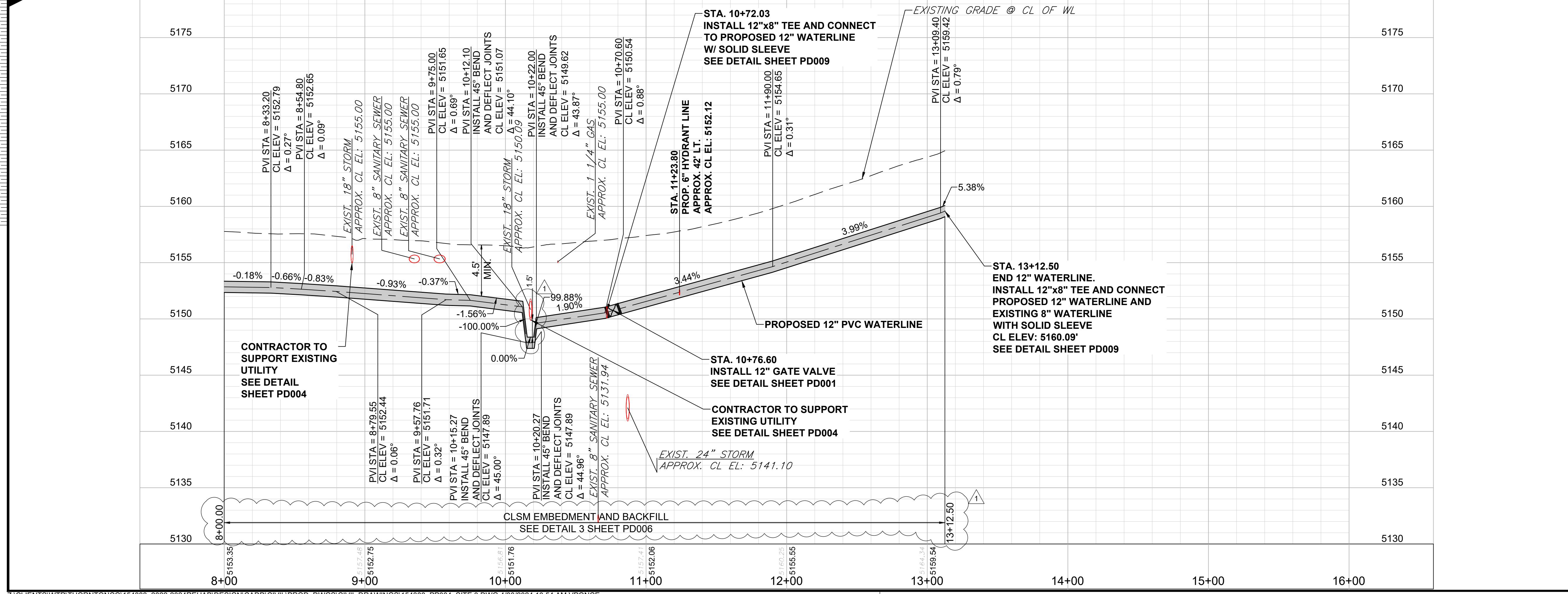
NOTE:

- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 12" WATER LINE.
- ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
- EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
- EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.
- SERVICE LINES ARE ANTICIPATED TO BE BETWEEN 7'-10' DEEP AT EXISTING WATERLINE CONNECTION. CONTRACTOR TO EXCAVATE FURTHER TO UNCOVER SERVICE LINE DEPTH EQUAL TO THAT OF PROPOSED WATERLINE, AS SHOWN.
- CONSTRUCTION WORK ON SITE 3 WILL BE PERFORMED DURING THE SUMMER MONTHS (MAY 30 - AUGUST 14) WHILE SCHOOL IS ON BREAK.
- PAVEMENT MARKINGS FOR SITE 3 SHOULD CONFORM TO CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 627.06 (CURRENT EDITION).



Scale For Microfitting
Millimeters

Inches



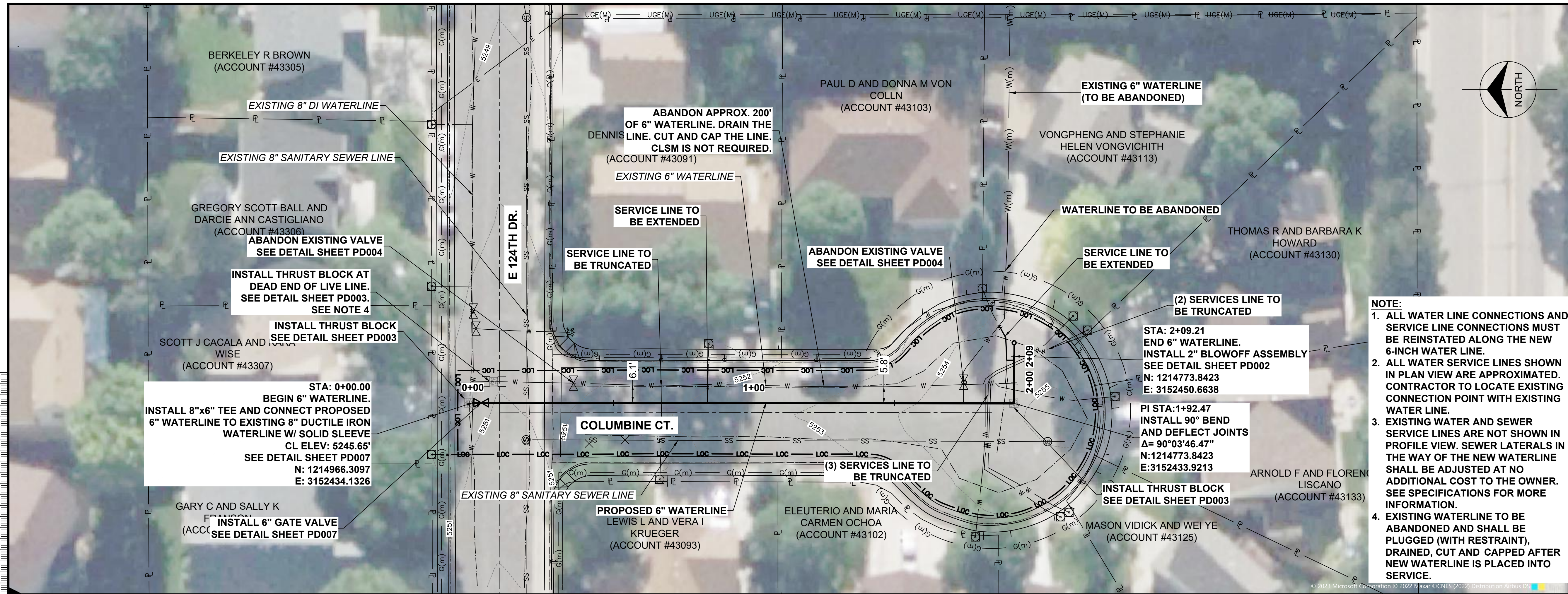
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE



CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #3 123RD AVE & JASMINE STREET STA. 8+00 TO STA. 13+12.50	
project	contract
154303	
drawing	rev.
PP004	1
sheet 8 of 39 sheets	
file 154303_PP004_SITE 3.dwg	

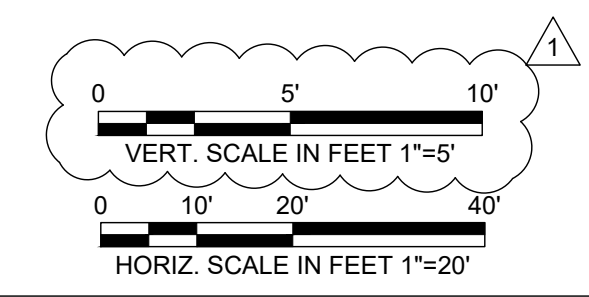


no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

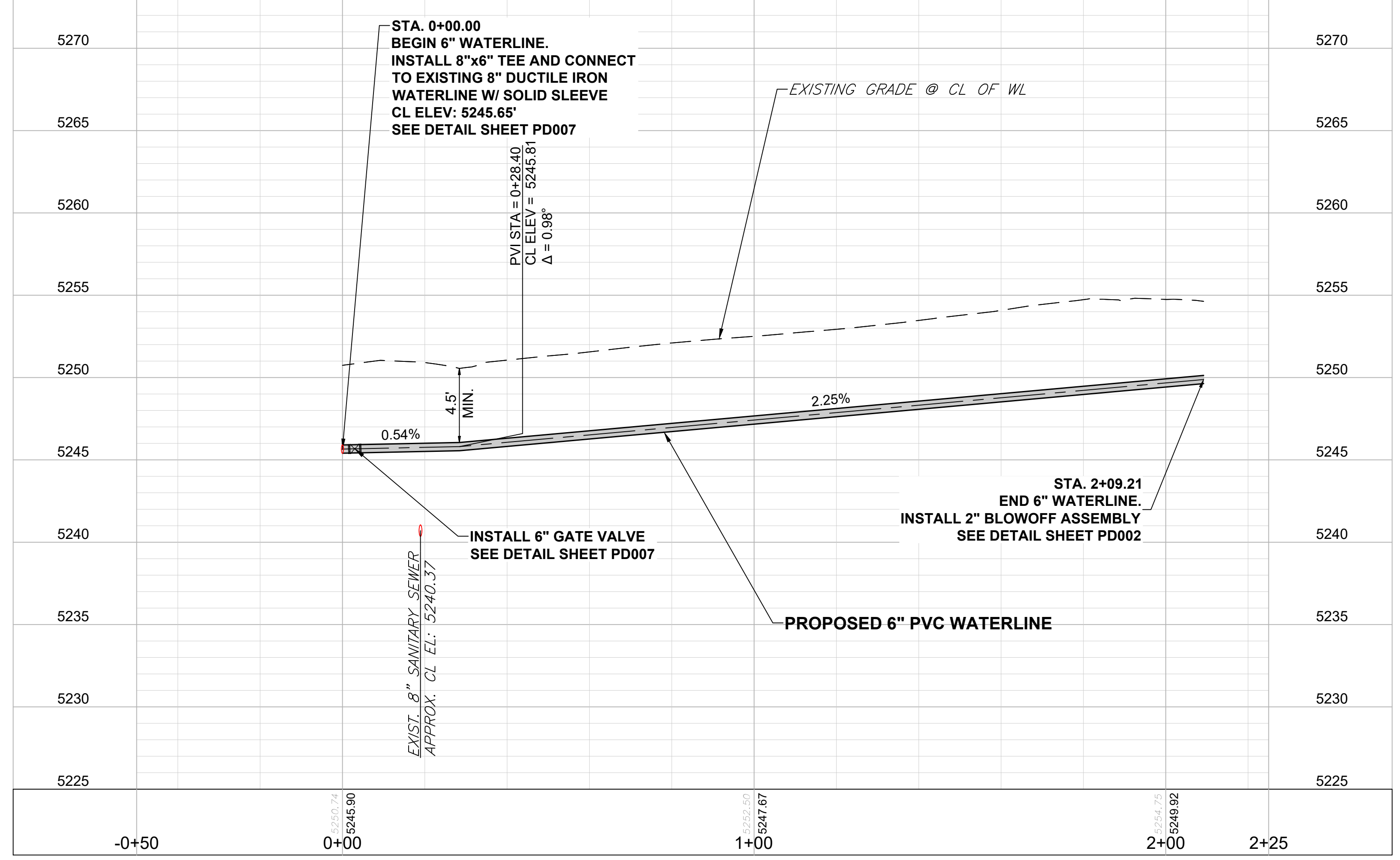


NOTE:

1. ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 6-INCH WATER LINE.
2. ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
3. EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
4. EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



Scale For Microfitting
Millimeters
Inches



PRELIMINARY- NOT FOR CONSTRUCTION

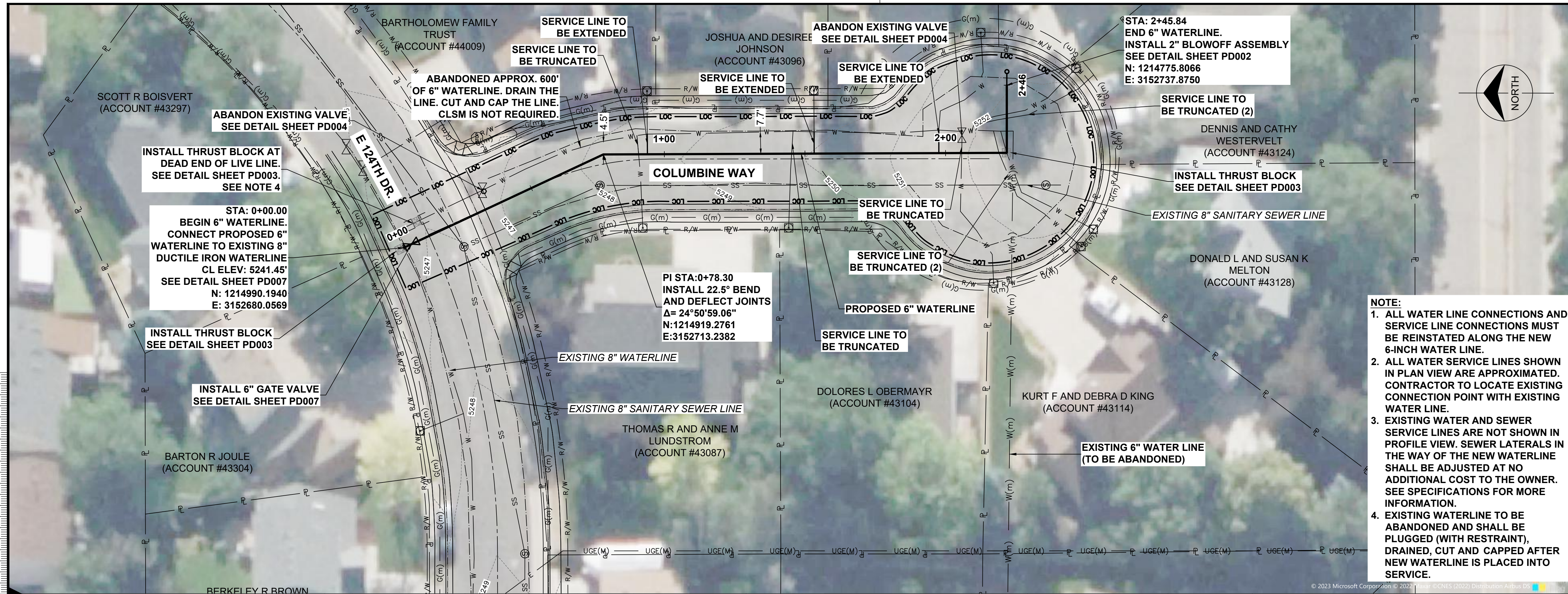


date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE



CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
SITE #4 COLUMBINE COURT
STA. 00+00 TO STA. 2+09.21

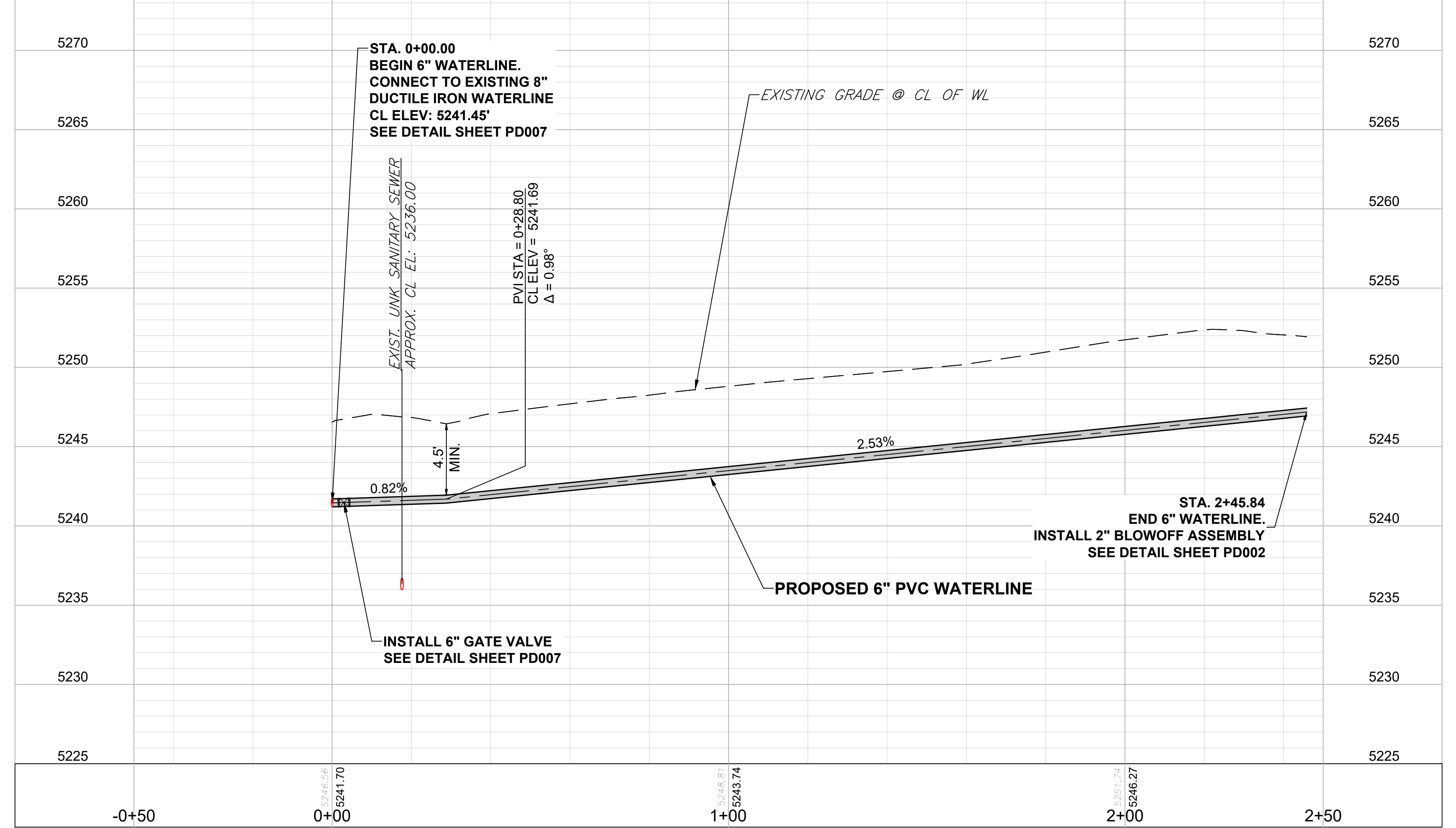
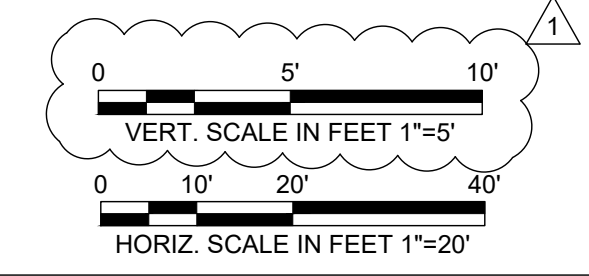
project	154303	contract	
drawing	PP005	rev.	1
sheet	9	of	39 sheets
file	154303_PP005_SITE 4.dwg		



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

NOTE:

1. ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 6-INCH WATER LINE.
2. ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
3. EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
4. EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



PRELIMINARY- NOT FOR CONSTRUCTION

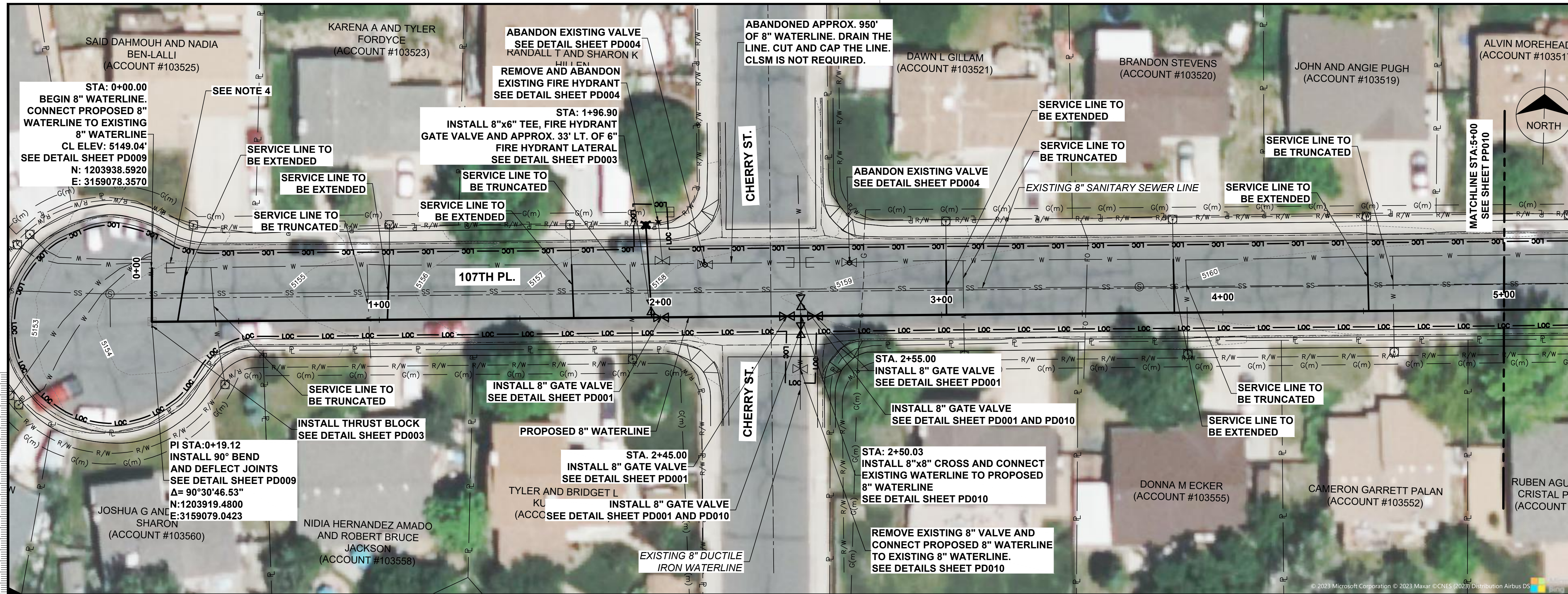
BURNS MEDONNELL
 9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



CITY OF THORNTON
 2022-2024 PIPELINE REHABILITATION
 SITE #4 COLUMBINE WAY
 STA. 0+00 TO STA. 2+45.84

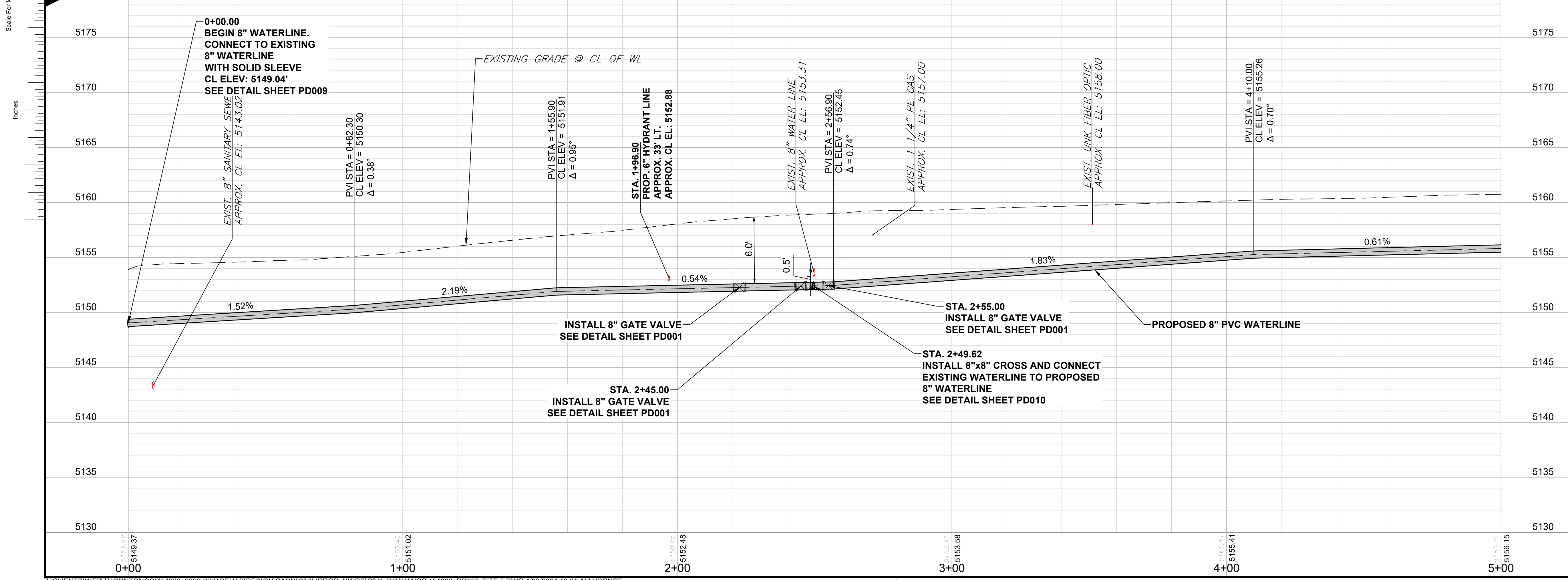
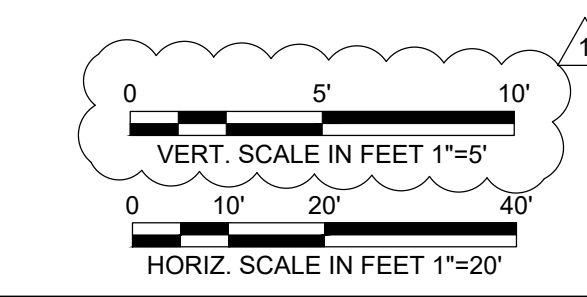
project 154303	contract
drawing PP006	rev. 1
sheet 10	of 39
file 154303_PP006_SITE 4.dwg	sheets



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

NOTE:

- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
- ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
- EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
- EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



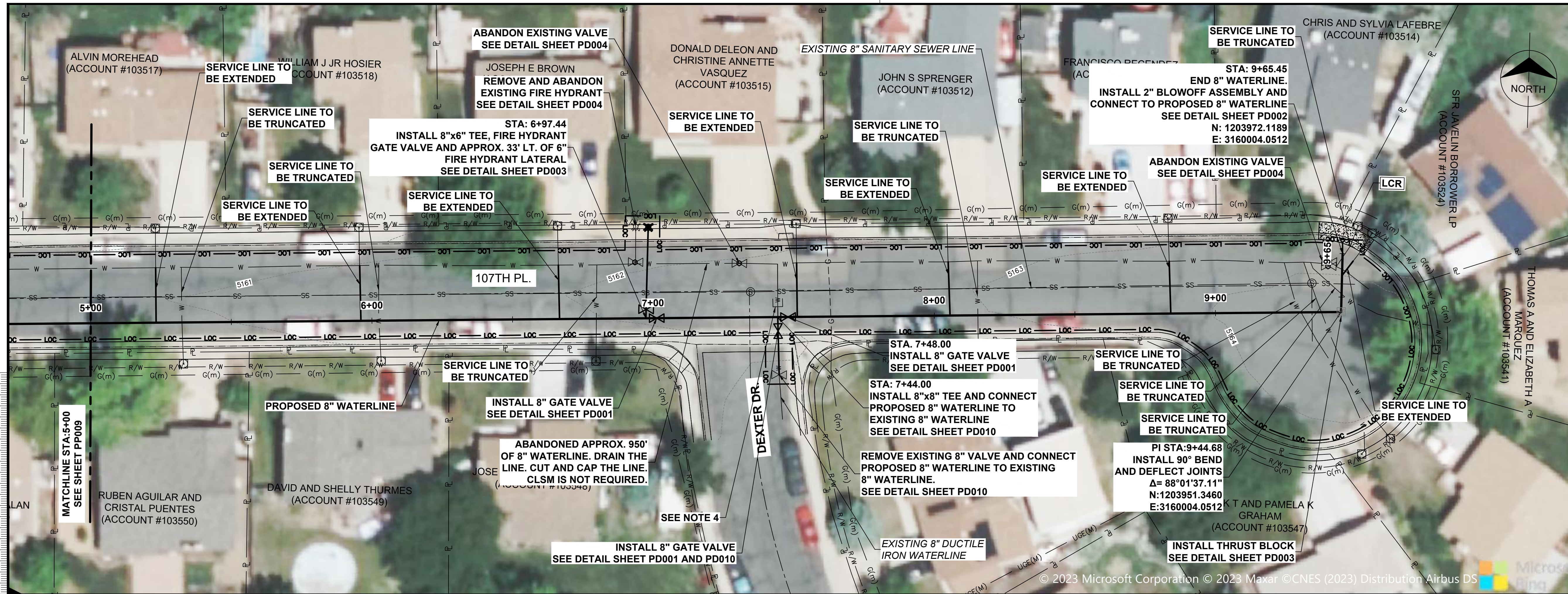
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
 9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



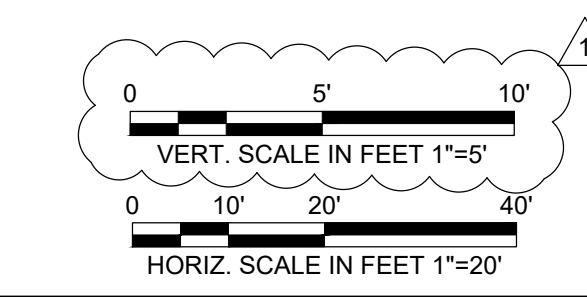
CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #5 E. 107TH PLACE STA. 0+00 TO STA. 5+00	
project 154303	contract
drawing PP007	rev. 1
sheet 11	of 39
file 154303_PP007_SITE 5.dwg	



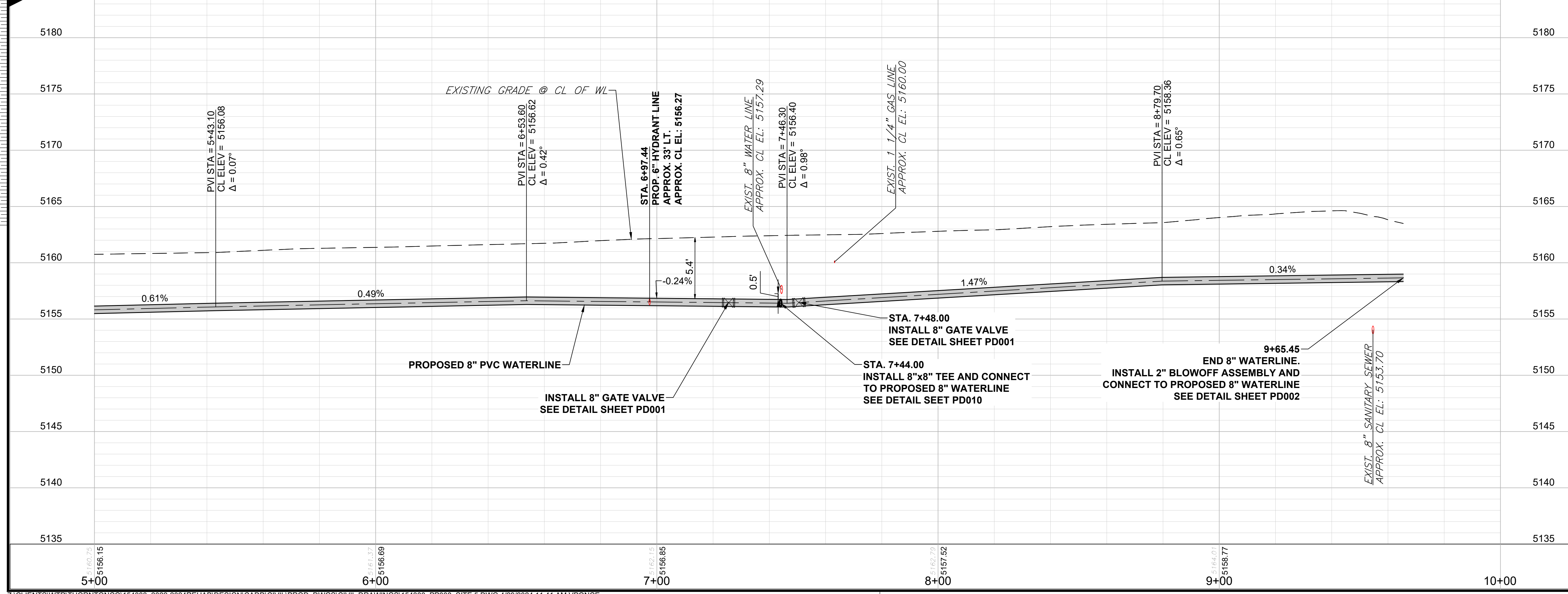
no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

NOTE:

- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
- ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
- EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
- EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



Scale For Microfitting
Millimeters
Inches



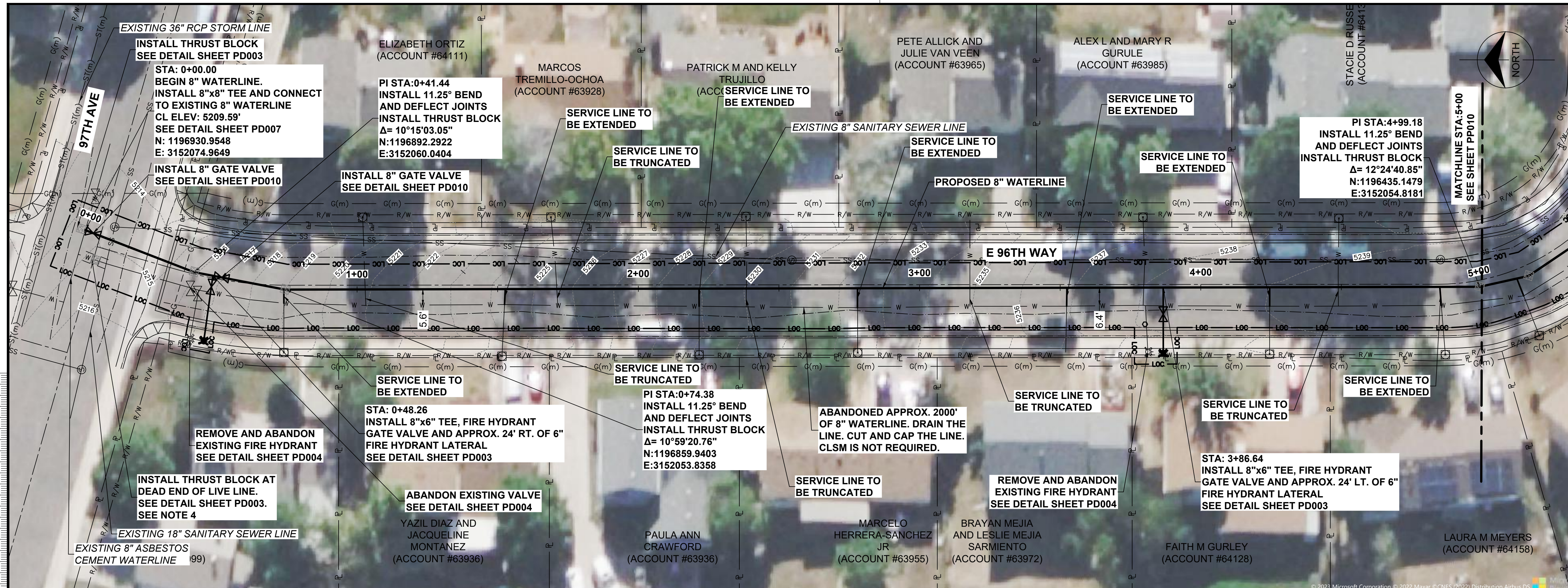
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
9191 SOUTH JAMAICA STREET, ENGLEWOOD, COLORADO 80112 303-721-9292

date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE

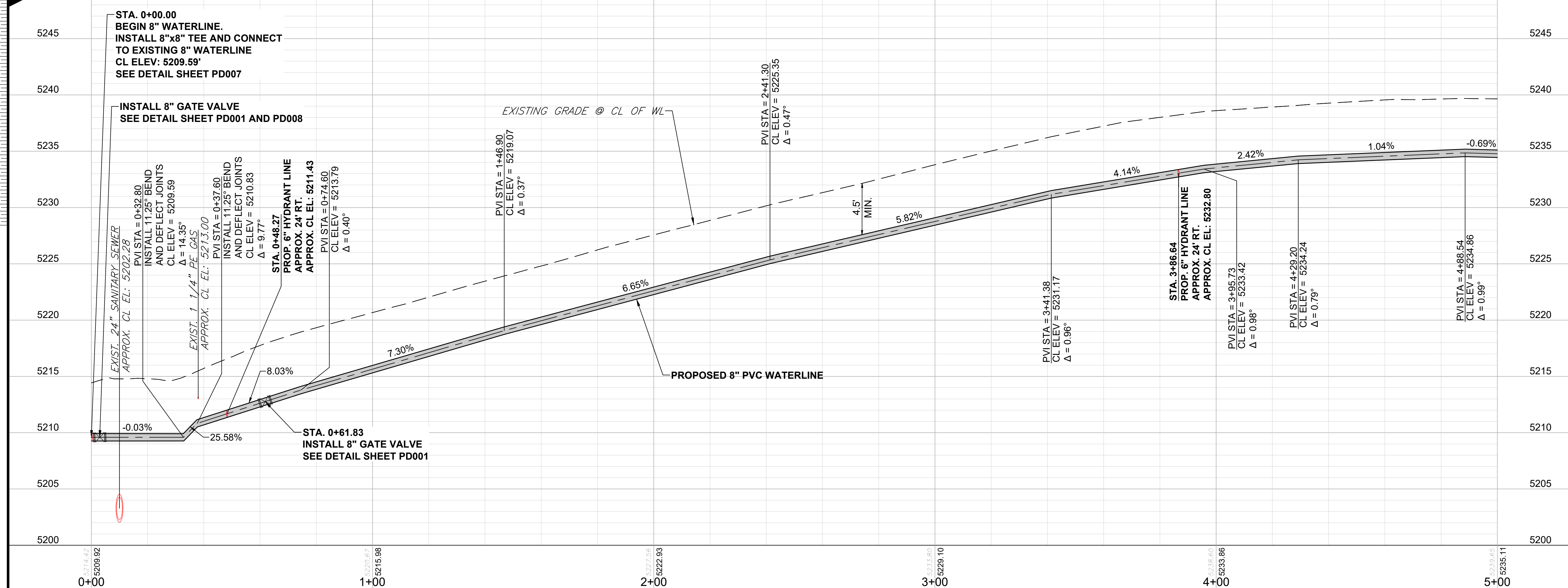
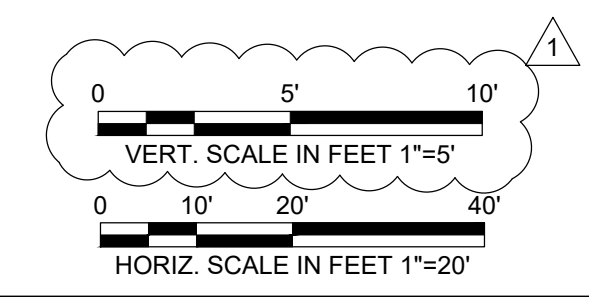


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #5 E. 107TH PLACE STA. 5+00 TO STA. 9+65.45	
project	contract
154303	
drawing	rev.
PP008	1
sheet 12 of 39 sheets	file 154303_PP008_SITE 5.dwg



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

- NOTE:**
- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
 - ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
 - EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
 - EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED IN SERVICE.



PRELIMINARY- NOT FOR CONSTRUCTION

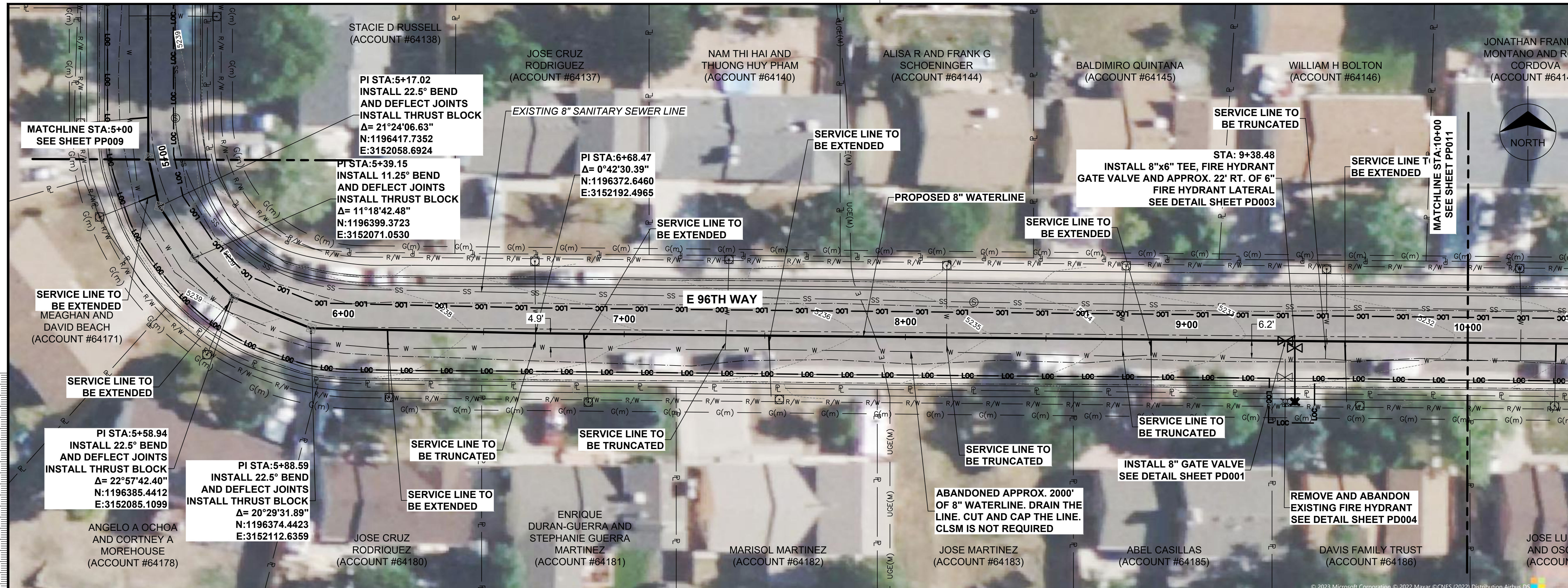
BURNS MEDONNELL

9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

date	detailed
FEBRUARY 2024	V. PONCE
designed	checked
R. BRONG	K. LEBRASSE

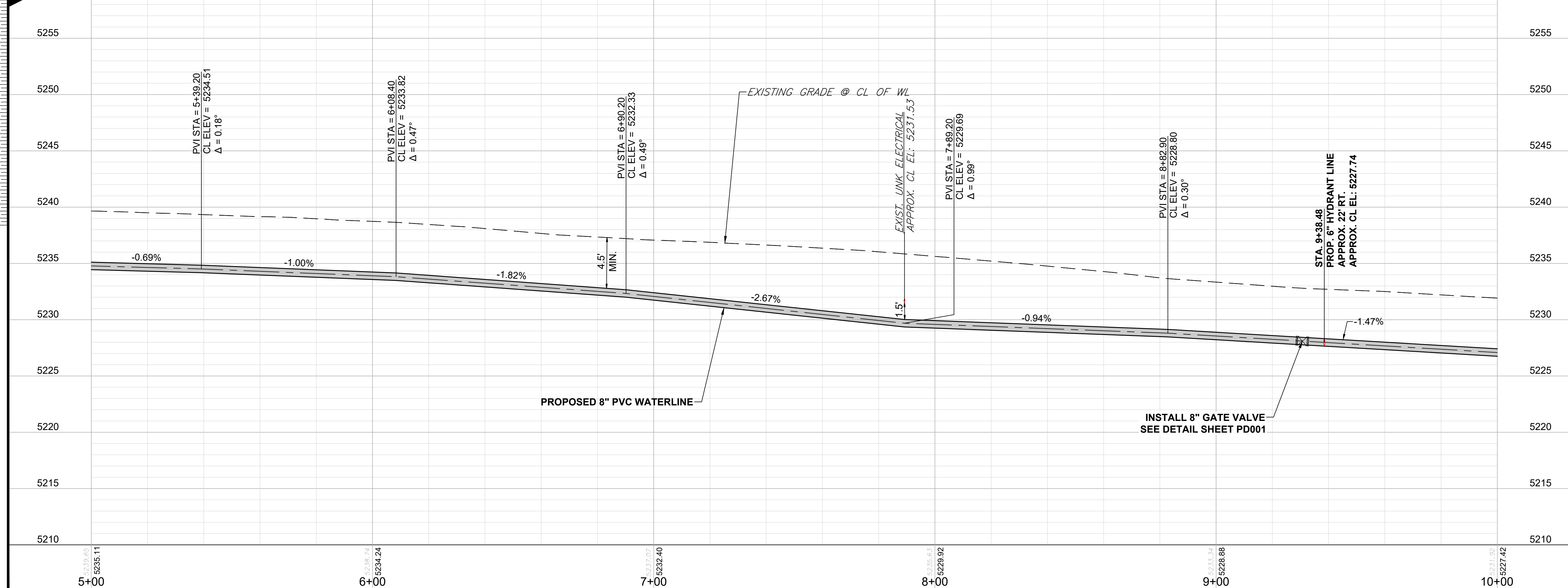
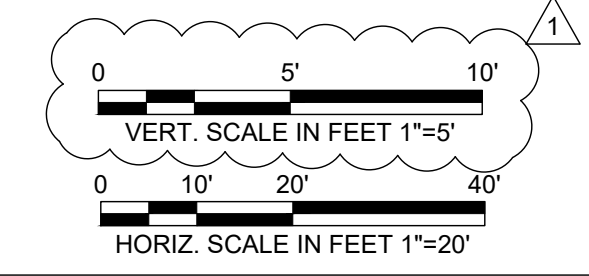


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION		
SITE #6 96TH WAY STA. 0+00 TO STA. 5+00		
project	contract	
154303		
drawing	rev.	
PP009	1	
sheet	of	sheets
13	39	
file	154303_PP009_SITE 6.dwg	



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

- NOTE:**
1. ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
 2. ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
 3. EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
 4. EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



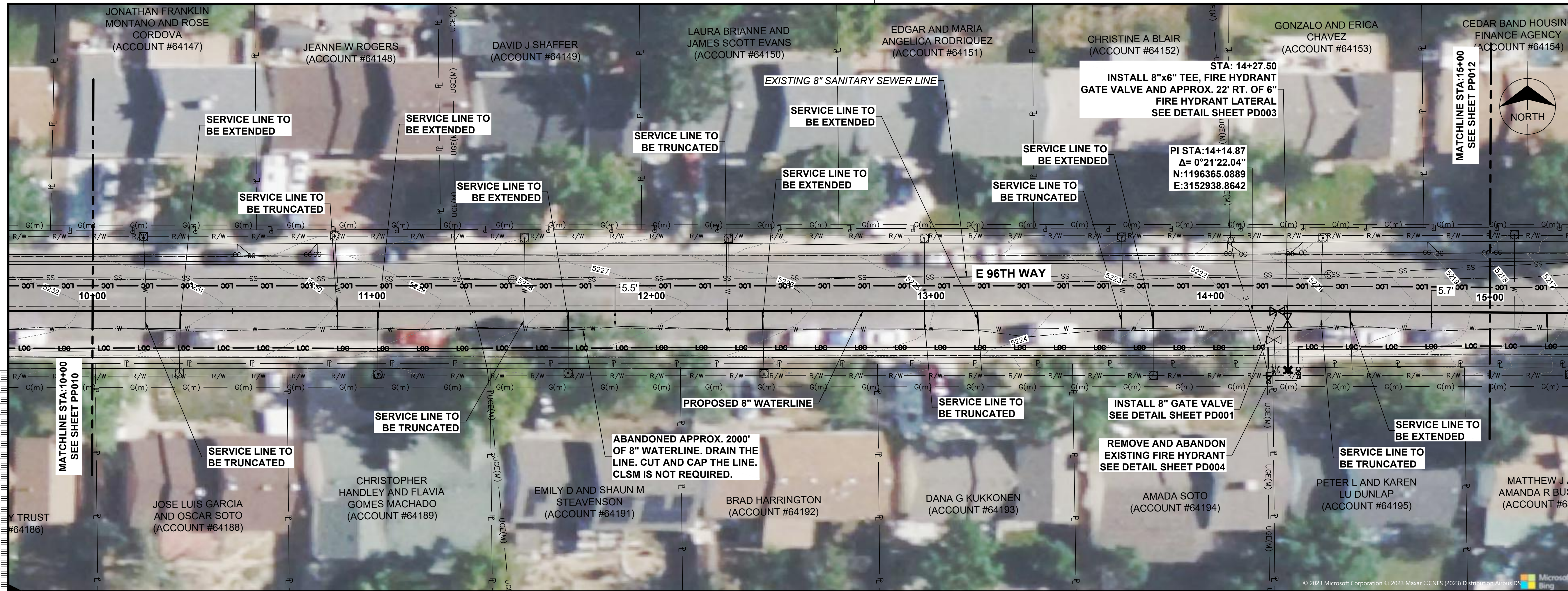
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
 9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE



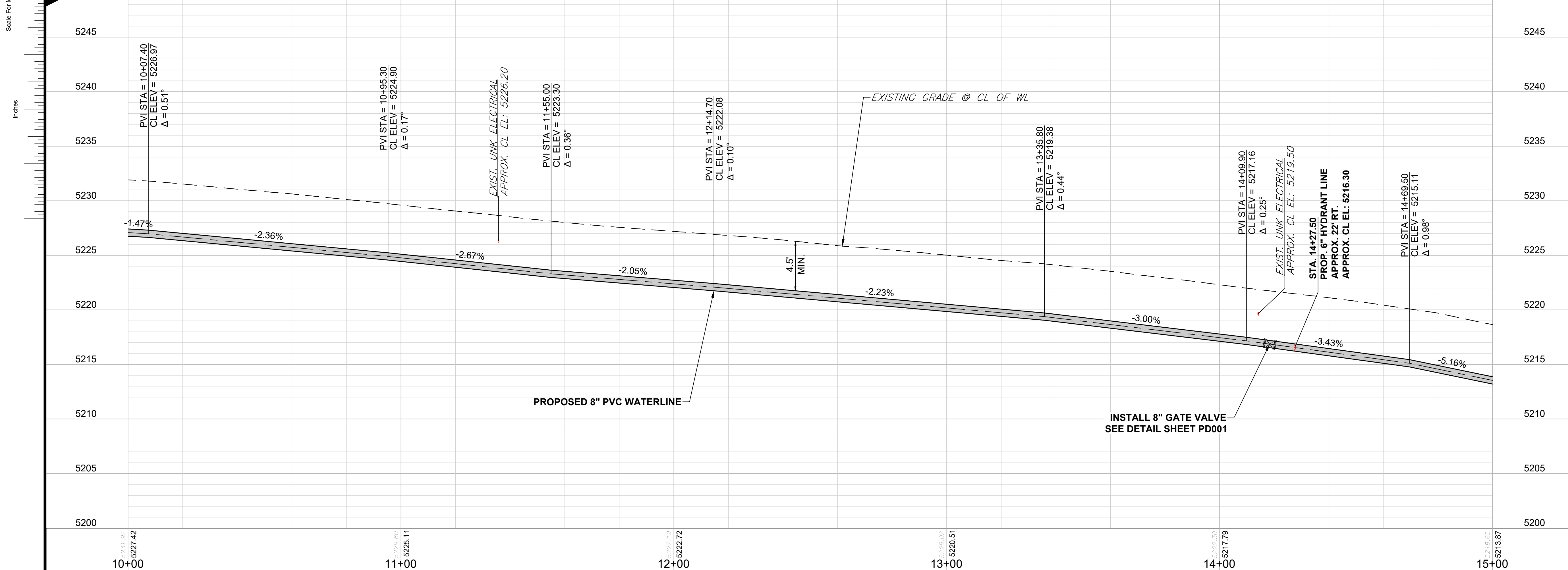
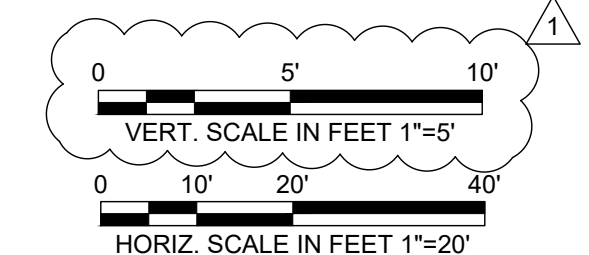
CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #6 96TH WAY STA. 5+00 TO STA. 10+00	
project	154303
contract	
drawing	PP010 - 1
sheet	14 of 39 sheets
file	154303_PP010_SITE 6.dwg



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

NOTE:

- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
- ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
- EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
- EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



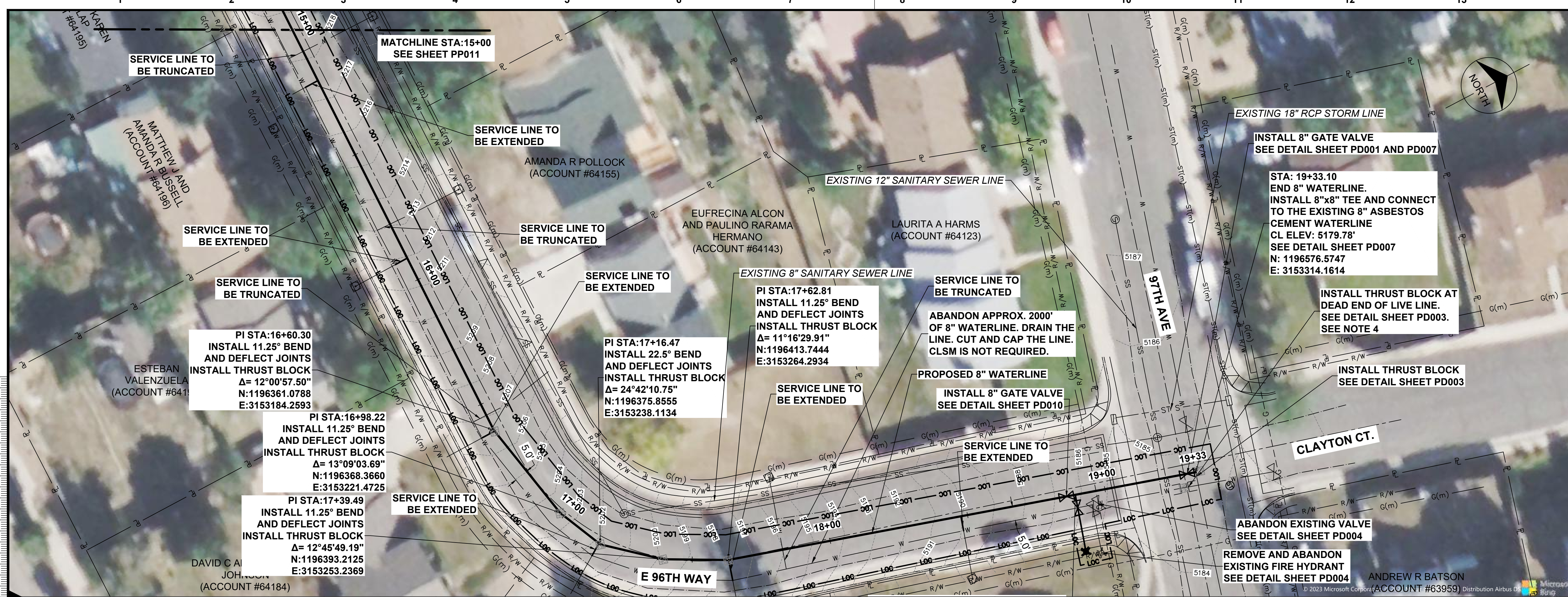
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
 9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE

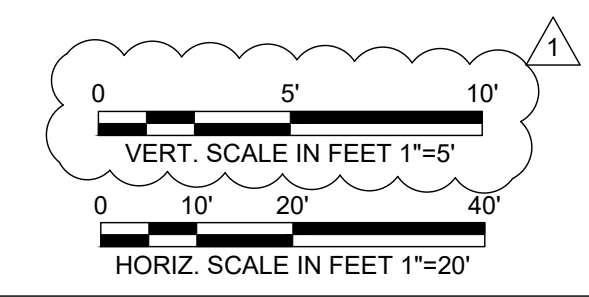


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #6 96TH WAY STA. 10+00 TO STA. 15+00	
project 154303	contract
drawing PP011	rev. 1
sheet 15	of 39
file 154303_PP011_SITE 6.dwg	

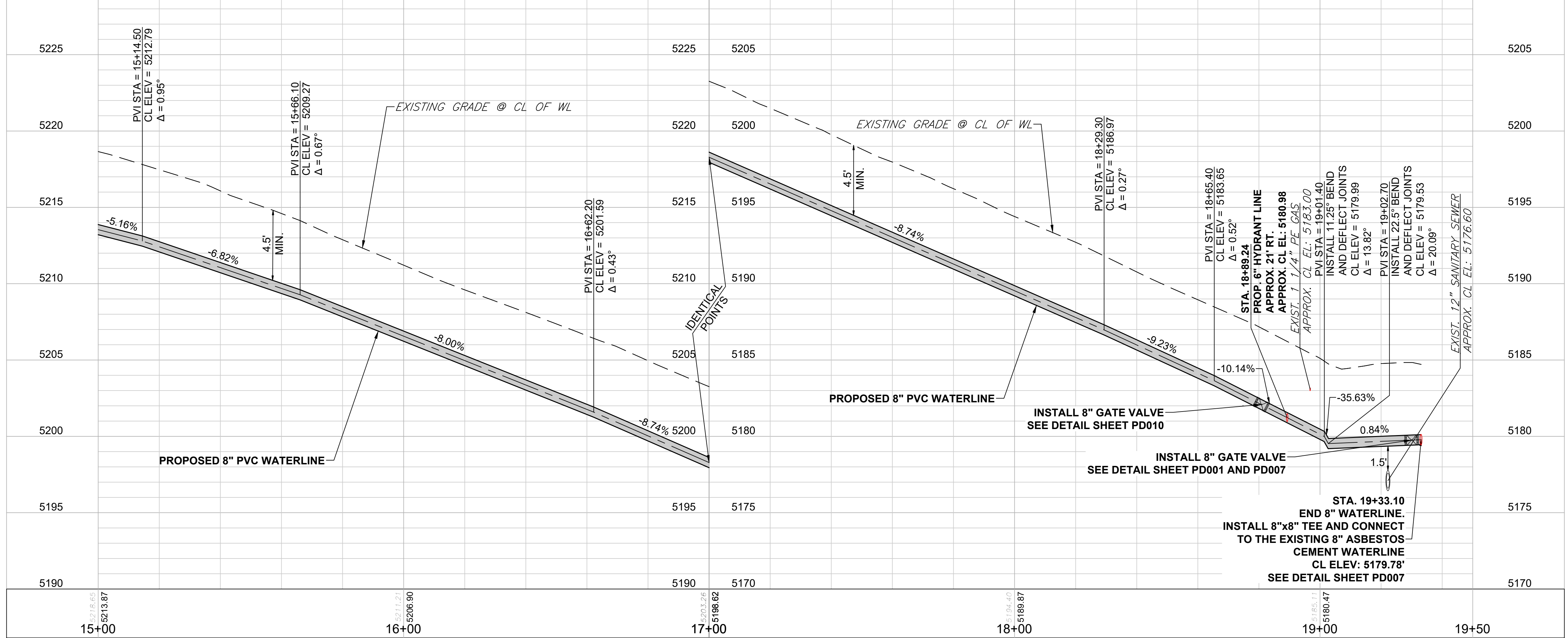


no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

- NOTE:**
1. ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
 2. ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
 3. EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
 4. EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



Scale For Microfitting
Inches



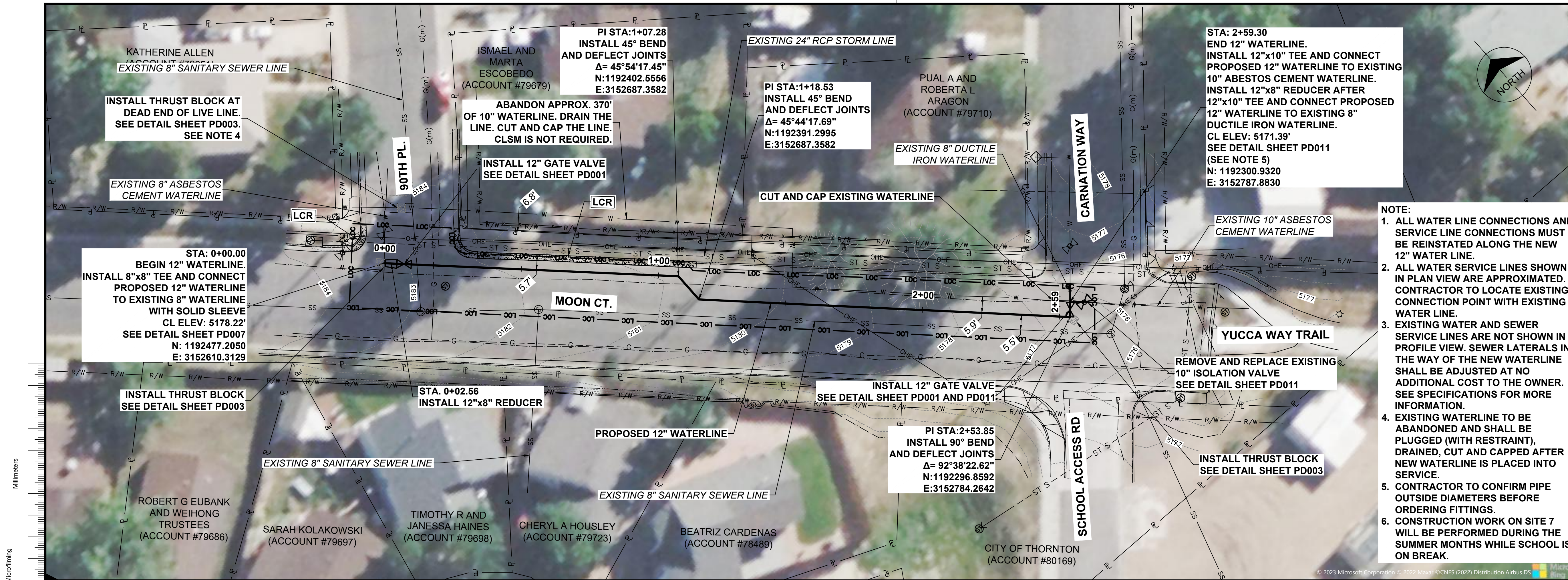
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE

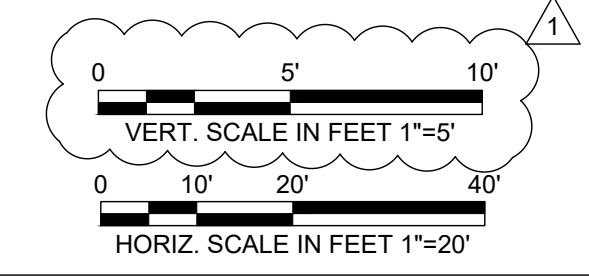


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #6 96TH WAY STA. 15+00 TO STA. 19+33.10	
project 154303	contract
drawing PP012	rev. 1
sheet 16	of 39 sheets
file 154303_PP012_SITE 6.dwg	

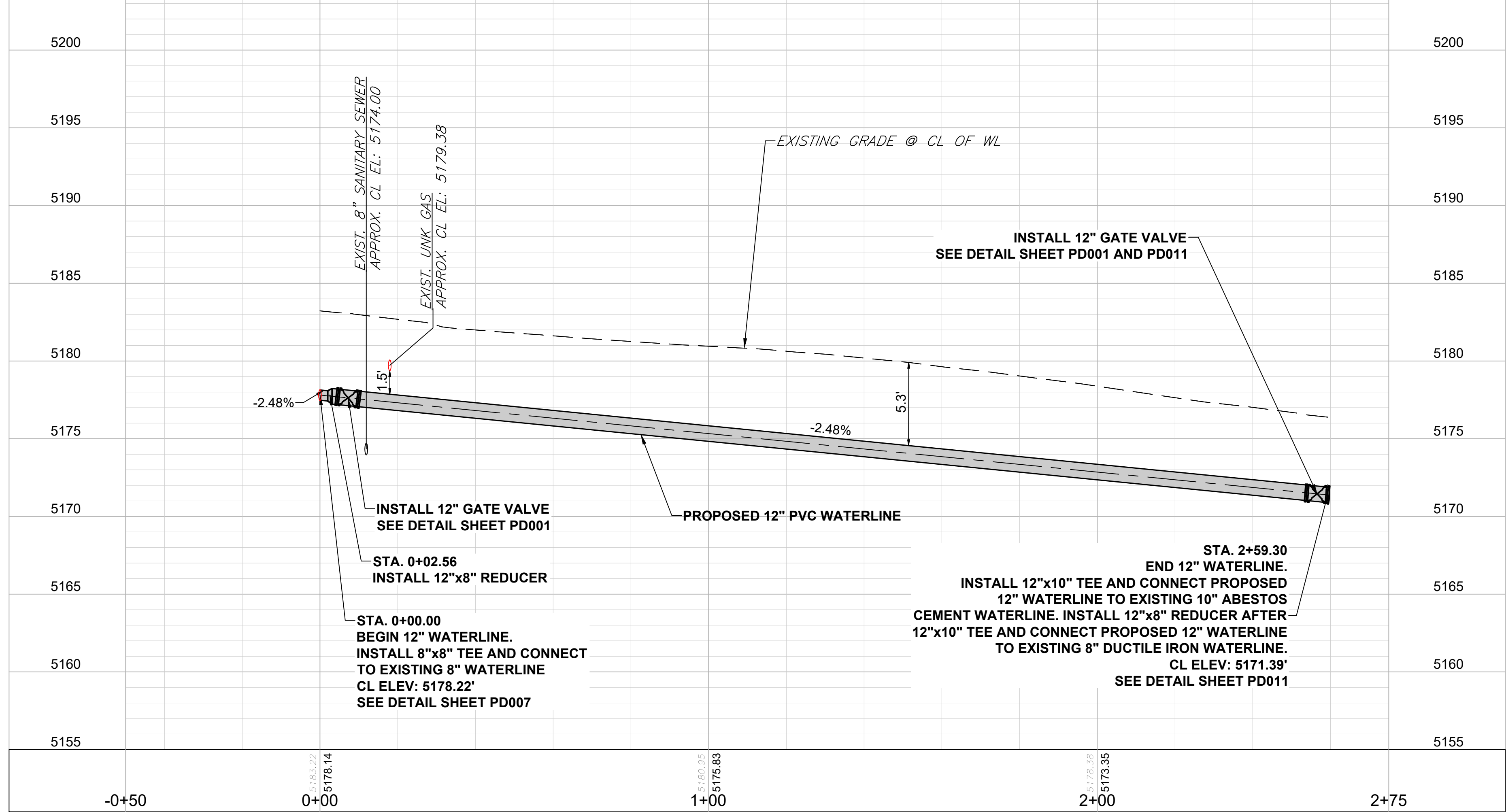


no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

- NOTE:**
1. ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 12" WATER LINE.
 2. ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
 3. EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
 4. EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.
 5. CONTRACTOR TO CONFIRM PIPE OUTSIDE DIAMETERS BEFORE ORDERING FITTINGS.
 6. CONSTRUCTION WORK ON SITE 7 WILL BE PERFORMED DURING THE SUMMER MONTHS WHILE SCHOOL IS ON BREAK.



Scale For Microfitting
Millimeters
Inches



PRELIMINARY- NOT FOR CONSTRUCTION



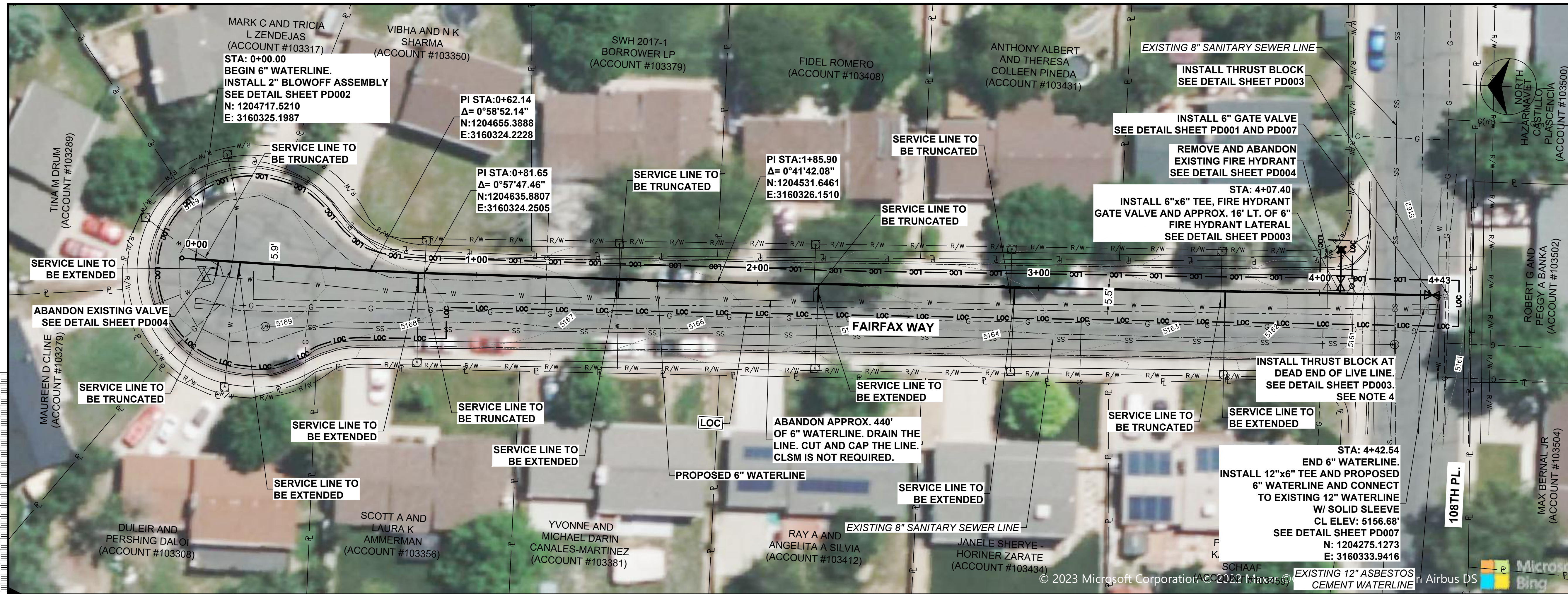
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
SITE #7 E. MOON COURT
STA. 0+00 TO STA. 2+59.30

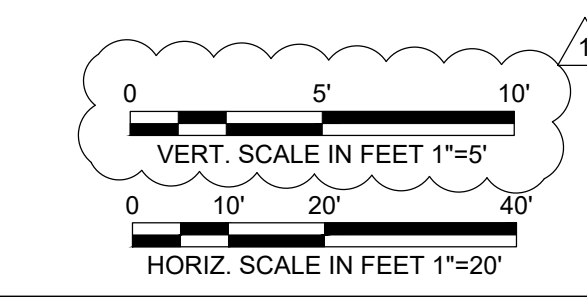
project 154303	contract
drawing PP013	rev. 1
sheet 17	of 39
file 154303_PP013_SITE 7.dwg	sheets



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

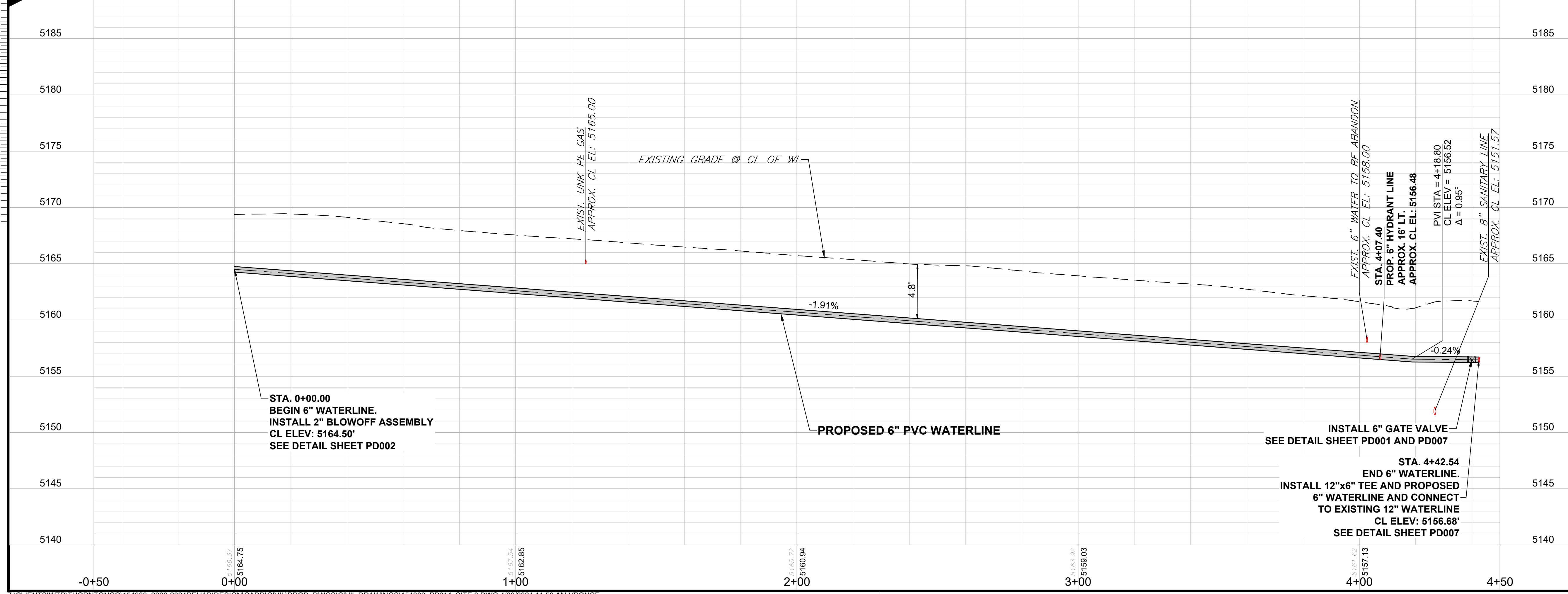
NOTE:

1. ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 6-INCH WATER LINE.
2. ALL WATER SERVICE LINES SHOWN IN PLAN VIEW ARE APPROXIMATED. CONTRACTOR TO LOCATE EXISTING CONNECTION POINT WITH EXISTING WATER LINE.
3. EXISTING WATER AND SEWER SERVICE LINES ARE NOT SHOWN IN PROFILE VIEW. SEWER LATERALS IN THE WAY OF THE NEW WATERLINE SHALL BE ADJUSTED AT NO ADDITIONAL COST TO THE OWNER. SEE SPECIFICATIONS FOR MORE INFORMATION.
4. EXISTING WATERLINE TO BE ABANDONED AND SHALL BE PLUGGED (WITH RESTRAINT), DRAINED, CUT AND CAPPED AFTER NEW WATERLINE IS PLACED INTO SERVICE.



Scale For Microfitting
Millimeters

Inches



PRELIMINARY- NOT FOR CONSTRUCTION

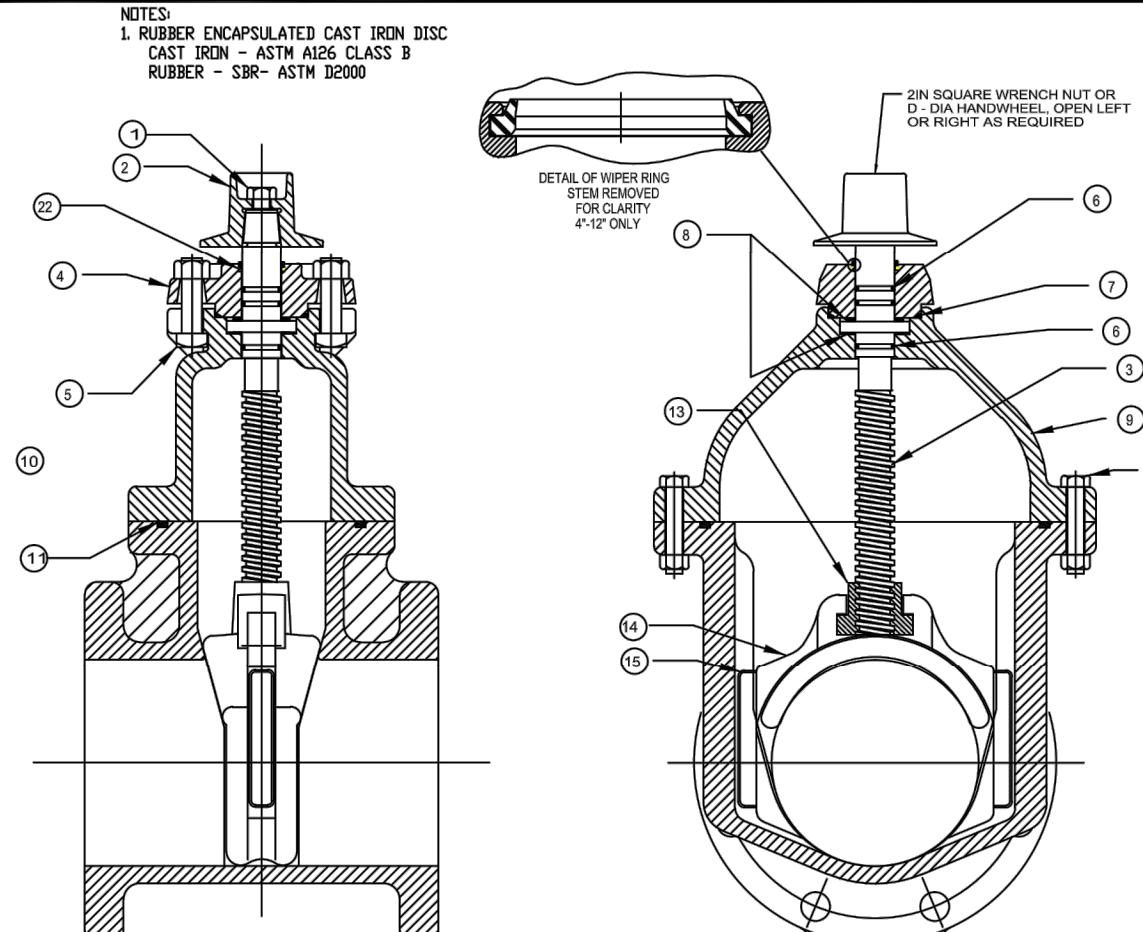
BURNS MEDONNELL
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #8 FAIRFAX WAY STA. 0+00 TO STA. 4+42.54	
project 154303	contract
drawing PP014	rev. 1
sheet 18	of 39
file 154303_PP015.dwg	

NOTES:
 1. RUBBER ENCAPSULATED CAST IRON DISC
 CAST IRON - ASTM A536 CLASS B
 RUBBER - SBR - ASTM D2000



2. 2M SQUARE WRENCH NUT OR D-24 MANHOLESWHEEL, OPEN LEFT OR RIGHT AS REQUIRED

DETAIL OF WIPER RING
 STEEL RINGS FOR CLARITY
 1/2" ONLY

PART LIST			
ITEM	DESCRIPTION	QTY	MATERIAL
1	CAP SCREW	1	304 STAINLESS STEEL A193 GRADE 8B
2	WRENCH NUT	1	CAST IRON A126 CLASS B
3	STEM	1	BRONZE B138 ALLOY C97800
4	STUFFING BOX	1	CAST IRON A126 CLASS B
5	STUFFING BOX BOLTS	2	304 STAINLESS STEEL A193 GRADE 8B
6	STUFFING BOX NUTS	2	304 STAINLESS STEEL F594 GROUP 1
7	O-RING	3	D2000 NITRILE
8	O-RING	1	RUBBER D2000 NITRILE
9	ANTI-FRICTION WASHER	2	CELCON
10	BONNET	1	CAST IRON A126 CLASS B
11	BONNET BOLTS	2	304 STAINLESS STEEL A193 GRADE 8B
12	BONNET NUTS	2	304 STAINLESS STEEL F594 GROUP 1
13	BONNET GASKET (O-RING)	1	RUBBER D2000 NITRILE
14	DISC NUT	1	SEE NOTE 1 B62 ALLOY C93800
15	DISC	1	SEE NOTE 1
16	GUIDE CAP	2	CELCON
17	BODY - FLANGE ENDS	1	CAST IRON A126 CLASS B
18	HANDWHEEL	1	CAST IRON A126 CLASS B
19	BODY - MJ ENDS	1	CAST IRON A126 CLASS B
20	BODY - SLIP-ON ENDS	1	CAST IRON A126 CLASS B
21	BODY - FLANGE & MJ END	1	CAST IRON A126 CLASS B
22	BODY - FLANGE & SLIP-ON END	1	CAST IRON A126 CLASS B
23	WIPER RING	1	RUBBER

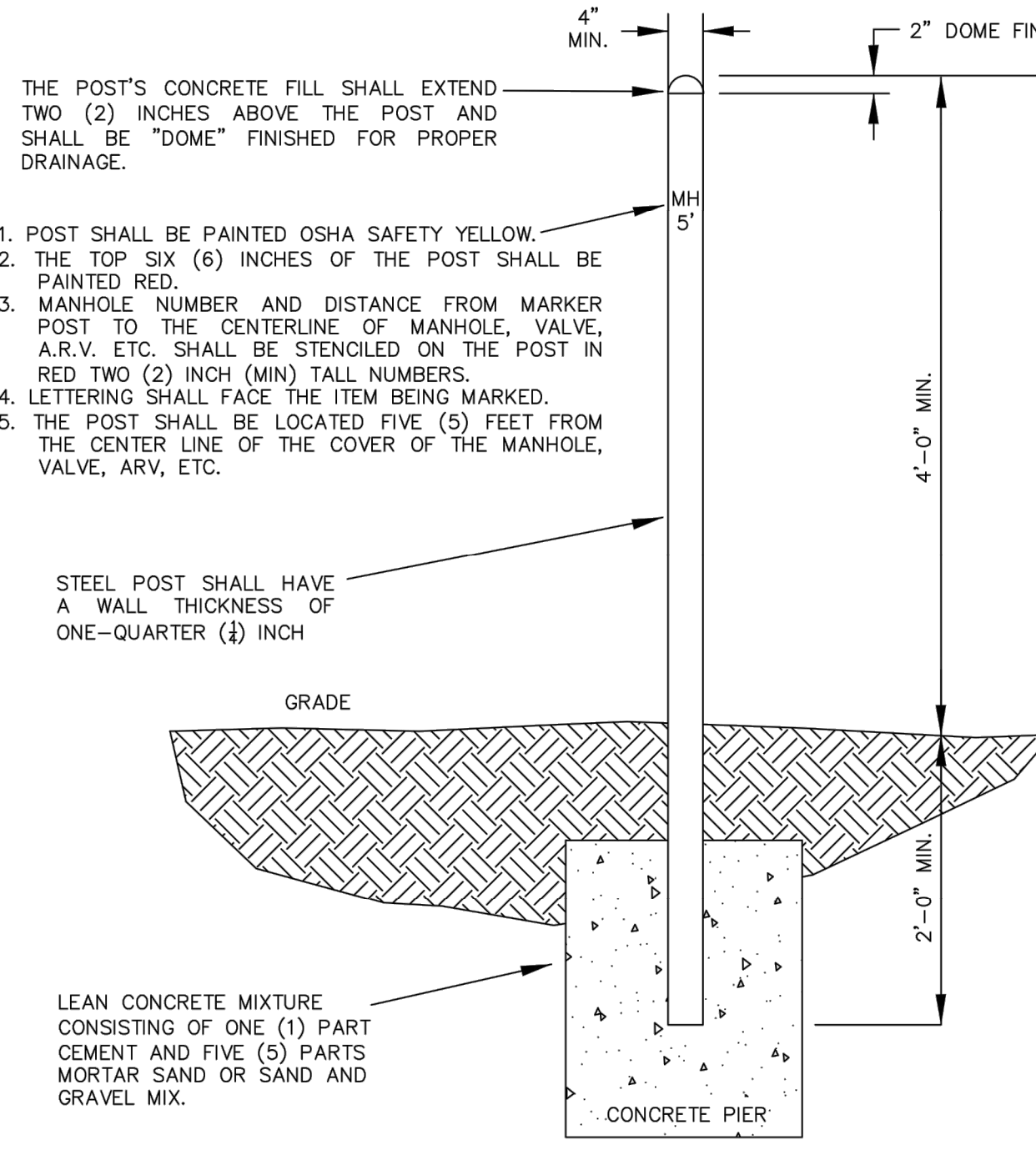
N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

ISSUED: APRIL 2010
 REVISED:

GATE VALVE DETAIL

DRAWING NO. 200-6A



THE POST'S CONCRETE FILL SHALL EXTEND TWO (2) INCHES ABOVE THE POST AND SHALL BE "DOME" FINISHED FOR PROPER DRAINAGE.

- POST SHALL BE PAINTED OSHA SAFETY YELLOW.
- THE TOP SIX (6) INCHES OF THE POST SHALL BE PAINTED RED.
- MANHOLE NUMBER AND DISTANCE FROM MARKER POST TO THE CENTERLINE OF MANHOLE, VALVE, A.R.V. ETC. SHALL BE STENCILED ON THE POST IN RED TWO (2) INCH (MIN) TALL NUMBERS.
- LETTERING SHALL FACE THE ITEM BEING MARKED.
- THE POST SHALL BE LOCATED FIVE (5) FEET FROM THE CENTER LINE OF THE COVER OF THE MANHOLE, VALVE, ARV, ETC.

STEEL POST SHALL HAVE A WALL THICKNESS OF ONE-QUARTER (1/4) INCH

LEAN CONCRETE MIXTURE CONSISTING OF ONE (1) PART CEMENT AND FIVE (5) PARTS MORTAR SAND OR SAND AND GRAVEL MIX.

NOTE: PIPE SHALL BE BLASTED (OR OTHERWISE CLEANED) PRIOR TO PRIMING AND PAINTING. THE PIPE SHALL BE COATED WITH TWO (2) LAYERS OF PRIME COAT AND ONE (1) OIL BASE SEMI-GLOSS FINISHING COAT IN THE COLORS SPECIFIED ABOVE. THE TOTAL PRIME AND PAINT THICKNESS SHALL BE A MIN. OF 4.5 MIL. THICKNESS OR 1.5 MIL. OF EACH LAYER.

N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

ISSUED: JANUARY 2003
 REVISED: APRIL 2010

MARKER POST DETAIL

DRAWING NO. 300-5

ALSO REFER TO DETAIL 200-16

SEWER AND WATER SERVICES SHALL BE A MINIMUM OF TEN (10) FEET APART HORIZONTALLY.

SANITARY SEWER SERVICES SHALL BE CONSTRUCTED ON THE SHORTEST AND STRAIGHTEST ROUTE POSSIBLE, NO MORE THAN TWO 1/4 BENDS SHALL BE PERMITTED IN A SANITARY SEWER SERVICE.

SERVICES SHALL NOT BE ANY CLOSER THAN FIVE (5) FEET TO THE SIDE PROPERTY (EXCEPT ON CUL-DE-SACS), AND NO SERVICE MAY BE CONSTRUCTED THROUGH OR IN FRONT OF ANY ADJOINING PROPERTY.

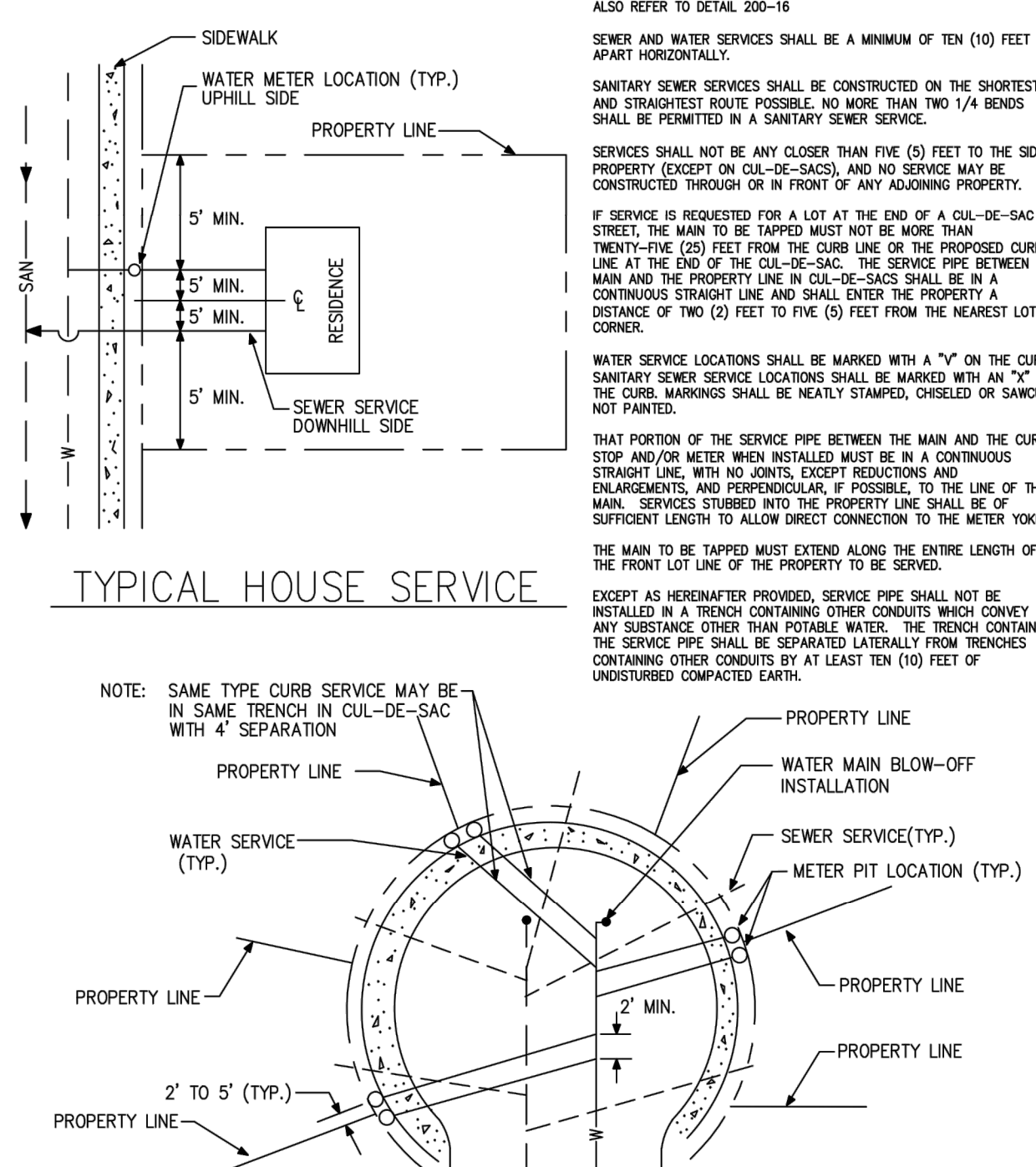
IF SERVICE IS REQUESTED FOR A LOT AT THE END OF A CUL-DE-SAC STREET, THE MAIN TO BE TAPPED MUST NOT BE MORE THAN TWENTY-FIVE (25) FEET FROM THE CURB LINE OR THE PROPOSED CURB LINE AT THE END OF THE CUL-DE-SAC. THE SERVICE PIPE BETWEEN THE MAIN AND THE PROPERTY LINE IN CUL-DE-SACS SHALL BE IN A CONTINUOUS STRAIGHT LINE AND SHALL EXCEED THE PROPERTY A DISTANCE OF TWO (2) FEET TO FIVE (5) FEET FROM THE NEAREST LOT CORNER.

WATER SERVICE LOCATIONS SHALL BE MARKED WITH A "W" ON THE CURB. SANITARY SEWER SERVICE LOCATIONS SHALL BE MARKED WITH AN "S" ON THE CURB. MARKINGS SHALL BE NEATLY STAMPED, CHISELED OR SAWCUT, NOT PAINTED.

THAT PORTION OF THE SERVICE PIPE BETWEEN THE MAIN AND THE CURB STOP AND/OR METER WHEN INSTALLED MUST BE IN A CONTINUOUS STRAIGHT LINE, WITH NO JOINTS, EXCEPT REDUCTIONS AND ENLARGEMENTS, AND PERPENDICULAR, IF POSSIBLE, TO THE LINE OF THE MAIN. SERVICES STUBBED INTO THE PROPERTY LINE SHALL BE OF SUFFICIENT LENGTH TO ALLOW DIRECT CONNECTION TO THE METER YOKE.

THE MAIN TO BE TAPPED MUST EXTEND ALONG THE ENTIRE LENGTH OF THE FRONT LOT LINE OF THE PROPERTY TO BE SERVED.

EXCEPT AS HEREINAFTER PROVIDED, SERVICE PIPE SHALL NOT BE INSTALLED IN A TRENCH CONTAINING OTHER CONDUITS WHICH CONVEY ANY SUBSTANCE OTHER THAN POTABLE WATER. THE TRENCH CONTAINING THE SERVICE PIPE SHALL BE SEPARATED LATERALLY FROM TRENCHES CONTAINING OTHER CONDUITS BY AT LEAST TEN (10) FEET OF UNDISTURBED COMPACTED EARTH.



TYPICAL HOUSE SERVICE CONNECTION IN CUL-DE-SACS

N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

ISSUED: APRIL 1992
 REVISED: APRIL 2010

SERVICE DETAIL

DRAWING NO. 200-2

GATE VALVES

VALVES SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH AWWA STANDARD C-500, "METAL-SEATED GATE VALVES FOR WATER", OR AWWA C-509 "RESILIENT-SEATED GATE VALVES, 3 THROUGH 12 NPS, FOR WATER AND SEWAGE SYSTEMS" WITH THE FOLLOWING ADDITIONAL REQUIREMENTS OR EXCEPTIONS:

VALVES MEETING AWWA STANDARD C-500 SHALL BE OF A MODIFIED WEDGE DISC CONSTRUCTION, COATED BOTH INSIDE AND OUT WITH A TOUGH, DURABLE EPOXY TO PREVENT CORROSION, CAST IRON BODY, FULLY BRONZE MOUNTED WITH NON-RISING STEMS.

VALVES SHALL BE SUITABLE FOR FREQUENT OPERATION, AS WELL AS SERVICE INVOLVING LONG PERIODS OF INACTIVITY. THE OPERATING PRESSURE FOR VALVES SIX (6) INCHES THROUGH TWELVE (12) INCHES SHALL BE 200 PSI.

VALVE STEMS SHALL BE MADE OF BRONZE AND THREADED SO THAT VALVES SHALL OPEN BY TURNING TO THE LEFT (COUNTERCLOCKWISE). EACH VALVE SHALL BE FURNISHED WITH A TWO (2) INCH SQUARE OPERATING NUT. THE OPERATING NUT SHALL HAVE AN ARROW SHOWING THE DIRECTION OF OPENING AND THE WORD "OPEN" CAST ON THE NUT. THE STEM SEAL SHALL CONSIST OF TWO (2) O-RINGS; ONE OR BOTH POSITIONED ABOVE THE THRUST COLLAR WITH THE VALVE UNDER PRESSURE IN THE FULL OPEN POSITION.

BOLTS AND HEX NUTS USED ON THE BONNET OF THE VALVE SHALL BE THE MANUFACTURER'S STANDARD FABRICATED FROM A LOW ALLOY STEEL FOR CORROSION RESISTANCE.

FLANGES SHALL BE SIZED AND DRILLED IN ACCORDANCE WITH ANSI B-16.1 CLASS 125 SPECIFICATIONS. FLANGES SHALL BE MACHINED IN A FLAT FACE OR MACHINED TO A FLAT SURFACE WITH A SERRATED FINISH IN ACCORDANCE WITH AWWA STANDARD C-207 "STEEL PIPE FLANGES."

THE COMPONENTS OF THE MECHANICAL JOINT SHALL CONFORM TO ANSI A-21.11 (AWWA STANDARD C-111). THE TEE-HEAD BOLTS AND HEXAGON NUTS SHALL BE FABRICATED FROM A HIGH STRENGTH STAINLESS STEEL, OR AN APPROVED EQUAL.

AFTER APPROVED FACTORY ASSEMBLY, EACH VALVE SHALL BE GIVEN THE OPERATION AND HYDROSTATIC TESTS IN ACCORDANCE WITH THE REFERENCED SPECIFICATIONS.

WEDGE DISC VALVES SHALL BE LIMITED TO THE FOLLOWING MANUFACTURERS OR APPROVED EQUIVALENT: WATERLOO SERIES-500, MUELLER-A2360, KENSAL, CLOW R.N. RESILIENT-SEATED GATE VALVES SHALL BE LIMITED TO THE AMERICAN-80 "CRS" GATE VALVE OR THE U.S. PIPE "METROSEAL" GATE VALVE.

THE MANUFACTURER SHALL FURNISH A CERTIFIED STATEMENT THAT THE INSPECTION AND SPECIFIED TESTS HAVE BEEN MADE AND THE RESULTS THEREOF COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE STANDARD(S) HEREIN SPECIFIED. A COPY OF THE CERTIFICATION SHALL BE SENT TO THE DEVELOPMENT ENGINEERING MANAGER UPON REQUEST.

CORROSION PROTECTION SHALL BE COVERED IN SUBSECTION 204.2 OF THESE STANDARDS AND SPECIFICATIONS.

VALVES SHALL BE HANDLED IN SUCH A MANNER AS TO PREVENT ANY INJURY OR DAMAGE AND SHALL BE THOROUGHLY CLEANED BEFORE INSTALLATION. VALVES SHALL BE SET IN SUCH A MANNER THAT THE VALVE STEMS ARE PLUMB. VALVES SHALL BE LOCATED AT POINTS AS SPECIFIED IN SUBSECTION 203.3 OF THESE STANDARDS AND SPECIFICATIONS.

VALVE BOXES

VALVE BOX PARTS SHALL BE MANUFACTURED BY TYLER, SERIES 6660 OR AN APPROVED EQUIVALENT MANUFACTURER AND MADE OF GRAY CAST IRON, BUFFALO TYPE WITH NO. 160 OVAL BASE. A FIVE AND ONE-QUARTER (5 1/4) INCH SCREW-TYPE SHAFT SHALL BE ADJUSTABLE FROM 48 INCHES TO 96 INCHES. VALVE BOX LIDS SHALL BE MARKED WITH THE WORD "WATER" AND SHALL HAVE A LIP OR FLANGE EXTENDING INTO THE VALVE BOX SHAFT. NO SLIP-TYPE BOXES SHALL BE ALLOWED. THE VALVE BOX SHALL BE OF A DESIGN WHICH SHALL NOT TRANSMIT SHOCK OR STRESS TO THE VALVE AND SHALL BE CENTERED AND PLUMB OVER THE OPERATING NUT OF THE VALVE WITH THE BOX COVER FLUSH WITH THE SURFACE OF THE PAVEMENT. IN NON-PAVED AREAS, A 24 INCH SQUARE CONCRETE COLLAR IS REQUIRED AROUND VALVE BOX COVER AS PER THE STANDARD DETAIL IN SECTION 200 OF THESE STANDARDS AND SPECIFICATIONS. IN UNIMPROVED ROADWAYS THE VALVE BOX COVER SHALL BE SET SIX (6) INCHES BELOW FINAL GRADE WITH A MARKER POST INDICATING THE LOCATION AS PER THE STANDARD DETAIL DRAWING.

THE MANUFACTURER SHALL FURNISH A CERTIFIED STATEMENT THAT THE INSPECTION AND SPECIFIED TESTS HAVE BEEN MADE AND THE RESULTS THEREOF COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE STANDARD(S) HEREIN SPECIFIED. A COPY OF THE CERTIFICATION SHALL BE SENT TO THE DEVELOPMENT ENGINEERING MANAGER UPON REQUEST.

FOR VALVE BOXES ALONG FIRE SPRINKLER LINES THE LID SHALL BE LABELED "FIRE"

CORROSION PROTECTION SHALL BE COVERED IN SUBSECTION 204.2 OF THESE STANDARDS AND SPECIFICATIONS.

FINAL ELEVATION OF VALVE BOXES SHALL BE LEFT TO THE DISCRETION OF THE DEVELOPMENT ENGINEERING MANAGER.

VALVE BOXES SHALL BE INSTALLED PLUMB.

VALVE BOXES WHICH HAVE SHIFTED DURING BACKFILL OPERATIONS AND ARE NO LONGER PLUMB, SHALL BE RE-EXCAVATED AND REALIGNED TO THE SATISFACTION OF THE DEVELOPMENT ENGINEERING MANAGER.

FOR GREENBELT AREA APPLICATION, REFER TO DETAIL 200-7

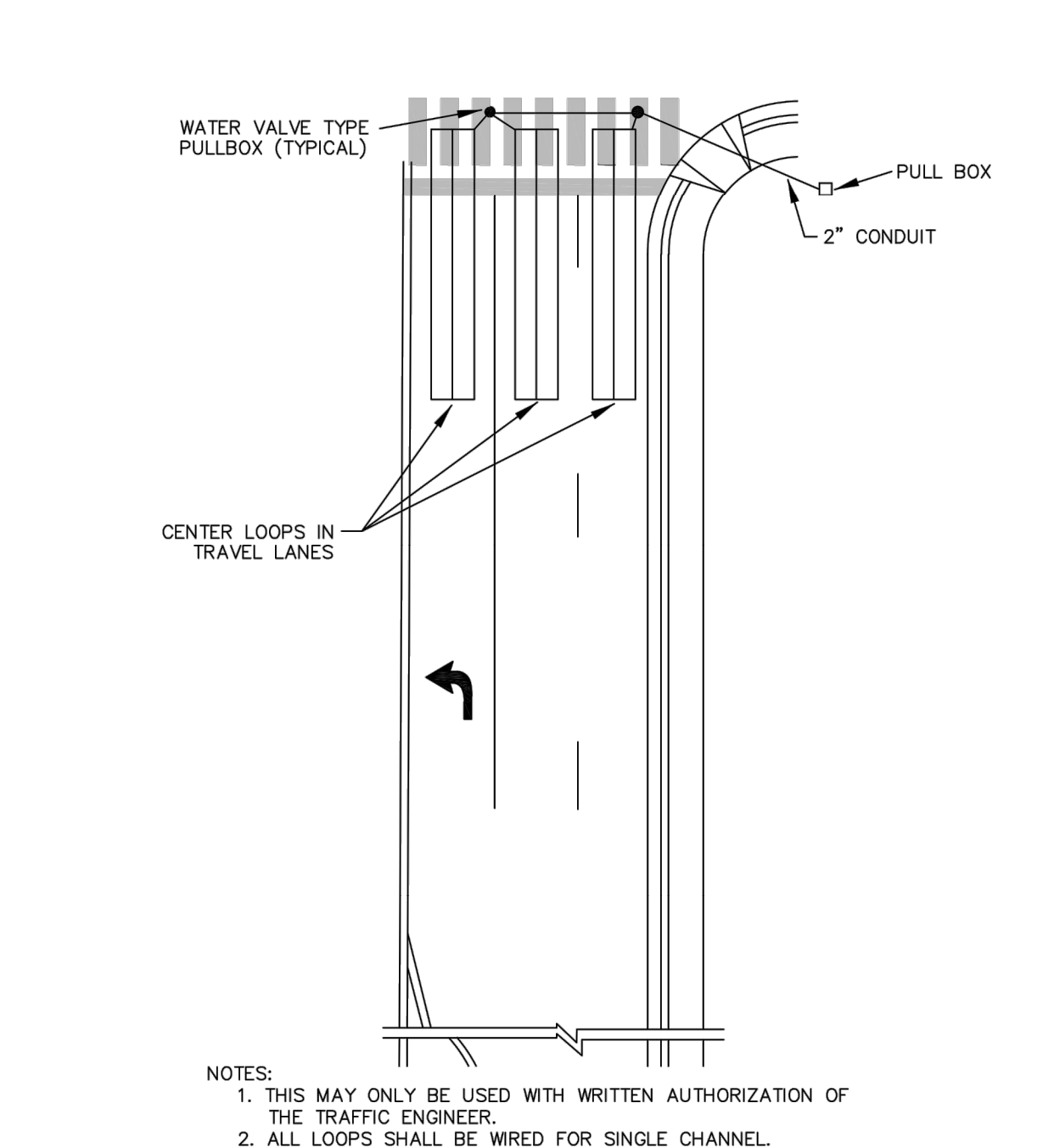
N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

ISSUED: APRIL 2010
 REVISED:

GATE VALVE AND VALVE BOX NOTES

DRAWING NO. 200-6B



WATER VALVE TYPE PULLBOX (TYPICAL)

PULL BOX

2" CONDUIT

CENTER LOOPS IN TRAVEL LANES

NOTES:

- THIS MAY ONLY BE USED WITH WRITTEN AUTHORIZATION OF THE TRAFFIC ENGINEER.
- ALL LOOPS SHALL BE WIRED FOR SINGLE CHANNEL.
- SEE PLANS FOR LOCATION AND LENGTH OF EACH DETECTOR.
- CIRCULAR LOOPS MAY BE USED AS AN ALTERNATIVE.

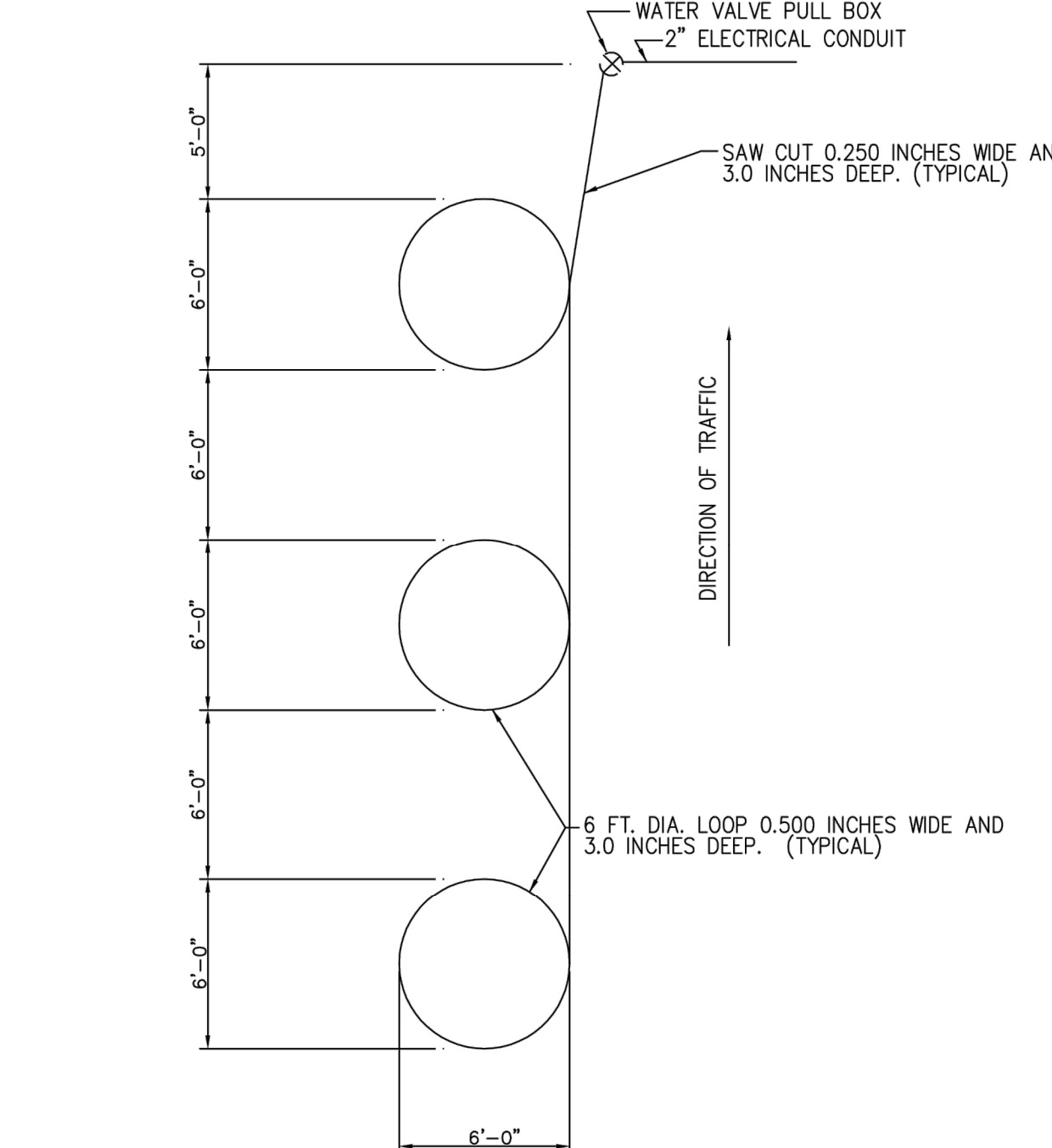
N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

ISSUED: FEBRUARY 2003
 REVISED: APRIL 2010

TYPICAL LOOP PLACEMENT DETAIL

DRAWING NO. 700-6



WATER VALVE PULL BOX
 2" ELECTRICAL CONDUIT

SAW CUT 0.250 INCHES WIDE AND 3.0 INCHES DEEP. (TYPICAL)

DIRECTION OF TRAFFIC

6 FT. DIA. LOOP 0.500 INCHES WIDE AND 3.0 INCHES DEEP. (TYPICAL)

NOTE:
 THIS LOOP DETECTOR MAY ONLY BE USED WITH THE WRITTEN AUTHORIZATION OF THE TRAFFIC ENGINEER. THIS LOOP DETECTOR CAN BE USED INSTEAD OF 6' x 40' QUADROPOLE LOOP SHOWN ON PLAN.

N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

ISSUED: FEBRUARY 2003
 REVISED: APRIL 2010

TYPICAL ALTERNATIVE ROUND LOOP LAYOUT

DRAWING NO. 700-7

no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL

9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE

City of Thornton

**CITY OF THORNTON
 2022-2024 PIPELINE REHABILITATION**

CIVIL DETAILS I

project	154303	contract	
drawing	PD001	rev.	1
sheet	19	of	39 sheets
file	154303_PD001.dwg		

Scale For Microfinishing

Inches

WATERMAIN LOWERING

PIPE* : D.I.P. OR PVC C-900 DR-14

DIP, STEEL PIPE, HARNESS RODS, STEEL CASING PIPE, FITTINGS, VALVES, AND VALVE BOXES SHALL BE HAND WRAPPED USING POLYETHYLENE WITH A MIN. THICKNESS OF EIGHT (8) MILS AND TWO (2) INCH WIDE, TEN (10) MIL THICK POLYETHYLENE PRESSURE SENSITIVE TAPE TO CLOSE SEAMS OR HOLD OVERLAPS. THE POLYETHYLENE SHALL BE APPLIED TO PREVENT THE CONTACT OF BACKFILL MATERIAL WITH THE FITTING. THE RAW MATERIAL USED TO MANUFACTURE POLYETHYLENE FILM SHALL BE TYPE 1, CLASS A, GRADE E-1 IN ACCORDANCE WITH ASTM STANDARD DESIGNATION D-1248. POLYETHYLENE ENCASEMENT MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C-105.

BITUMINOUS MATERIAL IS TO BE USED FOR CORROSION PROTECTION ON ALL STEEL CASING PIPES. INSTALLATION SHALL BE IN ACCORDANCE WITH ESTABLISHED AWWA STANDARDS (AWWA C-600 OR C-603).

PIPE SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C-900. BEFORE THE PLACING OF PIPE IN THE TRENCH, EACH PIPE OR FITTING SHALL BE THOROUGHLY CLEANED OF FOREIGN MATERIAL, KEPT CLEAN AND EXAMINED FOR CRACKS OR DEFECTS BEFORE INSTALLATION. THE DEVELOPMENT ENGINEERING MANAGER MAY REJECT ANY PIPE WHICH SHOWS DISCOLORATION DUE TO THE SUN.

JOINT LUBRICANT SHALL BE SUPPLIED BY THE PIPE MANUFACTURER.

WHEN LAYING PIPE ON CURVES, THE PIPE SHALL BE KEPT IN ALIGNMENT BY DEFLECTING JOINTS OR USING SHORT LENGTHS OF PIPE. IF USING DEFLECTING JOINTS, RECOMMENDED PRACTICES AND ALLOWANCES AS STIPULATED BY THE MANUFACTURER MUST BE ADHERED TO. PIPE SHALL BE LAID WITH THE BELL ENDS FACING IN THE DIRECTION OF LAYING UNLESS DIRECTED OTHERWISE BY THE DEVELOPMENT ENGINEERING MANAGER.

WHENEVER THE PIPE IS LEFT UNATTENDED, TEMPORARY PLUGS SHALL BE INSTALLED AT OPENINGS. TEMPORARY PLUGS SHALL BE WATERTIGHT, STANDARD CAST IRON AND SHALL BE SUBJECT TO APPROVAL BY THE DEVELOPMENT ENGINEERING MANAGER.

N.T.S.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: APRIL 1992
	WATERMAIN LOWERING DETAIL	REVISED: APRIL 2010
		DRAWING NO. 200-3A

PLAN VIEW A

DETAIL B

SECTION A-A

MAIN SIZE	DEFORMED BAR		TIE BAR	
	DIA.	X	DIA.	AMOUNT
8"	-	-	.375	2
12"	.500	18"	.500	2
16"	.750	20"	.750	2
24"	1.000	24"	1.000	2

NOTES:
 1. PIPE USED IN LOWERING SHALL BE DUCTILE IRON PIPE WITH EIGHT (8) MIL POLYWRAP.
 2. FITTINGS, PIPES & TIE BARS TO BE WRAPPED SEPARATELY IN POLYETHYLENE.
 3. 45° FITTINGS SHALL BE USED.
 4. FITTINGS SHALL BE RODDED TO NEXT BELL & NO JOINTS ARE ALLOWED BETWEEN FITTINGS OR UTILIZE MEGALUG CONNECTIONS.
 5. FITTINGS SHALL BE M.J.
 6. MEGALUG CONNECTIONS OR PIGEARS SHALL BE USED ON RODDING FOR FITTINGS UNLESS OTHERWISE APPROVED BY THE DEVELOPMENT ENGINEERING MANAGER.

N.T.S.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: APRIL 1992
	WATERMAIN LOWERING CROSS-SECTION DETAIL	REVISED: APRIL 2010
		DRAWING NO. 200-3B

N.T.S.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: JANUARY 2005
	16" TO 42" VALVE AND VAULT DETAIL	REVISED: APRIL 2010
		DRAWING NO. 200-8

VALVES SHALL BE HANDED IN SUCH A MANNER AS TO PREVENT ANY INJURY OR DAMAGE AND SHALL BE THOROUGHLY CLEANED BEFORE INSTALLATION. VALVES SHALL BE SET IN SUCH A MANNER THAT THE VALVE STEMS ARE PLUMB. VALVE BOXES SHALL BE INSTALLED PLUMB. FINAL ELEVATION OF THE VALVE BOXES SHALL BE LEFT TO THE DISCRETION OF THE DEVELOPMENT ENGINEERING MANAGER.

NOTE: FOR LINES 12" AND LARGER, A HYDRANT SHALL BE USED FOR THE BLOWOFF.

N.T.S.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: APRIL 1992
	2" BLOWOFF DETAIL (FOR MAINS LESS THAN 12" DIA.)	REVISED: APRIL 2010
		DRAWING NO. 200-3A

NOTE: COLOR SHALL BE FLAT BLACK

N.T.S.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: JANUARY 2005
	TYPICAL AIR VENT DETAIL	REVISED: APRIL 2010
		DRAWING NO. 200-20

N.T.S.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: APRIL 2010
	TYPE II SIDEWALK RAMP - COLLECTOR/ARTERIAL (DIRECTIONAL)	REVISED: APRIL 2010
		DRAWING NO. 500-13

no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

PRELIMINARY- NOT FOR CONSTRUCTION

9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE

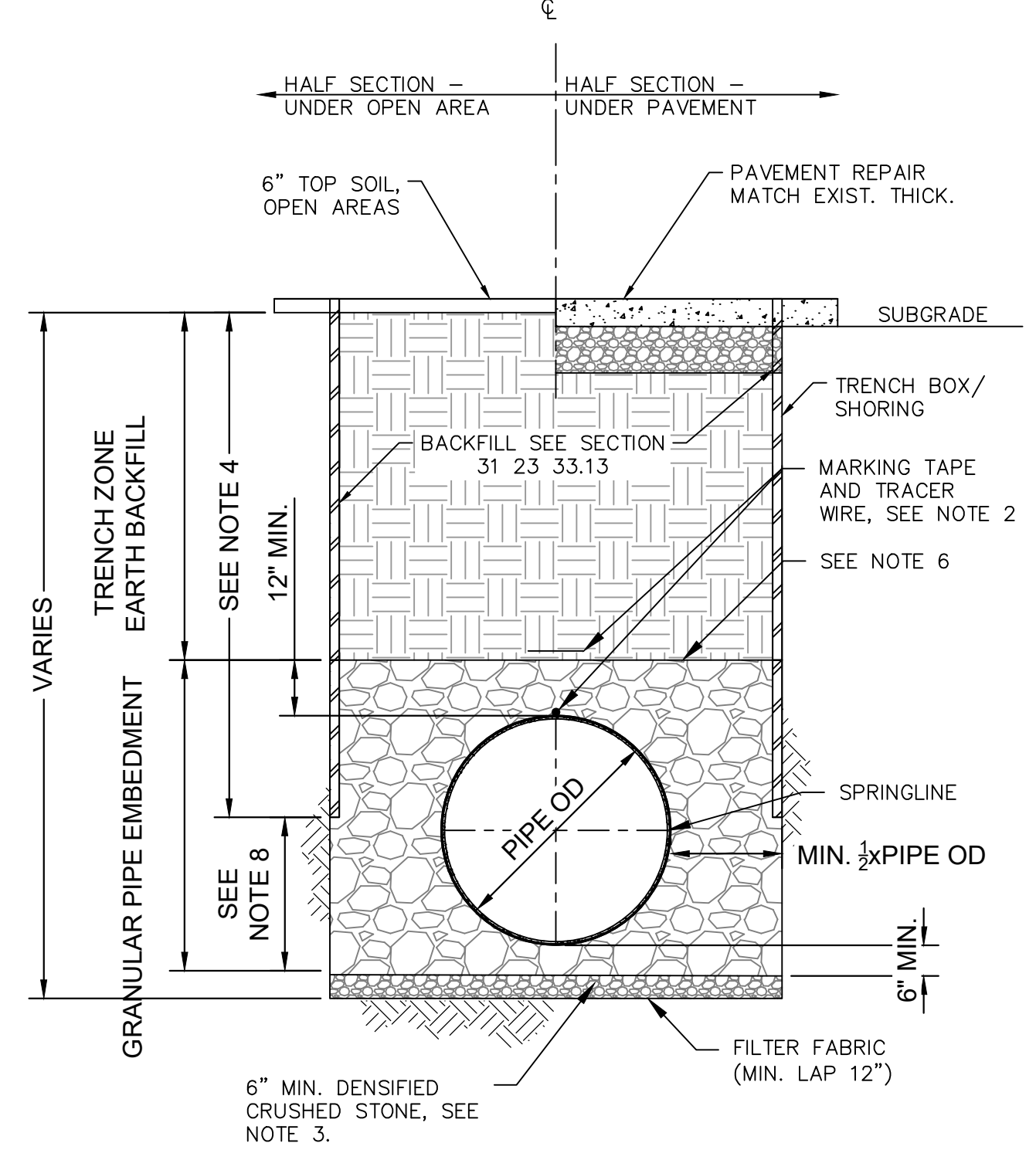
City of Thornton

CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION			
CIVIL DETAILS II			
project	154303	contract	
drawing	PD002 - 1	rev.	
sheet	20 of 39 sheets	file	154303_PD002.dwg

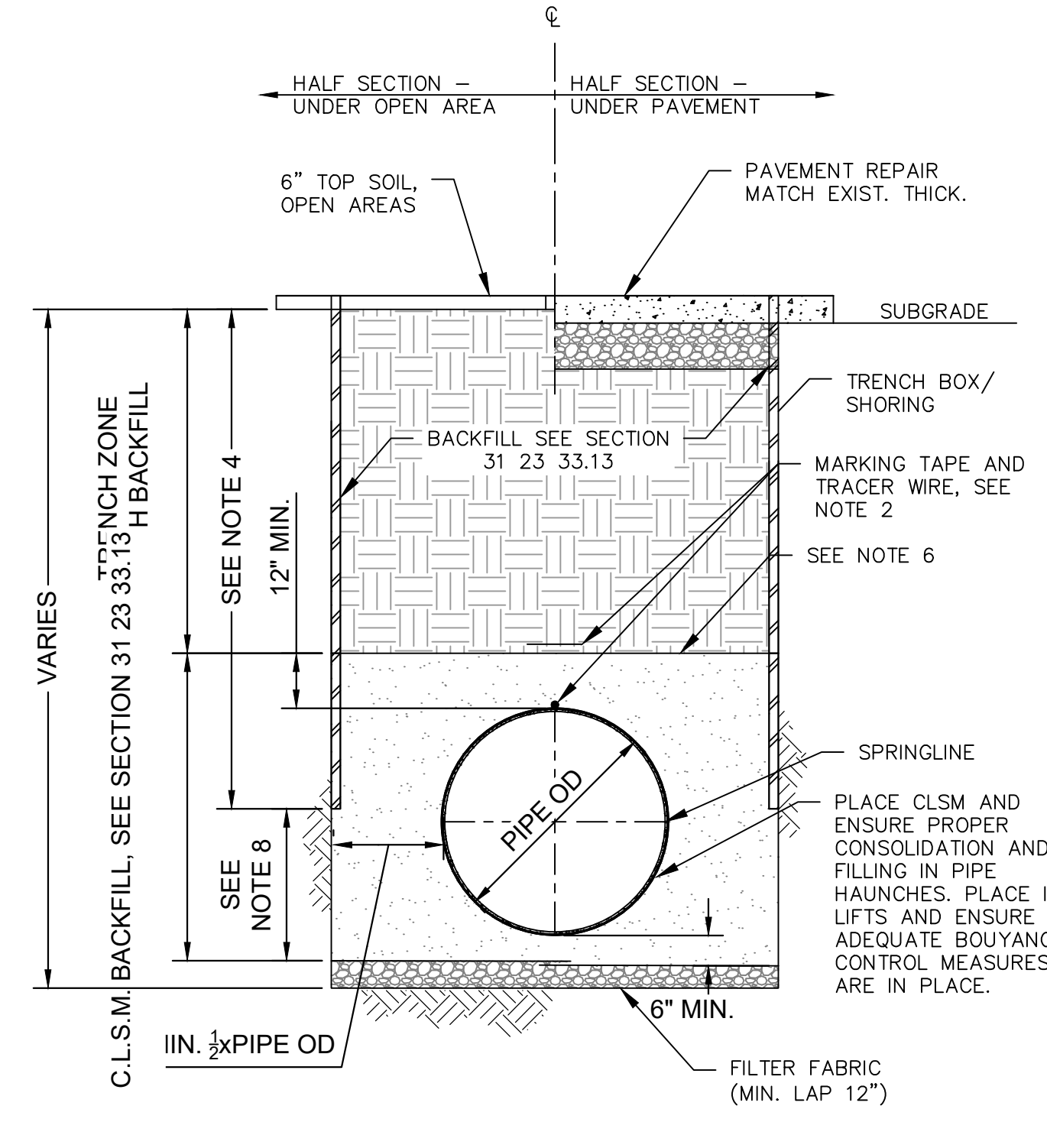
Scale For Microfinishing
Inches
Millimeters

NOTES:

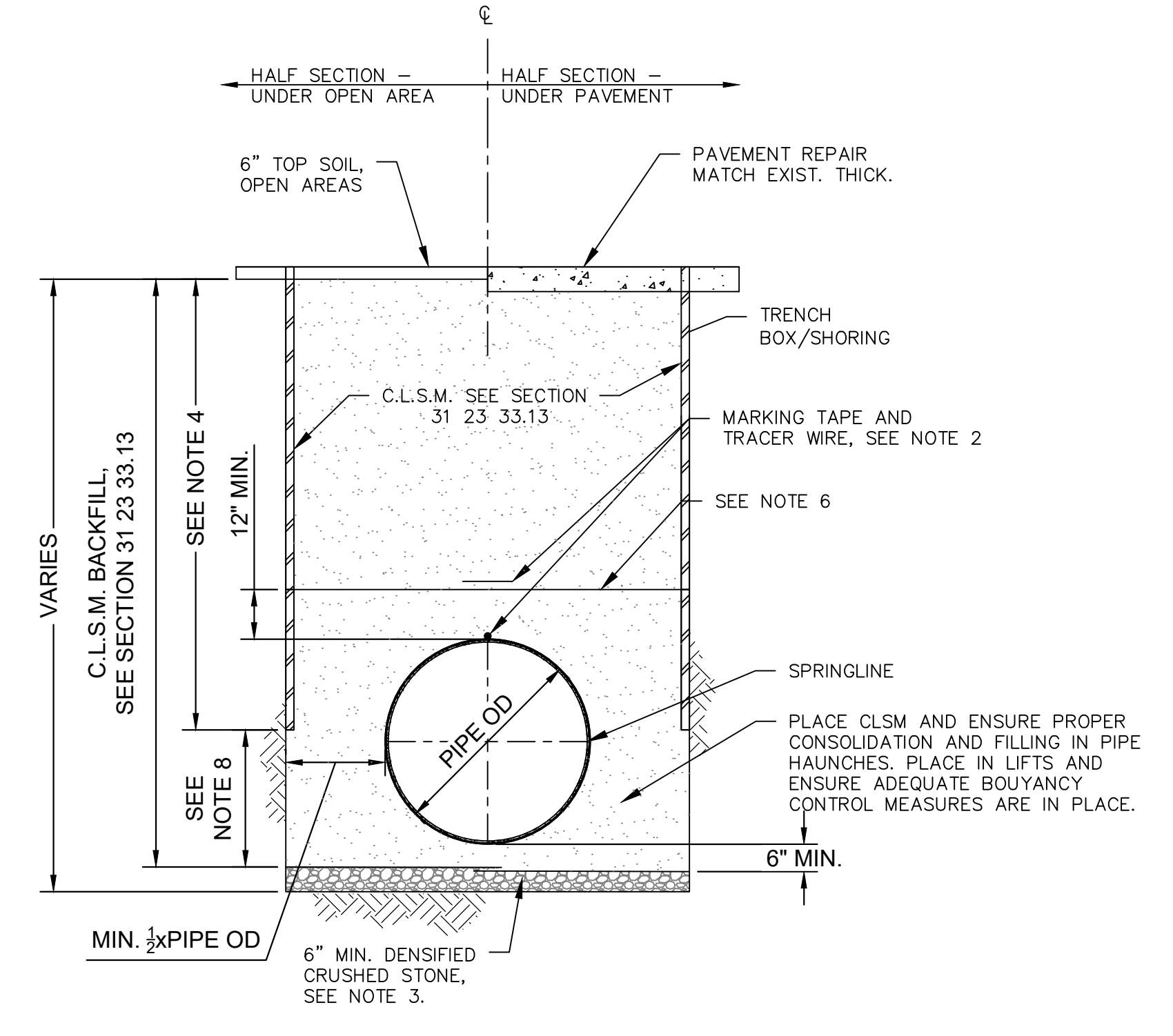
1. REFER TO TRENCHING AND BACKFILLING FOR UTILITIES SPECIFICATION FOR TRENCH BOX/SHORING REQUIREMENTS OR SLOPE TRENCH WALLS IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS.
2. INSTALL MARKING TAPE 8 TO 12" ABOVE TOP OF PIPE, AS SHOWN. REFER TO SECTION 33 05 26 - UTILITY IDENTIFICATION FOR ADDITIONAL INFORMATION.
3. OVER EXCAVATE AND USE STABILIZATION MATERIAL WHEN WET AND UNSUITABLE OR UNEXPECTED TRENCH CONDITIONS ARE FOUND DURING CONSTRUCTION.
4. PIPE EMBEDMENT ZONE MUST BE FILLED AND RECOMPACTED TO SPECIFIED DENSITIES UPON REMOVAL OR MOVEMENT OF TRENCH SAFETY SYSTEM.
5. USE POLYETHYLENE WRAP AS BOND BREAKER BETWEEN CONCRETE OR C.L.S.M. AND PIPE, BOLTS, AND FLANGES.
6. INSTALL ORANGE HDPE FENCE ACROSS ENTIRE TRENCH WIDTH, OVERLAP ENDS MIN. OF 4 FEET.
7. ADJUST HEIGHT OF UNSUPPORTED TRENCH AS NEEDED FOR SAFE CONDITIONS IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS.



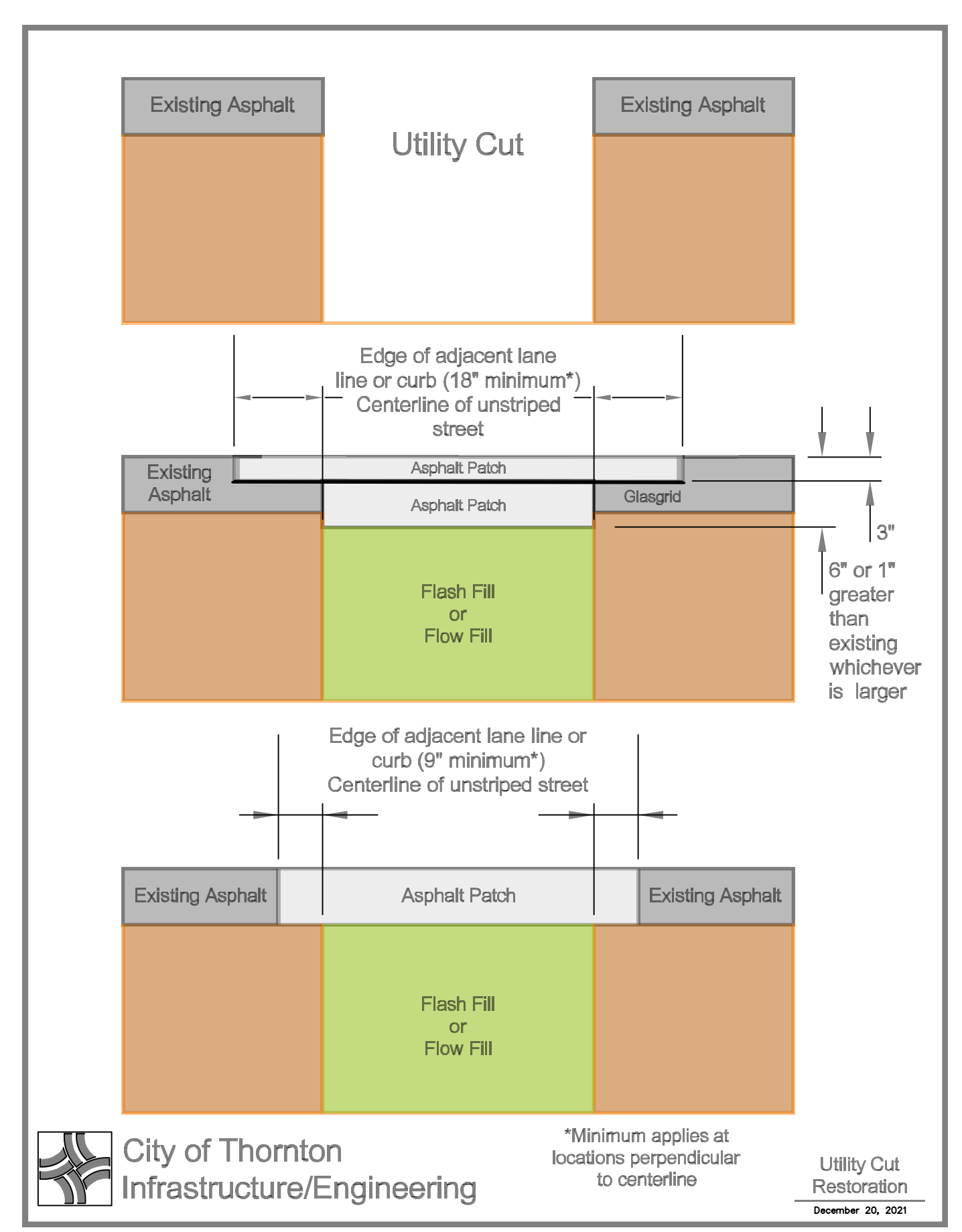
1
TYPICAL EXCAVATION AND BEDDING/BACKFILL DETAIL
NOT TO SCALE
PD006



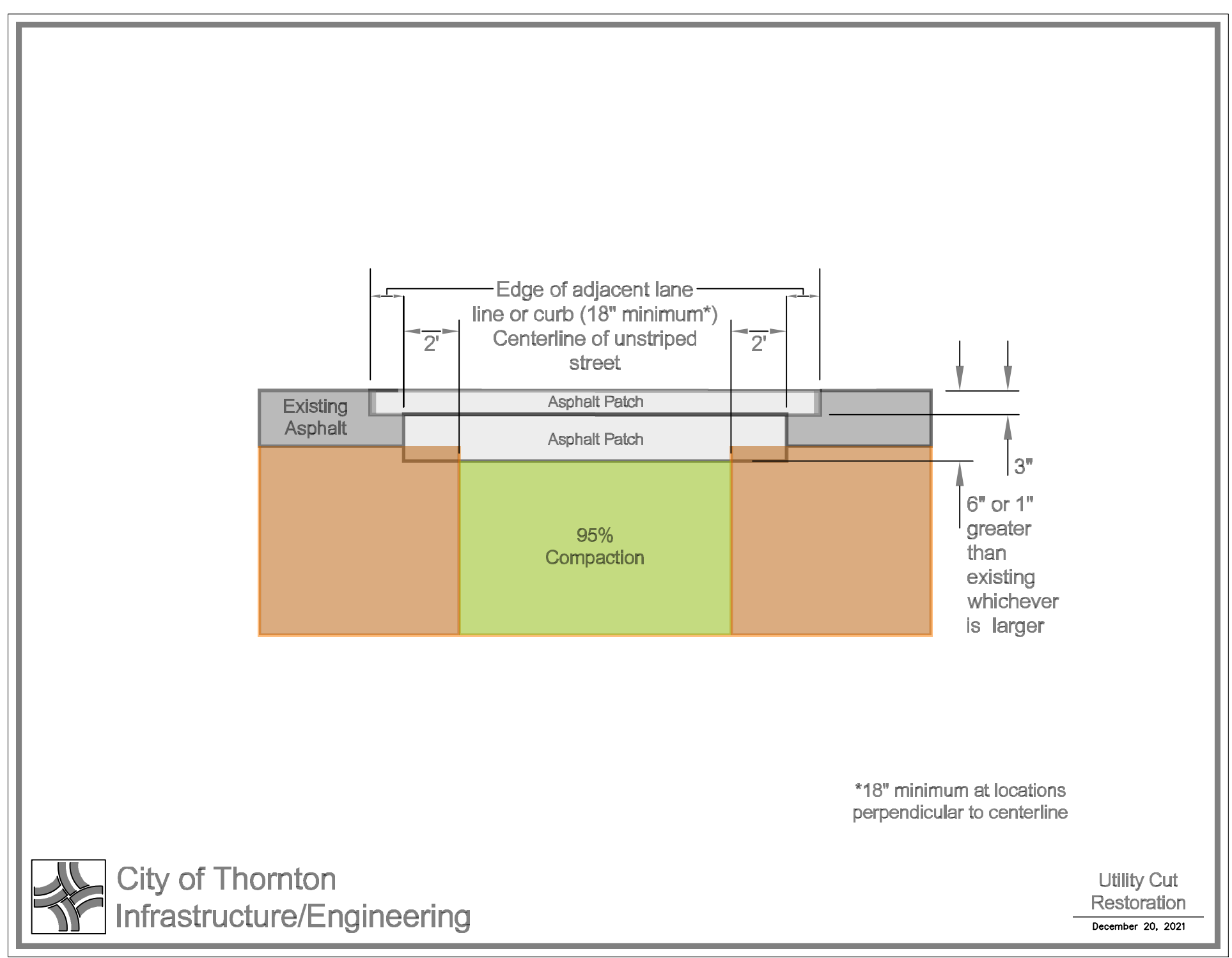
2
TYPICAL EXCAVATION AND CLSM BEDDING DETAIL
NOT TO SCALE
PD006



3
TYPICAL EXCAVATION AND CLSM BEDDING/BACKFILL DETAIL
NOT TO SCALE
PD006



City of Thornton Infrastructure/Engineering
Utility Cut Restoration
December 20, 2021



City of Thornton Infrastructure/Engineering
Utility Cut Restoration
December 20, 2021

no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

PRELIMINARY- NOT FOR CONSTRUCTION



9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



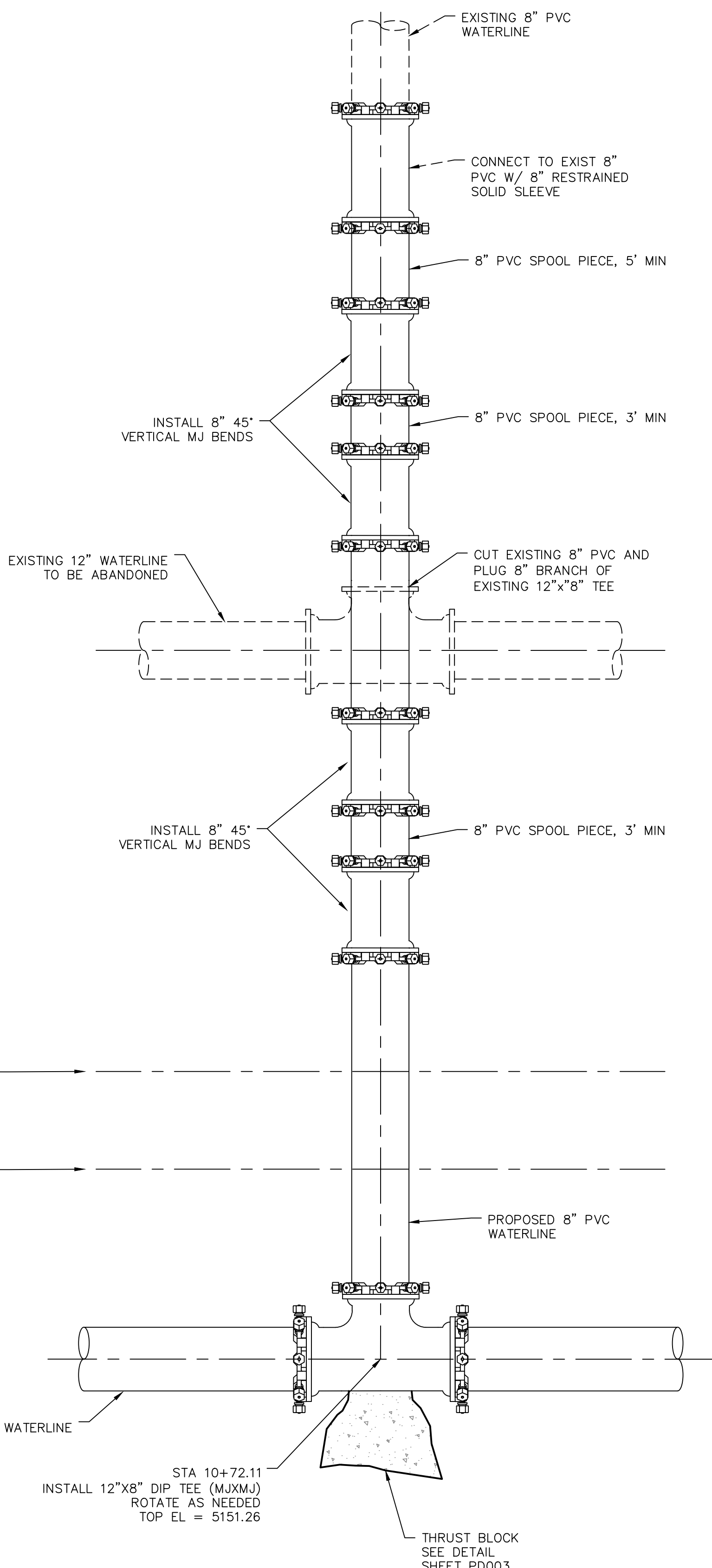
CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
ROADWAY DETAILS II

project 154303	contract
drawing PD006	rev. 1
sheet 24	of 39
file 154303_PD006.dwg	sheets

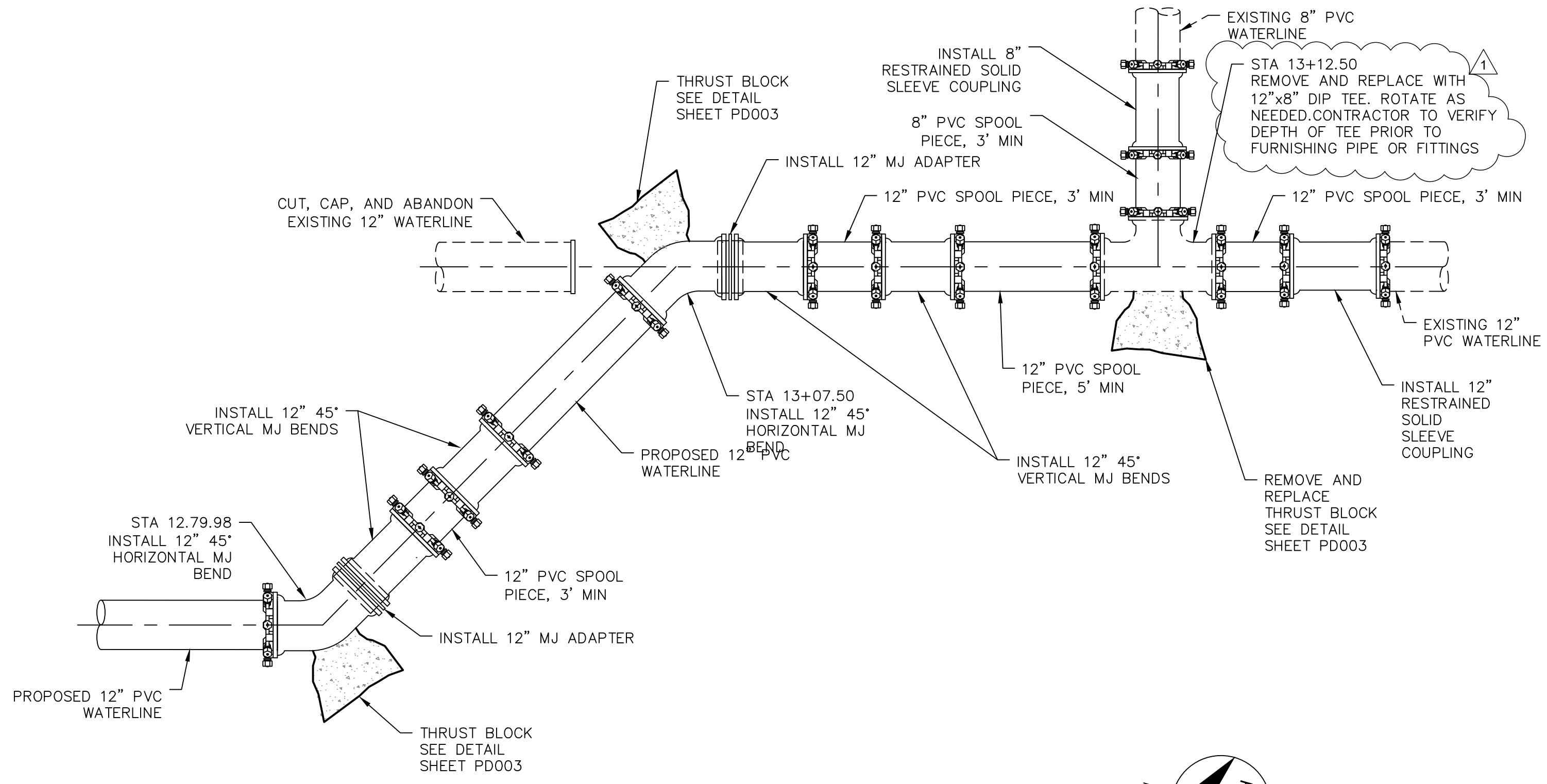
Scale For Microfinishing
Millimeters
Inches

GENERAL NOTES

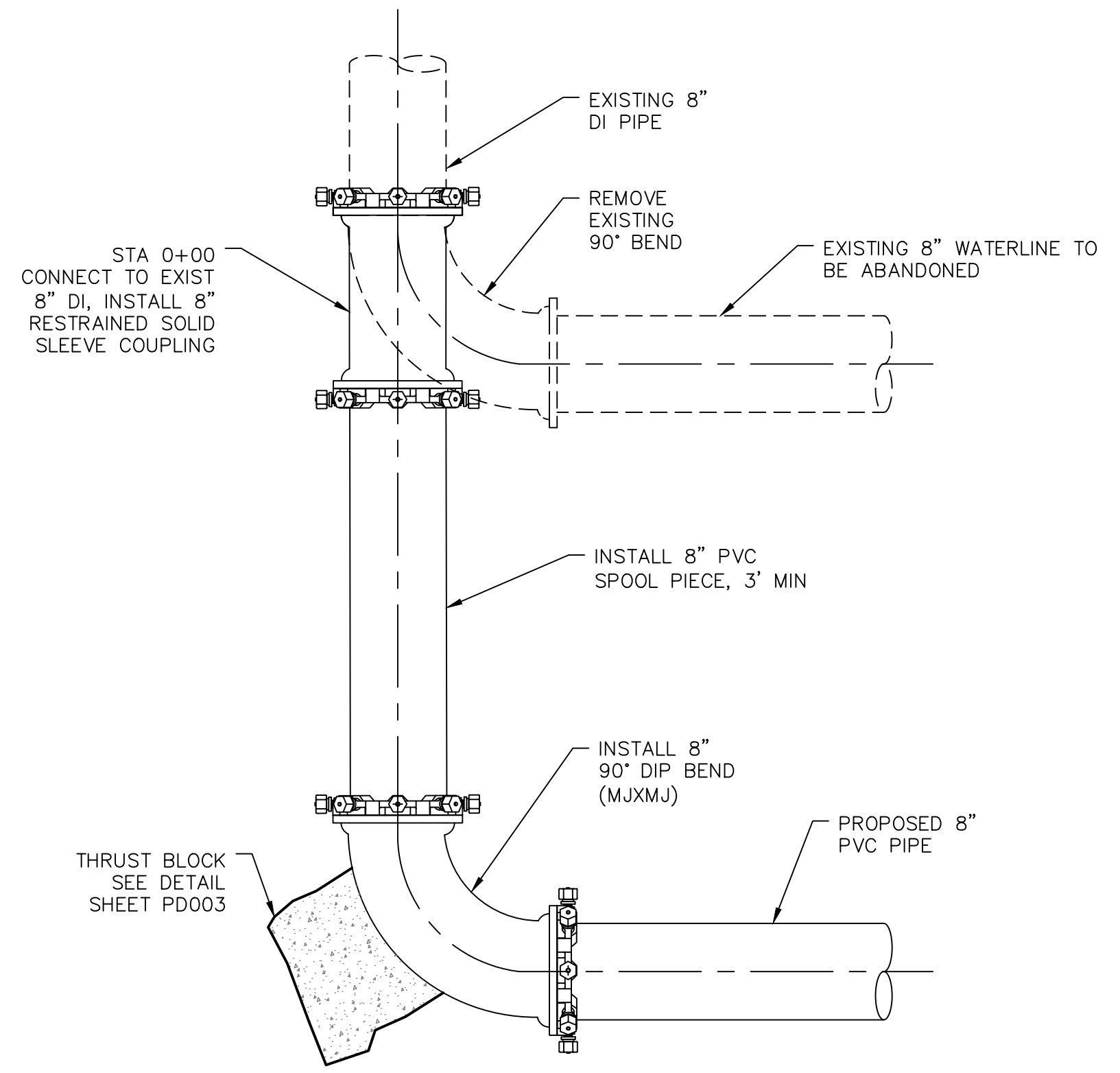
1. CONTRACTOR TO LOCATE UTILITIES AND VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.



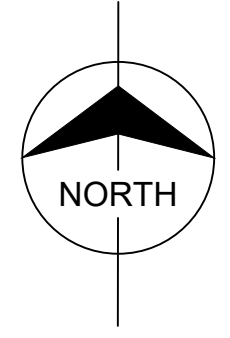
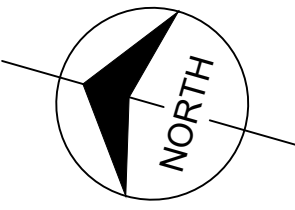
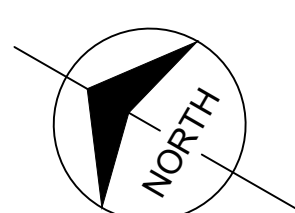
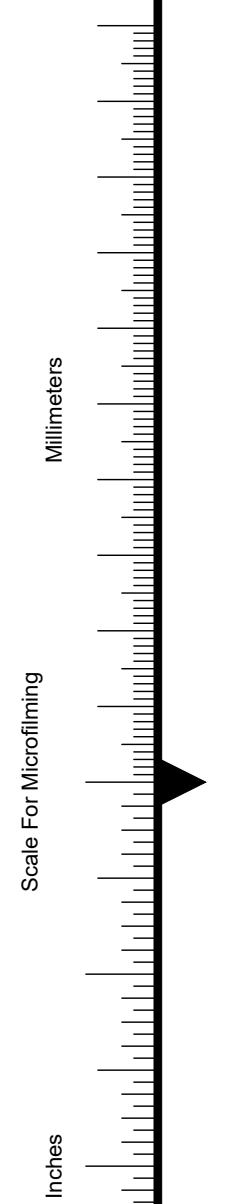
CONNECTION DETAIL SITE 3 STATION 10+72.11
NOT TO SCALE



CONNECTION DETAIL SITE 3 STATION 13+12.50
NOT TO SCALE



CONNECTION DETAIL SITE 5 STATION 0+00
NOT TO SCALE



no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
1	04/29/24	RSB	KGL	ADDENDUM 1

PRELIMINARY- NOT FOR CONSTRUCTION



9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE



CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
CONNECTION DETAILS III

project	154303	contract	
drawing	PD009	rev.	1
sheet	27	of	39 sheets
file	154303_PD009.dwg		

TABLE OF CONTENTS

Technical Specifications and Standard Details City of Thornton – 2022-2024 Pipeline Rehabilitation

Division 00	BID AND CONTRACT DOCUMENTS
00 01 07	Index and Certification Page
Division 01	GENERAL REQUIREMENTS
	<i>Included in Thornton's General and Special Conditions</i>
01 11 00	Summary of Work
01 29 00	Measurement and Payment
01 32 33	Construction Photographs
01 33 00	Submittals
Division 02	EXISTING CONDITIONS
02 41 00	Demolition
Divisions 03 - 08	NOT USED
Division 09	FINISHES
09 90 00	Protective Coatings
Divisions 10 – 30	NOT USED
Division 31	EARTHWORK
31 20 50	Site Preparation and Earthwork
31 20 55	Sedimentation and Erosion Control
31 23 33.13	Trenching and Backfilling for Utilities
31 23 33.16	Trenching and Backfilling for Utility Structures
Division 32	EXTERIOR IMPROVEMENTS
32 11 23	Aggregate Base Courses
32 12 16	Asphalt Paving
32 16 00	Curbs, Gutters, Sidewalks & Driveways
32 17 23	Pavement Markings
32 91 05	Topsoiling and Finished Grading
32 92 00	Seeding and Sodding
Division 33	UTILITIES
33 05 97	Utility Identification
33 08 00	Abandonment of Existing Pipelines and Structures
33 11 00	Pressure Pipe
33 12 16	Utility Valves and Accessories
33 31 50	Pipe Installation
Divisions 34 - 48	NOT USED

CITY OF THORNTON		
2022-2024 Pipeline Rehabilitation BID FORM		
<i>Base Bid Unit Price Schedule</i>		
Site	Description	Total Cost
1	Site 1	\$
2	Site 2	\$
3	Site 3	\$
4	Site 4	\$
5	Site 5	\$
6	Site 6	\$
7	Site 7	\$
8	Site 8	\$
Total Cost Base Bid		\$

City of Thornton 2022 - 2024 Pipeline Rehabilitation Bid Form					
Base Bid - Site 1					
Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	5		
7	CLSM as Backfill Material	CY	0		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	77		
9	Concrete Surface Restoration	SY	0		
10	Concrete Curb & Gutter Restoration	LF	0		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0		
13	Tree Removal, Disposal, and Replacement	EA	0		
14	Tree and Vegetation Trimming and Disposal	LS	0		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	234		
16	8-inch PVC Waterline	LF	0		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	0		
19	Hydrant Service Lines - DIP Waterline	LF	0		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	1		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	0		
24	Connection to Existing 16-inch Waterline	EA	0		
25	6-inch Direct-Bury Gate Valve	EA	1		
26	8-inch Direct-Bury Gate Valve	EA	0		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	0		
29	Fire Hydrant Assembly	EA	0		
30	2-inch Blowoff Assembly	EA	1		
31	Water Service Line Reactivation	EA	6		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	0		
34	Existing Valve Box Removal	EA	1		
TOTAL (\$)					

City of Thornton 2022 - 2024 Pipeline Rehabilitation Bid Form					
Base Bid - Site 2					
Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	7		
7	CLSM as Backfill Material	CY	3		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	115		
9	Concrete Surface Restoration	SY	17		
10	Concrete Curb & Gutter Restoration	LF	20		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0		
13	Tree Removal, Disposal, and Replacement	EA	0		
14	Tree and Vegetation Trimming and Disposal	LS	0		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	342		
16	8-inch PVC Waterline	LF	0		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	0		
19	Hydrant Service Lines - DIP Waterline	LF	0		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	1		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	0		
24	Connection to Existing 16-inch Waterline	EA	0		
25	6-inch Direct-Bury Gate Valve	EA	1		
26	8-inch Direct-Bury Gate Valve	EA	0		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	0		
29	Fire Hydrant Assembly	EA	0		
30	2-inch Blowoff Assembly	EA	1		
31	Water Service Line Reactivation	EA	7		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	0		
34	Existing Valve Box Removal	EA	1		
				TOTAL (\$)	

City of Thornton
2022 - 2024 Pipeline Rehabilitation Bid Form

Base Bid - Site 3

Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	25		
7	CLSM as Backfill Material	CY	1733		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	553		
9	Concrete Surface Restoration	SY	20		
10	Concrete Curb & Gutter Restoration	LF	630		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0.23		
13	Tree Removal, Disposal, and Replacement	EA	10		
14	Tree and Vegetation Trimming and Disposal	LS	1		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	0		
16	8-inch PVC Waterline	LF	0		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	1,332		
19	Hydrant Service Lines - DIP Waterline	LF	36		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	4		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	1		
24	Connection to Existing 16-inch Waterline	EA	1		
25	6-inch Direct-Bury Gate Valve	EA	0		
26	8-inch Direct-Bury Gate Valve	EA	1		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	4		
29	Fire Hydrant Assembly	EA	2		
30	2-inch Blowoff Assembly	EA	0		
31	Water Service Line Reactivation	EA	11		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	1		
34	Existing Valve Box Removal	EA	4		
TOTAL (\$)					

City of Thornton 2022 - 2024 Pipeline Rehabilitation Bid Form					
Base Bid - Site 4					
Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	9		
7	CLSM as Backfill Material	CY	0		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	158		
9	Concrete Surface Restoration	SY	15		
10	Concrete Curb & Gutter Restoration	LF	0		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0		
13	Tree Removal, Disposal, and Replacement	EA	0		
14	Tree and Vegetation Trimming and Disposal	LS	0		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	468		
16	8-inch PVC Waterline	LF	0		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	0		
19	Hydrant Service Lines - DIP Waterline	LF	0		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	2		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	0		
24	Connection to Existing 16-inch Waterline	EA	0		
25	6-inch Direct-Bury Gate Valve	EA	2		
26	8-inch Direct-Bury Gate Valve	EA	0		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	0		
29	Fire Hydrant Assembly	EA	0		
30	2-inch Blowoff Assembly	EA	2		
31	Water Service Line Reactivation	EA	19		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	0		
34	Existing Valve Box Removal	EA	4		
TOTAL (\$)					

City of Thornton 2022 - 2024 Pipeline Rehabilitation Bid Form					
Base Bid - Site 5					
Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	19		
7	CLSM as Backfill Material	CY	5		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	358		
9	Concrete Surface Restoration	SY	40		
10	Concrete Curb & Gutter Restoration	LF	40		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0		
13	Tree Removal, Disposal, and Replacement	EA	0		
14	Tree and Vegetation Trimming and Disposal	LS	0		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	0		
16	8-inch PVC Waterline	LF	972		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	0		
19	Hydrant Service Lines - DIP Waterline	LF	67		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	3		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	0		
24	Connection to Existing 16-inch Waterline	EA	0		
25	6-inch Direct-Bury Gate Valve	EA	0		
26	8-inch Direct-Bury Gate Valve	EA	8		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	0		
29	Fire Hydrant Assembly	EA	2		
30	2-inch Blowoff Assembly	EA	1		
31	Water Service Line Reactivation	EA	29		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	0		
34	Existing Valve Box Removal	EA	5		
				TOTAL (\$)	

City of Thornton 2022 - 2024 Pipeline Rehabilitation Bid Form					
Base Bid - Site 6					
Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	37		
7	CLSM as Backfill Material	CY	0		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	686		
9	Concrete Surface Restoration	SY	37		
10	Concrete Curb & Gutter Restoration	LF	50		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0		
13	Tree Removal, Disposal, and Replacement	EA	0		
14	Tree and Vegetation Trimming and Disposal	LS	0		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	0		
16	8-inch PVC Waterline	LF	1944		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	0		
19	Hydrant Service Lines - DIP Waterline	LF	106		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	2		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	0		
24	Connection to Existing 16-inch Waterline	EA	0		
25	6-inch Direct-Bury Gate Valve	EA	0		
26	8-inch Direct-Bury Gate Valve	EA	4		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	0		
29	Fire Hydrant Assembly	EA	5		
30	2-inch Blowoff Assembly	EA	0		
31	Water Service Line Reactivation	EA	50		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	0		
34	Existing Valve Box Removal	EA	2		
TOTAL (\$)					

City of Thornton 2022 - 2024 Pipeline Rehabilitation Bid Form					
Base Bid - Site 7					
Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	5		
7	CLSM as Backfill Material	CY	0		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	91		
9	Concrete Surface Restoration	SY	0		
10	Concrete Curb & Gutter Restoration	LF	85		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0		
13	Tree Removal, Disposal, and Replacement	EA	0		
14	Tree and Vegetation Trimming and Disposal	LS	0		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	0		
16	8-inch PVC Waterline	LF	0		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	270		
19	Hydrant Service Lines - DIP Waterline	LF	0		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	2		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	0		
24	Connection to Existing 16-inch Waterline	EA	0		
25	6-inch Direct-Bury Gate Valve	EA	0		
26	8-inch Direct-Bury Gate Valve	EA	0		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	2		
29	Fire Hydrant Assembly	EA	0		
30	2-inch Blowoff Assembly	EA	0		
31	Water Service Line Reactivation	EA	0		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	0		
34	Existing Valve Box Removal	EA	1		
TOTAL (\$)					

City of Thornton 2022 - 2024 Pipeline Rehabilitation Bid Form					
Base Bid - Site 8					
Bid Item	Description	Unit	Quantity	Unit Price (\$)	Total Price (\$)
Division 01 General Items					
1	Mobilization and Demobilization	LS	1		
2	Contract Bonds and Insurance	LS	1		
3	Traffic Control	LS	1		
4	Construction Surveying	LS	1		
5	Conformance with Erosion Protection and Sediment Control Plan, Permits and Maintenance	LS	1		
Division 31 Site Work					
6	Trench Stabilization Material	TON	9		
7	CLSM as Backfill Material	CY	0		
Division 32 Exterior Improvements					
8	Asphalt Surface Restoration	TON	161		
9	Concrete Surface Restoration	SY	15		
10	Concrete Curb & Gutter Restoration	LF	350		
11	Payment for Soil, Asphalt, Concrete, and Other Testing	LS	1		
12	Seeding and Surface Restoration	AC	0		
13	Tree Removal, Disposal, and Replacement	EA	0		
14	Tree and Vegetation Trimming and Disposal	LS	0		
Division 33 Utilities					
15	6-inch PVC Waterline	LF	450		
16	8-inch PVC Waterline	LF	0		
17	10-inch PVC Waterline	LF	0		
18	12-inch PVC Waterline	LF	0		
19	Hydrant Service Lines - DIP Waterline	LF	15		
20	Connection to Existing 6-inch Waterline	EA	0		
21	Connection to Existing 8-inch Waterline	EA	0		
22	Connection to Existing 10-inch Waterline	EA	0		
23	Connection to Existing 12-inch Waterline	EA	1		
24	Connection to Existing 16-inch Waterline	EA	0		
25	6-inch Direct-Bury Gate Valve	EA	1		
26	8-inch Direct-Bury Gate Valve	EA	0		
27	10-inch Direct-Bury Gate Valve	EA	0		
28	12-inch Direct-Bury Gate Valve	EA	0		
29	Fire Hydrant Assembly	EA	1		
30	2-inch Blowoff Assembly	EA	1		
31	Water Service Line Reactivation	EA	14		
32	Abandonment of Existing Waterline in Place	LS	1		
33	Abandonment of Existing PRV in Vault	EA	0		
34	Existing Valve Box Removal	EA	1		
TOTAL (\$)					

Certificate Of Completion

Envelope Id: AD7D60A538B24A4CA1D642C335521599	Status: Completed
Subject: Complete with DocuSign: 24-196 ADDEND-One_5-2-2024.docx, 2024 Pipe Rehab - Div 01 (Addendum 1)....	
Source Envelope:	
Document Pages: 58	Signatures: 1
Certificate Pages: 1	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelope Stamping: Enabled	Keith Griess
Time Zone: (UTC-07:00) Mountain Time (US & Canada)	9500 Civic Center Drive
	Thornton, CO 80229
	Keith.Griess@ThorntonCO.gov
	IP Address: 199.117.212.4

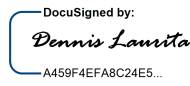
Record Tracking

Status: Original	Holder: Keith Griess	Location: DocuSign
5/2/2024 11:00:14 AM	Keith.Griess@ThorntonCO.gov	

Signer Events

Dennis Laurita
 Dennis.Laurita@thorntonco.gov
 SHI OBO City of Thornton
 Security Level: Email, Account Authentication (None)

Signature

DocuSigned by:

 A459F4EFA8C24E5...
 Signature Adoption: Pre-selected Style
 Using IP Address: 107.77.198.22
 Signed using mobile

Timestamp

Sent: 5/2/2024 11:05:35 AM
 Viewed: 5/2/2024 11:40:34 AM
 Signed: 5/2/2024 11:40:48 AM

Electronic Record and Signature Disclosure:
 Not Offered via DocuSign

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	5/2/2024 11:05:35 AM
Certified Delivered	Security Checked	5/2/2024 11:40:34 AM
Signing Complete	Security Checked	5/2/2024 11:40:48 AM
Completed	Security Checked	5/2/2024 11:40:48 AM
Payment Events	Status	Timestamps