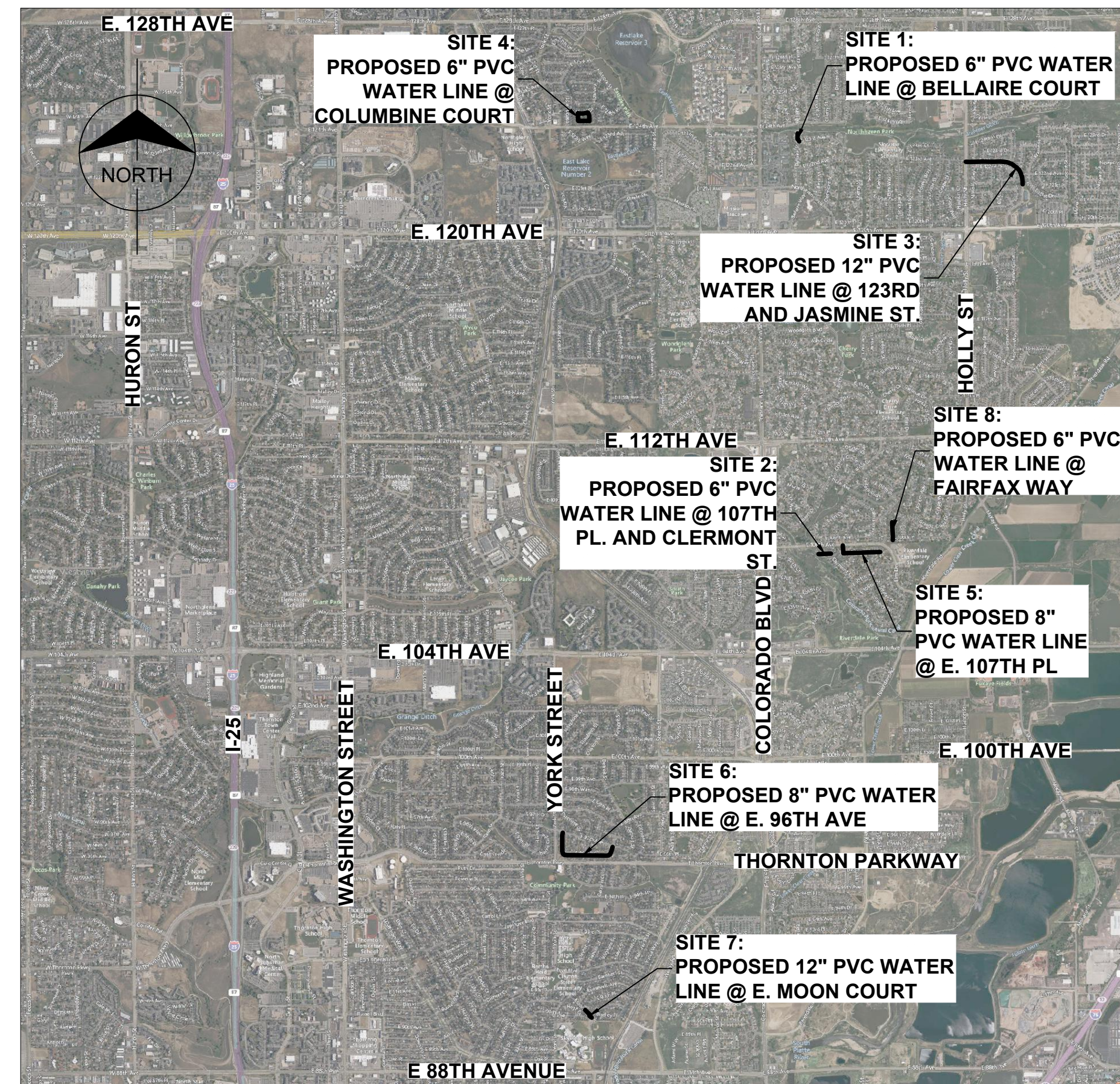




2022-2024 PIPELINE REHABILITATION



PROJECT VICINITY MAP
NOT TO SCALE

ISSUED FOR BID

FEBRUARY 2024
City of Thornton Project No. 24-196
Burns & McDonnell Project No. 154303

KRISTIN SCHWARTZ, P.E. - SENIOR CIVIL ENGINEER, CITY OF THORNTON DATE

JASON PIERCE, P.E. - INFRASTRUCTURE ENGINEERING MANAGER, CITY OF THORNTON DATE

RYAN S. BRONG, P.E. - CIVIL ENGINEER DATE

JOSH REDMAN - UTILITIES OPERATIONS MANAGER, CITY OF THORNTON DATE

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



Cover

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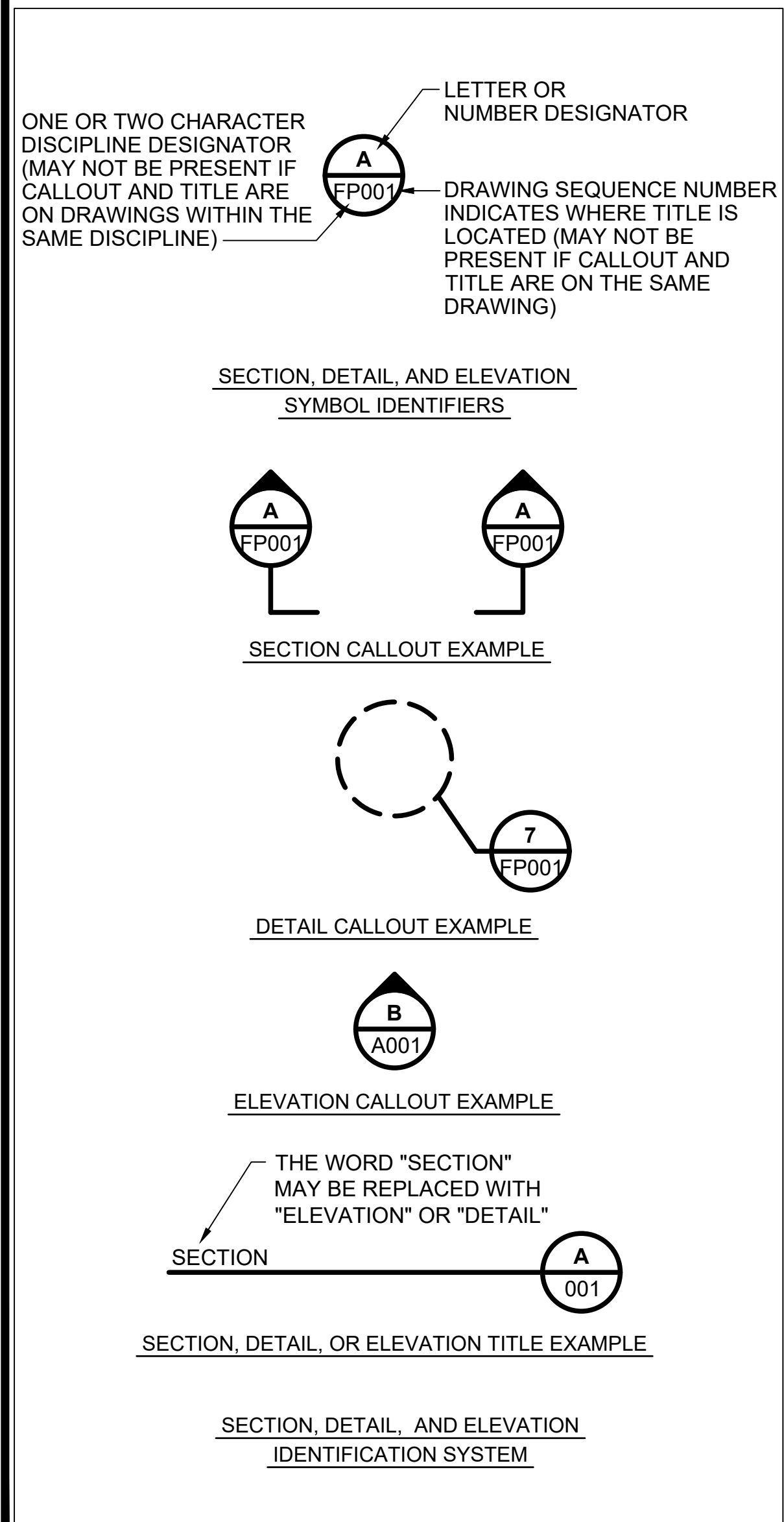


City of Thornton

PIPELINE REHABILITATION PROJECT

PROJECT NO. 24-196

ISSUED FOR BID



GENERAL DRAWINGS		
Sheet Number	Sheet Title	Sheet Description
1	G001	COVER SHEET
2	G002	INDEX AND LEGEND
3	G003	GENERAL NOTES I
4	G004	OVERVIEW MAP & SURVEY CONTROL

CIVIL DRAWINGS		
Sheet Number	Sheet Title	Sheet Description
5	PP001	SITE #1 BELLAIRE COURT STA. 00+00 TO STA. 2+19.01
6	PP002	SITE #2 107TH PLACE & CLERMONT STREET STA. 00+00 TO STA. 3+26.94
7	PP003	SITE #3 123RD AVE & JASMINE STREET STA. 00+00 TO STA. 8+00
8	PP004	SITE #3 123RD AVE & JASMINE STREET STA. 8+00 TO STA. 13+12.50
9	PP005	SITE #4 COLUMBINE COURT STA. 00+00 TO STA. 2+09.21
10	PP006	SITE #4 COLUMBINE COURT STA. 00+00 TO STA. 2+45.84
11	PP007	SITE #5 E. 107TH PLACE STA. 00+00 TO STA. 5+00
12	PP008	SITE #5 E. 107TH PLACE STA. 5+00 TO STA. 9+65.45
13	PP009	SITE #6 96TH WAY STA. 00+00 TO STA. 5+00
14	PP010	SITE #6 96TH WAY STA. 5+00 TO STA. 10+00
15	PP011	SITE #6 96TH WAY STA. 10+00 TO STA. 15+00
16	PP012	SITE #6 96TH WAY STA. 15+00 TO STA. 19.33.10
17	PP013	SITE #7 E. MOON COURT STA. 00+00 TO STA. 2+59.30
18	PP014	SITE #8 FAIRFAX WAY STA. 00+00 TO STA. 4+42.54

DETAIL DRAWINGS		
Sheet Number	Sheet Title	Sheet Description
19	PD001	CIVIL DETAILS I
20	PD002	CIVIL DETAILS II
21	PD003	CIVIL DETAILS III
22	PD004	CIVIL DETAILS IV
23	PD005	ROADWAY DETAILS I
24	PD006	ROADWAY DETAILS II
25	PD007	CONNECTION DETAILS I
26	PD008	CONNECTION DETAILS II
27	PD009	CONNECTION DETAILS III
28	PD010	CONNECTION DETAILS IV
29	PD011	CONNECTION DETAILS V
30	PD012	EROSION AND SEDIMENT CONTROL

EROSION & SEDIMENT CONTROL DRAWINGS		
Sheet Number	Sheet Title	Sheet Description
31	EC-G001	COVER SHEET
32	EC-G002	DRAWING LEGEND AND GENERAL NOTES
33	EC003	SITE #1 STA. 00+00 TO STA. 2+19 SITE #2 STA. 00+00 TO STA. 3+27
34	EC004	SITE #3 STA. 00+00 TO STA. 10+50 SITE #3 STA. 10+50 TO STA. 20+50
35	EC005	SITE #4 STA. 00+00 TO STA. 2+09 SITE #4 STA. 00+00 TO STA. 2+46
36	EC006	SITE #5 STA. 00+00 TO STA. 4+50 SITE #5 STA. 4+50 TO STA. 9+58
37	EC007	SITE #6 STA. 00+00 TO STA. 5+00 SITE #6 STA. 5+00 TO STA. 10+00
38	EC008	SITE #6 STA. 10+00 TO STA. 15+50 SITE #6 STA. 15+50 TO STA. 19+28
39	EC009	SITE #7 STA. 00+00 TO STA. 2+73 SITE #8 STA. 00+00 TO STA. 4+43

LEGEND:

- INDEX CONTOUR (5' INTERVAL)
- INTERMEDIATE CONTOUR (1' INTERVAL)
- SECTION LINE
- PROPERTY LINE
- RIGHT OF WAY
- EXISTING EASEMENT
- FLOWLINE OF DITCH
- CENTER OF DITCH
- EXISTING ROAD CENTERLINE
- EXISTING STORM LINE
- EXISTING SEWER LINE
- EXISTING GAS LINE
- EXISTING TELEPHONE
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRICAL
- EXISTING FIBER OPTIC
- EXISTING BARBED WIRE FENCE
- EXISTING FENCE LINE (OTHER)
- EXISTING IRRIGATION LINES
- EXISTING WATERLINE
- PROPOSED WATERLINE
- PROPOSED PERMANENT EASEMENT
- PROPOSED TEMPORARY EASEMENT
- FLOODPLAIN EXTENTS
- WETLANDS
- PROPOSED PERMANENT FENCE
- PROPOSED LIMITS OF CONSTRUCTION
- TEMPORARY LIVESTOCK FENCE
- W(h) ----- EXISTING WATER LINE (MAPPED)
- G(h) ----- EXISTING GAS LINE (MAPPED)
- ST(h) ----- EXISTING STORM LINE (MAPPED)
- FO(h) ----- EXISTING FIBER OPTIC (MAPPED)
- SS(h) ----- EXISTING SANITARY SEWER LINE (MAPPED)

- SECTION
- PROJECT CONTROL POINT
- PIN
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING LIGHT POLE
- EXISTING ELECTRICAL BOX
- EXISTING WATER MANHOLE
- EXISTING WATER METER
- EXISTING WELL
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM SEWER MANHOLE
- EXISTING UNIDENTIFIED MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING GAS METER
- EXISTING GAS VALVE
- SIGN AS DESIGNATED
- EXISTING TREE DIA. AND DRIP LINE (e.g. D16 15)
- CONTROL POINT
- IRRIGATION VALVE
- GEOTECHNICAL HOLE LOCATION
- TEST HOLE
- BOLLARDS
- GATE VALVE
- CUT OF WALL
- REDUCER
- METER BOX
- BLOWOFF ASSEMBLY
- PROPOSED FIRE HYDRANT
- LIMITS OF CONCRETE REMOVAL AND REPLACEMENT

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



City of Thornton
2022-2024 Pipeline Rehabilitation
Thornton Project No. 24-196
BMCD Project No. 154303

Index

GENERAL NOTES:

- 1. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE; INCLUDING, SAFETY OF PERSONS AND PROPERTY DURING THE PERFORMANCE OF WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CITY CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.
- 2. UNLESS NOTED IN THE CONTRACT DRAWINGS AND SPECS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CITY OF THORNTON'S STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC AND PRIVATE IMPROVEMENTS (LATEST EDITION) AND WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY AUTHORIZED CITY OF THORNTON PERSONNEL.
- 3. THE TYPE, SIZE, LOCATION, AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO DATE OF CONSTRUCTION. FOR INFORMATION CONTACT: UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) - 1-800-922-1987. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY SIZE AND HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING FACILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE CITY / CONSTRUCTION COORDINATOR OF ANY DISCREPANCIES.
- 4. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PROJECT STANDARDS AND SPECIFICATIONS AS WELL AS THE CITY OF THORNTON'S STANDARDS AND SPECIFICATIONS, INCLUDING PARKS, RECREATION, & COMMUNITY PROGRAMS DESIGN STANDARDS NOTED IN SPECIFICATIONS. WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY AUTHORIZED CITY OF THORNTON REPRESENTATIVE.
- 5. ALL TRENCHES SHALL BE ADEQUATELY SUPPORTED AND THE SAFETY OF WORKERS PROVIDED FOR AS REQUIRED BY THE MOST RECENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION." THESE REGULATIONS ARE DESCRIBED IN SUBPART P, PART 1926 OF THE CODE OF FEDERAL REGULATIONS. SHEETING AND SHORING SHALL BE UTILIZED WHERE NECESSARY TO PREVENT ANY EXCESSIVE WIDENING OR SLOUGHING OF THE TRENCH WHICH MAY BE DETRIMENTAL TO HUMAN SAFETY, TO THE PIPE BEING PLACED, TO TREES, OR TO ANY EXISTING STRUCTURE WHERE EXCAVATIONS ARE MADE UNDER SEVERE WATER CONDITIONS. THE CONTRACTOR MAY BE REQUIRED TO USE AN ENGINEER APPROVED PILING INSTEAD OF SHEETING AND SHORING.
- 6. THE CONTRACTOR SHALL FURNISH THE ENGINEER THE "AS CONSTRUCTED" LOCATIONS OF FACILITIES INSTALLED, BY A COLORADO LICENSED PLS. SEE SPECIFICATIONS SECTION 01 12 00 FOR ADDITIONAL SURVEYING AND AS-BUILT REQUIREMENTS.
- 7. IN ADDITION TO INSTALLATION OF TRACKING PAD BMP, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AFFECTED PUBLIC STREETS OF MUD OR DEBRIS DUE TO CONSTRUCTION ACTIVITY INITIATED BY SAID CONTRACTOR ON A DAILY BASIS OR AS OTHERWISE DIRECTED BY AUTHORIZED CITY REPRESENTATIVE.
- 8. AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE BEGINNING OF WORK, A PRECONSTRUCTION CONFERENCE SHALL BE HELD BETWEEN THE CITY AND THE CONTRACTOR WHO IS SCHEDULED TO PERFORM THE WORK, CONSTRUCTION COORDINATOR, THE CONSULTING ENGINEER, CONSTRUCTION COORDINATOR AND ANY OTHER ENTITIES INVOLVED IN THE CONSTRUCTION.
- 9. THE MATERIALS USED IN PROJECTS SHALL BE NEW AND SUBJECT TO THE INSPECTION AND APPROVAL OF THE INSPECTOR AT ALL TIMES. THE INSPECTOR HAS THE RIGHT TO PERFORM ANY TESTING DEEMED NECESSARY TO ENSURE COMPLIANCE OF THE MATERIAL WITH THESE STANDARDS. NO MATERIAL SHALL BE USED BEFORE BEING INSPECTED AND APPROVED BY THE INSPECTOR. FAILURE OR NEGLECT ON THE PART OF THE INSPECTOR TO CONDEMN OR REJECT INFERIOR MATERIALS OR WORK SHALL NOT BE CONSTRUED TO IMPLY THEIR ACCEPTANCE SHOULD THEIR INFERIORITY BECOME EVIDENT AT ANY TIME PRIOR TO FINAL ACCEPTANCE OF THE WORK. INSPECTORS HAVE THE AUTHORITY TO REJECT DEFECTIVE OR INFERIOR MATERIALS AND/OR DEFECTIVE WORKMANSHIP AND TO SUSPEND WORK UNTIL SUCH TIME AS THE RESPONSIBLE PARTY SHALL CORRECT THE DISCREPANCIES IN QUESTION.
- 10. WHENEVER DEFECTIVE MATERIALS AND WORK ARE REJECTED, THE CONTRACTOR SHALL PROMPTLY REMOVE SUCH DEFECTIVE MATERIALS AND CONSTRUCTION FROM THE JOB SITE AND REPLACE ALL DEFECTIVE PORTIONS TO THE SATISFACTION OF ENGINEER. IN THE EVENT THE RESPONSIBLE PARTY FAILS TO REMOVE REJECTED ITEMS FROM THE JOB SITE WITHIN ONE (1) WEEK, ENGINEER MAY ARRANGE FOR SUCH REMOVAL AT THE EXPENSE OF THE RESPONSIBLE PARTY.
- 11. INSPECTION AND/OR OBSERVATION SHALL NOT RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK STRICTLY IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR ANY MODIFICATIONS THEREOF. WORK NOT SO CONSTRUCTED SHALL BE REMOVED AND CORRECTED BY THE RESPONSIBLE PARTY AT THEIR SOLE EXPENSE, WHENEVER SO ORDERED BY ENGINEER, WITHOUT REFERENCE TO ANY PREVIOUS ERROR OR OVERSIGHT IN INSPECTION.
- 12. EXCEPT IN CASES OF EMERGENCY, MAINTENANCE, OR PROTECTION OF WORK ALREADY COMPLETED, NO WORK SHALL BE ALLOWED BETWEEN THE HOURS OF 8:00 AM AND 5:00 PM ON SATURDAY, SUNDAY, OR LEGAL HOLIDAYS UNLESS APPROVED BY THE CITY OF THORNTON, CONSTRUCTION COORDINATOR AND ADAMS COUNTY IN EACH CASE. WHEN ANY INSPECTOR IS REQUIRED TO WORK OUTSIDE THE HOURS OF 8:00 AM TO 5:00 PM ON REGULAR CITY OF THORNTON BUSINESS DAYS, OVERTIME SHALL BE CHARGED TO THE RESPONSIBLE PARTY. HOWEVER, SUCH INSPECTORS SHALL REMAIN EMPLOYEES OF THE CITY OF THORNTON FOR ALL PURPOSES. REQUESTS FOR OVERTIME SHALL BE MADE TO ENGINEER AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE. PAYMENT FOR SUCH OVERTIME WORK SHALL BE MADE TO THE CITY OF THORNTON PRIOR TO FINAL ACCEPTANCE.
- 13. THE WORK SHALL BE SURVEYED AND STAKED UNDER THE SUPERVISION OF A COLORADO LICENSED LAND SURVEYOR (PLS) IN ACCORDANCE WITH THE APPROVED CONTRACT DRAWINGS.
- 14. COMPACTION OF ALL TRENCHES MUST BE ATTAINED TO CONTRACT SPECIFICATIONS AND COMPACTION TEST RESULTS SUBMITTED TO THE ENGINEER AND THE CITY OF THORNTON FOR ACCEPTANCE.
- 15. ALL WORK, INCLUDING CORRECTION WORK, SHALL BE INSPECTED BY A CITY REPRESENTATIVE WHO SHALL HAVE THE AUTHORITY TO HALT CONSTRUCTION WHEN STANDARD CONSTRUCTION PRACTICES ARE NOT BEING ADHERED TO.

- 16. ALL SITE GRADING (EXCAVATION, EMBANKMENT, AND COMPACTION) SHALL CONFORM TO THE RECOMMENDATIONS OF THE LATEST SOILS INVESTIGATION FOR THIS PROJECT AND SHALL FURTHER BE IN CONFORMANCE WITH THE CONTRACT SPECIFICATIONS. A COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES SHALL BE OBTAINED PRIOR TO ANY GRADING BEING PERFORMED ON SITES ONE (1) ACRE OR LARGER IN SIZE. THESE PERMITS CAN BE OBTAINED FROM THE STATE WATER QUALITY CONTROL DIVISION.
- 17. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
- 18. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROPER MEASURES TAKEN TO CONTROL EROSION AND SEDIMENT MOVEMENT.
- 19. AT ALL TIMES, THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND-CAUSED EROSION AND TO INSURE THE HEALTH OF EXISTING VEGETATION. EARTHWORK OPERATIONS SHALL BE DISCONTINUED WHEN DUST SIGNIFICANTLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE CONTRACTOR SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.
- 20. PERMANENT SLOPES SHALL NOT EXCEED 4:1 (H:V) IN AREAS TO BE SEEDED OR SODDED.
- 21. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED BY THE SPECIFIC LANDOWNER AND THEIR AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE PROPOSED EROSION CONTROL MEASURES DO NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS EROSION CONTROL PLAN AND THE OBLIGATION OF THE CONTRACTOR SHALL RUN WITH THE LAND UNTIL SUCH TIME AS THE EROSION CONTROL PLAN IS PROPERLY COMPLETED, OFFICIALLY MODIFIED, OR VOIDED.
- 22. THERE SHALL BE A MINIMUM OF FOUR AND ONE-HALF (4.5) FEET OF COVER FROM FINISHED GRADE TO THE TOP OF WATER LINES EXCEPT WHERE DEEPER INSTALLATIONS ARE REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER THE LAND.
- 23. BEDDING AND BACKFILL MATERIALS FOR THE WATER LINES SHALL CONFORM TO THE CONTRACT SPECIFICATIONS.
- 24. RIM ELEVATIONS OF MANHOLES AND VAULTS SHOWN ON THE PLAN AND PROFILE SHEETS ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE PIPELINE CONTRACTOR SHALL FIELD VERIFY RIM ELEVATIONS AND WHERE POSSIBLE ALLOW APPROXIMATELY THE TOP ONE (1) FOOT OF RIM ELEVATION TO BE ADJUSTED EITHER UP OR DOWN IN ORDER TO MATCH FINISHED GRADE OR FINAL PAVEMENT ELEVATION(S). THE MAXIMUM ADJUSTMENT TO FINAL GRADE OR FINAL PAVEMENT ELEVATION(S) IS TWELVE (12) INCHES WITH CONCRETE RINGS.
- 25. DURING CONSTRUCTION, CARE MUST BE TAKEN TO AVOID ANY GROUNDWATER, STORM WATER, CONSTRUCTION DEBRIS, SOIL, OR ANY OTHER FOREIGN MATERIALS FROM ENTERING ANY ACTIVE STORM SEWER.
- 26. CONTRACTOR SHALL MAINTAIN EROSION AND WATER CONTROL MEASURES TO PROTECT THE PROJECT SITE, PUBLIC RIGHT-OF-WAY (ROW), AND PRIVATE PROPERTY, AND SHALL PREVENT SEDIMENT POLLUTION OF ADJACENT WATER COURSES AND PROPERTIES. CONTRACTOR SHALL FOLLOW ALL PERMITS, AS WELL AS LOCAL, STATE, AND FEDERAL CODES.
- 27. ALL DEWATERING ASSOCIATED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE STATE OF COLORADO PERMITTING PROCESS FOR "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY." FOR INFORMATION, PLEASE CDPHE'S WATER QUALITY CONTROL DIVISION.
- 28. AFTER ANY OVERLAY OF AN EXISTING ROADWAY, WHERE UTILITIES ARE PRESENT, THE CONTRACTOR SHALL OPEN ALL MANHOLES AND VALVE BOXES FOLLOWING THE PAVING OPERATION TO ENSURE THAT MANHOLE AND VALVES WERE NOT PAVED OVER NOR FILLED WITH ASPHALT.
- 29. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BY THE CITY OF THORNTON'S CONSTRUCTION COORDINATOR OR JURISDICTIONAL AUTHORITY'S REPRESENTATIVE BEFORE ANY CUTS ARE MADE. PATCHING AND PAVEMENT RESTORATION SHALL BE DONE IN CONFORMANCE WITH THE MAINTAINING AUTHORITY'S STANDARDS AND SPECIFICATIONS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE. IN STREETS WHERE MORE THAN ONE CUT IS MADE, AN OVERLAY OF THE TRAVEL LANE(S) WIDTH, INCLUDING THE PATCHED AREAS, MAY BE REQUIRED. THE DETERMINATION OF NEED FOR A COMPLETE OVERLAY SHALL BE MADE BY THE CITY OF THORNTON.
- 30. PAVING AND FLATWORK SHALL NOT START UNTIL AN ASPHALT MIX DESIGN HAS BEEN SUBMITTED AND APPROVED BY THE ENGINEER AND SUBGRADE COMPACTION TEST AND PROOFROLL HAVE BEEN PERFORMED AND THE RESULTS HAVE MET WITH THE APPROVAL OF THE MAINTAINING AUTHORITY.
- 31. ALL DAMAGED EXISTING CURB, GUTTER, AND SIDEWALK SHALL BE REPLACED PRIOR TO ACCEPTANCE OF COMPLETED IMPROVEMENTS.
- 32. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN PROPER TRAFFIC CONTROL DEVICES UNTIL THE SITE IS OPEN TO TRAFFIC. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN (TCP) TO THE LOCAL AUTHORITIES, JURISDICTIONS, AND THE CITY OF THORNTON FOR APPROVAL PRIOR TO CONSTRUCTION. ALL SIGNS, STRIPING, AND CONTROL DEVICES SHALL CONFORM TO, AND PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, AND COLORADO DEPARTMENT OF TRANSPORTATION'S (CDOT) M&S STANDARDS, LATEST EDITION.
- 33. REPAIR OF ANY DAMAGE TO EXISTING IMPROVEMENTS OR LANDSCAPING IS THE RESPONSIBILITY OF THE CONTRACTOR TO FULL SATISFACTION OF THE LANDOWNER AT NO ADDITIONAL COST. THE CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION.
- 34. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE APPROPRIATE ENTITIES, INCLUDING, BUT NOT LIMITED TO, ADAMS COUNTY, SPECIAL UTILITY DISTRICTS AND FIRE, POLICE, AND SCHOOL DISTRICTS, OF ALL STREET CLOSINGS AND SERVICE INTERRUPTIONS AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO THE INITIATION OF THE INTERRUPTION.

- 35. ANY MONUMENT SET FOR THE PURPOSE OF LOCATING OR PRESERVING THE LINES OF ANY STREET OR PROPERTY SUBDIVISION, OR A PRECISE SURVEY REFERENCE POINT OR PERMANENT SURVEY BENCHMARK, SHALL NOT BE REMOVED OR DISTURBED OR CAUSED TO BE REMOVED OR DISTURBED WITHOUT FIRST OBTAINING PERMISSION IN WRITING FROM THE LOCAL AUTHORITY TO DO SO. CONTRACTOR SHALL PAY ALL EXPENSES INCIDENT TO THE PROPER REPLACEMENT OF SUCH MONUMENT.
- 36. THE CONSTRUCTION WORK SHALL BE PERFORMED AND CONDUCTED SO AS NOT TO INTERFERE WITH ACCESS TO FIRE HYDRANTS, FIRE STATIONS, FIRE ESCAPES, WATER GATES, UNDERGROUND VAULTS, VALVE HOUSING STRUCTURES AND ANY OTHER VITAL EQUIPMENT AS MAY BE DESIGNATED BY THE LOCAL JURISDICTIONS.
- 37. NOTIFY OWNERS OF ADJACENT PROPERTY AND UTILITIES WHEN PROSECUTION OF THE WORK MAY AFFECT THEM AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO THE EXPECTED DISTURBANCE.



XCEL ENERGY GENERAL NOTES

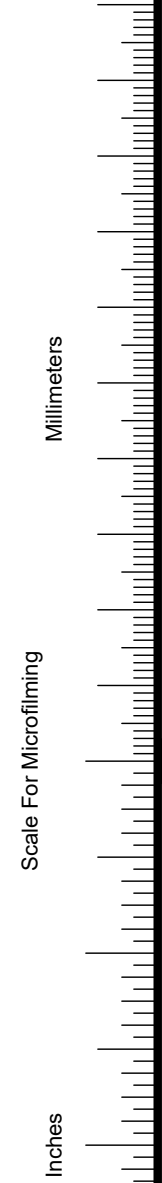
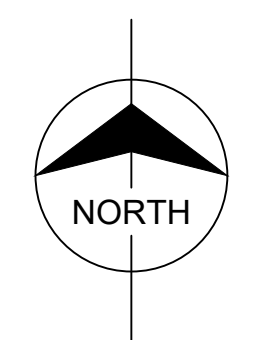
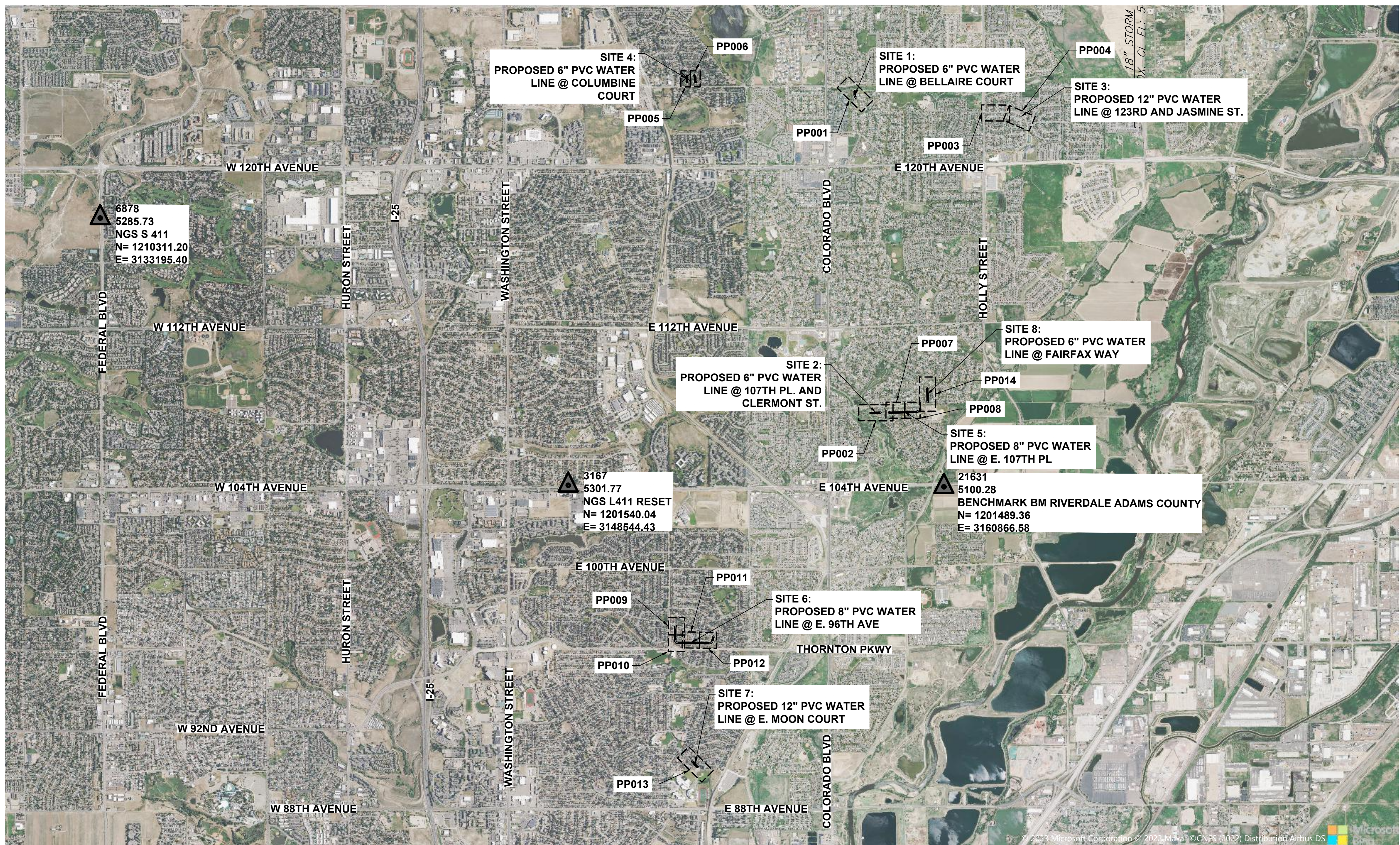
- 1. CONTRACTOR SHALL NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) 1-800-922-1987 (811 WHEN CALLING WITHIN COLORADO) FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION AROUND PUBLIC SERVICE COMPANY OF COLORADO (PSCO/XCEL) UTILITIES.
- 2. A PSCO FIELD OPERATOR MUST BE ON SITE DURING TESTHOLING, EXCAVATION, SITE GRADING, BACKFILL OPERATIONS, COMPACTION, AND INSTALLATION OF PROPOSED WORK WITHIN THE PSCO EASEMENTS AND/OR WITHIN A MINIMUM OF FIFTEEN (15) FEET FROM THE OUTER LIMITS OF THE LOCATE MARKS FOR THE PSCO POWER LINE(S).
- 3. CONTRACTOR SHALL MAINTAIN A MINIMUM SIX (6) FEET CLEARANCE FROM UNDERGROUND ELECTRIC LINES AND TWENTY (20) FEET FROM OVERHEAD ELECTRIC LINE(S) WHEN CONSTRUCTING IN PARALLEL.

REGIONAL/LOCAL FIRE DEPARTMENT NOTES:

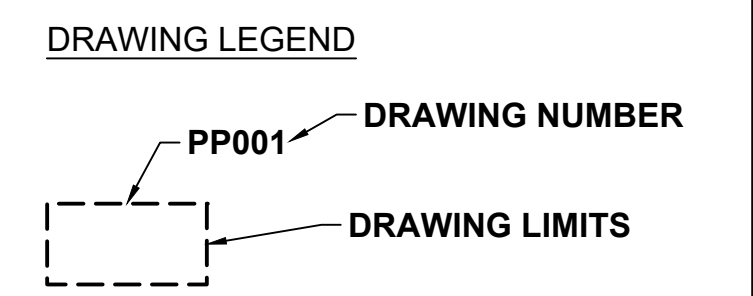
- 1. CONTRACTOR SHALL NOTIFY ALL AFFECTED REGIONAL AND LOCAL FIRE DEPARTMENTS OF FULL OR PARTIAL LANE CLOSURES FOR ALL ROAD(S) IMPACTED.
- 2. ACCESS ON AFFECTED ROADWAYS SHALL BE CAPABLE OF SUPPORTING FORTY (40) TONS DURING CONSTRUCTION TO FACILITATE EMERGENCY RESPONSE.
- 3. CODE COMPLIANT ACCESS TO ALL PARTS OF THE PIPELINE INSTALLATION ACTIVITIES SHALL BE CLEARLY IDENTIFIED IN THE EMERGENCY OPERATIONAL PLAN PREPARED BY THE CONTRACTOR. PLAN SHALL BE PROVIDED TO AFFECTED FIRE DISTRICTS.
- 4. NO ON-SITE FUEL STORAGE SHALL BE PERMITTED. FUELING OPERATIONS SHALL COMPLY WITH THE CURRENT FIRE CODE.

Scale For Microfining
Millimeters
Inches

no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID
<p>PRELIMINARY- NOT FOR CONSTRUCTION</p>  <p>9191 SOUTH JAMAICA STREET, ENGLEWOOD, COLORADO 80112 303-721-9292</p>				
date		detailed		
FEBRUARY 2024		V. PONCE		
designed		checked		
R. BRONG		K. LEBRASSE		
				
<p>CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION</p> <p>GENERAL NOTES I</p>				
project		contract		
154303				
drawing		rev.		
G003		0		
sheet		of sheets		
3		39		
file 154303_G003.dwg				



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



VERTICAL DATUM:
NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) & GEIOD18.
NGS BENCHMARKS:

S 411
ELEV=5285.73'

L411 RESET
ELEV=5301.77'

HORIZONTAL DATUM:
COLORADO STATE PLANE COORDINATES NAD 83(2011) DATUM. (NAD83 COLORADO STATE PLANES, NORTH ZONE, US FOOT - CODE: C083-NF)
HORIZONTAL CONTROL BASED UPON TRIMBLE VRS NOW NETWORK.

- NOTE:**
- THIS DRAWING IS AT COLORADO STATE PLANE COORDINATES (UNSCALED).
 - ALL PROPERTY PINS, INTERSECTION MONUMENTS, AND SECTION CORNERS DISTURBED DURING CONSTRUCTION MUST BE REFERENCED AND REPLACED UNDER THE SUPERVISION OF A LICENSED SURVEYOR.
 - TO OBTAIN ALL THE INFORMATION THAT IS AVAILABLE IN THIS DRAWING, ALL OF THE AUTOCAD LAYERS MUST BE TURNED ON AND THAWED.
 - THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
 - ALL PROJECT CONTROL LISTED HEREON IS PROVIDED AS A COURTESY. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THE ACCURACY OF THE COORDINATES AND ELEVATIONS SHOWN PRIOR TO USING THEM FOR ANY PURPOSES.

NOTICE
ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON. (13-80-105 C.R.S. 2012)

ABBREVIATIONS

ASSY	ASSEMBLY	GNSS	GLOBAL NAVIGATION SATELLITE SYSTEMS	PL	PLACE
AVE	AVENUE	HGL	HYDRAULIC GRADE LINE	PROP	PROPOSED
BFV	BUTTERFLY VALVE	HSP	HIGH SERVICE PUMP	PS	PIPE SUPPORT
BLVD	BOULEVARD	HWL	HIGH WATER LEVEL	PV	PLUG VALVE
BMP	BEST MANAGEMENT PRACTICES	ID	INNER DIAMETER	PVC	POLYVINYL CHLORIDE
BV	BALL VALVE	IE	INVERT ELEVATION	PVI	POINT OF VERTICAL INFLECTION
BW	BUTT WELD	INST	INSTALL	PW	POTABLE WATER
CAV	COMBINATION AIR VALVE	INSTL	INSTALLATION	RD	ROAD
CI	CAST IRON	INV	INVERT	RED	REDUCER
CLSM	CONTROLLED LOW STRENGTH MATERIAL (FLOWABLE FILL)	LAT	LATITUDE	ROW	RIGHT OF WAY
CO	CLEANOUT	LCC	LOWER CLEAR CREEK DITCH	RT	RIGHT
COAG	COLORADO AGRICULTURAL DITCH	LF	LINEAR FOOT	RTD	REGIONAL TRANSPORTATION DISTRICT
CP	CONTROL POINT	LONG	LONGITUDE	R/W	RIGHT OF WAY
DIA/Ø	DIAMETER	LT	LEFT	RW	RAW WATER LINE
DIP	DUCTILE IRON PIPE	LW	LAP WELD	SAN	SANITARY SEWER
DR	DRIVE	LT	LEFT	SCH	SCHEDULE
DWG	DRAWING	LWL	LOWER WATER LEVEL	SPCS	STATE PLANE COORDINATE SYSTEMS
E.F.	EACH FACE	MAX	MAXIMUM	SQ	SQUARE
EL	ELEVATION	MG	MILLION GALLONS	SST	STAINLESS STEEL
EOP	EDGE OF PAVEMENT	MGD	MILLION GALLONS PER DAY	ST	STREET
E.W.	EACH WAY	MIN	MINIMUM	STA	STATION
EXIST	EXISTING	MW	MONITORING WELL	STL	STEEL
FCA	FLANGED COUPLING ADAPTER	NAD	NORTH AMERICAN DATUM	SWLK	SIDEWALK
FIK	FLANGE INSULATING KIT	NAVD	NORTH AMERICAN VERTICAL DATUM	TBD	TO BE DETERMINED
FIR	FOR INTERNAL REVIEW	NG	NATURAL GAS	TBR	TO BE REMOVED
FL	FLOW LINE	NIC	NOT IN CONTRACT	TBX	TELEPHONE BOX
FLG	FLANGE(D)	No.	NUMBER	TEMP	TEMPORARY
FM	FORCE MAIN	OC	ON CENTER	TOW	TOP OF WALL
FO	FIBER OPTIC	OE	OVERHEAD ELECTRIC	TWTS	TRACER WIRE TEST STATION
FOR	FOR OFFICE REVIEW	OVE	OVERHEAD ELECTRIC	UGE	UNDERGROUND ELECTRIC
FRP	FIBERGLASS REINFORCED PLASTIC	OVF	OVERFLOW	UGT	UNDERGROUND TELEPHONE
FT	FOOT	PI	POINT OF INFLECTION	UNK	UNKNOWN
		PKWY	PARKWAY	VAC	VACUUM
				W	WATER SUPPLY LINE

PRELIMINARY- NOT FOR CONSTRUCTION



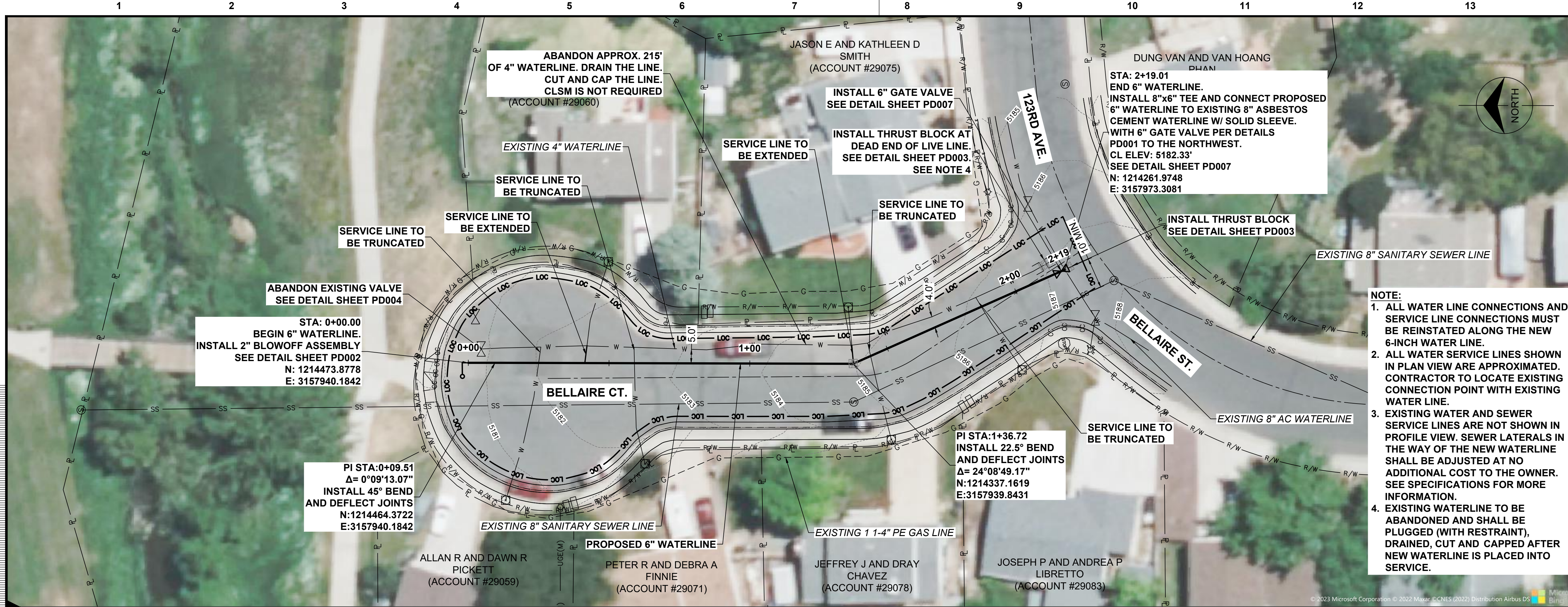
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

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



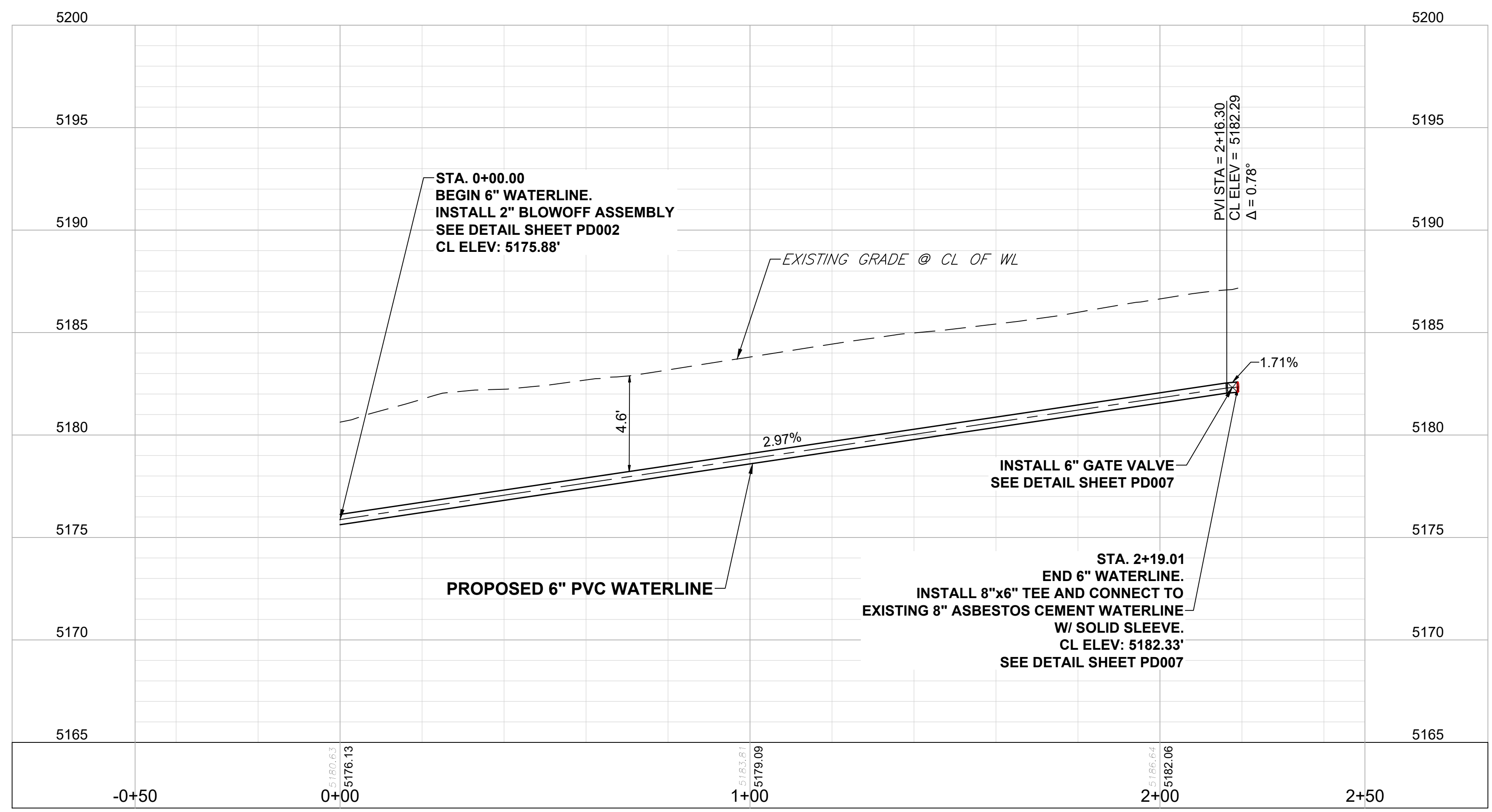
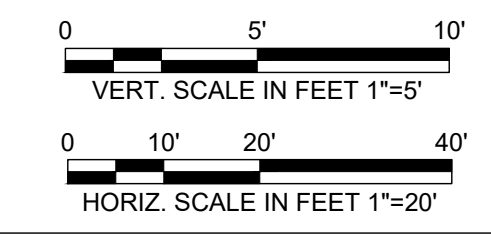
CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
OVERVIEW MAP &
SURVEY CONTROL

project	154303	contract	
drawing	G004	rev.	0
sheet	4	of	39 sheets
file	154303_G004.dwg		



NOTE:

- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 6-INCH 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.
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no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID

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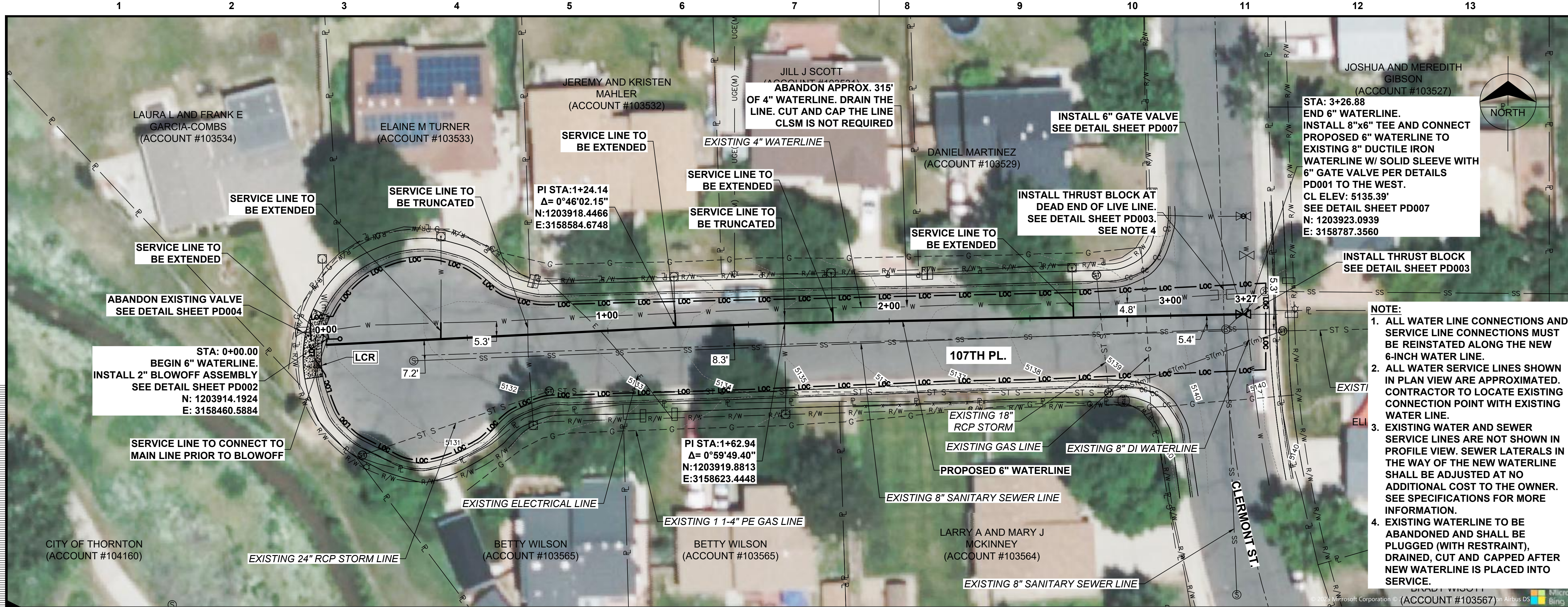
9191 SOUTH JAMAICA STREET, ENGLEWOOD, COLORADO 80112 303-721-9292

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

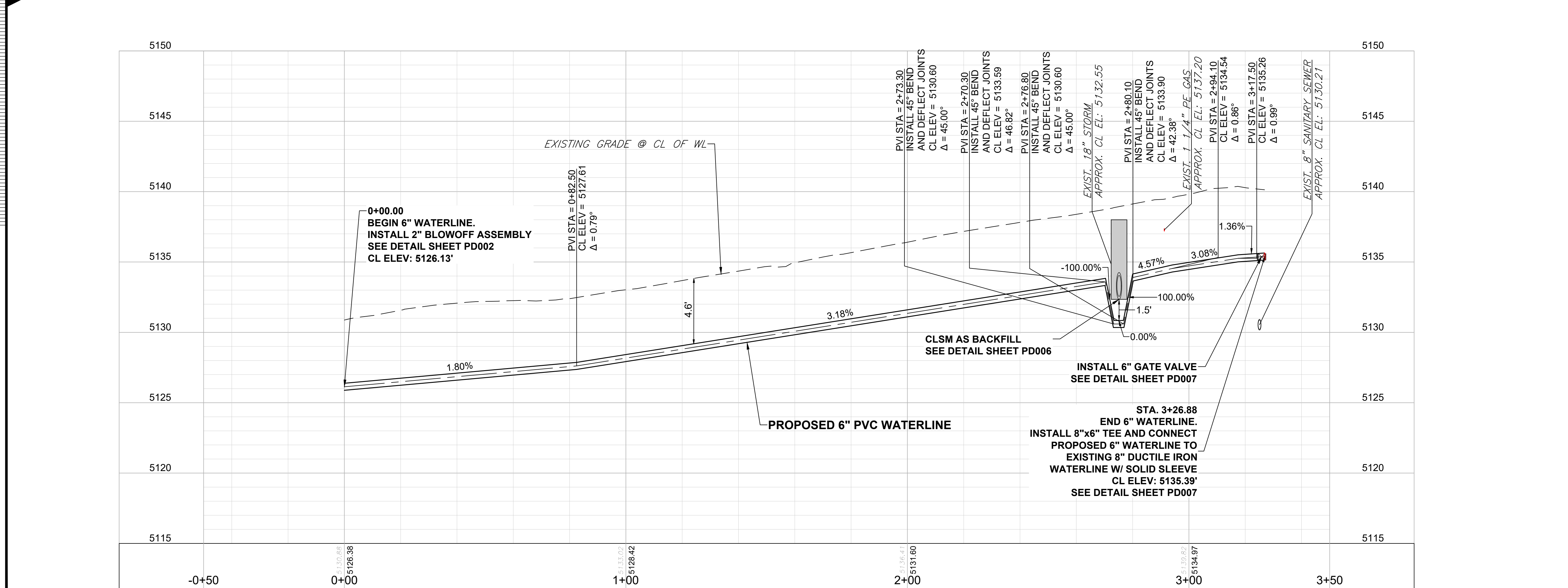
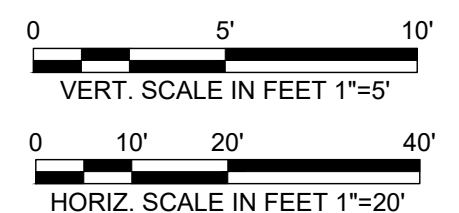


CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
SITE #1 BELLAIRE COURT
STA. 00+00 TO 2+19.01

project	154303	contract	
drawing	PP001	rev.	0
sheet	5	of	39 sheets
file	154303_PP001_SITE 1.dwg		



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



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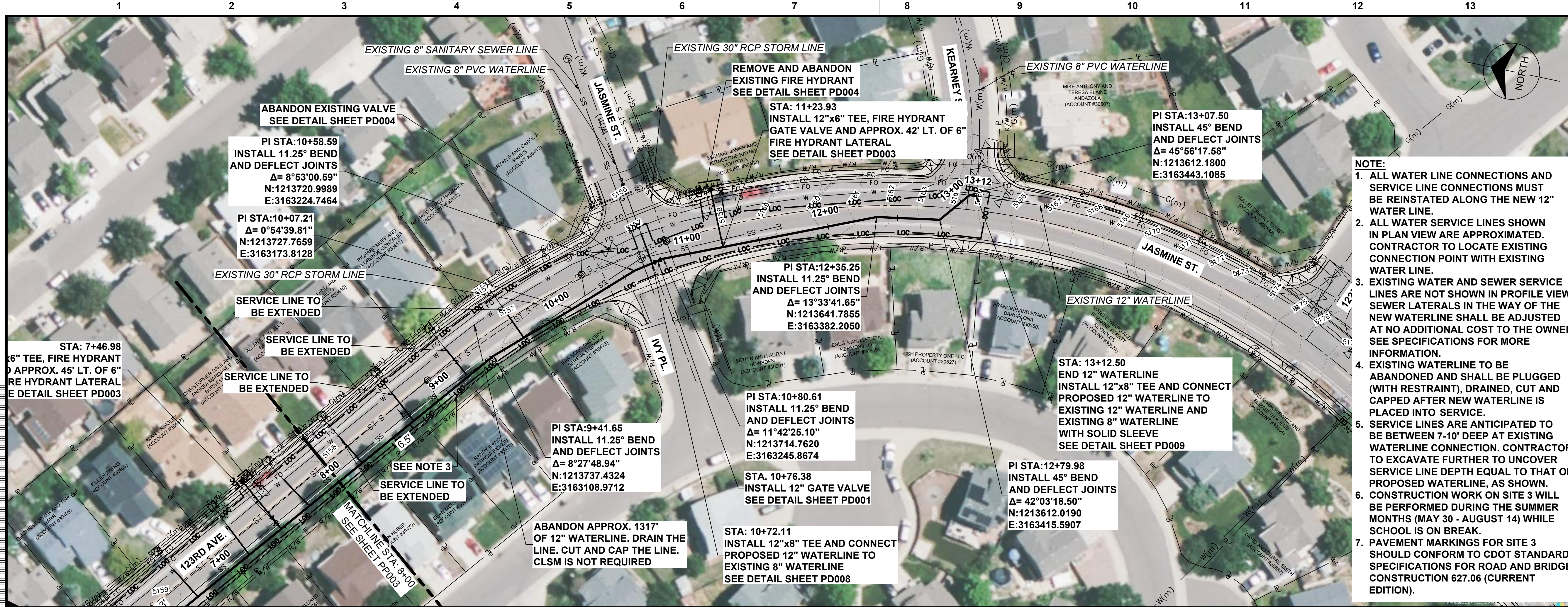


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date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE

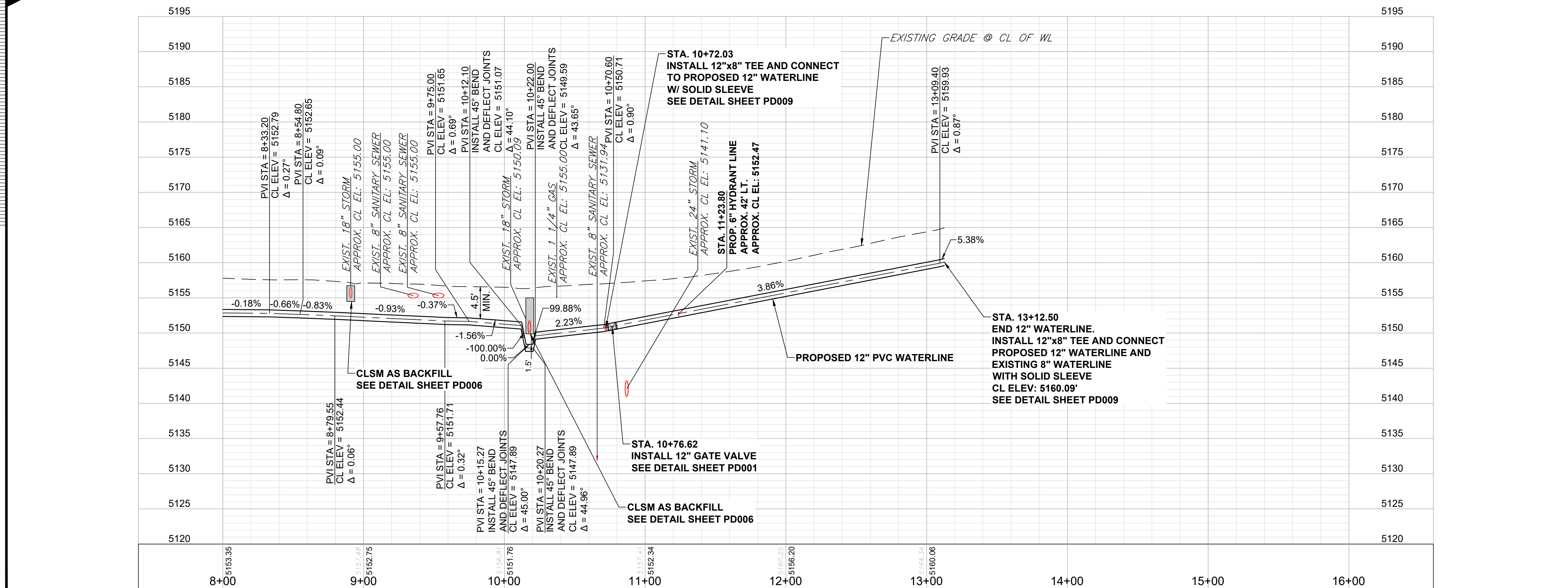
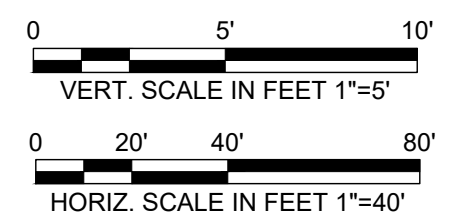


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #2 107TH PLACE & CLERMONT STREET STA. 00+00 TO 3+26.94	
project	contract
154303	
drawing	rev.
PP002	0
sheet 6 of 39 sheets	file 154303_PP002_SITE 2.dwg



- 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. 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.
 6. CONSTRUCTION WORK ON SITE 3 WILL BE PERFORMED DURING THE SUMMER MONTHS (MAY 30 - AUGUST 14) WHILE SCHOOL IS ON BREAK.
 7. 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



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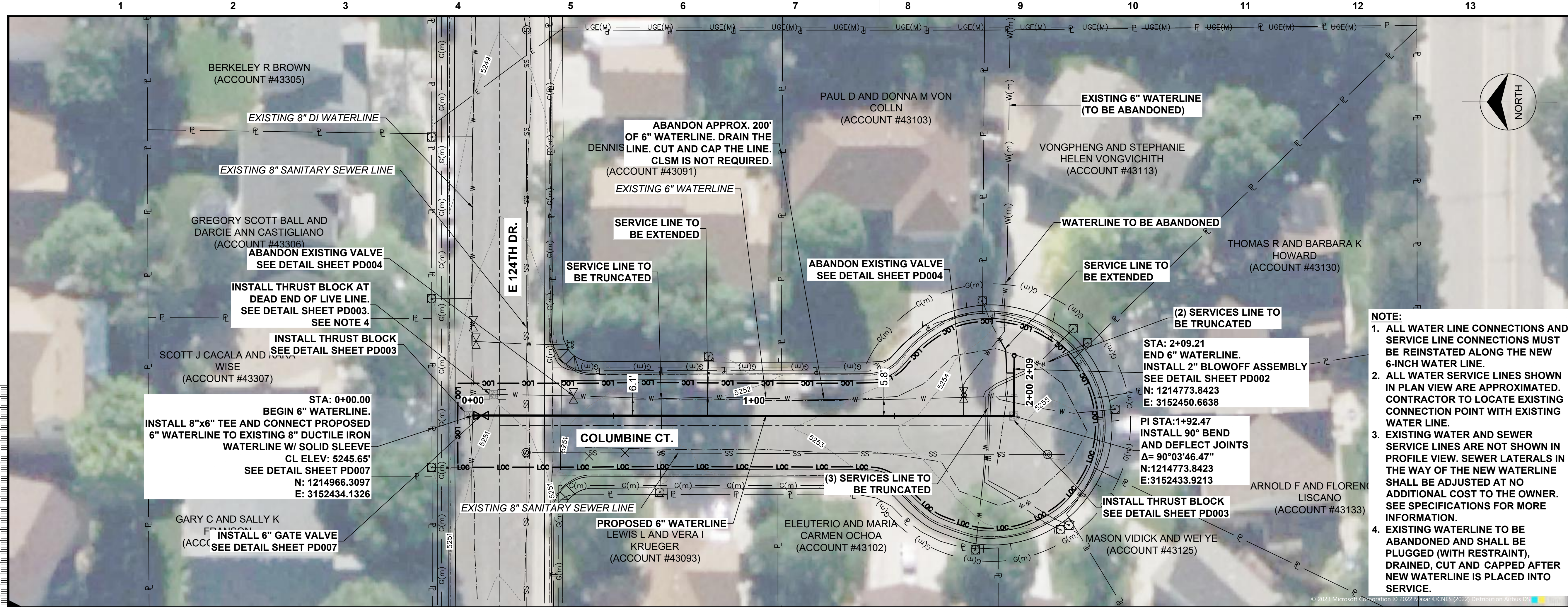
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303-721-9292

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

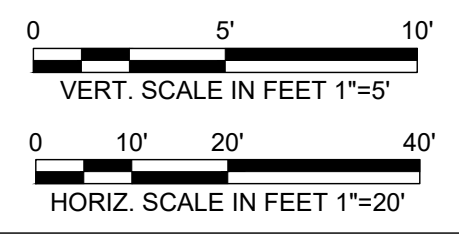
project 154303	contract
drawing PP004	rev. 0
sheet 8	of 39
file 154303_PP004_SITE 3.dwg	sheets



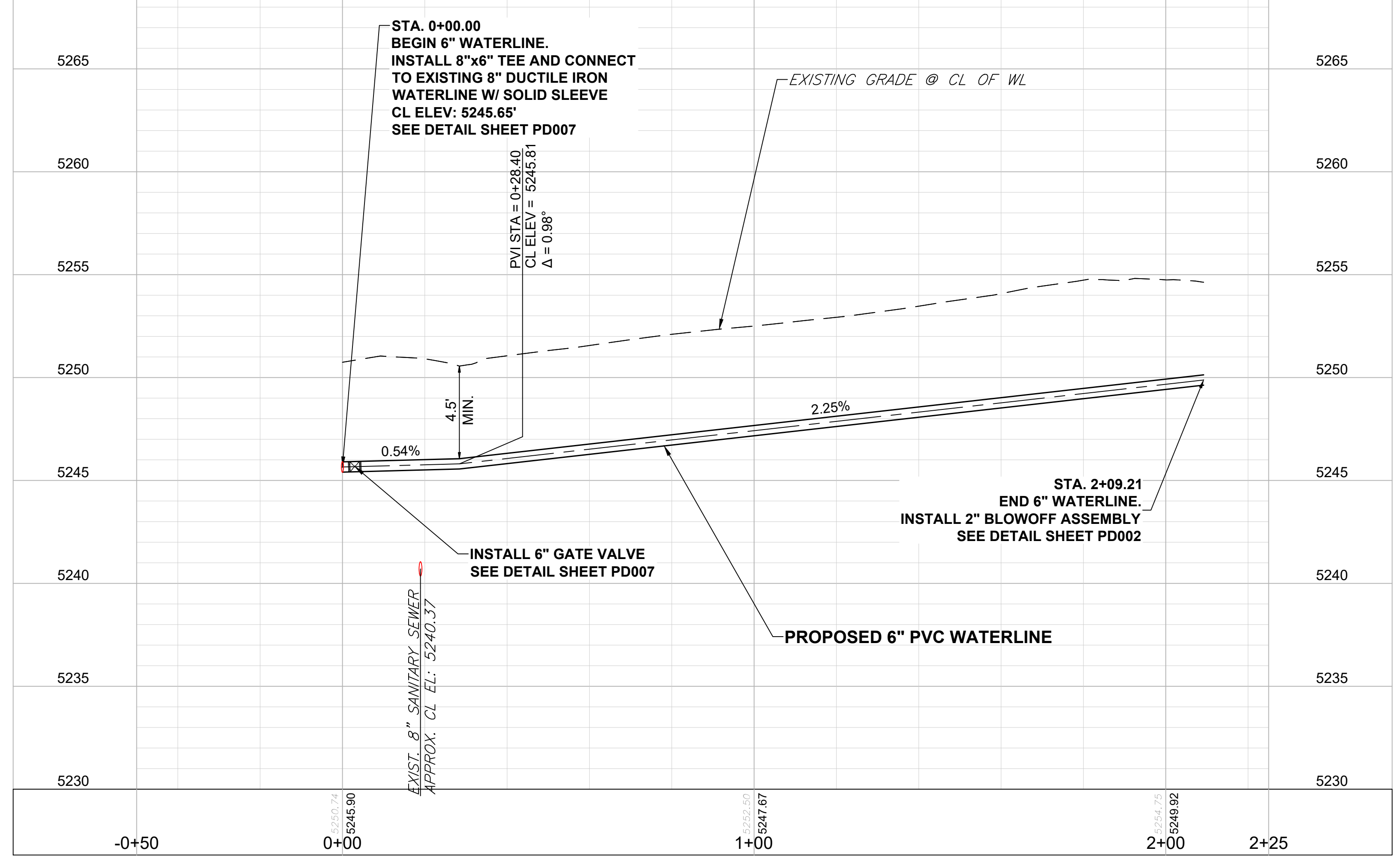
no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID



- 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.
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Scale For Microfitting
Millimeters
Inches



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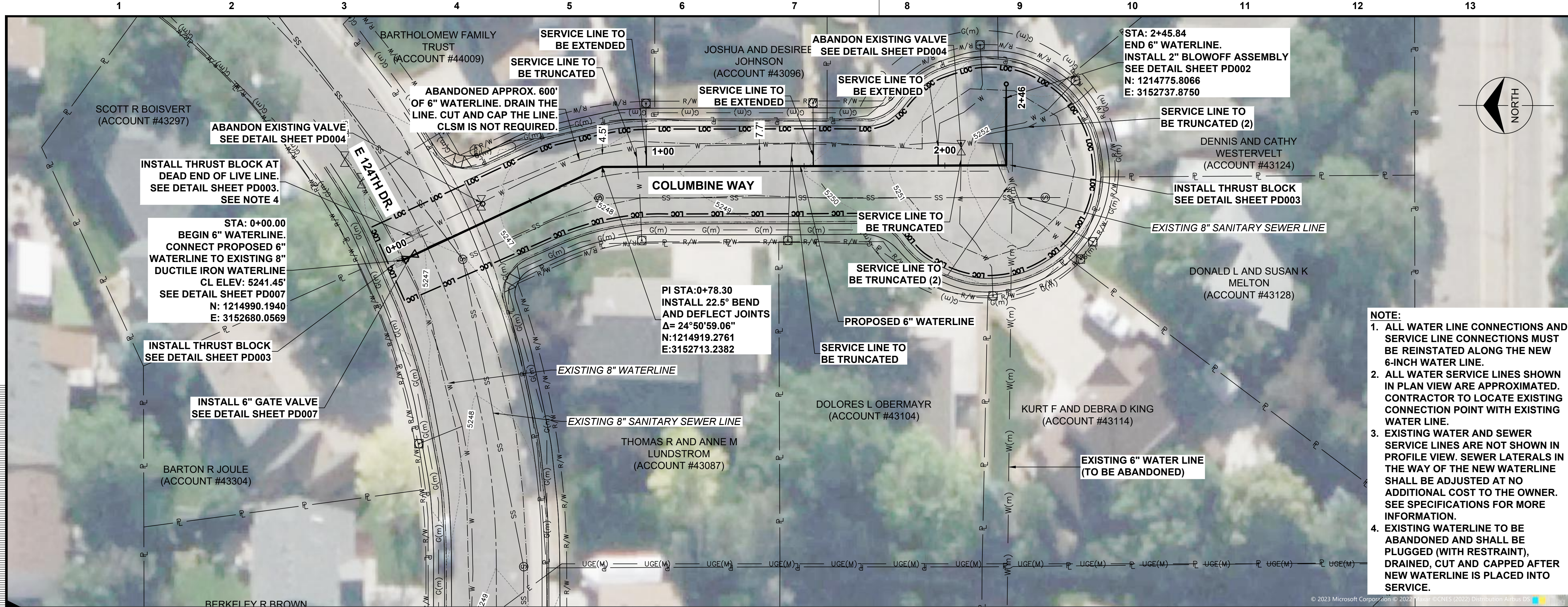
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

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



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

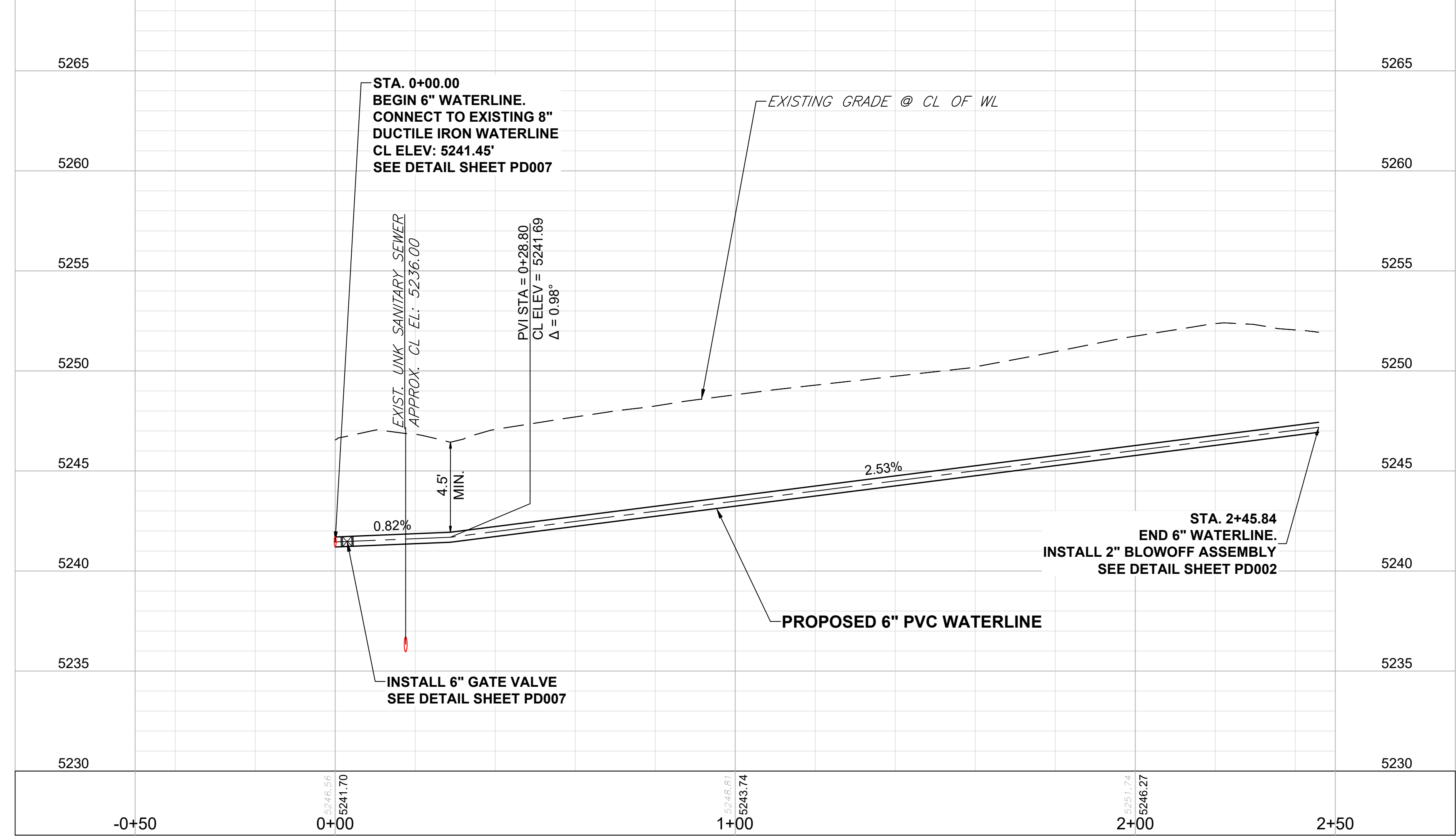
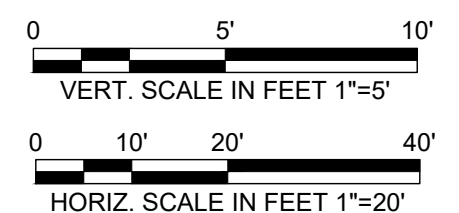
project 154303	contract
drawing PP005	rev. 0
sheet 9	of 39
file 154303_PP005_SITE 4.dwg	sheets



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

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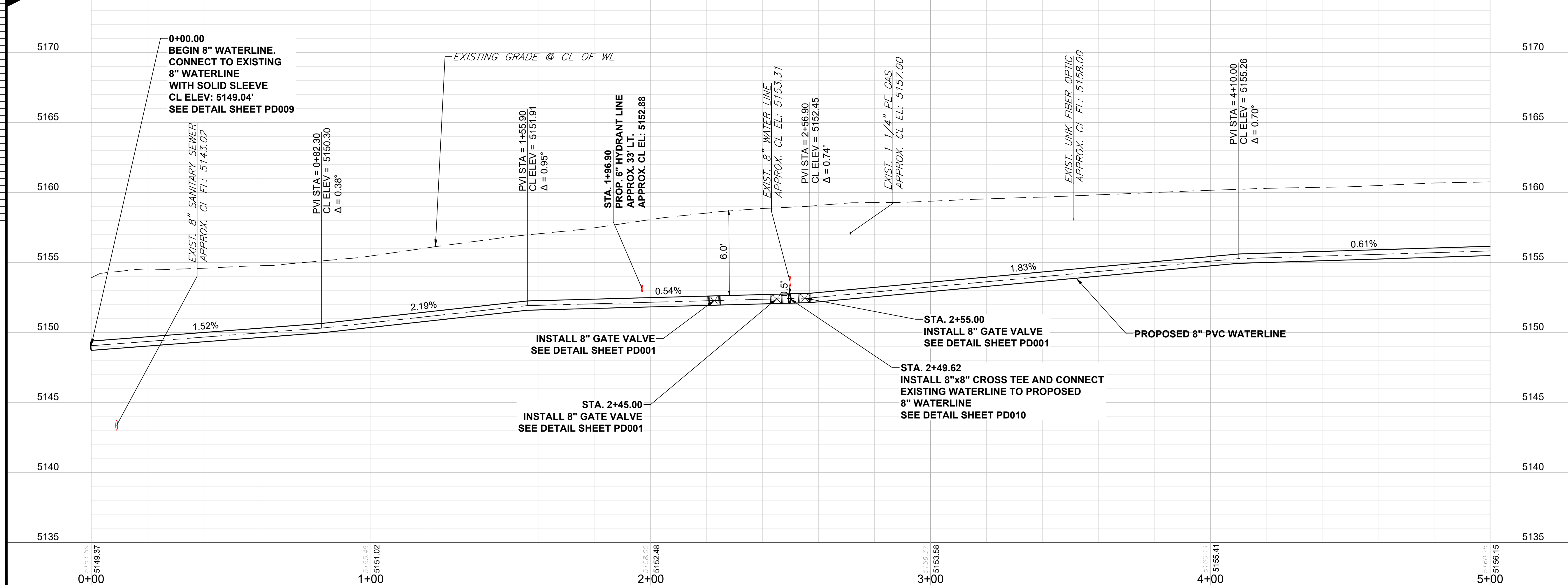
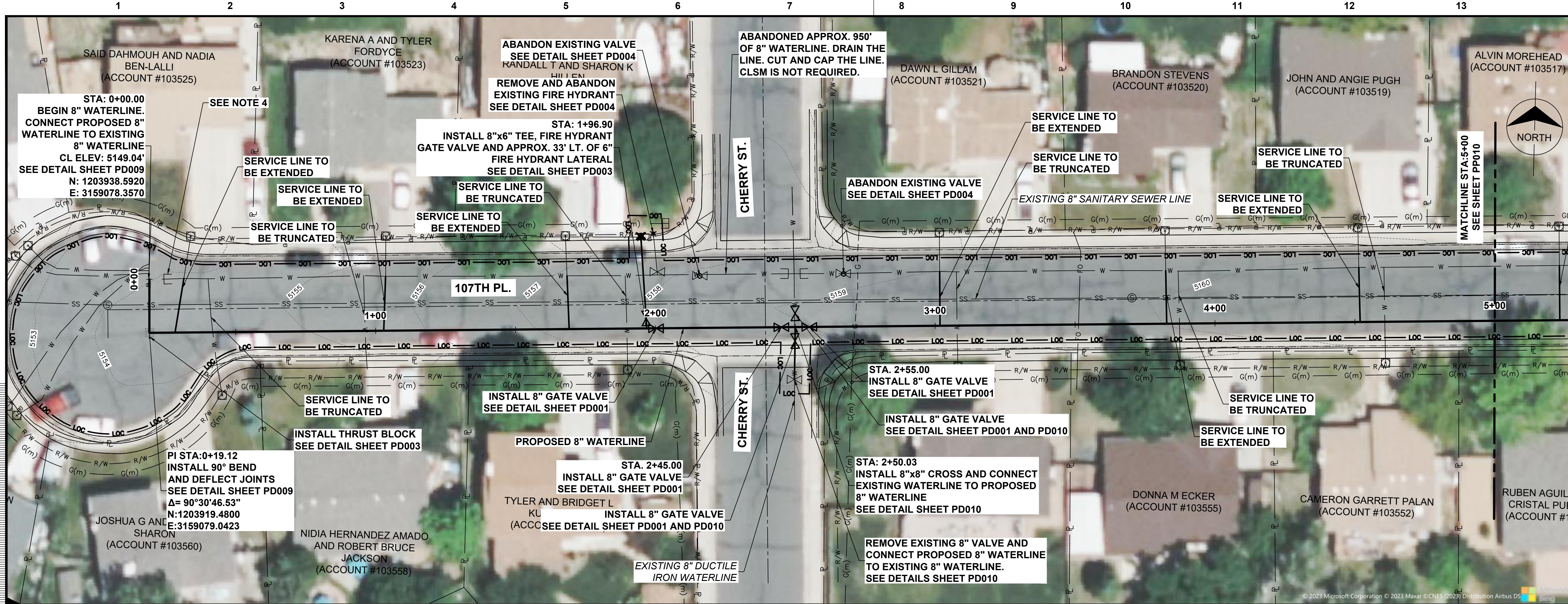
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

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



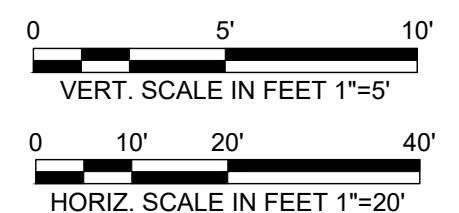
CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
SITE #4 COLUMBINE WAY
STA. 0+00 TO STA. 2+45.84

project 154303	contract
drawing PP006	rev. 0
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

- NOTE:**
- ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
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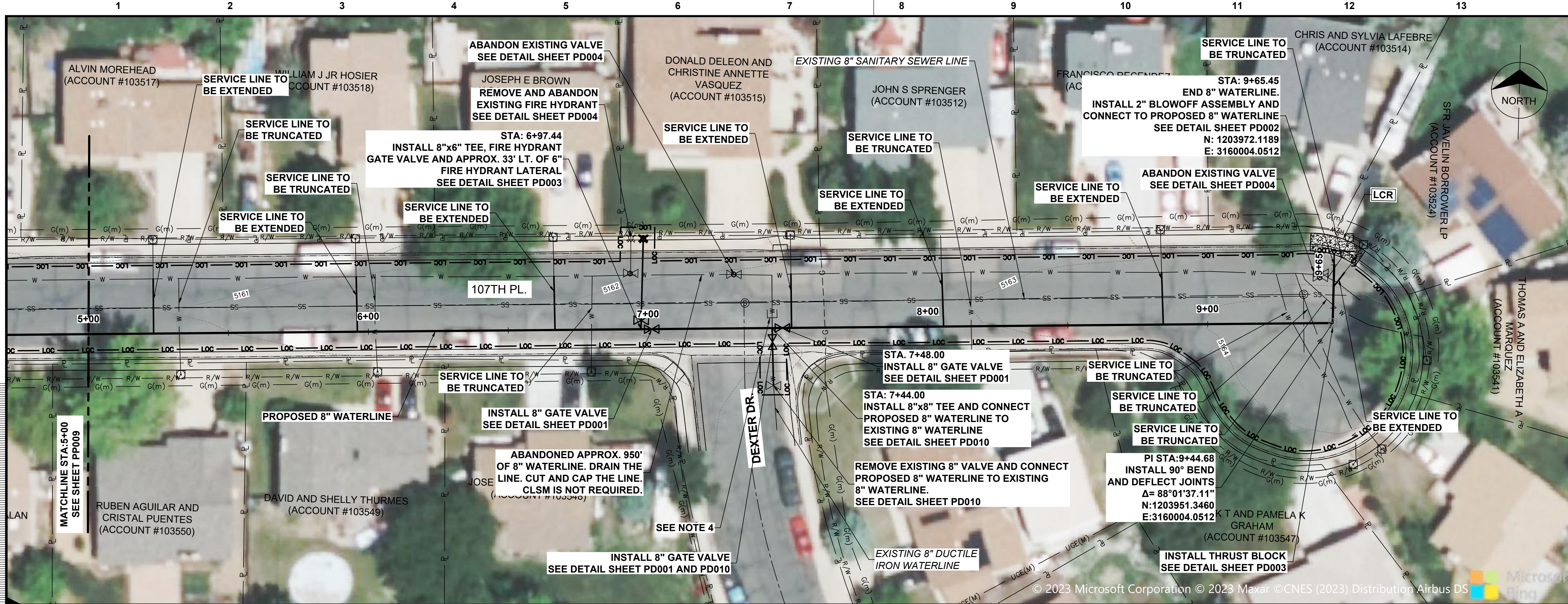


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303-721-9292

date FEBRUARY 2024	detailed V. PONCE
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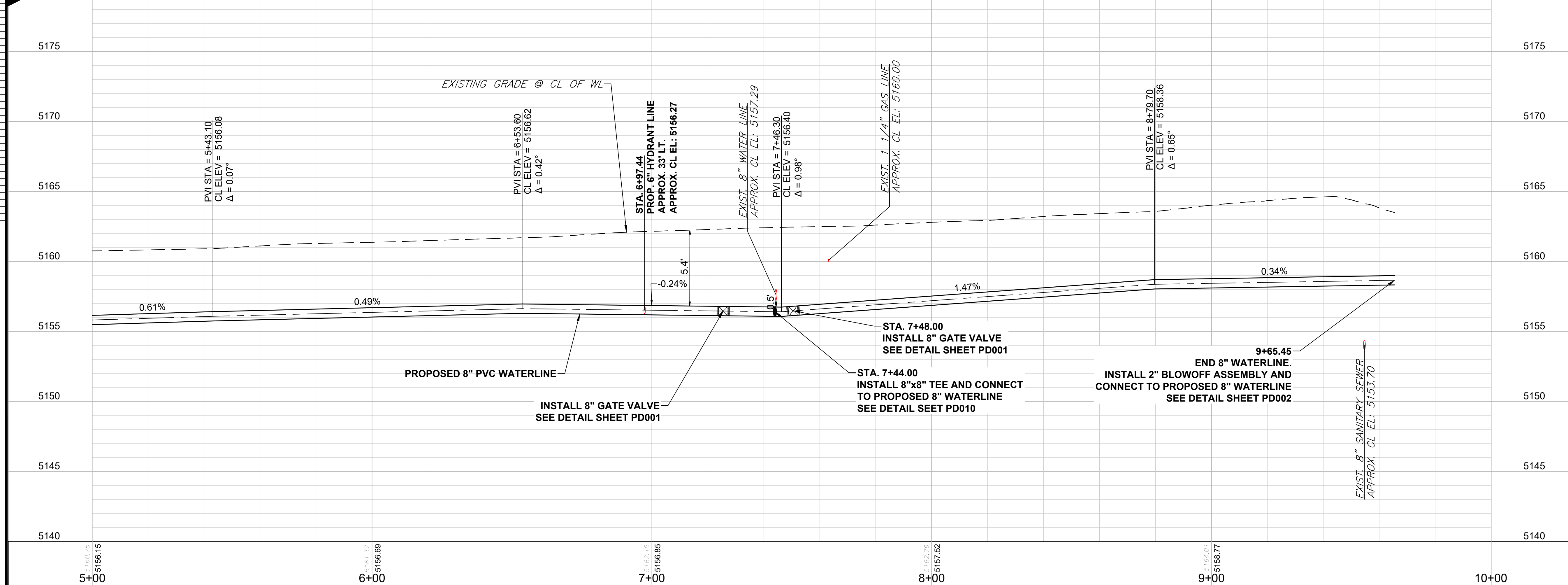


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #5 E. 107TH PLACE STA. 0+00 TO STA. 5+00	
project 154303	contract
drawing PP007	rev. 0
sheet 11	of 39
file 154303_PP007_SITE 5.dwg	



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

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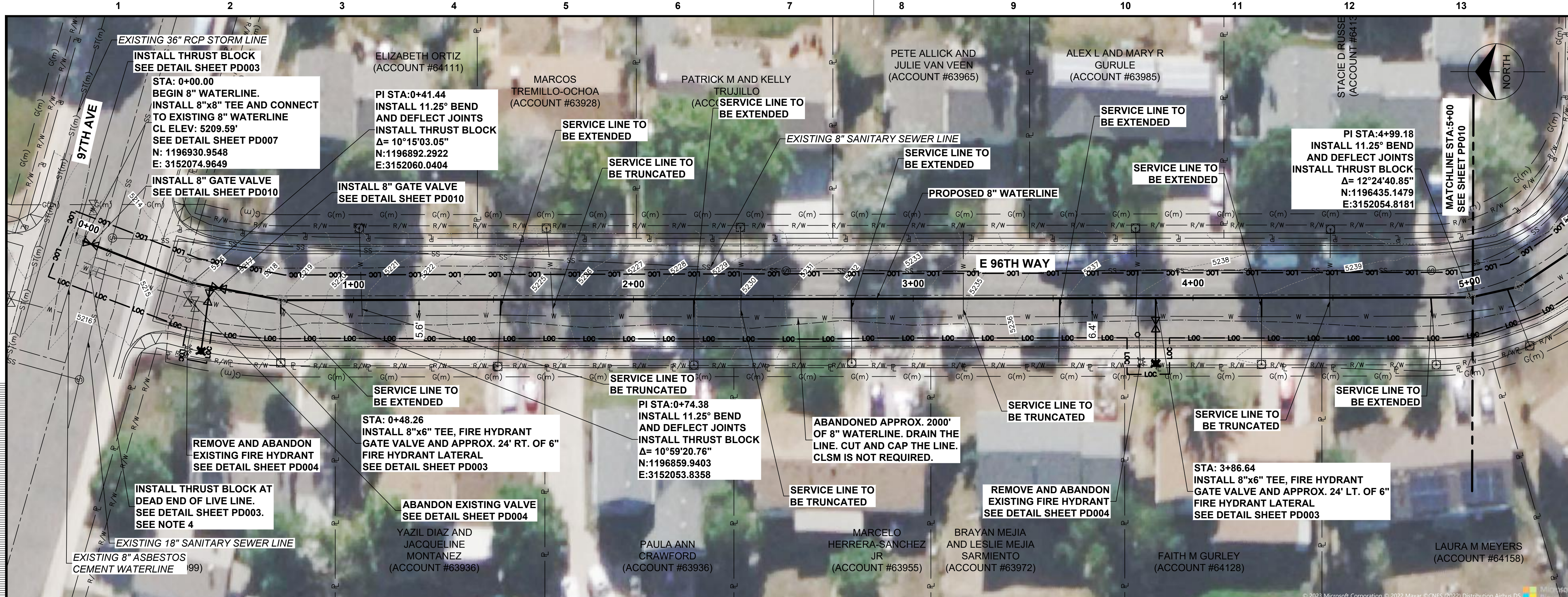
BURNS MEDONNELL

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ENGLEWOOD, COLORADO 80112
303-721-9292

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

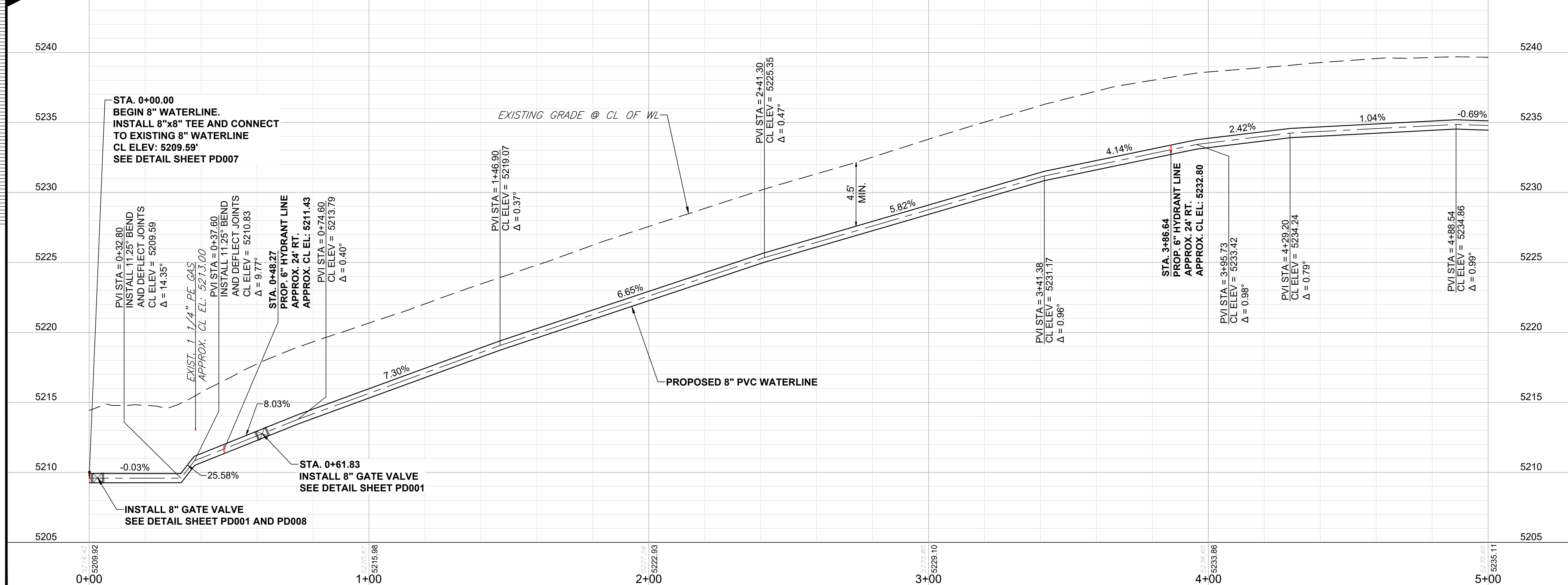
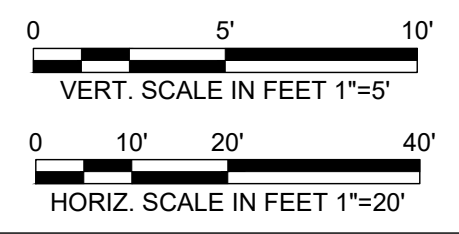


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #5 E. 107TH PLACE STA. 5+00 TO STA. 9+65.45	
project	154303
contract	
drawing	PP008 - 0
sheet	12 of 39 sheets
file	154303_PP008_SITE 5.dwg



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

- NOTE:**
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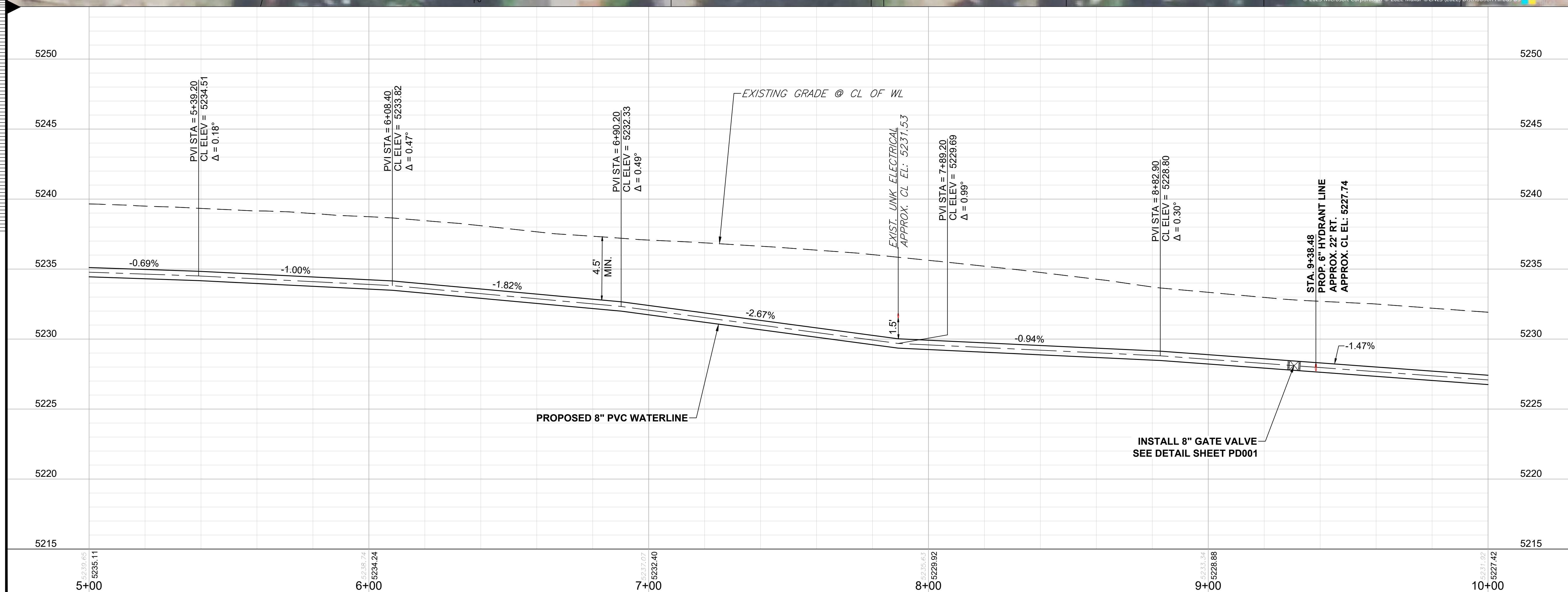
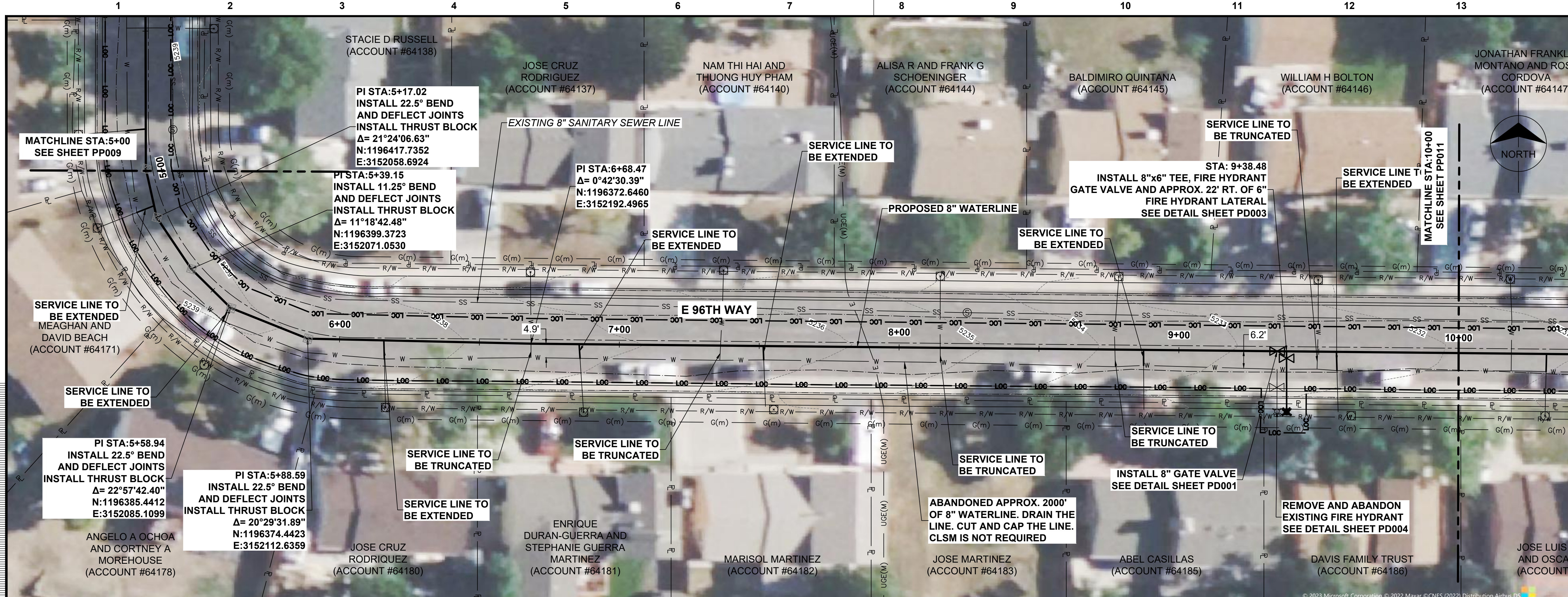
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BURNS MEDONNELL
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 ENGLEWOOD, COLORADO 80112
 303-721-9292

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

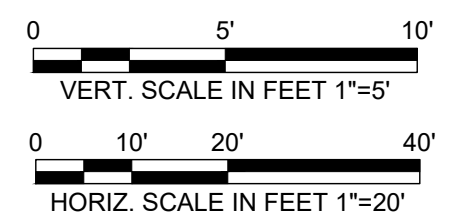


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #6 96TH WAY STA. 0+00 TO STA. 5+00	
project	154303
contract	
drawing	PP009 - 0
sheet	13 of 39 sheets
file	154303_PP009_SITE 6.dwg



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

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1. ALL WATER LINE CONNECTIONS AND SERVICE LINE CONNECTIONS MUST BE REINSTATED ALONG THE NEW 8" WATER LINE.
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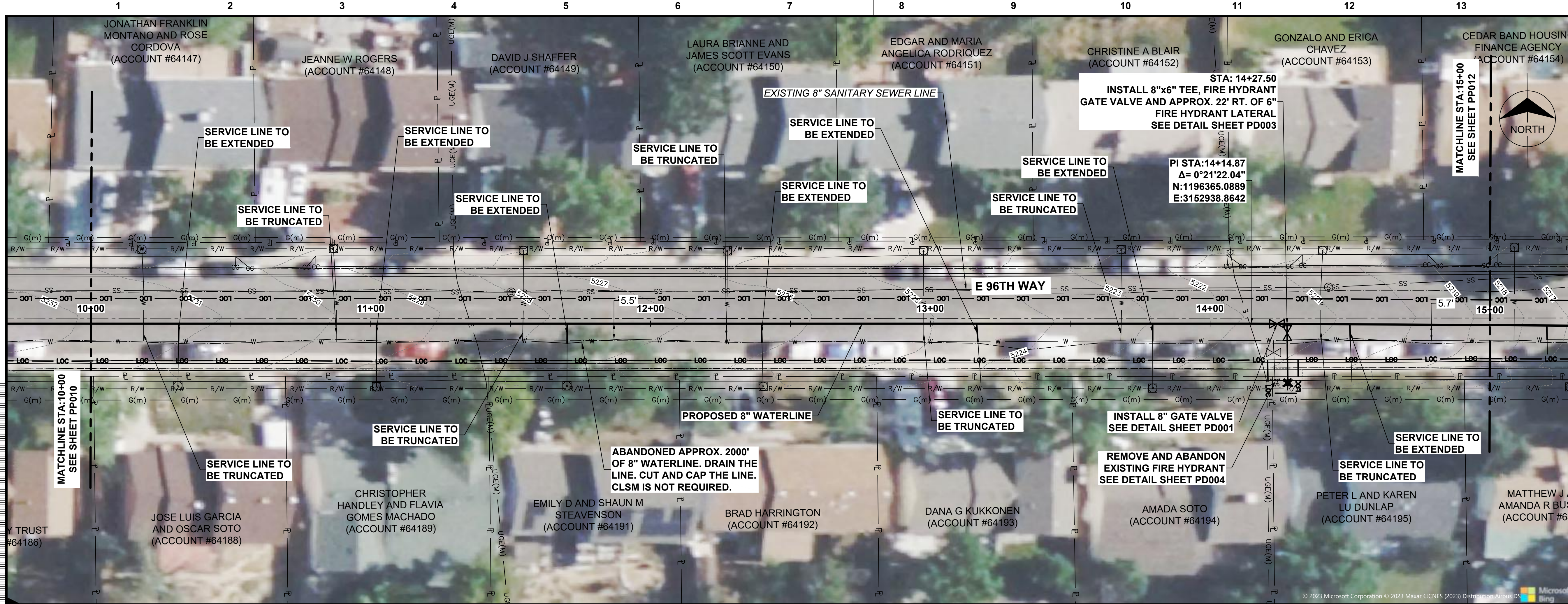


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303-721-9292

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



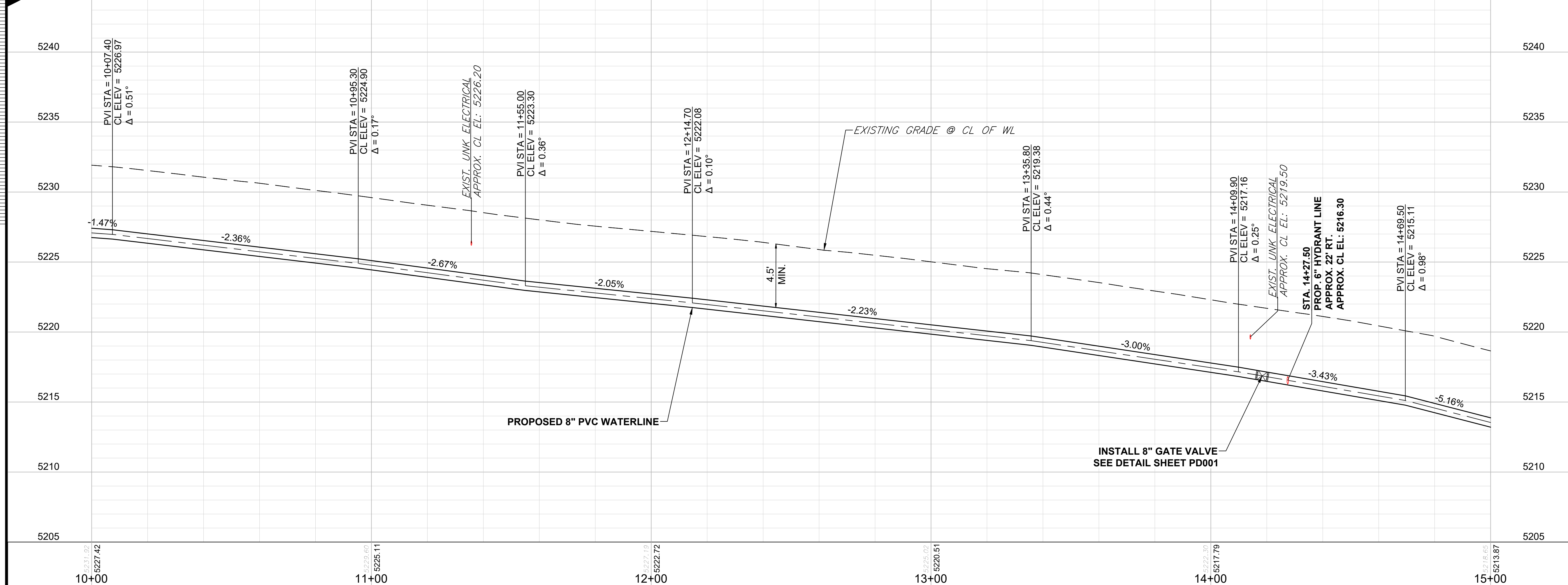
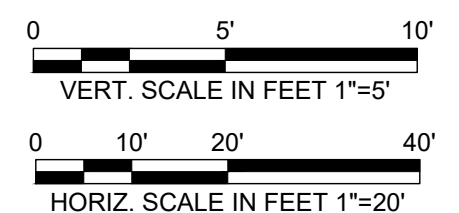
CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #6 96TH WAY STA. 5+00 TO STA. 10+00	
project	154303
contract	
drawing	PP010 - 0
sheet	14 of 39 sheets
file	154303_PP010_SITE 6.dwg



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

NOTE:

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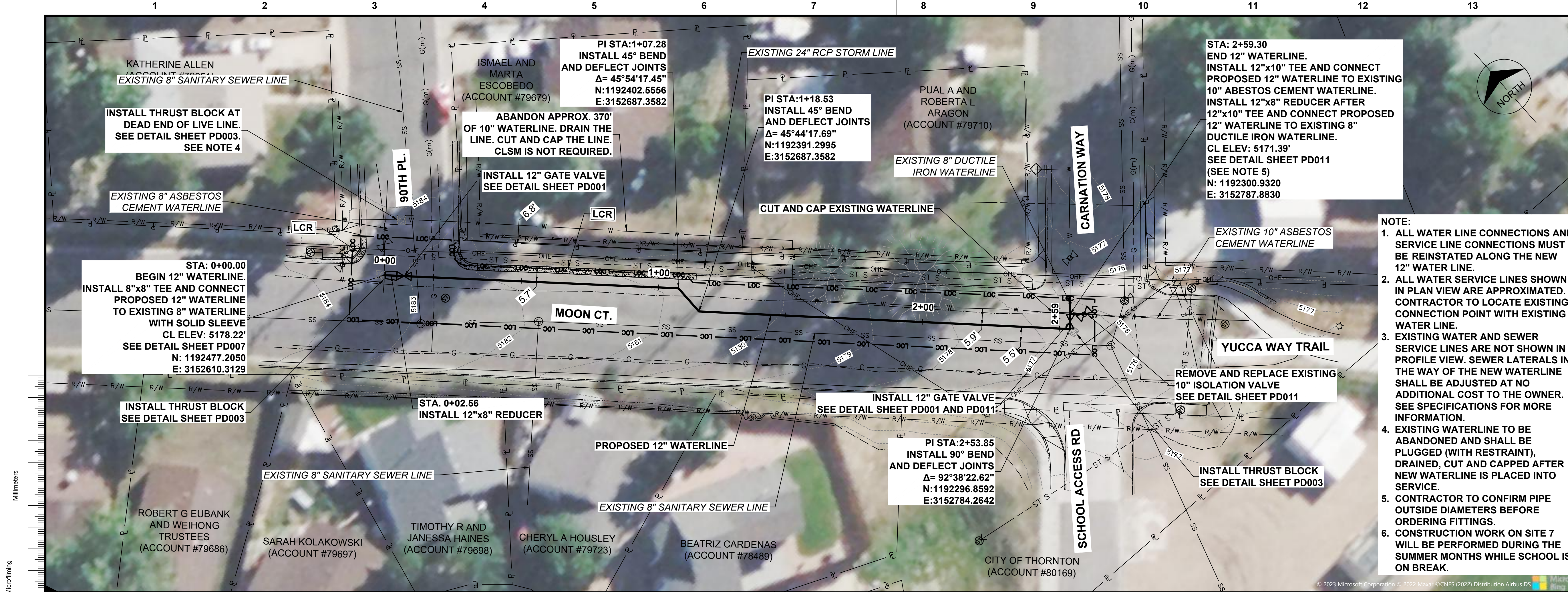


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303-721-9292

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

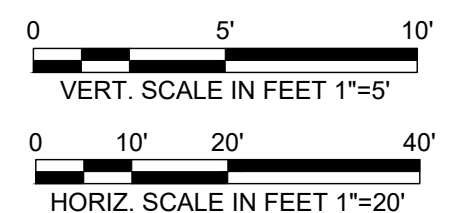


CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
SITE #6 96TH WAY STA. 10+00 TO STA. 15+00	
project 154303	contract
drawing PP011	rev. 0
sheet 15	of 39
file 154303_PP011_SITE 6.dwg	



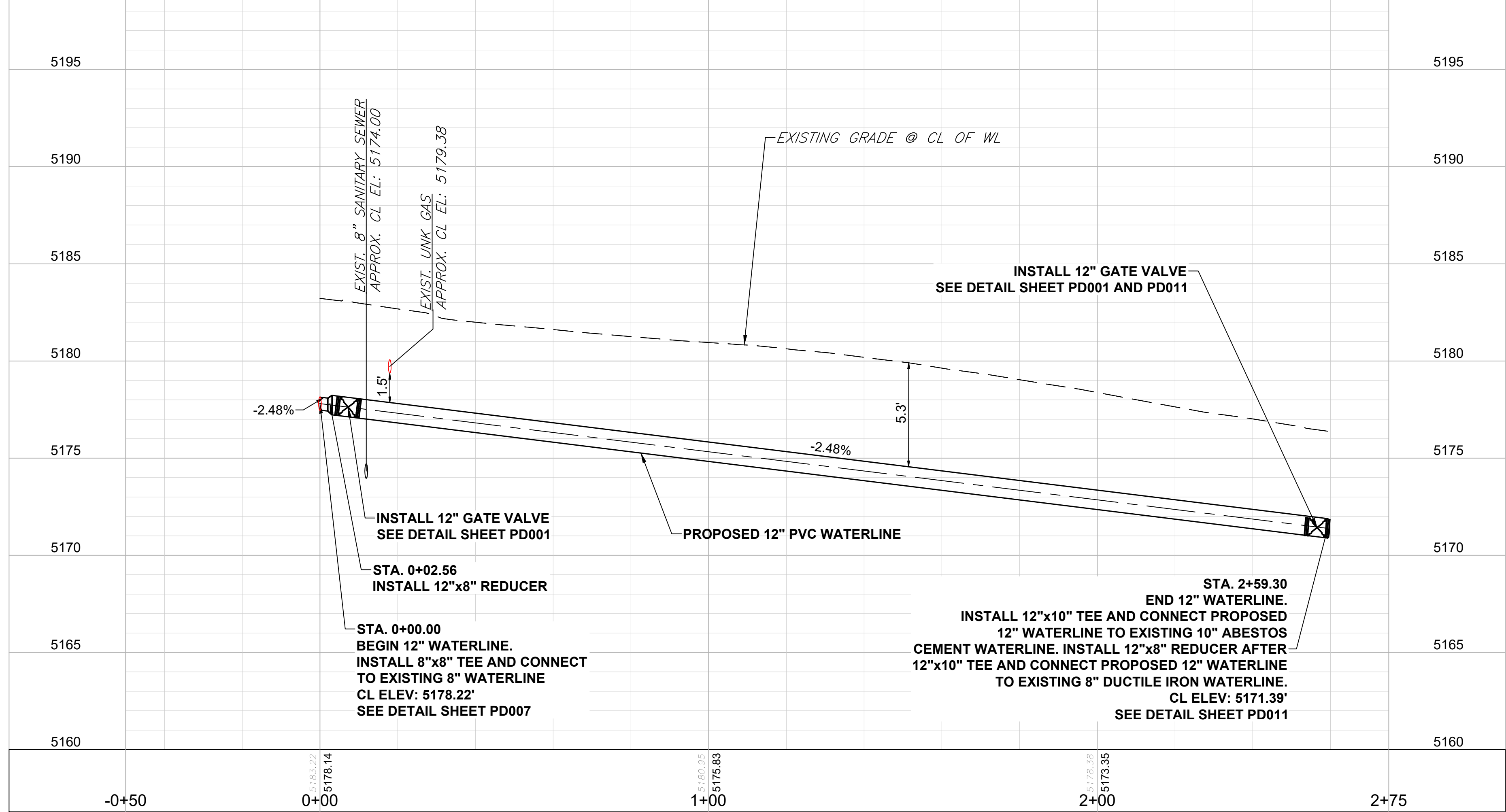
no.	date	by	ckd	description
0	02/20/24	RSB	KGL	ISSUED FOR BID

- 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

Inches



PRELIMINARY- NOT FOR CONSTRUCTION



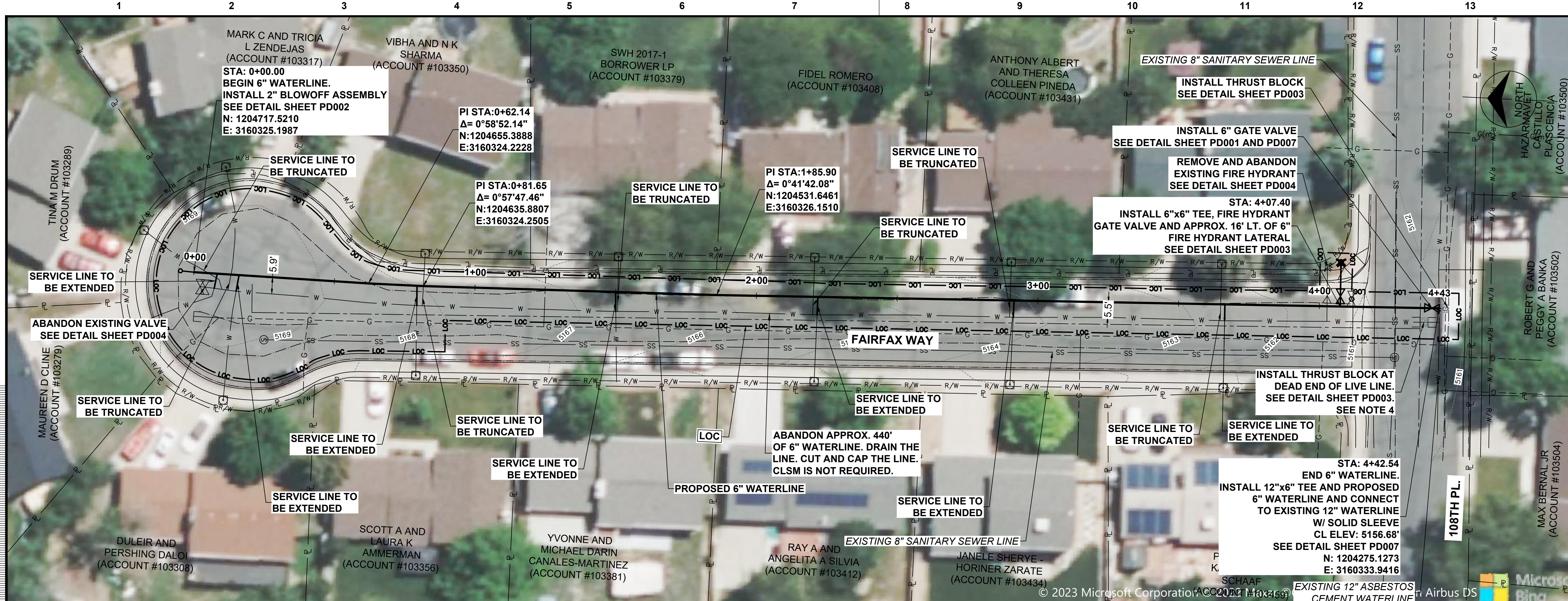
9191 SOUTH JAMAICA STREET,
ENGLEWOOD, COLORADO 80112
303-721-9292

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



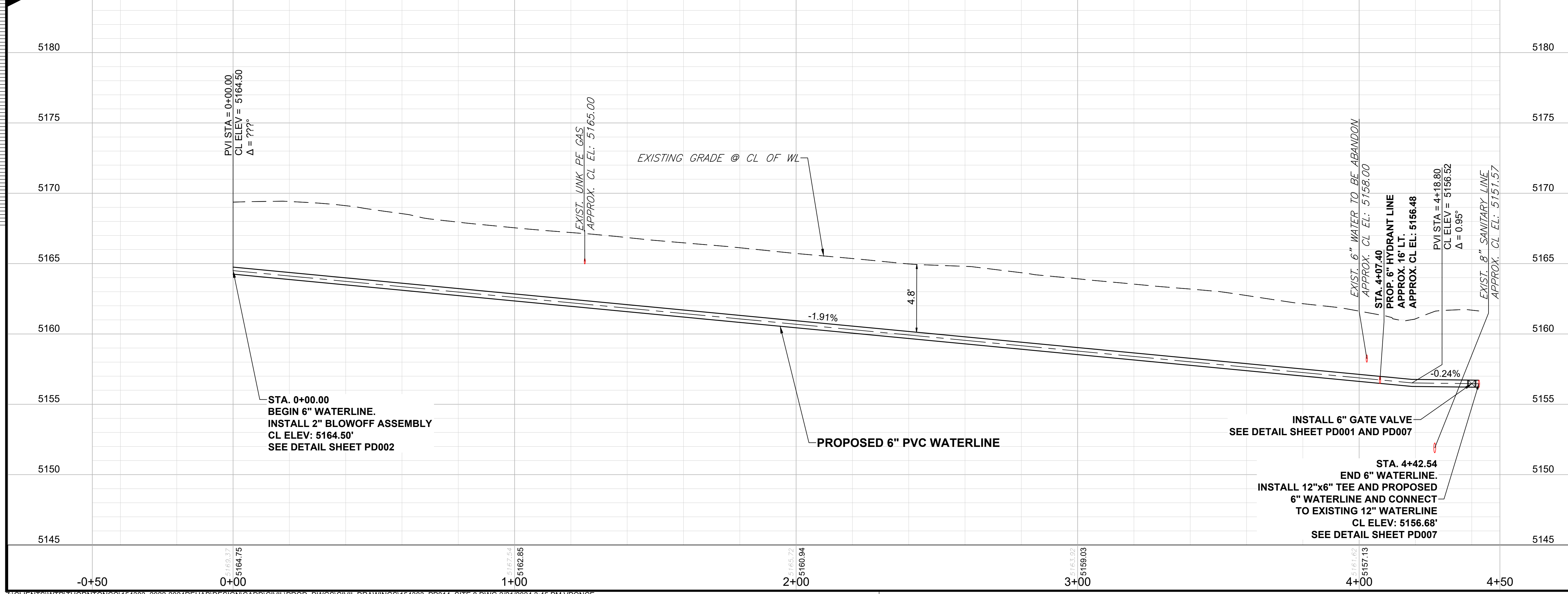
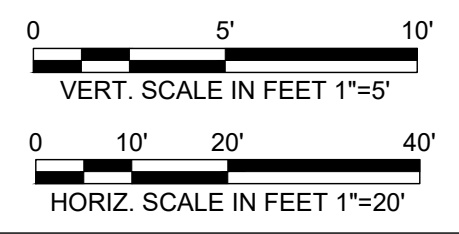
CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
SITE #7 E. MOON COURT
STA. 0+00 TO STA. 2+59.30

project 154303	contract
drawing PP013	rev. 0
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

- 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.



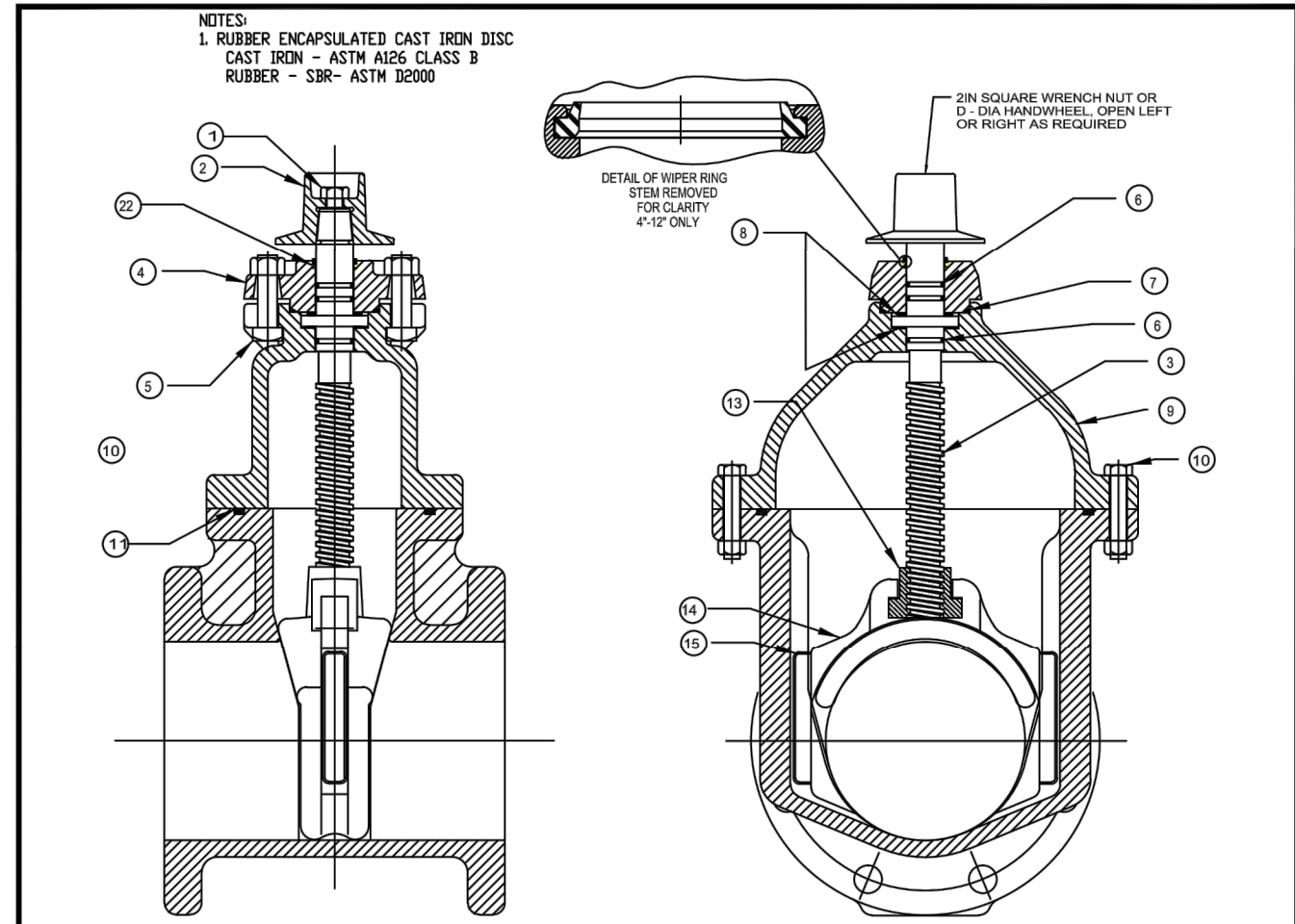
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BURNS MEDONNELL
 9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

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. 0
sheet 18	of 39 sheets
file 154303_PP015.dwg	



ITEM	DESCRIPTION	QTY	MATERIAL	ASTM
1	CAP SCREW	1	304 STAINLESS STEEL	A193 GRADE B8
2	WRENCH NUT	1	CAST IRON	A126 CLASS B
3	STEM	1	BRONZE	B138 ALLOY C87800
4	STUFFING BOX	1	CAST IRON	A126 CLASS B
5	STUFFING BOX BOLTS	2	304 STAINLESS STEEL	A193 GRADE B8
6	STUFFING BOX NUTS	2	304 STAINLESS STEEL	F594 GROUP 1
7	O-RING	3	D2000	NITRILE
8	O-RING	1	RUBBER	D2000
9	ANTI-FRICTION WASHER	2	CELCON	
10	BONNET	1	CAST IRON	A126 CLASS B
11	BONNET BOLTS	2	304 STAINLESS STEEL	A193 GRADE B8
12	BONNET NUTS	2	304 STAINLESS STEEL	F594 GROUP 1
13	BONNET GASKET (O-RING)	1	RUBBER	D2000
14	DISC NUT	1	BRONZE	B62 ALLOY C82800
15	DISC	1	SEE NOTE 1	
16	GUIDE CAP	2	CELCON	
17	BODY - FLANGE ENDS	1	CAST IRON	CLASS B
18	HANDWHEEL	1	CAST IRON	A126 CLASS B
19	BODY - MU ENDS	1	CAST IRON	A126 CLASS B
20	BODY - SLIP-ON ENDS	1	CAST IRON	A126 CLASS B
21	BODY - FLANGE A MU END	1	CAST IRON	A126 CLASS B
22	BODY - FLANGE B SLIP-ON END	1	CAST IRON	A126 CLASS B
23	WIPER RING	1	RUBBER	

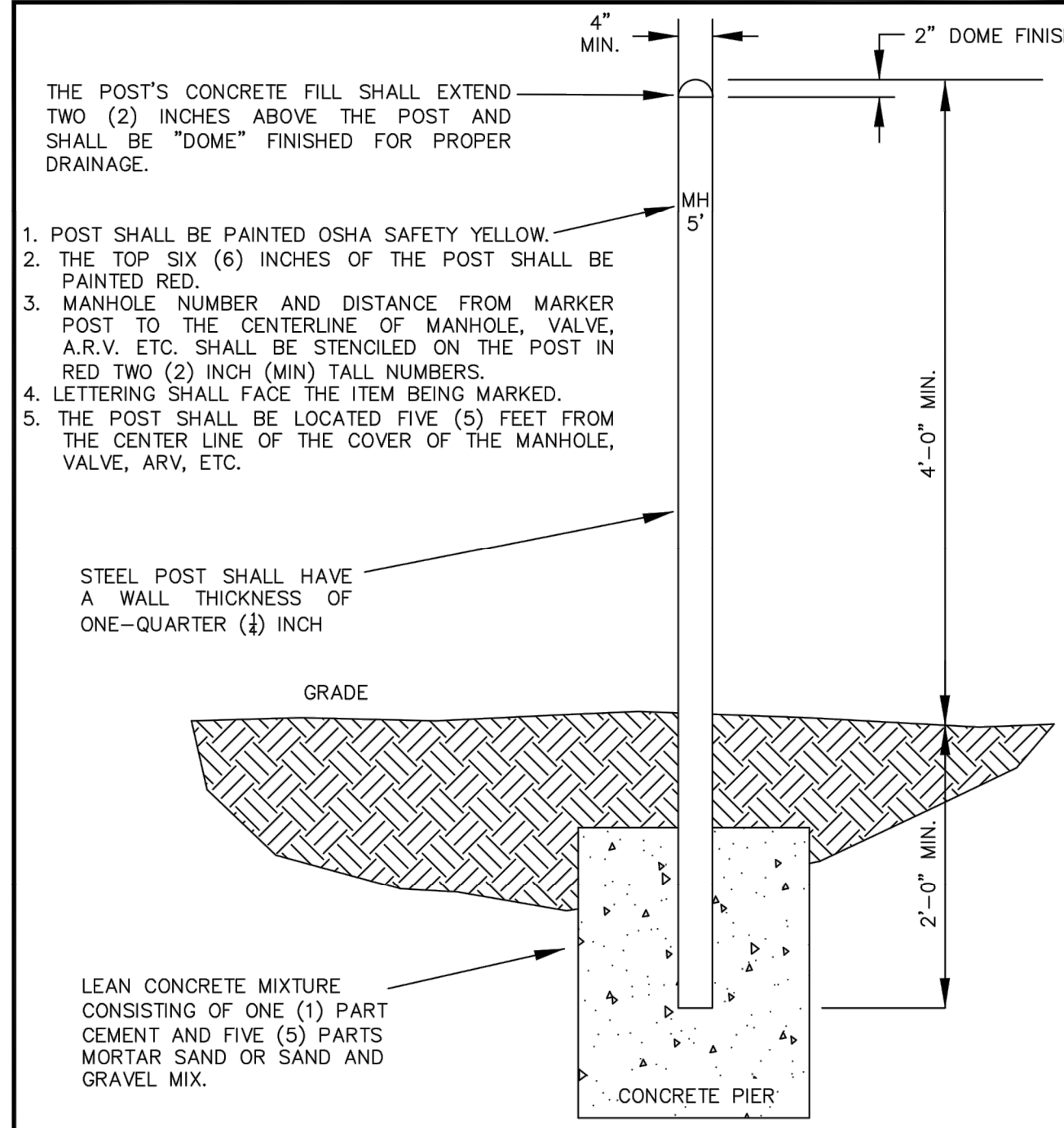
N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

GATE VALVE DETAIL

ISSUED: APRIL 2010
REVISED:

DRAWING NO. 200-6A



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.

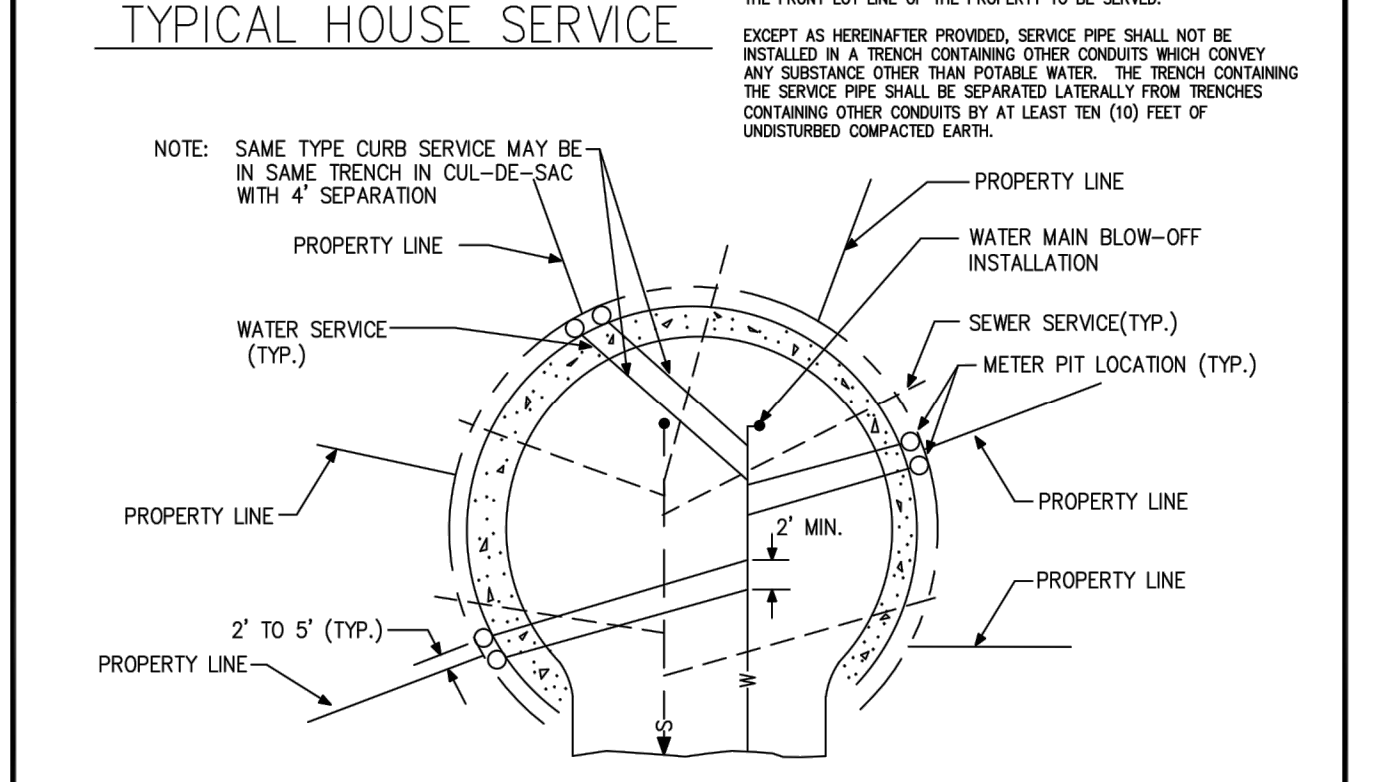
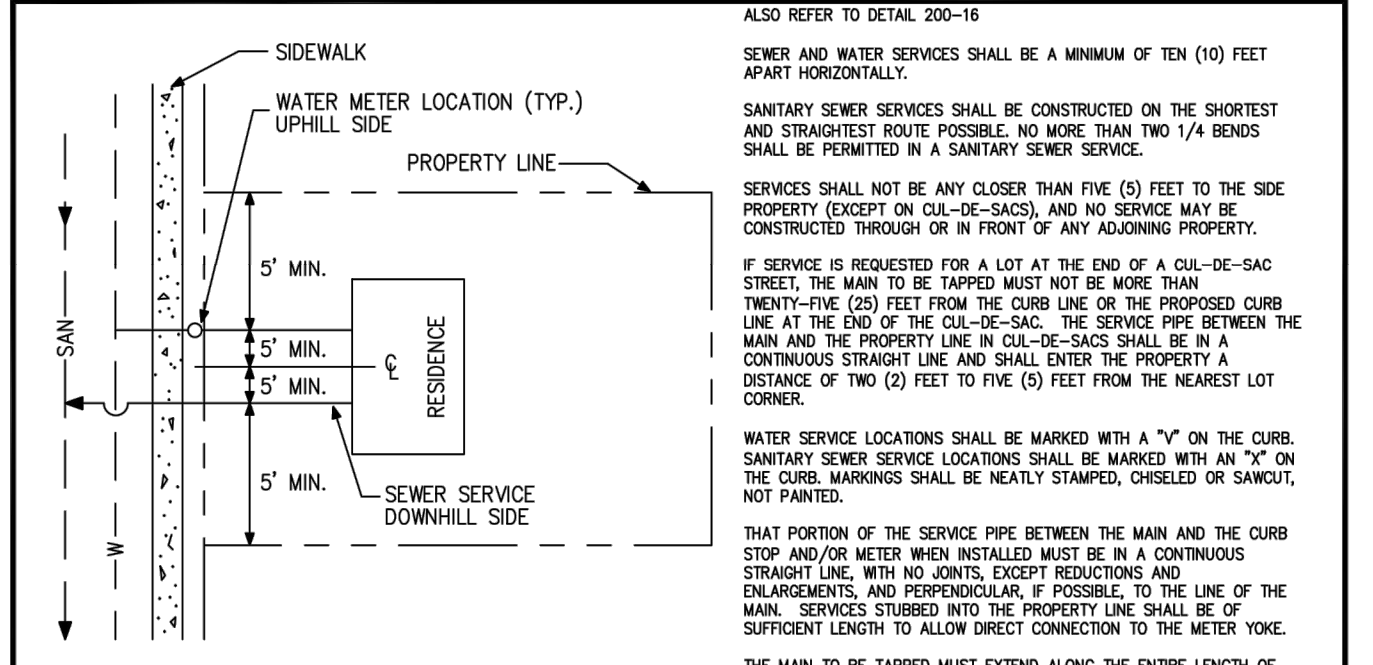
N.T.S.

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

MARKER POST DETAIL

ISSUED: JANUARY 2003
REVISED: APRIL 2010

DRAWING NO. 300-5



CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS

SERVICE DETAIL

ISSUED: APRIL 1992
REVISED: APRIL 2010

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: WATEROUS SERIES-600, MUELLER-A-236S, 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 RE-ALIGNED 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

GATE VALVE AND VALVE BOX NOTES

ISSUED: APRIL 2010
REVISED:

DRAWING NO. 200-6B

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

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

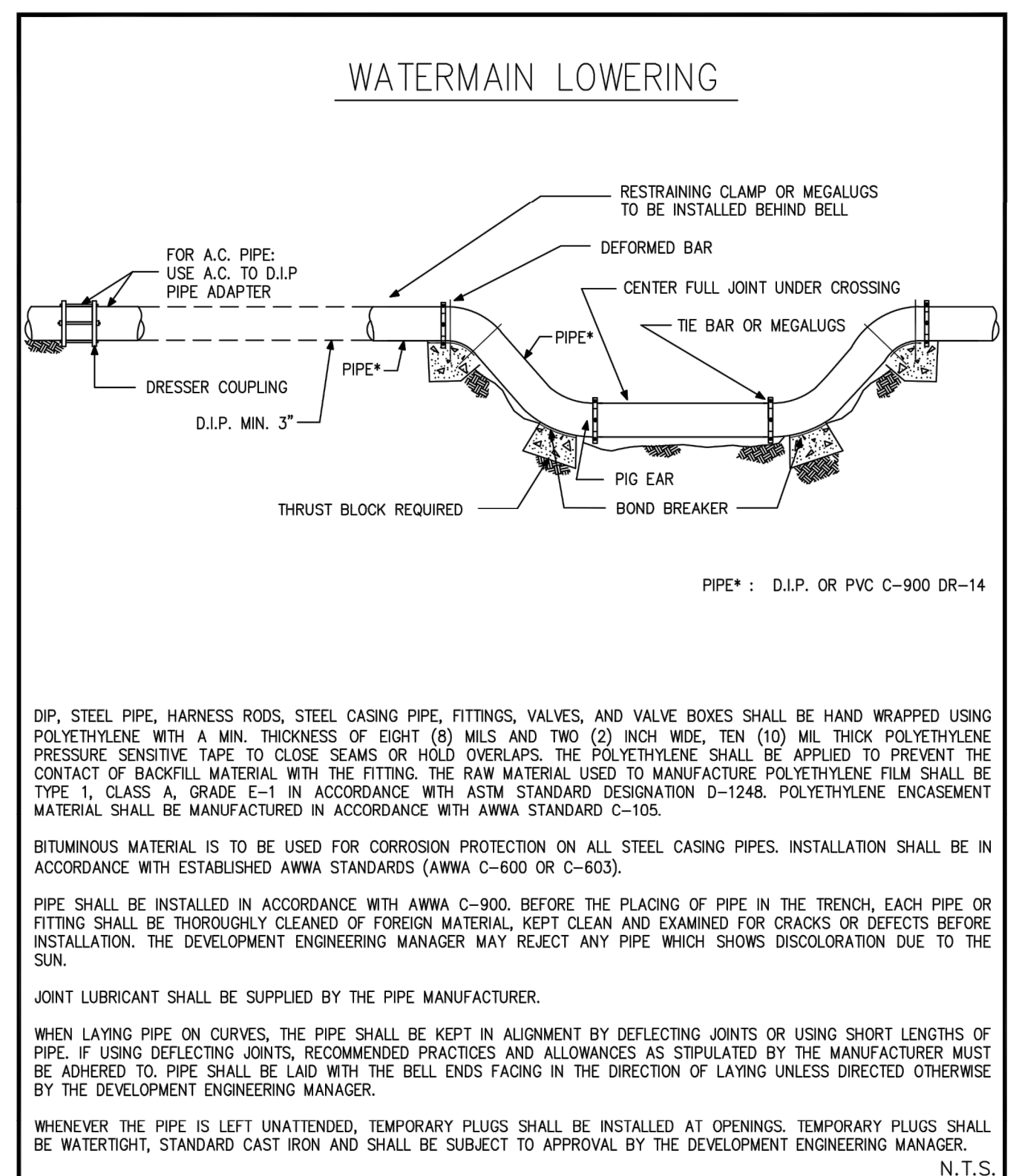


CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
CIVIL DETAILS I

project	154303	contract	
drawing	PD001	rev.	0
sheet	19	of	39 sheets
file	154303_PD001.dwg		

Scale For Microfinishing
Millimeters
Inches

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



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.

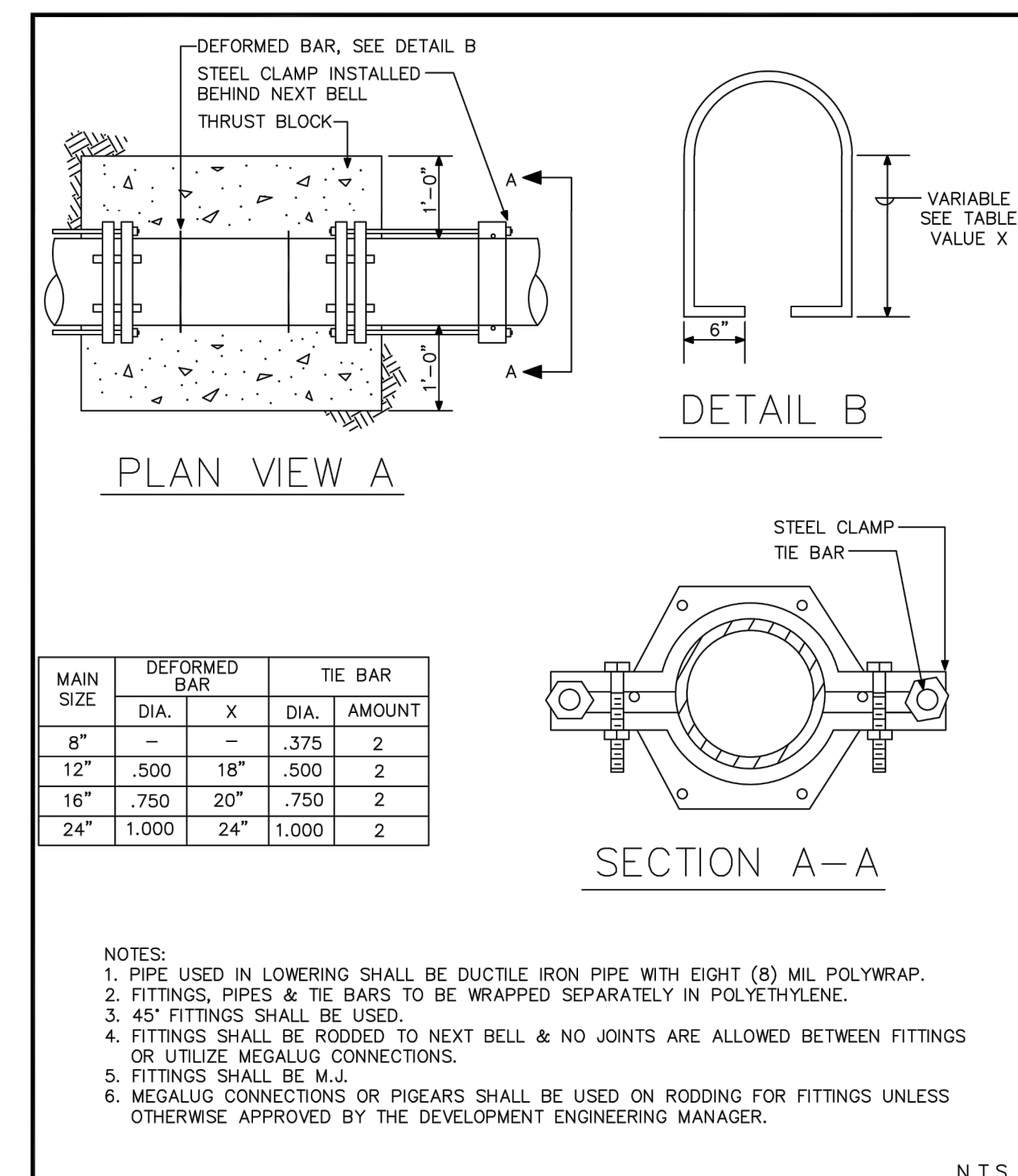
JOINT LUBRICANT SHALL BE SUPPLIED BY THE PIPE MANUFACTURER.

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

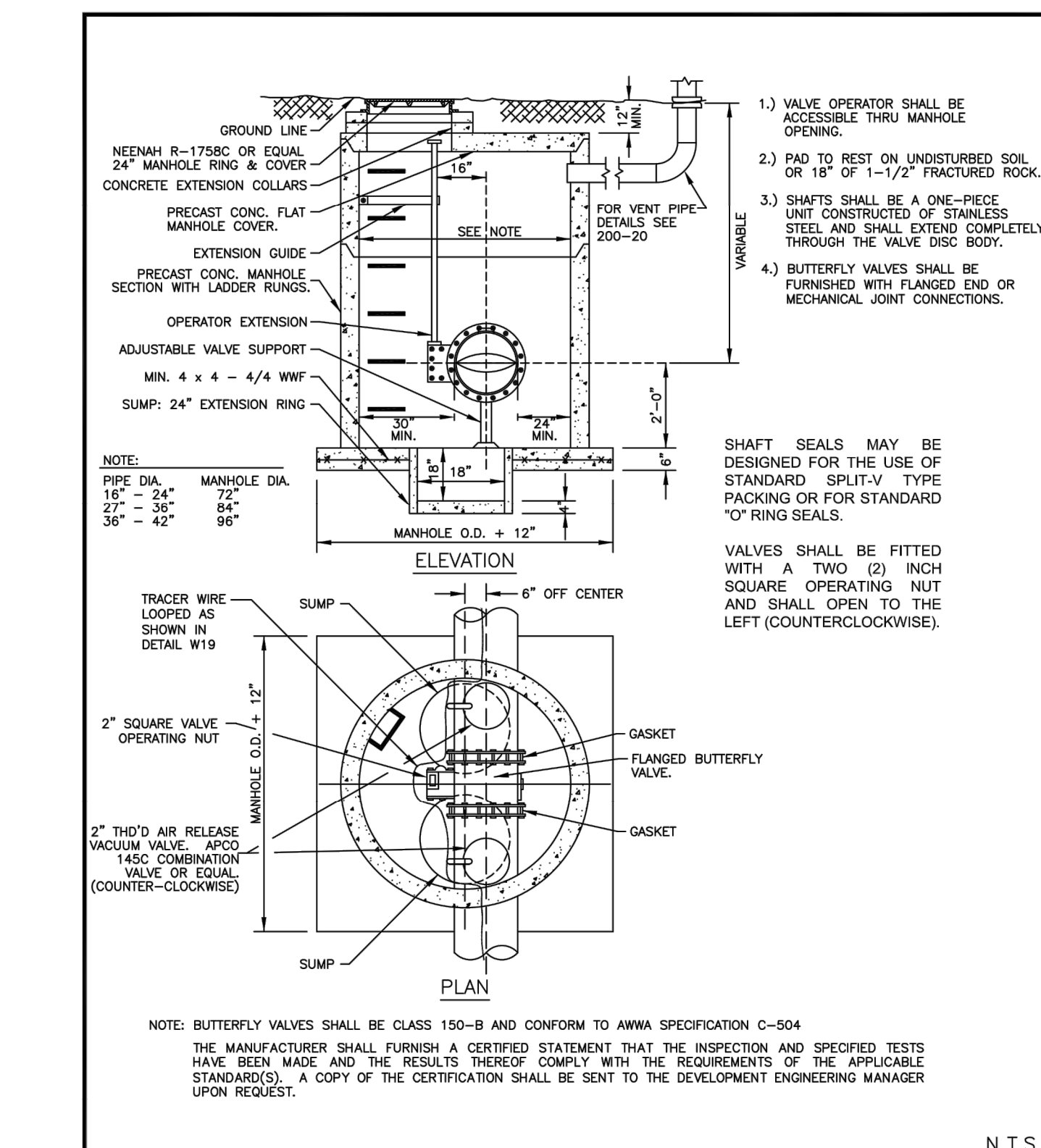


MAIN SIZE	DEFORMED BAR		TIE BAR	
	DIA.	X	DIA.	AMOUNT
8"	-	-	.375	2
12"	.500	18"	.500	2
16"	.750	20"	.750	2
24"	1.000	24"	1.000	2

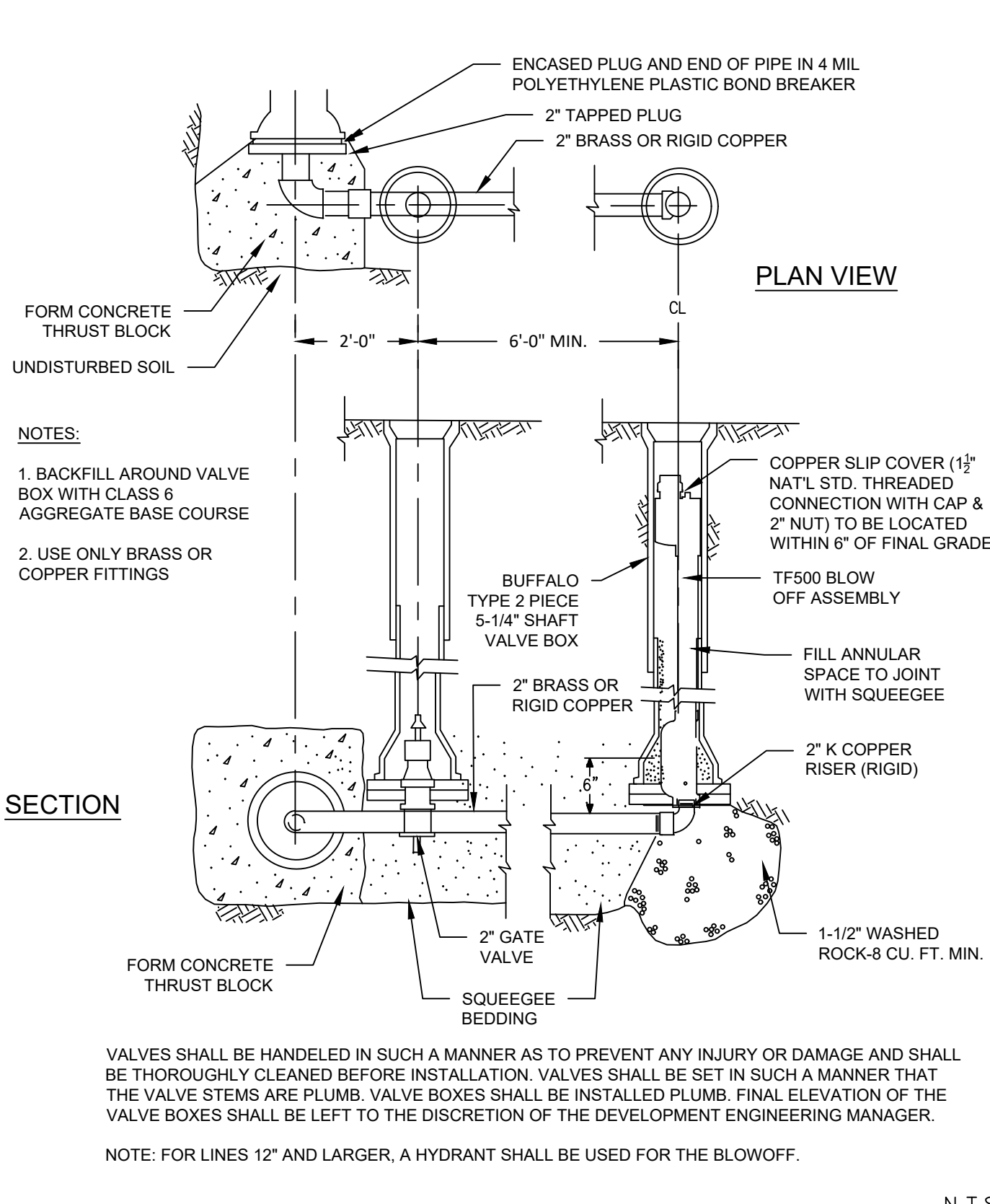
NOTES:
 1. PIPE USED IN LOWERING SHALL BE DUCTILE IRON PIPE WITH EIGHT (8) MIL POLYWRAP.
 2. FITTINGS, PIPES & TIE BARS TO BE WRAPPED SEPARATELY IN POLYETHYLENE.
 3. 45° FITTINGS SHALL BE USED.
 4. FITTINGS SHALL BE RODDED TO NEXT BELL & NO JOINTS ARE ALLOWED BETWEEN FITTINGS OR UTILIZE MEGALUG CONNECTIONS.
 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.

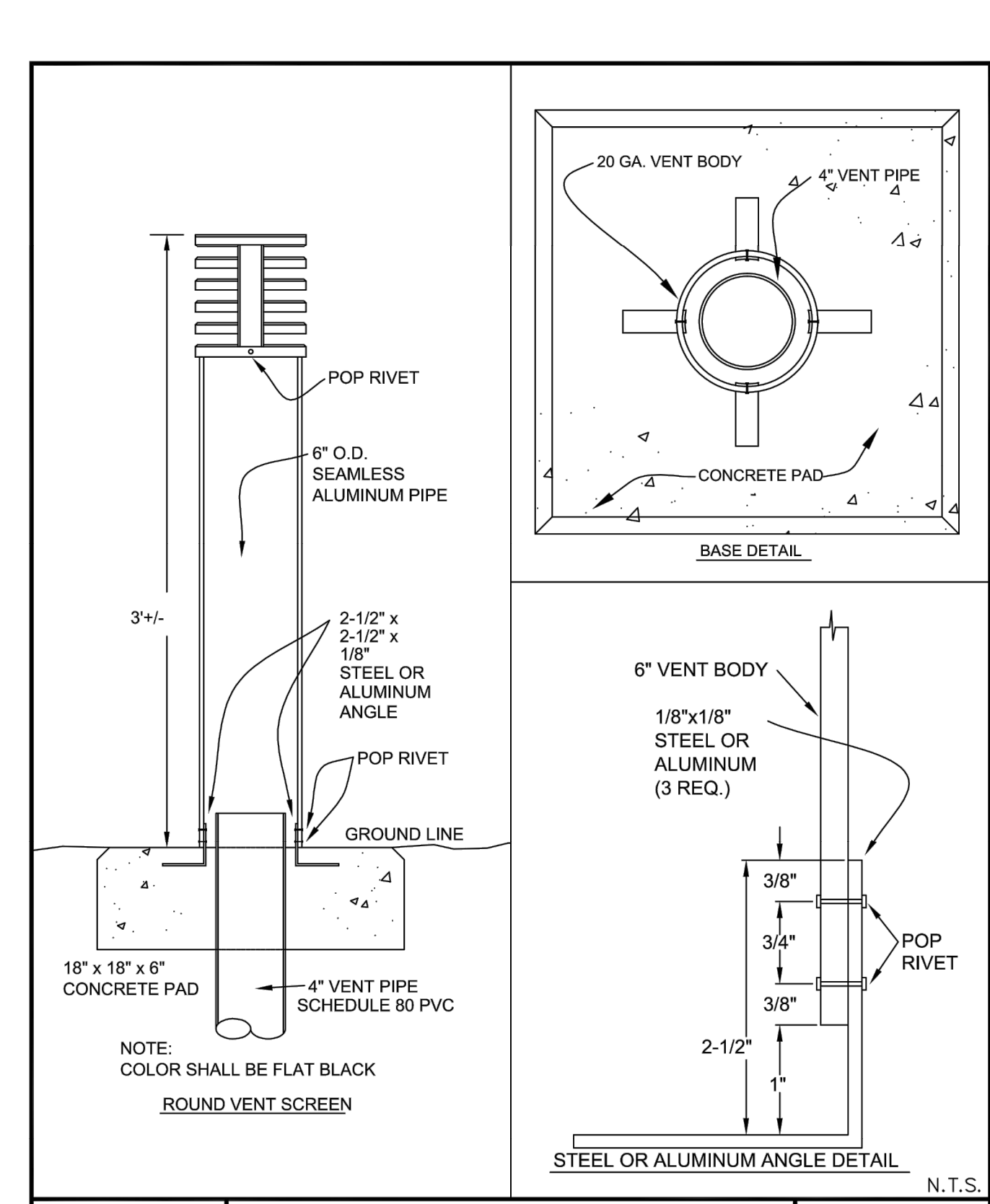
	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: APRIL 1992
	WATERMAIN LOWERING CROSS-SECTION DETAIL	REVISED: APRIL 2010
		DRAWING NO. 200-3B



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



	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED:
	2" BLOWOFF DETAIL (FOR MAINS LESS THAN 12" DIA.)	REVISED:
		DRAWING NO.



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

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
 CIVIL DETAILS II

project	154303	contract	
drawing	PD002	rev.	0
sheet	20	of	39 sheets
file	154303_PD002.dwg		

Scale For Microfitting
Millimeters
Inches

THRUST BLOCKS SHALL BE CONSTRUCTED AT BENDS AND FITTINGS WHICH RESULT IN UNBALANCED LINE THRUST. CARE SHALL BE TAKEN NOT TO BLOCK OUTLETS OR TO COVER BOLTS, NUTS, CLAMPS OR OTHER FITTINGS OR TO MAKE THEM INACCESSIBLE.

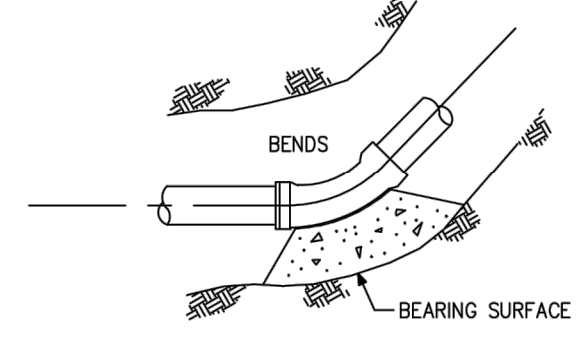
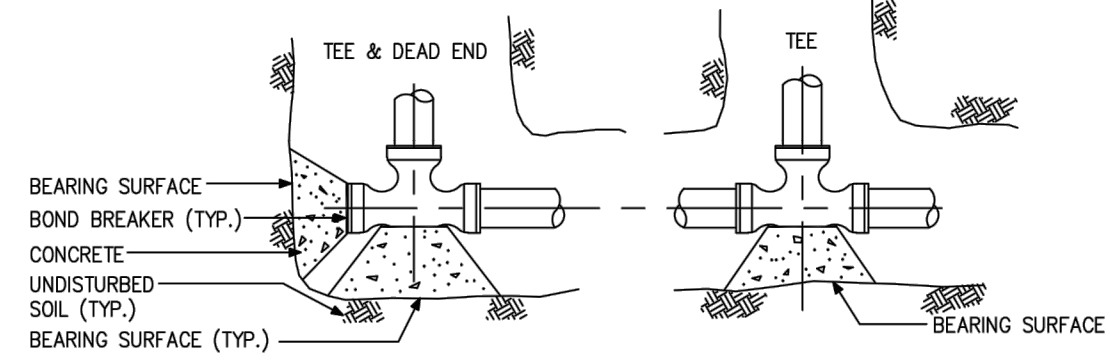
A BOND BREAKER SHALL BE PLACED BETWEEN THE FITTING AND THE THRUST BLOCK TO AID IN EASE OF FUTURE REMOVAL. THE VERTICAL SIDES OF THE CONCRETE THRUST BLOCKS SHALL BE FORMED TO ALLOW FOR SYMMETRICAL THRUST.

WHEN IT IS IMPOSSIBLE THROUGH OVER EXCAVATION OR OTHER CAUSES TO POUR A THRUST BLOCK AGAINST UNDISTURBED EARTH, HARNESS RODS SHALL BE REQUIRED TO ANCHOR THE FITTINGS TO THE MAIN UPON APPROVAL OF THE DEVELOPMENT ENGINEERING MANAGER.

BACKFILL MAY BE PLACED OVER THE THRUST BLOCK ONCE THE SURFACE HAS SET SUFFICIENTLY TO RESIST THE WEIGHT OF THE BACKFILL.

NO DRY KICKERS SHALL BE ALLOWED.

NO HAND MIXED CONCRETE SHALL BE ALLOWED.



PLAN VIEW

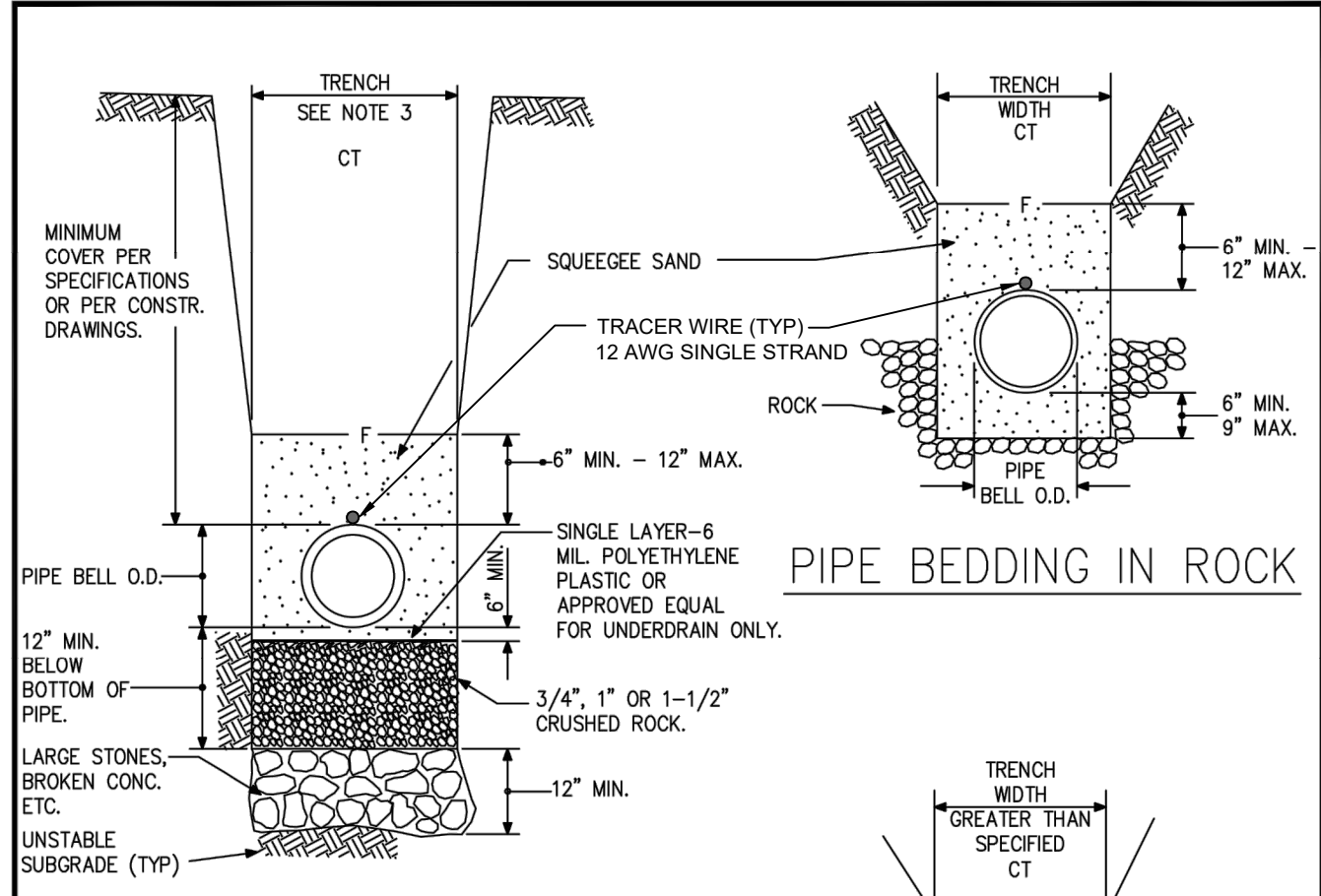
- NOTES:
- THRUST BLOCKS MUST BE CAST IN PLACE CONCRETE.
 - NO TAMPING OR COMPACTING SHALL BE ALLOWED ABOVE THRUST BLOCK FOR A MINIMUM OF TWENTY-FOUR (24) HOURS AFTER PLACEMENT.
 - CONCRETE MUST SET A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO THE PERFORMANCE OF A HYDROSTATIC TEST.
 - BEARING SURFACE BASED ON BEARING STRENGTH OF 3000 P.S.F. AND MAIN PRESSURE OF 200 P.S.I. FOR MAINS GREATER THAN 16" OR VERTICAL THRUSTS, SHOW AREA REQUIREMENT ON STANDARD DETAILS.
 - BOND BREAKER TO BE MINIMUM OF 8 MIL. POLYETHYLENE PLASTIC.

N.T.S.

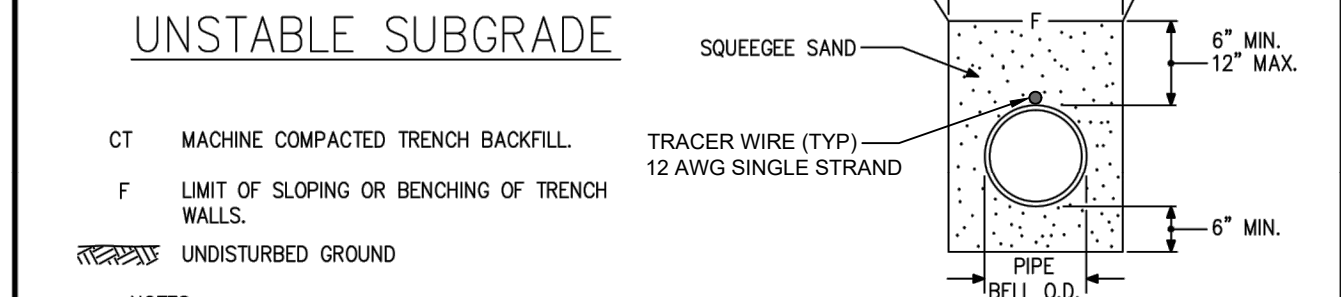
CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

THRUST BLOCK DETAIL

ISSUED: APRIL 1992	REVISOR: APRIL 2010
REVISED:	DRAWING NO.
APRIL 2010	200-11



PIPE BEDDING IN ROCK



TRENCH OVERWIDTH

- UNSTABLE SUBGRADE
- CT MACHINE COMPACTED TRENCH BACKFILL.
F LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS.
UNDISTURBED GROUND
- NOTES:
- MIN. COVER TO BE BELOW FINAL STREET GRADE WHEN AVAILABLE.
 - TRENCH TO BE GRADED OR SHEETED AS NECESSARY FOR THE PROTECTION OF OTHER UTILITIES AND TO MEET LOCAL, STATE & FEDERAL REQUIREMENTS.
 - TRENCH WIDTH SHALL NOT BE MORE THAN 16 INCHES NOR LESS THAN 12 INCHES WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE LAD THEREIN. (BELL OR COUPLING O.D., IF APPLICABLE).

N.T.S.

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

SPECIAL BEDDING DETAIL

ISSUED: APRIL 1992	REVISOR: APRIL 2010
REVISED:	DRAWING NO.
APRIL 2010	200-5

SERVICE PIPE TWO (2) INCHES OR LESS IN DIAMETER SHALL BE CONNECTED TO THE MAIN BY MEANS OF A BRONZE CORPORATION STOP OF THE SAME SIZE. NO UNDERGROUND JOINTS ARE PERMITTED IN THE COPPER SERVICE PIPE BETWEEN THE CORPORATION STOP AND THE CURB STOP AND/OR METER EXCEPT AT REDUCERS. OVERSIZING OF SERVICE LINES IS PERMITTED, AND SHOULD BE OUTSIDE OF THE PIT OR VAULT.

ALL JOINTS MUST BE OF A SWEAT COPPER DESIGN. SOLDER USED IN CONNECTION OF THE JOINTS SHALL BE OF A LEAD CONTENT OF 0.20 OR LESS. CORPORATION STOPS SHALL BE AWMA TAPER THREAD TO COPPER CONNECTION OF PACK JOINT AND SHALL BE A FORD TYPE F600 OR AN APPROVED EQUAL. TAPS SHALL BE MADE BY THE RESPONSIBLE PARTY.

NO TAPS SHALL BE MADE UNTIL AFTER THE SERVICE PIPE IS SET IN PLACE AND THE COPPER SETTER (ON RESIDENTIALS) OR CURB STOP (ON COMMERCIALS) HAS BEEN INSTALLED.

UNDER NO CIRCUMSTANCES IS A WATER MAIN TO BE TAPPED DIRECTLY. ONLY SADDLES UTILIZING A CAST BRONZE CASTING WITH DOUBLE SILICONE BRONZE STRAPS SHALL BE PERMITTED.

WHEN TAPPING EXISTING ASBESTOS CEMENT PIPE, THE SIZE OF TAPS MUST BE ONE (1) PIPELINE SIZE SMALLER THAN THE SIZE OF THE PIPE BEING TAPPED.

TAPS SHALL NOT BE MADE ON A WATER MAIN UNTIL THE MAIN HAS PASSED THE CHLORINE AND HYDROSTATIC PRESSURE TESTS AND CLEARWATER TESTS.

CARE SHALL BE TAKEN TO PROPERLY INSTALL WATER SERVICE SO THAT ENOUGH SLACK IS IN THE SERVICE TO PROTECT AGAINST PULLOUT PROBLEMS.

WATER MAINS SHALL BE TAPPED AT A 45 DEGREE ANGLE FROM THE HORIZONTAL CENTER LINE OF THE WATER MAIN ON THE SAME SIDE OF THE PIPE AS THE WATER METER.

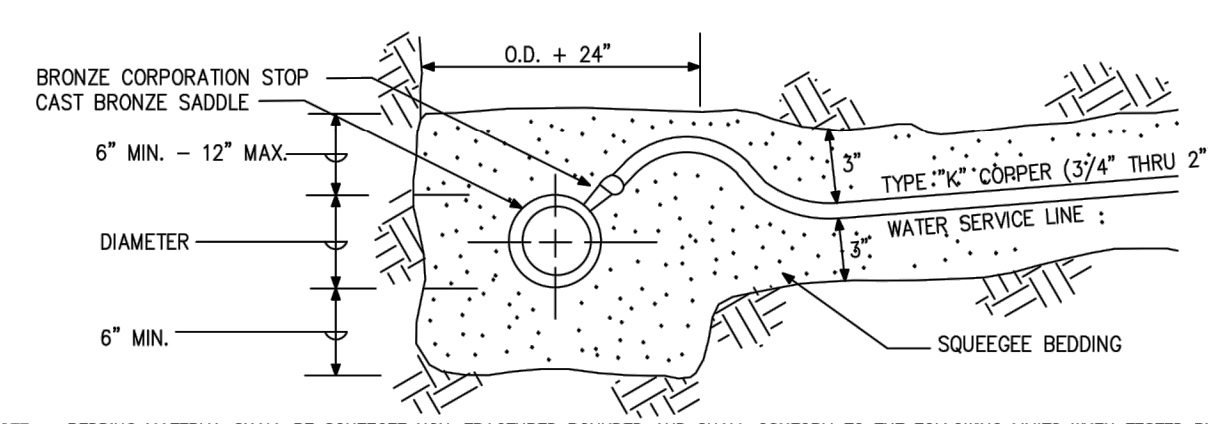
TAPPING MAINS MAY REQUIRE DIGGING OUT BEDDING MATERIAL AND CUTTING OR REMOVING PART OF THE CORROSION PROTECTIVE WRAPPING. AFTER THE TAPS ARE MADE, THE WRAP SHALL BE REPAIRED OR REPLACED BY THE INSTALLING RESPONSIBLE PARTY IN SUCH A MANNER AS TO PROTECT BOTH THE PIPE AND THE MAIN.

SERVICE TAPS SHALL HAVE A MINIMUM SEPARATION OF TWENTY FOUR (24) INCHES AND BE NO CLOSER THAN TWENTY-FOUR (24) INCHES TO A COUPLING OR PIPE JOINT OR FITTING. NO MORE THAN FOUR (4) SERVICE TAPS SHALL BE PERMITTED ON ANY ONE (1) JOINT OF PIPE.

ALL SERVICE PIPE MUST BE LAID AT LEAST FOUR AND ONE-HALF (4½) FEET BELOW THE ESTABLISHED GRADE OF THE STREET IN WHICH THEY WILL BE LAID AND ALL OTHER PLACES AT LEAST FOUR AND ONE-HALF (4½) FEET BELOW THE SURFACE OF THE GROUND.

IF AFTER A SERVICE PIPE HAS BEEN INSTALLED, THE GRADE OF THE SURFACE OF THE GROUND IS LOWERED, THE SERVICE PIPE MUST BE LOWERED TO PROVIDE AT LEAST FOUR AND ONE-HALF (4½) FEET OF COVER.

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.



NOTE: BEDDING MATERIAL SHALL BE SQUEEGEE NON-FRACTURED ROUNDED AND SHALL CONFORM TO THE FOLLOWING LIMITS WHEN TESTED BY MEANS OF LABORATORY SIEVES:

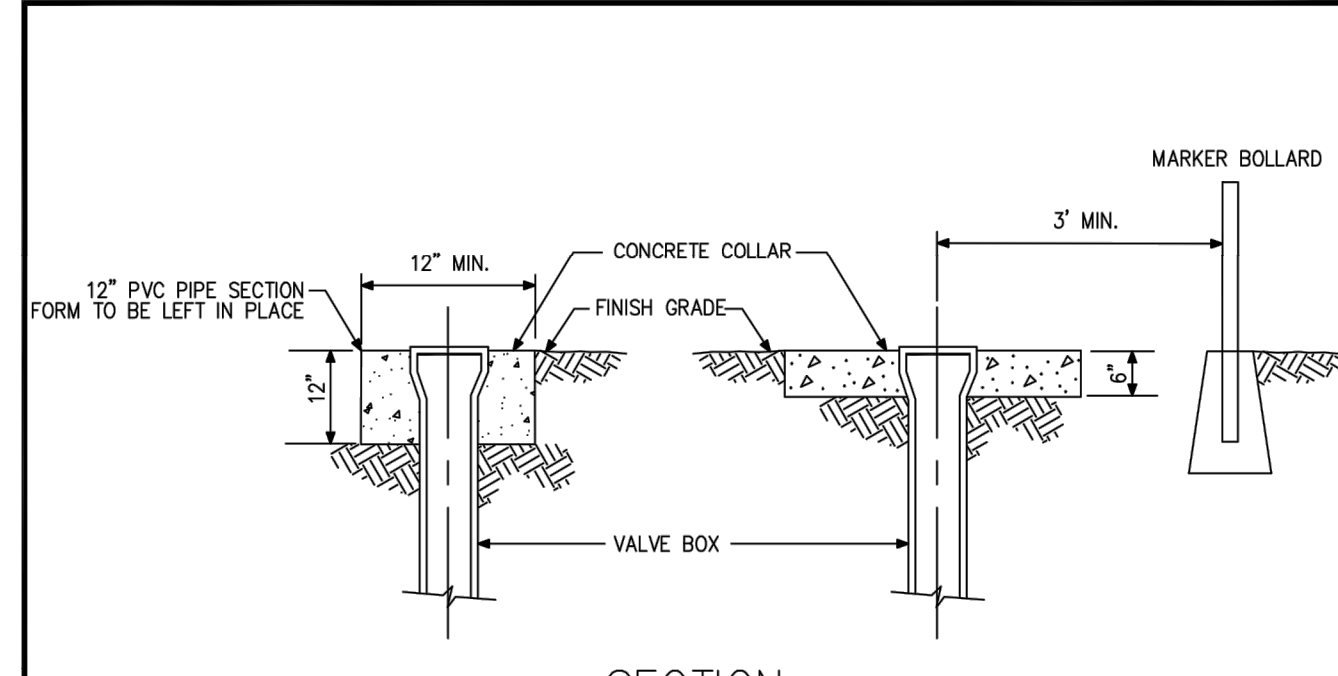
SEIVE SIZE	TOTAL % PASSING BY WEIGHT
3/8" INCH	100
NO. 200	0-5

N.T.S.

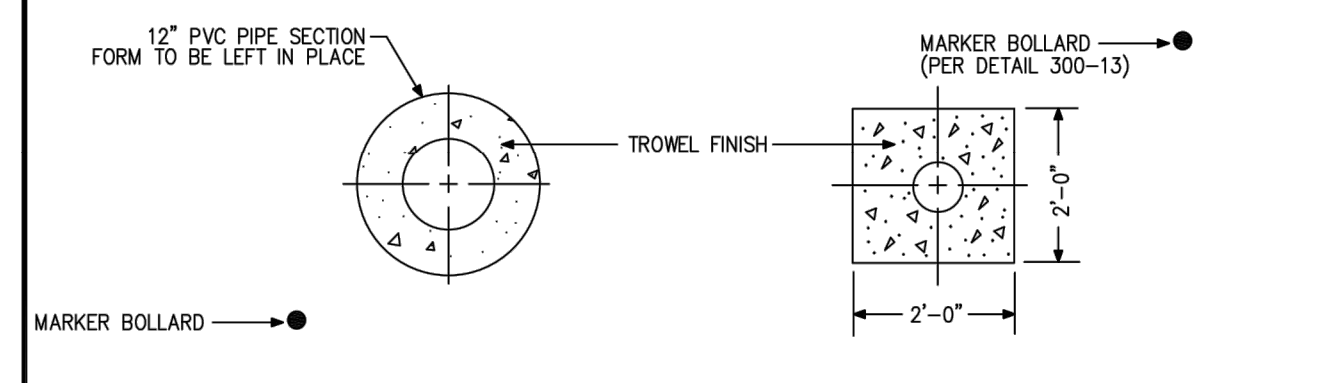
CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

3/4" THRU 2" SERVICE
CONNECTION DETAIL

ISSUED: APRIL 1992	REVISOR: APRIL 2010
REVISED:	DRAWING NO.
APRIL 2010	200-14



SECTION



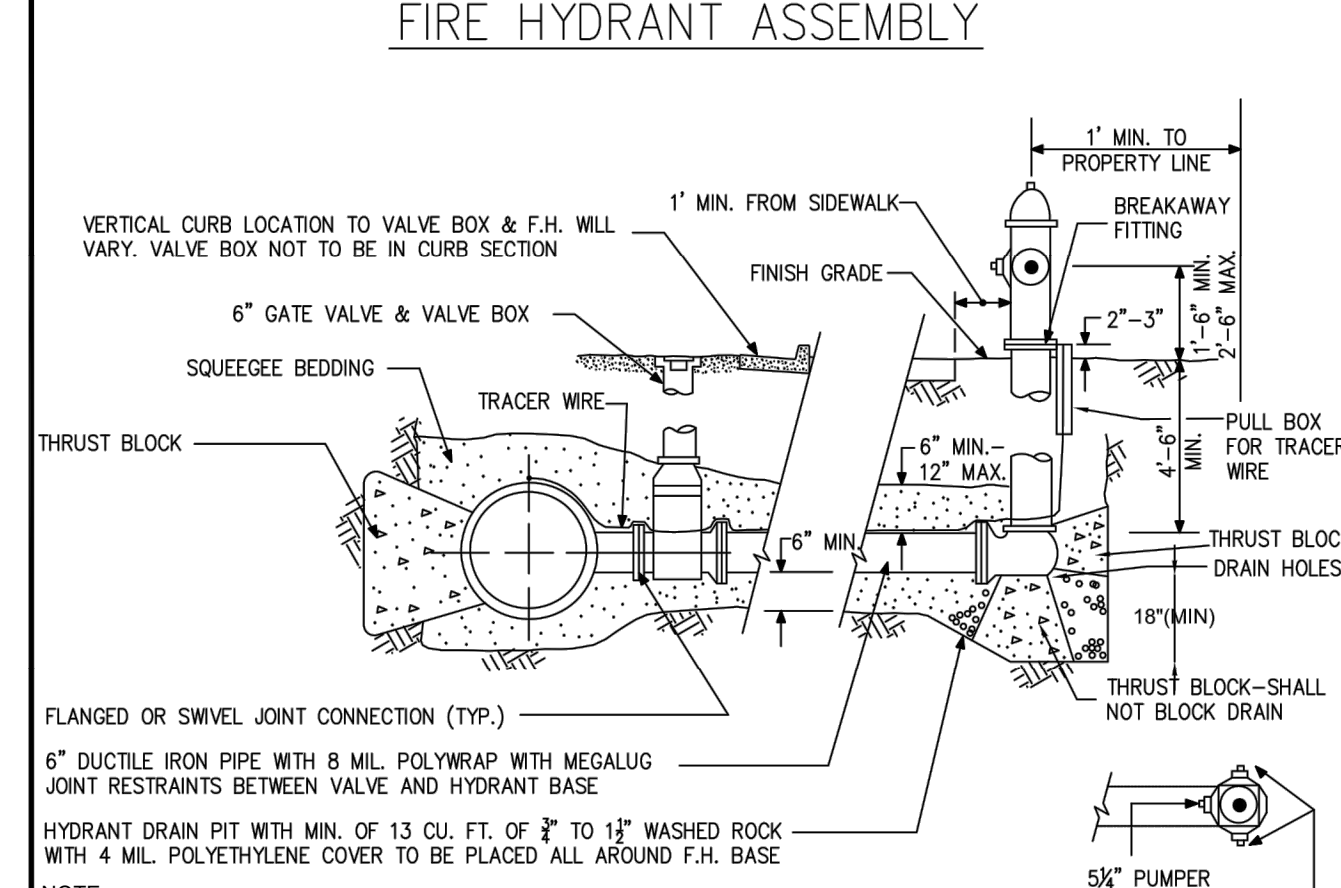
PLAN

N.T.S.

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

VALVE BOX COLLAR FOR
GREENBELT AREA DETAIL

ISSUED: APRIL 1992	REVISOR: APRIL 2010
REVISED:	DRAWING NO.
APRIL 2010	200-7



FIRE HYDRANT ASSEMBLY

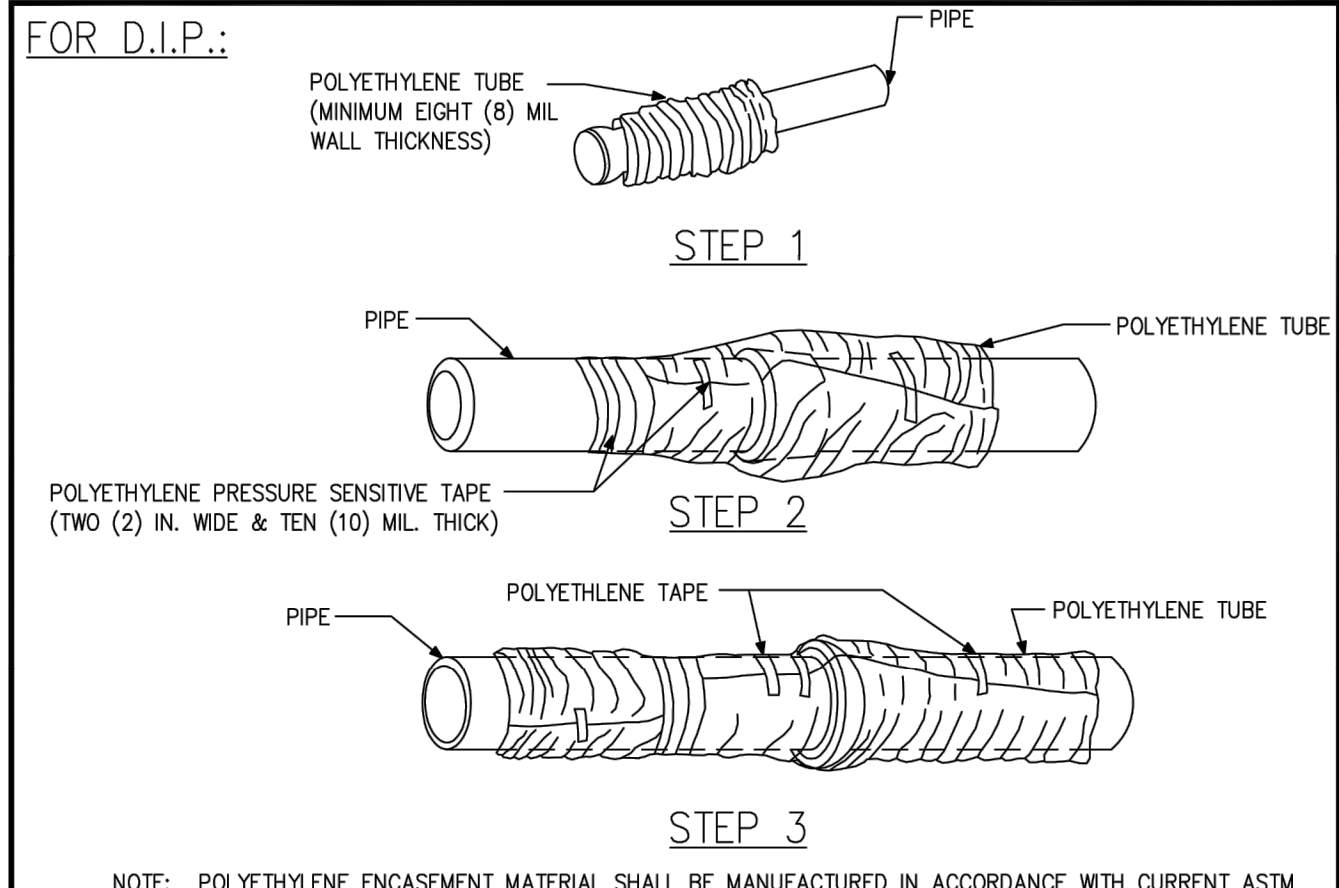
- FLANGED OR SWIVEL JOINT CONNECTION (TYP.)
- 6" DUCTILE IRON PIPE WITH 8 MIL. POLYWRAP WITH MEGALUG JOINT RESTRAINTS BETWEEN VALVE AND HYDRANT BASE
- HYDRANT DRAIN PIT WITH MIN. OF 13 CU. FT. OF 3/4" TO 1 1/2" WASHED ROCK WITH 4 MIL. POLYETHYLENE COVER TO BE PLACED ALL AROUND F.H. BASE
- NOTE:
FIRE HYDRANTS SHALL BE LIMITED TO THE FOLLOWING MANUFACTURERS ONLY:
- MUELLER COMPANY 5-1/4 SUPER CENTURION
 - WATEROUS COMPANY (1) MODEL WB-250-PACER
 - AVK HYDRANT (2700 OR 2780 SERIES)
- SHOE AND BARREL SHALL BE CONNECTED WITH HIGH STRENGTH STAINLESS BOLTS AND NUTS
HYDRANT SHALL HAVE A FIVE (5) FOOT CLEAR ZONE ON EACH SIDE OF HYDRANT (TEN (10) FOOT EASEMENT AROUND).
MINIMUM DISTANCE FROM DRIVEWAYS SHALL BE SIX (6) FEET.
HYDRANTS SHALL CONFORM TO AND BE TESTED IN ACCORDANCE WITH AWMA SPECIFICATION C-502.
HYDRANTS SHALL BE MADE OF CAST IRON WITH FULL BRONZE MOUNTINGS.
INLET SHALL FIT SIX (6) INCH PIPE WITH BARREL LENGTH SUFFICIENT FOR A FIVE (5) FOOT TRENCH.
ONLY TWO (2) HEIGHT EXTENSIONS MAY BE USED PER HYDRANT.
HYDRANT BASES SHOULD NOT BE ANY DEEPER THAN SIX (6) FEET FROM THE TOP OF FINISHED GRADE.
MAIN VALVE OPENING IN THE HYDRANT SHALL BE NO LESS THAN FIVE (5) INCHES IN DIAMETER.
THREADS ON NOZZLES SHALL BE NATIONAL STANDARD.
OPERATING NUT & NOZZLE COVERS SHALL BE NATIONAL STANDARD PENTAGON MEASURING ONE AND ONE-HALF (1½) INCHES FROM POINT TO OPPOSITE FLAT AND SHALL OPEN CLOCKWISE.
HYDRANTS SHALL BE PLUMBED VERTICALLY WITH PUMPER NOZZLE FACING STREET.
NO WATER SERVICE MAIN TAPS SHALL BE MADE TO A DISTRIBUTION MAIN WITHIN FIVE (5) FEET OF A FIRE HYDRANT BRANCH MAIN.
NO HORIZONTAL BENDS OR OFFSETS SHALL BE USED IN INSTALLING FIRE HYDRANT BRANCH MAINS.
- EACH HYDRANT SHALL BE PAINTED WITH OSHA ENAMEL, SAFETY YELLOW, OR AN APPROVED EQUIVALENT.
FIRE HYDRANT ASSEMBLIES SHALL BE MEGALUGGED IN ACCORDANCE WITH SUBSECTION 204.1 (N)

N.T.S.

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

FIRE HYDRANT ASSEMBLY DETAIL

ISSUED: APRIL 1992	REVISOR: APRIL 2010
REVISED:	DRAWING NO.
APRIL 2010	200-10



- NOTE: POLYETHYLENE ENCASEMENT MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH CURRENT ASTM STANDARD. THE RAW MATERIAL USED TO MANUFACTURE POLYETHYLENE FILM SHALL BE TYPE I, CLASS A, GRADE E-1 IN ACCORDANCE WITH CURRENT ASTM STANDARD.
- STEP 1 - PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.
- STEP 2 - PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE.
- STEP 3 - OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

N.T.S.

CITY OF THORNTON, COLORADO
STANDARDS & SPECIFICATIONS

CORROSION PROTECTION DETAIL

ISSUED: APRIL 1992	REVISOR: APRIL 2010
REVISED:	DRAWING NO.
APRIL 2010	200-15

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

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

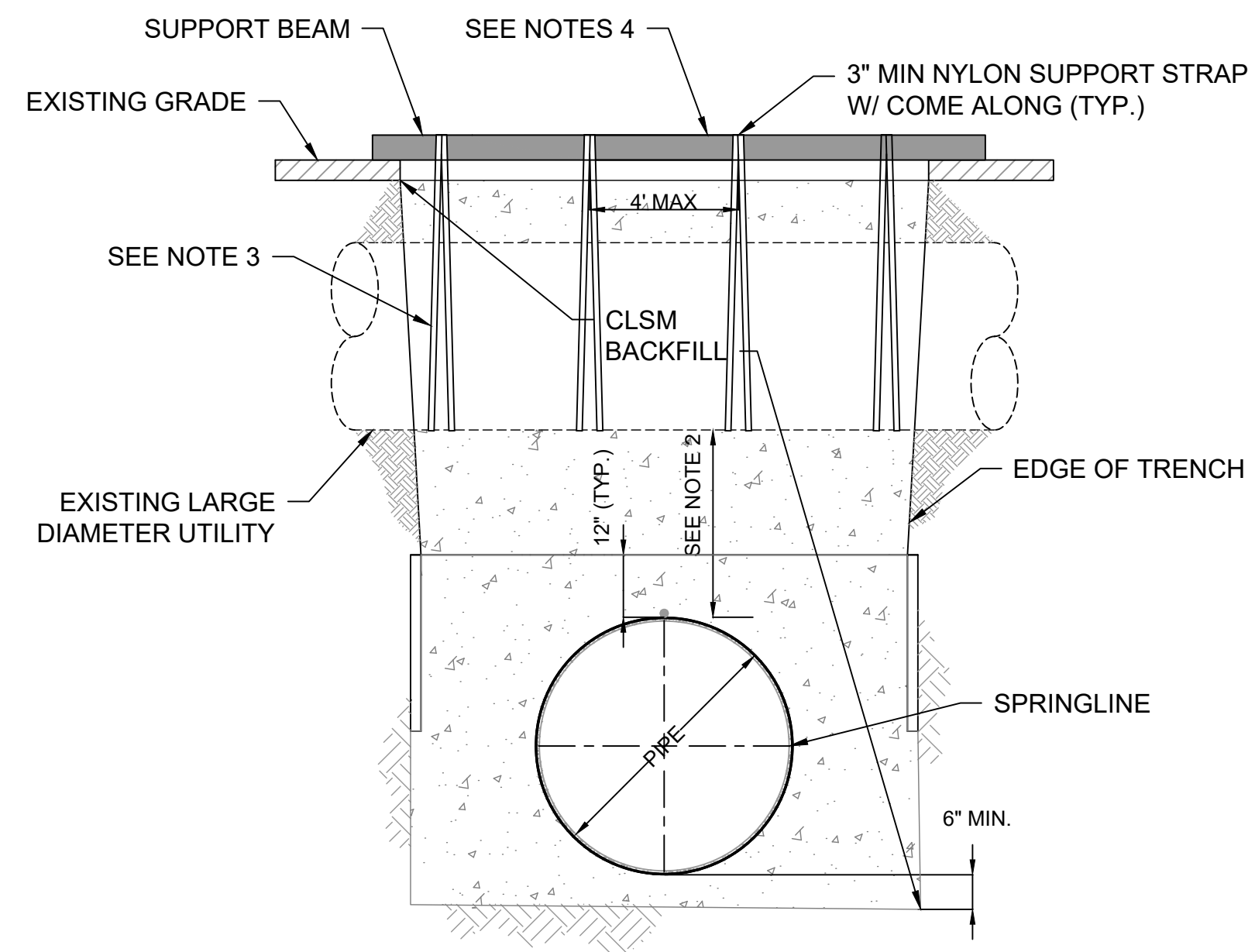
CIVIL DETAILS III

project 154303	contract
drawing PD003	rev. 0
sheet 021	of 39
file 154303_PD003.dwg	sheets

Scale For Microfinishing

Inches

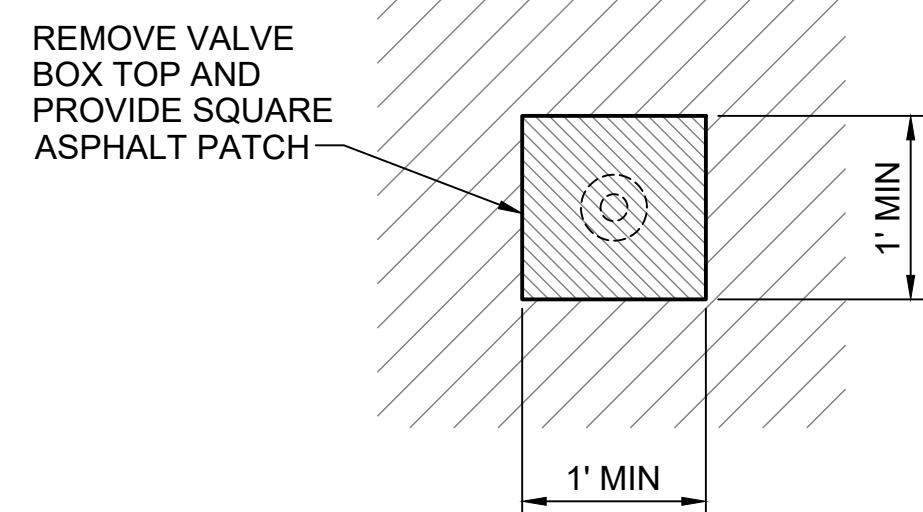




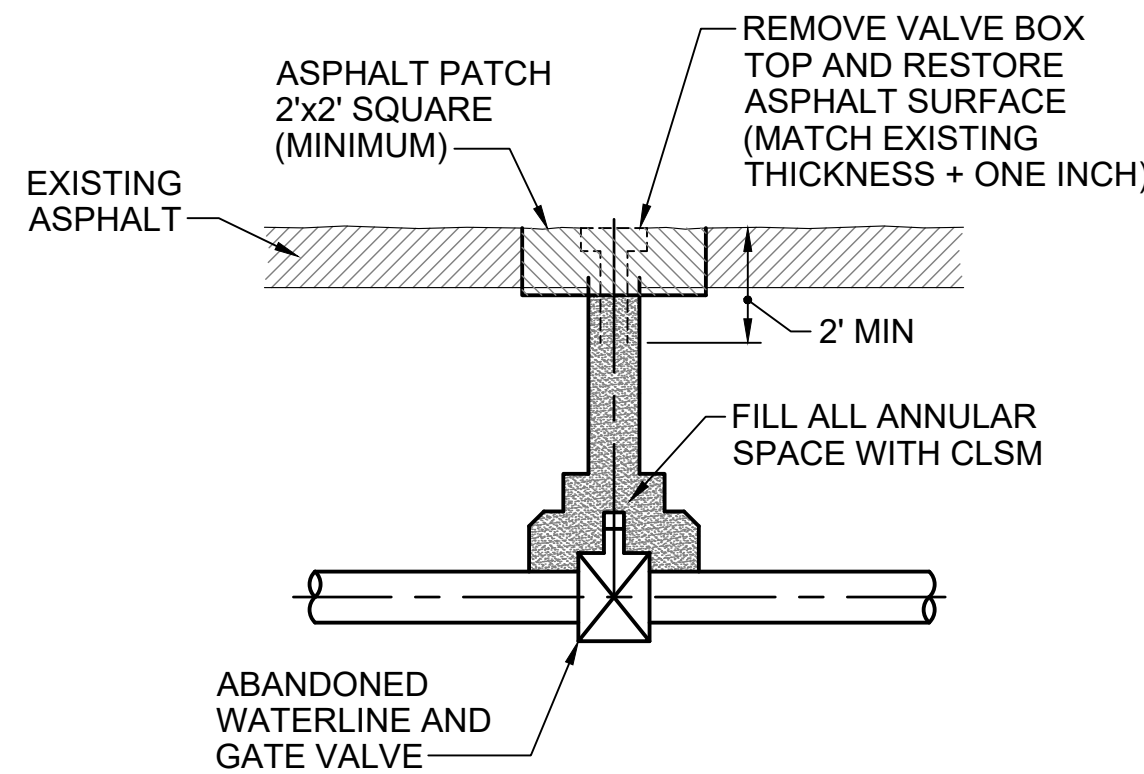
EXISTING UTILITY SUPPORT - TYPICAL DETAIL
NOT TO SCALE

NOTE:

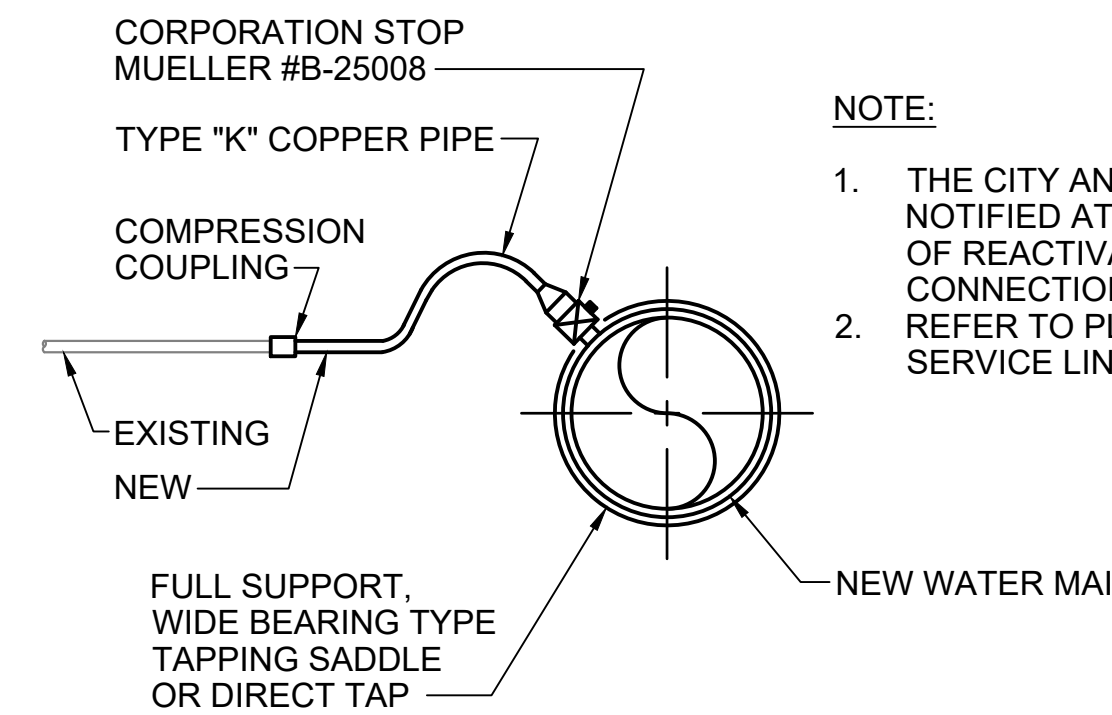
1. CONTRACTOR SHALL UTILIZE EXISTING UTILITY SUPPORT WHERE NECESSARY AND WHEN CROSSING ANY UTILITY LARGER THAN 18-INCH IN DIAMETER.
2. SEPARATION SHALL BE SHOWN ON THE DRAWINGS OR AS REQUIRED BY PERMITS.
3. NYLON STRAP SHALL HAVE A MINIMUM WORKING LOAD OF 5,000 POUNDS.
4. SUPPORT BEAM SHALL EXTEND A MINIMUM OF 2-FEET BEYOND EDGE OF TRENCH ON BOTH SIDES.
5. SEE DETAIL ON PD006 FOR CLSM AS BACKFILL ASPHALT SURFACE RESTORATION REQUIREMENTS.



PLAN



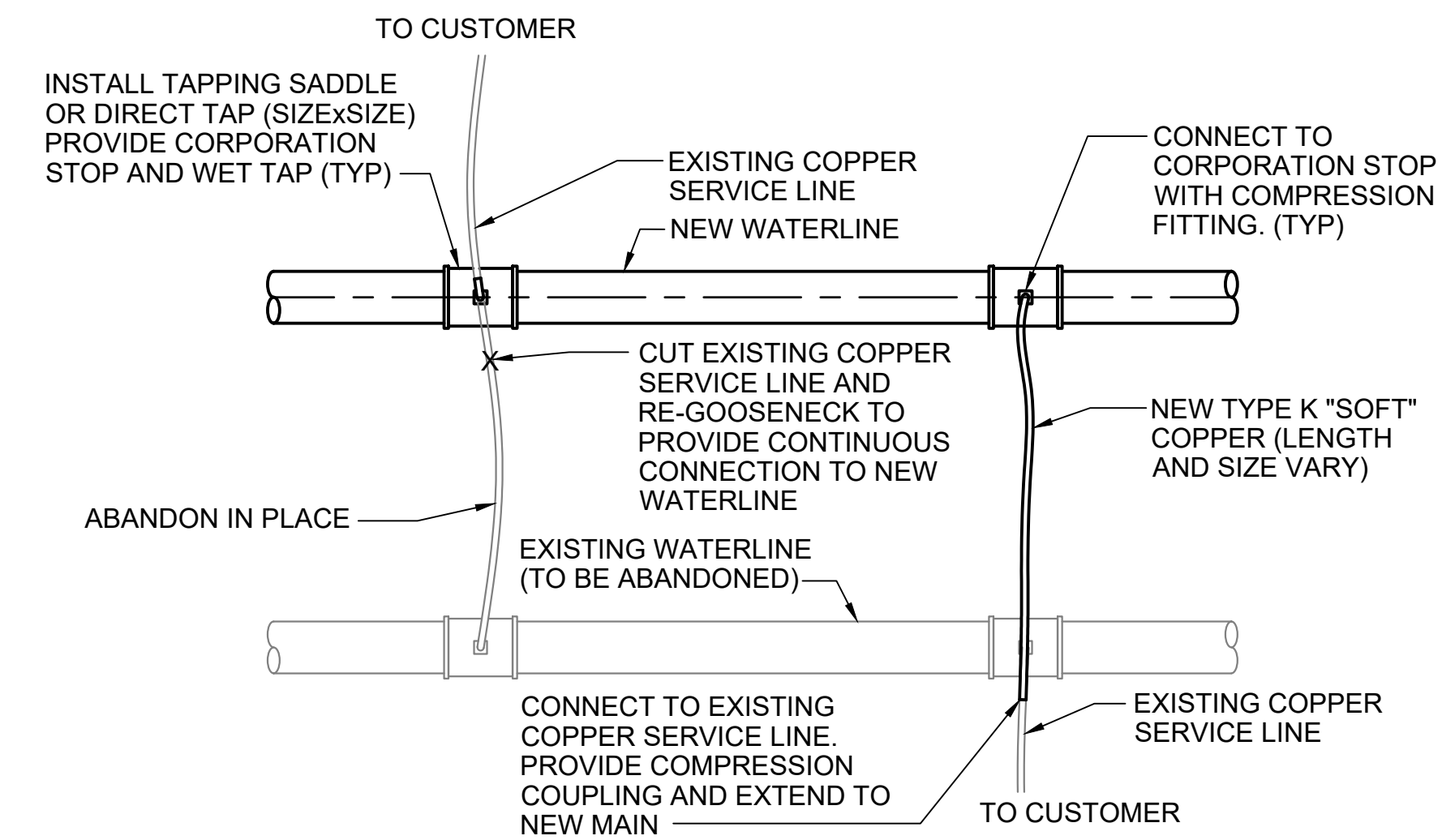
VALVE BOX ABANDONMENT PROFILE
NOT TO SCALE



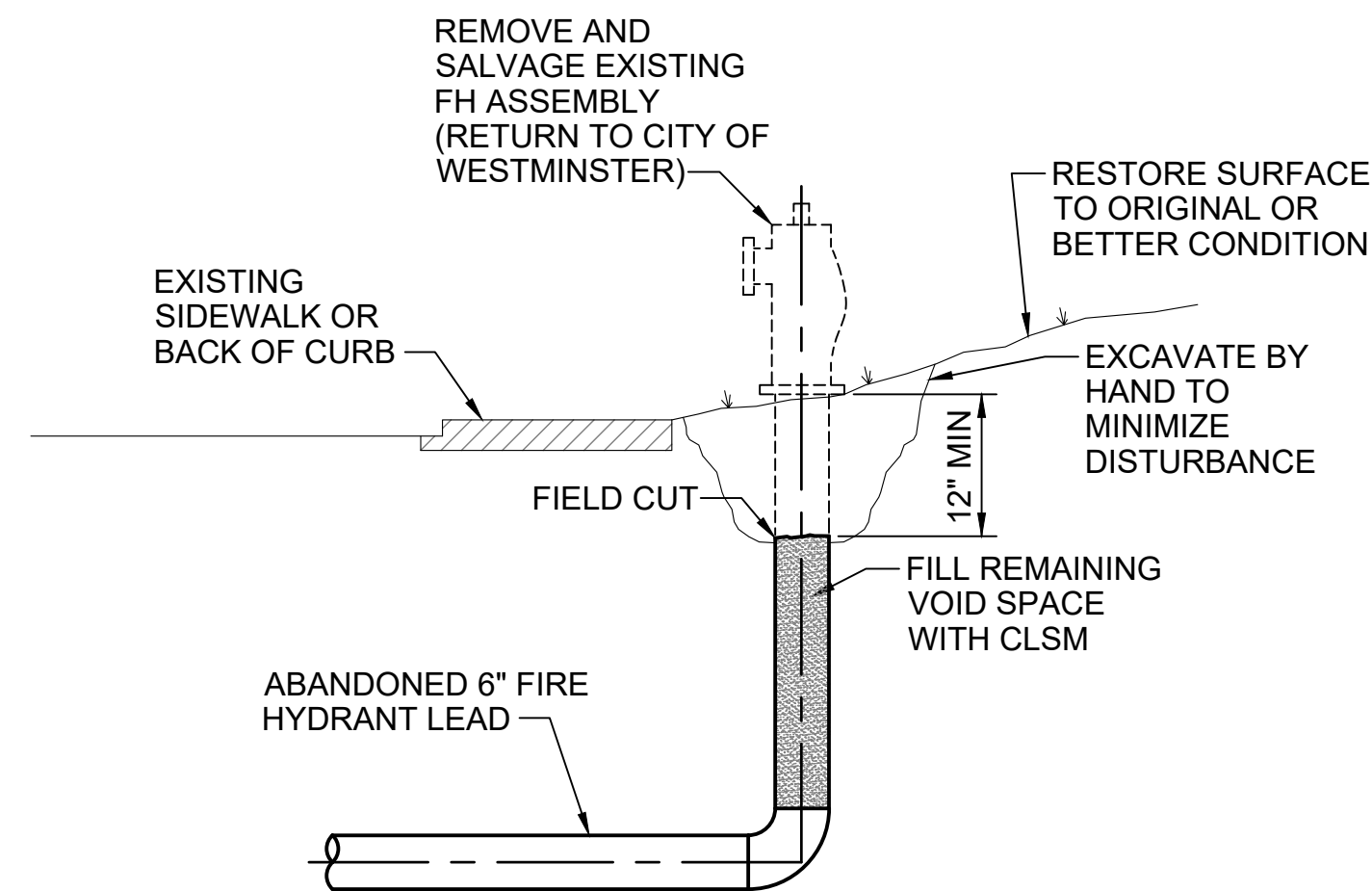
NOTE:

1. THE CITY AND THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF REACTIVATING ANY WATER SERVICE CONNECTIONS.
2. REFER TO PLAN VIEW FOR APPROXIMATE SERVICE LINE REPLACEMENT LENGTH.

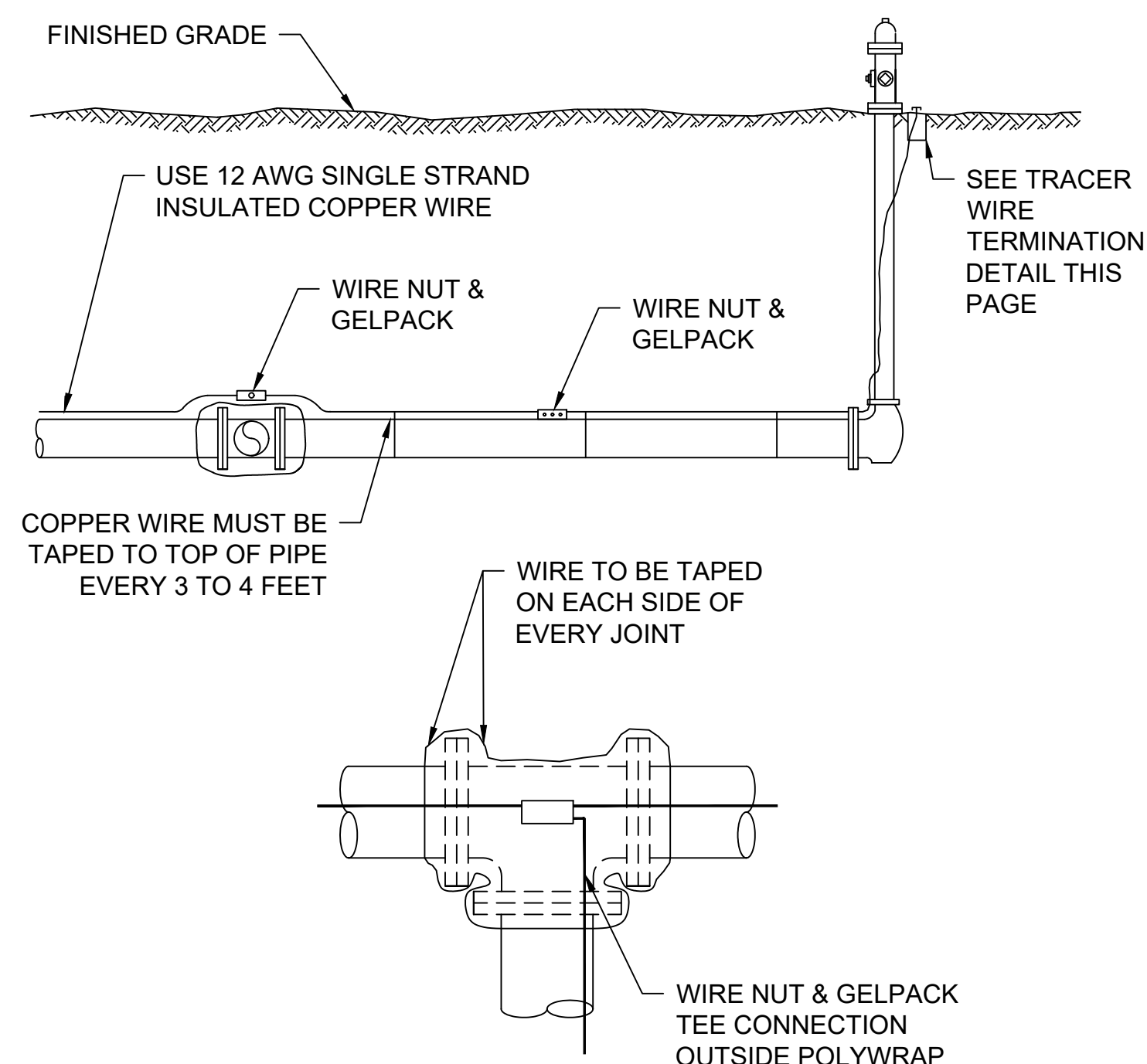
TYPICAL WATER SERVICE CONNECTION



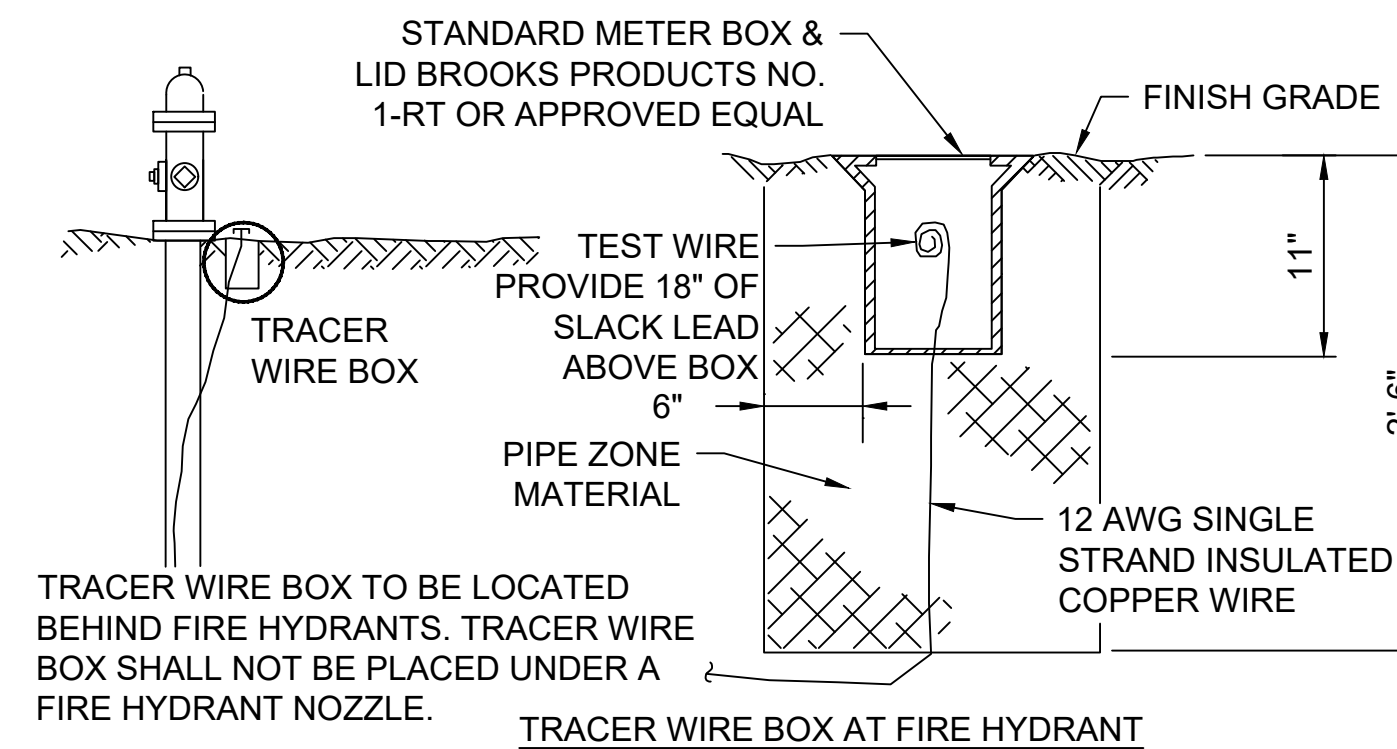
TYPICAL WATER SERVICE LINE REACTIVATION
NOT TO SCALE



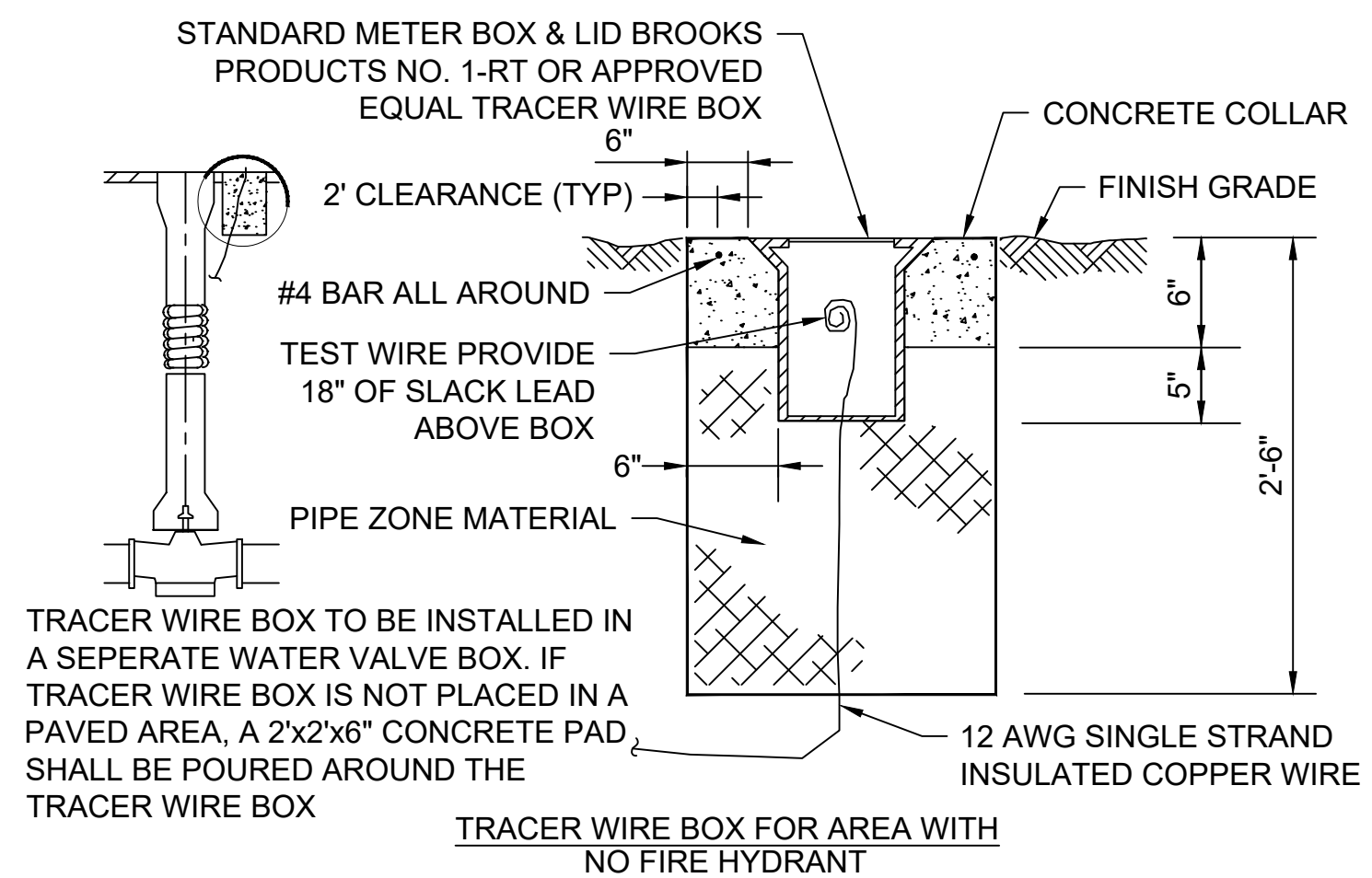
FIRE HYDRANT REMOVAL
NOT TO SCALE



TRACER WIRE
NOT TO SCALE



TRACER WIRE BOX AT FIRE HYDRANT



TRACER WIRE TERMINATION
NOT TO SCALE

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

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

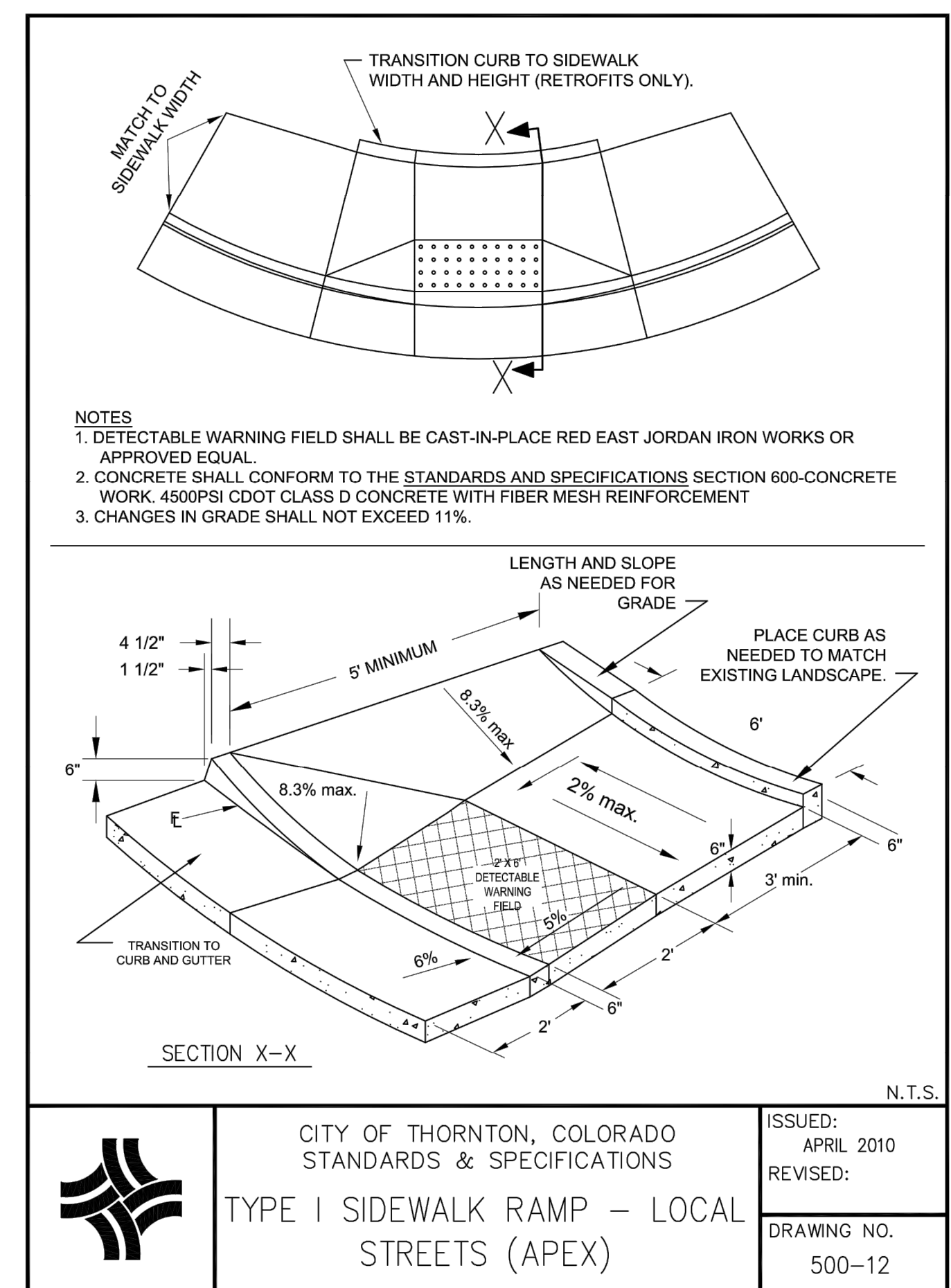
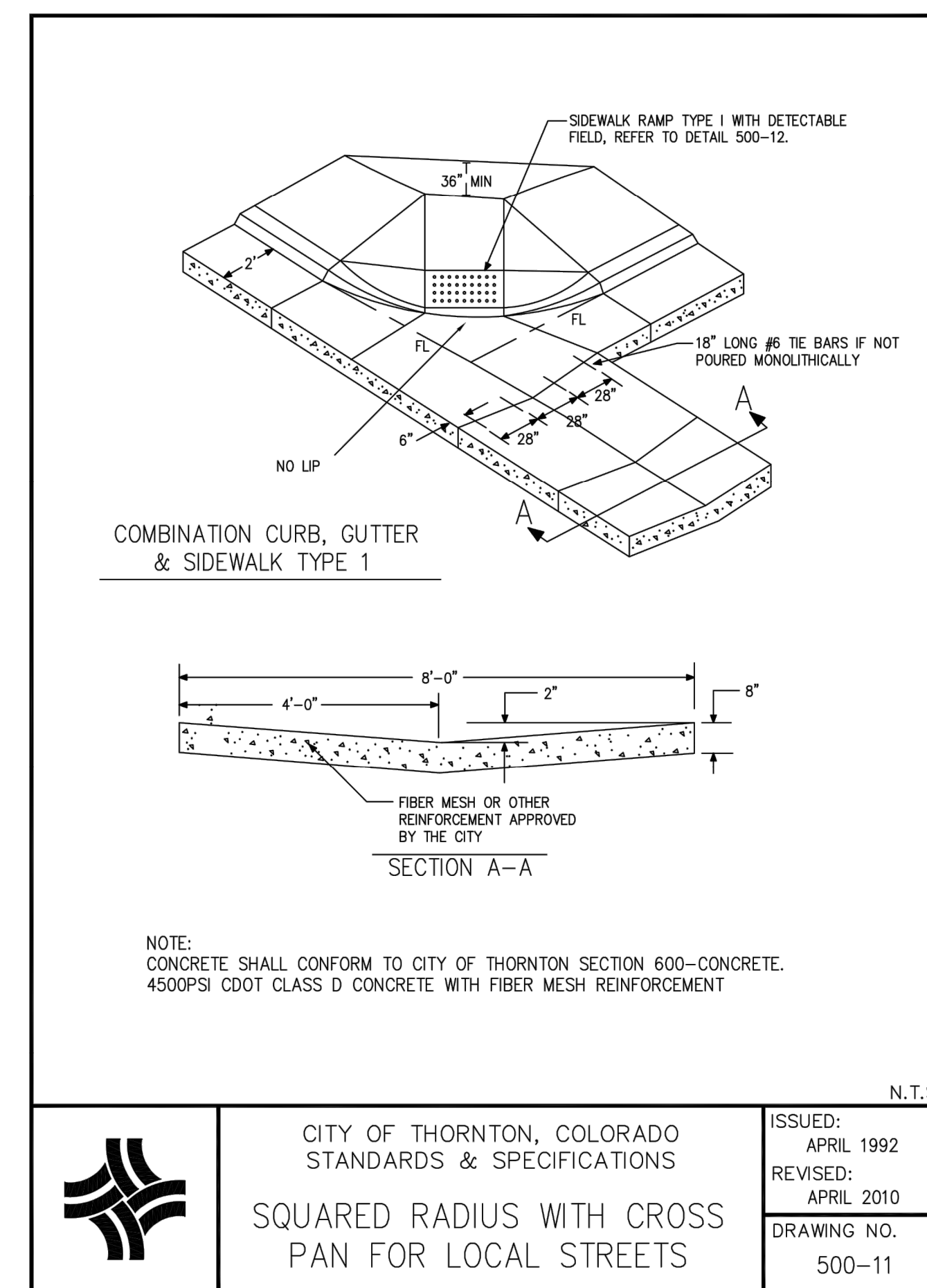
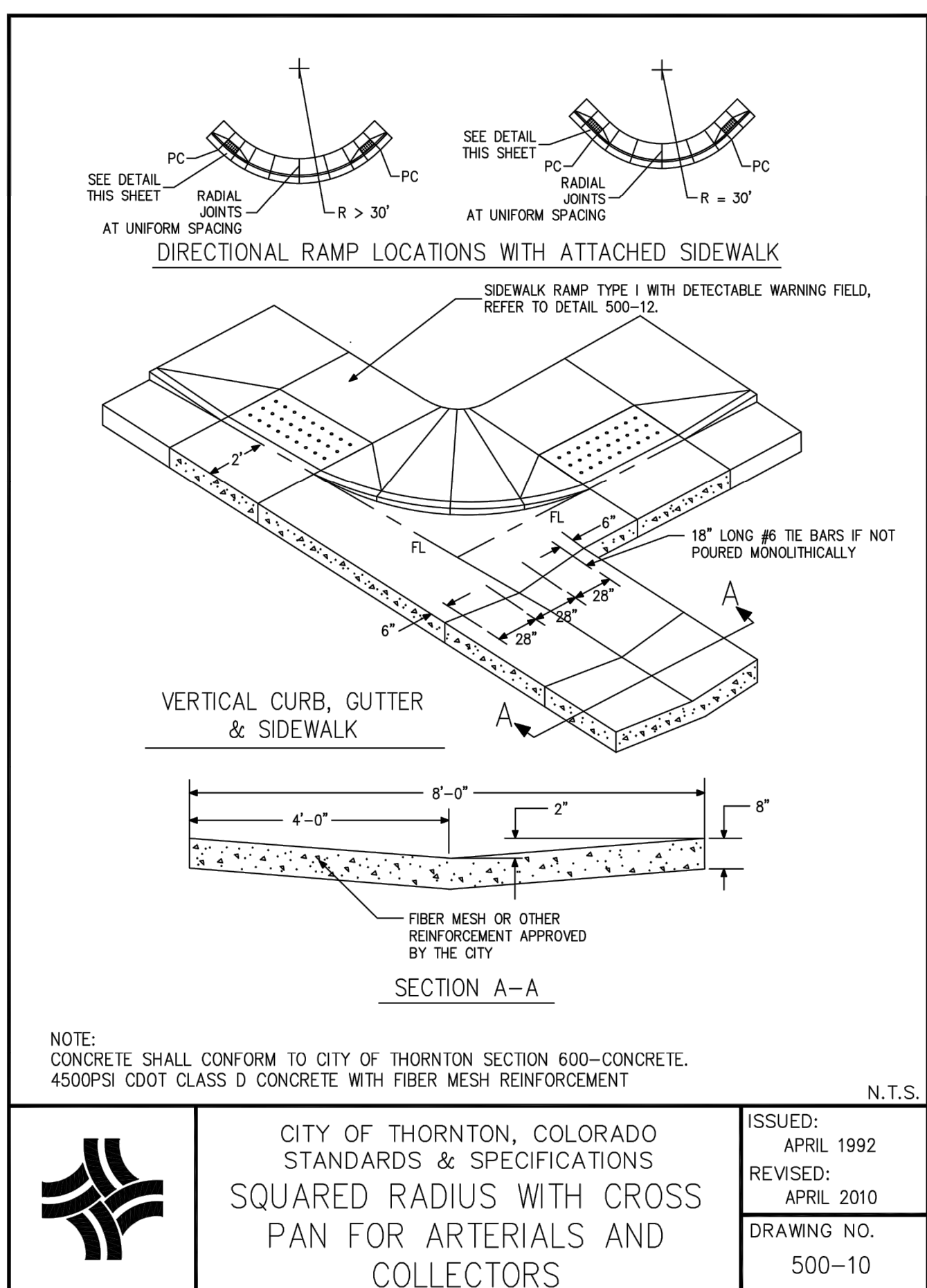
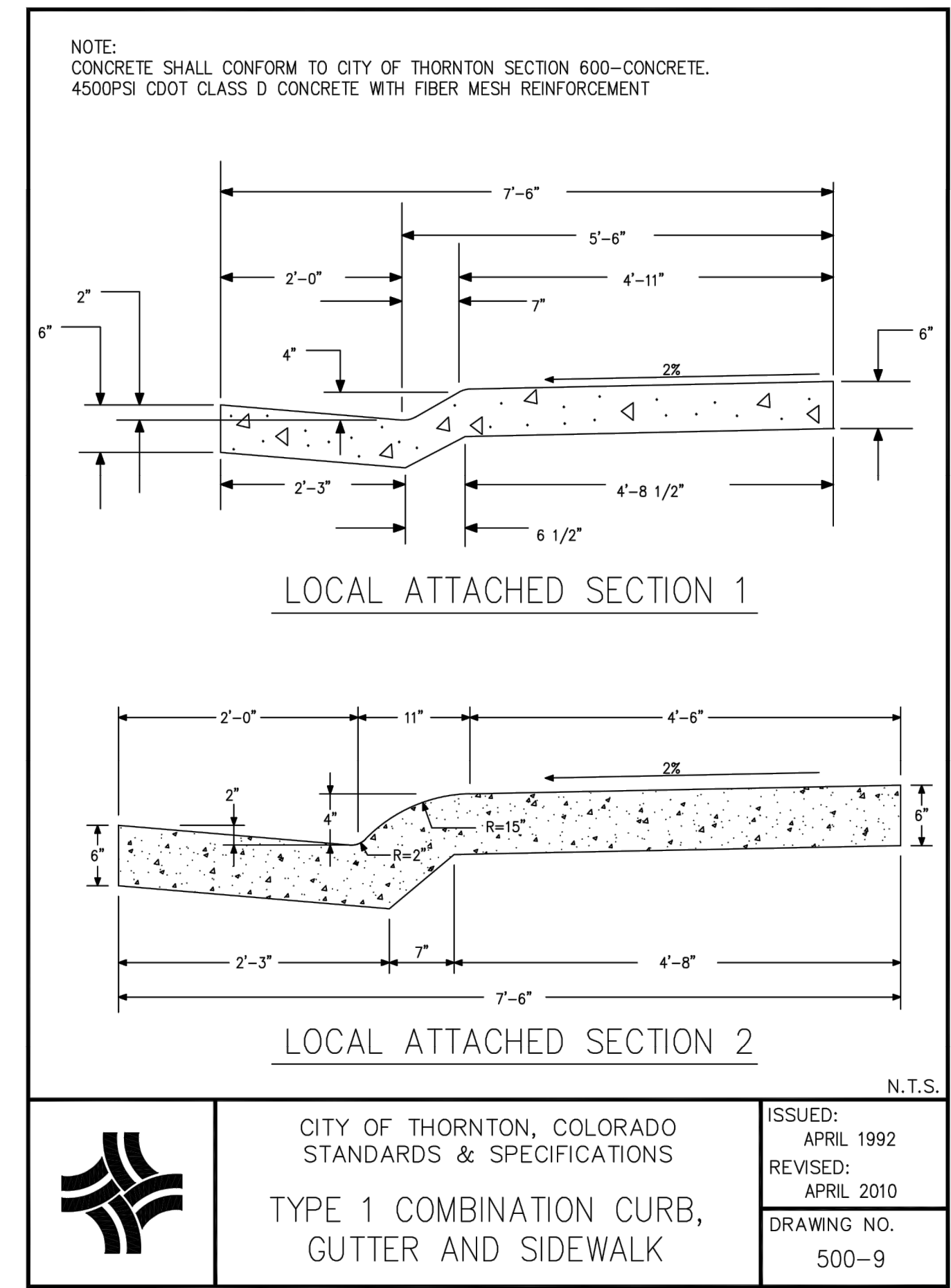
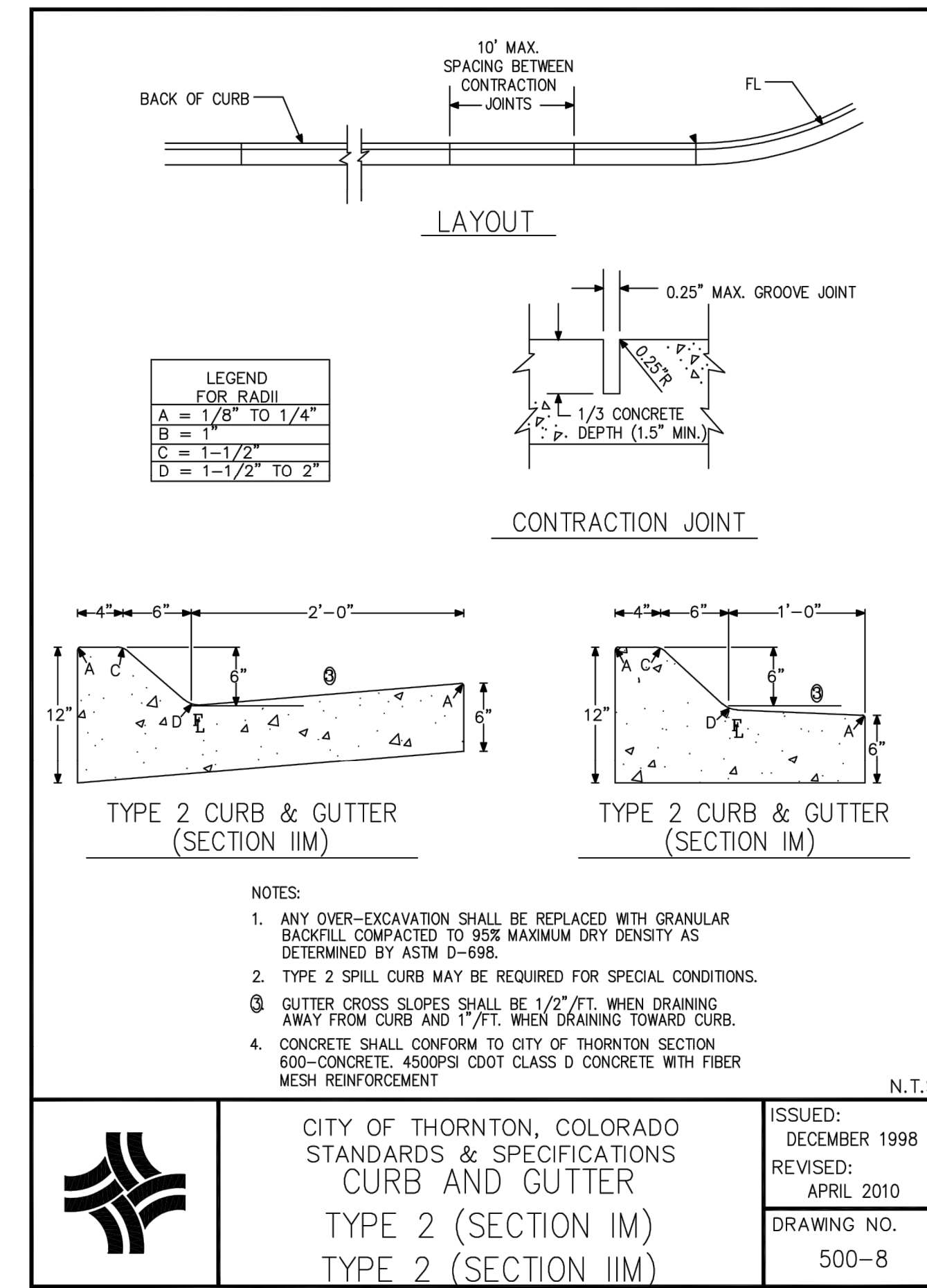
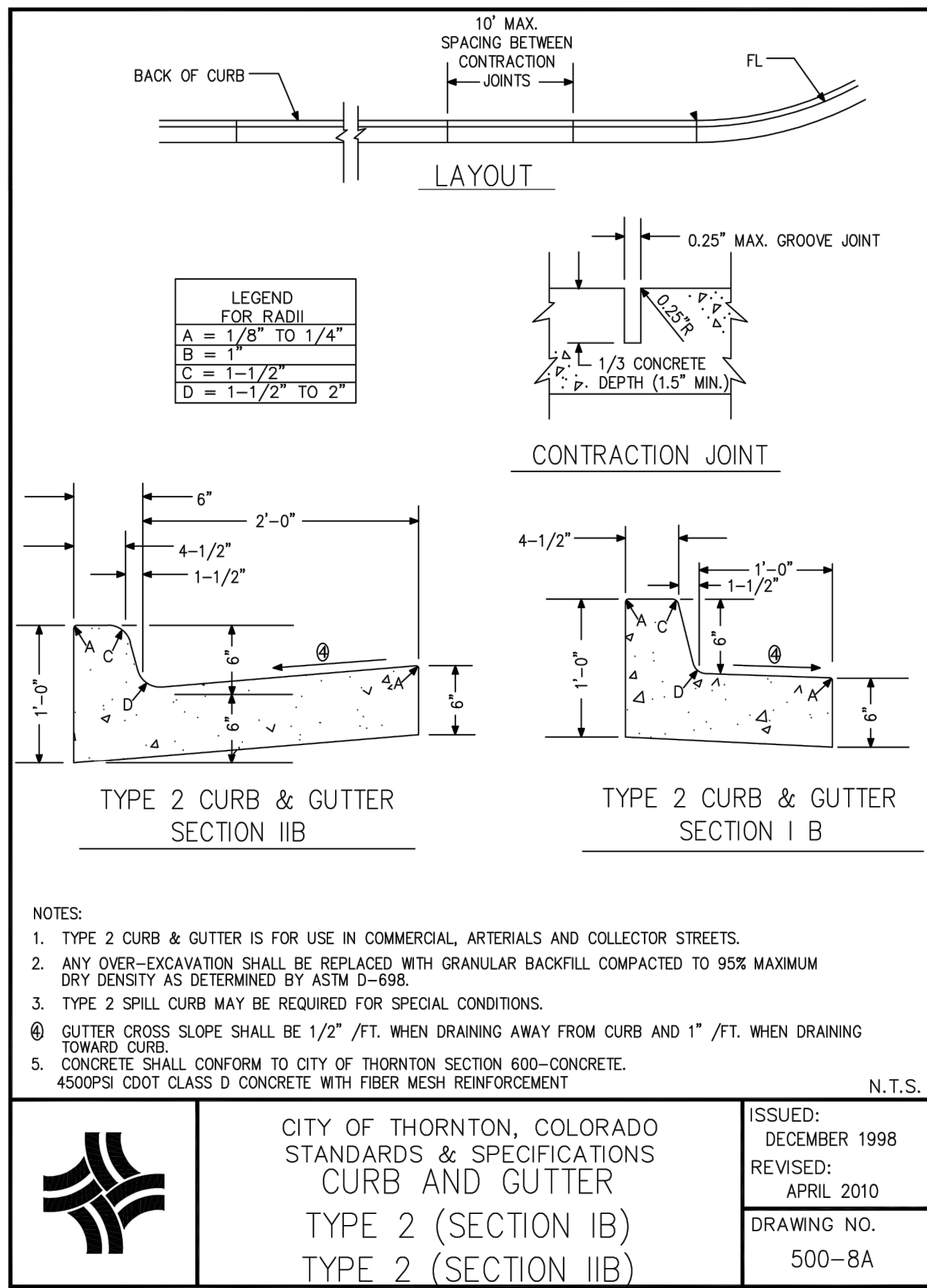


CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
CIVIL DETAILS IV

project	154303	contract	
drawing	PD004	rev.	0
sheet	22	of	39 sheets
file	154303_PD004.dwg		

Scale For Microfitting
Millimeters
Inches

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



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

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

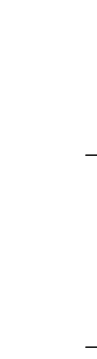


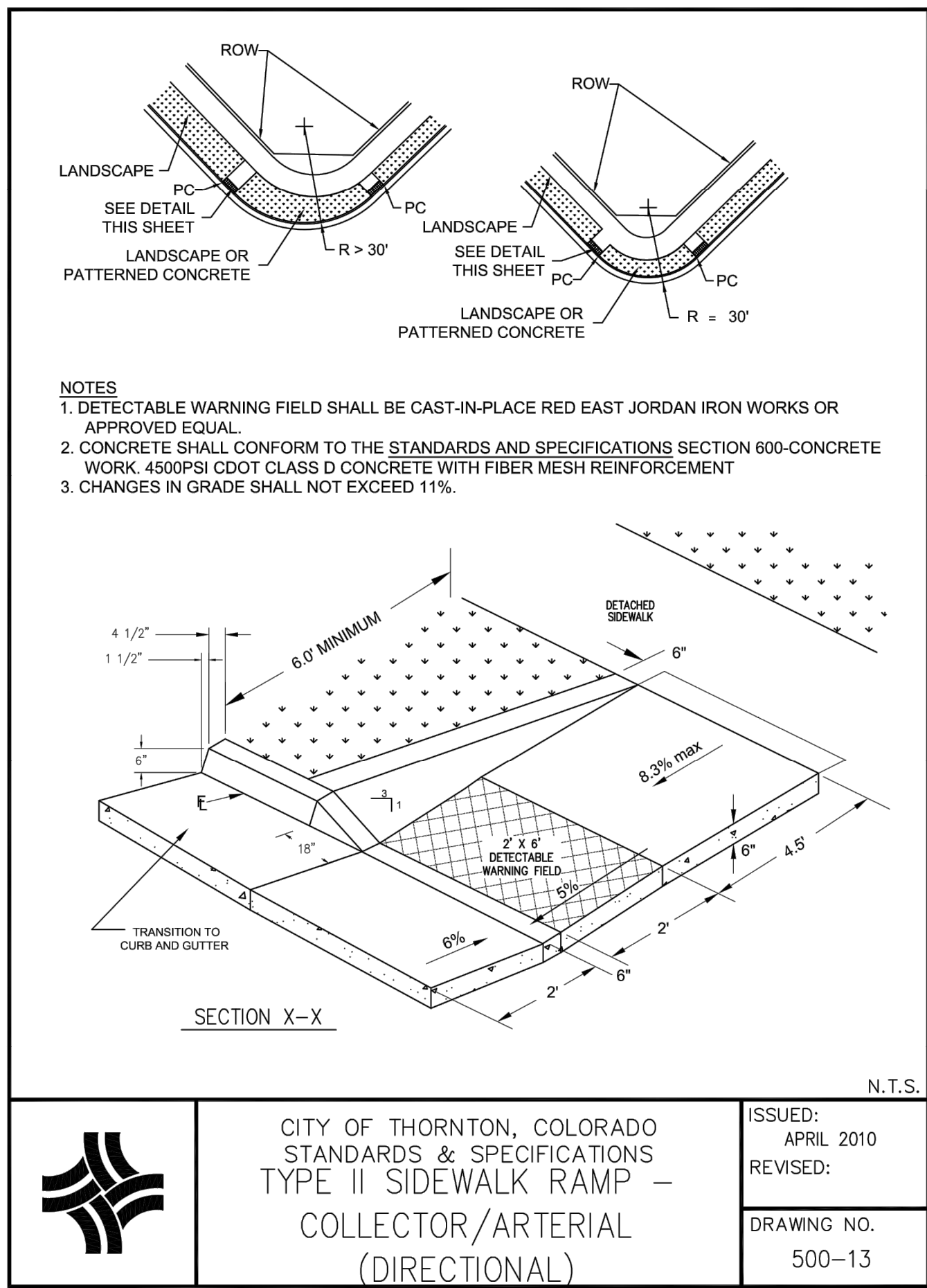
CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
ROADWAY DETAILS I

project	154303	contract	
drawing	PD005	rev.	0
sheet	23	of	39 sheets
file	154303_PD005.dwg		

Scale For Microfinishing

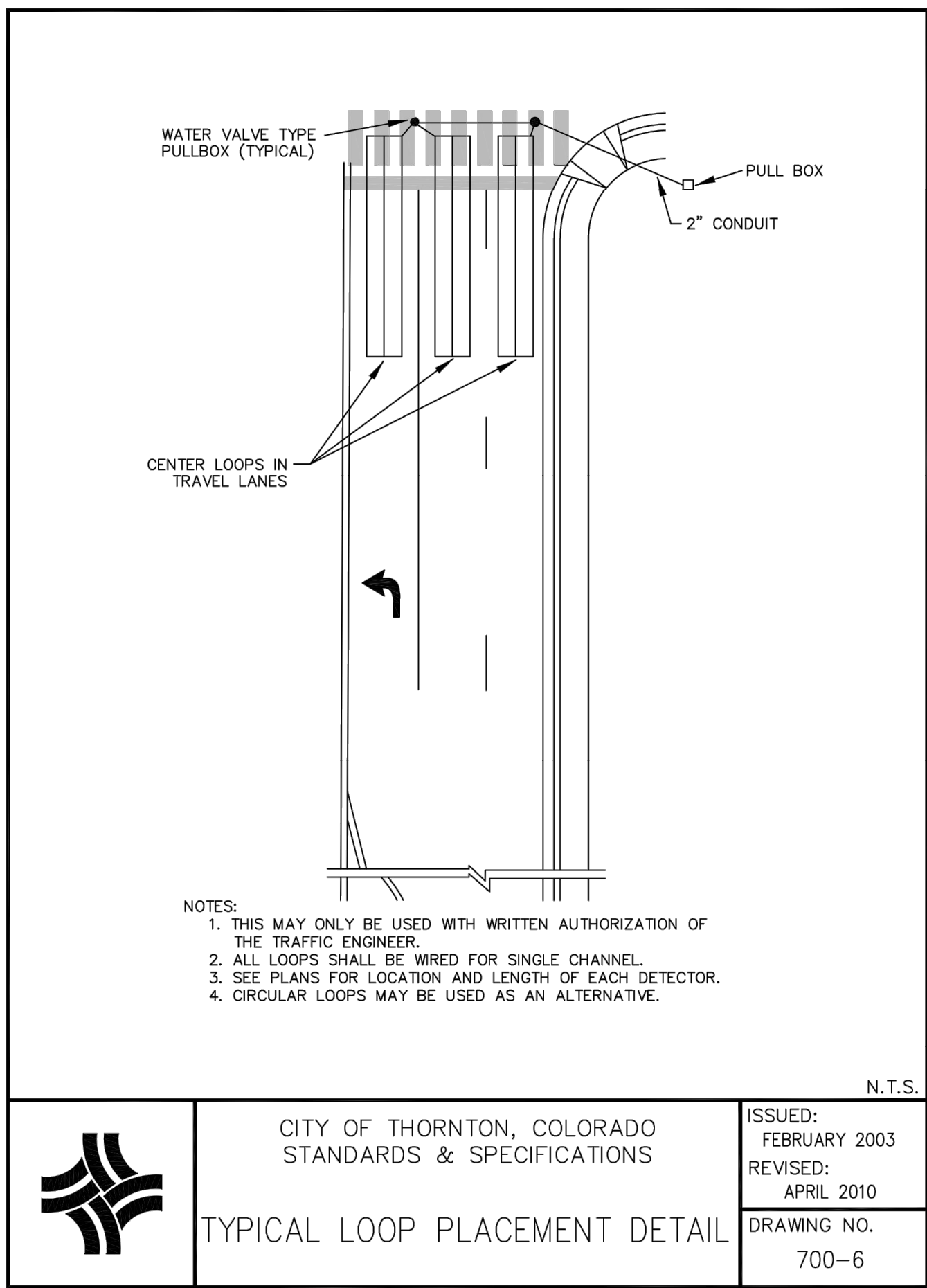
Inches





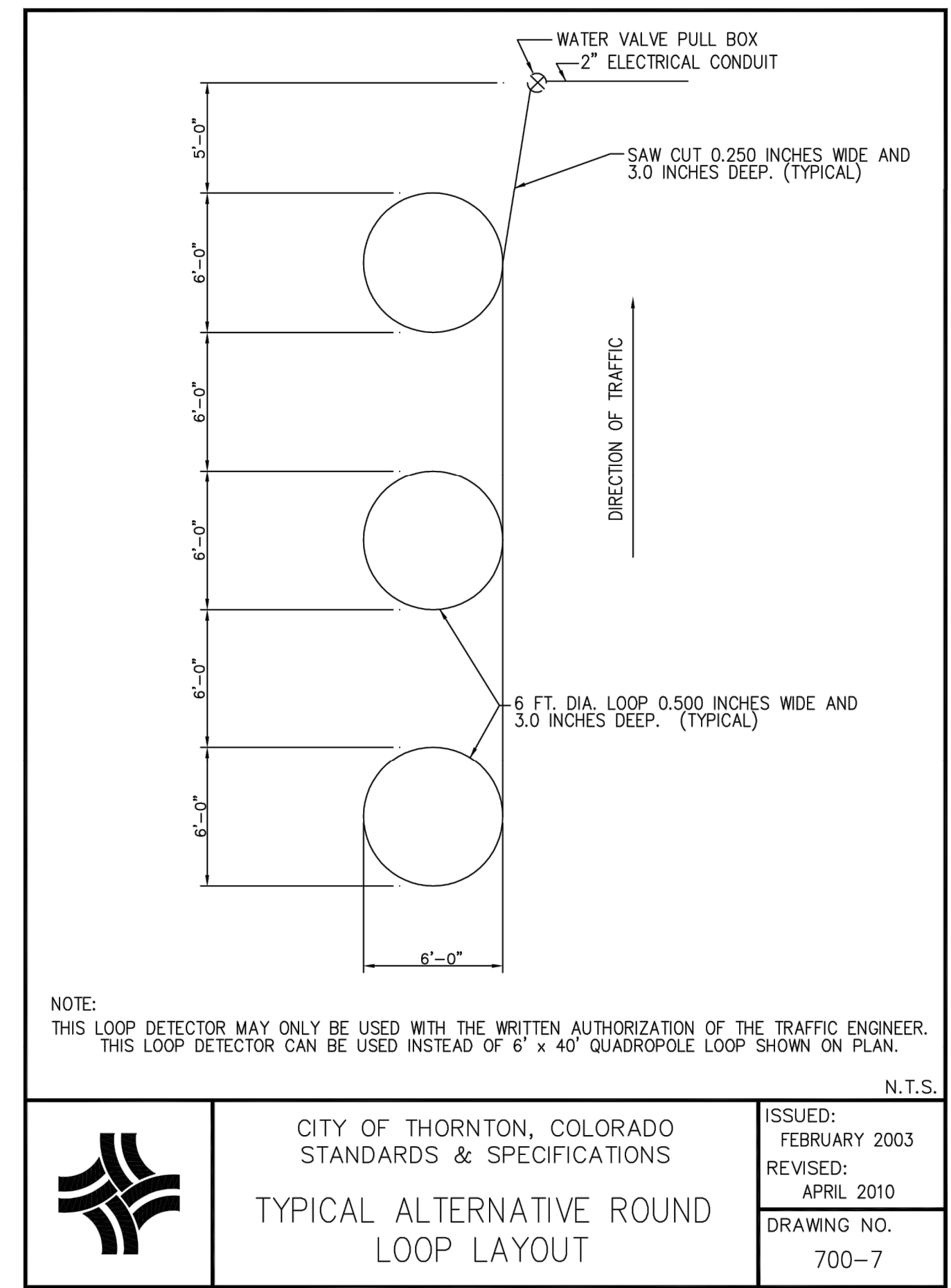
CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS
TYPE II SIDEWALK RAMP – COLLECTOR/ARTERIAL (DIRECTIONAL)

ISSUED: APRIL 2010
 REVISED:
 DRAWING NO. 500-13



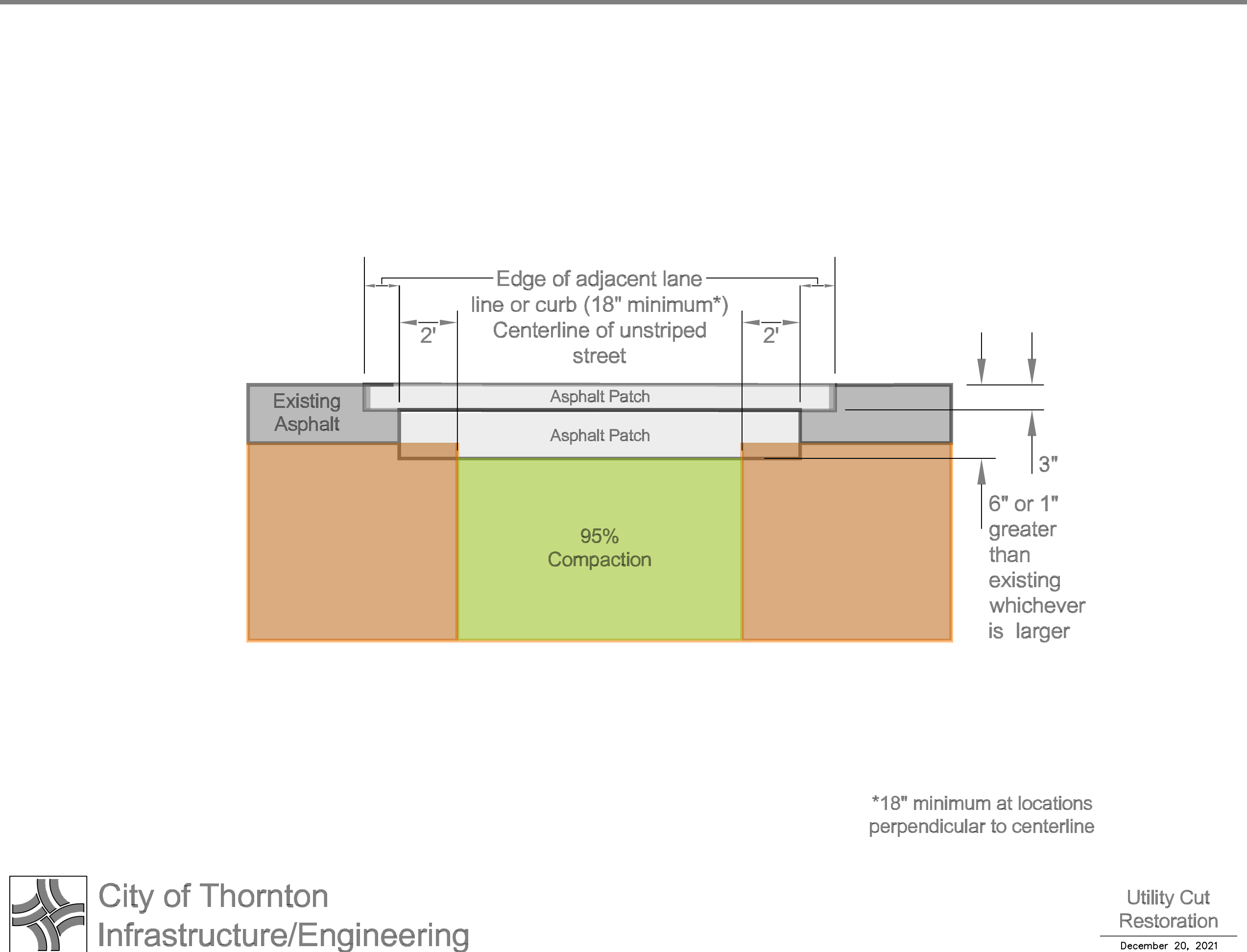
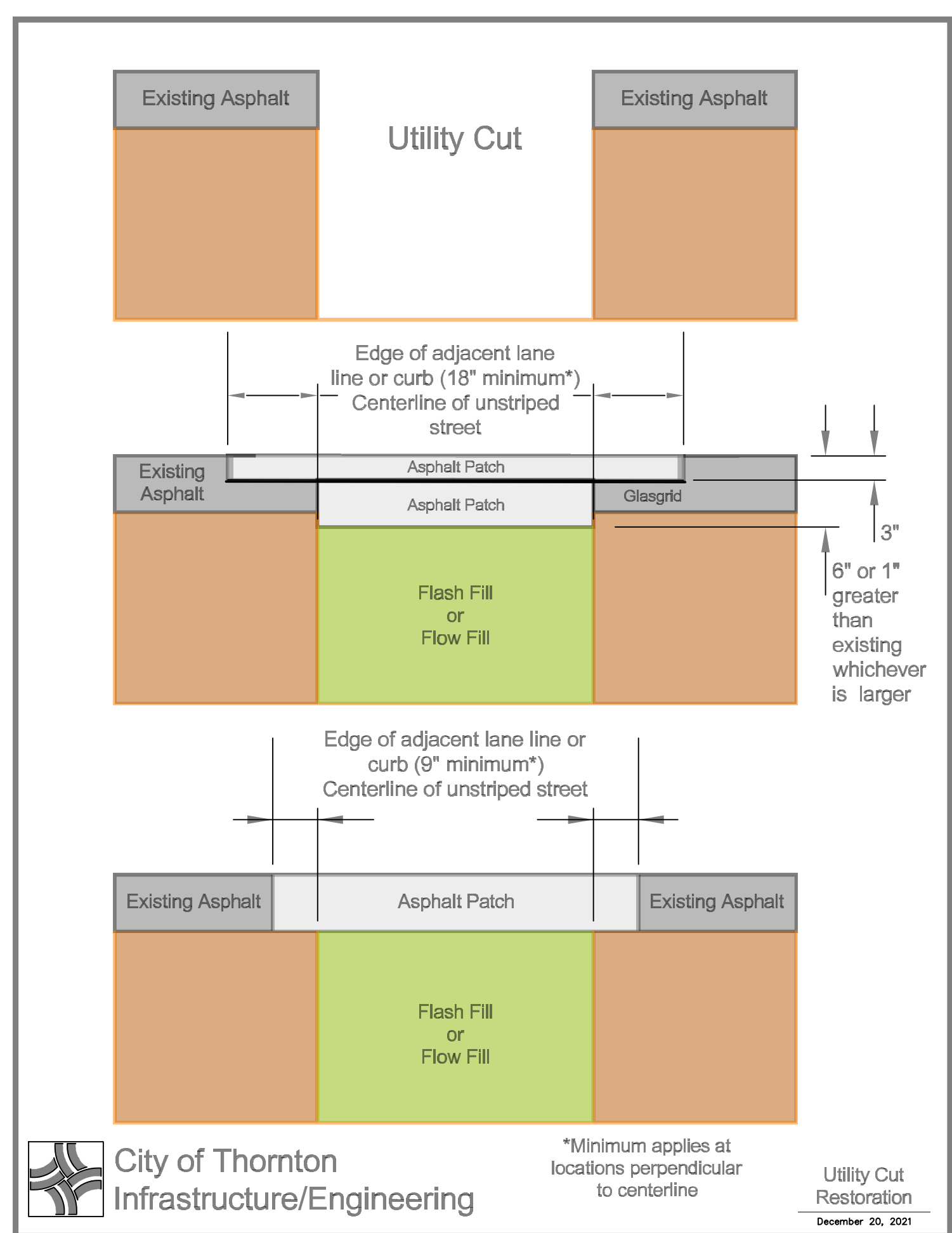
CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS
TYPICAL LOOP PLACEMENT DETAIL

ISSUED: FEBRUARY 2003
 REVISED: APRIL 2010
 DRAWING NO. 700-6



CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS
TYPICAL ALTERNATIVE ROUND LOOP LAYOUT

ISSUED: FEBRUARY 2003
 REVISED: APRIL 2010
 DRAWING NO. 700-7



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

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

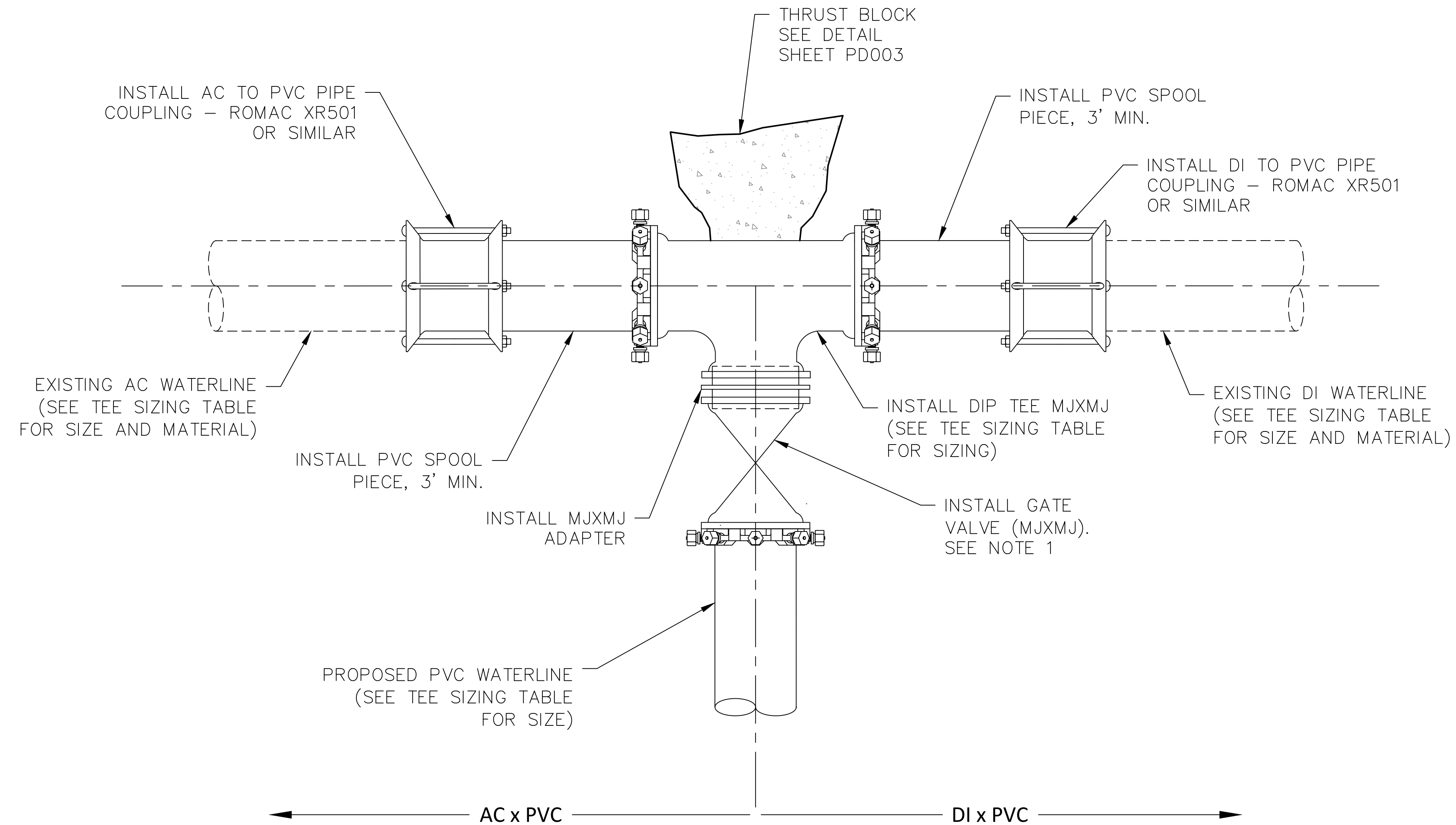
date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE



CITY OF THORNTON
 2022-2024 PIPELINE REHABILITATION
 ROADWAY DETAILS II

project	154303	contract	
drawing	PD006	rev.	0
sheet	24 of 39	sheets	
file	154303_PD006.dwg		

Scale For Microfinishing
 Millimeters
 Inches



NOTE 1
 INSTALL GV ON TEE UNLESS OTHERWISE SHOWN ON THE PLAN AND PROFILE DRAWINGS.

CONNECTION DETAIL (SEE TEE SIZING TABLE FOR LOCATIONS)
 NOT TO SCALE

TEE SIZING TABLE				
SITE	STATION	EXISTING WATERLINE		TEE BRANCH SIZE
		NOMINAL DIAMETER	MATERIAL	
SITE 1	2+19.01	8"	AC	6"
SITE 2	3+26.88	8"	DI	6"
SITE 3	0+00	16"	DI	12"
SITE 4 (COLUMBINE COURT)	0+00	8"	DI	6"
SITE 4 (COLUMBINE WAY)	0+00	8"	DI	6"
SITE 6	0+00	8"	AC	8"
SITE 6	19+33.10	8"	AC	8"
SITE 7	0+00	8"	PVC	8"
SITE 8	4+42.54	12"	AC	6"

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

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
 CONNECTION DETAILS I

project 154303	contract
drawing PD007	rev. 0
sheet 25	of 39
sheets	
file 154303_PD007.dwg	

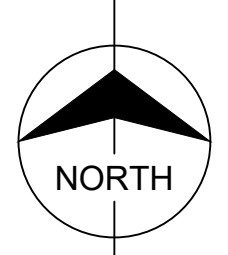
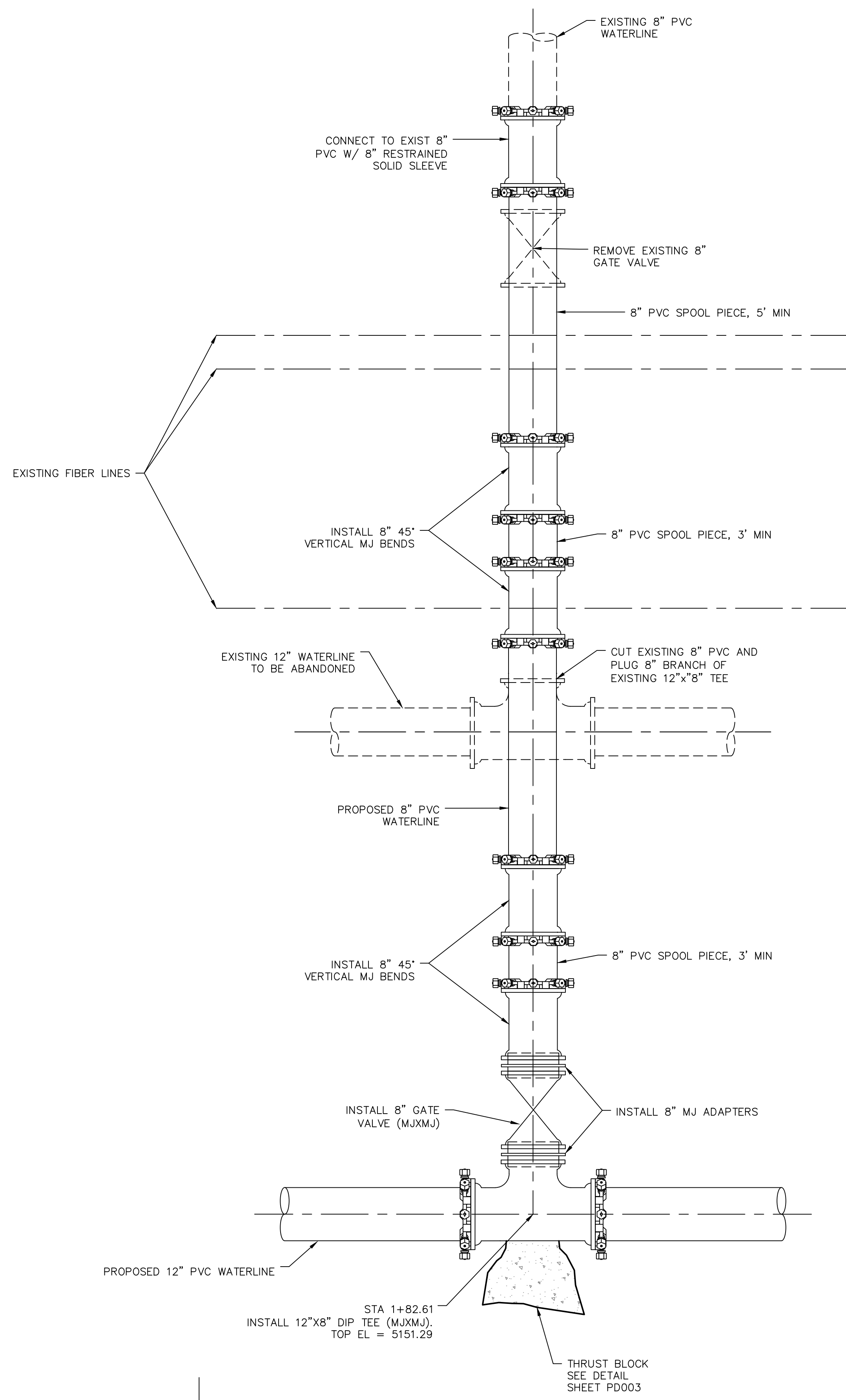
Scale For Microfitting
 Millimeters
 Inches

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

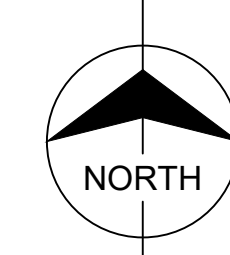
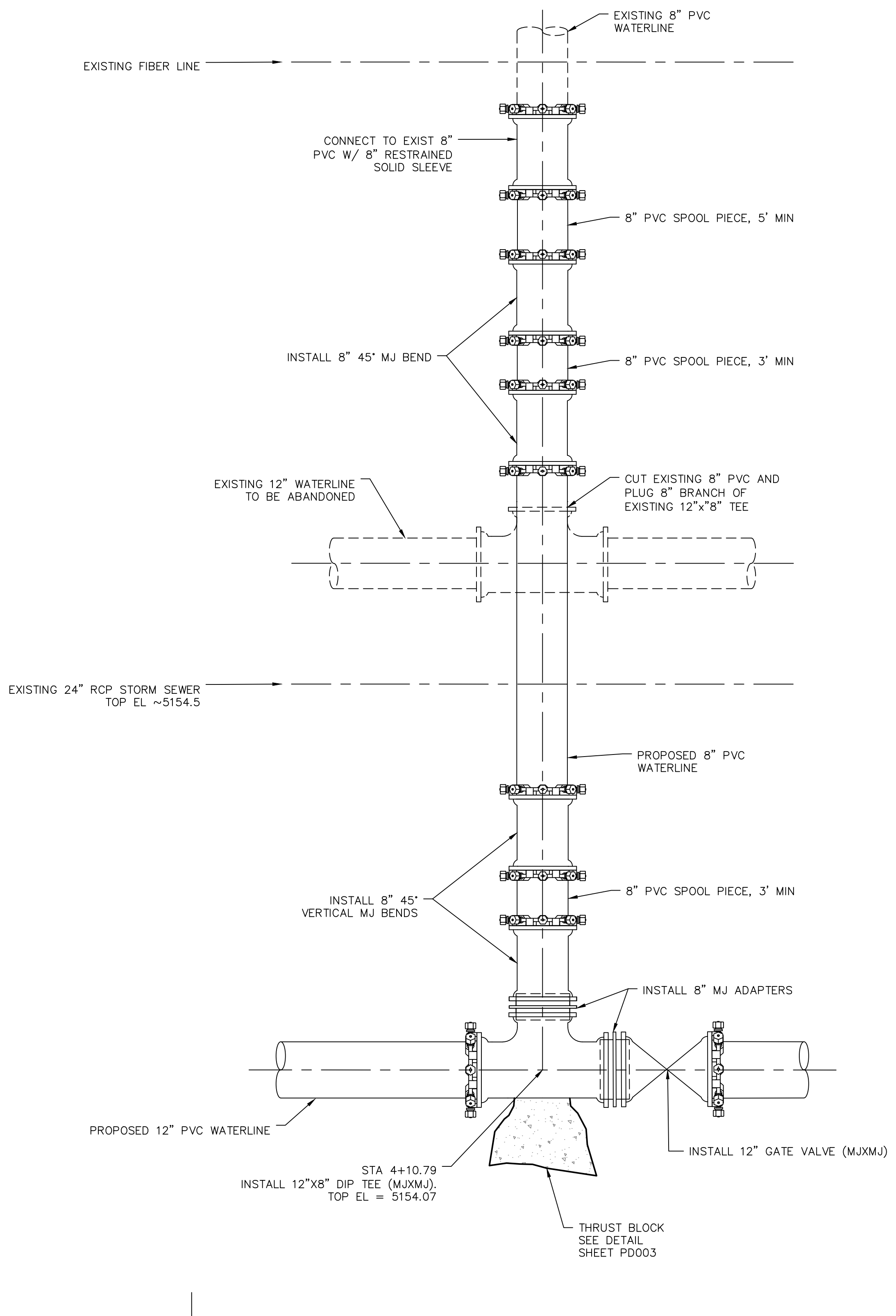
GENERAL NOTES

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

Scale For Microfilming
Millimeters
Inches



CONNECTION DETAIL SITE 3 STATION 1+82.61
NOT TO SCALE



CONNECTION DETAIL SITE 3 STATION 4+10.79
NOT TO SCALE

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

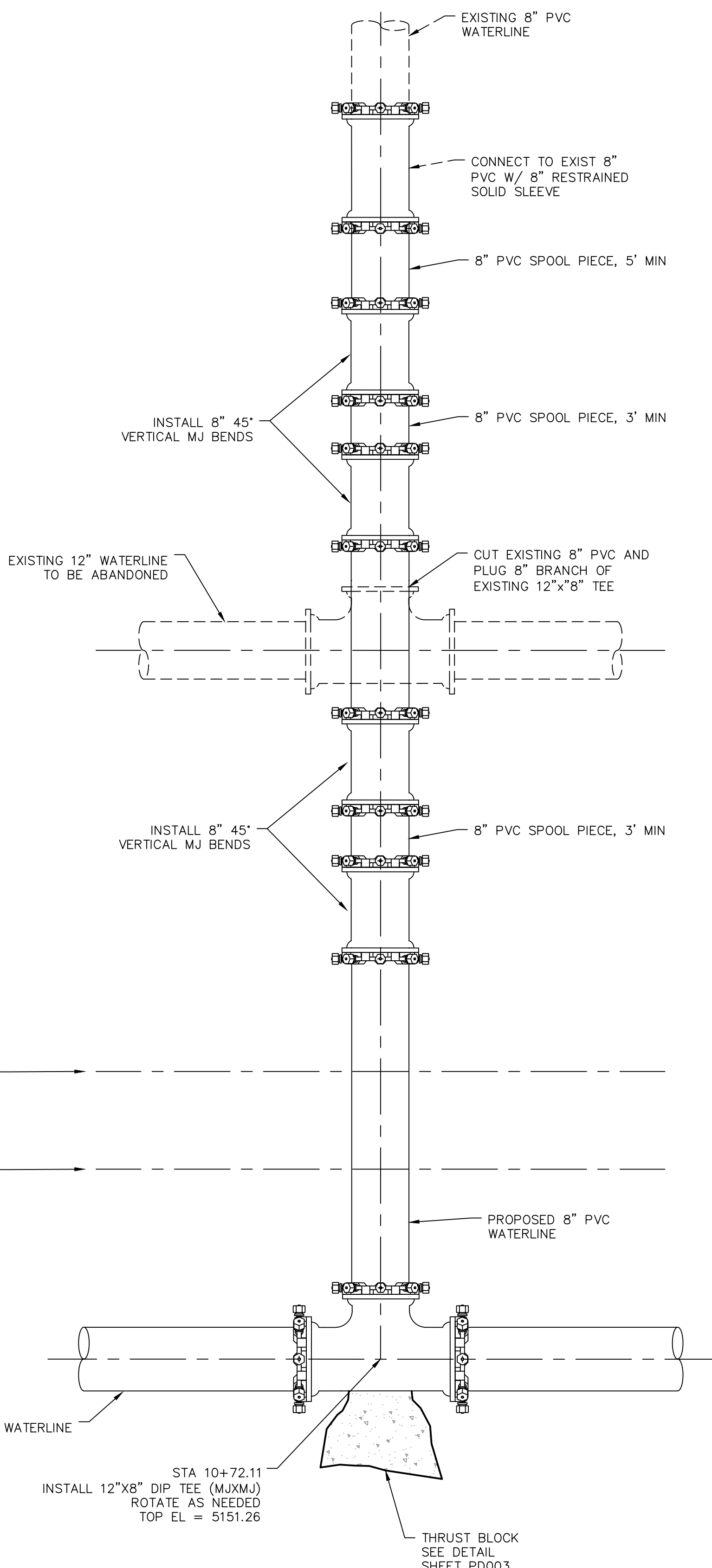


CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
CONNECTION DETAILS II

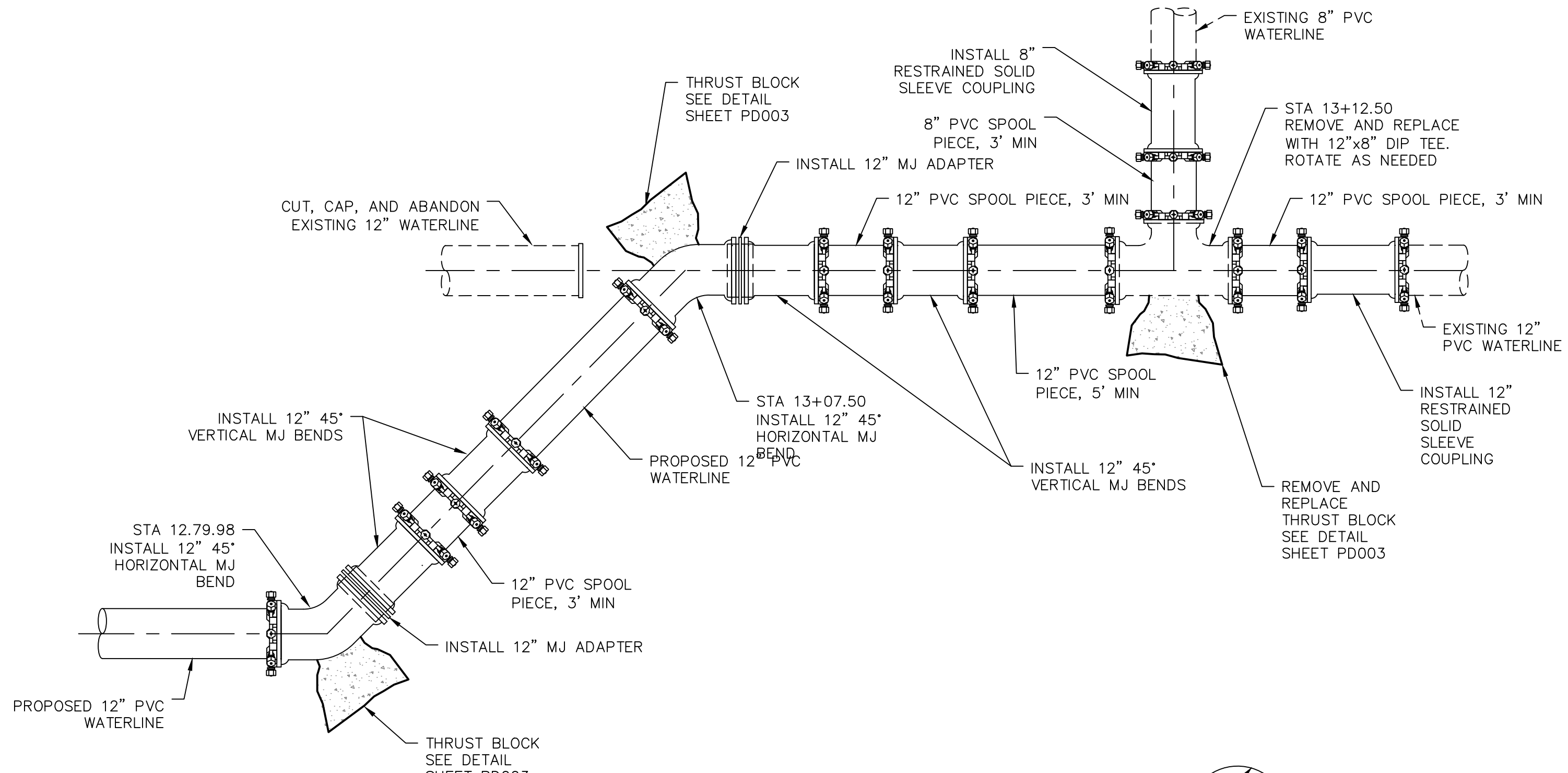
project 154303	contract
drawing PD008	rev. 0
sheet 26	of 39
file 154303_PD008.dwg	sheets

GENERAL NOTES

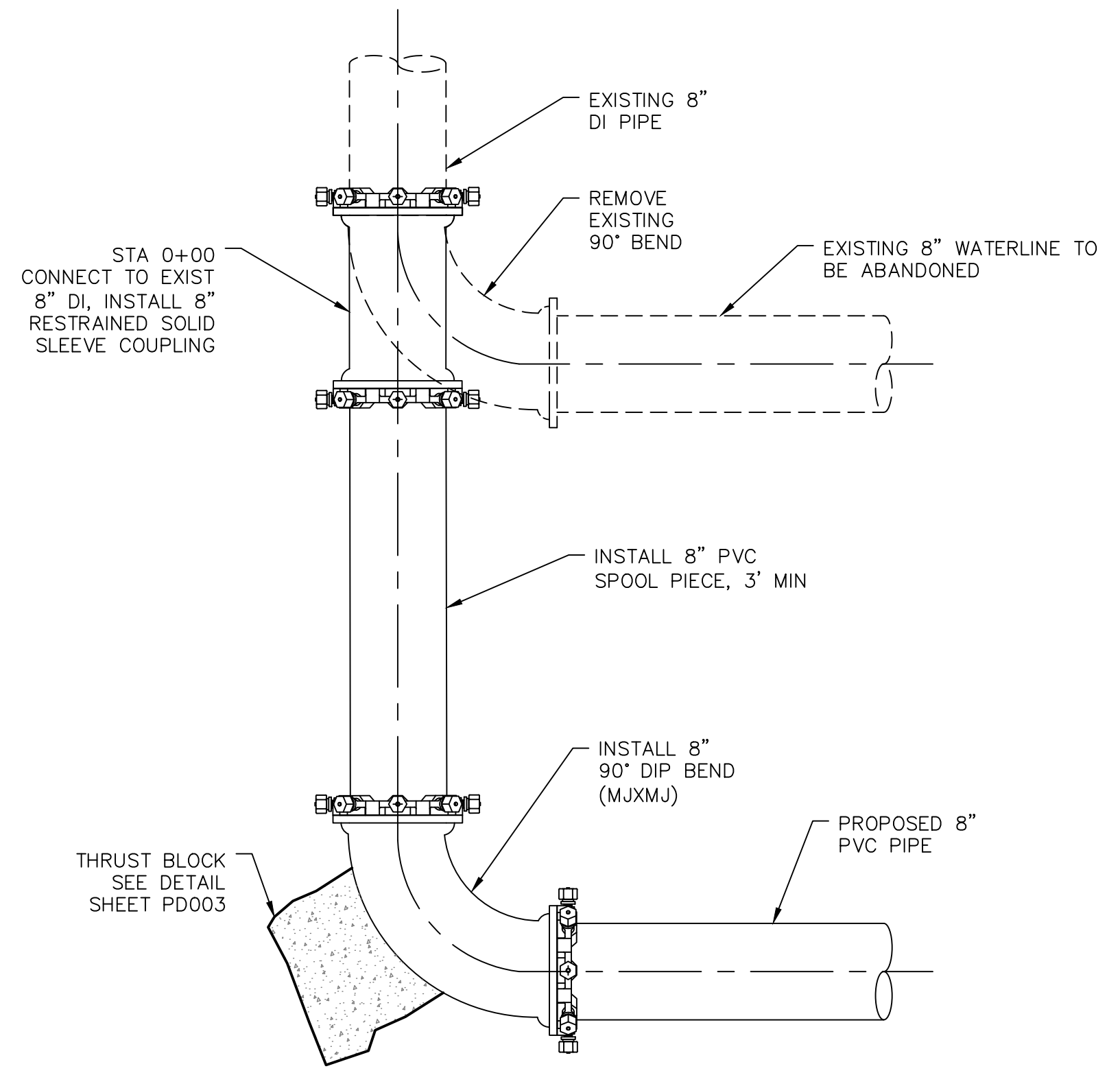
1. CONTRACTOR TO LOCATE UTILITIES AND VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.



CONNECTION DETAIL SITE 3 STATION 10+72.11
NOT TO SCALE

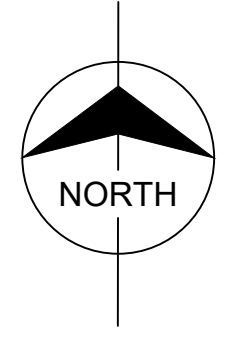
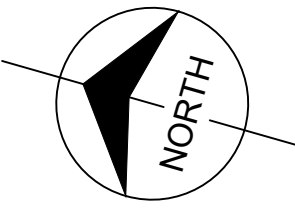
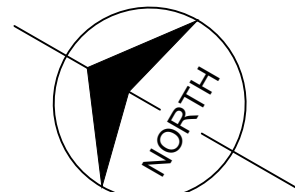


CONNECTION DETAIL SITE 3 STATION 13+12.50
NOT TO SCALE



CONNECTION DETAIL SITE 5 STATION 0+00
NOT TO SCALE

Scale For Microfining
Millimeters
Inches



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

PRELIMINARY- NOT FOR CONSTRUCTION

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

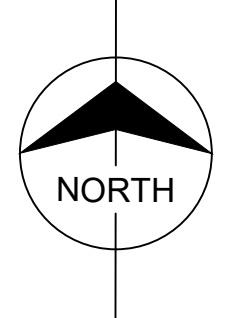
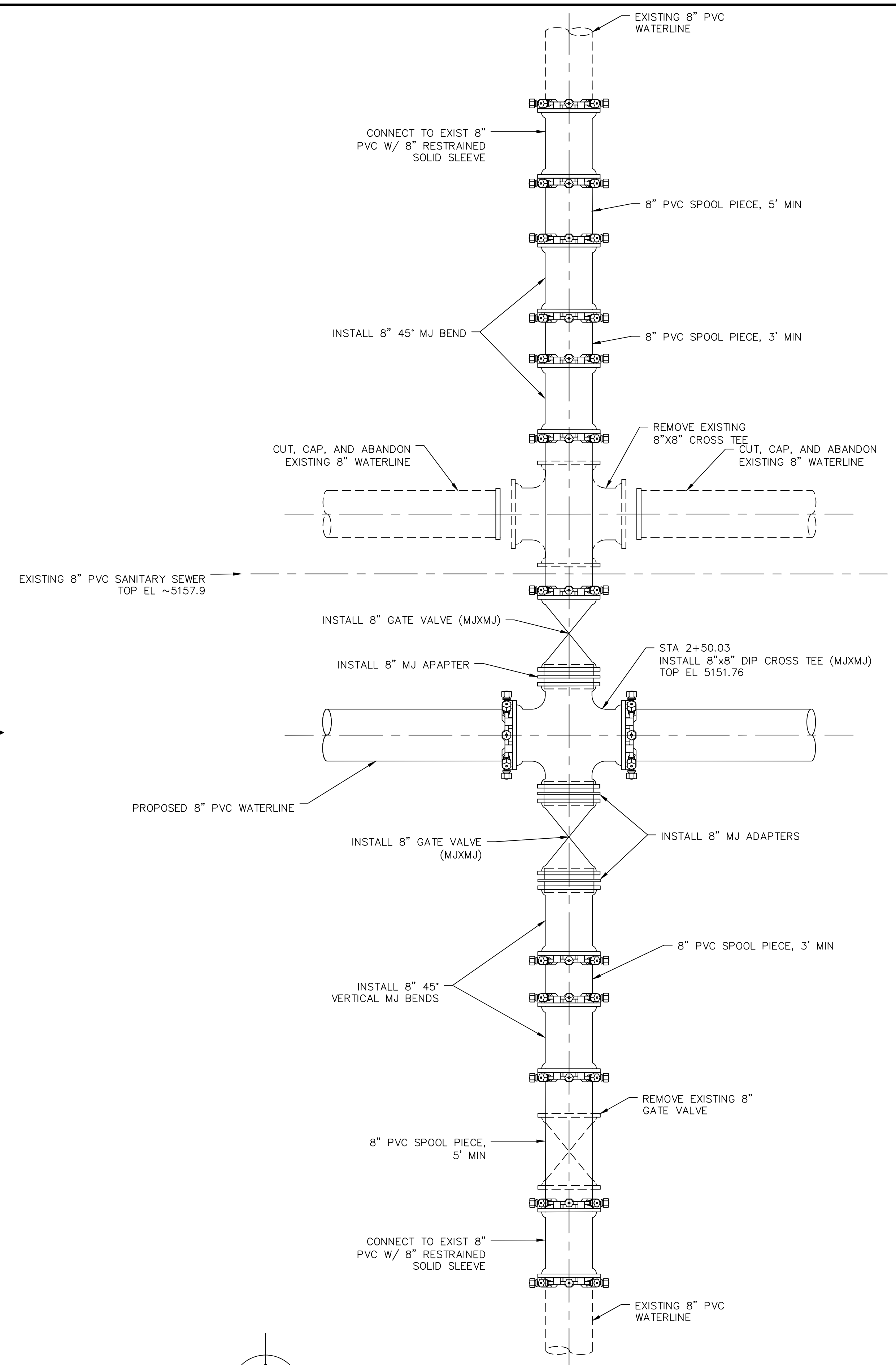
date	FEBRUARY 2024	detailed	V. PONCE
designed	R. BRONG	checked	K. LEBRASSE



CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
CONNECTION DETAILS III

project	154303	contract	
drawing	PD009	rev.	0
sheet	27	of	39 sheets
file	154303_PD009.dwg		

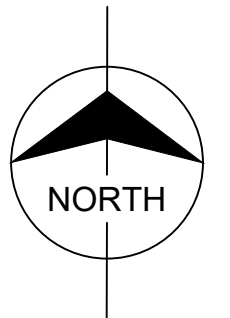
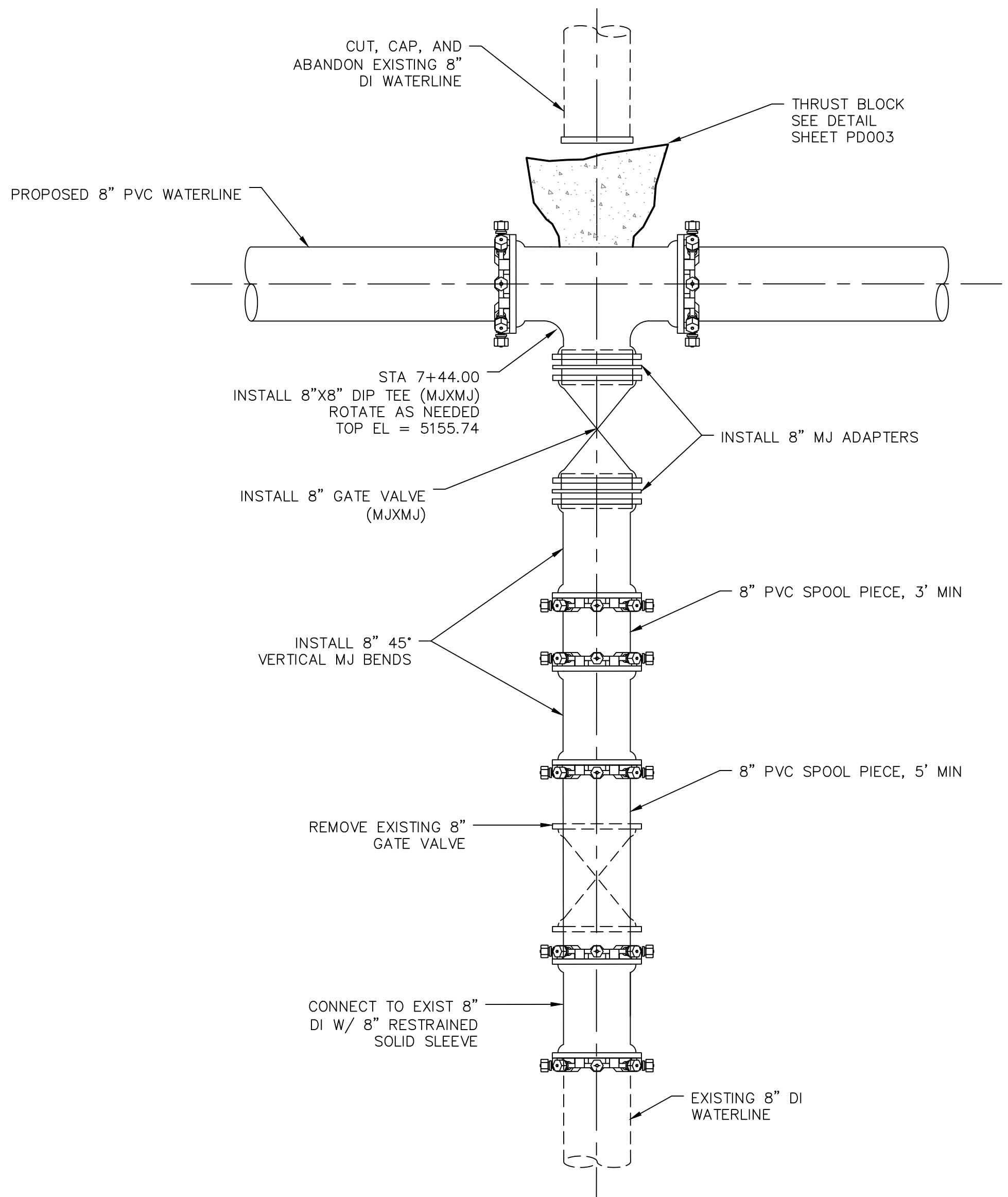
Scale For Microfitting
 Millimeters
 Inches



CONNECTION DETAIL SITE 5 STATION 2+50.03
 NOT TO SCALE

GENERAL NOTES

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



CONNECTION DETAIL SITE 5 STATION 7+44.00
 NOT TO SCALE

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

PRELIMINARY- NOT FOR CONSTRUCTION



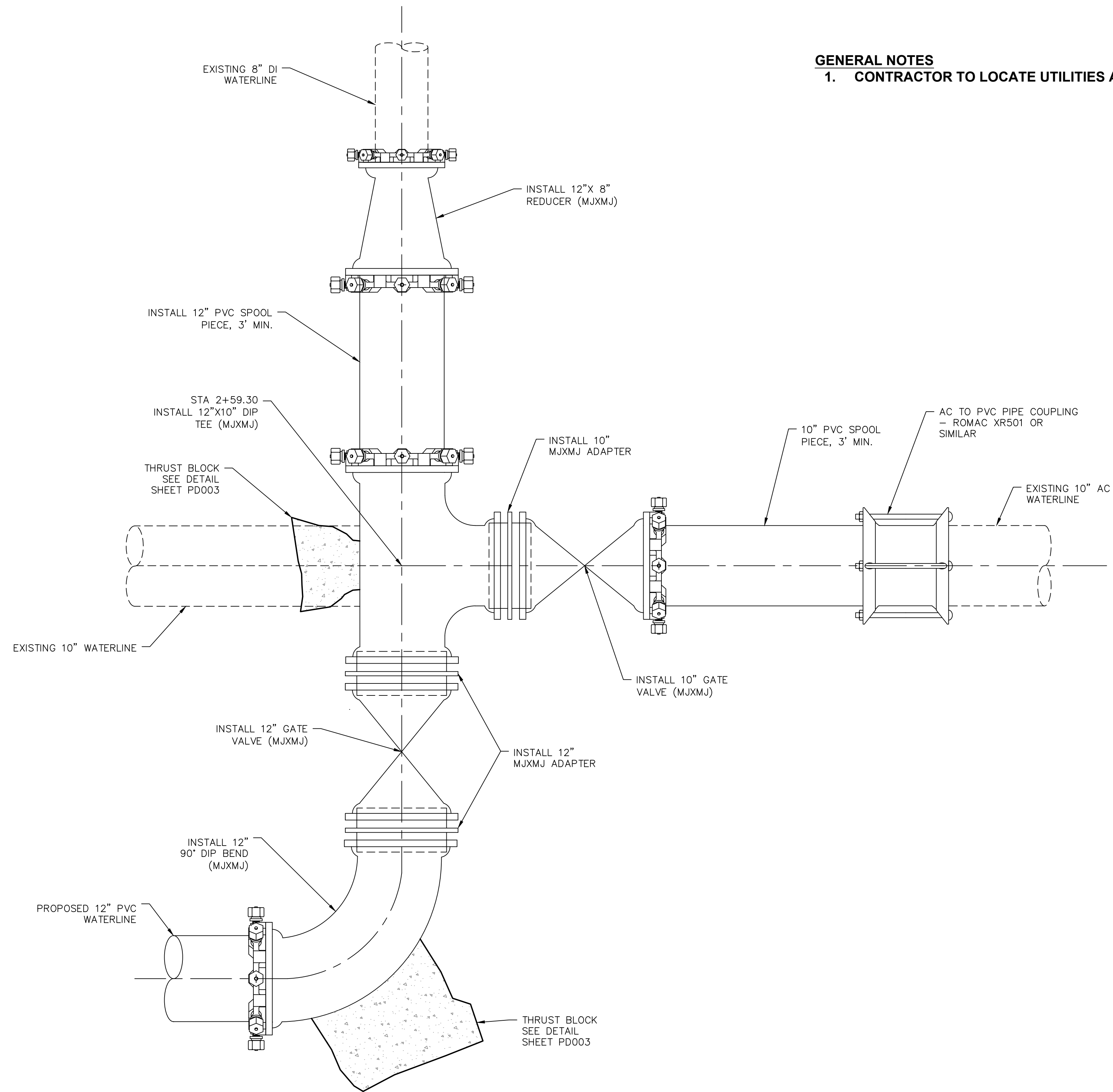
9191 SOUTH JAMAICA STREET,
 ENGLEWOOD, COLORADO 80112
 303-721-9292

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



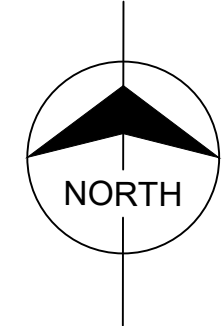
CITY OF THORNTON
 2022-2024 PIPELINE REHABILITATION
 CONNECTION DETAILS IV

project 154303	contract
drawing PD010	rev. 0
sheet 28	of 39
file 154303_PD010.dwg	sheets



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

Scale For Microfilming
 Millimeters
 Inches



CONNECTION DETAIL SITE 7 STATION 2+59.30
 NOT TO SCALE

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

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

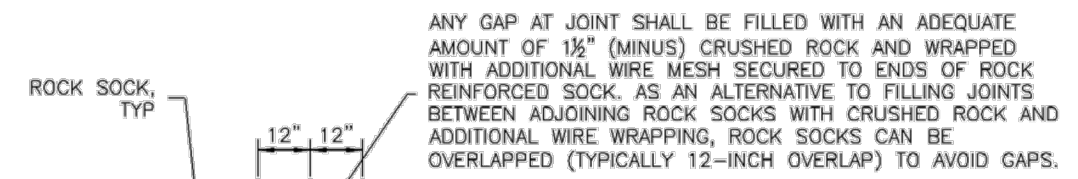
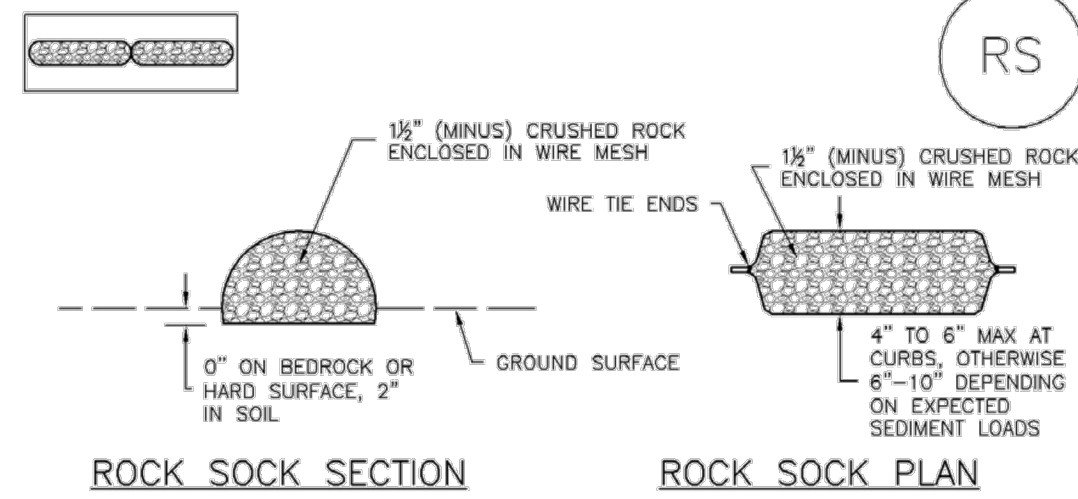
date FEBRUARY 2024	detailed V. PONCE
designed R. BRONG	checked K. LEBRASSE



CITY OF THORNTON
 2022-2024 PIPELINE REHABILITATION
 CONNECTION DETAILS V

project 154303	contract
drawing PD011	rev. 0
sheet 29 of 39 sheets	
file 154303_PD011.dwg	

SC-5 Rock Sock (RS)



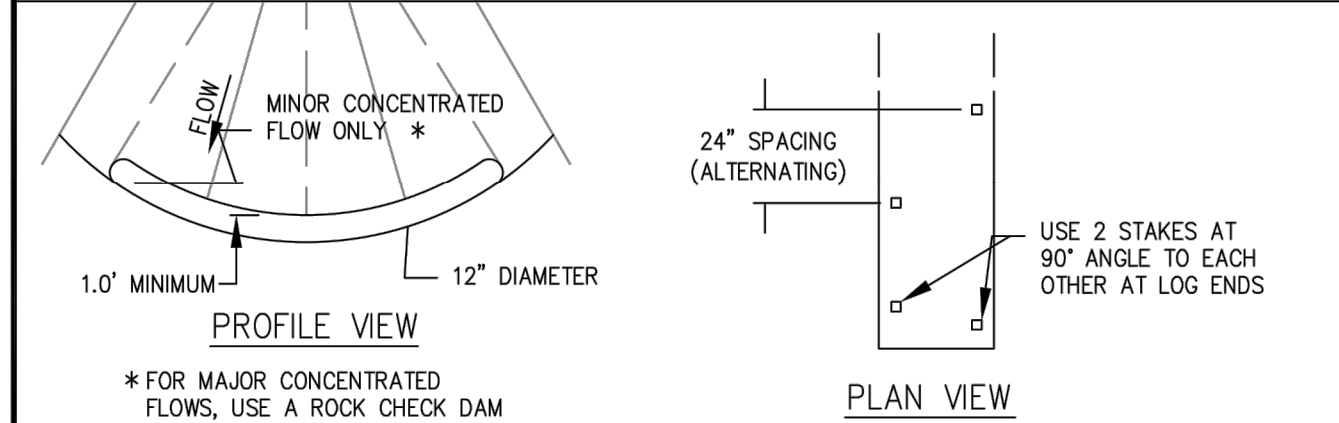
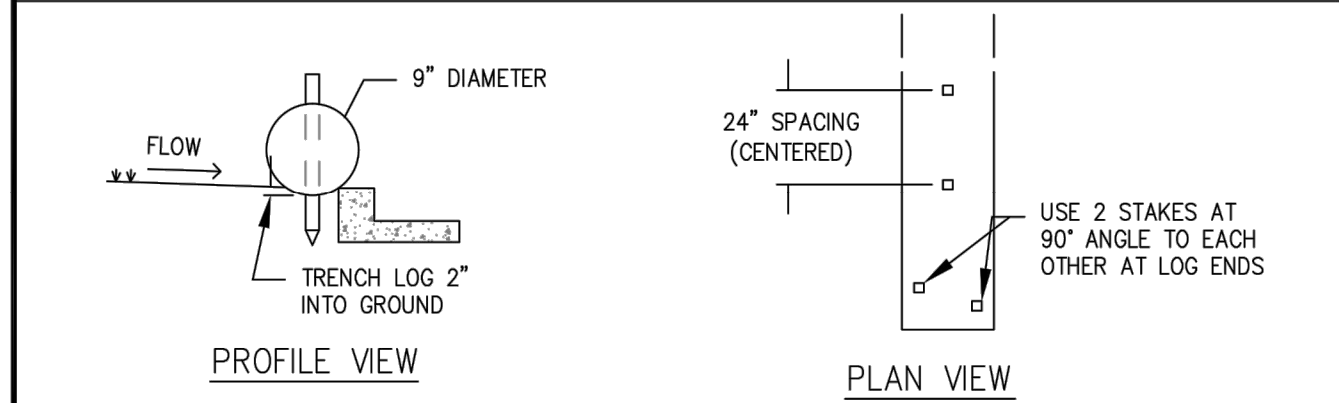
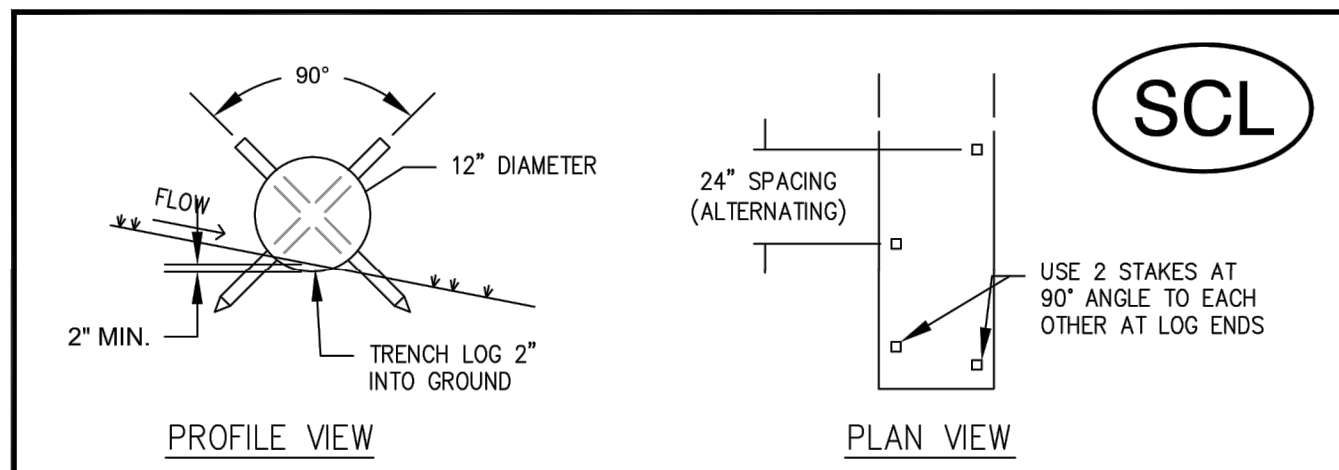
GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
NO. 4	
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5

MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.

- ROCK SOCK INSTALLATION NOTES**
- SEE PLAN VIEW FOR: -LOCATION(S) OF ROCK SOCKS.
 - CRUSHED ROCK SHALL BE 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1/2" MINUS).
 - WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2", RECOMMENDED MINIMUM ROLL WIDTH OF 48"
 - WIRE MESH SHALL BE SECURED USING "HDG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
 - SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS-1. ROCK SOCK PERIMETER CONTROL

RS-2 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3



- NOTES:**
- STAKES SHALL BE 1-1/2" x 1-1/2" x 24" MINIMUM AND EMBEDDED INTO GROUND A MINIMUM OF 12".
 - SEDIMENT CONTROL LOG SHALL BE TRENCHED 2" INTO GROUND.
 - FOR CONTINUOUS CONTROL, ADJACENT SEDIMENT CONTROL LOGS SHALL BE PLACED FIRMLY TOGETHER WITH NO GAPS.
 - SEDIMENT SHALL BE CLEANED/ REMOVED WHEN SEDIMENT DEPTH IS 1/2 THE HEIGHT OF THE SEDIMENT CONTROL LOG.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: NOV 08
	SEDIMENT CONTROL LOG	REVISED:
		DRAWING NO. 400-9

Rock Sock (RS) SC-5

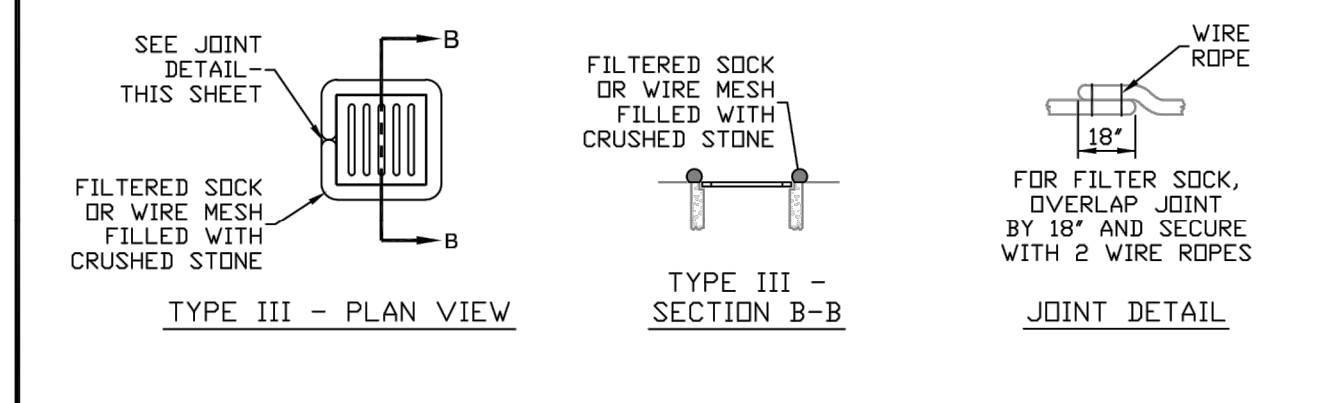
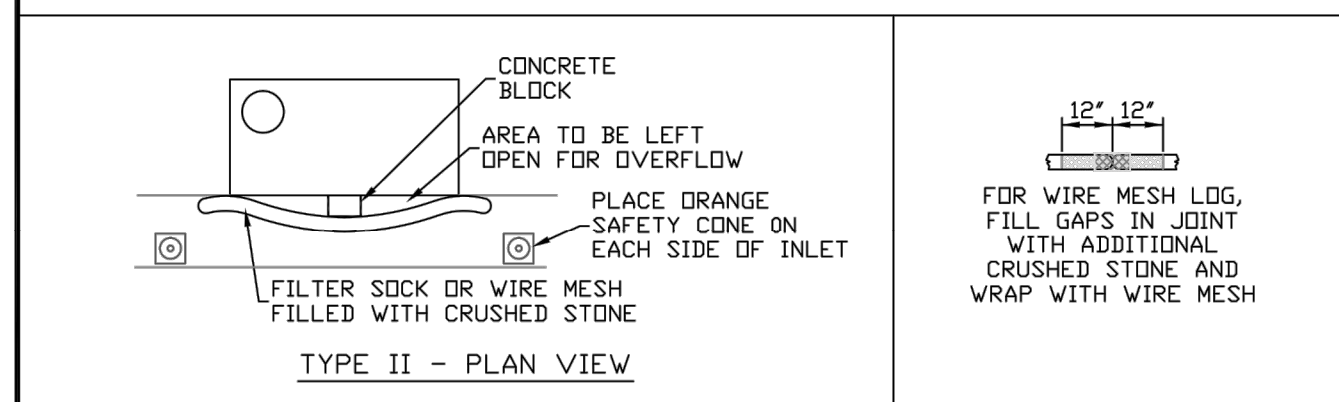
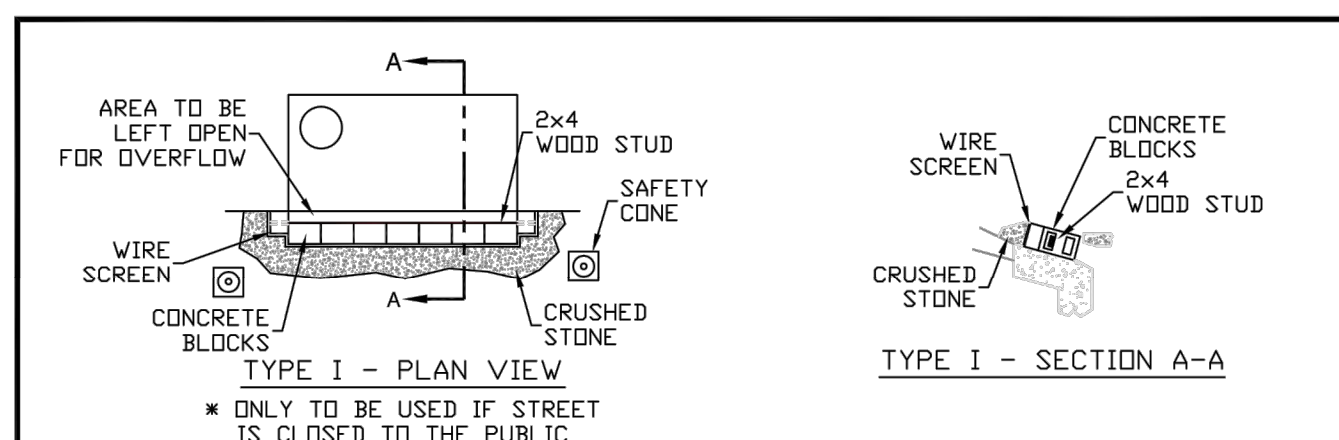
- ROCK SOCK MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
 - SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
 - ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 - WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN JURISDICTION)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

November 2010 Urban Drainage and Flood Control District RS-3
Urban Storm Drainage Criteria Manual Volume 3



- NOTES:**
- CRUSHED STONE SHALL BE NO. 4 STONE WITH 0% PASSING THE 3/4" SIEVE.
 - SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATION REACHES 1/2 THE INLET PROTECTION HEIGHT.
 - INLET PROTECTION SHALL BE PLACED IN A MANNER NOT TO CAUSE SIGNIFICANT FLOODING IN PUBLIC STREETS OR AREAS.
 - INSET FILTER BAGS WITH OVERFLOW PORTS MAY BE USED IN HIGH TRAFFIC AREAS AS A SUBSTITUTE.
 - IF LARGE DEPOSITS OF SEDIMENT ENTERS THE STORM SEWER, THE CONTRACTOR SHALL CLEAN THE STORM SEWER TO THE SATISFACTION OF THE CITY.

	CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS	ISSUED: NOV 08
	INLET PROTECTION	REVISED:
		DRAWING NO. 400-10

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

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BURNS MEDONNELL

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

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



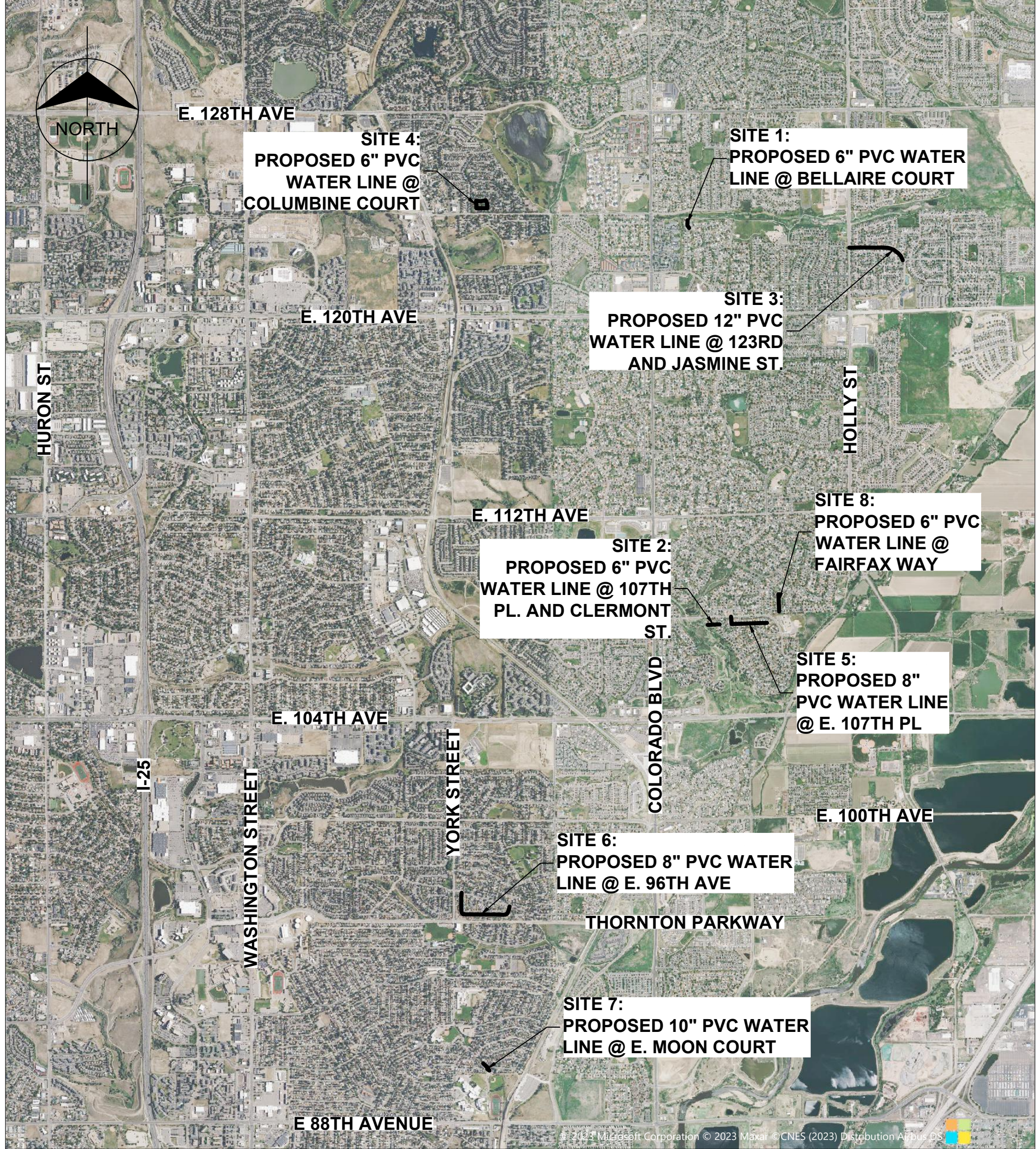
CITY OF THORNTON 2022-2024 PIPELINE REHABILITATION	
EROSION AND SEDIMENT CONTROL DETAILS	
project 154303	contract
drawing PD012	rev. 0
sheet 30	of 39 sheets
file 154303_PD012.dwg	

Scale For Microfinning
Millimeters
Inches

2022-2024 PIPELINE REHABILITATION PROJECT

EROSION AND SEDIMENT CONTROL DRAWINGS

PROJECT NO. 24-196



PROJECT VICINITY MAP
NOT TO SCALE

ISSUED FOR BID

FEBRUARY 2024

City of Thornton Project No. 24-196
Burns & McDonnell Project No. 154303

KRISTIN SCHWARTZ, P.E. - SENIOR CIVIL ENGINEER, CITY OF THORNTON DATE

RYAN S. BRONG, P.E. - CIVIL ENGINEER DATE


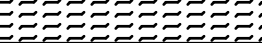


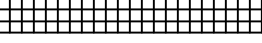





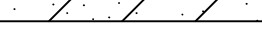
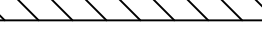
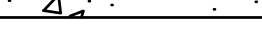
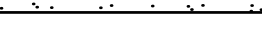



JOSH REDMAN - UTILITIES OPERATIONS MANAGER DATE

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



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LEGEND:

- SM**  SEEDING AND MULCHING
- SD**  SODDING
- IP**  INLET PROTECTION
- CS**  CURB SOCK
- ECB**  EROSION CONTROL BLANKET
- SF**  SILT FENCE
- CF**  CONSTRUCTION FENCE
- LDA**  LIMITS OF DISTURBED AREA
- SCL**  SEDIMENT CONTROL LOG
- LOC**  LIMITS OF CONSTRUCTION
- CWA**  CONCRETE WASHOUT AREA
- LAR**  LIMITS OF ASPHALT REMOVAL AND REPLACEMENT
- LCR**  LIMITS OF CONCRETE REMOVAL AND REPLACEMENT
- LGR**  LIMITS OF GRAVEL REMOVAL AND REPLACEMENT
- VTC**  VEHICLE TRACKING CONTROL
-  FLOW DIRECTION
-  SIGN AS DESIGNATED
EXISTING TREE DIA. AND DRIP LINE (e.g. D16 15)

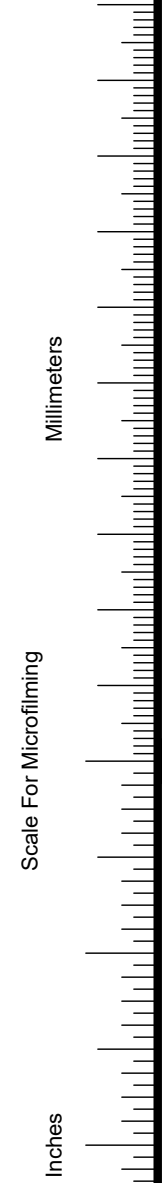
BMP QUANTITIES	
BMP MEASURE	QUANTITY
LOC	242,303 SQFT
SCL	1,650 LF
LAR	62,587 SQFT
CS	130 QTY
IP	14 QTY
LCR	2,035 SQFT

CITY OF THORNTON EROSION AND SEDIMENT CONTROL NOTES:

1. CONTROL MEASURES SHALL BE INSTALLED BEFORE ANY EARTH DISTURBING ACTIVITIES COMMENCE.
2. THE CONTRACTOR SHALL NOTIFY THE CITY OF THORNTON INSPECTOR ONCE ALL INITIAL CONTROL MEASURES HAVE BEEN INSTALLED FOR AN INITIAL INSPECTION AT LEAST FORTY EIGHT (48) HOURS PRIOR TO THE INSPECTION. CONSTRUCTION ACTIVITY CANNOT BEGIN UNTIL A PASSING INITIAL INSPECTION HAS OCCURRED.
3. STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES SHALL NOT CAUSE, HAVE THE REASONABLE POTENTIAL TO CAUSE, OR MEASURABLY CONTRIBUTE TO AN EXCEEDANCE OF ANY WATER QUALITY STANDARD.
4. CONSTRUCTION SHALL BE PHASED IN A MANNER TO LIMIT EARTH DISTURBING ACTIVITIES (I.E. THE ENTIRE PROJECT SITE SHOULD NOT BE DISTURBED IF CONSTRUCTION WILL ONLY BE OCCURRING IN ONE PARTICULAR SECTION).
5. SEDIMENT CAUSED BY ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE IT LEAVES THE CONSTRUCTION SITE.
6. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND ANY OTHER CHEMICALS SHALL HAVE SECONDARY CONTAINMENT OR EQUIVALENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING THE MS4 OR STATE WATERS.
7. A COPY OF THE SWMP AND SITE MAPS MUST BE AVAILABLE AT ALL TIMES ON THE CONSTRUCTION SITE UNLESS OTHERWISE APPROVED BY CDPHE OR THE CITY OF THORNTON.
8. THE SWMP AND SITE MAPS SHALL BE CONTINUOUSLY UPDATED TO REFLECT NEW OR REVISED CONTROL MEASURES (CM) DUE TO CHANGES IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE CONSTRUCTION SITE. UPDATES MUST BE MADE WITHIN 72-HOURS FOLLOWING THE CHANGE IN CONTROL MEASURES.
9. THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE (INCLUDING ALL BMP'S, STORAGE CONTAINERS, AND CONSTRUCTION EQUIPMENT) A MINIMUM OF EVERY **14 CALENDAR DAYS** AND WITHIN 24-HOURS AFTER A PRECIPITATION EVENT OR SNOW MELT THAT CAUSE SURFACE EROSION. INSPECTIONS SHALL CONTINUE UNTIL AN INACTIVATION NOTICE IS FILED WITH CDPHE.
10. THE CONTRACTOR SHALL KEEP A RECORD OF ALL INSPECTIONS ON SITE AND AVAILABLE FOR REVIEW BY CDPHE OR CITY STAFF. INSPECTION REPORTS MUST IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT.
11. CONTROL MEASURES REQUIRING MAINTENANCE OR ADJUSTMENT SHALL BE REPAIRED IMMEDIATELY AFTER OBSERVATION OF THE FAILING CONTROL MEASURE.
12. SILT FENCE PATCHING: PATCHING IS ONLY ALLOWED ON THE TOP HALF OF THE FENCE. NOT MORE THAN TWO (2) PATCHES PER SECTION OF FENCE. SILT FENCE WITH HOLES OR DETERIORATION ON THE LOWER HALF OF THE FENCE MUST BE REPLACED. REPAIR TYPICALLY INVOLVES REPLACING THE SILT FENCE TO MAINTAIN THE CM'S EFFECTIVENESS TO DRAIN SLOWLY AND FUNCTION AS ORIGINALLY DESIGNED.
13. FOR ALL INSTANCES OF NONCOMPLIANCE BASED ON ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES, ALL NEEDED INFORMATION MUST BE PROVIDED ORALLY TO CDPHE SPILL REPORTING LINE (24-HOUR NUMBER FOR ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES: 1-877-518-5608) WITHIN **24-HOURS** FROM THE TIME THE CONTRACTOR BECOMES AWARE OF THE CIRCUMSTANCES.
14. STRAW BALES **SHALL NOT** BE USED FOR PRIMARY EROSION OR SEDIMENT CONTROL (I.E. STRAW BALES MAY BE USED FOR REINFORCEMENT BEHIND ANOTHER BMP SUCH AS SILT FENCE).
15. CONTROL MEASURES REFERRED TO AS "CUTBACK CURB" ARE **NOT ALLOWED**. THE CUTBACK CURB MAY BECOME INEFFECTIVE AND MAY ALSO COMPROMISE THE INTEGRITY OF THE CURB AND IN MOST CASES DOES NOT PROVIDE ANY WATER QUALITY BENEFIT FOR FILTERING OUR SEDIMENT.
16. INLET PROTECTION AND VEGETATIVE BUFFER CONTROL MEASURES **SHALL NOT** BE USED AS STANDALONE CM'S. THESE METHODS MUST BE UTILIZED WITH AT LEAST ONE ADDITIONAL CM.
17. CONTROL MEASURES INTENDED FOR SHEET FLOW SEDIMENT RUNOFF SHALL BE PLACED PARALLEL TO THE SLOPE.
18. ALL CONTROL MEASURES SHALL BE CLEANED WHEN SEDIMENT LEVELS ACCUMULATE TO HALF THE DESIGN OF THE CM UNLESS OTHERWISE SPECIFIED.
19. A VEHICLE TRACKING CONTROL (VTC) SHALL BE PLACED AT ALL ENTRANCES/EXITS FROM THE SITE TO PREVENT TRACK-OUT ONTO PUBLIC STREETS. IF TRACK-OUT DOES OCCUR, THE CONTRACTOR SHALL IMMEDIATELY SWEEP THE STREET OF DEBRIS. RECYCLED CRUSHED CONCRETE OR ASPHALT **SHALL NOT** BE USED FOR VEHICLE TRACKING CONTROL (VTC).
20. FOR RESIDENTIAL PROJECTS, BACK OF CURB PROTECTION IS REQUIRED ALONG ALL INTERIOR LOTS.
21. ALL SEDIMENT COLLECTED IN BMP'S SHALL BE REMOVED UPON INITIAL ACCEPTANCE.
22. WIND EROSION AND DUST CONTROL MEASURES MUST BE UTILIZED TO MINIMIZE AIRBORNE PARTICULATE DUST. CONTROL MEASURES MAY INCLUDE MINIMIZING DISTURBED AREAS, WATERING, AND/OR PROVIDING TEMPORARY STABILIZATION.
23. PERMANENT EROSION CONTROL MEASURES FOR SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN **14 CALENDAR DAYS** AFTER FINAL GRADING OR THE FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH DISTURBANCE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH DISTURBANCE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED WITHIN 14 CALENDAR DAYS. TEMPORARY EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION MEASURES ARE IMPLEMENTED.
24. FINAL STABILIZATION HAS BEEN ACHIEVED WHEN ALL EARTH DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH AN INDIVIDUAL PLANT DENSITY OF AT LEAST **70 PERCENT** OF PRE-DISTURBANCE LEVELS, OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED.
25. ALL TEMPORARY CONTROL MEASURES SHALL BE REMOVED FROM THE SITE UPON SUBMITTING THE INACTIVATION NOTICE.
26. ALL SITE WASTES (INCLUDING TRASH AND BUILDING MATERIALS) MUST BE PROPERLY MANAGED TO PREVENT POTENTIAL POLLUTION OF STATE WATERS. STREET REPAIR OPERATIONS SUCH AS ROTOR MILLING, SLURRY SEAL, AND CHIP SEAL. THE MINIMUM CM'S REQUIRED ARE INLET PROTECTION, CURB SOCKS, AND STREET SWEEPING.

GENERAL NOTES:

1. ALL SITE GRADING (EXCAVATION, EMBANKMENT, AND COMPACTION) SHALL CONFORM TO THE RECOMMENDATIONS OF THE LATEST SPECIFICATIONS FOR THIS PROJECT AND SHALL FURTHER BE IN CONFORMANCE WITH THE CITY OF THORNTON'S GENERAL EROSION AND SEDIMENT CONTROL MANUAL.
2. SEDIMENT CONTROL LOGS SHALL BE PLACED DOWNSTREAM OF ANY DITCH OR CHANNEL BEING DISTURBED.
3. CONTRACTOR SHALL USE VEHICLE TRACKING PADS WHERE VEHICLES WILL BE ENTERING AND EXITING THE ROADWAY. IN ADDITION TO THE INSTALLATION OF TRACKING PAD BMP'S, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AFFECTED PUBLIC STREETS OF MUD OR DEBRIS DUE TO CONSTRUCTION ACTIVITY INITIATED BY SAID CONTRACTOR ON A DAILY BASIS OR AS OTHERWISE DIRECTED BY AUTHORIZED CITY REPRESENTATIVE.
4. ANY STORM DRAIN INLET ALONG CONSTRUCTION ALIGNMENT AND IMMEDIATELY DOWN GRADIENT OF DISTURBED AREAS SHALL BE PROTECTED WITH INLET PROTECTION (IP).
5. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
6. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSION ELEMENTS.
7. ALL DISTURBED SURFACE NOT REQUIRING SURFACING (PAVEMENT, GRAVEL, ETC.) SHALL BE SEEDED AND MULCHED OR SODDED PER THE ESC DRAWINGS IMMEDIATELY AFTER CONSTRUCTION.
8. TEMPORARY VEGETATION SHALL BE INSTALLED ON ALL DISTURBED AREAS WHERE PERMANENT SURFACE IMPROVEMENTS ARE NOT SCHEDULED FOR INSTALLATION WITHIN 30 DAYS OR LOCAL JURISDICTIONAL STANDARDS. VEGETATION SHALL BE A VIGOROUS, DROUGHT TOLERANT, NATIVE SPECIES MIX. (REFER TO SPECIFICATIONS SECTION 32 92 00). PROJECT SCHEDULING SHOULD TAKE ADVANTAGE OF SPRING OR FALL PLANTING SEASONS FOR NATURAL GERMINATION, BUT SEEDED AREAS SHALL BE IRRIGATED, IF CONDITIONS SO MERIT.
9. AT ALL TIMES, THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND CAUSED EROSION. EARTHWORK OPERATIONS SHALL BE DISCONTINUED WHEN FUGITIVE DUST SIGNIFICANTLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE CONTRACTOR SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.
10. TEMPORARY CUT/FILL SLOPES SHALL NOT EXCEED A STEEPNESS OF 2:1 (2H:1V). PERMANENT SLOPES SHALL NOT EXCEED 4:1 (4H:1V) IN AREAS TO BE SEEDED OR SODDED.
11. UTILITY CONSTRUCTION IS NOT APPROVED UNDER THIS PLAN.
12. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL DUST ABATEMENT AND EROSION CONTROL MEASURES DEEMED NECESSARY BY THE CITY, SHOULD CONDITIONS MERIT THEM.
13. THIS LIST IS NOT INTENDED TO BE ALL INCLUSIVE, BUT IS INTENDED TO IDENTIFY THE GENERAL NOTES IDENTIFIED BY THE CITY TO BE INCLUDED AS PART OF THE STORMWATER MANAGEMENT PLAN FOR COMPLIANCE WITH THE CITY'S STORMWATER MANAGEMENT REQUIREMENTS FOR CONSTRUCTION ACTIVITIES.
14. CONTRACTOR SHALL MINIMIZE TRENCH WIDTH SUCH THAT ASPHALT WORK IS MAINTAINED TO ONE LANE. IF CONTRACTOR EXTENDS TRENCH/OVERCUT INTO OTHER LANE, CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF ASPHALT INTO CENTER OF THAT LANE AT NO ADDITIONAL COST TO THE OWNER.



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

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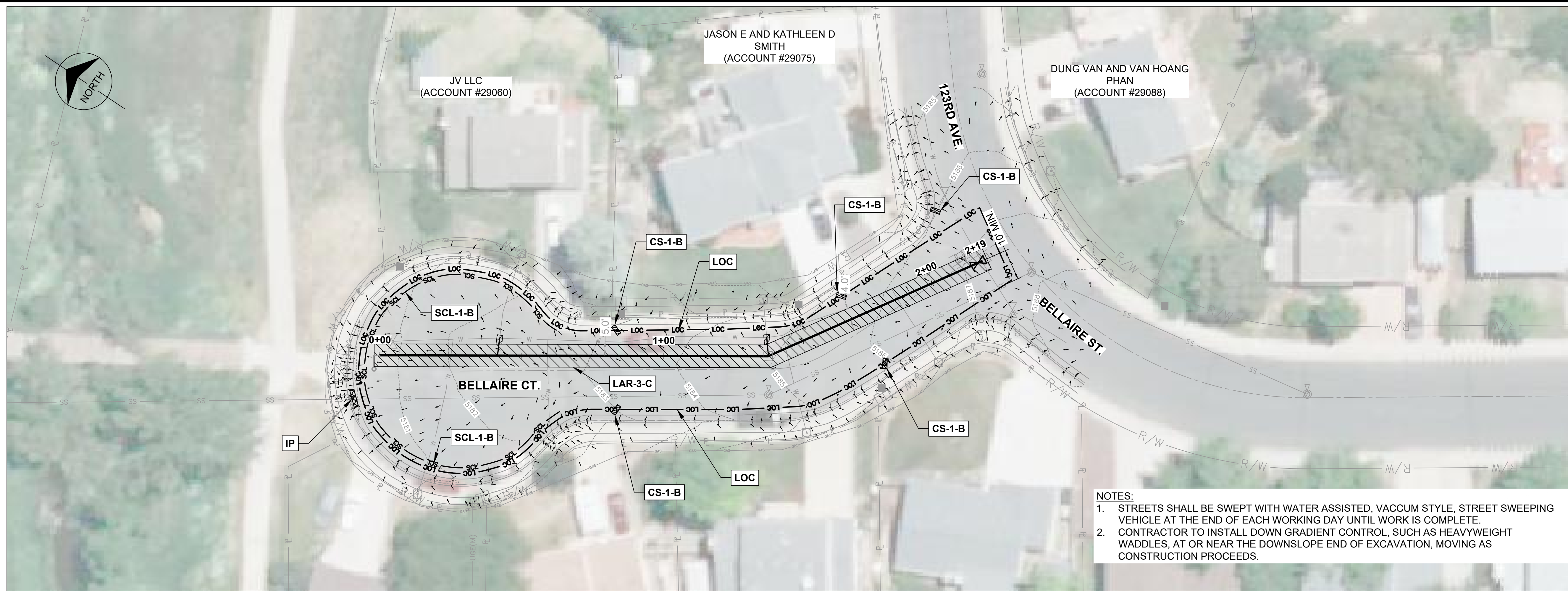
191 JAMAICA STREET
ENGLEWOOD, COLORADO 80112
303-721-9292

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



CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
EROSION & SEDIMENT CONTROL DRAWINGS
EROSION AND SEDIMENT CONTROL
DRAWING LEGEND AND GENERAL NOTES

project 154303	contract
drawing EC-G002	rev. 0
sheet 32 of 39 sheets	file EC-G002.dwg



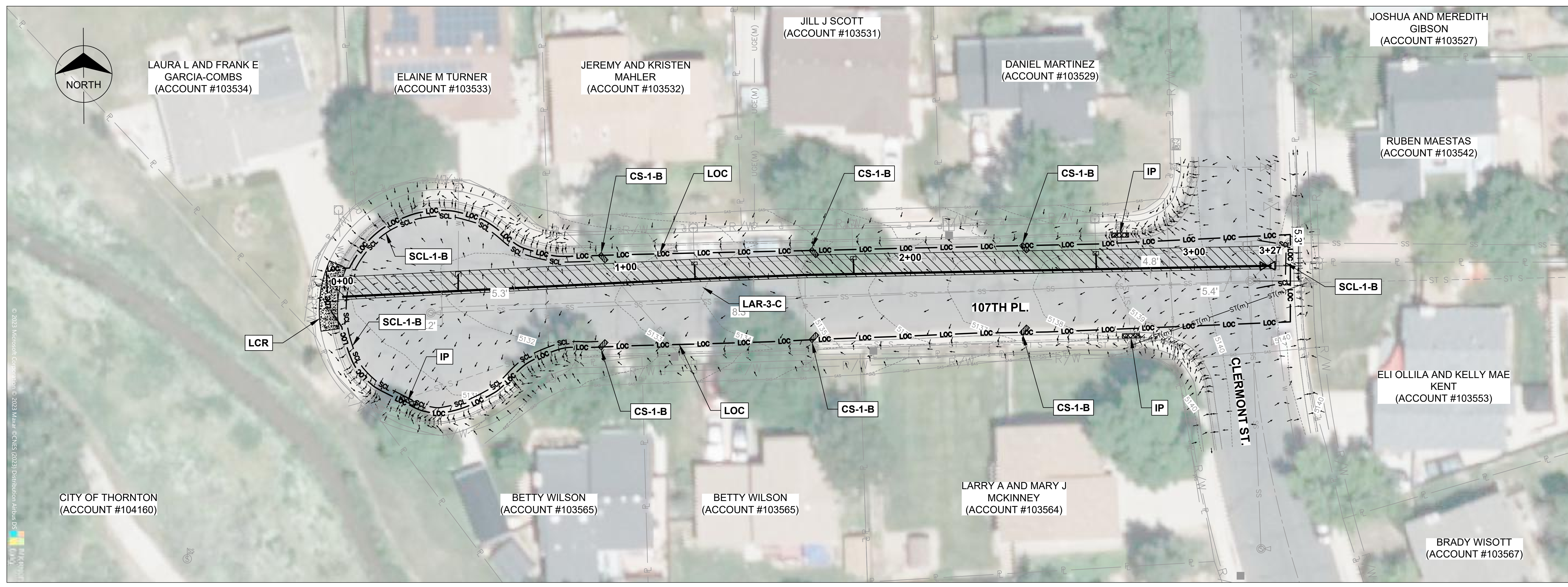
NOTES:
 1. STREETS SHALL BE SWEEPED WITH WATER ASSISTED, VACUUM STYLE, STREET SWEEPING VEHICLE AT THE END OF EACH WORKING DAY UNTIL WORK IS COMPLETE.
 2. CONTRACTOR TO INSTALL DOWN GRADIENT CONTROL, SUCH AS HEAVYWEIGHT WADDLES, AT OR NEAR THE DOWNSLOPE END OF EXCAVATION, MOVING AS CONSTRUCTION PROCEEDS.

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

LEGEND:

- IP** INLET PROTECTION
- CS** CURB SOCK
- SCL** SEDIMENT CONTROL LOG
- LOC** LIMITS OF CONSTRUCTION
- LAR** LIMITS OF ASPHALT REMOVAL AND REPLACEMENT
- LCR** LIMITS OF CONCRETE REMOVAL AND REPLACEMENT

HORIZ. SCALE IN FEET 1"=20'



PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
 9191 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
 EROSION & SEDIMENT CONTROL DRAWINGS
 SITE #1 STA. 00+00 TO STA. 2+19
 SITE #2 STA. 00+00 TO STA. 3+27

project	154303	contract	
drawing	EC003	rev.	0
sheet	33	of	39 sheets
file	EC003.dwg		

Scale For Microfining

Inches

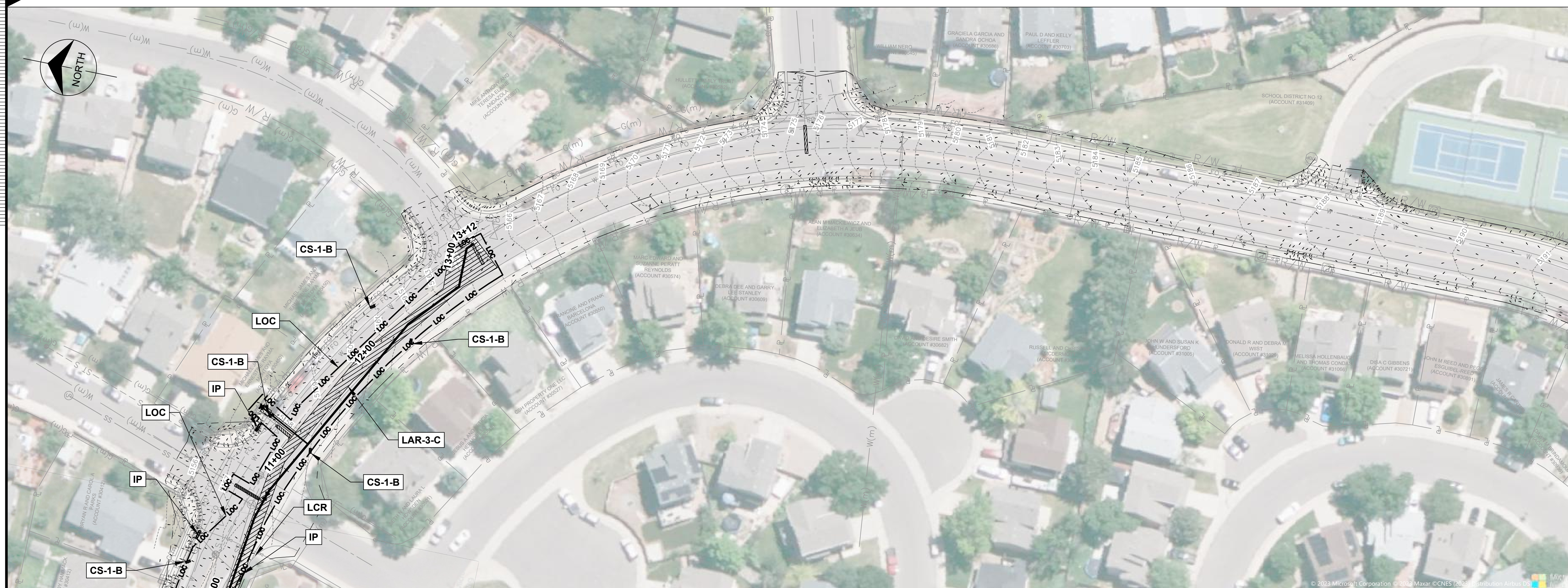
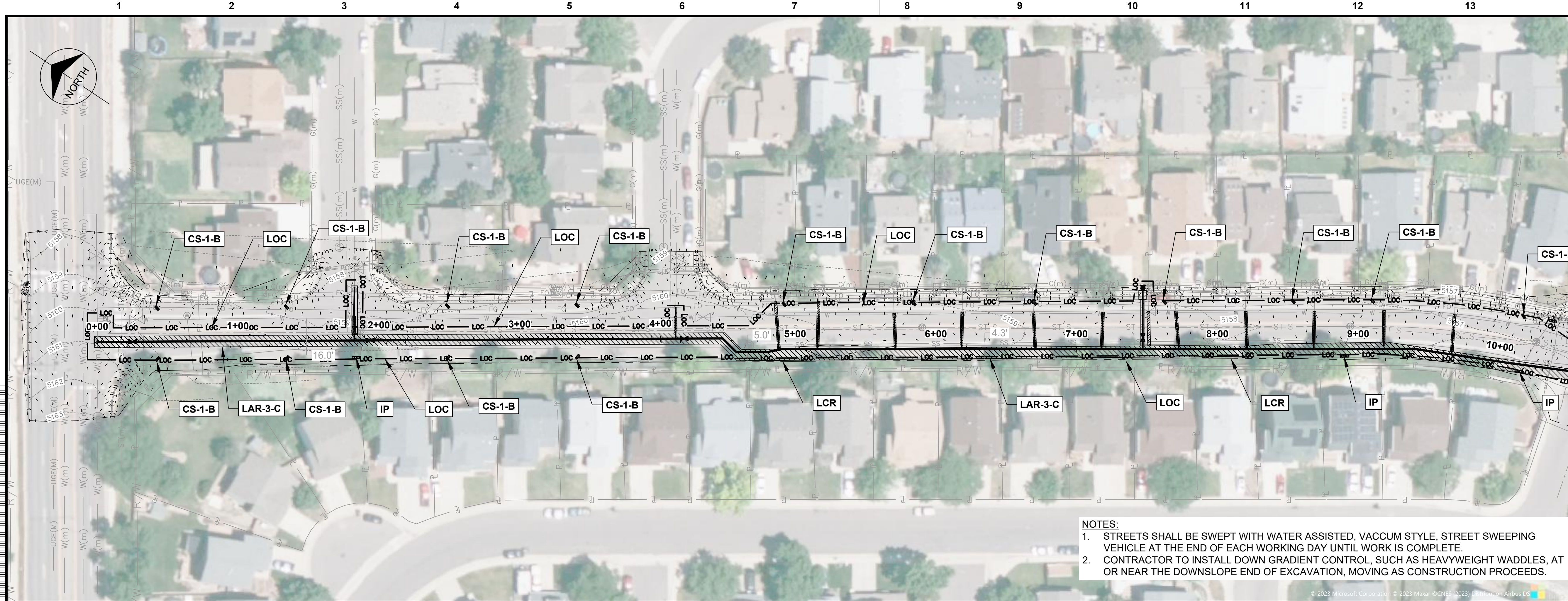
CITY OF THORNTON
 (ACCOUNT #104160)

BETTY WILSON
 (ACCOUNT #103565)

BETTY WILSON
 (ACCOUNT #103565)

LARRY A AND MARY J
 MCKINNEY
 (ACCOUNT #103564)

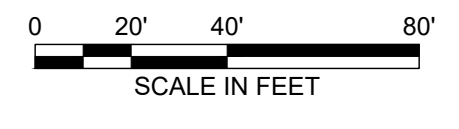
BRADY WISOTT
 (ACCOUNT #103567)



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

LEGEND:

	INLET PROTECTION
	CURB SOCK
	SEDIMENT CONTROL LOG
	LIMITS OF CONSTRUCTION
	LIMITS OF ASPHALT REMOVAL AND REPLACEMENT
	LIMITS OF CONCRETE REMOVAL AND REPLACEMENT



NOTES:
 1. STREETS SHALL BE SWEEPED WITH WATER ASSISTED, VACUUM STYLE, STREET SWEEPING VEHICLE AT THE END OF EACH WORKING DAY UNTIL WORK IS COMPLETE.
 2. CONTRACTOR TO INSTALL DOWN GRADIENT CONTROL, SUCH AS HEAVYWEIGHT WADDLES, AT OR NEAR THE DOWNSLOPE END OF EXCAVATION, MOVING AS CONSTRUCTION PROCEEDS.

PRELIMINARY- NOT FOR CONSTRUCTION



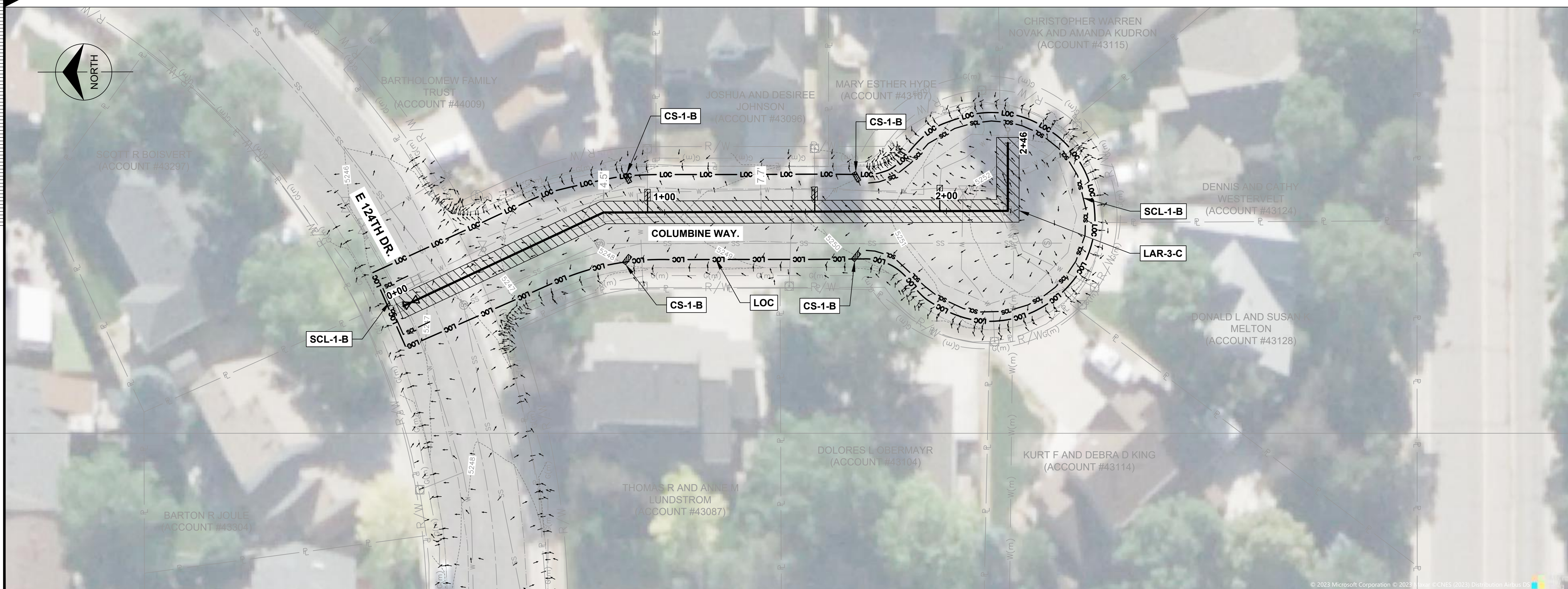
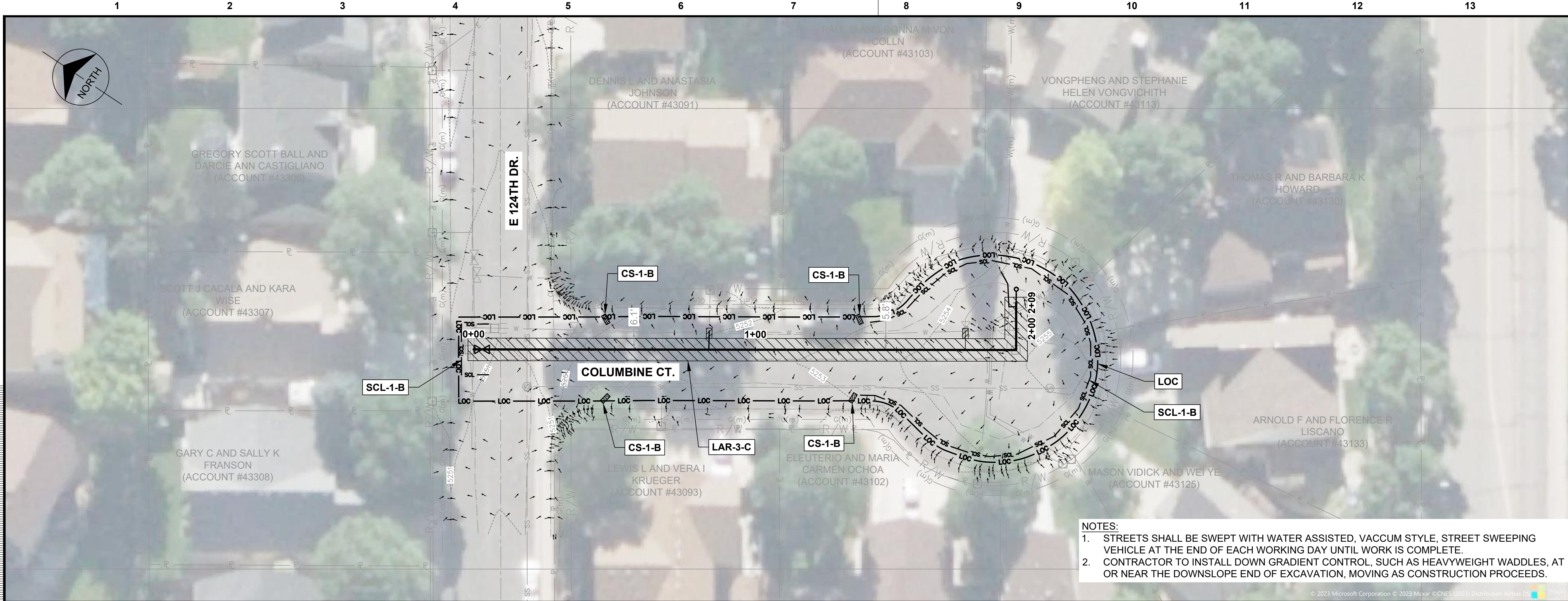
9191 JAMAICA STREET
 ENGLEWOOD, COLORADO 80112
 303-721-9292

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



CITY OF THORNTON
 2022-2024 PIPELINE REHABILITATION
 EROSION & SEDIMENT CONTROL DRAWINGS
 SITE #3 STA. 00+00 TO STA. 10+50
 SITE #3 STA. 10+50 TO STA. 13+33

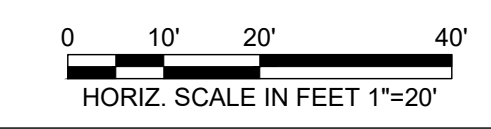
project	154303	contract	
drawing	EC004	rev.	0
sheet	34	of	39 sheets
file	EC004.dwg		



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

LEGEND:

	INLET PROTECTION
	CURB SOCK
	SEDIMENT CONTROL LOG
	LIMITS OF CONSTRUCTION
	LIMITS OF ASPHALT REMOVAL AND REPLACEMENT



NOTES:

- STREETS SHALL BE SWEEPED WITH WATER ASSISTED, VACUUM STYLE, STREET SWEEPING VEHICLE AT THE END OF EACH WORKING DAY UNTIL WORK IS COMPLETE.
- CONTRACTOR TO INSTALL DOWN GRADIENT CONTROL, SUCH AS HEAVYWEIGHT WADDLES, AT OR NEAR THE DOWNSLOPE END OF EXCAVATION, MOVING AS CONSTRUCTION PROCEEDS.

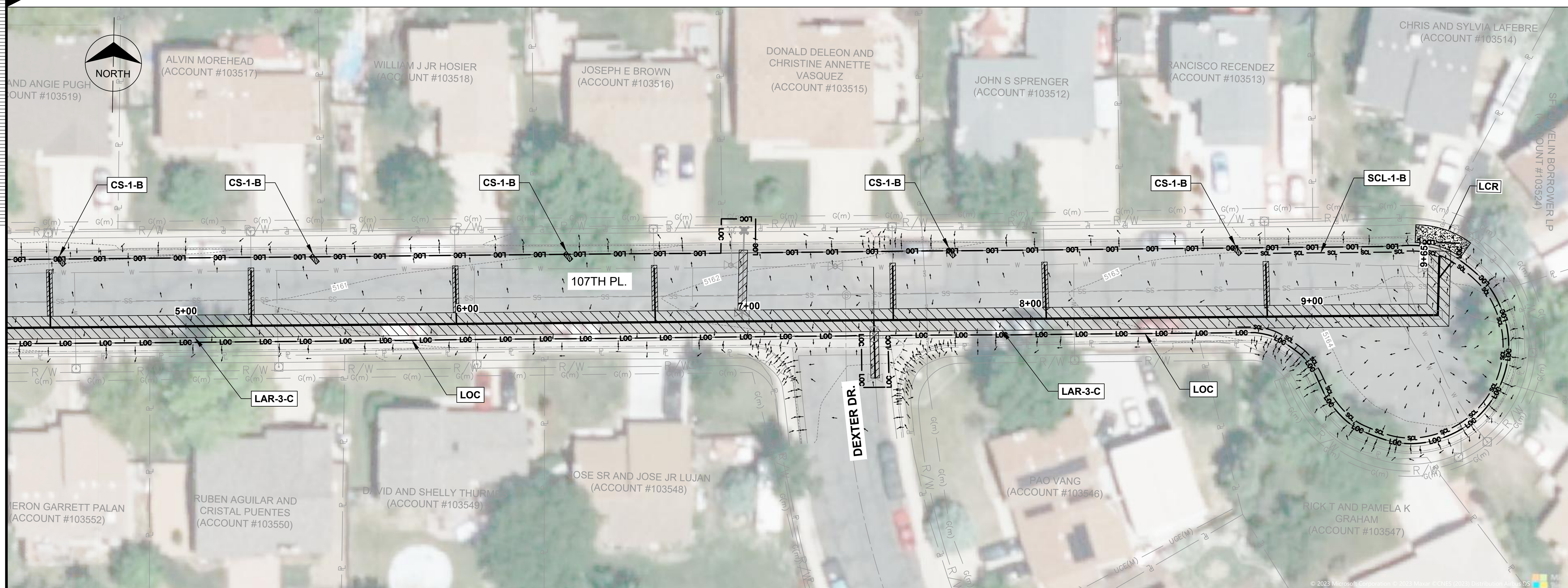
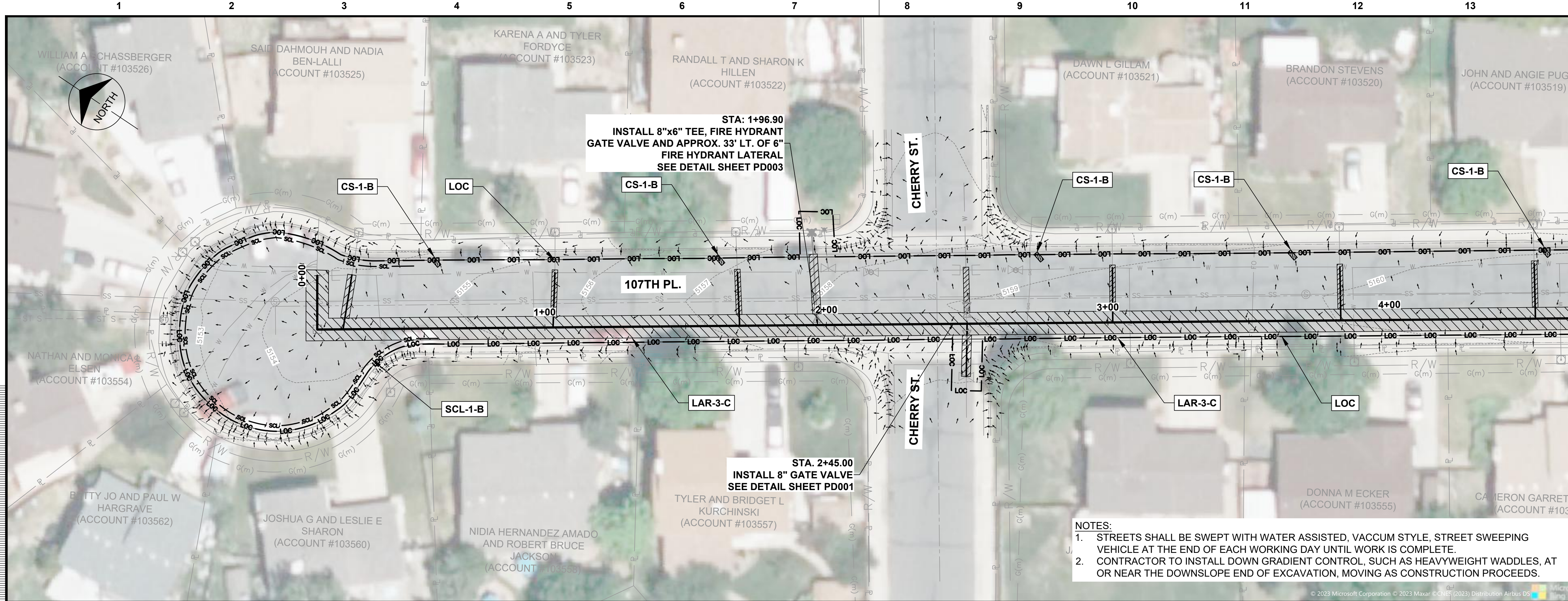
PRELIMINARY- NOT FOR CONSTRUCTION

BURNS MEDONNELL
 9191 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 EROSION & SEDIMENT CONTROL DRAWINGS SITE #4 STA. 00+00 TO STA. 2+09 SITE#4 STA. 00+00 TO STA. 2+46			
project	154303	contract	
drawing	EC005	rev.	0
sheet	35	of	39 sheets
file	EC005.dwg		



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

LEGEND:

- IP** INLET PROTECTION
- CS** CURB SOCK
- SCL** SEDIMENT CONTROL LOG
- LOC** LIMITS OF CONSTRUCTION
- LAR** LIMITS OF ASPHALT REMOVAL AND REPLACEMENT
- LCR** LIMITS OF CONCRETE REMOVAL AND REPLACEMENT

NOTES:

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0 10' 20' 40'
HORIZ. SCALE IN FEET 1"=20'

PRELIMINARY- NOT FOR CONSTRUCTION



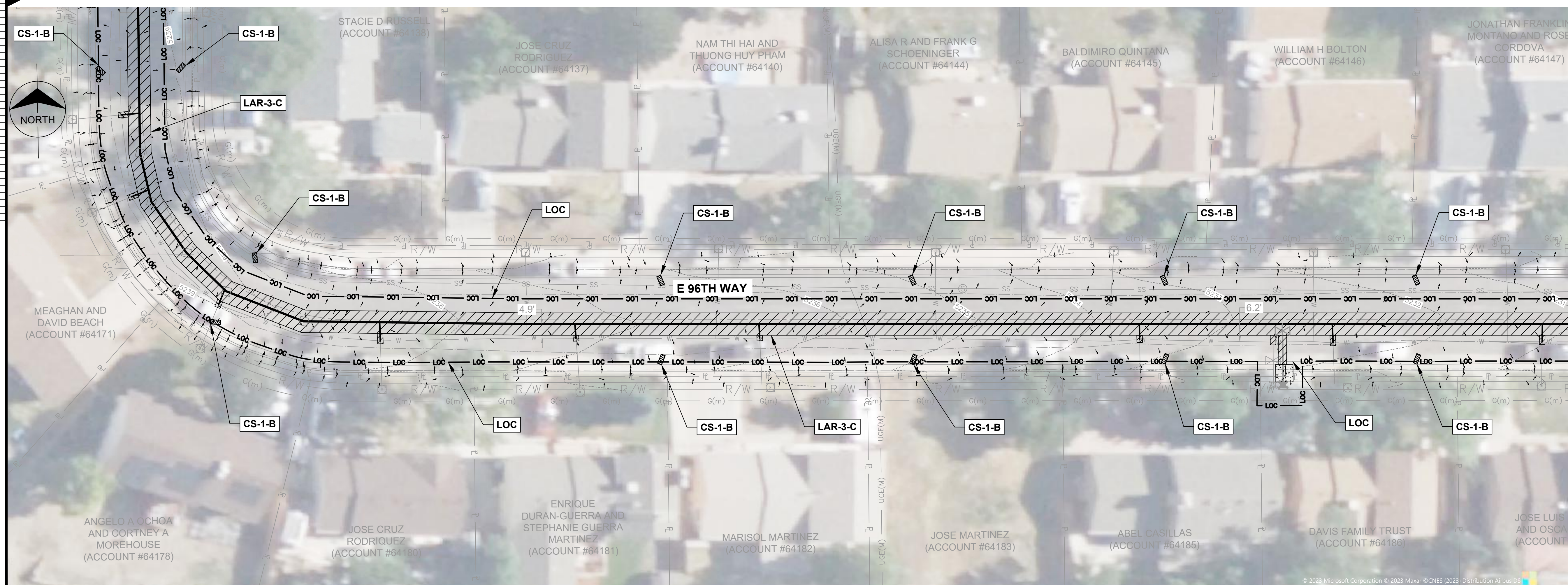
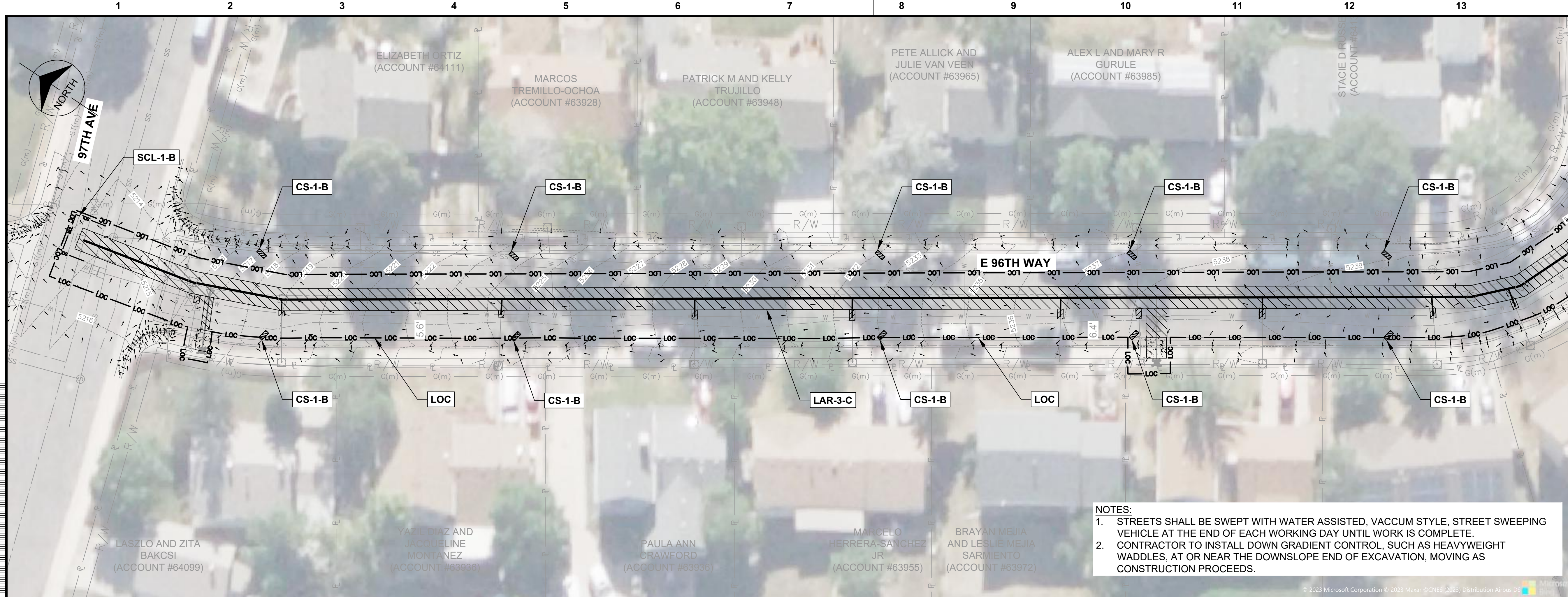
9191 JAMAICA STREET
ENGLEWOOD, COLORADO 80112
303-721-9292

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



CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
EROSION & SEDIMENT CONTROL DRAWINGS
SITE #5 STA. 00+00 TO STA. 4+50
SITE #5 STA. 4+50 TO STA. 9+65

project	154303	contract	
drawing	EC006	rev.	0
sheet	36	of	39 sheets
file	EC006.dwg		



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

LEGEND:

- IP INLET PROTECTION
- CS CURB SOCK
- SCL SEDIMENT CONTROL LOG
- LOC LIMITS OF CONSTRUCTION
- LAR LIMITS OF ASPHALT REMOVAL AND REPLACEMENT

NOTES:

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0 10' 20' 40'
HORIZ. SCALE IN FEET 1"=20'

PRELIMINARY- NOT FOR CONSTRUCTION



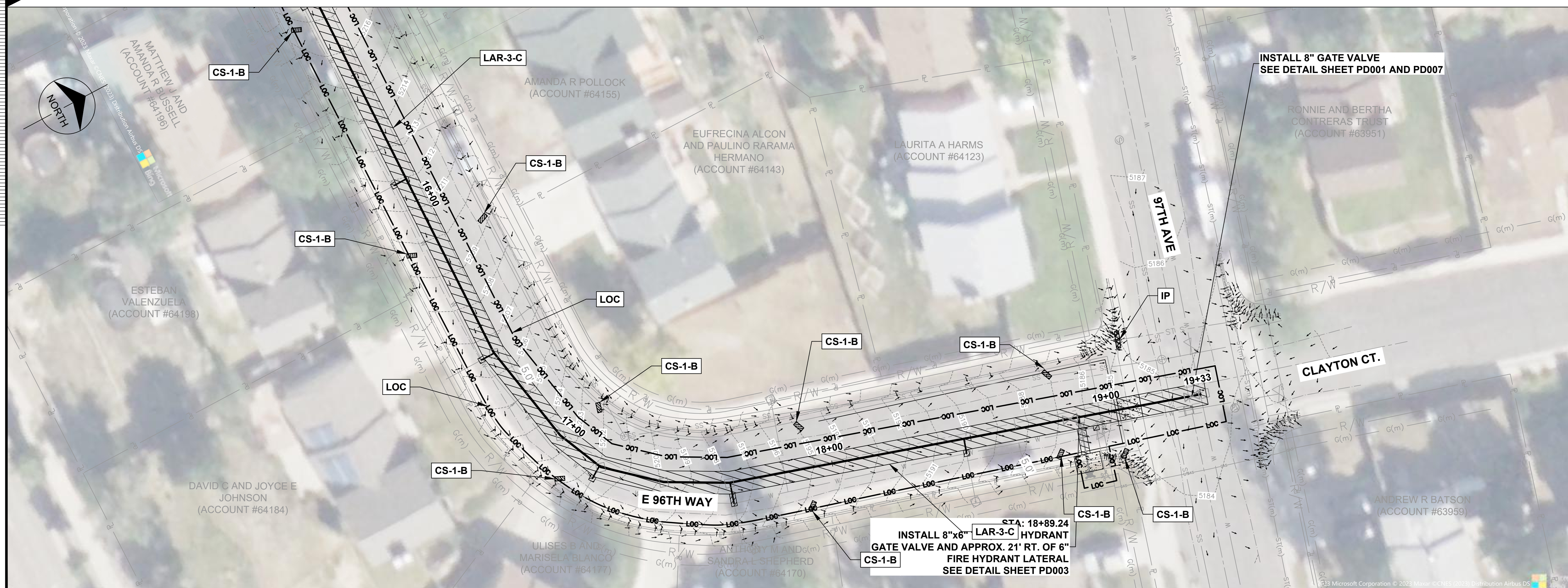
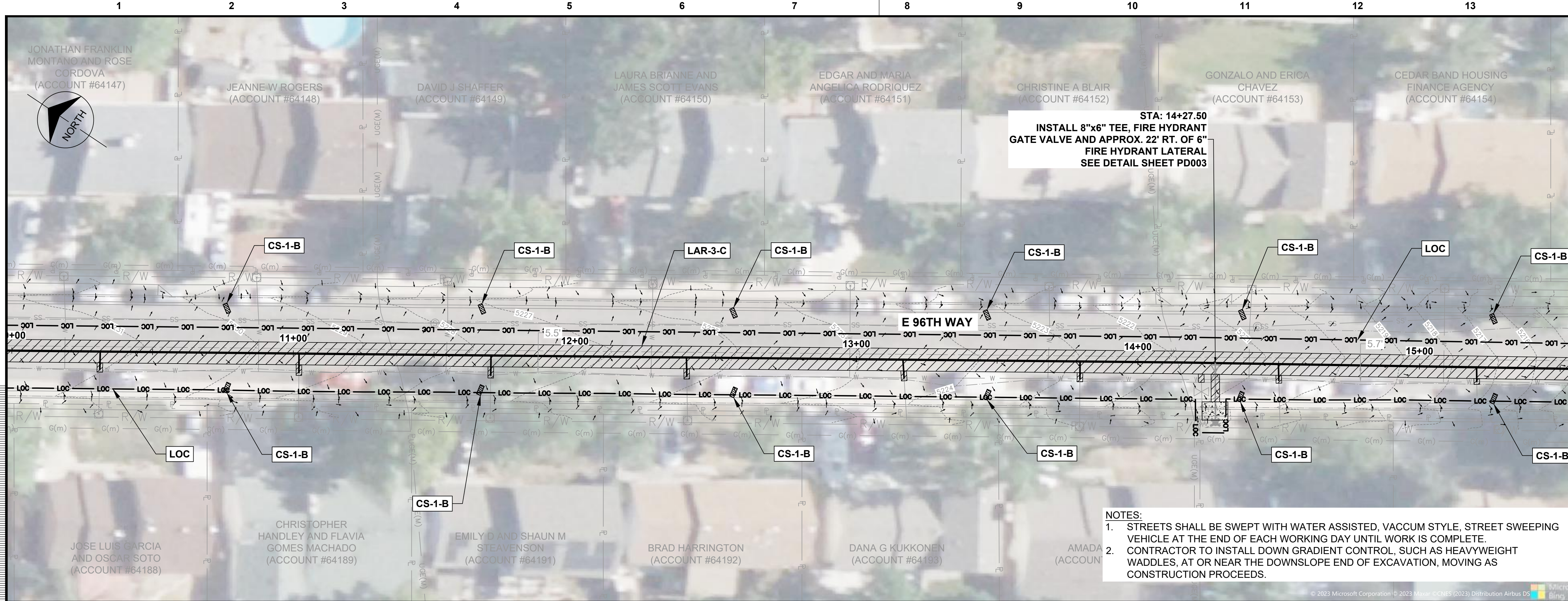
9191 JAMAICA STREET
ENGLEWOOD, COLORADO 80112
303-721-9292

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



CITY OF THORNTON
2022-2024 PIPELINE REHABILITATION
EROSION & SEDIMENT CONTROL DRAWINGS
SITE #6 STA. 00+00 TO STA. 5+00
SITE #6 STA. 5+00 TO STA. 10+00

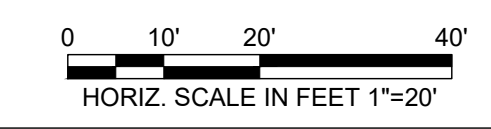
project	154303	contract	
drawing	EC007	rev.	0
sheet	37	of	39 sheets
file	EC007.dwg		



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

LEGEND:

IP	[Symbol]	INLET PROTECTION
CS	[Symbol]	CURB SOCK
SCL	[Symbol]	SEDIMENT CONTROL LOG
LOC	[Symbol]	LIMITS OF CONSTRUCTION
LAR	[Symbol]	LIMITS OF ASPHALT REMOVAL AND REPLACEMENT



NOTES:

- STREETS SHALL BE SWEEPED WITH WATER ASSISTED, VACCUM STYLE, STREET SWEEPING VEHICLE AT THE END OF EACH WORKING DAY UNTIL WORK IS COMPLETE.
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PRELIMINARY- NOT FOR CONSTRUCTION

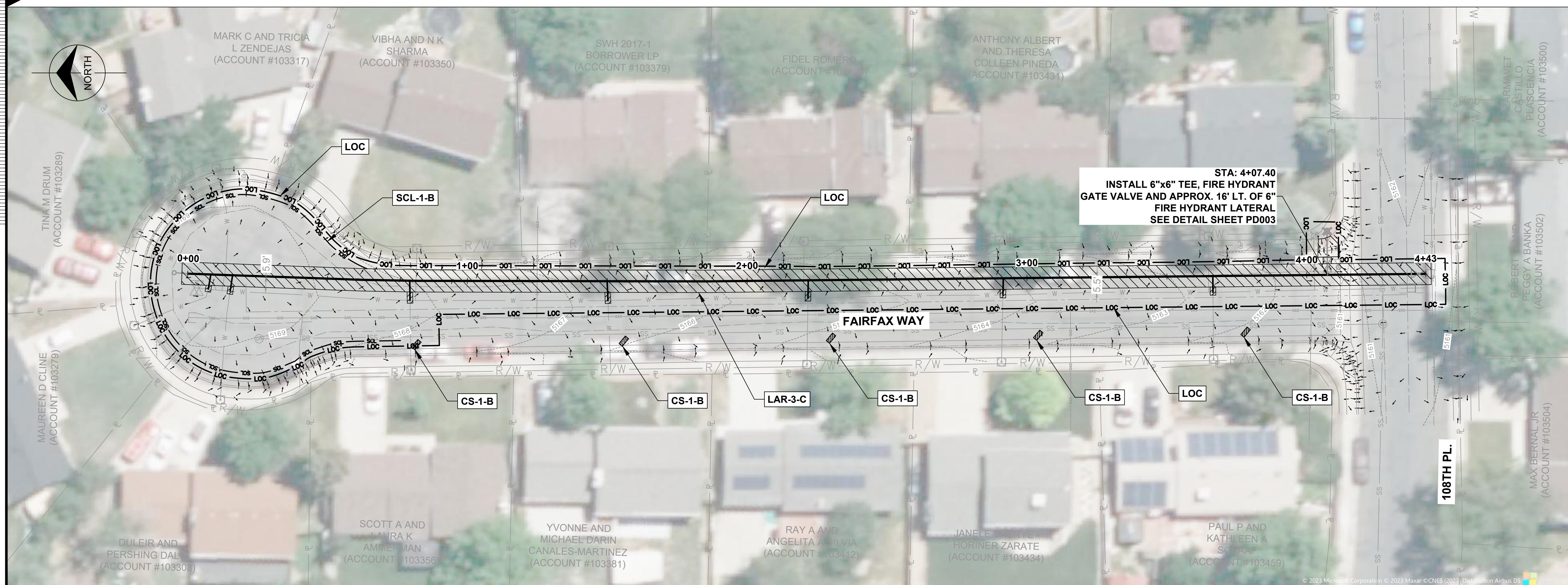
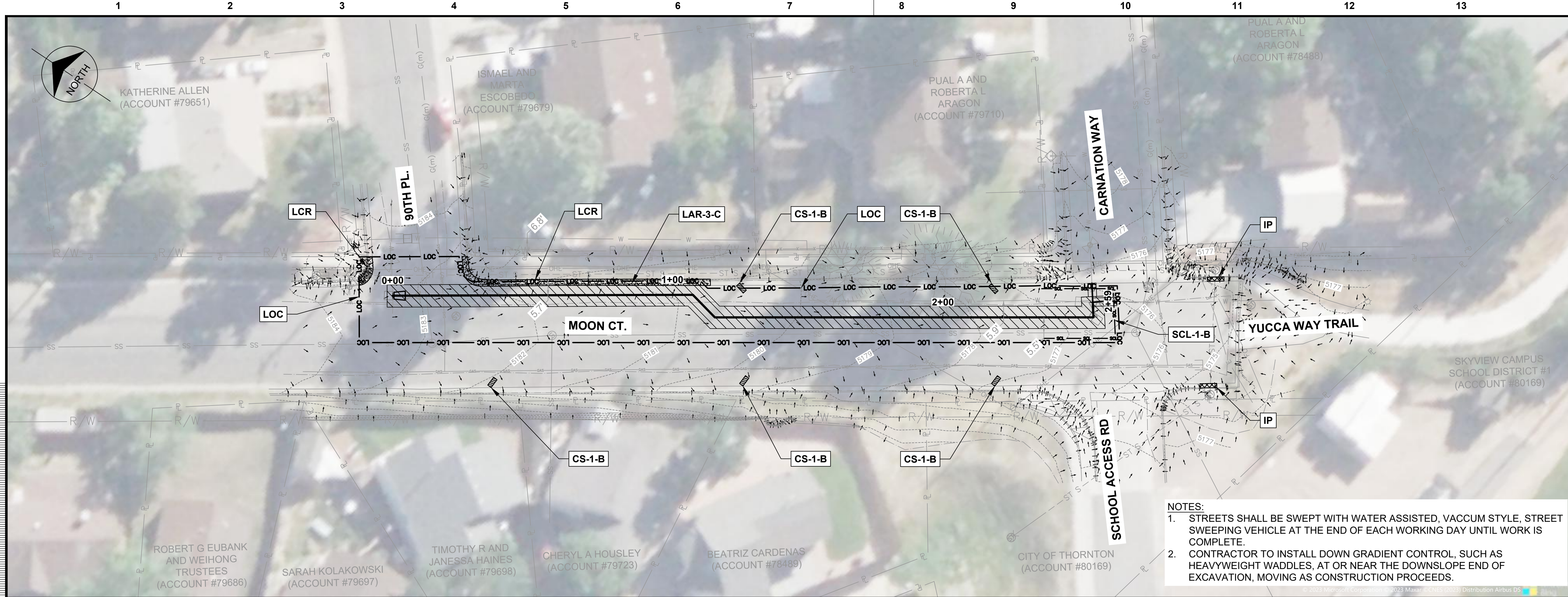
BURNS MEDONNELL
 9191 JAMAICA STREET
 ENGLEWOOD, COLORADO 80112
 303-721-9292

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



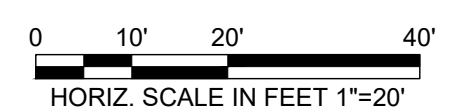
CITY OF THORNTON
 2022-2024 PIPELINE REHABILITATION
 EROSION & SEDIMENT CONTROL DRAWINGS
 SITE #6 STA. 10+00 TO STA. 15+00
 SITE #6 STA. 15+00 TO STA. 19+33

project 154303	contract
drawing EC008	rev. 0
sheet 38	of 39
file EC008.dwg	sheets



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

- LEGEND:**
- INLET PROTECTION
 - CURB SOCK
 - SEDIMENT CONTROL LOG
 - LIMITS OF CONSTRUCTION
 - LIMITS OF ASPHALT REMOVAL AND REPLACEMENT
 - LIMITS OF CONCRETE REMOVAL AND REPLACEMENT



- NOTES:**
- STREETS SHALL BE SWEEPED WITH WATER ASSISTED, VACUUM STYLE, STREET SWEEPING VEHICLE AT THE END OF EACH WORKING DAY UNTIL WORK IS COMPLETE.
 - CONTRACTOR TO INSTALL DOWN GRADIENT CONTROL, SUCH AS HEAVYWEIGHT WADDLES, AT OR NEAR THE DOWNSLOPE END OF EXCAVATION, MOVING AS CONSTRUCTION PROCEEDS.

PRELIMINARY- NOT FOR CONSTRUCTION



9191 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
EROSION & SEDIMENT CONTROL DRAWINGS
SITE #7 STA. 00+00 TO STA. 2+59
SITE #8 STA. 00+00 TO STA. 4+43

project	154303	contract	
drawing	EC009	rev.	0
sheet	39	of	39 sheets
file	EC009.dwg		