LATIGO TRAILS - FILING NO. 9

TOWN OF ELBERT
EL PASO COUNTY
COLORADO STATE
PUBLIC UTILITY PLAN

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).

3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOIL AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
   3.1. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   3.2. CITY OF COLORADO SPRINGS/ EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
   3.3. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS AND BRIDGE CONSTRUCTION
   3.4. CDOT M&S STANDARDS

4. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSIONS OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE EINGEERI9NG CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.

5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.

6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.

8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.

9. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.

10. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.

11. SIGHT VISIBILITY TRIANGLES ARE IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED IN SIGHT TRIANGLES.

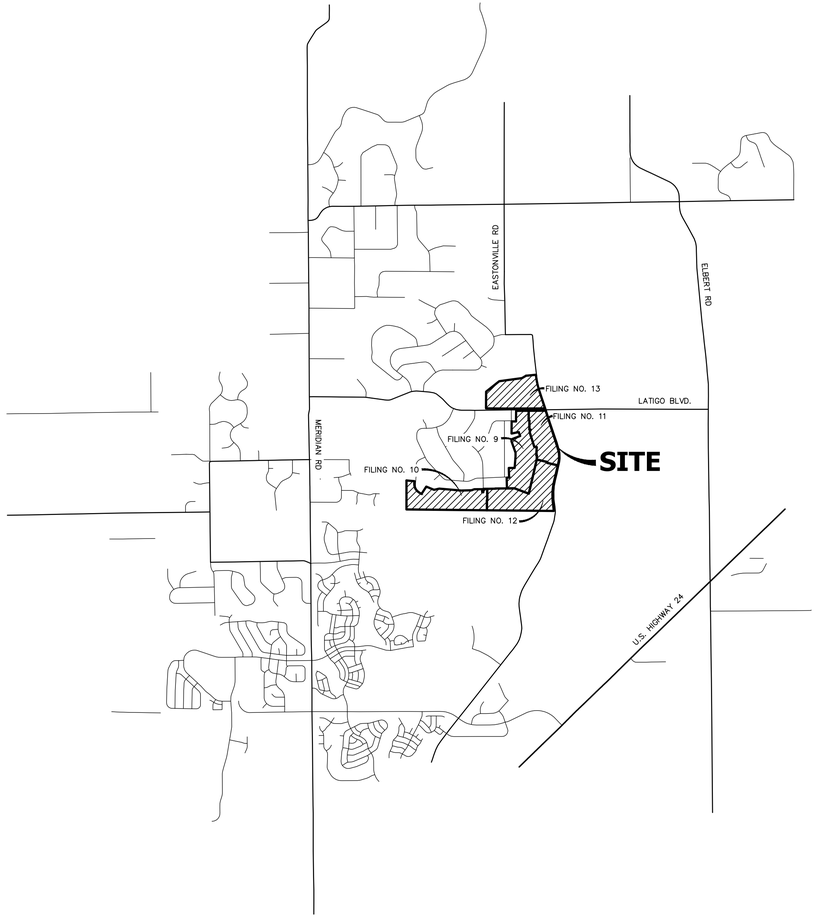
12. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.

13. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.

14. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWENER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

ABBREVIATIONS

AC	ACRE	FL	FLOWLINE	RT	RIGHT
AD	ALGEBRAIC DIFFERENCE	FIL	FILING	S	SOUTH
AH	AHEAD	FO	FIBER OPTIC CABLE	STE	STEEL
ARCH	ARCHITECT	GB	GRADE BREAK	SAN	SANITARY SEWER
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	GE	GAS EASEMENT	SF	SQUARE FOOT
		GIS	GEOGRAPHIC INFORMATION SYSTEM	ST	STREET
ASS'Y	ASSEMBLY			STA	STATION
AVE	AVENUE	GL	GAS LINE	STM	STORM SEWER
BB	BOX BASE	GPS	GLOBAL POSITIONING SYSTEM	SY	SQUARE YARD
BK	BACK	GV	GATE VALVE	SY-IN	SQUARE YARD INCH
BNDY	BOUNDARY	HBP	HOT BITUMINOUS PAVEMENT	TB	THRUST BLOCK
BOP	BOTTOM OF PIPE	HC	HANDICAP	TBC	TOP BACK OF CURB
BOV	BLOW OFF VALVE	HDC	HIGH DEFLECTION COUPLING	TBW	TOP BACK OF WALK
BFV	BUTTERFLY VALVE	HDPE	HIGH DENSITY POLYETHYLENE	TEL	TELEPHONE
BLVD	BOULEVARD	HGL	HYDRAULIC GRADE LINE	TN	TON
BW	BOTTOM OF WALL	HMA	HOT MIX ASPHALT	TOA	TOP OF ASPHALT
C&G	CURB & GUTTER	HOA	HOME OWNERS ASSOCIATION	TOB	TOP OF BOX
CATV	CABLE TELEVISION	HP	HIGH POINT	TOC	TOP OF CURB OR CONCRETE
CB	CATCH BASIN	HR	HOUR	TOF	TOP OF FOUNDATION
CBC	CONCRETE BOX CULVERT	I	INLET	TOP	TOP OF PIPE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	IE	IRRIGATION EASEMENT	TW	TOP OF WALL
		INT	INTERSECTION	TYP	TYPICAL
CDS	CUL-DE-SAC	INV	INVERT	UDFCD	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
CF	CUBIC FOOT	IRR	IRRIGATION		
CFS	CUBIC FEET PER SECOND	KB	KICK (THRUST) BLOCK	UE	UTILITY EASEMENT
CIP	COMPLETE IN PLACE	LB	POUND	U&DE	UTILITY & DRAINAGE EASEMENT
CL	CENTER LINE	LE	LANDSCAPE EASEMENT	UGE	UNDEROGROUND ELECTRIC
CLOMR	CONDITIONAL LETTER OF MAP REVISION	LF	LINEAR FOOT	VCP	VITRIFIED CLAY PIPE
		LN	LANE	VPC	VERTICAL POINT OF CURVATURE
CLR	CLEAR	LOMR	LETTER OF MAP REVISION	VPI	VERTICAL POINT OF INTERSECTION
CMP	CORRUGATED METAL PIPE	LP	LOW POINT		
CO	CLEAN OUT	LS	LUMP SUM	VPT	VERTICAL POINT OF TANGENCY
COCS	CITY OF COLORADO SPRINGS	LT	LEFT	VTC	VEHICLE TRACKING CONTROL
CONC	CONCRETE	MAX	MAXIMUM	W	WEST
CR	CIRCLE	M/D	MOISTURE DENSITY	WL	WATER LINE
CSP	CORRUGATED STEEL PIPE	MDDP	MASTER DEVELOPMENT DRAINAGE PLAN	WM	WATER MAIN
CSU	COLORADO SPRINGS UTILITIES			WRD	WATER RESOURCES DEPARTMENT
CT	COURT	MH	MANHOLE		
CTRB	CONCRETE THRUST REDUCER	MIN	MINIMUM	WS	WATER SURFACE
		MS	MOUNTABLE SIDEWALK	WSE	WATER SURFACE ELEVATION
CY	CUBIC YARD	N	NORTH	WTR	WATER
DBPS	DRAINAGE BASIN PLANNING STUDY	NRCP	NON-REINFORCED CONCRETE PIPE	YR	YEAR
DE	DRAINAGE EASEMENT	ODP	OFFICIAL DEVELOPMENT PLAN		
DIA	DIAMETER	OHE	OVERHEAD ELECTRIC		
DIP	DUCTILE IRON PIPE	OHU	OVERHEAD UTILITY		
DR	DRIVE	PC	POINT OF CURVATURE		
DRC	DESIGN REVIEW COMMITTEE	PCC	POINT OF COMPOUND CURVATURE		
DU	DWELLING UNITS				
DY	DAY	PCR	POINT OF CURB RETURN		
E	EAST	PDP	PRELIMINARY DEVELOPMENT PLAN		
EA	EACH				
EGL	ENERGY GRADE LINE	PE	PROFESSIONAL ENGINEER		
EL	ELEVATION	PI	POINT OF INTERSECTION		
ELEC	ELECTRIC	PKWY	PARKWAY		
EOA	EDGE OF ASPHALT	PL	PROPERTY LINE		
EPC	EL PASO COUNTY	PR	PROPOSED		
ERCP	ELLIPTICAL RCP	PRC	POINT OF REVERSE CURVATURE		
ESMT	EASEMENT	PT	POINT OF TANGENCY		
EST	ESTIMATE	PV	PLUG VALVE		
EX	EXISTING	PVC	POLYVINYL CHLORIDE		
FDP	FINAL DEVELOPMENT PLAN	R	RADIUS		
FDR	FINAL DRAINAGE REPORT	RCBC	REINFORCED CONCRETE BOX CULVERT		
FES	FLARED END SECTION				
FF	FINISHED FLOOR ELEVATION	RCP	REINFORCED CONCRETE PIPE		
FG	FINISHED GRADE	RD	ROAD		
FH	FIRE HYDRANT	ROW	RIGHT OF WAY		



SHEET INDEX

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

CONTACTS:

OWNER/DEVELOPER:	BRJM, LLC 101 N. CASCADE, SUITE 200 COLORADO SPRINGS, CO 80903 P~719-475-7474
ENGINEER/SURVEYOR:	JR ENGINEERING, LLC ATTN: MIKE A. BRAMLETT 5475 TECH CENTER DRIVE, SUITE 235 COLORADO SPRINGS, CO 80919 P~303-267-6240
FIRE PROTECTION DISTRICT:	FALCON FIRE FPD 7030 N MERIDIAN RD FALCON, CO 80831 P~719-494-4050
~~DISTRICT.~~ WATER PROVIDER	MERIDIAN SERVICE METROPOLITAN DISTRICT 11886 STAPLETON DR PEYTON, CO 80831 P~719-495-6567
COUNTY TRANSPORTATION:	EL PASO COUNTY, DEPT. OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, COLORADO 80922 KEVIN MASTIN ~ (719) 520-6300
COUNTY DEVELOPMENT:	EL PASO PLANNING AND COMMUNITY 2880 INTERNATIONAL CIRCLE COLORADO SPRINGS, CO 80910 CRAIG DOSSEY ~ (719) 520-6300
ELECTRIC COMPANY:	MOUNTAIN VIEW ELECTRIC ASSOC., INC. 11140 EAST WOODMEN ROAD FALCON, COLORADO 80831 (719) 495-2283

BASIS OF BEARING

THE BASIS OF BEARINGS IS THE WESTERLY LINE OF TRACT, B, WOODMOOR PLACER, BEING MONUMENTED BY A 1-1/4" YELLOW PLASTIC CAP ILLEGIBLE AT BOTH ENDS. SAID LINE BEARING N26°20'33"E AS REFERENCED TO COLORADO STATE PLANE CENTRAL ZONE.

BENCHMARK

NGS MONUMENT T 294 BEING MONUMENTED BY A 3-1/4" BRASS DISC SET IN A 4'X4' BOULDER, LOCATED 1.8 MILES EAST ALONG HIGBY ROAD FROM ITS INTERSECTION WITH JACKSON CREEK PARKWAY, 40 FEET SOUTH OF THE CENTERLINE OF THE ROAD, 6 FEET SOUTH OF A FENCE, AND 6.2 FEET SOUTH OF A WITNESS POST. SAID MONUMENT HAVING A PUBLISHED ELEVATION OF 7247.10 FEET, NAVD88.

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

BOB IRWIN — DATE

BRJM, LLC
101 N. CASCADE
COLORADO SPRINGS, CO 80903

EL PASO COUNTY STATEMENT

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

JENNIFER IRVINE, P.E. — DATE

COUNTY ENGINEER/ECM ADMINISTRATOR

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLAN AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

COLORADO REGISTERED MIKE A. BRAMLETT 32314 PROFESSIONAL ENGINEER

MIKE A. BRAMLETT, P.E. — DATE
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

MERIDIAN SERVICE METROPOLITAN DISTRICT:

MSMD PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH DISTRICT DESIGN CRITERIA. THE DISTRICT IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE DISTRICT THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

DISTRICT ENGINEER — DATE

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

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

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE 1"=XX' | V-SCALE 1"=X' | DATE 07/06/21 | DESIGNED BY XXX | DRAWN BY QNL | CHECKED BY

LATIGO TRAILS – FILING NO. 9

COVER SHEET

SHEET 1 OF 13

JOB NO. 25175.01

x:\2510000.all\25175011\Drawingsheet dwgs\Cl2x25175011_CV01-Utility.dwg, CV01, 8/1/2021 4:20:46 PM, CS

LAYER LINETYPE LEGEND

	EXISTING	PROPOSED
PHASE LINE		
MATCH LINE		
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
R.O.W. A LINE	A	A
CENTERLINE		
CITY LIMITS		
WIRE FENCE		
CHAIN LINK FENCE		
WOOD FENCE		
MASONRY FENCE		
GUARDRAIL		
CONC. BARRIER		
CABLE TV	TV	TV
ELECTRIC	E	E
FIBER OPTIC	FO	FO
GAS MAIN	G	G
IRRIGATION MAIN	IRR	IRR
OIL/PETRO. MAIN	O	O
OVERHEAD UTILITY	OHU	OHU
SANITARY SEWER	S	
STORM DRAIN		
TELEPHONE	T	T
WATER MAIN	W	
RAW WATER LINE	RWL	RWL
SWALE/WATERWAY FLOWLINE		
DIVERSION DITCH		
DIVERSION CHANNEL		
MAJOR DRAINAGE BASIN		
MINOR DRAINAGE BASIN		
TOP OF SLOPE		
TOE OF SLOPE		
EDGE OF WATER		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
DEPRESSION CONT. (INDEX)	6100	6100
DEPRESSION CONT. (INTER)		
TOP OF CUTS		
TOE OF FILLS		
CUT AND FILL LINE		C/F
SILT FENCE	SF	SF
100 YEAR FLOODPLAIN	100YR	100YR
500 YEAR FLOODPLAIN	500YR	500YR
FLOODWAY	FLDWY	FLDWY
BASE FLOOD ELEVATION		
EDGE OF WETLANDS		
STONE WALL		

UTILITIES LEGEND

	EXISTING	PROPOSED
STORM SEWER		
MANHOLE		
STORM INLET		
AREA INLET – SQUARE		
AREA INLET – ROUND		
FLARED END SECTION		
RIPRAP		
SANITARY SEWER		
LINE MARKER	Mkr San	
SERVICE MARKER		
CLEAN–OUT		
MANHOLE W/ DIRECTIONAL FLOW ARROW		
WATER LINE		
LINE MARKER	Mkr W	
SERVICE MARKER		
FIRE HYDRANT		
FIRE CONNECTION		
MANHOLE		
BEND		
BLOW–OFF VALVE		
WELL	WELL	
METER		
VALVE		
REDUCER		
THRUST BLOCK		
CROSS		
PLUG W/ THRUST BLOCK		
TEE		
REVERSE ANCHOR		
ANODE		
AIR & VACUUM VALVE ASSEMBLY		
TRANSMISSION BLOW–OFF ASSEMBLY		
GAS LINE		
MARKER	Mkr G	
SERVICE MARKER		
METER		
VALVE		
PLUG		
TEE		
DRY UTILITIES		
CABLE TV MARKER	Mkr TV	
CABLE TELEVISION PEDESTAL		
ELECTRIC MARKER	Mkr E	
ELECTRIC SERVICE MARKER		
ELECTRICAL PEDESTAL		
ELECTRICAL METER		
ELECTRICAL MANHOLE		
FIBER–OPTIC MARKER	Mkr FO	
IRRIGATION PEDESTAL		
TELEPHONE MARKER	Mkr T	
TELEPHONE PEDESTAL		
TELEPHONE MANHOLE		
UTILITY POLE		
GUY ANCHOR		
GUY POLE		
MISC. UTILITIES		
VENT PIPE	VP	VP
TEST HOLE DESIGNATOR	TH# FIRM AGENCY	

MONUMENTATION LEGEND

ALUMINUM CAP – FOUND	AC
BRASS CAP – FOUND	BC
BENCHMARK – FOUND	
CROSS – FOUND	
MONUMENT – SET	
MONUMENT – FOUND (DEFAULT)	
MONUMENT – FOUND (ALTERNATE 1)	
MONUMENT – FOUND (ALTERNATE 2)	
MONUMENT – FOUND (ALTERNATE 3)	
MONUMENT – FOUND (ALTERNATE 4)	
MONUMENT – FOUND (ALTERNATE 5)	
MONUMENT – FOUND (ALTERNATE 6)	
MONUMENT – FOUND (ALTERNATE 7)	
NAIL & WASHER – FOUND	NAIL & WASHER
PANEL – FOUND	
PK NAIL – FOUND	PK NAIL
ROW MONUMENT – FOUND	
ROW MARKER – FOUND	
SECTION CORNER – FOUND	
SECTION CORNER – SET	
QUARTER–SECTION CORNER – FOUND	
QUARTER–SECTION CORNER – SET	
SECTION CENTER – FOUND	
SECTION CENTER – FOUND	
CONTROL/TRAVERSE POINT – SET	

TRAFFIC LEGEND

	EXISTING	PROPOSED
PARKING METER		
TRAFFIC SIGNAL BOX		
TRAFFIC SIGNAL POLE		
TRAFFIC SIGNAL		
BARRICADE		
GUARD RAIL POST		
IMPACT ATTENUATOR		
BRIDGE STYLE HIGHWAY SIGN POST		
CANTILEVER STYLE HIGHWAY SIGN POST		
SIGN		
RAILROAD MARKER/SIGN		
STREET LIGHT		
STREET LIGHT – SINGLE		
STREET LIGHT – DOUBLE		
LUMINAIRE		
ALTERNATE LUMINAIRE		
SIGNAL MAST ARM W/ LUMINAIRE		
PEDESTAL POLE FOUNDATION		
TRAFFIC SIGNAL POLE		
ROUND PULL BOX		
MEDIUM PULL BOX		
LARGE PULL BOX (20X33X15)		
SIGNAL HEAD WITHOUT BACK PLATE		
SIGNAL HEAD WITH BACK PLATE		
PEDESTRIAN SIGNAL HEAD		
VIDEO IMAGE DETECTOR		
OPTICOM DETECTOR		
VEHICLE DETECTION ZONE		V

STORM WATER MANAGEMENT

	KEY	SYMBOL
CHECK DAM	CD	
CONSTRUCTION ROAD STABILIZATION	CRS	
CURB SOCK INLET PROTECTION	CS	
CONCRETE WASHOUT AREA	CWA	
DIVERSION DITCH AND DIKE, TEMPORARY	DD	
DIVERSION CHANNEL, TEMPORARY	DV	
DEWATERING	DW	
EROSION CONTROL BLANKET	ECB	
INLET FILTER	IF	
INLET PROTECTION	IP	
MULCHING	MU	
OUTLET PROTECTION	OP	
PAVED FLUME	PF	
PERMENENT SEEDING	PS	
REINFORCED CONCRETE DAM	RCD	
ROUGH CUT STREET CONTROL	RCS	
SEDIMENT BASIN	SB	
SEDIMENT CONTROL LOG	SCL	
SILT FENCE	SF	
SURFACE ROUGHENING	SR	
STABILIZED STAGING AREA	SSA	
SEDIMENT TRAP	ST	
STRAW BALE BARRIER	STB	
TERRACING	TER	
TEMPORARY SEEDING	TS	
TEMPORARY STREAM CROSSING CULVERT/BRIDGE	TSC C	
TEMPORARY STREAM CROSSING FORD TYPE	TSC F	
TEMPORARY SLOPE DRAIN	TSD	
VEHICLE TRACKING CONTROL	VTC	
VEHICLE TRACKING CONTROL WITH WASH RACK	WR	

DRAINAGE REPORT PLANS

	KEY
BASIN DESIGNATION (NO COEFFICIENT)	# / ##
BASIN DESIGNATION (1 COEFFICIENT)	# / ## / #
BASIN DESIGNATION (2 COEFFICIENTS)	# / ## / # / #
ANALISYS POINT IDENTIFIER	#
BASIN DESIGNATION (HISTORIC)	# / ##
BASIN DESIGNATION (DEVELOPED)	# / #.#
SUB–BASIN DESIGNATION (DEVELOPED)	# / ##
DRAINAGE PIPE IDENTIFIER	##
DRAINAGE POINT IDENTIFIER (HEXAGONAL)	##
DRAINAGE POINT IDENTIFIER (TRIANGULAR)	?
SWMM DESIGNATION 1	#
SWMM DESIGNATION 2	#
SWMM DESIGNATION 3	#
SWMM DESIGNATION 4	?

LANDSCAPE LEGEND

	EXISTING	PROPOSED
TREE – CONIFEROUS		
TREE – DECIDUOUS		
SHRUB/BUSH		
SHRUBS AND BUSHES		
IRRIGATION BOX		
IRRIGATION SPRINKLER		
IRRIGATION VALVE		
BOLLARD		
FLAGPOLE		FP

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

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

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

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No.	REVISION	BY	DATE

H–SCALE	1"=XX'
V–SCALE	1"=X'
DATE	07/06/21
DESIGNED BY	N/A
DRAWN BY	QNL
CHECKED BY	

LATIGO TRAILS – FILING NO. 9

LEGEND AND NOTES

SHEET 2 OF 13

JOB NO. 25175.01

METROPOLITAN DISTRICT GENERAL UTILITY NOTES FOR MERIDIAN SERVICE METROPOLITAN DISTRICT

GENERAL NOTES

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

   ~~ON SITE OFFICE 719-495-6567.~~
   ~~MANAGEMENT COMPANY, IN CARE OF CRS OF COLORADO, LLC 303-381-4965.~~

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

2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. INSPECTION FEES: CALL MSMD FOR FEE SCHEDULE. OR VIEW AT WWW.MERIDIANRANCHMETRO.ORG
17. 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.
18. 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.
19. PUMPING OR BYPASS OPERATIONS SHALL BE REVIEWED AND APPROVED BY MSMD AND THE ENGINEER OF RECORD PRIOR TO EXECUTION.
20. 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 SIDR-7 PE4710 RATED FOR 200 PSI WITH THE MARKING SIDR-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 SIDR 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 OPEN RIGHT WITH A 1 ½" PENTAGON OPERATING NUT AND SERVICE CAPS, STANDARD 4 1/2" PUMPER NOZZLE WITH A THREAD PATTERN OF 5 - 3/8" - 6 TPI (THREADS PER INCH) ALONG WITH TWO STANDARD 2 ½" NST (NATIONAL STANDARD THREAD) SIDE NOZZLES.
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.

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 1/2" PUMPER NOZZLE WITH A THREAD PATTERN OF 5 – 3/8" – 6 TPI (THREADS PER INCH) ALONG WITH TWO STANDARD 2 ½" NST (NATIONAL STANDARD THREAD) SIDE NOZZLES. HYDRANT SHALL BE PAINTED WITH RUSTOLEUM SAFETY YELLOW.**

Know what's below. Call before you dig.

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

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A Westrian Company
Centennial 303-740-9393 • s 719-593-2593
Fort Collins 970-491-9888 • g.com

No.	REVISION	BY	DATE

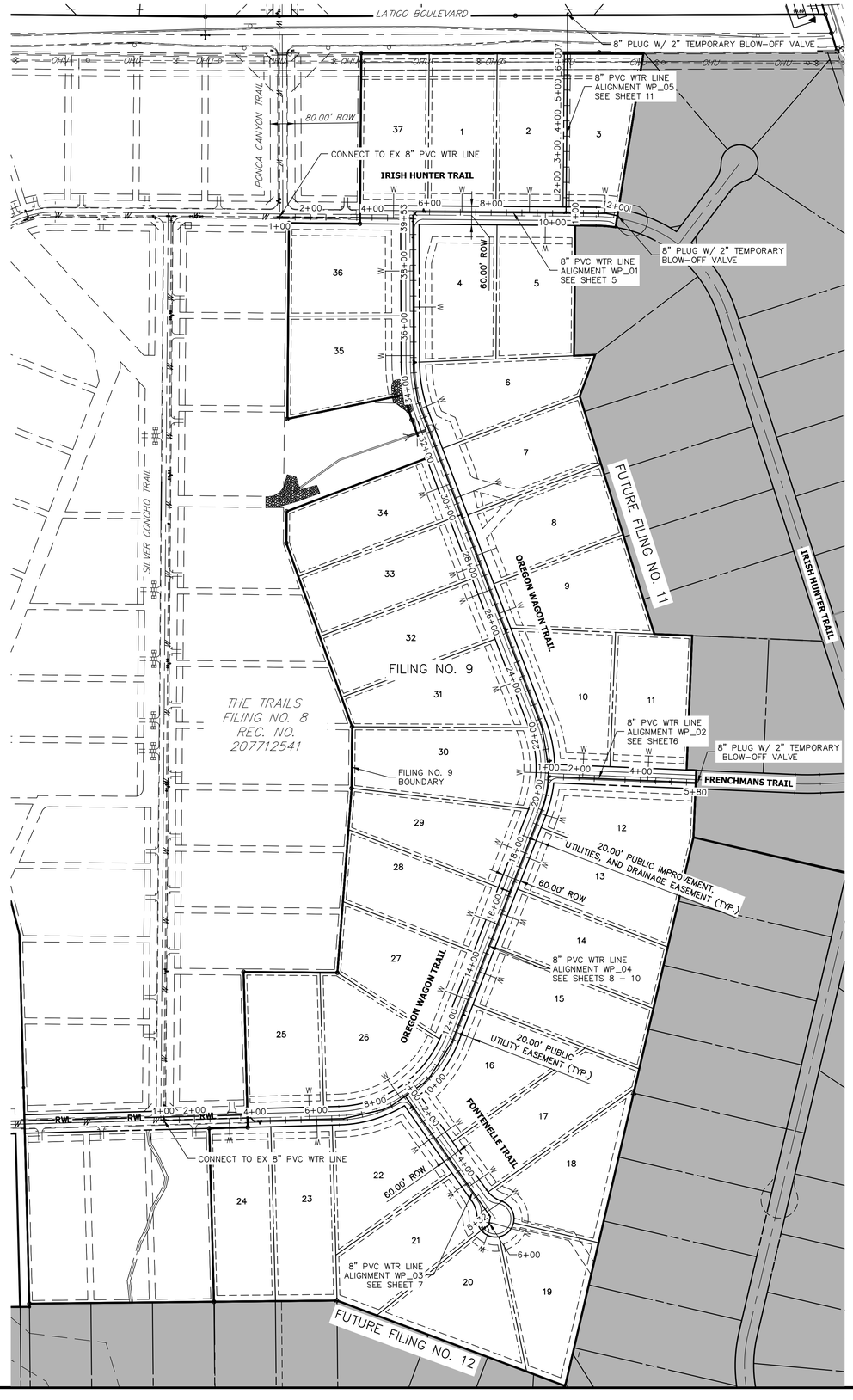
H-SCALE	1"=5'
V-SCALE	1"=5'
DATE	07/06/21
DESIGNED BY	XXX
DRAWN BY	XXX
CHECKED BY	

LATIGO TRAILS – FILING NO. 9

LEGEND AND NOTES

SHEET 3 OF N/A

JOB NO. 25175.01



LABEL HYDRANTS AND VALVES

WATER SERVICE LINE TAP LOCATIONS		
ID NO.	PIPE ℄ STATION	PIPE ALIGNMENT
LOT 1	7+04.99	WP_01
LOT 2	9+24.39	WP_01
LOT 3	11+70.02	WP_01
LOT 4	36+63.89	WP_04
LOT 5	9+76.41	WP_01
LOT 6	33+31.10	WP_04
LOT 7	30+19.24	WP_04
LOT 8	28+20.50	WP_04
LOT 9	26+17.99	WP_04
LOT 10	2+12.38	WP_02
LOT 11	4+23.75	WP_02
LOT 12	19+36.75	WP_04
LOT 13	17+88.42	WP_04
LOT 14	15+87.67	WP_04
LOT 15	13+86.17	WP_04
LOT 16	2+70.00	WP_03
LOT 17	4+59.77	WP_03
LOT 18	5+60.66	WP_03
LOT 19	5+98.80	WP_03
LOT 20	6+15.16	WP_03
LOT 21	4+46.77	WP_03
LOT 22	2+61.29	WP_03
LOT 23	6+01.32	WP_04
LOT 24	3+12.96	WP_04
LOT 25	5+77.64	WP_04
LOT 26	8+89.16	WP_04
LOT 27	12+88.06	WP_04
LOT 28	15+51.83	WP_04
LOT 29	17+99.85	WP_04
LOT 30	20+72.48	WP_04
LOT 31	23+92.05	WP_04
LOT 32	26+99.85	WP_04
LOT 33	27+89.83	WP_04
LOT 34	30+67.72	WP_04
LOT 35	35+06.11	WP_04
LOT 36	37+81.10	WP_04
LOT 37	4+69.54	WP_01

WATER SERVICE NOTES

1. ALL WATER SERVICE PIPES ARE TO BE TYPE K COPPER 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.

200 100 0 200 400

ORIGINAL SCALE: 1" = 200'

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.

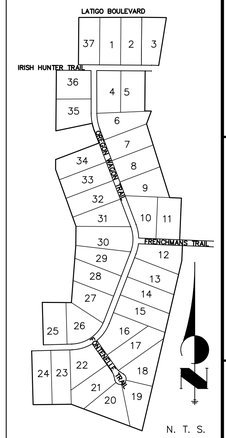
ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

32314 — DATE

KEY MAP



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

PREPARED FOR
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No.	REVISION	BY	DATE

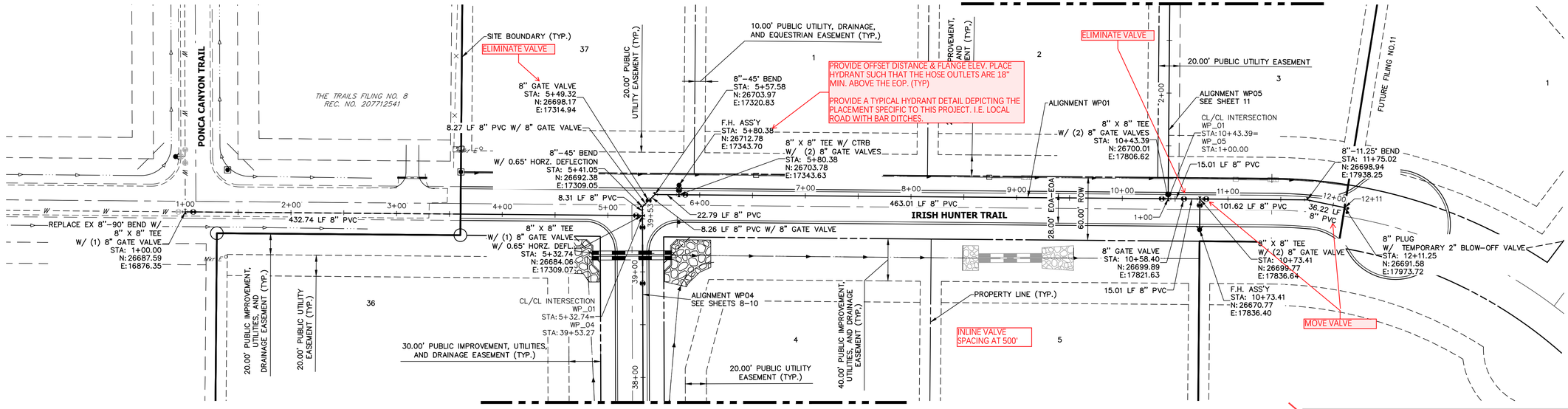
H-SCALE 1"=200'
V-SCALE 1"=X'
DATE 07/06/21
DESIGNED BY QNL
DRAWN BY QNL
CHECKED BY

LATIGO TRAILS – FILING NO. 9

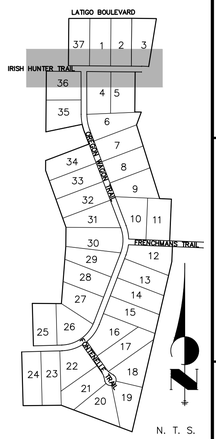
OVERALL UTILITY PLAN

SHEET 4 OF 13

JOB NO. 25175.01



KEY MAP



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 (C+RB). 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.

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.

50 25 0 50 100
ORIGINAL SCALE: 1" = 50'

APPROVALS

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO MERIDIAN RANCH METRO DISTRICT SPECIFICATIONS. THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS AS SHOWN ON THIS WATER INSTALLATION PLAN ARE CORRECT AND ADEQUATE TO SATISFY THE FIRE PROTECTION REQUIREMENTS AS SPECIFIED BY THE FALCON FIRE DEPARTMENT.

SIGNED _____ DATE _____
FALCON FIRE DEPARTMENT
PLAN REVIEW NUMBER: _____

WATER INSTALLATION CORROSION CONTROL REQUIREMENTS: SEE PLAN FOR PLACEMENT

WATER PLAN APPROVAL

SIGNED _____ DATE _____
MERIDIAN SERVICE METRO DISTRICT
WORK ORDER NUMBER: _____ PROJECT NUMBER: _____

TIM HUNKER
DISTRICT MANAGER
DATE

CHARLES COTHERN
DISTRICT ENGINEER
DATE

Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

32314 — MIKE A. BRAMLETT — COLORADO REGISTERED PROFESSIONAL ENGINEER

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

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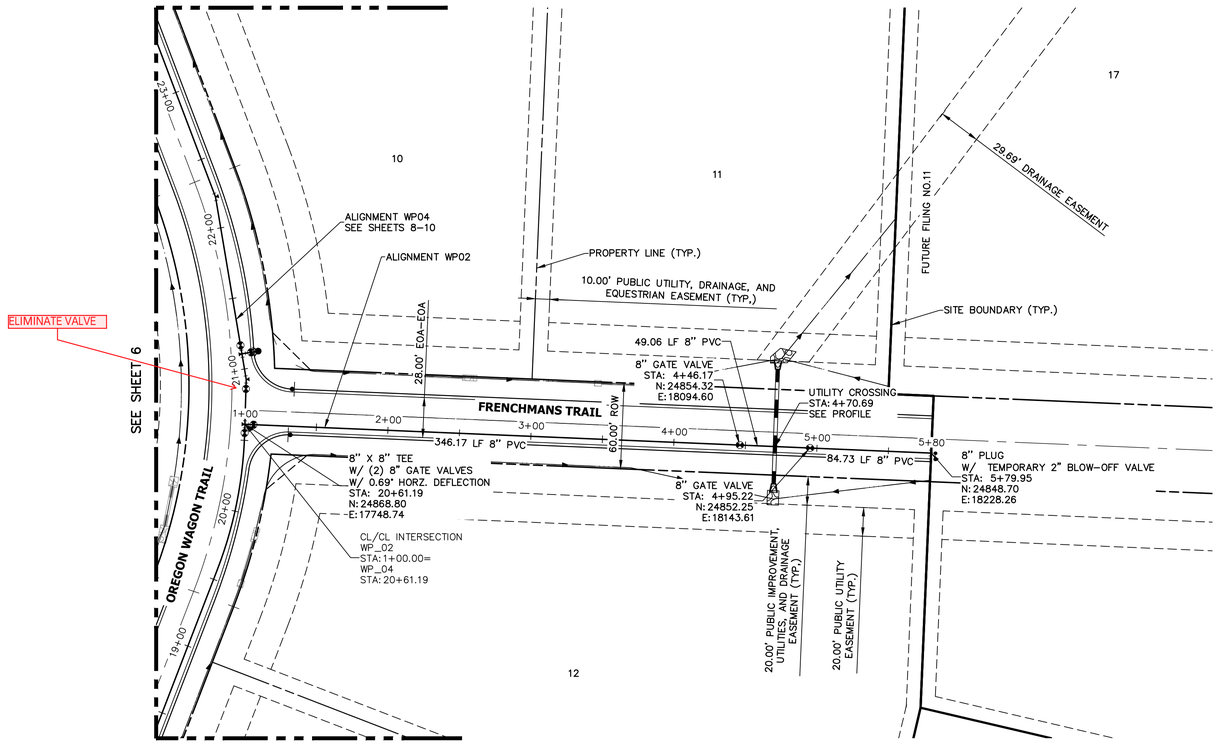
DRAWN BY	QNL
CHECKED BY	

LATIGO TRAILS – FILING NO. 9

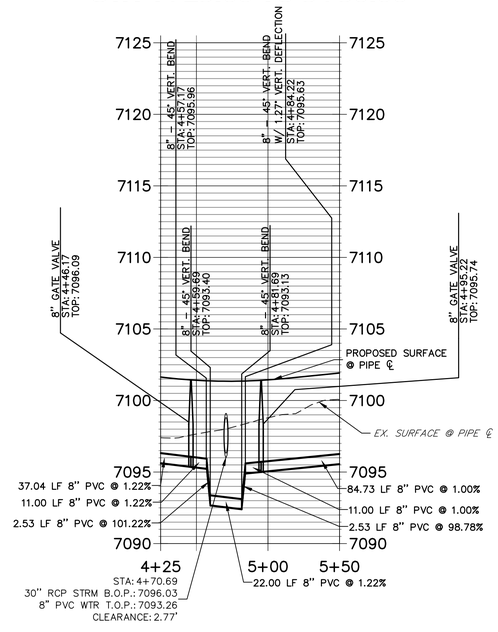
WATER DISTRIBUTION PLAN

SHEET 5 OF 13

JOB NO. 25175.01



WP_02 PROFILE
STA 4+25.00 TO 5+50.00



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50 25 0 50 100

HORIZONTAL
ORIGINAL SCALE: 1" = 50'
VERTICAL
ORIGINAL SCALE: 1" = 5'

Know what's below. Call before you dig.

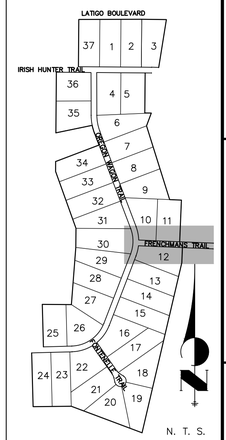
ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

KEY MAP



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

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

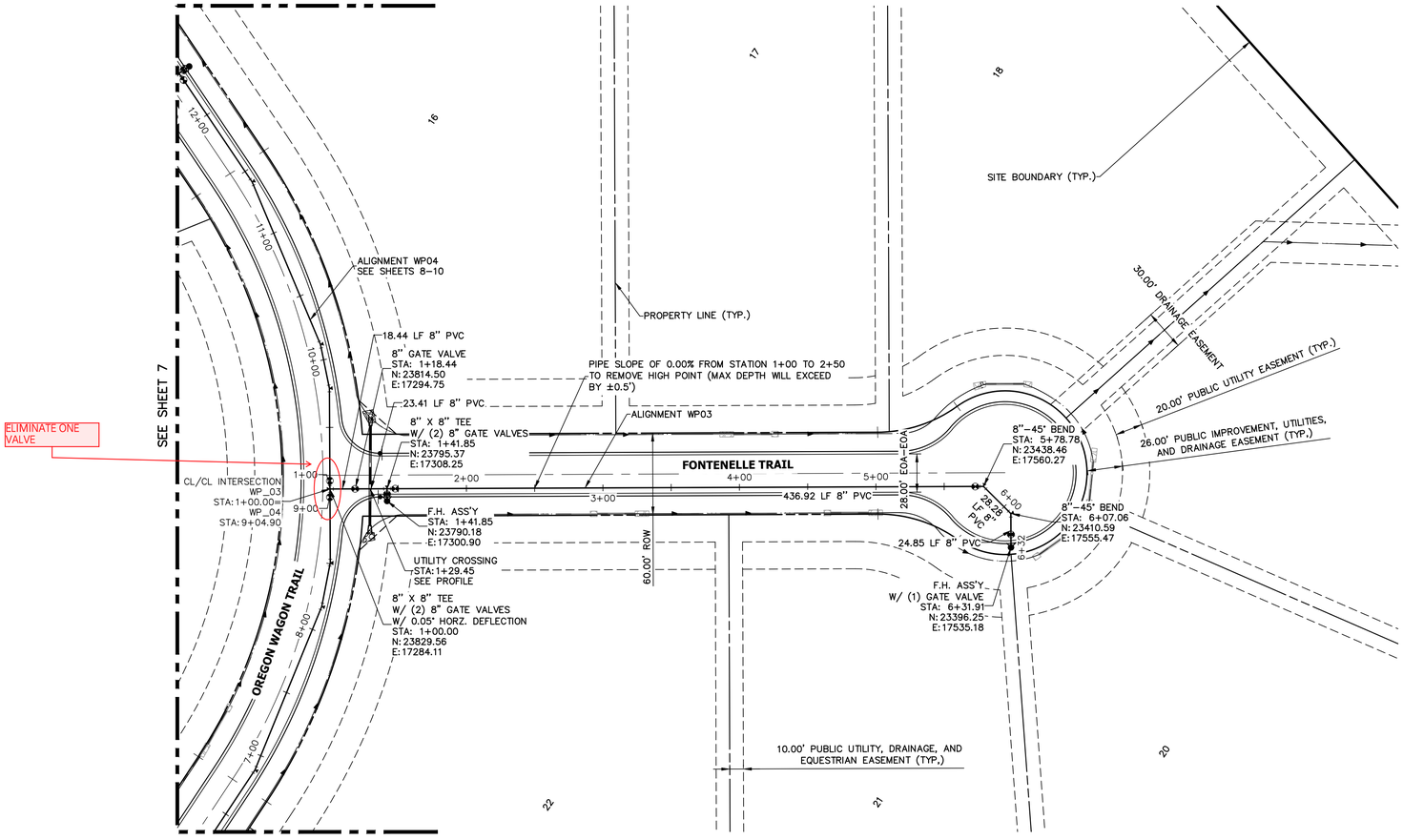
H-SCALE	1"=50'	DESIGNED BY	QNL
V-SCALE	1"=5'	DRAWN BY	QNL
DATE	07/06/21	CHECKED BY	

LATIGO TRAILS - FILING NO. 9

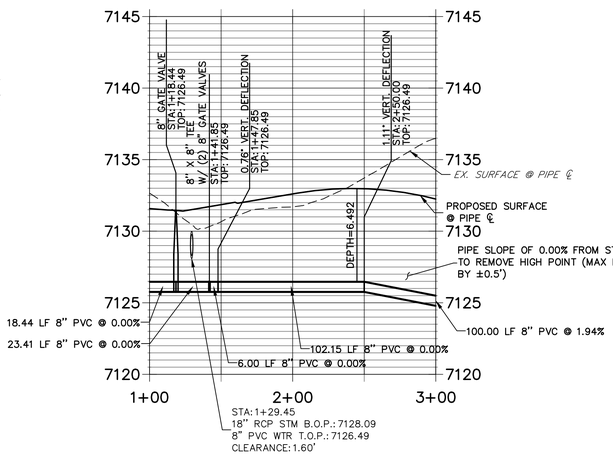
WATER DISTRIBUTION PLAN

SHEET 6 OF 13

JOB NO. 25175.01



WP_03 PROFILE
STA 1+00.00 TO 3+00.00



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50 25 0 50 100

HORIZONTAL
ORIGINAL SCALE: 1" = 50'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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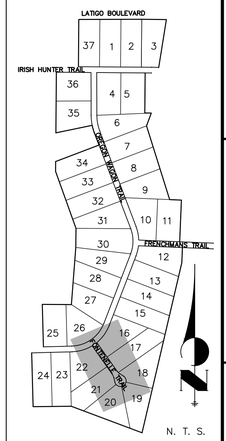
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

COLORADO REGISTERED MIKE A. BRAMLETT 32314 PROFESSIONAL ENGINEER

KEY MAP



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LATIGO TRAILS – FILING NO. 9

WATER DISTRIBUTION PLAN

SHEET 7 OF 13

JOB NO. 25175.01

SEE SHEET 9
MATCH STA: 18+00

292.88 LF 8" PVC

F.H. ASS'Y
STA: 16+64.33
N: 24504.34
E: 17597.06

8" X 8" TEE
W/ (3) 8" GATE VALVES
STA: 16+64.33
N: 24493.91
E: 17624.12

427.64 LF 8" PVC

(1) 6" VALVE
(1) 8" VALVE

F.H. ASS'Y
STA: 12+36.69
N: 24091.65
E: 17478.70

8" X 8" TEE
W/ (3) 8" GATE VALVES
STA: 12+36.69
N: 24094.89
E: 17470.30

98.06 LF 8" PVC

8"–11.25° BEND
STA: 11+40.63
N: 24005.26
E: 17435.75

129.21 LF 8" PVC

8"–11.25° BEND
STA: 10+11.42
N: 23895.94
E: 17366.85

8"–11.25° BEND
STA: 9+78.61
N: 23872.14
E: 17344.28

32.80 LF 8" PVC

73.71 LF 8" PVC

CL/CL INTERSECTION
WP_04
STA: 9+04.90=
WP_03
STA: 1+00.00

8"–11.25° BEND
STA: 8+50.94
N: 23798.40
E: 17240.06

8"–11.25° BEND
STA: 8+18.14
N: 23785.04
E: 17210.10

32.80 LF 8" PVC

129.35 LF 8" PVC

53.96 LF 8" PVC

8" X 8" TEE
W/ (2) 8" GATE VALVES
W/ 0.05° HORZ. DEFLECTION
STA: 9+04.90
N: 23829.56
E: 17284.11

ALIGNMENT WP03
SEE SHEETS 7

SEE SHEET 7

28.00' EOA–EOA

60.00' ROW

OREGON WAGON TRAIL

20.00' PUBLIC IMPROVEMENT, UTILITIES, AND DRAINAGE EASEMENT (TYP.)

20.00' PUBLIC UTILITY EASEMENT (TYP.)

10.00' PUBLIC UTILITY, DRAINAGE, AND EQUESTRIAN EASEMENT (TYP.)

10.00' DRAINAGE EASEMENT

FONTENELLE TRAIL

THE TRAILS FILING NO. 8
REC. NO. 207712541

Mkr Rod

28

27

25

26

16

17

SILVER CONCHO TRAIL

PROPERTY LINE (TYP.)

SITE BOUNDARY (TYP.)

EXISITNG 8" PVC WTR LINE

MOST TEES AND CROSSES CAN ELIMINATE ONE (1) VALVE.

(1) 6" VALVE AND (1) 8" VALVE REQUIRED AT EACH HYDRANT PLACED SUCH THAT EACH SEGMENT OF WM CAN BE ISOLATED BY 3 VALVES WITH ONLY ONE (1) HYDRANT PER ISOLATED SEGMENT.

8"–45° BEND
STA: 3+97.32
N: 23748.66
E: 16792.59

18.93 LF 8" PVC

8" X 8" TEE
W/ (3) 8" GATE VALVES
STA: 4+16.25
N: 23749.17
E: 16811.51

8"–45° BEND
STA: 3+82.45
N: 23758.89
E: 16781.79

ALIGNMENT WP03

282.45 LF 8" PVC

14.87 LF 8" PVC

272.53 LF 8" PVC

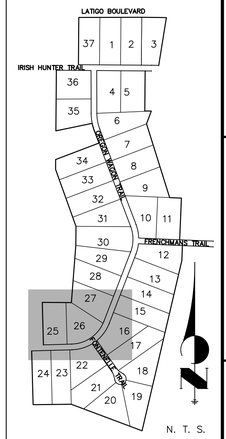
REPLACE EX 8"–90° BEND W/
8" X 8" TEE
W/ (1) 8" GATE VALVE
STA: 1+00.00
N: 23751.34
E: 16499.45

F.H. ASS'Y
STA: 4+16.25
N: 23740.17
E: 16811.75

8"–11.25° BEND
STA: 6+88.78
N: 23756.43
E: 17083.95

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00

KEY MAP



N. T. S.

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50 25 0 50 100
ORIGINAL SCALE: 1" = 50'

Know what's below.
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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

COLORADO REGISTERED MIKE A. BRAMLETT 32314 PROFESSIONAL ENGINEER

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

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PREPARED FOR
BRJM, LLC
101 N. CASCADE, SUITE 200
COLORADO SPRINGS, CO 80903
ATTN: BOB IRWIN
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No.	REVISION	BY	DATE

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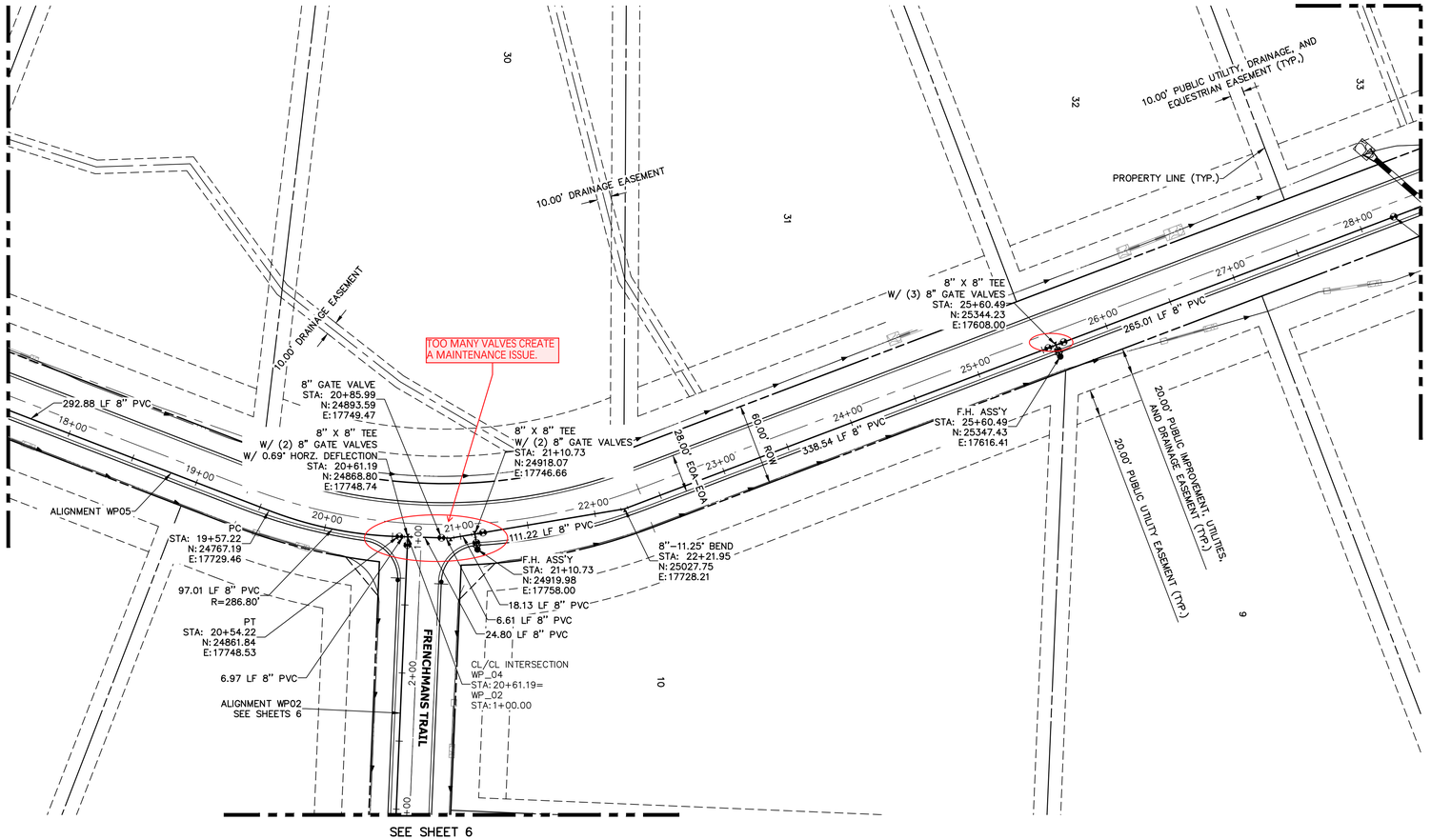
V–SCALE	N/A
DATE	07/06/21
DESIGNED BY	QNL
DRAWN BY	QNL
CHECKED BY	

LATIGO TRAILS – FILING NO. 9

WATER DISTRIBUTION PLAN

SHEET 8 OF 13

JOB NO. 25175.01

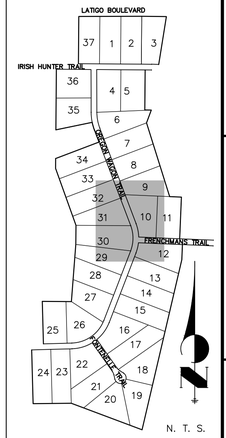


SEE SHEET 6

50 25 0 50 100

ORIGINAL SCALE: 1" = 50'

KEY MAP



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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

32314

MIKE A. BRAMLETT, P.E. DATE
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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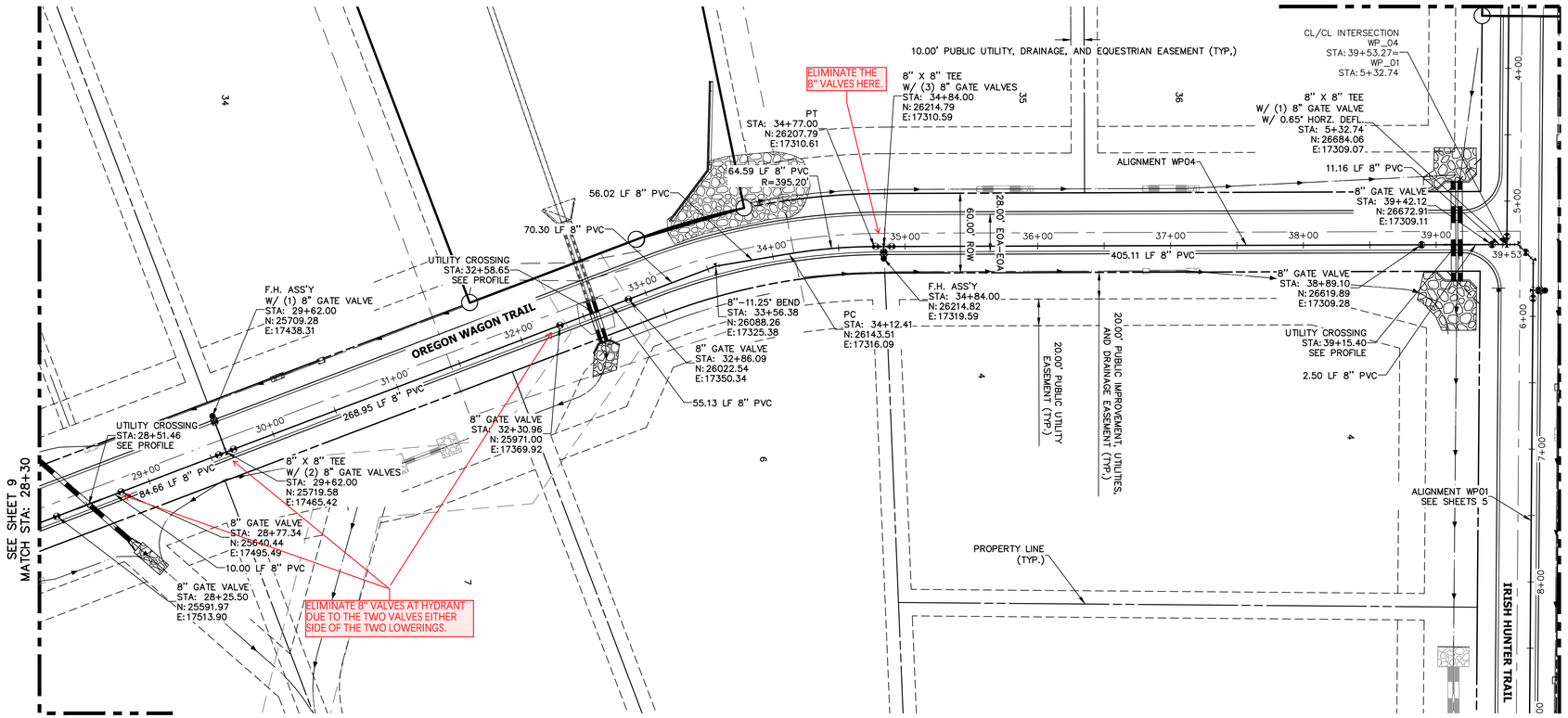
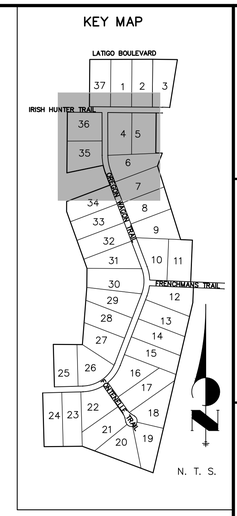
LATIGO TRAILS – FILING NO. 9

WATER DISTRIBUTION PLAN

SHEET 9 OF 13

JOB NO. 25175.01





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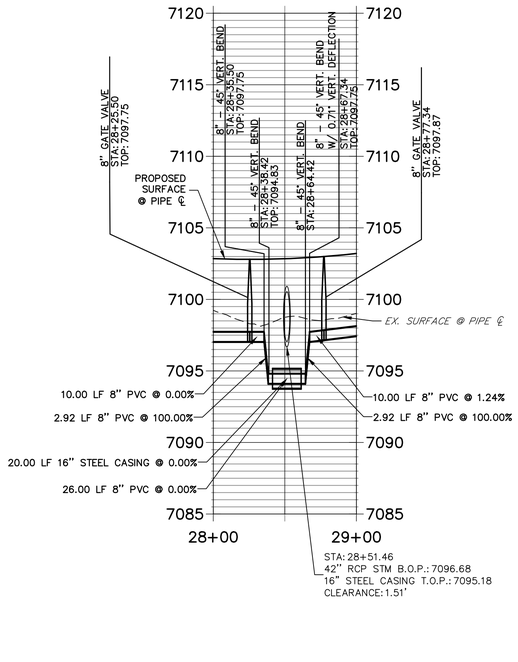
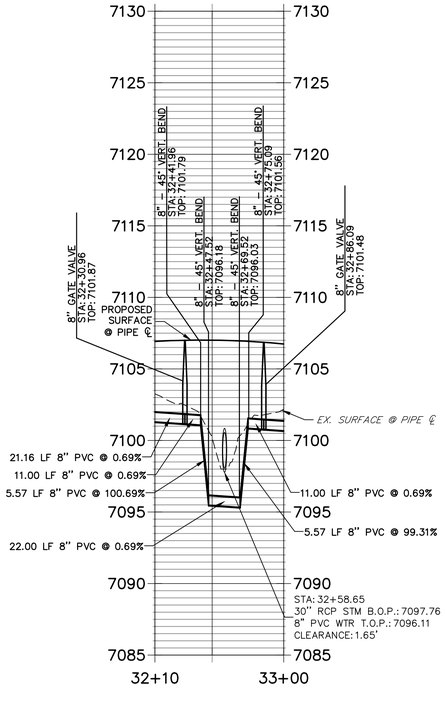
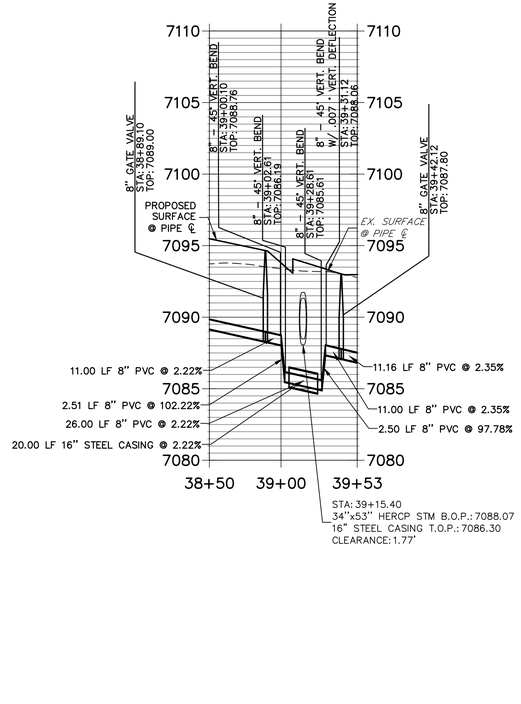
WP_04 PROFILE
STA 28+00.00 TO 29+00.00



WP_04 PROFILE (1)
STA 32+10.00 TO 33+00.00



WP_04 PROFILE (2)
STA 38+50.00 TO 39+53.27



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50 25 0 50 100

HORIZONTAL
ORIGINAL SCALE: 1" = 50'
VERTICAL
ORIGINAL SCALE: 1" = 5'

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COLORADO REGISTERED MIKE A. BRAMLETT 32314 PROFESSIONAL ENGINEER

MIKE A. BRAMLETT, P.E.
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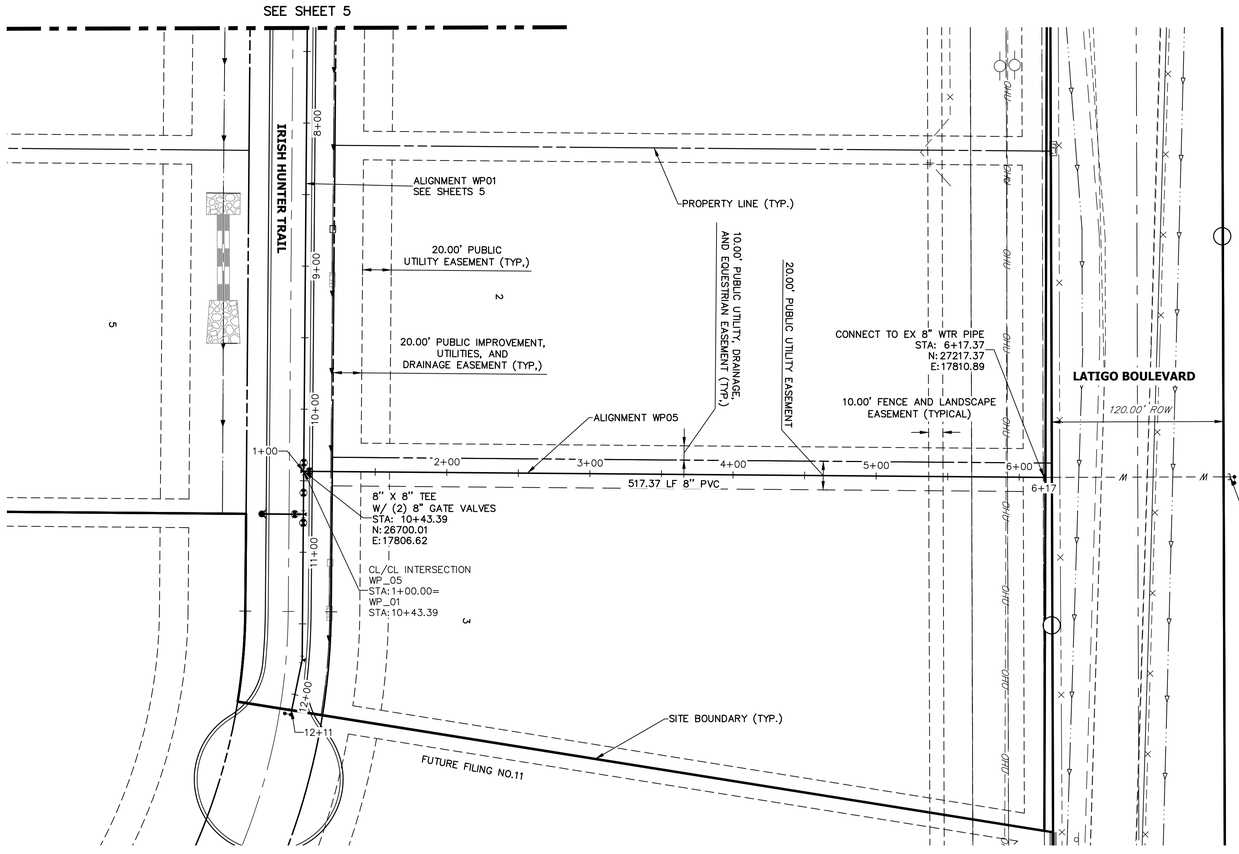
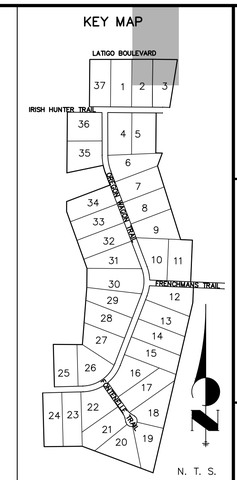
LATIGO TRAILS – FILING NO. 9

WATER DISTRIBUTION PLAN

SHEET 10 OF 13

JOB NO. 25175.01





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COLORADO REGISTERED MIKE A. BRAMLETT 32314 PROFESSIONAL ENGINEER

MIKE A. BRAMLETT, P.E. DATE
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CHECKED BY	

LATIGO TRAILS – FILING NO. 9

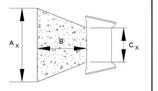
WATER DISTRIBUTION PLAN

SHEET 11 OF 13

JOB NO. 25175.01

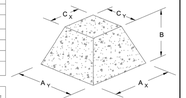
THRUST BLOCK DIMENSIONS and VOLUMES - PVC & DIP 250 psi

MAIN SIZE (in.)	TYPE OF FITTING	MINIMUM BEARING SURFACE AREA (ft²)	MINIMUM A_x(ft)	MINIMUM A_y(ft)	MINIMUM C_x(ft)	MINIMUM C_y(ft)	MINIMUM B (ft)	APPROXIMATE VOLUME (yd³)
4	11.25° BEND	1.00	1.00	1.00	0.25	0.33	2.00	0.25
4	22.5° BEND	2.00	1.41	1.41	0.21	0.33	2.00	0.25
4	45° BEND	3.50	1.87	1.87	0.42	0.33	2.00	0.25
4	TEE & DEAD END	4.75	2.18	2.18	0.67	0.33	2.00	0.25
6	11.25° BEND	2.00	1.41	1.41	0.25	0.50	2.00	0.25
6	22.5° BEND	3.75	1.94	1.94	0.38	0.50	2.00	0.25
6	45° BEND	7.25	2.69	2.69	0.58	0.50	2.00	0.25
6	TEE & DEAD END	9.50	3.08	3.08	0.83	0.50	2.00	0.50
8	11.25° BEND	3.25	1.80	1.80	0.34	0.67	2.00	0.25
8	22.5° BEND	6.50	2.55	2.55	0.48	0.67	2.00	0.25
8	45° BEND	12.50	3.57	3.50	0.67	0.67	2.00	0.50
8	TEE & DEAD END	16.25	4.64	3.50	1.08	0.67	2.00	0.75



THRUST BLOCK DIMENSIONS and VOLUMES - PVC (Maximum Static Pressure = 170 psi)

MAIN SIZE (in.)	TYPE OF FITTING	MINIMUM BEARING SURFACE AREA (ft²)	MINIMUM A_x(ft)	MINIMUM A_y(ft)	MINIMUM C_x(ft)	MINIMUM C_y(ft)	MINIMUM B (ft)	APPROXIMATE VOLUME (yd³)
12	11.25° BEND	4.75	2.18	2.18	0.43	1.00	2.00	0.25
12	22.5° BEND	9.25	3.04	3.04	0.64	1.00	2.00	0.50
12	45° BEND	18.00	4.92	3.66	1.00	1.00	2.00	0.75
12	TEE & DEAD END	23.50	6.42	3.66	1.46	1.00	2.48	1.00
16	11.25° BEND	8.00	2.83	2.83	0.44	1.33	2.00	0.50
16	22.5° BEND	16.00	4.27	3.75	0.66	1.33	2.00	0.75
16	45° BEND	31.00	8.27	3.75	1.00	1.33	3.64	1.75
16	TEE & DEAD END	40.50	10.80	3.75	1.92	1.33	4.44	3.00



THRUST BLOCK DIMENSIONS and VOLUMES - DIP (Maximum Static Pressure = 250 psi)

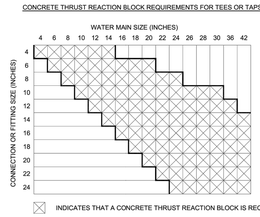
MAIN SIZE (in.)	TYPE OF FITTING	MINIMUM BEARING SURFACE AREA (ft²)	MINIMUM A_x(ft)	MINIMUM A_y(ft)	MINIMUM C_x(ft)	MINIMUM C_y(ft)	MINIMUM B (ft)	APPROXIMATE VOLUME (yd³)
12	11.25° BEND	6.75	2.60	2.60	0.43	1.00	2.00	0.50
12	22.5° BEND	13.50	3.69	3.66	0.64	1.00	2.00	0.50
12	45° BEND	26.25	7.17	3.66	1.00	1.00	3.09	1.50
12	TEE & DEAD END	34.25	9.36	3.66	1.46	1.00	3.95	2.25
16	11.25° BEND	11.75	3.43	3.43	0.44	1.33	2.00	0.50
16	22.5° BEND	23.25	6.20	3.75	0.66	1.33	2.77	1.00
16	45° BEND	45.50	12.13	3.75	1.00	1.33	5.57	4.00
16	TEE & DEAD END	59.50	15.87	3.75	1.92	1.33	6.98	6.50

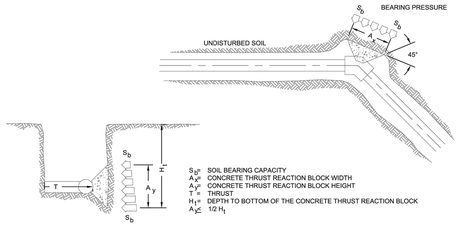
NOTES:

1. THE MINIMUM BEARING SURFACE AREAS SHOWN ARE BASED ON A MAX STATIC PIPE PRESSURE OF 170/250 POUNDS PER SQUARE INCH PLUS A SAFETY FACTOR OF 1.5 AND AN ALLOWABLE SOIL BEARING CAPACITY OF 1500 POUNDS PER SQUARE FOOT. BEARING SURFACE AREA IS ROUNDED UP TO THE NEAREST 0.25 SQUARE FEET. REFERENCE AWWA M-23 AND M-41.
2. THE DESIGN ENGINEER IS RESPONSIBLE FOR VERIFYING ASSUMPTIONS BASED ON ACTUAL SITE CONDITIONS. IF SITE CONDITIONS VARY FROM THE ASSUMPTIONS THE DESIGN ENGINEER SHALL PROVIDE A SITE SPECIFIC DESIGN IN ACCORDANCE WITH AWWA M-23, PVC PIPE - DESIGN AND INSTALLATION AND AWWA M-41, DUCTILE-IRON PIPE AND FITTINGS. SITE SPECIFIC DESIGNS INCLUDING GEOTECHNICAL INFORMATION SHALL BE SUBMITTED TO COLORADO SPRINGS UTILITIES FOR REVIEW.
3. THE MINIMUM BEARING SURFACE AREA AND APPROXIMATE VOLUME OF CONCRETE SHALL BE SHOWN ON THE CONSTRUCTION PLANS FOR ALL CONCRETE THRUST BLOCKS. CONCRETE MIX SHALL BE PER MATERIAL CHAPTER 4.
4. THE APPROXIMATE VOLUMES SHOWN ARE BASED ON THE MINIMUM BEARING SURFACE AREA AND THE MINIMUM TRENCH DIMENSIONS. THE APPROXIMATE VOLUME IS ROUNDED UP TO THE NEAREST 0.25 CUBIC YARDS.
5. THESE CHARTS MAY ONLY BE USED IF THE BLOCK HEIGHT (Ay) IS EQUAL TO OR LESS THAN ONE HALF THE TOTAL DEPTH (H) FROM THE FINISHED GRADE TO THE BOTTOM OF THE BLOCK. THE MINIMUM DIMENSIONS SHOWN ARE BASED ON A PIPE DEPTH OF 5 FEET. SEE DETAIL DRAWING A4-3.
6. A SITE SPECIFIC DESIGN SHALL BE REQUIRED FOR PIPES LARGER THAN 16 INCHES OR MAX STATIC PIPE PRESSURES GREATER THAN 250 POUNDS PER SQUARE INCH. THE DESIGN ENGINEER HAS THE OPTION OF PROVIDING A SITE SPECIFIC DESIGN FOR PIPES SMALLER THAN 16 INCHES OR MAX STATIC PRESSURES LESS THAN 250 POUNDS PER SQUARE INCH.
7. ALL CALCULATIONS SHALL BE PROVIDED TO COLORADO SPRINGS UTILITIES FOR REVIEW.

Colorado Springs Utilities	CONCRETE THRUST REACTION BLOCKS	A4-2
It's how we're all connected		DATED 03/2014

CONCRETE THRUST REACTION BLOCK REQUIREMENTS FOR TEES OR TAPS





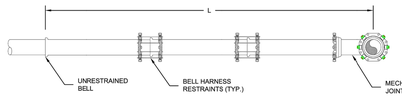
NOTES:

1. A SITE SPECIFIC DESIGN SHALL BE REQUIRED FOR CONNECTIONS OR FITTING SIZE COMBINATIONS NOT SHOWN ABOVE.
2. THE CONCRETE THRUST REACTION BLOCK SHALL BEAR AGAINST UNDISTURBED SOIL.
3. THE CONCRETE THRUST REACTION BLOCK SHALL BE INSTALLED WITH A 45° ANGLE FROM THE FITTING TO THE UNDISTURBED SOIL AS SHOWN IN THE DRAWING ABOVE.
4. REFER TO DETAIL DRAWING A4-2 FOR STANDARD CONCRETE THRUST REACTION BLOCK DIMENSIONS AND VOLUMES.
5. DUCTILE IRON FITTINGS AND PIPE SHALL BE WRAPPED IN POLYETHYLENE TUBING WHERE ADJACENT TO CONCRETE.

Colorado Springs Utilities	CONCRETE THRUST REACTION BLOCKS	A4-3
It's how we're all connected		DATED 03/2014

L = MINIMUM RESTRAINED PIPE LENGTH (FEET)

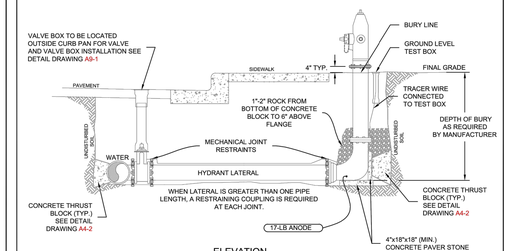
PIPE DIAMETER		45° BEND			22-1/2° BEND			11-1/4° BEND			DEAD END VALVE OR PLUG, TO INCLUDE INLINE VALVES (SEE NOTE 9)		
MAX. STATIC PRESSURE (PSI)		<100	100-150	150-200	<100	100-150	150-200	<100	100-150	150-200	<100	100-150	150-200
6 INCH	DUCTILE IRON AND PVC	6	9	12	3	5	6	2	3	3	49	73	97
8 INCH	DUCTILE IRON AND PVC	8	12	16	4	6	8	2	3	4	63	94	125
12 INCH	DUCTILE IRON AND PVC	12	17	23	6	8	11	3	4	6	89	133	177
16 INCH	DUCTILE IRON AND PVC	15	22	29	7	11	14	4	5	7	USE CONCRETE REVERSE ANCHOR	USE CONCRETE REVERSE ANCHOR	USE CONCRETE REVERSE ANCHOR
20 INCH	DUCTILE IRON AND PVC	18	26	35	9	13	17	4	6	8			
24 INCH	DUCTILE IRON AND PVC	20	30	40	10	15	20	5	7	10			
30 INCH	DUCTILE IRON AND PVC	24	36	48	12	18	24	6	9	12			
36 INCH	DUCTILE IRON AND PVC	28	42	56	14	20	27	7	10	14			



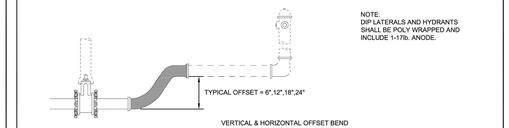
NOTES:

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 SANDS, 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 1/8 PIPE DIAMETER (4" MIN.)." FACTOR OF SAFETY 2:1.
6. FIGURES ARE BASED ON DIP WRAPPED IN POLYETHYLENE MATERIAL.
7. MEASUREMENTS ARE IN FEET.
8. USE CRA FOR DOWN TURNING BENDS.
9. RESTRAINED LENGTH FOR DEAD END MAY BE USED AT THE DISCRETION OF COLORADO SPRINGS UTILITIES.

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



ELEVATION



ELEVATION

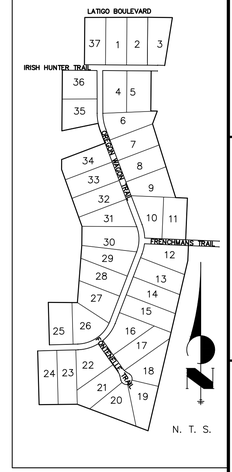
NOTE:
DIP LATERALS AND HYDRANTS SHALL BE POLY WRAPPED AND INCLUDE 1-17lb. ANODE.

NOTES:

1. MECHANICAL JOINT RESTRAINTS SHALL BE INSTALLED PER DETAIL DRAWINGS A4-4, A4-5, & CHAPTER 5.
2. TRACER WIRE AND GROUND LEVEL TEST BOX TO BE INSTALLED WITH EACH FIRE HYDRANT. PLACE TEST BOX WITHIN 6" FROM THE HYDRANT.
3. REFERENCE DETAIL DRAWINGS A5-1 & A5-2 FOR FIRE HYDRANT LOCATION.
4. INSTALLATION OF A PRIVATE FIRE HYDRANT WILL REQUIRE A SECONDARY VALVE INSTALLED AT THE PROPERTY LINE.
5. HYDRANT BASE BLOCK SHALL BE PLACED ON UNDISTURED EARTH.
6. DO NOT BLOCK WEEP HOLE WITH POLYWRAP.
7. COVER DRAIN ROCK WITH POLYWRAP PRIOR TO BACKFILL.
8. FOR HDPE HYDRANT CONNECTION SEE DETAIL DRAWING A10-0.
9. FOR PRIVATE FIRE HYDRANTS A SECONDARY VALVE SHALL BE INSTALLED ON THE PROPERTY LINE OR RIGHT-OF WAY LINE.

Colorado Springs Utilities	FIRE HYDRANT INSTALLATION	A5-3
It's how we're all connected		DATED 03/2014

KEY MAP



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

PLAN

ELEVATION

NOTES:

1. ALL DUCTILE IRON FITTINGS AND PIPE SHALL BE CATHODICALLY PROTECTED PER SECTION 2.6.I.
2. ALL FITTINGS SHALL HAVE MJ RESTRAINTS IN ACCORDANCE WITH CHAPTER 5.
3. EXAMPLE CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTION.
4. RESTRAINED JOINTS ARE REQUIRED WITHIN LOWERING.
5. NO TAPS OR TEES ARE ALLOWED WITHIN THE LOWERING.
6. THE LOWERINGS MAY BE ACCOMPLISHED WITH ANY DEGREE OF BENDS, HOWEVER, THE MAXIMUM DEGREE OF BEND ALLOWED IS 45 DEGREES.
7. WHERE WATER MAIN CROSSES UNDER STORM SEWER, WASTEWATER OR NON-POTABLE WATER INFRASTRUCTURE, A MINIMUM OF 9 FEET REQUIRED BETWEEN THE CENTERLINE OF THE CROSSING AND THE FIRST JOINT. THIS MEETS THE REQUIREMENTS FOR SECONDARY CONTAINMENT AS DESCRIBED IN SECTION 2.6-H.2.

Colorado Springs Utilities	LOWERING DETAIL UTILITY CROSSING 30" & SMALLER	A7-1
It's how we're all connected		DATED 08/2020

NOTES:

1. ALL DUCTILE IRON FITTINGS AND PIPE SHALL BE CATHODICALLY PROTECTED PER SECTION 2.6.I.
2. ALL FITTINGS SHALL HAVE MJ RESTRAINTS IN ACCORDANCE WITH CHAPTER 5.
3. EXAMPLE CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTION.
4. RESTRAINED JOINTS ARE REQUIRED WITHIN LOWERING.
5. NO TAPS OR TEES ARE ALLOWED WITHIN THE LOWERING.
6. THE LOWERINGS MAY BE ACCOMPLISHED WITH ANY DEGREE OF BENDS, HOWEVER, THE MAXIMUM DEGREE OF BEND ALLOWED IS 45 DEGREES.
7. WHERE WATER MAIN CROSSES UNDER STORM SEWER, WASTEWATER OR NON-POTABLE WATER INFRASTRUCTURE, A MINIMUM OF 9 FEET REQUIRED BETWEEN THE CENTERLINE OF THE CROSSING AND THE FIRST JOINT. THIS MEETS THE REQUIREMENTS FOR SECONDARY CONTAINMENT AS DESCRIBED IN SECTION 2.6-H.2.

Colorado Springs Utilities	LOWERING DETAIL W/CASING UTILITY CROSSING GREATER THAN 30"	A7-2
It's how we're all connected		DATED 08/2020

NOTE:
AN ADDITIONAL CASING SPACER SHALL BE CENTERED ON THE PIPE WHEN 18' TO 20' LONG PIPE JOINTS ARE USED. (TYP.)

* "W" SHALL BE ADDED WHEN A SLEEVE IS REQUIRED TO CROSS A ROADWAY IMPROVEMENT SUCH AS A ROUNDABOUT OR MEDIAN. "W" IS NOT REQUIRED WHEN CROSSING AN UNDERGROUND UTILITY.

NOTES:

1. ALL FITTINGS AND BELLS SHALL BE RESTRAINED IN THE CASING PIPE.
2. LOCATE CASING SPACERS AT "HOMING" LOCATION FOR SLEEVES GREATER THAN 50 FEET IN LENGTH TO PREVENT DAMAGE TO BELL DURING INSTALLATION AND EXTRACTION OF PIPE, IF REMOVED.
3. CASING SHALL BE STEEL PIPE WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI. CASING THICKNESS SHALL BE SPECIFIED BY THE DESIGN ENGINEER ON THE PLANS BASED ON THE ANTICIPATED LOADS. SEE DETAIL DRAWING A7-4.
4. THE DIAMETER OF THE CASING SHALL BE SPECIFIED BY THE DESIGN ENGINEER. THE DIAMETER SHALL TAKE INTO ACCOUNT THE MAXIMUM O.D. WITH THE USE OF RESTRAINED JOINT PIPE.
5. SEE DETAIL DRAWING A7-4 FOR CASING SPACER DETAILS.
6. LOCATE SPACERS ON BOTH SIDES OF JOINTS TO ELIMINATE DEFLECTION OF THE JOINT IN THE SLEEVE.
7. WHERE WATER MAIN CROSSES UNDER STORM SEWER, WASTEWATER OR NON-POTABLE WATER INFRASTRUCTURE, REFERENCE SECTION 2.6-H.2.
8. WHEN CROSSING A ROADWAY IMPROVEMENT, THE WIDTH OF THE IMPROVEMENT SHALL BE ADDED TO THE LENGTH OF THE SLEEVE.

Colorado Springs Utilities	TYPICAL STEEL CASING INSTALLATION	A7-3
It's how we're all connected		DATED 06/2015

CASING PIPE MINIMUM SIZES AND THICKNESSES (TO BE VERIFIED BY THE DESIGN ENGINEER) BASED ON ACTUAL LOADING AND SITE CONDITIONS

CASING PIPE NOMINAL SIZE (IN)	MIN. THICKNESS (IN)
12	0.250
14	0.312
16	0.312
18	0.312
20	0.375
24	0.500
32	0.500
36	0.625

CASING PIPE MINIMUM SIZES AND THICKNESSES ARE BASED ON E80 LOADING. VARIANCES TO THESE MINIMUMS MAY BE ALLOWED WITH SUPPORTING CALCULATIONS FROM THE DESIGN ENGINEER

PLAN

SECTION A-A

TYPICAL PIPE SUPPORT CASING ARRANGEMENT (CENTERED/RESTRAINED)

CARRIER PIPE:

1. CARRIER PIPE SHALL BE CENTERED WITHIN CASING BY USE OF APPROVED STAINLESS STEEL CASING SPACERS AS MANUFACTURED BY APPROVED MANUFACTURER BY COLORADO SPRINGS UTILITIES. (REFERENCE CHAPTER 2)

PLACEMENT OF SPACERS ON CARRIER PIPE:

1. GENERAL - ONE SPACER SHALL BE PLACED MAX. 2' FROM EACH END OF CASING AND ON EITHER SIDE OF EACH BELL OR MECHANICAL JOINT. SUBSEQUENT SPACERS SHALL BE PLACED AT 8' INTERVALS WITHIN THE CASING, OR IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS.

END SEALS:

1. END SEALS SHALL BE USED TO ENSURE A WATER TIGHT SEAL ON EITHER END OF THE CASING.

CATHODIC PROTECTION:

1. CASING SHALL BE CATHODICALLY PROTECTED PER SECTION 2.6.I.

SPACER

Colorado Springs Utilities	TYPICAL STEEL CASING INSTALLATION	A7-4
It's how we're all connected		DATED 06/2015

Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

32314

MIKE A. BRAMLETT, P.E. DATE
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=N/A'
V-SCALE	1"=X'
DATE	07/06/22
DESIGNED BY	QNL
DRAWN BY	QNL
CHECKED BY	

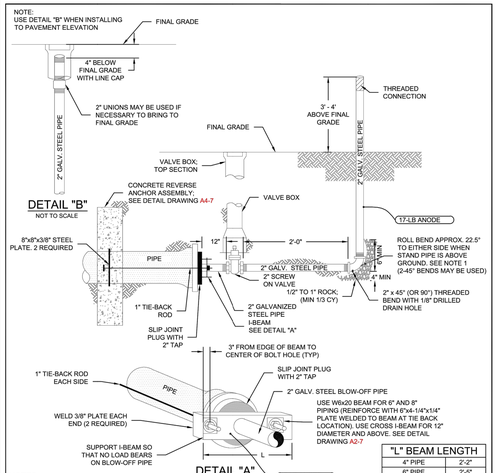
LATIGO TRAILS – FILING NO. 9

DETAILS

SHEET 12 OF 13

JOB NO. 25175.01

NOTE:
USE DETAIL "B" WHEN INSTALLING TO PAVEMENT ELEVATION



"L" BEAM LENGTH	
4" PIPE	2'-2"
6" PIPE	2'-5"
8" PIPE	2'-8"

NOTES:

1. IF APPROPRIATE LOCATION FOR DISCHARGED WATER CANNOT BE REACHED BY ROLLING THE BEND ADDITIONAL BENDS MAY BE REQUIRED BY THE COLORADO SPRINGS UTILITIES INSPECTOR.
2. COAT TIE RODS, BEAM AND GALVANIZED STEEL PIPE, SEE DETAIL DRAWING A8-11.
3. ENTIRE BLOW-OFF ASSEMBLY MUST BE ADEQUATELY SUPPORTED. CONCRETE PAVER STONES MAY BE REQUIRED.
4. PIPE DOPE APPROVED FOR USE IN POTABLE WATER SYSTEMS MUST BE USED ON ALL THREADED FITTINGS.
5. TEMPORARY BLOW-OFF VALVE ASSEMBLIES SHALL BE INSPECTED BY THE COLORADO SPRINGS UTILITIES INSPECTOR PRIOR TO BACKFILL. BACKFILL COMPACTION TO BE SAME AS PIPE COMPACTION SPECIFICATIONS.
6. 2" GALVANIZED PIPE MUST BE RATED TO 250 PSI AND CONFORM TO NSF-61 SPECIFICATIONS.
7. THERE SHALL BE NO SERVICE LINES CONNECTED BETWEEN THE LAST ISOLATION VALVE AND THE TEMPORARY BLOW-OFF ASSEMBLY.
8. TIE BACK RODS SHALL BE A MINIMUM ASTM A307 GRADE A STEEL WITH MINIMUM ASTM A-36 NUTS. STEEL BEAMS SHALL BE ASTM A992 GD 50.
9. ALL HOLES IN STEEL SHALL BE OVERSIZED HOLES.

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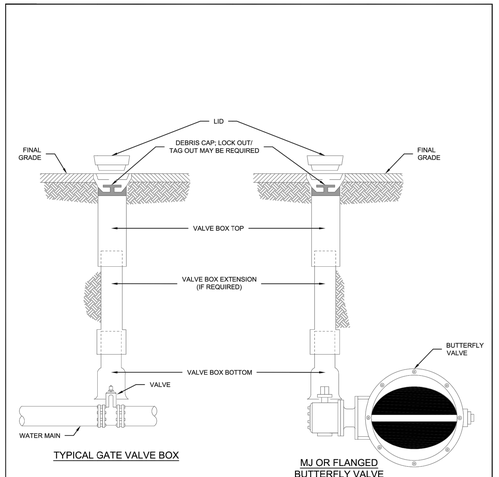
TEMPORARY BLOW-OFF ASSEMBLIES- 4", 6" & 8" MAINS WITH SLIP JOINT PLUG

A2-4

DATED 03/2014



TYPICAL GATE VALVE BOX

MJ OR FLANGED BUTTERFLY VALVE
WITH ROTATED ACTUATOR VALVE BOX

NOTES:

1. MAIN AND FIRE HYDRANT VALVES AND VALVE BOXES SHALL NOT BE IN THE CURB PAN, CURB OR SIDEWALK.
2. VALVE BOXES SHALL BE SLIP TYPE, PER CHAPTER 4.
3. DEBRIS CAPS SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATIONS.
4. DEBRIS CAPS WITH FLEXIBLE SKIRTS SHALL BE TRIMMED TO PROVIDE A SMOOTH CONTACT WITH THE INTERIOR OF THE VALVE BOX.
5. FOR SERVICE LINES 4" AND GREATER, TRACER WIRE WILL BE BROUGHT UP IN THE SECONDARY VALVE BOX.

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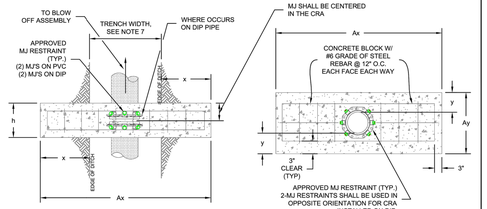
VALVE BOX INSTALLATION

A9-1

DATED 03/2014



PLAN
DEAD END OR REVERSE ANCHOR

ELEVATION
DEAD END OR REVERSE ANCHOR

DIAMETER (in)	PRESSURE (psi)	x (in)	Ax (in)	y (in)	Ay (in)	Ab (sf)	h (in)	Vol (cy)
4	250	12	72	12	28.80	6.80	18	1.0
6	250	18	84	12	30.90	9.73	18	1.0
8	250	36	120	12	33.05	18.53	18	1.5
12	170	36	120	15	43.20	24.60	18	2.0
12	250	48	144	18	49.20	36.80	24	3.75
16	170	54	156	18	53.40	44.05	24	4.25
16	250	60	168	24	65.40	60.50	36	8.5

NOTES:

1. THE MINIMUM BEARING SURFACE AREAS SHOWN ARE BASED ON A MAX STATIC PIPE PRESSURE OF 170/250 POUNDS PER SQUARE INCH PLUS A SAFETY FACTOR OF 1.5, AND AN ALLOWABLE SOIL BEARING CAPACITY OF 1500 POUNDS PER SQUARE FOOT. FOR HDPE ADDITIONAL ASSUMPTIONS INCLUDE A MAX 50°-F TEMPERATURE CHANGE AND A POISSON RATIO OF 0.45. REFERENCE AWWA M-23, M-41 AND M-55.
2. THE DESIGN ENGINEER IS RESPONSIBLE FOR VERIFYING ASSUMPTION BASED ON ACTUAL SITE CONDITIONS. IF SITE VARY FROM THE ASSUMPTIONS THE DESIGN ENGINEER SHALL PROVIDE A SITE SPECIFIC DESIGN THAT SHALL BE IN ACCORDANCE WITH AWWA M-23, PVC PIPE - DESIGN AND INSTALLATION AND AWWA M-41, DUCTILE-IRON PIPE AND FITTINGS. SITE SPECIFIC DESIGNS USING GEOTECHNICAL INFORMATION SHALL BE SUBMITTED TO COLORADO SPRINGS UTILITIES FOR APPROVAL.
3. THE MINIMUM LATERAL BEARING SURFACE AREA (As) AND APPROXIMATE VOLUME OF CONCRETE (Vol) SHALL BE SHOWN ON THE CONSTRUCTION PLANS FOR ALL CONCRETE REVERSE ANCHORS.
4. THE APPROXIMATE VOLUMES SHOWN ARE BASED ON THE MINIMUM DIMENSIONS IN THE TABLE. THE APPROXIMATE VOLUME IS ROUNDED UP TO THE NEAREST 0.25 CUBIC YARDS.
5. A SITE SPECIFIC DESIGN SHALL BE REQUIRED FOR PIPES LARGER THAN 16 INCHES OR MAX STATIC PIPE PRESSURES GREATER THAN 250 POUNDS PER SQUARE INCH. THE DESIGN ENGINEER HAS THE OPTION OF PROVIDING A SITE SPECIFIC DESIGN FOR PIPES SMALLER THAN 16 INCHES OR MAX STATIC PRESSURES LESS THAN THE PRESSURE LISTED IN THE TABLE.
6. FOR CORROSION PROTECTION OF THE RODS SEE DETAIL DRAWING A8-11.
7. A TRENCH WIDTH OF 4 FEET AND 6" BEDDING UNDER THE PIPE ARE ASSUMED FOR BEARING. CALCULATIONS, (Ax, Ay, x AND y).
8. THE DESIGN ENGINEER SHALL ENSURE THE CONSTRUCTION OF THE CONCRETE REVERSE ANCHOR SHALL NOT CONFLICT WITH OTHER UTILITIES.
9. DUCTILE IRON FITTINGS AND PIPE SHALL BE WRAPPED IN POLYETHYLENE TUBING WHERE ADJACENT TO CONCRETE.

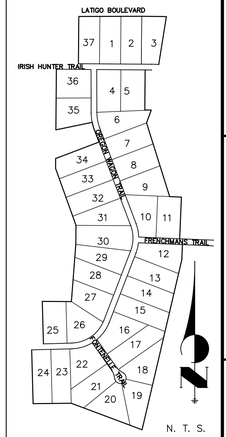
Colorado Springs Utilities
It's how we're all connected

CONCRETE REVERSE ANCHOR FOR MECHANICAL JOINT RESTRAINTS

A4-8

DATED 06/2015

KEY MAP



UNTIL SUCH TIME AS THESE DOCUMENTS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
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Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	1"=N/A"
V-SCALE	1"=X'
DATE	07/06/21
DESIGNED BY	QNL
DRAWN BY	QNL
CHECKED BY	

LATIGO TRAILS – FILING NO. 9

DETAILS

SHEET 13 OF 13

JOB NO. 25175.01

Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

COLORADO REGISTERED MIKE A. BRAMLETT 32314 PROFESSIONAL ENGINEER