

METROPOLITAN DISTRICT GENERAL UTILITY NOTES FOR
MERIDIAN SERVICE METROPOLITAN DISTRICT

GENERAL NOTES

1.MERIDIAN SERVICE METROPOLITAN DISTRICT (MSMD) CONTACT TELEPHONE NUMBERS:

11886 STAPLETON DR
FALCON, CO 80831
PHONE 719-495-6567

- 1. ALL SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, RAW WATER AND STORM DRAIN SYSTEMS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CURRENT MERIDIAN SERVICE METROPOLITAN DISTRICT (MSMD) SPECIFICATIONS. MSMD SPECIFICATIONS HEREINAFTER SHALL BE CONSISTENT WITH THE COLORADO SPRINGS UTILITIES SPECIFICATIONS (CSUS) FOR WASTEWATER LINE EXTENSION & SERVICE STANDARDS, 2010 EDITION AND THE WATER LIND EXTENSION & SERVICE STANDARDS, 2014 EDITION, UNLESS OTHERWISE NOTED AND APPROVED.
- 2. ALL PLANS ON THE JOB SITE SHALL BE SIGNED AND APPROVED BY MSMD AND MSMD'S ENGINEER. ANY REVISION TO THE PLANS SHALL BE APPROVED BY MSMD AND MSMD'S ENGINEER AND SO NOTED ON THE PLANS.
- 3. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY MSMD. MSMD RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO MSMD STANDARDS AND SPECIFICATIONS.
- 4. ALL PIPE MATERIAL, BACKFILL, AND INSTALLATION SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS OF THE EL PASO COUNTY DEVELOPMENT SERVICES, COLORADO SPRINGS UTILITIES, MSMD, DISTRICT ENGINEER AND THE SOILS ENGINEER.
- 5. ALL UTILITY TRENCH BACKFILL SHALL BE PLACED PER THE APPROVED SOILS REPORT RECOMMENDATIONS AND UNDER THE DIRECTION OF THE SOILS ENGINEER. TRENCH BACKFILL SHALL BE MOISTURE CONDITIONED TO WITHIN 2 PERCENT OF OPTIMUM AND COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM MODIFIED PROCTOR DRY DENSITY (ASTM D 1557) OR HIGHER STANDARD AS REQUIRED BY THE EL PASO COUNTY DEVELOPMENT SERVICES OR THE SOILS ENGINEER RECOMMENDATION. THIS SHALL INCLUDE ALL MAIN LINE, VALVES, FIRE HYDRANT RUNS, WATER & SEWER SERVICE LINES, CLEAN OUTS, INLET BOXES, MANHOLES, ETC. A QUALIFIED SOILS ENGINEER SHALL OBSERVE AND TEST THE BACKFILL AND COMPACTION OF ALL TRENCHES AND ALL REPORTS SHALL BE SUBMITTED TO MSMD FOR REVIEW AND APPROVAL.
- 6. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING FACILITIES (ABOVEGROUND AND UNDERGROUND) WITHIN THE PROJECT SITE SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT THE REVISIONS OF THE CONSTRUCTION DRAWINGS IF IT IS FOUND THAT THE ACTUAL LOCATIONS ARE IN CONFLICT WITH THE PROPOSED WORK.
- 7. ALL WATER AND SANITARY SEWER SERVICE LATERAL LOCATIONS SHALL BE CLEARLY MARKED BY STAMPING AN "S" FOR SEWER AND A "W" FOR WATER ON THE CURB FACE AT EACH SERVICE LATERAL LOCATION. ALL SLEEVE LOCATIONS SHALL BE CLEARLY MARKED BY STAMPING AN "X" ON THE CURB FACE. ALL PRIVATE IRRIGATION SLEEVES SHALL BE MARKED BY STAMPING AN "I" ON THE TOP OF THE SIDEWALK.
- 8. BENDS, DEFLECTIONS & CUT PIPE LENGTHS SHALL BE USED TO HOLD HORIZONTAL ALIGNMENT OF SEWER AND WATER LINES TO NO MORE THAN 0.5' FROM THE DESIGNED ALIGNMENT.
- 9. AT ALL LOCATIONS WHERE CAP AND STUB IS NOTED ON DRAWINGS, PROVIDE A PLUG AT THE END OF THE PIPE JOINT NEAREST THE SPECIFIED STATION. PROVIDE A REVERSE ANCHOR AT ALL WATER LINE PLUGS AND BLOW OFFS.
- 10. ALL EXISTING UTILITY MAINS SHALL BE SUPPORTED AND PROTECTED IN PLACE AND FUNCTION CONTINUOUSLY DURING ALL CONSTRUCTION OPERATIONS. SHOULD A MSMD UTILITY FAIL OR BE DAMAGED AS A RESULT OF THE CONSTRUCTION OPERATION, IT SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR PER ALL MSMD SPECIFICATIONS. IN THE EVENT THE CONTRACTOR CANNOT IMMEDIATELY MAKE THE REPAIRS TO THE FAILED OR DAMAGED MSMD UTILITY TO THE SATISFACTION OF MSMD, MSMD MAY REPAIR OR CAUSE THE REPAIR AND BACK CHARGE ALL SUCH COSTS TO THE CONTRACTOR.
- 11. THE CONTRACTOR SHALL REPLACE OR REPAIR ANY AND ALL DAMAGE CAUSED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITIES TO ALL ABOVE OR BELOW GROUND IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO FENCES, LANDSCAPING, CURB, GUTTER, SIDEWALK, ASPHALT, ELECTRIC SYSTEMS, GAS SYSTEMS, TELEPHONE/TELEVISION SYSTEMS, ETC.
- 12. A PRECONSTRUCTION CONFERENCE MEETING SHALL BE HELD AT THE PROJECT SITE A MINIMUM OF 7 DAYS BEFORE CONSTRUCTION BEGINS AND SHALL BE ATTENDED BY ALL REPRESENTATIVES RESPONSIBLE FOR CONSTRUCTION, INSPECTION, SUPERVISION, TESTING AND ALL OTHER ASPECTS OF THE WORK. THE CONTRACTOR SHALL NOTIFY MSMD AND ALL AFFECTED UTILITY COMPANIES ADJACENT TO THE PROPOSED UTILITY CONSTRUCTION A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF CONSTRUCTION FOR SCHEDULING. THE CONTRACTOR SHALL SCHEDULE BI-WEEKLY CONSTRUCTION MEETINGS AT THE PROJECT SITE OR MORE FREQUENTLY AS DEEMED NECESSARY BY MSMD.
- 13. PRELIMINARY ACCEPTANCE SHALL BE DEFINED AS THE POINT IN TIME THAT MSMD ACCEPTS THE FACILITY FOR USE AND ALL SURFACE IMPROVEMENTS AND RESTORATIONS ARE COMPLETED.
- 14. FINAL ACCEPTANCE BY MSMD OF ANY UTILITY LINE OR SYSTEM SHALL NOT OCCUR UNTIL COMPLETION OF FINAL ASPHALT LAYERS AND/OR FINAL COMPLETION AND/OR RESTORATION OF ALL SURFACE IMPROVEMENTS. THE WARRANTY PERIOD FOR ALL FACILITIES SHALL BE 12 MONTHS COMMENCING WITH FINAL ACCEPTANCE. MSMD MAY REQUIRE RETESTING OF THE UTILITY SYSTEM PRIOR TO FINAL ACCEPTANCE.
- 15. INSPECTION FEES: CALL MSMD FOR FEE SCHEDULE, OR VIEW AT WWW.MERIDIANRANCHMETRO.ORG.
- 16. ALL COMMERCIAL/BUSINESS DEVELOPMENTS SHALL HAVE A MINIMUM EIGHT INCH DIAMETER WATER MAIN LOOPED THROUGH THE PROPOSED PROPERTY WITH GATE VALVES LOCATED WHERE THE MAIN ENTERS AND EXITS THE PROPERTY AND A MINIMUM EIGHT INCH SANITARY SEWER MAIN WITH A MANHOLE IN THE STREET WHERE THE MAIN ENTERS THE PROPERTY. THE EXTENT OF THE MAINS SHALL BE MARKED WITH THE APPROPRIATELY COLORED CARSONITE MARKERS AND TRACER WIRE.
- 17. AFTER REVIEW AND APPROVAL OF PLANS FOR THE EXTENSION OF LINES, FACILITIES, AND/OR SERVICES, CONSTRUCTION MUST BE COMPLETED WITHIN 18 MONTHS FOR RESIDENTIAL SUBDIVISIONS AND 12 MONTHS FOR ANY COMMERCIAL INSTALLATIONS. IF WORK IS NOT COMPLETED WITHIN THIS TIME FRAME AND NO EXTENSION HAS BEEN GIVEN, THEN ALL PLANS MUST BE RE-SUBMITTED TO MSMD FOR REVIEW (WITH NEW FEES PAID) AND APPROVAL.
- 18. PUMPING OR BYPASS OPERATIONS SHALL BE REVIEWED AND APPROVED BY MSMD AND THE ENGINEER OF RECORD PRIOR TO EXECUTION.
- 19. ANY FACILITIES OUTSIDE OF PAVED ROADS MUST BE MARKED APPROPRIATELY WITH CARSONITE MARKERS AT EACH VALVE, MANHOLE, TEST STATION, AND ANY OTHER FACILITIES MSMD DEEMS NECESSARY.

WATER NOTES

- 27. ALL WATER MAIN PIPES SHALL BE AWWA C900 PVC, PRESSURE CLASS 200 OR MSMD APPROVED EQUAL, INSTALLED PER MANUFACTURERS' SPECIFICATIONS. ALL WATER MAIN FITTINGS SHALL HAVE MECHANICAL RESTRAINTS AND THRUST BLOCKS. ALL WATER MAIN PIPES SHALL HAVE A MINIMUM COVER DEPTH OF 5'-6" INSTALLED WITH A COATED 12 GAUGE U.F. TRACER WIRE.
- 28. ALL LOTS SHALL RECEIVE A MINIMUM 3/4" DIAMETER HDPE OR COPPER WATER SERVICE INSTALLED PER APPROVED PLANS CSUS AND MSMD SPECIFICATIONS. HDPE WATER SERVICE SHALL BE HDPE SDR-7 PE4710 RATED FOR 200 PSI WITH THE MARKING SDR-7, AWWA C901, NSF61 PE4710. WATER SERVICES SHALL BE INCREASED IN SIZE TO 1" DIAMETER WHERE THE RESIDENTIAL SERVICE WATER PRESSURE IS LESS THAN 40 PSI AT 10 GPM DEMAND AND ALL 1/3 ACRE OR GREATER LOTS SHALL RECEIVE A MINIMUM 1" DIAMETER WATER SERVICE AS INDICATED ON THE PLANS. THE CURB STOP VALVE AND BOX AT THE END OF EACH WATER SERVICE SHALL BE "LOCATED" WITH A 2" X 4" PIECE OF WOOD EXTENDED 4' ABOVE FINISH GRADE, PAINTED BLUE, DIRECTLY BEHIND THE CURB STOP VALVE AND BOX. ALL TRACER WIRE CONNECTIONS SHALL BE MADE WITH DBY (DIRECT BURY YELLOW) WATER TIGHT STYLE ELECTRICAL CONNECTORS OR EQUAL.
- 29. IF HDPE WATER SERVICES ARE TO BE USED THEY SHALL INCLUDE A ROMAC 202 NS OR EQUAL TAPPING SADDLE AND A CURB STOP VALVE INSIDE A CURB STOP BOX AT THE END OF THE WATER SERVICE. ALL CORPORATION STOPS SHALL BE AY MCDONALD MODEL NUMBER 74701B-33 FOR SDR HDPE SAME SIZE AS THE WATER SERVICE. ALL CURB STOP VALVES SHALL BE ¾" AY MCDONALD MODEL NUMBER 76100 (FLARE X FLARE) OR EQUIVALENT WITH A MAIN SIDE ONE PACK JOINT (PEP) ADAPTOR AY MCDONALD MODEL NUMBER 74755-33 UNLESS OTHERWISE NOTED ON THE PLANS. ALL 1" DIAMETER WATER SERVICES SHALL RECEIVE A 1" INLET BY ¾" OUTLET CURB STOP VALVE.
- 30. IF COPPER WATER SERVICES ARE TO BE USED THEY SHALL INCLUDE A ROMAC 202 BS OR EQUAL TAPPING SADDLE AND A CURB STOP VALVE INSIDE A CURB STOP BOX AT THE END OF THE WATER SERVICE. ALL CURB STOP VALVES SHALL BE ¾" UNLESS OTHERWISE NOTED ON THE PLANS. ALL 1" DIAMETER WATER SERVICES SHALL RECEIVE A 1" INLET BY ¾" OUTLET CURB STOP VALVE MANUFACTURED BY AY MCDONALD MODEL NUMBER 6104 (FLARE X FLARE) OR EQUIVALENT.
- 31. ALL POTABLE WATER VALVES SHALL OPEN CLOCKWISE WITH THE VALVE OPERATING NUT INSTALLED LOW NEAR THE MAIN LINE AND PAINTED RED. ALL POTABLE AND RAW WATER VALVES NOT WITHIN PAVED STREETS SHALL BE MARKED WITH CARSONITE MARKERS. ALL RAW WATER VALVES SHALL OPEN COUNTERCLOCKWISE WITH THE VALVE OPERATING NUT INSTALLED HIGH WITHIN 1' FROM THE SURFACE AND PAINTED BLACK.
- 32. ALL POTABLE WATER, RAW WATER AND NON-POTABLE WATER VALVES 14" OR GREATER SHALL BE BUTTERFLY VALVES WITH A SIDE OPERATING NUT. THE OPERATIONAL DEPTH OF THE POTABLE WATER VALVES SHALL NOT EXCEED 6' IN OVERALL DEPTH NOR SHALL IT BE CLOSER TO THE SURFACE THEN 4'.
- 33. FIRE HYDRANT LOCATIONS SHALL BE REVIEWED AND APPROVED BY THE APPLICABLE FIRE DEPARTMENT AUTHORITY.
- 34. FIRE HYDRANTS SHALL BE AVK MODEL 2780 NOSTALGIC (PART # 27ND-023XX-0010B-AN) OPEN RIGHT WITH A 1 ½" PENTAGON OPERATING NUT AND SERVICE CAPS, STANDARD 4 ½" PUMPER NOZZLE WITH A THREAD PATTERN OF 5- 8 ½" - 6 TPI (THREAD PER INCH) ALONG WITH TWO SANDARD 2 ½" NST (NATIONAL STANDARD THREAD) SIZE NOZZLES. HYDRANTS SHALL BE PAINTED WITH RUSTOLEUM SAFETY YELLOW.
- 35. ALL DUCTILE IRON PIPES, FITTINGS, VALVES AND FIRE HYDRANTS SHALL BE WRAPPED WITH POLYETHYLENE TUBING, DOUBLE BONDED AT EACH JOINT AND ELECTRICALLY ISOLATED. BONDING AND ANODE CONNECTIONS SHALL BE THOROUGHLY COATED WITH BITUMINOUS COATINGS.
- 36. ALL DUCTILE IRON PIPE AND FITTINGS LESS THAN 12 INCHES IN DIAMETER SHALL HAVE CATHODIC PROTECTION USING TWO NO. 6 WIRES WITH 17 LB. MAGNESIUM ANODES EVERY 400 FEET AND 9 LB. MAGNESIUM ANODES AT EACH FITTING. ALL DUCTILE IRON PIPE AND FITTINGS 12 INCHES AND GREATER SHALL HAVE CATHODIC PROTECTION USING TWO NO. 6 WIRES WITH 17 LB. MAGNESIUM ANODES EVERY 300 FEET AND 9 LB. MAGNESIUM ANODES AT EACH FITTING. CATHODIC PROTECTION AND ANODES SHALL BE INSTALLED PER MSMD SPECIFICATIONS.
- 37. ALL EXISTING WATER UTILITY MATERIAL REMOVED AS PART OF THE WORK ON THESE DRAWINGS SHALL BE RETURNED TO MSMD AS REQUESTED.
- 38. TESTING OF FACILITIES:
A.THE CONTRACTOR SHALL NOTIFY MSMD A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF ANY TESTING TO ALLOW MSMD STAFF TO BE PRESENT AT ALL TIMES DURING TESTING. ALL TESTING SHALL BE PER MSMD SPECIFICATIONS OR CSUS, WHICHEVER IS GREATER.
B.ALL SECTIONS OF WATER LINES MUST FIRST PASS A CHLORINE TEST WITH A MINIMUM OF 50 PARTS PER MILLION OF RESIDUAL AFTER 24 HOURS. THE WHOLE SECTION OF LINE BEING TESTED MUST BE RE-CHLORINATED AND RE-TESTED IF IT DOES NOT PASS. ONCE THE SECTION OF LINE BEING TESTED PASSES THE CHLORINE TEST THE LINE MUST BE FLUSHED AND BAC-T TESTED PER CSUS. ONCE THE BAC-T TEST PASSES, THE SECTION OF LINE MAY BE PRESSURE TESTED. WATER FLUSHED FROM THE WATER SYSTEM MUST BE PROPERLY DE-CHLORINATED DURING THE FLUSHING PROCESS
C.ALL SECTIONS OF WATER LINES MUST PASS A TWO HOUR 200 PSI HYDROSTATIC PRESSURE TEST. THE PRESSURE SHALL NOT DECREASE BY MORE THAN 5 PSI DURING THE DURATION OF THE TEST. NO WATER SHALL BE ADDED DURING THE PRESSURE TEST. IF THE PRESSURE TEST FAILS, THE SECTIONS OF LINE THAT FAILED MUST AGAIN PASS THE CHLORINE TEST, BE FLUSHED, AND PASS THE BAC-T TEST PRIOR TO CONDUCTING A NEW PRESSURE TEST.
D.ONCE WATER SERVICES ARE INSTALLED A SECOND WATER PRESSURE TEST MUST BE DONE TO A WORKING PSI OF 150 PSI FOLLOWING THE ABOVE TESTING STANDARDS.
E.SECTIONS OF WATER LINES SHALL BE LEFT PRESSURIZED ONCE THE WATER LINES HAVE PASSED ALL TESTING DURING THE REMAINING CONSTRUCTION ACTIVITIES.
- 39. COMMENCEMENT OF USE OF WATER LINES AND/OR SYSTEMS. NO WATER FACILITY SHALL BE PLACED IN SERVICE UNTIL:
A.MSMD HAS APPROVED ALL TESTS AND COMPACTION TESTING REPORTS, AND AS-BUILT DRAWINGS ARE SUBMITTED TO AND APPROVED BY MSMD.
B.ALL WATER LINES ARE COMPLETED AND THE FIRST LIFT OF ASPHALT IS COMPLETED OVER THE LINE. IN THE CASE WHERE NO ASPHALT IS TO BE PLACED OVER THE LINE, SURFACE IMPROVEMENTS SHALL BE COMPLETED PRIOR TO USE OF THE FACILITY.
C.ALL EASEMENTS (PLATTED OR DEEDED) ARE DEDICATED, EXECUTED TO MSMD, AND RECORDED.
- 40. ANY WATER SHUT DOWNS THAT NEED TO OCCUR ON THE CRITICAL LINES AS DEFINED BY THE MSMD SOP (STANDARD OPERATION PROCEDURE) MANUAL SHALL BE COORDINATED WITH MSMD STAFF FOR NIGHT TIME SHUT DOWNS.
- 41. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONNECTIONS TO EXISTING WATER MAINS WITHOUT A SHUTDOWN OF THE WATER SYSTEM. IN THE EVENT THAT A SHUTDOWN OF A WATER SYSTEM IS NECESSARY, THE CONTRACTOR SHALL ACQUIRE A PERMIT FROM MSMD.
- 42. ALL NON-POTABLE WATER MAINS SHALL BE AWWA NON-POTABLE STANDARD (PURPLE PIPE) C900 PVC, PRESSURE CLASS 200 OR MSMD APPROVED EQUAL, INSTALLED PER MANUFACTURERS' SPECIFICATIONS. ALL WATER MAIN FITTINGS SHALL HAVE MECHANICAL RESTRAINTS AND THRUST BLOCKS. ALL WATER MAIN PIPES SHALL HAVE A MINIMUM COVER DEPTH OF 5'-6" INSTALLED WITH A COATED 12 GAUGE U.F. TRACER WIRE.
- 43. ALL NON- POTABLE WATER VALVES SHALL OPEN COUNTER CLOCKWISE WITH A VALVE EXTENSION, EXTENDING TO WITHIN 1' OF THE SURFACE AND PAINTED PURPLE WITH AN OPEN DIRECTION ARROW.
- 44. IRRIGATION SERVICES SHALL HAVE A STOP AND WASTE CURB STOP VALVE INSTALLED ALONG WITH A TRACER WIRE EXTENDING BACK TO THE MAIN LINE.
THE ABOVE GUIDELINES ARE SUBJECT TO CHANGE AT ANY TIME.

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE. THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
BRJM, LLC
101 N. CASCADE, SUITE 200
COLORADO SPRINGS, CO 80903
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Central 303-740-9888 • Colorado Springs 719-583-2583
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Table with 10 columns: No., REVISION, BY, DATE, H-SCALE, V-SCALE, DATE, DESIGNED BY, DRAWN BY, CHECKED BY. Row 1 contains values: N/A, N/A, 09/07/22, N/A, QNL.



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WATER SERVICE LINE TAP LOCATIONS		
ID NO.	PIPE & STATION	PIPE ALIGNMENT
LOT 1	1+00.00	WP01
LOT 2	2+75.84	WP01
LOT 3	4+07.31	WP01
LOT 4	5+73.03	WP01
LOT 5	1+13.46	WP03
LOT 6	0+00.00	WP03
LOT 7	0+66.85	WP03
LOT 8	1+20.05	WP03
LOT 9	8+55.14	WP01
LOT 10	10+86.99	WP01
LOT 11	12+50.57	WP01
LOT 12	13+86.19	WP01
LOT 13	15+63.23	WP01
LOT 14	17+69.98	WP01
LOT 15	19+91.08	WP01
LOT 16	21+81.46	WP01
LOT 17	24+10.48	WP01
LOT 18	26+25.89	WP01
LOT 19	27+79.51	WP01
LOT 20	30+69.39	WP01
LOT 21	32+90.14	WP01
LOT 22	35+08.89	WP01
LOT 23	37+25.89	WP01
LOT 24	39+41.19	WP01
LOT 25	41+39.63	WP01
LOT 26	41+79.73	WP01
LOT 27	39+14.92	WP01
LOT 28	37+06.74	WP01
LOT 29	34+91.41	WP01
LOT 30	32+67.39	WP01
LOT 31	30+45.73	WP01
LOT 32	27+71.06	WP01
LOT 33	25+58.58	WP01
LOT 34	23+33.21	WP01
LOT 35	20+98.73	WP01
LOT 36	18+83.91	WP01
LOT 37	16+03.03	WP01
LOT 38	12+79.25	WP01
LOT 39	9+27.69	WP01

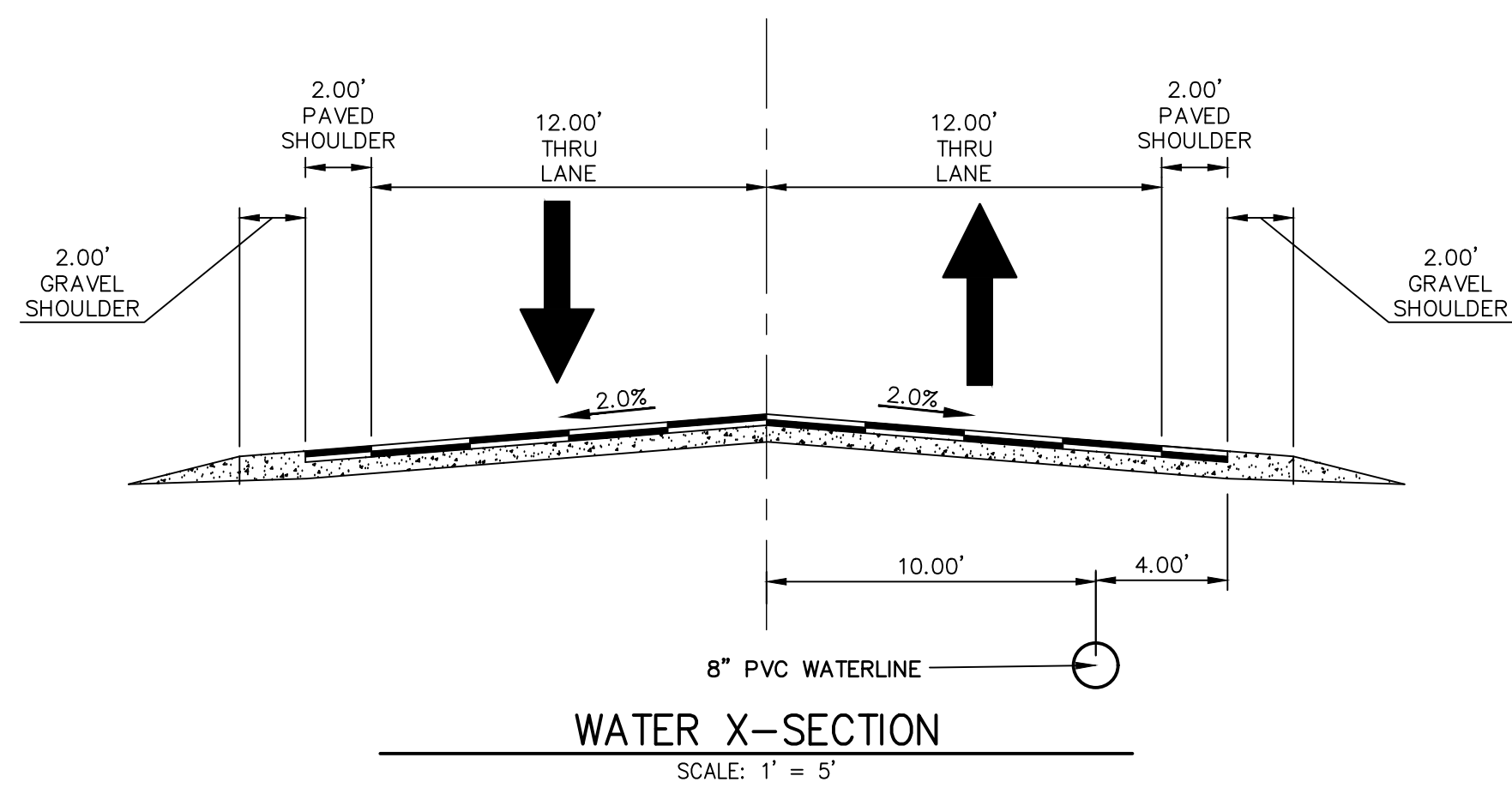
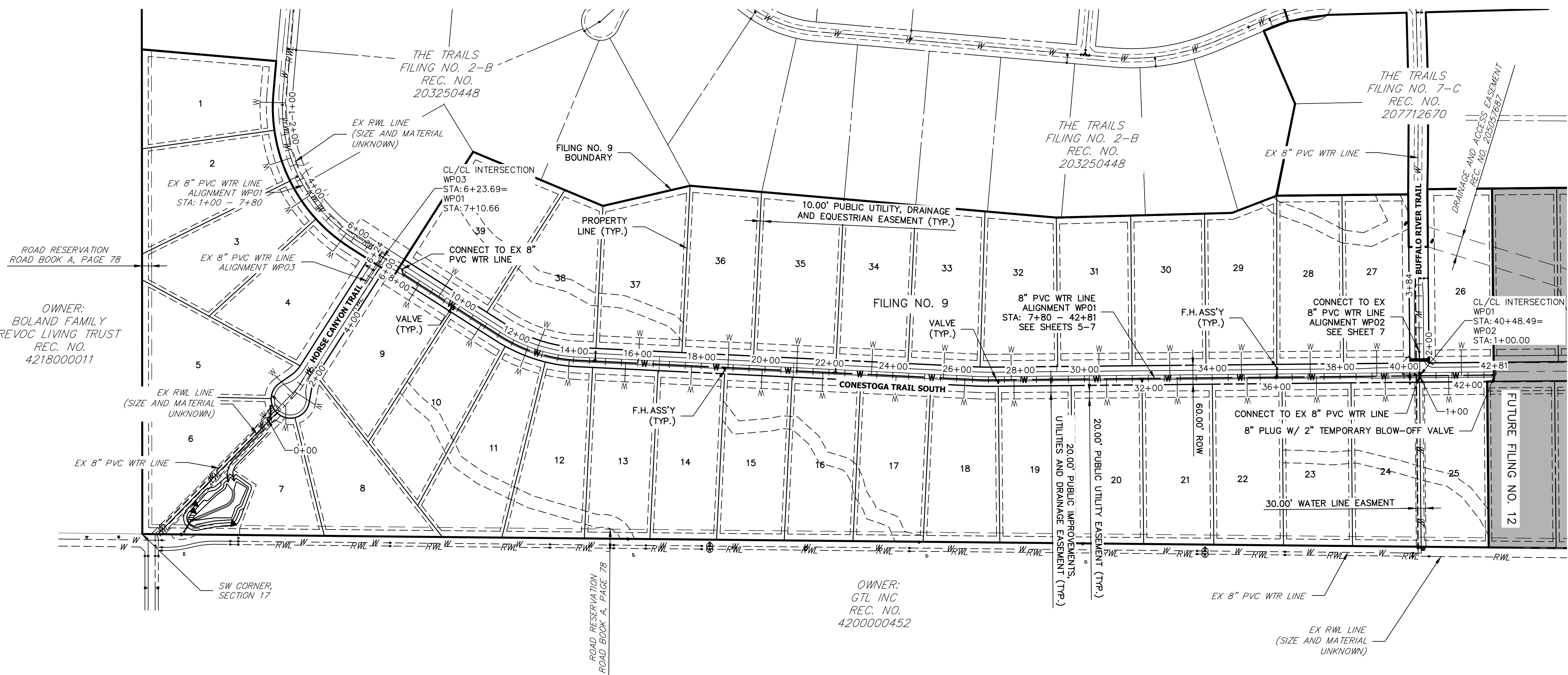
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LATIGO TRAILS – FILING NO. 9

OVERALL UTILITY PLAN

SHEET 4 OF 9

JOB NO. 25175.02



THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.


1. ALL WATER SERVICE PIPES ARE TO BE HDPE W/ FLARED FITTING.
2. ALL WATER SERVICE CURB STOP BOXES MUST BE RAISED A MINIMUM OF 2" ABOVE FINISHED GRADE WITH 1.5" PVC INSIDE THE STOP BOX AS TO KEEP THE VALVE EASILY ACCESSIBLE.
3. WATER SERVICE SHALL BE 1" MINIMUM DIAMETER.

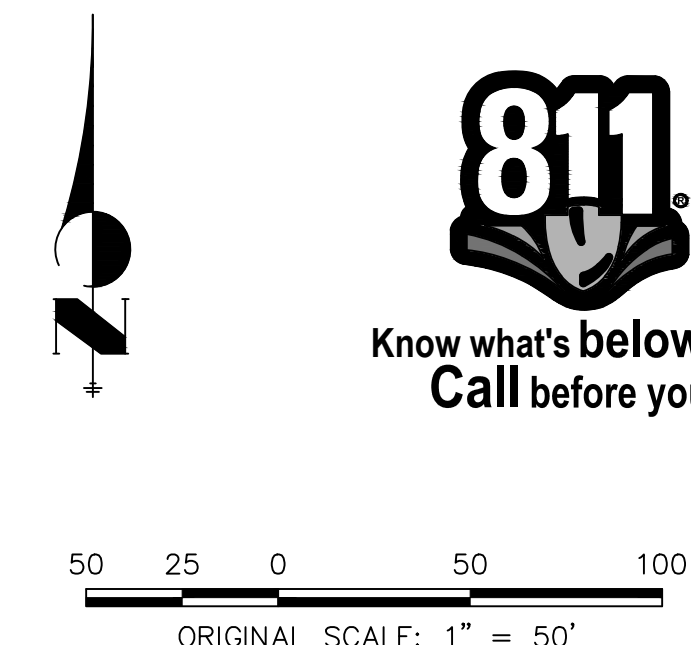
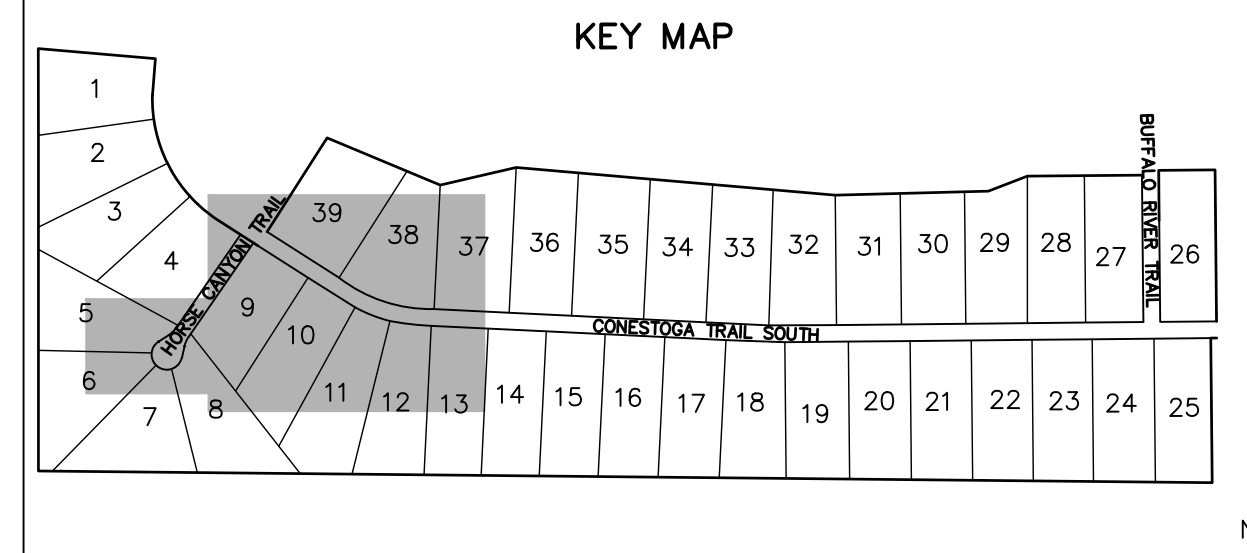
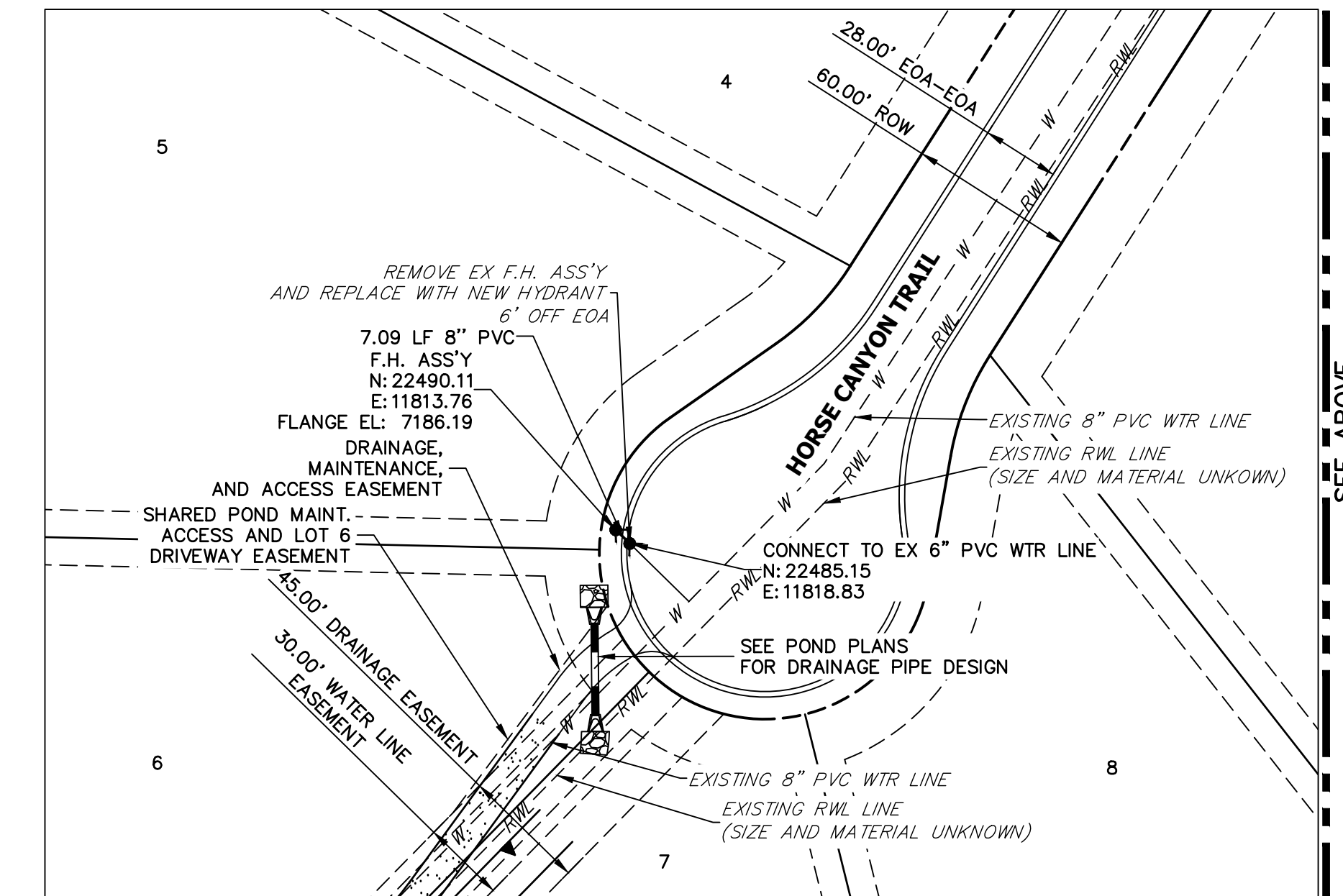
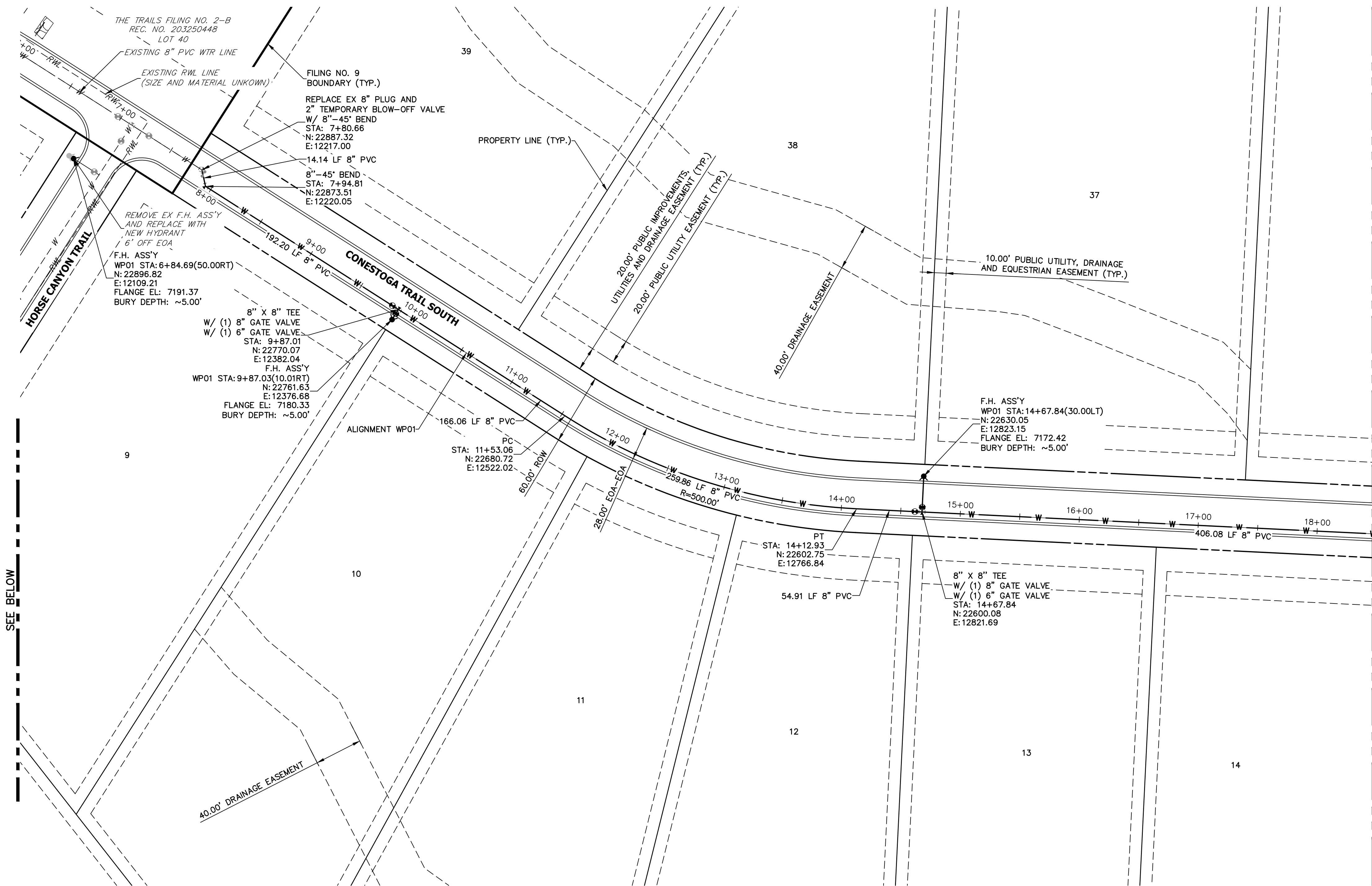


Know what's **below**.
Call before you dig



PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR
ENGINEERING


 BRYAN T. LAW, P.E.
 COLORADO P.E. 25043
 FOR AND ON BEHALF OF JR ENGINEERING, LLC



- WATER PIPE NOTES**
1. ALL WATER LINES ARE OWNED AND MAINTAINED BY MERIDIAN SERVICE METROPOLITAN DISTRICT (MSMD) UNLESS OTHERWISE NOTED.
 2. ALL CURVILINEAR PIPE MUST BE ACCOMPLISHED BY HIGH DEFLECTION COUPLERS.
 3. ALL HORIZONTAL BENDS, TEES, AND CROSSES REQUIRE CONCRETE THRUST REACTION BLOCKS (CTRB). SEE CSU DETAILS A4-2 AND A4-3.
 4. ALL HORIZONTAL AND VERTICAL DEFLECTIONS TO BE ACCOMPLISHED WITH HIGH DEFLECTION (HD) COUPLINGS.
 5. ALL VERTICAL BENDS REQUIRE MECHANICAL JOINT RESTRAINTS (MJR). SEE CSU DETAIL A4-4.
 6. SEE FIRE HYDRANT DETAIL DEPICTING THE PLACEMENT ON SHEET 9.

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ENGINEER'S STATEMENT


PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

Bryan T. Law

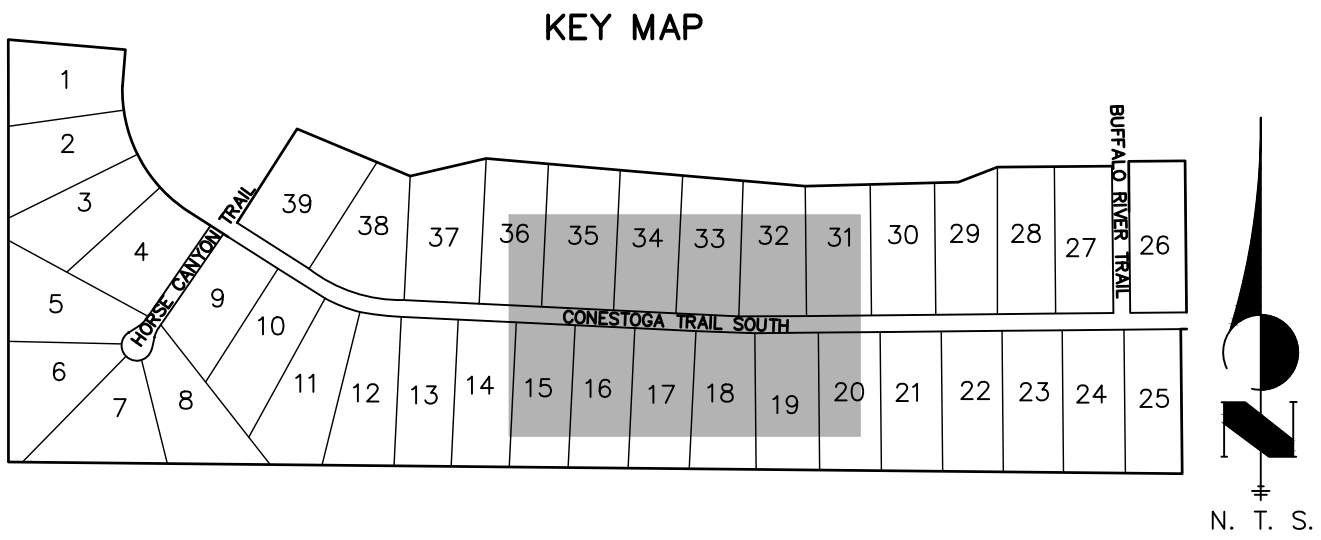
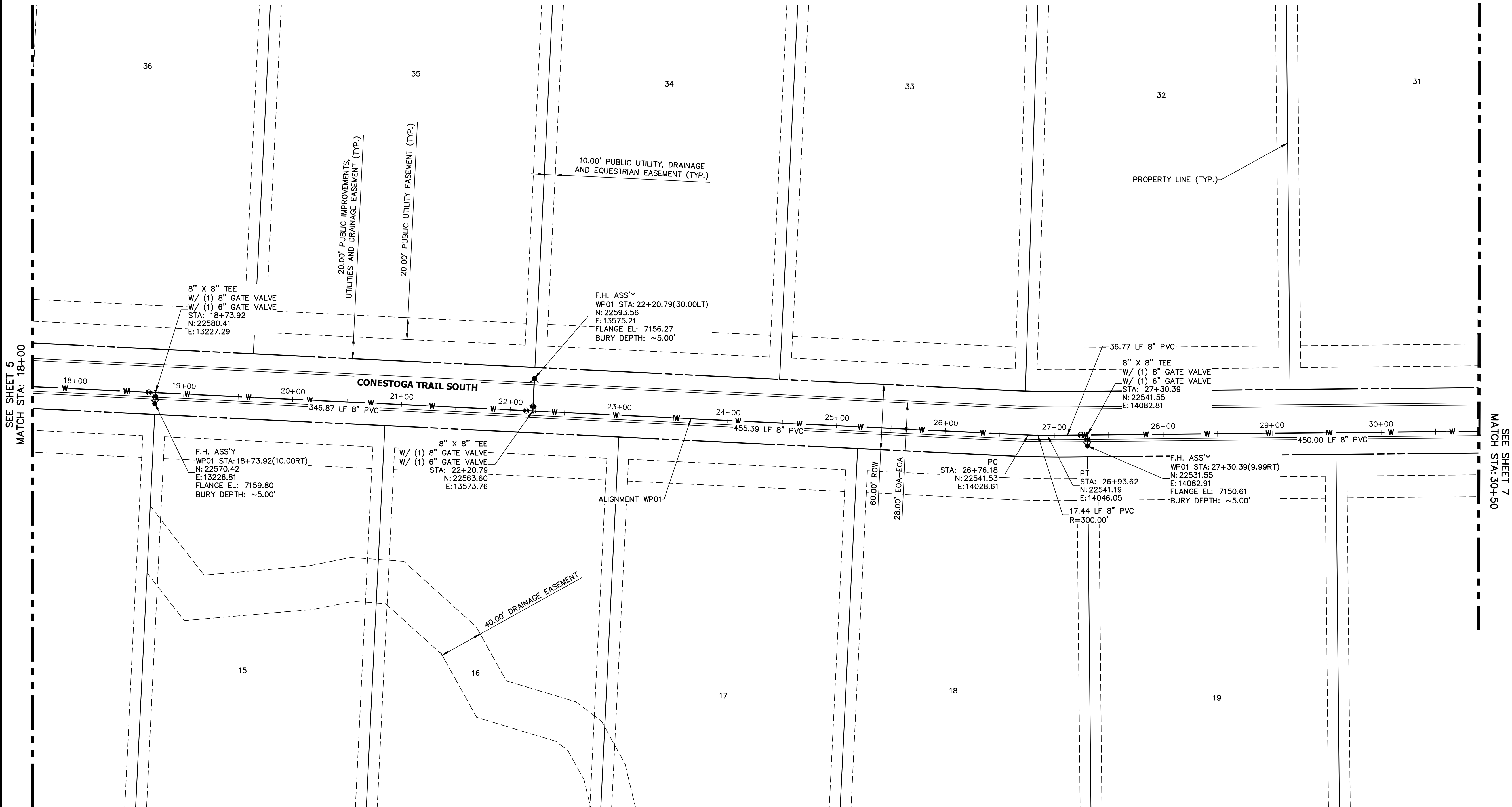
BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

25043

09/09/22

LATIGO TRAILS – FILING NO. 9		WATER DISTRIBUTION PLAN			
SHEET 5	OF 9	JOB NO. 25175.02			
H-SCALE 1"=50'		No.	REVISION	BY	DATE
V-SCALE N/A					
DATE 09/07/22					
DESIGNED BY QNL					
DRAWN BY QNL					
CHECKED BY					
		 J-R ENGINEERING A Western Company Central 303-740-3383 • Colorado Springs 719-583-2583 Fort Collins 970-491-9888 • www.jrengineering.com			
		PREPARED FOR BRJM, LLC 101 N. CASCADE, SUITE 200 COLORADO SPRINGS, CO 80903 ATTN: BOB IRWIN P~(719)–475–7474			
		UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.			

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WATER PIPE NOTES

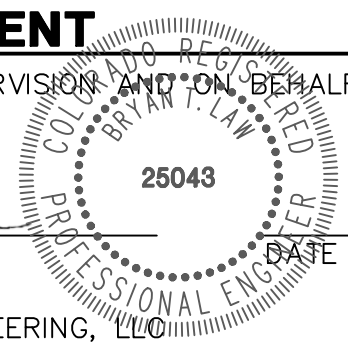
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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

Bryan T. Law, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC



LATIGO TRAILS - FILING NO. 9

WATER DISTRIBUTION PLAN

SHEET 6 OF 9

JOB NO. 25175.02

BY DATE

No. REVISION

H-SCALE 1"=50'

V-SCALE N/A

DATE 09/07/22

DESIGNED BY QNL

DRAWN BY QNL

CHECKED BY

PREPARED FOR

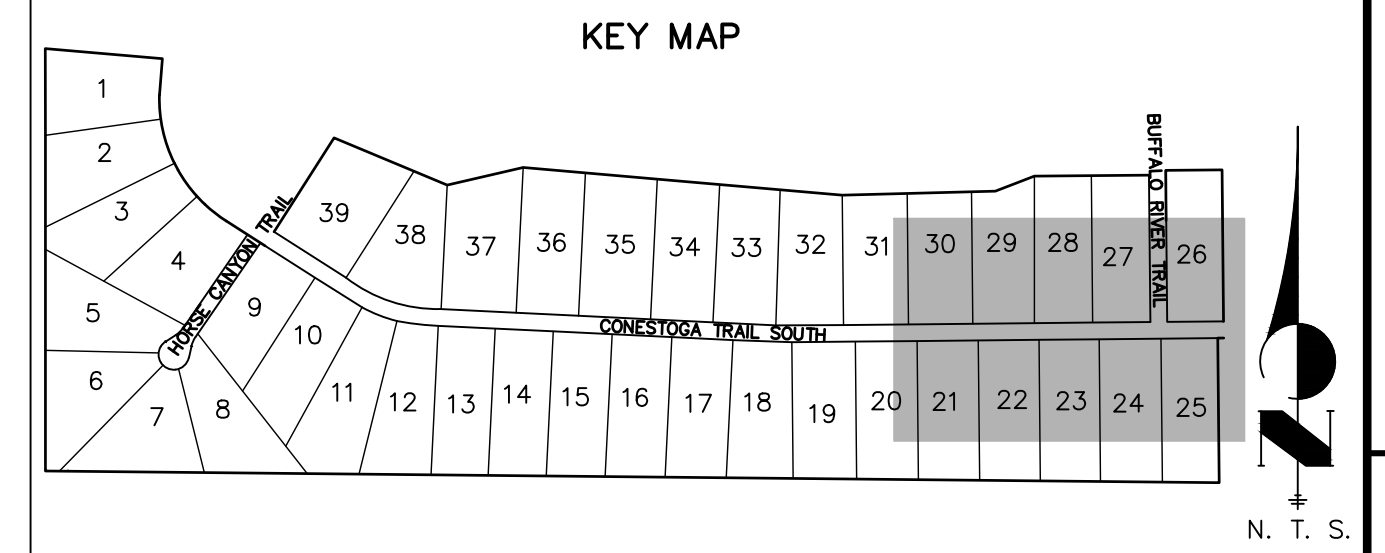
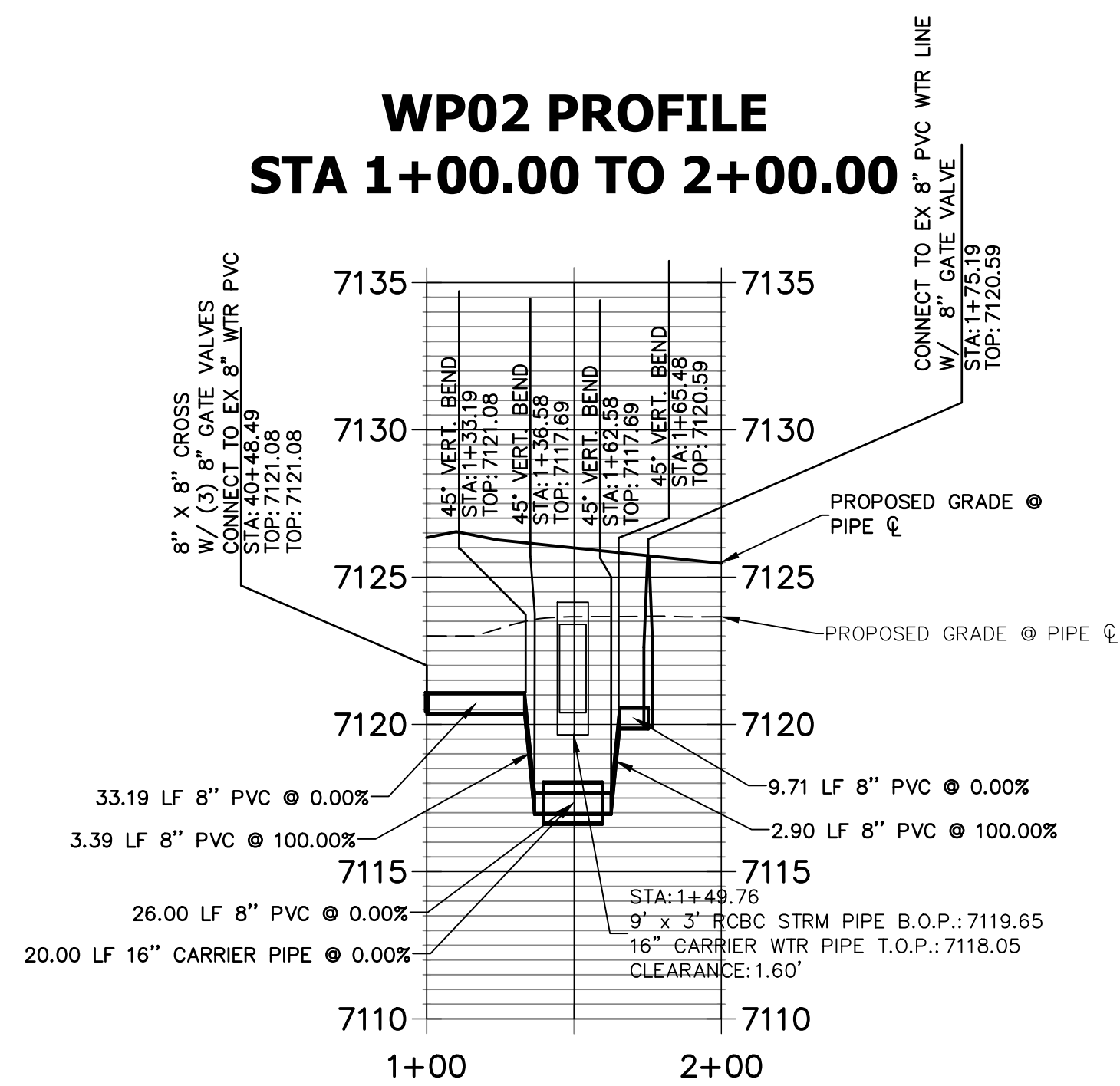
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101 N. CASCADE, SUITE 200
COLORADO SPRINGS, CO 80903
ATTN: BOB IRWIN
P~(719)-475-7474

J.R. ENGINEERING
A Western Company



Central 303-740-9888 • Colorado Springs 719-583-2583
Fort Collins 970-491-9888 • www.jrengineering.com

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.



THESE DRAWINGS ARE
APPROVED BY THE
APPROPRIATE REVIEWING
AGENCIES, JR ENGINEERING
APPROVES THEIR USE
ONLY FOR THE PURPOSES
DESIGNATED BY WRITTEN
AUTHORIZATION.

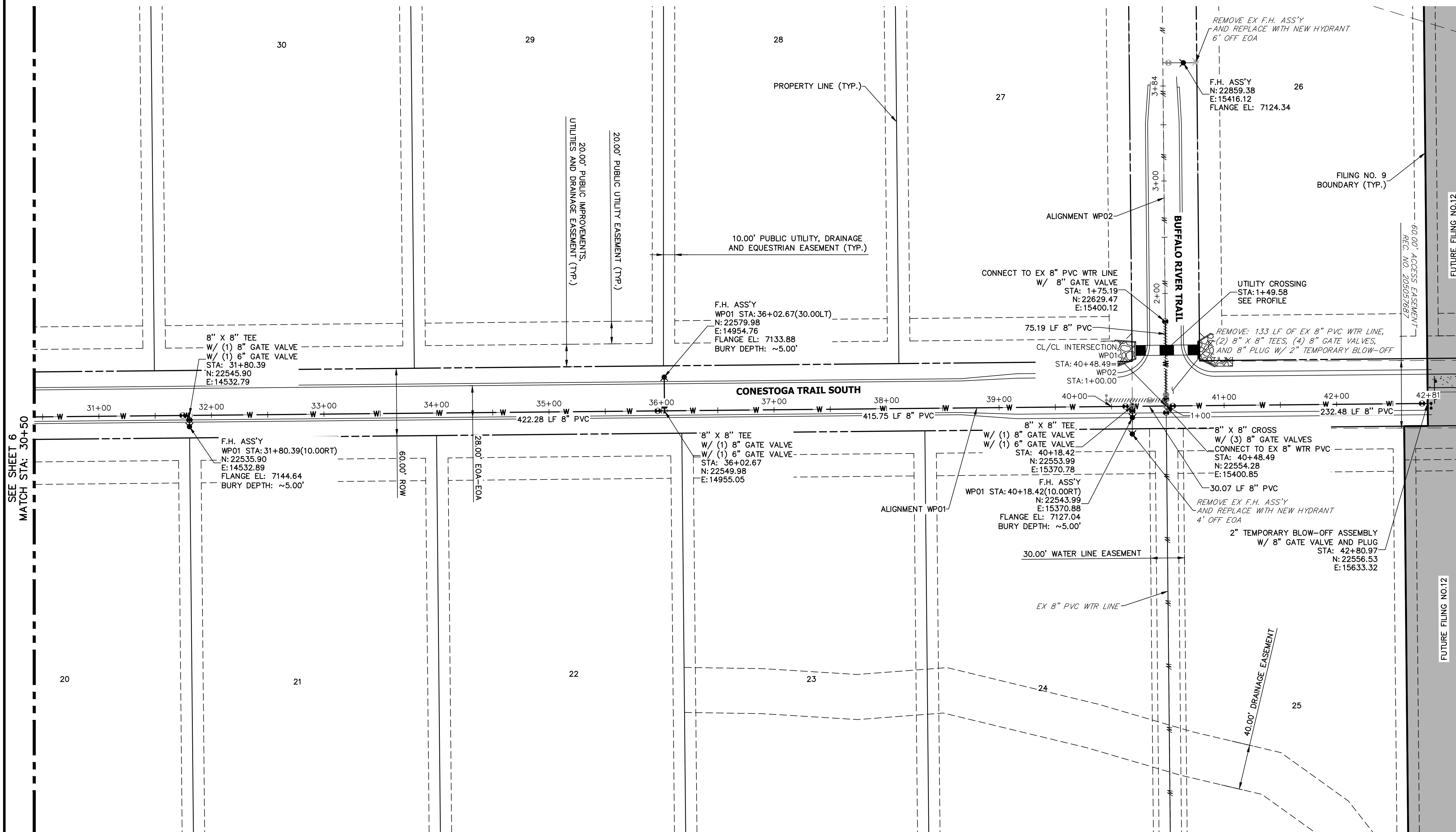
BRUM, LLC
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COLORADO SPRINGS, CO 80903
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P~(719)-475-7474

J&K ENGINEERING
A Westrian Company

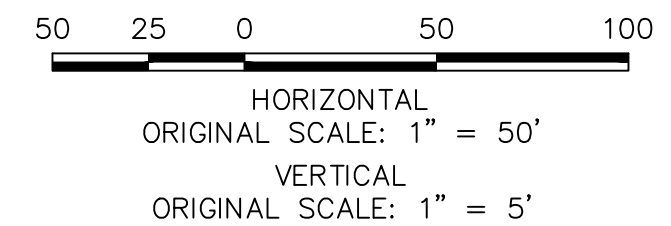
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WATER PIPE NOTES

1. ALL WATER LINES ARE OWNED AND MAINTAINED BY MERIDIAN SERVICE METROPOLITAN DISTRICT (MSMD) UNLESS OTHERWISE NOTED.
2. ALL CURVILINEAR PIPE MUST BE ACCOMPLISHED BY HIGH DEFLECTION COUPLERS.
3. ALL HORIZONTAL BENDS, TEES, AND CROSSES REQUIRE CONCRETE THROAT BLOCKS (CTB). SEE CSU DETAILS A4-1 AND A4-3.
4. ALL HORIZONTAL AND VERTICAL DEFLECTIONS TO BE ACCOMPLISHED WITH HIGH DEFLECTION (HD) COUPLINGS.
5. ALL VERTICAL BENDS REQUIRE MECHANICAL JOINT RESTRAINTS (MJR). SEE CSU DETAIL A4-4.
6. SEE FIRE HYDRANT DETAIL DEPICTING THE PLACEMENT ON SHEET 9.




Know what's **below**.
Call before you dig.



THE LOCATION OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR
ENGINEERING


BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF

EXPIRATION DATE
 12/31/2015
PROFESSIONAL ENGINEER
 25043
 BRYAN T. LAW
 COLORADO REGISTERED
 ENGINEERING, LLC

LATIGU TRAILS - FILING NO. 9

WATER DISTRIBUTION PLAN

SHEET 7 OF 9

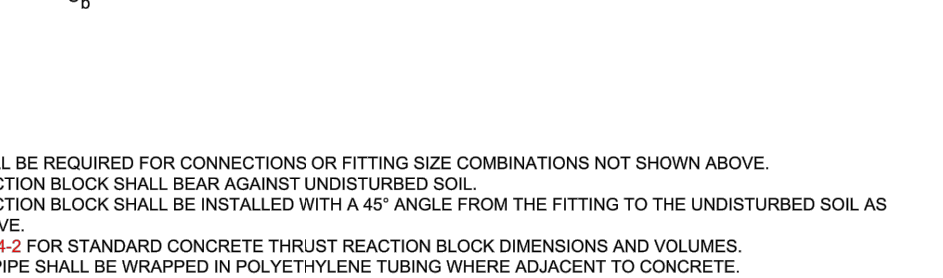
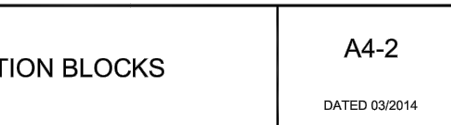
B NO. 25175.02

A diagram illustrating the decomposition of a vector A into its components. A vector A is shown pointing downwards and to the right. It is decomposed into two perpendicular components: A_x (horizontal component pointing right) and A_y (vertical component pointing down). The components are shown as separate vectors originating from the same point as A .

50 POUNDS PER SQUARE INCH PLUS A SAFETY FACTOR OF 1.5. THE AREA IS ROUNDED UP TO THE NEAREST 0.25 SQUARE FEET.


CONDITIONS: IF SITE CONDITIONS VARY FROM THE ASSUMPTIONS OF PIPE - DESIGN AND INSTALLATION AND AWWA M41, ALL SHALL BE SUBMITTED TO COLORADO SPRINGS UTILITIES FOR REVIEW.

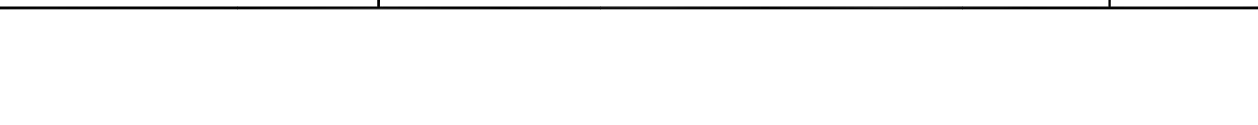
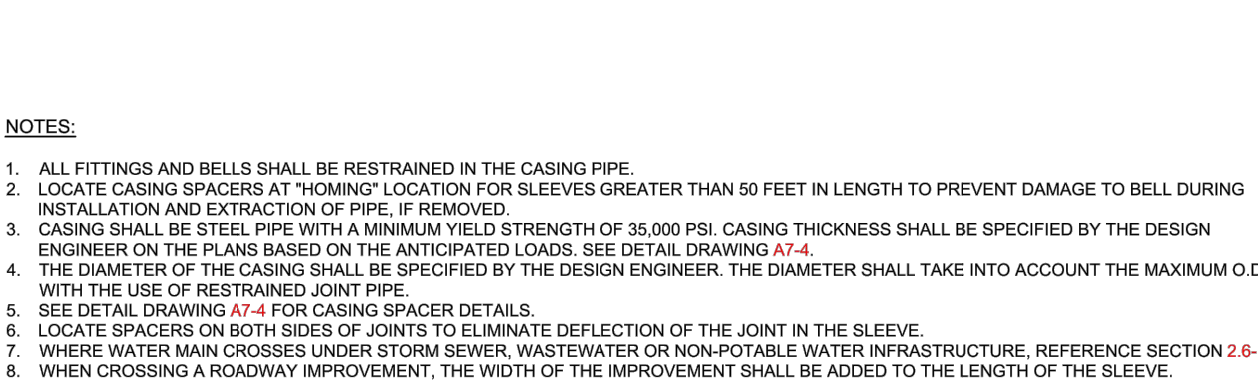
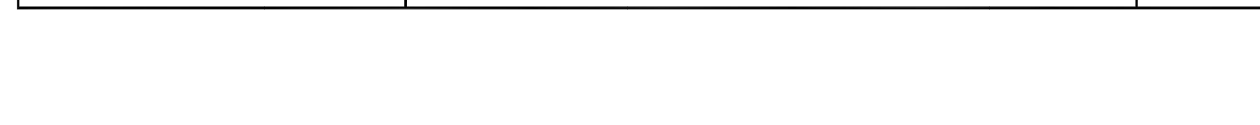
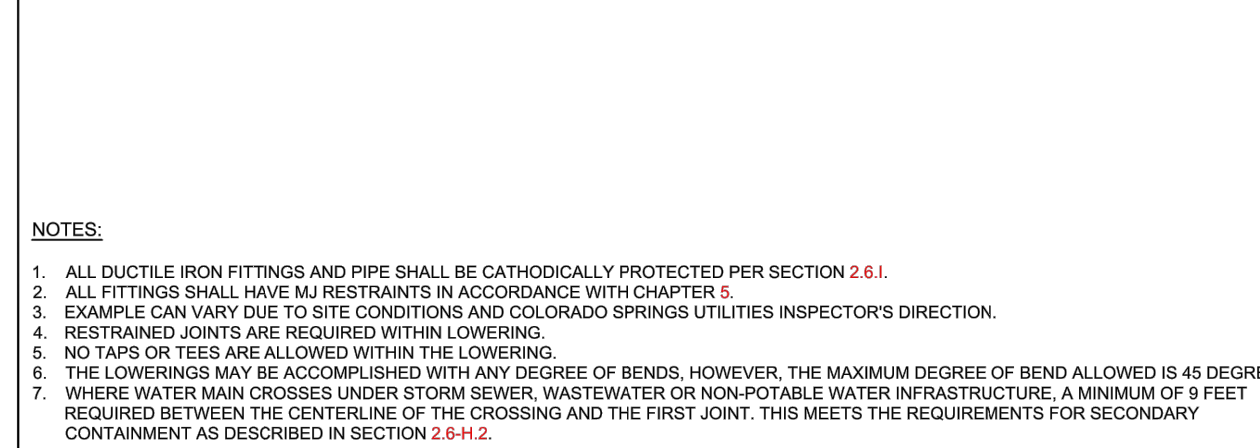
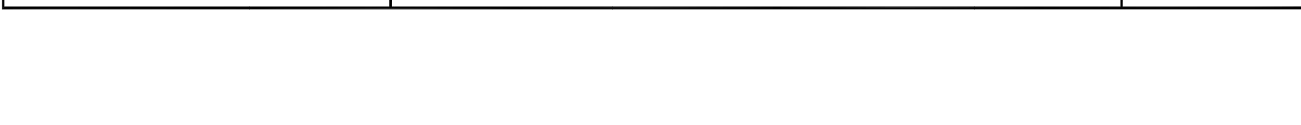
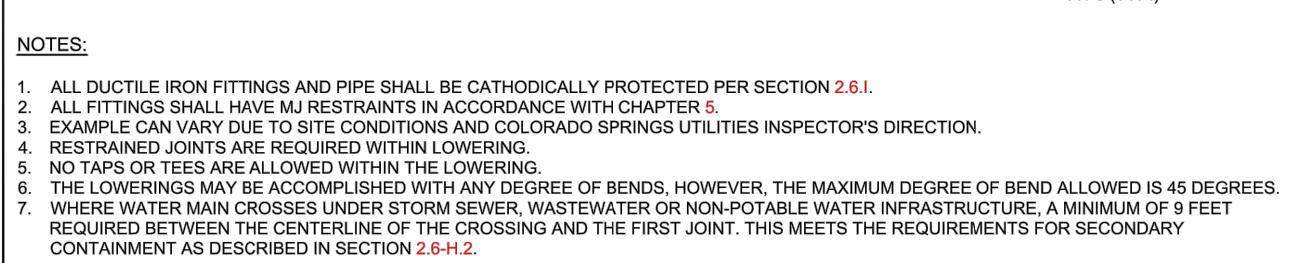
THE CONSTRUCTION PLANS FOR ALL CONCRETE THURSTER MINIMUM TRENCH DIMENSIONS. THE APPROXIMATE VOLUME OF THE TRENCH SHALL BE DETERMINED BY MEASURING THE TOTAL DEPTH (H) FROM THE FINISHED GRADE TO THE BOTTOM OF THE TRENCH. THE DETAIL DRAWING **A-4.3** SHALL BE USED TO DETERMINE THE REQUIRED TRENCH DEPTH. THE TRENCH DEPTH SHALL BE GREATER THAN 250 POUNDS PER SQUARE INCH OR 16 INCHES OR MAX STATIC PRESSURES LESS THAN 250 POUNDS PER SQUARE INCH.



	CONCRETE THRUST REACTION BLOCKS	A4-3 DATED 03/20
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1. PRESSURE GREATER THAN 200 PSI REQUIRE SPECIAL DESIGN APPROVED BY SPRINGS UTILITIES. APPROVED BY COLORADO SPRINGS UTILITIES.
2. LENGTH IS BASED ON MINIMUM 5 FEET OF GROUND COVER AND SOIL, COMPACTED ACCORDING TO CHAPTER 5 OF THESE WATER LESS. IF THE DEPTH IS LESS THAN 5 FEET RESTRAINED LENGTH MUST BE DESIGNED BY THE DESIGN ENGINEER.
3. APPROVED METHODS OF RESTRAINED PIPE BEYOND INITIAL FITTING SHALL BE IN ACCORDANCE WITH CHAPTER 4.
4. RESTRAINED PIPE LENGTH APPLIES TO CONDITIONS WHERE NO CONCRETE THRUST REACTION BLOCK IS PRESENT
5. CALCULATIONS ARE BASED ON A POORLY GRADED SAND, GRAVEL AND GRAVEL-SAND MIXTURE, LITTLE OR NO FINES, TYPE 4 BEDDING CONDITIONS. *PIPE BEDDED IN SAND, GRAVEL OR CRUSHED STONE TO A DEPTH OF 18 PIPE DIAMETER (4" MIN.) * FACTOR OF SAFETY 2.1.
6. FIGURES ARE BASED ON 12" WRAPPED IN POLYETHYLENE MANHOLE
7. MEASUREMENTS ARE IN FEET
8. USE C/R FOR DOWN TURNING BENDS
9. RESTRAINED LENGTH FOR DEAD END MAY BE USED AT THE DISCRETION OF COLORADO SPRINGS UTILITIES.

 <p>Colorado Springs Utilities It's how we're all connected</p>	<p>RESTRAINED PIPE LENGTH (FEET) W/MECHANICAL JOINT RESTRAINTS</p>	<p>A4-4</p> <p>DATED 03/2014</p>
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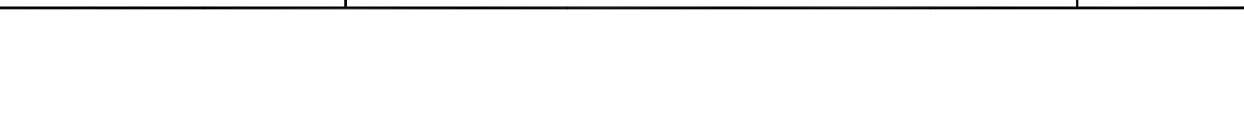
WATER TIGHT SEAL ON

ED PER SECTION 2.6.1.

Diagram labels:

- CASING
- CARRIER PIPE
- CASING SPACER
- RUBBER CASING END SEAL
- 1/2" WIDE STAINLESS STEEL BANDS

TYPICAL STEEL CASING INSTALLATION	A7-4 DATED 06/2015
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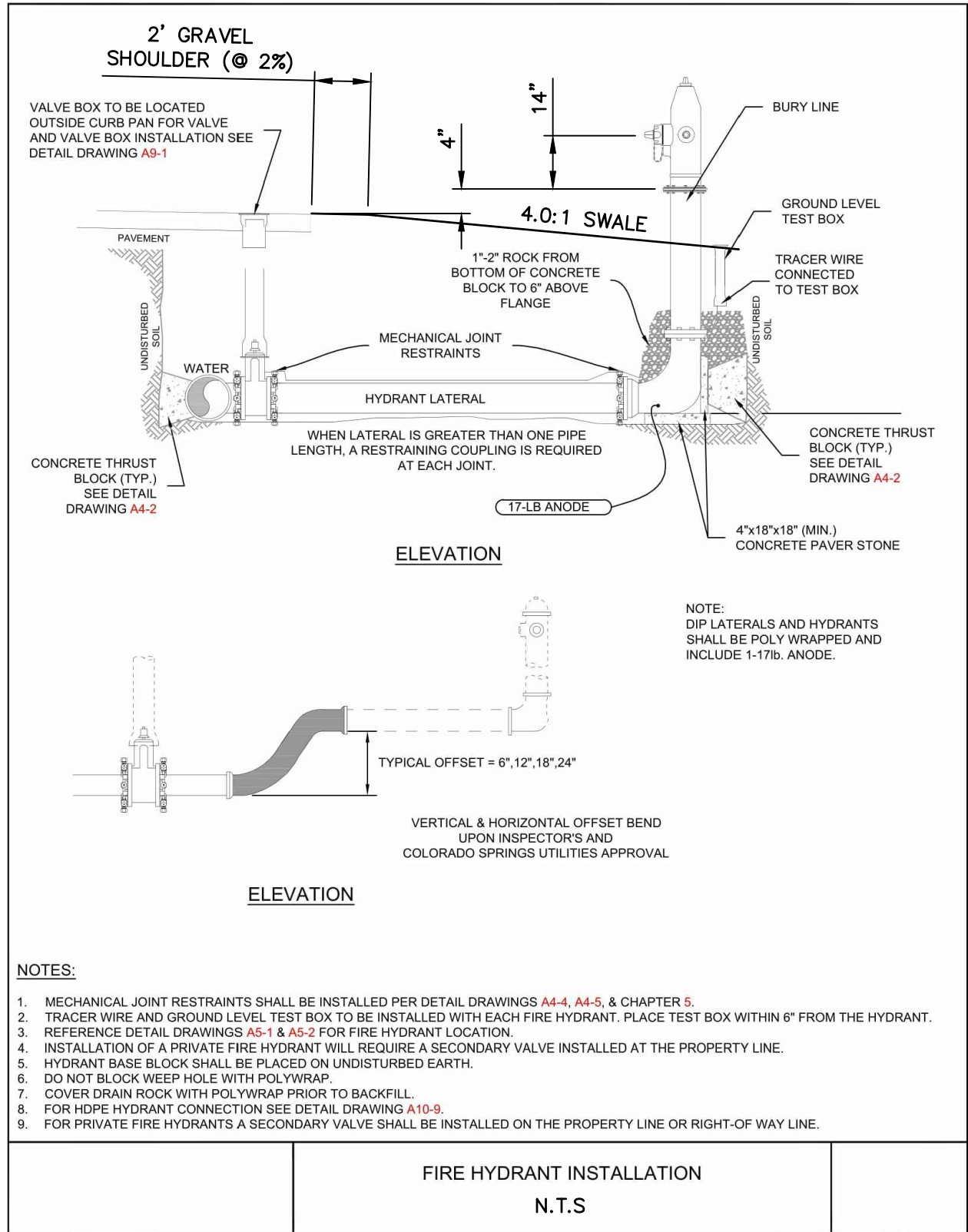
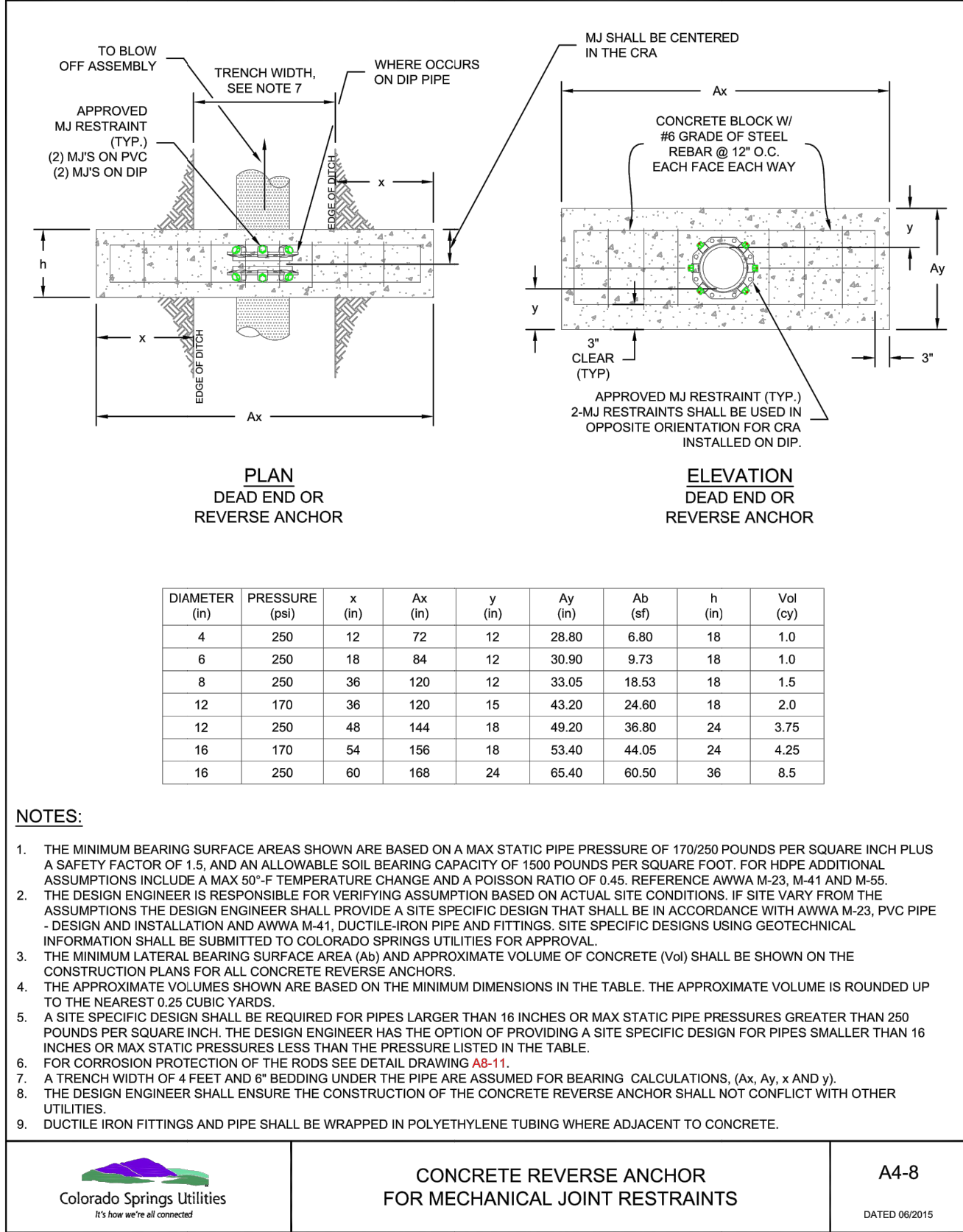
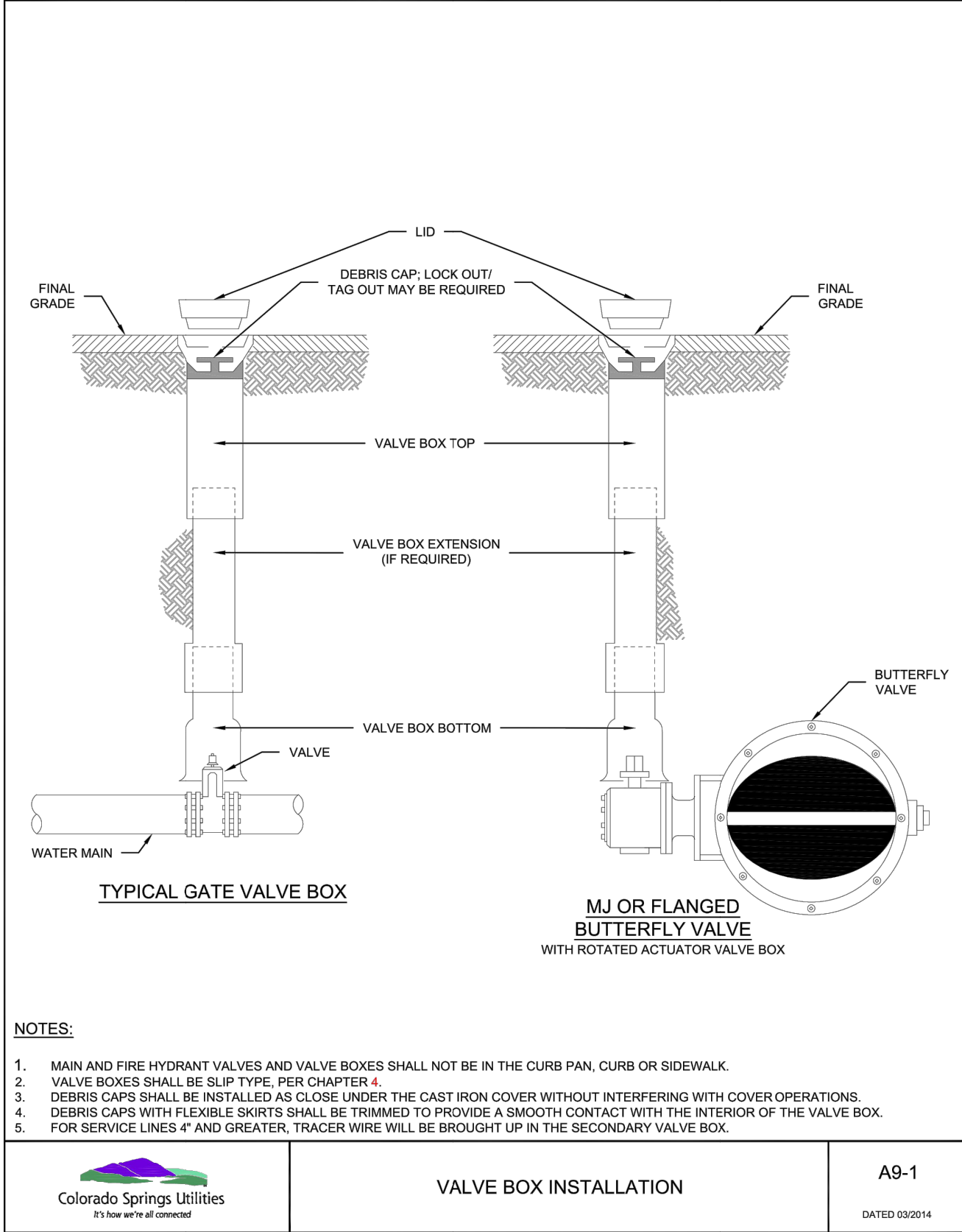
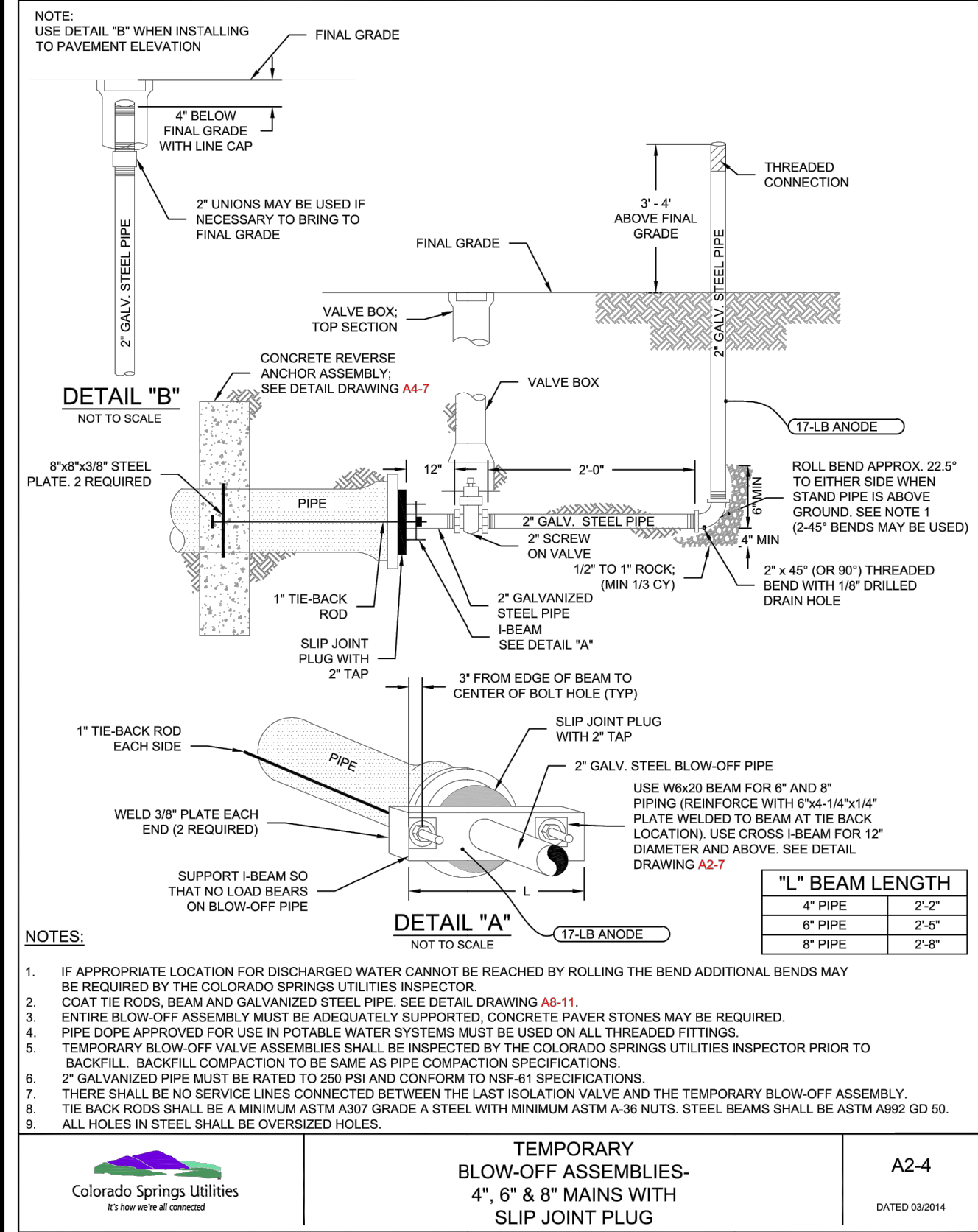


BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING.

BRYAN T. LAW, P.E.
COLORADO P.E. 25043
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SHEET	8	OF	9
JOB NO.	25175.02		

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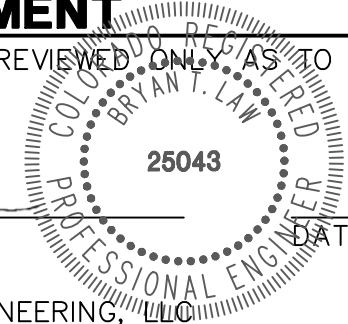


ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

Bryan T. Law
BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

09/09/22



LATIGO TRAILS - FILING NO.

9

DETAILS

SHEET 9 OF 9

JOB NO. 25175.02

BY DATE

No. REVISION

H-SCALE N/A

V-SCALE N/A

DATE 09/07/22

DESIGNED BY N/A

DRAWN BY QNL

CHECKED BY

JOB NO. 25175.02