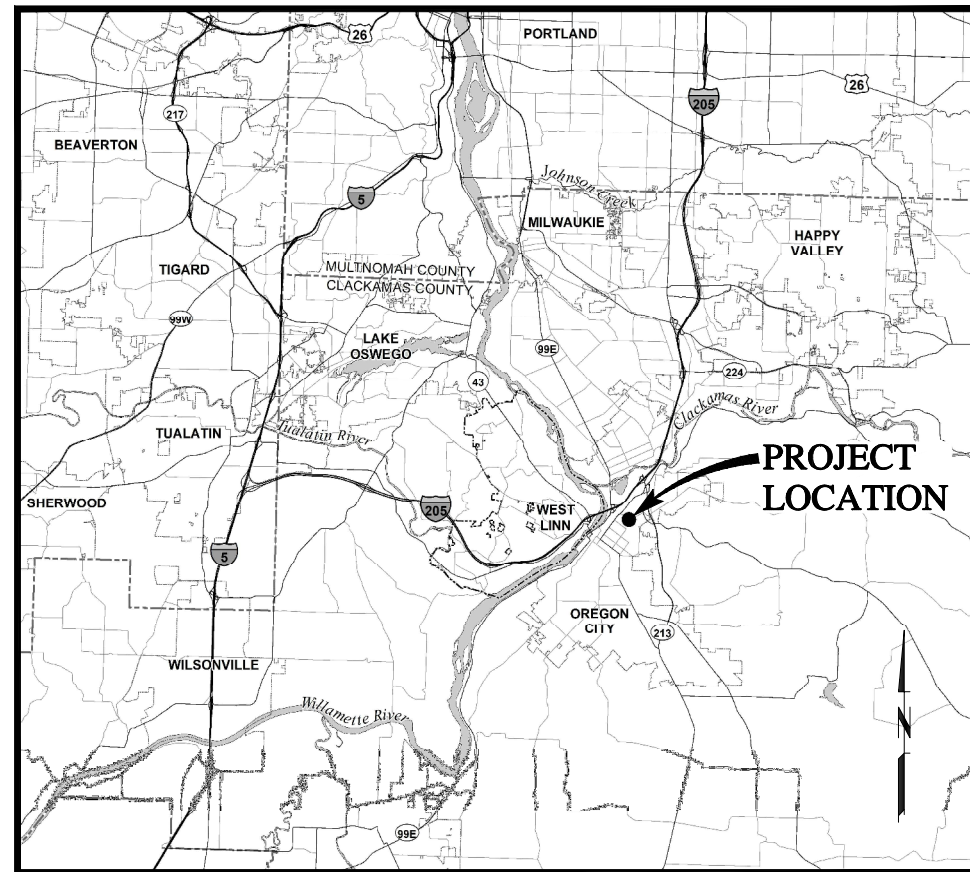


CITY OF
West Linn

CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01

JUNE 2018



VICINITY MAP

SCALE: 1"=2 MILES

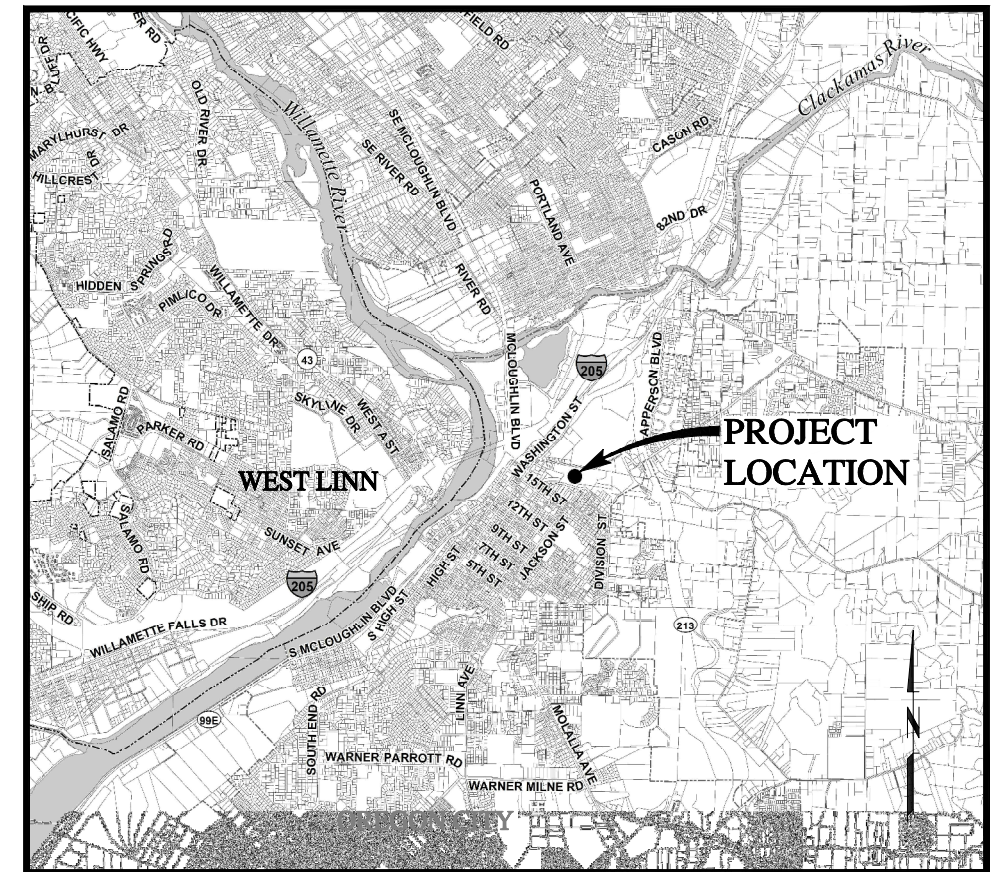
INDEX OF DRAWINGS

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LOCATION MAP

SCALE: 1"=3,000'

murraysmith




888 SW 5TH AVENUE, SUITE 1170
PORTLAND, OREGON 97204
P 503.225.9010



Know what's below.
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ATTENTION: OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY CALLING THE UTILITY NOTIFICATION CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 503-246-6699.)

@ AASHTO AB ABAN (D) ABS ABV AC ACP ADJ ADJC AFF AFG AHR AL ALT AMP ANSI APPROX APPVD APWA ARCH ARV ASCE ASSN ASSY ASTM ATM AUTO AUX AVE AVG AWWA B&S BC BD BETW BF BFD BFILL BFV BHP BKGD BLDG BLK BLVD BM BMP BO BOC BS BSMT BTF BTU BV BW C C TO C CARV CATV CB CCP CCW CFM CFS CHAN CHEM CHFR CHKV CI CIP CIPC CISP CJ CL CL2 CLG CLJ CLR CLSM CMP CMU CND CO COL COMB CONC CONN CONST CONT CONTR COORD COP CORP CORR CP CPLG CPVC CR CS	AT AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS ANCHOR BOLT ABANDON (ED) ACRYLONITRILE BUTADIENE STYRENE ABOVE ASPHALTIC CONCRETE ASPHALTIC CONCRETE PAVING ADJUSTABLE ADJACENT ABOVE FINISHED FLOOR ABOVE FINISHED GRADE ANCHOR ALUMINUM ALTERNATE AMPERE AMERICAN NATIONAL STANDARDS INSTITUTE APPROXIMATE APPROVED AMERICAN PUBLIC WORKS ASSOCIATION ARCHITECTURAL AIR RELEASE VALVE AMERICAN SOCIETY OF CIVIL ENGINEERS ASSOCIATION ASSEMBLY AMERICAN SOCIETY FOR TESTING & MATERIALS ATMOSPHERE AUTOMATIC AUXILIARY AVENUE AVERAGE AMERICAN WATER WORKS ASSOCIATION BELL & SPIGOT BOLT CIRCLE BOARD BETWEEN BOTH FACE BACKFLOW PREVENTION DEVICE BACKFILL BUTTERFLY VALVE BRAKE HORSEPOWER BACKGROUND BUILDING BLOCK BOULEVARD BENCHMARK / BEAM BEST MANAGEMENT PRACTICE BLOW-OFF BACK OF CURB BOTH SIDES BASEMENT BOTTOM FACE BRITISH THERMAL UNIT BALL VALVE BOTH WAYS CELSIUS CENTER TO CENTER COMBINATION AIR RELEASE VALVE CABLE TELEVISION CATCH BASIN CONCRETE CYLINDER PIPE COUNTER CLOCKWISE CUBIC FEET PER MINUTE CUBIC FEET PER SECOND CHANNEL CHEMICAL CHAMFER CHECK VALVE CAST IRON CAST IRON PIPE CAST IN PLACE CONCRETE CAST IRON SOIL PIPE CONSTRUCTION JOINT CENTER LINE CHLORINE CEILING CONTROL JOINT CLEAR CONTROLLED LOW STRENGTH MATERIAL CORRUGATED METAL PIPE CONCRETE MASONRY UNIT CONDUIT CLEANOUT COLUMN COMBINATION CONCRETE CONNECTION CONSTRUCTION CONTINUOUS / CONTINUATION CONTRACT (OR) COORDINATE COPPER CORPORATION CORRUGATED CONTROL POINT COUPLING CHLORINATED POLYVINYL CHLORIDE CRUSHED ROCK COMBINED SEWER	CSP CT CTR CU CULV CV CW CY CYL D DC DEFL DET DI DIA DIM DIR DIST DN DR DS DWG DOWEL DWV DWFY EA ECC EF EL ELB ELEC ENCL EOP EQ EQ SP EQUIP EW EXC EXIST EXIST GR EXP EXP BT EXP JT EXT F F TO F FAB FB FBE FCA FCO FD FDN FEXT FF FGL FH FIN FL FIN GR FIPT FITG FL FLEX FLG FLL FLR FM FO FOC FOF FOM FOS FPM FPS FRP FT FTG FUT FXTR G GA GAL GALV GC GFA GI GIP GJ GL GLV GND GPD GPH GPM GPS GR GR LN GRTG GV GRVL GYP	CONCRETE SEWER PIPE COURT CENTER CUBIC CULVERT CONTROL VALVE CLOCKWISE / COLD WATER CUBIC YARDS CYLINDER LOCK DRAIN DIRECT CURRENT DEFLECTION DETAIL DUCTILE IRON DIAMETER DIMENSION DIRECTION DISTANCE DOWN DRIVE DOWNSPOUT DRAWING DOWEL DRAIN WASTE AND VENT DRIVEWAY EACH ECCENTRIC EACH FACE ELEVATION ELBOW ELECTRICAL ENCLOSURE EDGE OF PAVEMENT EQUAL EQUALLY SPACED EQUIPMENT EACH WAY EXCAVATE EXISTING EXISTING GRADE EXPANSION EXPANSION BOLT EXPANSION JOINT EXTERIOR FAHRENHEIT FACE TO FACE FABRICATE FLAT BAR FUSION BONDED EPOXY FLANGED COUPLING ADAPTER FLOOR CLEANOUT FLOOR DRAIN FOUNDATION FIRE EXTINGUISHER FAR FACE FIBERGLASS FIRE HYDRANT FINISH FLOOR FINISH GRADE FEMALE IRON PIPE THREAD FITTING FLOOR CLEANOUT FLEXIBLE FLANGE FLOW LINE FLOOR FORCE MAIN FIBER OPTIC FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUDS FEET PER MINUTE FEET PER SECOND FIBERGLASS REINFORCED PLASTIC FEET / FOOT FOOTING FUTURE FIXTURE GAS GAUGE GALLON GALVANIZED GROOVED COUPLING GROOVED FLANGE ADAPTER GALVANIZED IRON GALVANIZED IRON PIPE GRIP JOINT GLASS GLOBE VALVE GROUND GALLONS PER DAY GALLONS PER HOUR GALLONS PER MINUTE GALLONS PER SECOND GRADE GRADE LINE GRATING GATE VALVE GRAVEL GYPSUM	HB HC HDPE HDR HDWE HGR HGT HH HM HNDRL HOA HOR HORIZ HP HPG HPT HR HSB HV HVAC HWL HWY HYD HYDR I&C IAW ID IE IF IMPV IN INCC INFL INJ INSTL INSUL INTER INTR INV IP IR IRRIG JT JUNC KPL KVA KW KWY L LAB LAV LB LF LIN LANE LOC LONG LP LPT LRG LS LT LVL LWL MAN MATL MAX MCC MCP MECH MET MFR MGD MH MIN MIPT MISC MJ MON MOT MP MSL MTD NA NC NF NIC NO / NO. NOM NORM NRS NTS	HOSE BIBB HOLLOW CORE HIGH DENSITY POLYETHYLENE HEADER HARDWARE HANGER HEIGHT HANDHOLD HOLLOW METAL HANDRAIL HAND-OFF-AUTO HAND-OFF-REMOTE HORIZONTAL HIGH PRESSURE / HORSEPOWER HIGH PRESSURE GAS HIGH POINT HOUR HIGH STRENGTH BOLT HOSE VALVE HEATING, VENTILATION, AIR CONDITIONING HIGH WATER LINE HIGHWAY HYDRANT HYDRAULIC INSTRUMENTATION & CONTROL IN ACCORDANCE WITH INSIDE DIAMETER INVERT ELEVATION INSIDE FACE IMPROVEMENT INCH INCLUDE (D) (ING) INFLUENT INJECTION INSTALLATION / INSTALL INSULATION INTERCEPTOR INTERIOR INVERT IRON PIPE IRON PIPE THREAD IRON ROD IRRIGATION JOINT JUNCTION KICK PLATE KILOVOLT AMPERE KILOWATT KEYWAY LENGTH OF CURVE LABORATORY LAVATORY POUND LINEAR FOOT LINEAL / LINEAR LANE LOCATION LONGITUDINAL LOW PRESSURE LOW POINT LARGE LONG SLEEVE / LUMP SUM LEFT LEVEL LOW WATER LINE MANUAL MATERIAL MAXIMUM MOTOR CONTROL CENTER MASTER CONTROL PANEL MECHANICAL METAL MANUFACTURER MILLION GALLONS PER DAY MANHOLE MINIMUM MALE IRON PIPE THREAD MISCELLANEOUS MECHANICAL JOINT MONUMENT / MONOLITHIC MOTOR MILEPOST MEAN SEA LEVEL MOUNTED NOT APPLICABLE NORMALLY CLOSED NEAR FACE NOT IN CONTRACT NORMALLY OPEN / NUMBER NOMINAL NORMAL NON-RISING STEM NOT TO SCALE	O TO O OC OD ODOT OF OPNG OPP ORIG OVHD P&ID PC PCC PCVC PE PERF PERM PERP PG PH PI PIVC PL PLBG PNL POC POLY POT PP PRC PRCST PREP PRESS PRKG PROP PRV PS PSIG PSL PSPT PT PTVC PV PVC PVMT PWR QTY RAD RC RCP RD RDCR REF REINF REQ'D RESTR RFCA RM RND RO R/W RPBPD RPM RR RST RT SALV SAN SC SCHED SD SDL SDR SECT SHLDR SHT SIM SLP SLV SOLN SP SPCL SPEC (S) SPG SPL SPRT SQ SQ FT SQ IN SQ YD SS SST ST STA STD STL STOR	OUT TO OUT ON CENTER OUTSIDE DIAMETER OREGON DEPARTMENT OF TRANSPORTATION OVERFLOW / OUTSIDE FACE OPENING OPPOSITE ORIGINAL OVERHEAD PROCESS & INSTRUMENTATION DIAGRAM POINT OF CURVE POINT OF COMPOUND CURVE POINT OF CURVATURE ON VERTICAL CURVE PLAIN END PERFORATED PERMANENT PERPENDICULAR PRESSURE GAUGE PIPE HANGER POINT OF INTERSECTION POINT OF INTERSECTION ON VERTICAL CURVE PROPERTY LINE / PLATE / PLASTIC PLUMBING PANEL POINT OF CURVATURE POLYETHYLENE POINT OF TANGENCY POWER POLE POINT OF REVERSE CURVATURE PRECAST PREPARATION PRESSURE PARKING PROPERTY PRESSURE RELIEF VALVE PUMP STATION POUNDS PER SQUARE INCH GAGE PIPE SLEEVE PIPE SUPPORT POINT OF TANGENCY POINT OF TANGENCY ON VERTICAL CURVE PLUG VALVE POLYVINYL CHLORIDE PAVEMENT POWER QUANTITY RADIUS REINFORCED CONCRETE REINFORCED CONCRETE PIPE ROAD / ROOF DRAIN REDUCER REFERENCE REINFORCE (D) (ING) (MENT) REQUIRED RESTRAINED RESTRAINED FLANGE COUPLING ADAPTER ROOM ROUND ROUGH OPENING RIGHT OF WAY REDUCED PRESSURE BACKFLOW PREVENTION DEVICE REVOLUTIONS PER MINUTE RAILROAD REINFORCING STEEL RIGHT SALVAGE SANITARY SOLID CORE SCHEDULE STORM DRAIN SADDLE STANDARD DIMENSION RATIO SECTION SHOULDER SHEET SIMILAR SLOPE SLEEVE SOLUTION SOIL PIPE / SEWER PIPE SPECIAL SPECIFICATION (S) SPACING SPOOL SUPPORT SQUARE SQUARE FOOT SQUARE INCH SQUARE YARD SANITARY SEWER STAINLESS STEEL STREET STATION STANDARD STEEL STORAGE	STR STRUCT SUBMG SUCTION SV S/W SWD SWGR SYMM SYS T or TEL T&B TAN TB TBM TC TDH TEMP T&G THK THRD THRU TP TRANS TSP TST TW TYP UG UH UN UON USGS V VAC VB VBOX VC VERT VFD VOL VCP VTR W W/ W/O W/W WD WF WH WHTR WI WM WP WS WT WTP WTRT WWF WWTF WWTP X SECT XFMR YD YH YR ZN	STRAIGHT STRUCTURE / STRUCTURAL SUBMERGED SUCTION SOLENOID VALVE SIDEWALK SIDEWATER DEPTH SWITCH GEAR SYMMETRICAL SYSTEM TELEPHONE TOP & BOTTOM TANGENCY THRUST BLOCK TEMPORARY BENCH MARK TOP OF CONCRETE / TOP OF CURB TOTAL DYNAMIC HEAD TEMPERATURE / TEMPORARY TONGUE & GROOVE THICKNESS THREAD(ED) THROUGH TEST PIT/TOP OF PAVEMENT/TURNING POINT TRANSITION TRI-SODIUM PHOSPHATE TOP OF STEEL TOP OF WALL TYPICAL UNDERGROUND UNIT HEATER UNION UNLESS OTHERWISE NOTED UNITED STATES GEOLOGIC SURVEY VENT / VOLT VACUUM VACUUM BREAKER VALVE BOX VERTICAL CURVE VERTICAL VARIABLE FREQUENCY DRIVE VOLUME VITRIFIED CLAY PIPE VENT THROUGH ROOF WATER WITH WITHOUT WALL TO WALL WOOD WIDE FLANGE WALL HYDRANT WATER HEATER WROUGHT IRON WATER METER WORKING POINT / WATERPROOFING WATER SERVICE WEIGHT WATER TREATMENT PLANT WATERTIGHT WELDED WIRE FABRIC WASTEWATER TREATMENT FACILITY WASTEWATER TREATMENT PLANT CROSS SECTION TRANSFORMER YARD DRAIN/YARD YARD HYDRANT YEAR ZINC
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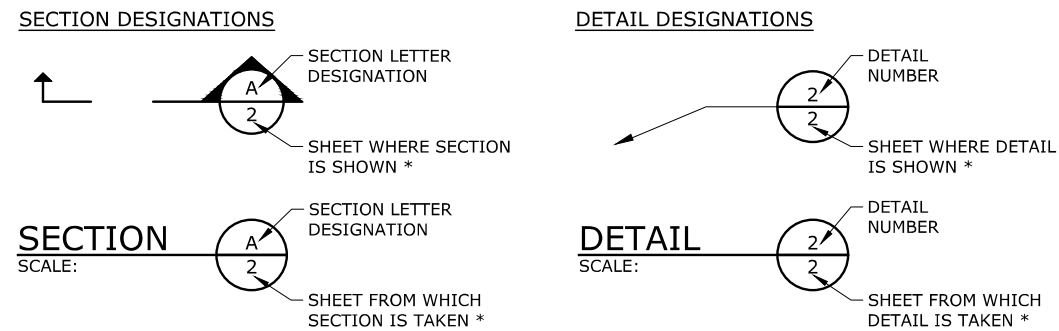
BY	REVISION	NO.	DATE	DESIGNED: JRL	DRAWN: DKH	CHECKED: TPB	APPROVED: TPB	
								
SCALE	VERT: AS SHOWN	HORIZ: AS SHOWN						NOTICE IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01								
PROJECT NAME:				SHEET TITLE:				
ABBREVIATIONS								
		DATE: JUNE 2018		PROJECT: 18-2161.202		SHEET: G-2		
						2 of 10		

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PIPE SYMBOLS

PLANT	SCHEMATIC	
		WELDED JOINT
		FLANGED JOINT
		GROOVED END JOINT
		MECHANICAL JOINT
		PUSH-ON JOINT (RUBBER GASKET)
		FLANGED COUPLING ADAPTER
		DOUBLE BALL FLEXIBLE EXTENSION COUPLING
		FLEXIBLE COUPLING W/ THRUST RING
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		BLIND FLANGE
		CAP
		LONG SLEEVE
		FLEXIBLE COUPLING
		CAPPED END OR PLUGGED END
		FITTING

SECTION AND DETAIL DESIGNATIONS



* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH.

VALVE SYMBOLS

PLANT	SCHEMATIC	
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE
		BALL VALVE
		BALANCING VALVE
		DIAPHRAGM VALVE
		PLUG VALVE (TOP)
		PLUG VALVE (SIDE)
		3-WAY PLUG VALVE
		SWING CHECK VALVE
		DOUBLE CHECK ASSEMBLY
		BALL SWING CHECK
		SILENT CHECK VALVE
		PRESSURE REDUCING VALVE
		ALTITUDE CONTROL VALVE
		SOLENOID VALVE
		RELIEF VALVE
		NEEDLE VALVE
		HOSE VALVE
		REDUCED PRESSURE BACKFLOW PREVENTER W/ GATE VALVES
		HOSE BIBB

MISCELLANEOUS PIPING SYMBOLS

	STRAINER
	SIGHT GLASS
	PRESSURE GAUGE W/ COCK
	PRESSURE SWITCH W/ COCK
	METER
	SLIP-ON JOINT PIPE
	RESTRAINED JOINT PIPE

TOPOGRAPHIC LEGEND



	EXISTING	PROPOSED
WATERLINE		
ELECTRICITY		
GAS		
TELEPHONE/TELEMETRY		
CABLE TELEVISION		
SANITARY SEWER LINE		
SANITARY SEWER FORCE MAIN		
STORM DRAIN		
CULVERT		
ABANDON PIPE		
DRAINAGE DITCH		
FENCE		
CHAIN LINK FENCE		
TEMPORARY SILT FENCE		
GUARDRAIL		
ROCK WALL		
TREE/BUSH LINE		
CENTERLINE		
EASEMENT/PROPERTY LINE		
RIGHT-OF-WAY		
EDGE OF PAVEMENT/AC		
EDGE OF GRAVEL		
CURB		
SIDEWALK		
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR		
MANHOLE		
CLEAN-OUT		
CATCH BASIN/FIELD INLET		
THRUST BLOCK		
VALVE		
AIR INJECTION ASSEMBLY		
BLOW-OFF ASSEMBLY		
AIR RELEASE ASSEMBLY		
FIRE HYDRANT ASSEMBLY		
WATER METER		
PULL BOX/JUNCTION BOX		
UTILITY POLE		
GUY WIRE		
LIGHT POST		
MAILBOX		
SIGN		
BENCHMARK		
TREE DECIDUOUS		
TREE CONIFEROUS		
TREE TO BE REMOVED		
SURFACE ELEVATION	+ 176.63	+ 176.63

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		RENEWS 12-31-18	
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PROJECT NAME: CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01			
SHEET TITLE: SYMBOLS AND LEGEND			
		DATE: JUNE 2018	
PROJECT:	18-2161.202	SHEET: G-3 3 of 10	

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GENERAL NOTES

1. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES AND SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING SHALL SUFFICIENTLY PRECEDE LAYING OF PIPE TO ALLOW REQUIRED ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK. DEFLECT PIPE AS REQUIRED AND WITHIN MANUFACTURER'S TOLERANCES TO AVOID EXISTING UTILITIES AND COMPLETE TIE-INS.
2. CONTRACTOR SHALL APPLY FOR AND OBTAIN RIGHT-OF-WAY (ROW) STREET PERMITS FROM THE CITY OF OREGON CITY BEFORE BEGINNING CONSTRUCTION WORK WITHIN THE ROW. CONTRACTOR SHALL INCLUDE TRAFFIC CONTROL AND TRAFFIC DETOUR PLANS, AND SITE PLAN WITH PERMIT APPLICATIONS TO THE CITY OF OREGON CITY FOR REVIEW.
3. BACKFILL AND SURFACING REQUIREMENTS ARE IDENTIFIED ON THE DRAWINGS. SEE SPECIFICATIONS AND STANDARD WEST LINN DETAIL WL-200. BACKFILL FOR PIPE TRENCHES UNDER PAVED AREAS SHALL BE CLASS B.
4. ALL CONCRETE SHALL BE A MINIMUM OF 3000 PSI STRENGTH.
5. LOCATIONS OF EXISTING UTILITIES ARE BASED ON INFORMATION SUPPLIED BY THE UTILITIES AND CONSIDERED APPROXIMATELY ONLY. AS REQUIRED BY STATE LAW, THE CONTRACTOR SHALL OBTAIN UTILITY LOCATES PRIOR TO COMMENCING CONSTRUCTION, CONTACT UTILITIES PRIOR TO CONSTRUCTION AND COMPLY WITH PROVISIONS OF ORS 757.541 TO 757.571.
6. RESTRAIN ALL VALVES, TEES, BENDS, AND FITTINGS UNLESS OTHERWISE NOTED.
7. ALL FLANGE CONNECTIONS TO BE PROVIDED WITH FULL-FACE GASKETS.
8. PROVIDE POLYETHYLENE ENCASEMENT FOR ALL PIPING WITHIN TEN (10) FEET OF EXISTING GAS MAIN ACCORDING TO ANSI/AWWA C105/A21.5.
9. CONTRACTOR TO LEAVE EXPOSED AND INSPECT WITH OWNER/ENGINEER ALL PIPE CLOSURE LOCATIONS, RESTRAINED EXISTING JOINTS AND EXPLORATORY CUT-IN RECONNECTION, UNDER NORMAL OPERATING PRESSURE PRIOR TO BACKFILLING. ANY LEAKS OBSERVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. UNLESS NOTED ON THE DRAWINGS OR SPECIFIED OTHERWISE, ALL WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT VERSION OF CITY OF WEST LINN STANDARDS AND THE OREGON ADMINISTRATIVE RULES (OAR), CHAPTER 333.
11. COMPLY WITH OAR CHAPTER 333 RULES FOR REQUIRED WATERLINE - SEWERLINE SEPARATION AND CROSSING REQUIREMENTS.
12. CONTRACTOR SHALL PROVIDE TEMPORARY BLOW-OFFS AND THRUST BLOCKING AS REQUIRED TO FACILITATE FLUSHING, TESTING, AND DISINFECTION OF WATERLINES. AT COMPLETION OF DISINFECTION, REMOVE TEMPORARY BLOW-OFFS AND REPLACE WITH PERMANENT CONNECTIONS. TEMPORARY BLOW-OFFS SHALL BE CONSTRUCTED PER WEST LINN STANDARD DETAIL WL-404B.
13. CUT INTO EXISTING WATERLINE WILL REQUIRE TEMPORARY SHUTDOWNS OF EXISTING FACILITIES. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE OWNER, PROVIDING A MINIMUM OF 72 HOURS ADVANCE NOTICE PRIOR TO PERFORMING CUT IN WORK. SEE SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION REQUIREMENTS. OPERATION OF VALVES SHALL BE BY CITY OF WEST LINN ONLY.
14. ALL STRUCTURES, LOTS, CURBS, SIDEWALKS, FENCES, WALLS, GUY WIRES, GUARDRAILS, PIPING AND UTILITIES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITION UNLESS OTHERWISE SPECIFIED.
15. CONTRACTOR TO COMPLY WITH OREGON CITY AND CLACKAMAS COUNTY PERMITS AND REQUIREMENTS FOR WORK IN, AND RESTORATION OF, COUNTY AND CITY PROPERTY AND ROADWAYS, RESPECTIVELY.
16. ALL PIPING SHALL HAVE A MINIMUM OF 3 FEET OF COVER FROM TOP OF PIPE TO STREET GRADE OR OTHER FINISHED GRADE, UNLESS OTHERWISE SHOWN OR APPROVED BY ENGINEER.
17. DO NOT REMOVE TREES (GREATER THAN 6" DIAMETER) UNLESS THEY HAVE BEEN PREVIOUSLY IDENTIFIED IN THE FIELD FOR REMOVAL PER ENGINEER.
18. FINAL LOCATIONS OF ALL VALVE BOXES SHALL BE FIELD LOCATED PER ENGINEER.
19. PROVIDE "AS CONSTRUCTED" DRAWINGS INDICATING ALL CHANGES IN GRADE, ALIGNMENT, FITTINGS AND MATERIALS INSTALLED AND ANY OTHER UTILITIES OR OBSTACLES NOT SO INDICATED ON THESE PLANS.
20. ELEVATIONS ARE BASED ON DOGAMI LIDAR - NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
20. AT THE END OF EACH WORK DAY ALL OPEN TRENCHES SHALL BE BACKFILLED AND ALL TRENCHES WITHIN STREETS SHALL BE TEMPORARILY PAVED OR COVERED TO THE SATISFACTION OF THE ENGINEER.
21. IF ASBESTOS CEMENT PIPE IS ENCOUNTERED DURING CONSTRUCTION, REMOVE AND DISPOSE OF EXISTING ASBESTOS CEMENT PIPE FOR WATERLINE CONSTRUCTION ACCORDING TO STATE AND LOCAL REQUIREMENTS.
22. CONTRACTOR SHALL COMPLY WITH ALL OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) REQUIREMENTS IN THE DISPOSAL OF SUPER CHLORINATED WATER. SEE TECHNICAL SPECIFICATIONS.
23. NO UNDERGROUND WORK SHALL BE "BURIED" UNTIL INSPECTED AND APPROVED BY THE ENGINEER.
24. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR WORK WITHIN CLACKAMAS COUNTY PUBLIC WORKS YARD TO THE OWNER FOR APPROVAL. A COPY OF THE APPROVED TRAFFIC CONTROL PLAN SHALL BE PROVIDED TO THE ENGINEER AND AVAILABLE AT THE WORK SITE. THE OWNER RESERVES THE RIGHT TO ADD TO OR MODIFY TRAFFIC CONTROL REQUIREMENTS AS MAY BE NECESSARY TO EFFECTIVELY CONTROL TRAFFIC AND TO ASSURE PUBLIC SAFETY.
25. CONTRACTOR SHALL PROTECT TRAFFIC AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, WARNING SIGNS, TRAFFIC CONES PER OWNER REQUIREMENTS IN ACCORDANCE WITH MUTCD (INCLUDING OREGON SUPPLEMENTS). ALL TRAFFIC CONTROL MEASURES SHALL BE APPROVED AND IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITY.
26. SAWCUTTING OF EXISTING SURFACES, WHICH INCLUDES ASPHALTIC CONCRETE AND CONCRETE SURFACES, SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE UNIT PRICES OF THE BID.

	PROJECT: 18-2161.202 DATE: JUNE 2018
	PROJECT NAME: CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01
SHEET TITLE: GENERAL NOTES	SCALE: VERT: AS SHOWN HORIZ: AS SHOWN NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
	NO. DATE REVISION BY
DESIGNED: JRL DRAWN: DKH CHECKED: TPB APPROVED: TPB	SHEET G-4 4 of 10

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EXIST PRV VAULT AND BLOW-OFF DRAIN, BAC-T SAMPLING LOC

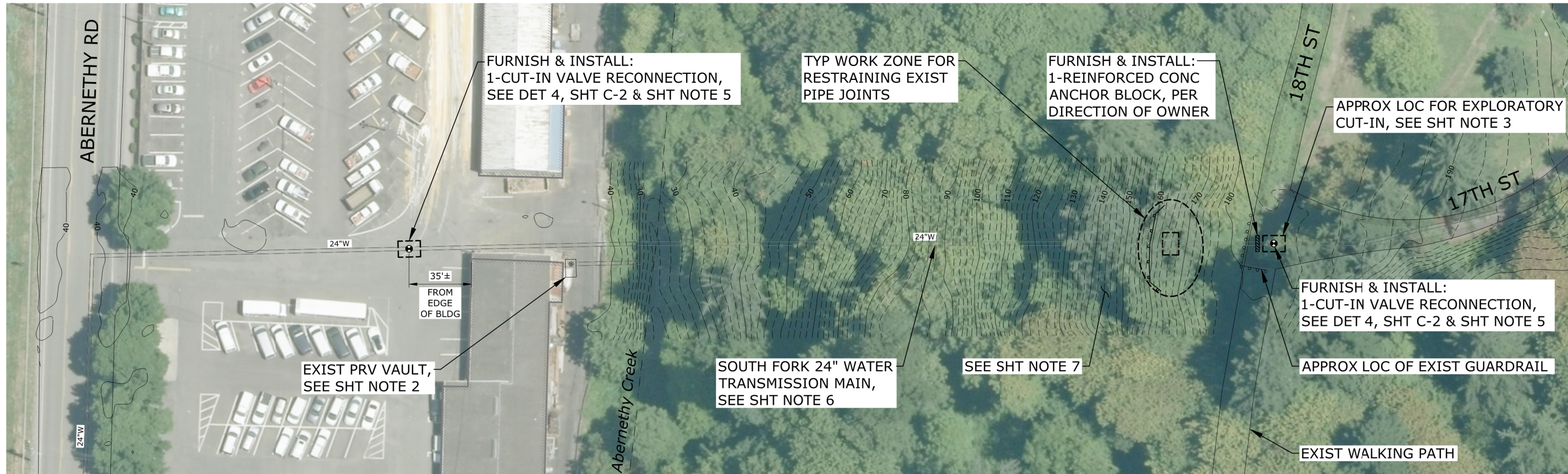
SEE SHT C-1

EXIST ISOLATION VALVES AND METER VAULT INCLUDES TAP FOR CHLORINE INJECTION FOR PIPELINE DISINFECTION

PLAN
SCALE: 1"=100'

NO. DATE	REVISION
DESIGNED: JRL	
DRAWN: DKH	
CHECKED: TPB	
APPROVED: TPB	
<p>PROJECT NAME: CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01</p> <p>SHEET TITLE: PROJECT OVERVIEW AND DISINFECTION PLAN</p>	
PROJECT: 18-2161.202	DATE: JUNE 2018
<p>BY: _____</p> <p>SHEET G-5</p> <p>5 of 10</p>	

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PLAN
SCALE: 1"=30'

EROSION CONTROL NOTES

1. CONTRACTOR SHALL FURNISH AND INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE CITY OF WEST LINN "EROSION PREVENTION AND SEDIMENT CONTROL - PLANNING AND DESIGN MANUAL", REVISION DECEMBER 2008.
2. THE IMPLEMENTATION OF THE EROSION AND SEDIMENTATION CONTROL PLAN, MEASURES AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE FACILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/ LANDSCAPING IS ESTABLISHED.
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTION OF ALL WORK, ADJACENT PROPERTIES AND DOWNSTREAM FACILITIES FROM EROSION AND SILTATION DURING THE COURSE OF THE WORK. ANY DAMAGE RESULTING FROM SUCH EROSION AND SILTATION SHALL BE CORRECTED AT THE SOLE EXPENSE OF THE CONTRACTOR.
4. THE EROSION AND SEDIMENTATION CONTROL FACILITIES SHOWN ON THE PLANS PRESENT BASIC CONCEPTS ONLY AND ARE FOR INFORMATIONAL PURPOSES ONLY.
5. THE FOLLOWING REFERENCED DETAILS ARE FROM THE ABOVE REFERENCED PLANNING AND DESIGN MANUAL:
 - A. SEDIMENT FENCE - DETAIL DRAWING 4-23

EROSION CONTROL LEGEND

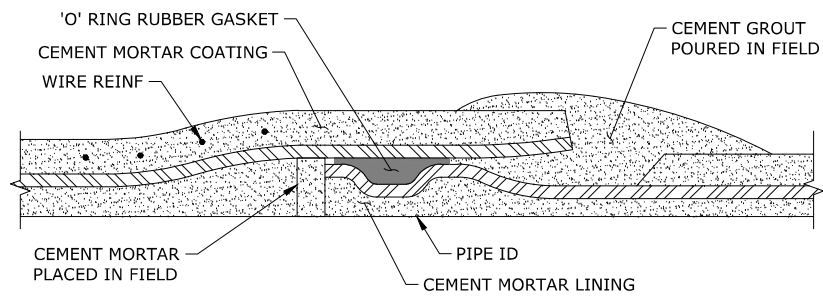
SEDIMENT FENCING

SHEET NOTES:

1. MAXIMUM ALLOWABLE SHUTDOWN TIME FOR EXISTING 24" POTABLE WATER TRANSMISSION MAIN SHALL BE 30 CALENDAR DAYS. SEE SPECIFICATION SECTION 01 12 16 - WORK SEQUENCE, FOR ADDITIONAL REQUIREMENTS REGARDING WORK SEQUENCE AND CONSTRAINTS.
2. CONTRACTOR TO COORDINATE WITH CITY PER SPECIFICATIONS TO SHUT DOWN, DRAIN AND DECHLORINATE 24" PIPELINE THROUGH EXISTING PRV VAULT DRAIN PIPING LOCATED ADJACENT TO ABERNETHY CREEK PRIOR TO PIPE CUT-INS.
3. AFTER PIPELINE HAS BEEN DRAINED, CONTRACTOR TO REMOVE A SECTION OF EXISTING 24" STEEL PIPELINE AND PERFORM CCTV INSPECTION OF PIPE INTERIOR TO LOCATE EXISTING STEEL PIPE JOINTS AND DOCUMENT CONDITION OF EACH JOINT. LIMITS OF PIPELINE INSPECTION SHALL BE FROM EXPLORATORY CUT-IN LOCATION TO ABERNATHY CREEK. CONTRACTOR TO MARK EXISTING JOINT LOCATIONS IN THE FIELD AND PROVIDE CCTV DATA TO OWNER AND ENGINEER FOR REVIEW. ONCE PROPOSED RESTRAINT METHODS HAVE BEEN CONFIRMED, CONTRACTOR TO INSTALL CUT-IN VALVE AND RESTORE PIPELINE AT EXPLORATORY CUT-IN LOCATION, PER DETAIL 4, SHEET C-2.
4. AFTER EXISTING PIPE JOINTS HAVE BEEN LOCATED PER NOTE 3, CONTRACTOR TO EXCAVATE LOCATIONS AND RESTRAIN JOINTS PER DETAILS 1 THROUGH 3, SHEET C-2. RESTRAINT METHOD TO BE APPROVED BY OWNER AND ENGINEER FOR EACH JOINT. IT IS ANTICIPATED THAT EXISTING PIPE JOINTS WILL REQUIRE HAND DIGGING DUE TO STEEP GRADE OF SLOPE. EROSION CONTROL SEDIMENT FENCING SHOWN FOR TYPICAL WORK ZONE ON SLOPE IS A MINIMUM REQUIREMENT. SEE EROSION CONTROL NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR TO PROVIDE SHORING FOR CUT-IN VALVE CONNECTIONS TO LIMIT SIZE OF PITS AND DISTURBANCE AREAS TO EXISTING ASPHALT.
6. ORIGINAL PLANS FOR 24" WATER MAIN INCLUDED IN APPENDIX D, SUPPLEMENTARY INFORMATION
7. BASEMAPPING SHOWN WAS DEVELOPED FROM EXISTING GEOGRAPHIC INFORMATION SYSTEM (GIS) DATA, WATERLINE AS-BUILT INFORMATION, AND FIELD OBSERVATIONS. NO TOPOGRAPHICAL SURVEY WAS PERFORMED AS PART OF THE PROJECT DESIGN. CONTRACTOR SHALL BE AWARE THAT CONSTRUCTION WORK AREA ON SLOPE ABOVE ABERNETHY CREEK IS A DENSELY VEGETATED NATURAL GREEN SPACE. EXISTING TREES ARE NOT SHOWN AND SHALL BE PROTECTED BY CONTRACTOR DURING WORK.

	PROJECT: 18-2161.202 DATE: JUNE 2018
	SHEET TITLE: SITE PLAN AND EROSION CONTROL PLAN
PROJECT NAME: CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01	SHEET: C-1 6 of 10
SCALE: VERT.: AS SHOWN HORIZ.: AS SHOWN NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	REVISIONS:
REGISTERED PROFESSIONAL ENGINEER WEST Linn, OR 97146 EXPIRES: MAY 23, 2021 RENEWS: 12-31-18	NO. DATE REVISION BY
DESIGNED: JRL DRAWN: DKH CHECKED: TPB APPROVED: TPB	SHEET: C-1 6 of 10

G:\PDX_Projects\18\2161 - West Linn South Fork 24 Inch Pipe Restraint\CAD\Sheets\18-2161-OR-C.dwg C-2 5/31/2018 4:33 PM DKH 21.0s (LMS Tech)

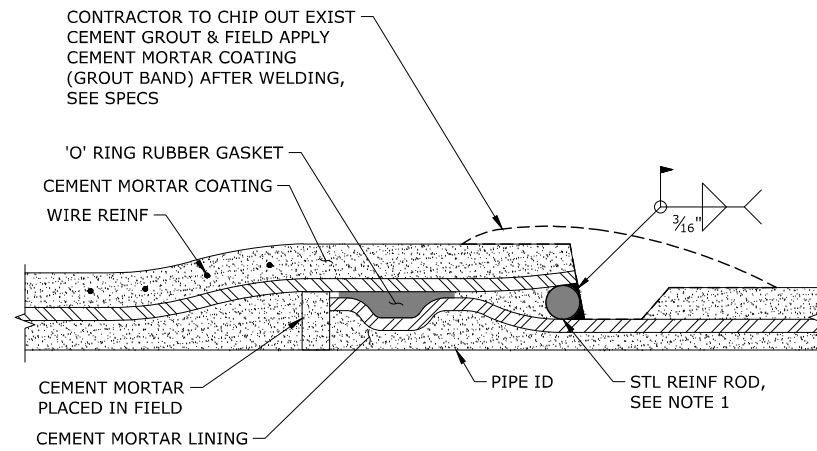


NOTES:

- EXISTING JOINT DETAIL PROVIDED FOR INFORMATIONAL PURPOSES. CONTRACTOR TO CONFIRM EXISTING PIPELINE DIMENSIONS BEFORE ORDERING MATERIALS. ORIGINAL JOINT DETAIL INCLUDED IN EXISTING 24" SUPPLY LINE PLANS (1972). SEE APPENDIX D, SUPPLEMENTARY INFORMATION, FOR ORIGINAL PLANS.

EXISTING ROLLED-GROOVE STEEL PIPE JOINT

SCALE: NTS

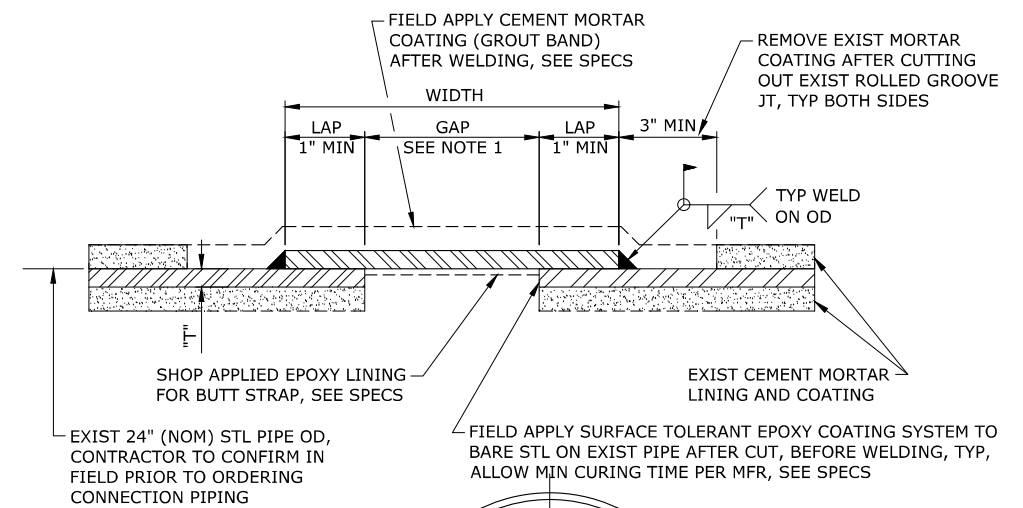


NOTES:

- STEEL REINFORCING ROD SHALL CONFORM TO ASTM A615, GRADE 40 MINIMUM, OR ASTM A36. ROD SHALL BE SIZED AS REQUIRED TO COMPLETE JOINT RESTRAINT AS SHOWN.

JOINT RESTRAINT W/ REINFORCING ROD

SCALE: NTS



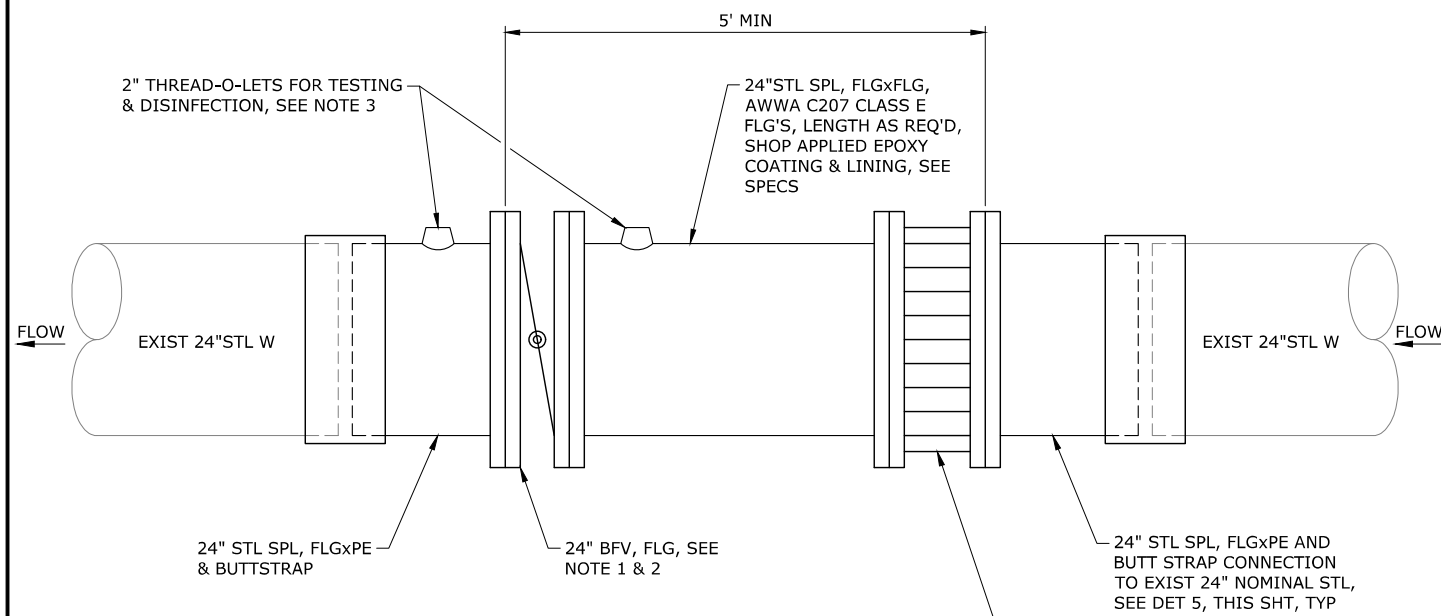
PROVIDE COMPLETE JT PENETRATION WELD FOR CONNECTION OF BUTT STRAP PIECES

NOTE:

- GAP WIDTH AS REQUIRED TO CUT OUT EXISTING ROLLED-GROOVE STEEL PIPE JOINT.

JOINT RESTRAINT WITH BUTT STRAP

SCALE: NTS

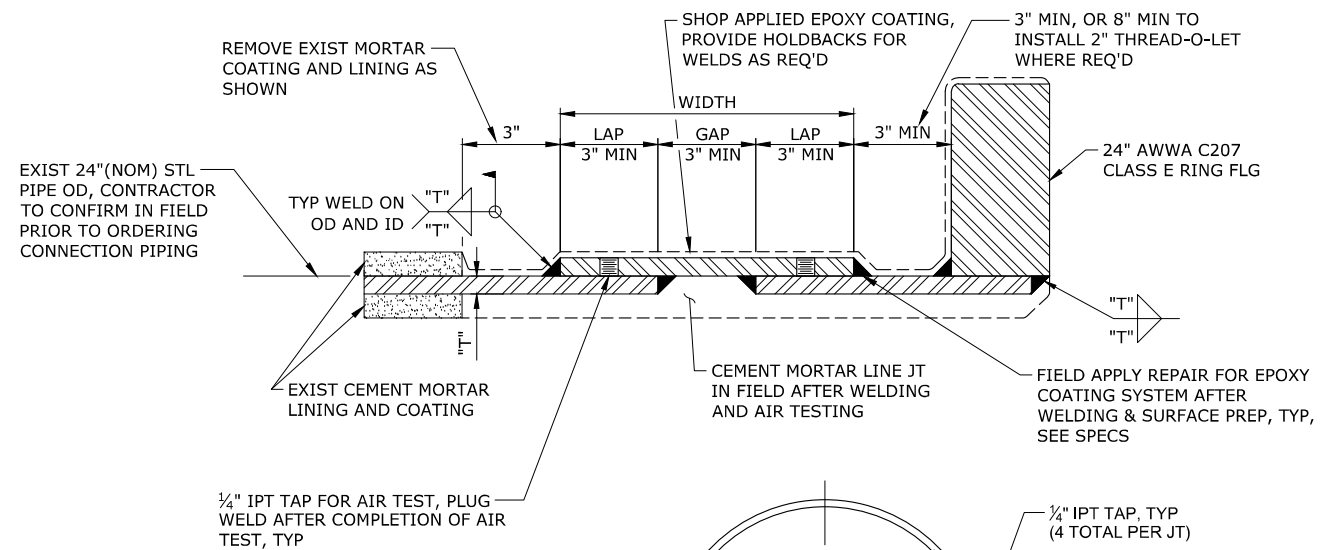


NOTES:

- BUTTERFLY VALVE SHALL BE CLASS 250B PER AWWA C504, FBE COATED AND LINED, WITH DUCTILE IRON BODY AND CLASS 125 FLANGES PER ANSI B16.1 TO MATCH DIMENSIONS OF CONNECTING CLASS E STEEL FLANGES.
- WRAP DISMANTLING JOINT AND BUTTERFLY VALVE WITH TWO LAYERS OF 8 MIL POLY WRAP AND ATTACH TO ADJACENT PIPE WITH POLYETHYLENE BACKED TAPE PRIOR TO BACKFILLING.
- CONTRACTOR TO PROVIDE TEMPORARY PIPING AND VALVES AS REQUIRED TO CONNECT TO THREAD-O-LETS TO COMPLETE HYDROSTATIC TESTING AND DISINFECTION PER SECTION 33 13 00. AFTER TESTING AND DISINFECTION HAS BEEN SUCCESSFULLY COMPLETED, CONTRACTOR TO PLUG, SEAL WELD, AND REPAIR PIPELINE COATING AS REQUIRED.

CUT-IN VALVE RECONNECTION

SCALE: 1"=1'-0"



PROVIDE COMPLETE JT PENETRATION WELD FOR CONNECTION OF BUTT STRAP PIECES

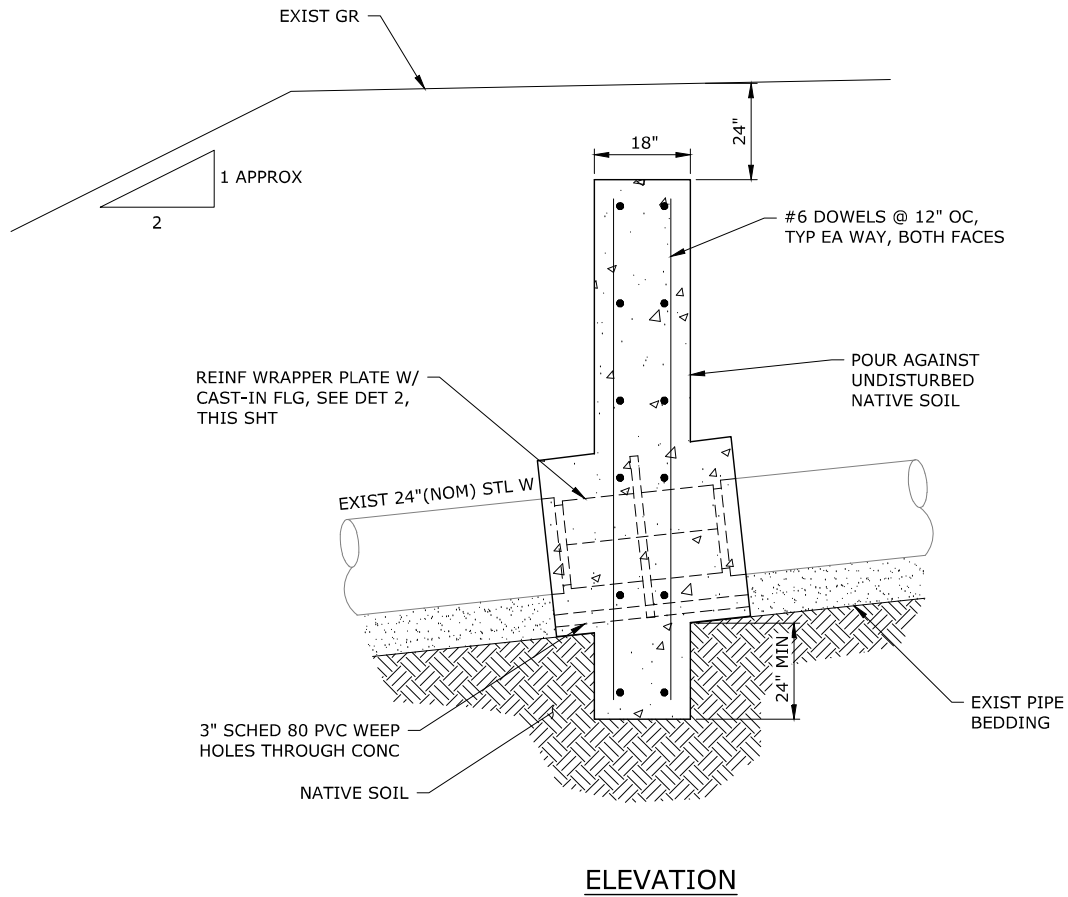
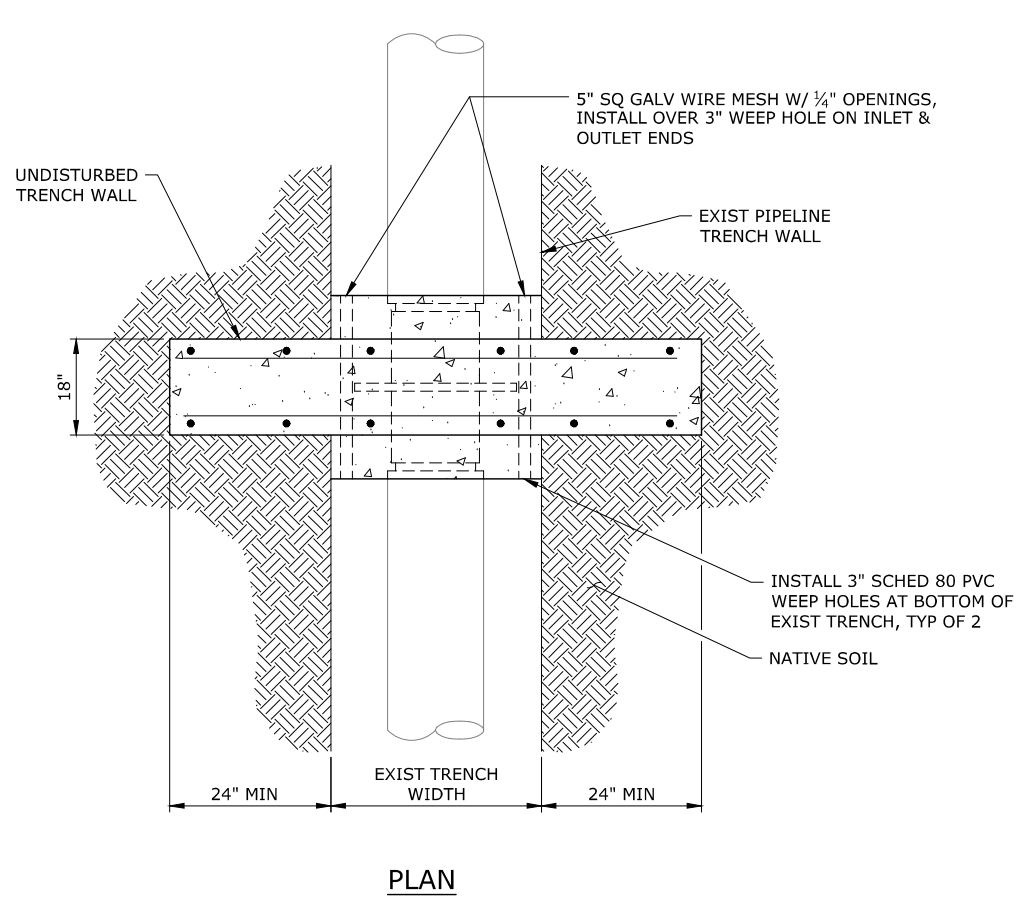
BUTT STRAP JOINT (CONNECTION TO EXISTING)

SCALE: NTS



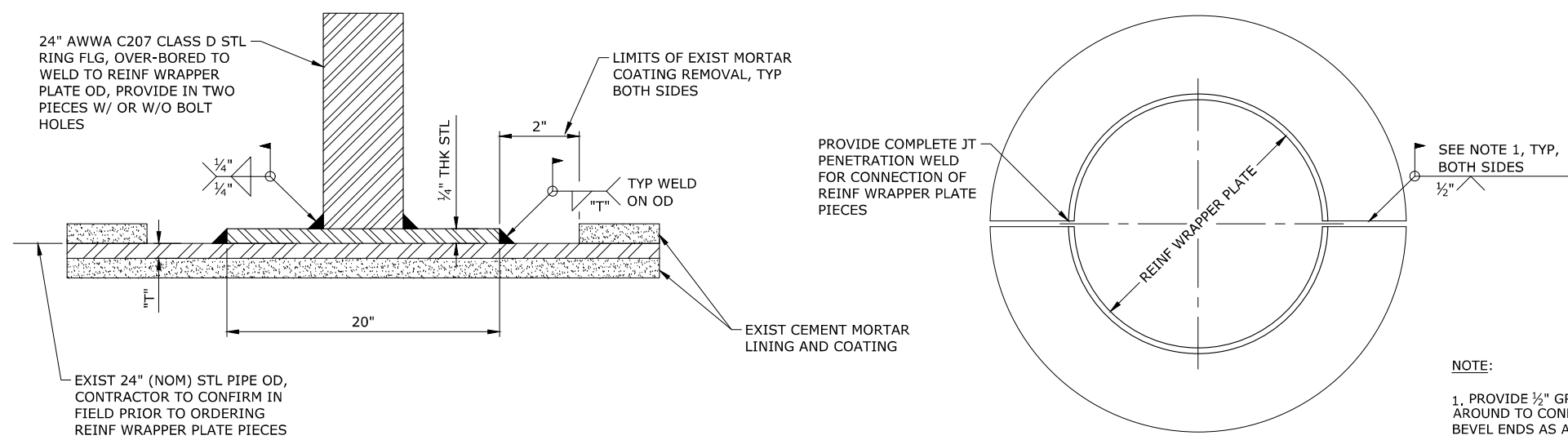
BY		SHEET	C-2	7 of 10
NO.	DATE	DESIGNED: JRL	DRAWN: MBE	CHECKED: TPB
APPROVED: TPB				
SCALE	VERT: AS SHOWN	<p>NOTICE</p> <p>IF THIS BAR DOES NOT MEASURE 1' THEN DRAWING IS NOT TO SCALE</p>		
<p>CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01</p>				
<p>MISCELLANEOUS CIVIL DETAILS - 1</p>				
		<p>DATE: JUNE 2018</p>		
<p>PROJECT: 18-2161-202</p>		<p>DATE: JUNE 2018</p>		

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- NOTES:**
1. CONCRETE ANCHOR BLOCKS SHALL BE CONSTRUCTED USING FORMS AS REQUIRED. REMOVE FORMS AFTER CONCRETE HAS SUFFICIENTLY CURED AND THEN BACKFILL.
 2. ALL CONCRETE SHALL BE COMMERCIAL GRADE CONCRETE, 3000 PSI COMPRESSIVE STRENGTH OR GREATER.
 3. CONFIRM EXISTING OUTSIDE DIAMETER OF 24" NOMINAL STEEL PIPELINE PRIOR TO ORDERING REINFORCING WRAPPER PLATE WITH CAST-IN FLANGE. ALL BARE STEEL SHALL BE FULLY ENCASED IN CONCRETE AS SHOWN.
 4. FURNISH & INSTALL FILTER FABRIC ON 5" SQUARE WIRE MESH INLET COVER PRIOR TO INSTALLING INLET COVER OVER 3" WEEPHOLES' ENDS. FILTER FABRIC SHALL BE MIRAFI 140N, OR APPROVED EQUAL.
 5. REINFORCED CONCRETE ANCHOR BLOCK TO BE CONSTRUCTED ONLY IF DIRECTED BY OWNER. SEE SECTION 01 12 16, WORK SEQUENCE FOR ADDITIONAL INFORMATION.

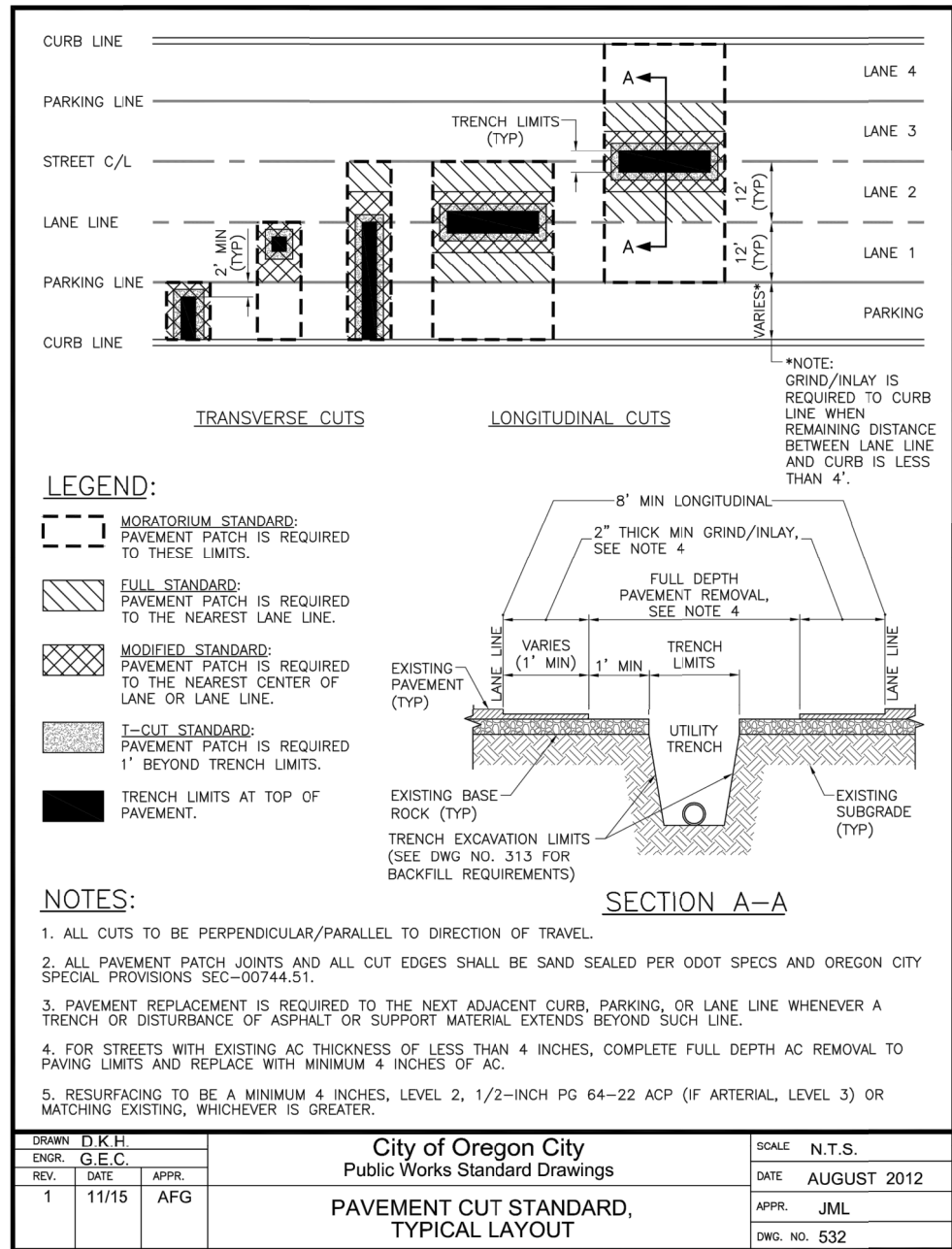
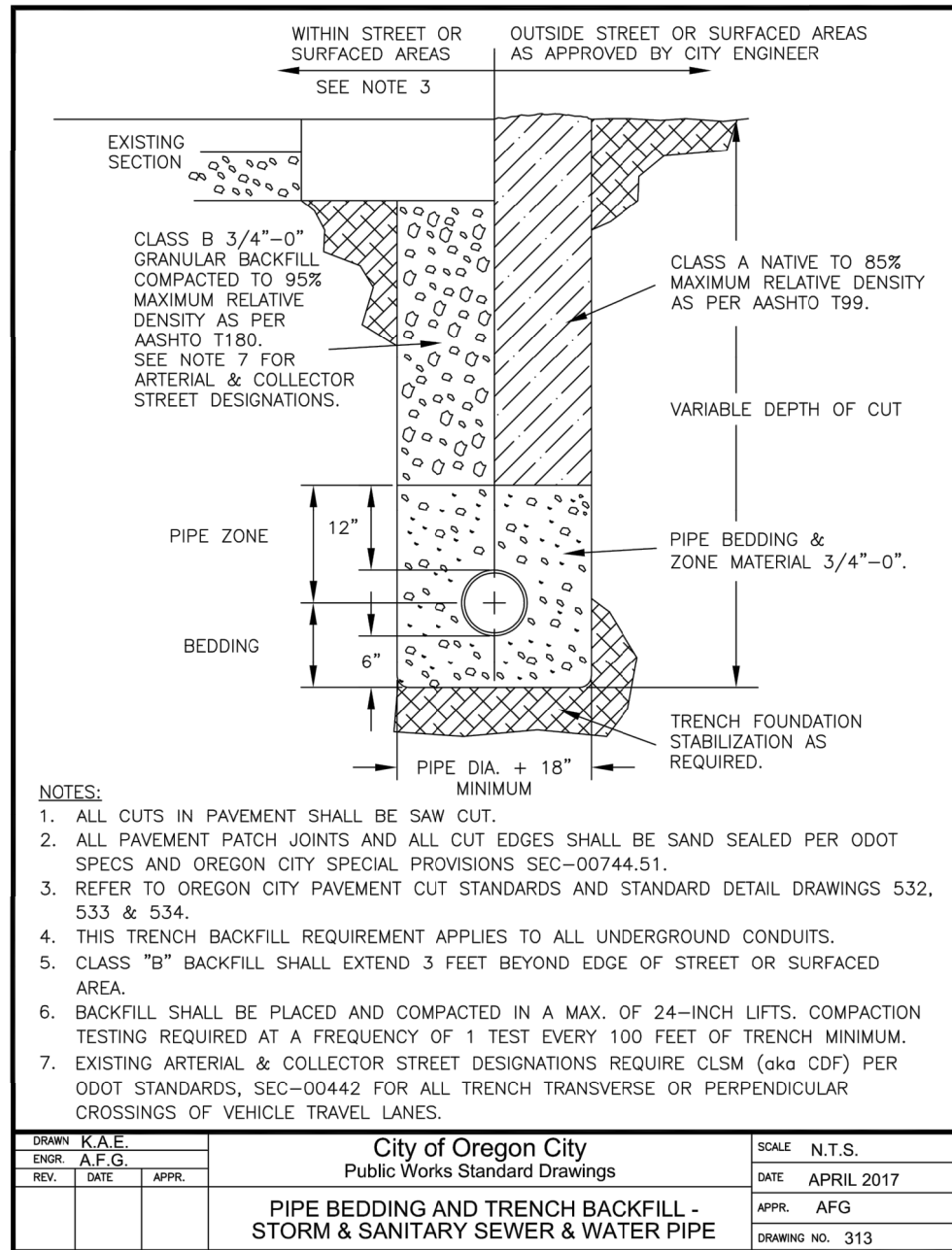
REINFORCED CONCRETE ANCHOR BLOCK 1
SCALE: NTS C-1



- NOTE:**
1. PROVIDE 1/2" GROOVE SEAL WELD ALL AROUND TO CONNECT FLANGE HALVES. BEVEL ENDS AS REQUIRED TO COMPLETE WELD PENETRATION DEPTH SPECIFIED.

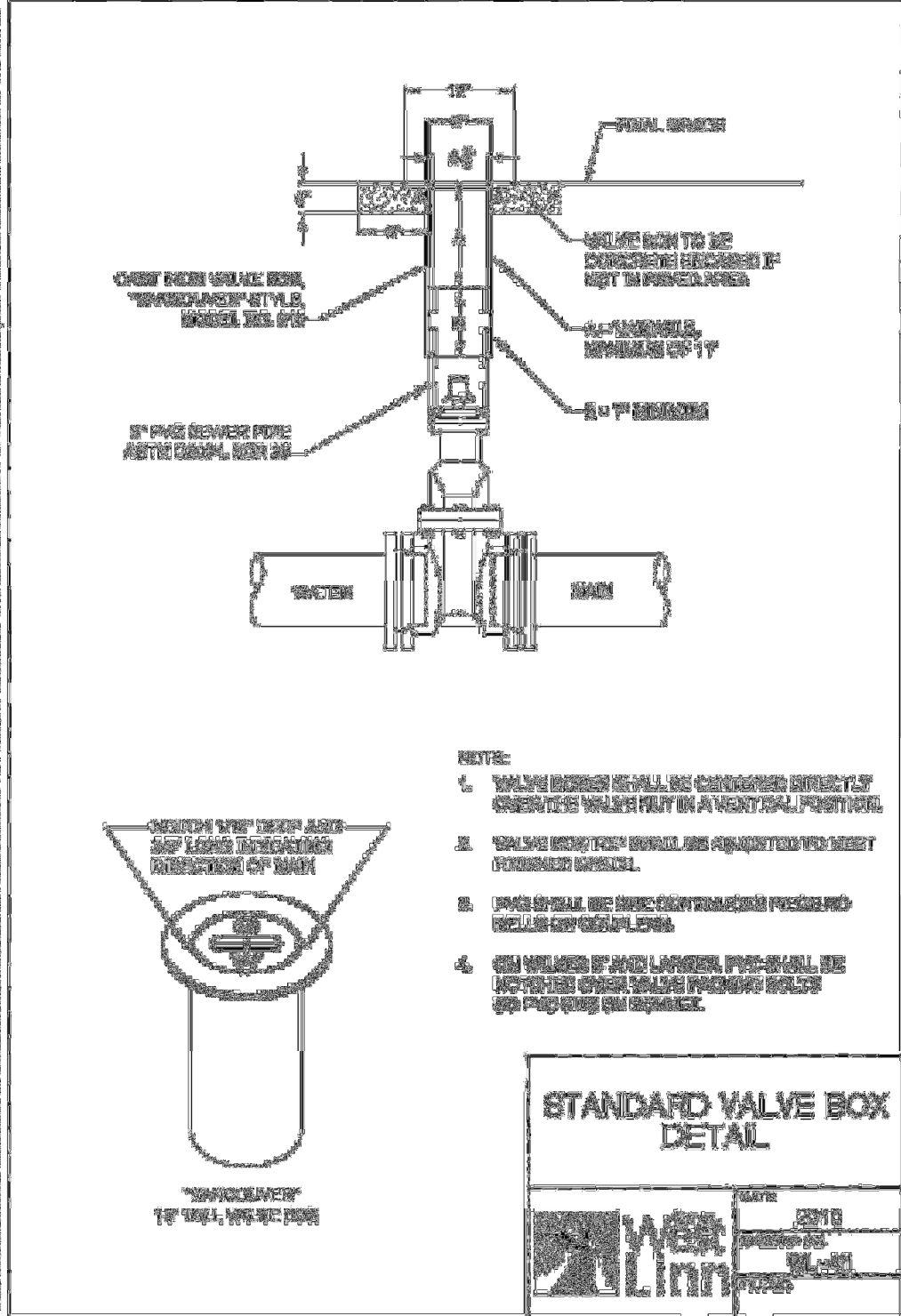
REINFORCING WRAPPER PLATE WITH CAST-IN FLANGE 2
SCALE: NTS

BY	REVISION	NO.	DATE	DESIGNED: JRL	DRAWN: MBE	CHECKED: TPB	APPROVED: TPB
SCALE: VERT: AS SHOWN HORIZ: AS SHOWN NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE							
PROJECT NAME: CITY OF WEST LINN SOUTH FORK 24-INCH PIPE RESTRAINT PROJECT NO. PW-18-01				SHEET TITLE: MISCELLANEOUS CIVIL DETAILS - 2			
				PROJECT: 18-2161.202 DATE: JUNE 2018			
				SHEET C-3 8 of 10			



BY		REVISION		SHEET	C-4	9 of 10
NO.	DATE	DESIGNED: JRL	DRAWN: MBE	CHECKED: TPB	APPROVED: TPB	
SCALE	VERT: AS SHOWN	HORIZ: AS SHOWN	NOTICE IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE			
PROJECT NAME:	CITY OF WEST LINN					MISCELLANEOUS CIVIL DETAILS - 3
	SOUTH FORK 24-INCH PIPE RESTRAINT					
	PROJECT NO. PW-18-01					
SHEET TITLE:						
		DATE:	JUNE 2018			
PROJECT:	18-2161.202	DATE:				

THIS DETAIL IS SUBJECT TO CHANGE WITHOUT NOTICE. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THIS DETAIL.





CITY OF
**West
Linn**

**APPENDIX D:
SUPPLEMENTARY
INFORMATION**

Public Works Department
22500 Salamo Road
West Linn, Oregon 97068
Telephone: (503) 722-5500
Fax: (503) 656-4106

Solicitation Number: PW-18-01

Appendix D

SUPPLEMENTARY INFORMATION

APPENDIX D – SUPPLEMENTARY INFORMATION

TABLE OF CONTENTS

- A. Existing drawings, “City of West Linn, Oregon - Water Improvement Phase I; 24”
Supply Line,” (1972).



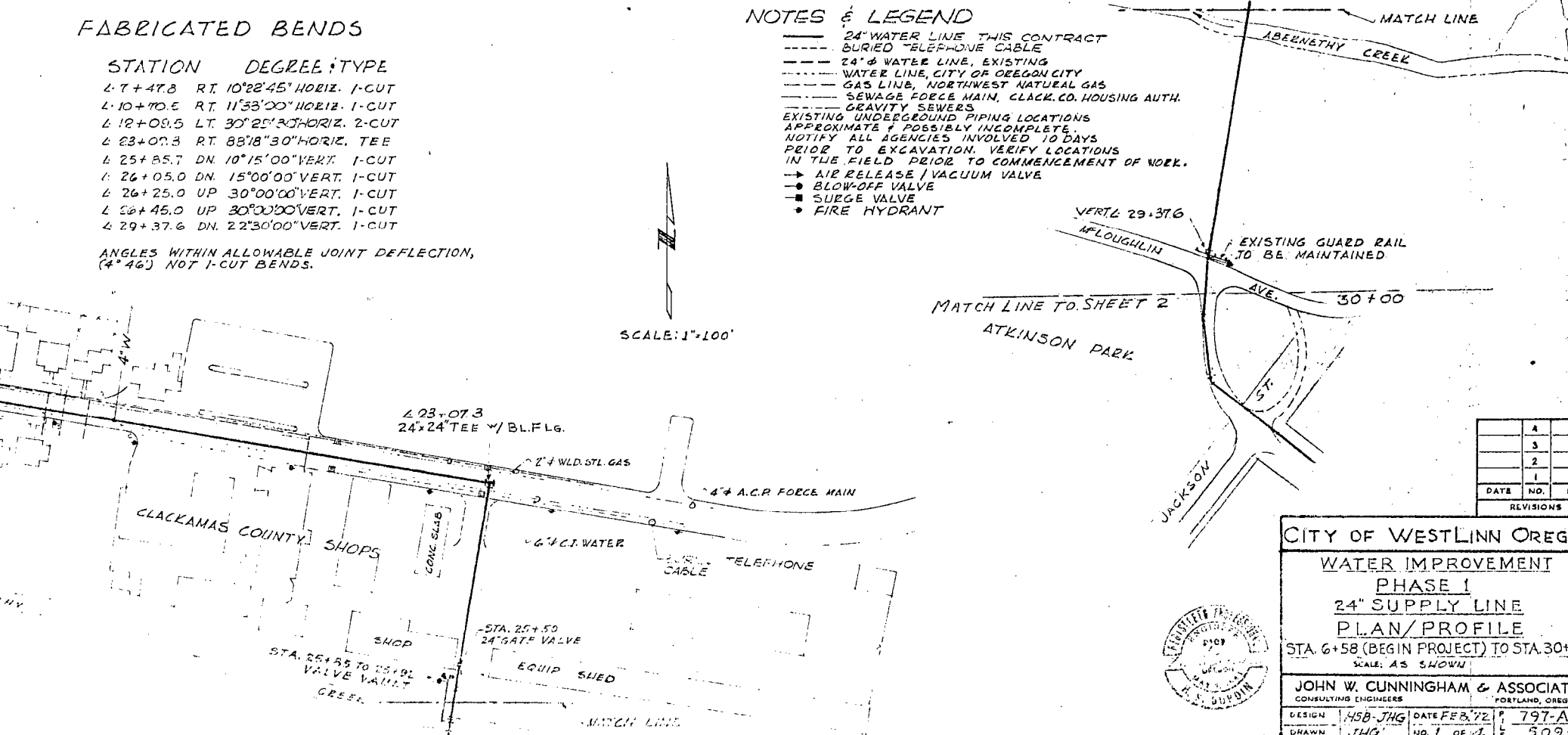
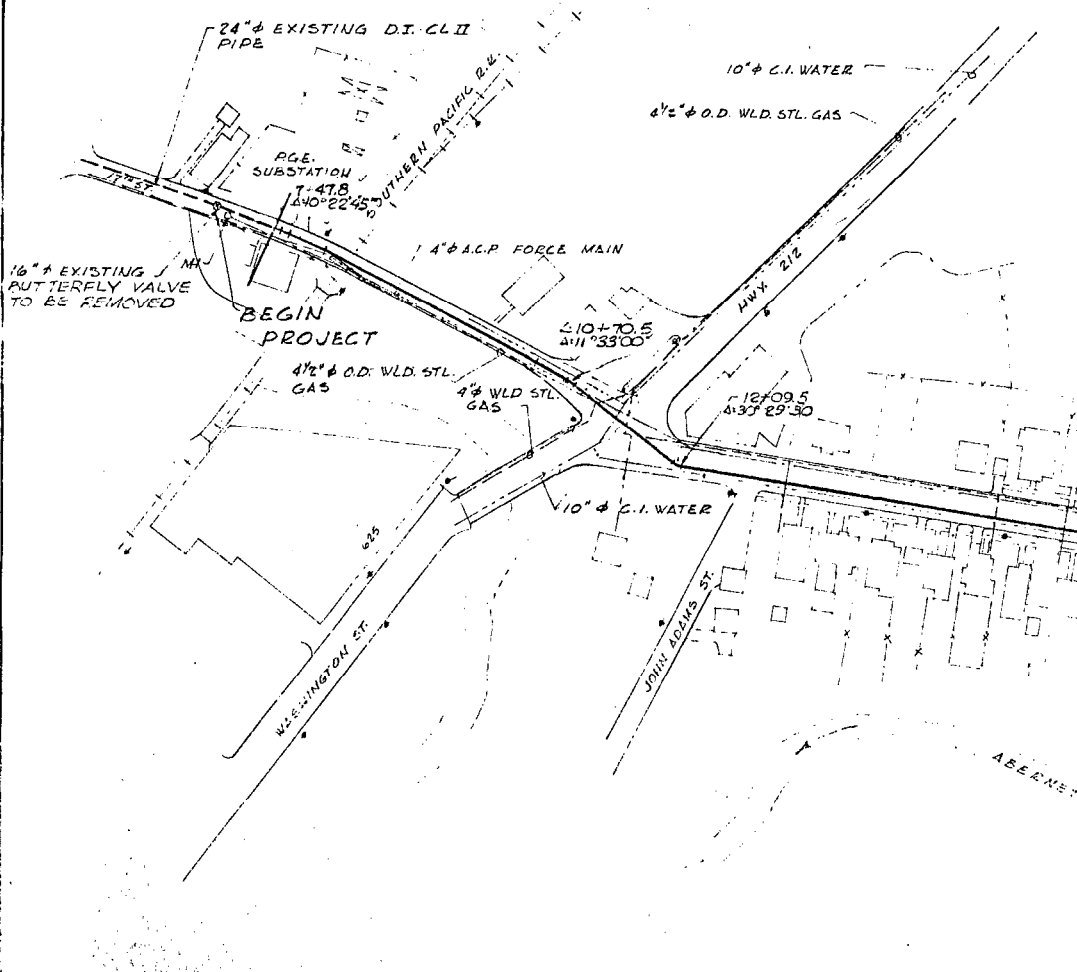
FABRICATED BENDS

STATION	DEGREE	TYPE
4+7+47.8	RT 10°22'45"	HORIZ. 1-CUT
4+10+70.5	RT 11°33'00"	HORIZ. 1-CUT
4+12+08.5	LT 30°25'30"	HORIZ. 2-CUT
4+23+07.3	RT 88°18'30"	HORIZ. TEE
4+25+85.7	DN 10°15'00"	VERT. 1-CUT
4+26+05.0	DN 15°00'00"	VERT. 1-CUT
4+26+25.0	UP 30°00'00"	VERT. 1-CUT
4+29+45.0	UP 30°00'00"	VERT. 1-CUT
4+29+37.6	DN 22°30'00"	VERT. 1-CUT

ANGLES WITHIN ALLOWABLE JOINT DEFLECTION, (4°46') NOT 1-CUT BENDS.

NOTES & LEGEND

- 24" WATER LINE THIS CONTRACT
- - - BURIED TELEPHONE CABLE
- - - 24" WATER LINE, EXISTING
- - - WATER LINE, CITY OF OREGON CITY
- - - GAS LINE, NORTHWEST NATURAL GAS
- - - SEWAGE FORCE MAIN, CLACK CO. HOUSING AUTH.
- - - GRAVITY SEWERS
- EXISTING UNDERGROUND PIPING LOCATIONS APPROXIMATE & POSSIBLY INCOMPLETE. NOTIFY ALL AGENCIES INVOLVED 10 DAYS PRIOR TO EXCAVATION. VERIFY LOCATIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK.
- AIR RELEASE / VACUUM VALVE
- BLOW-OFF VALVE
- SURGE VALVE
- FIRE HYDRANT

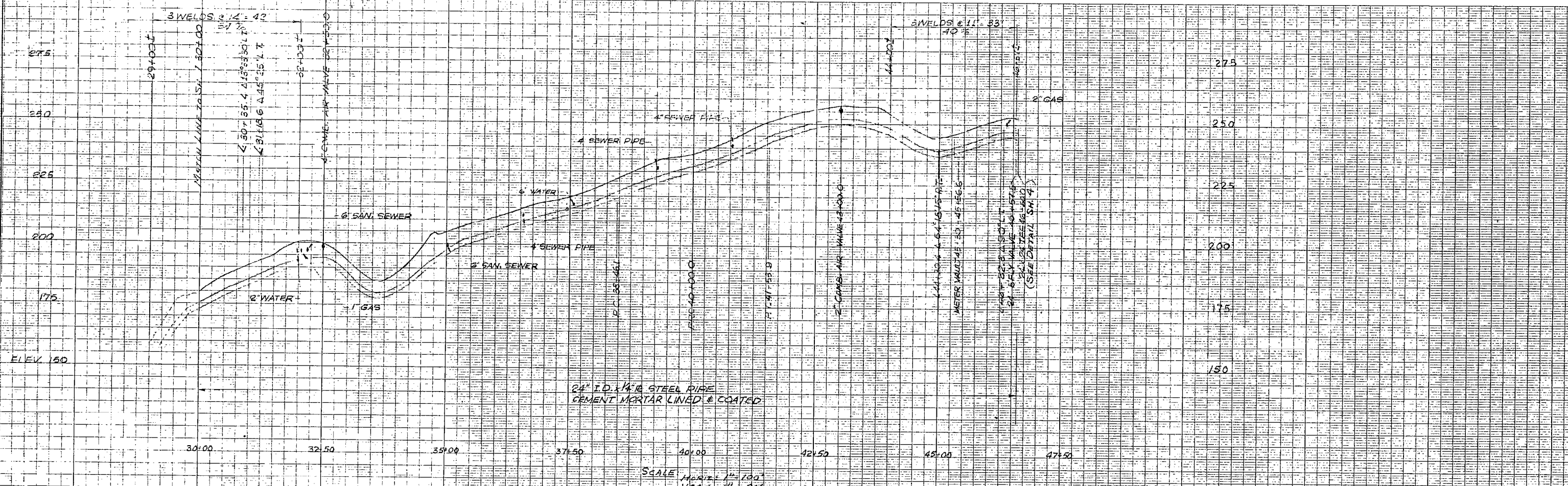


CITY OF WEST LINN OREGON
WATER IMPROVEMENT
PHASE I
24" SUPPLY LINE
PLAN/PROFILE
 STA. 6+58 (BEGIN PROJECT) TO STA. 30+00
 SCALE: AS SHOWN

JOHN W. CUNNINGHAM & ASSOCIATES
 CONSULTING ENGINEERS
 PORTLAND, OREGON

DESIGN: JHG DATE: FEB. 72
 DRAWN: JHG NO. 1 OF 2

797-A-5
 5095



NOTES & LEGEND

- 24" Ø WATER LINE, THIS CONTRACT
- 24" Ø WATER LINE, SO. FX WATER BD.
- 6" W WATER LINE, CITY OF OREGON CITY
- 2" G GAS LINE, N.W. NATURAL GAS CO.

EXISTING UNDERGROUND PIPING LOCATIONS APPROXIMATE & POSSIBLY INCOMPLETE. NOTIFY ALL AGENCIES INVOLVED 10 DAYS PRIOR TO EXCAVATION. VERIFY LOCATIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK.

COMBINATION AIR VALVE

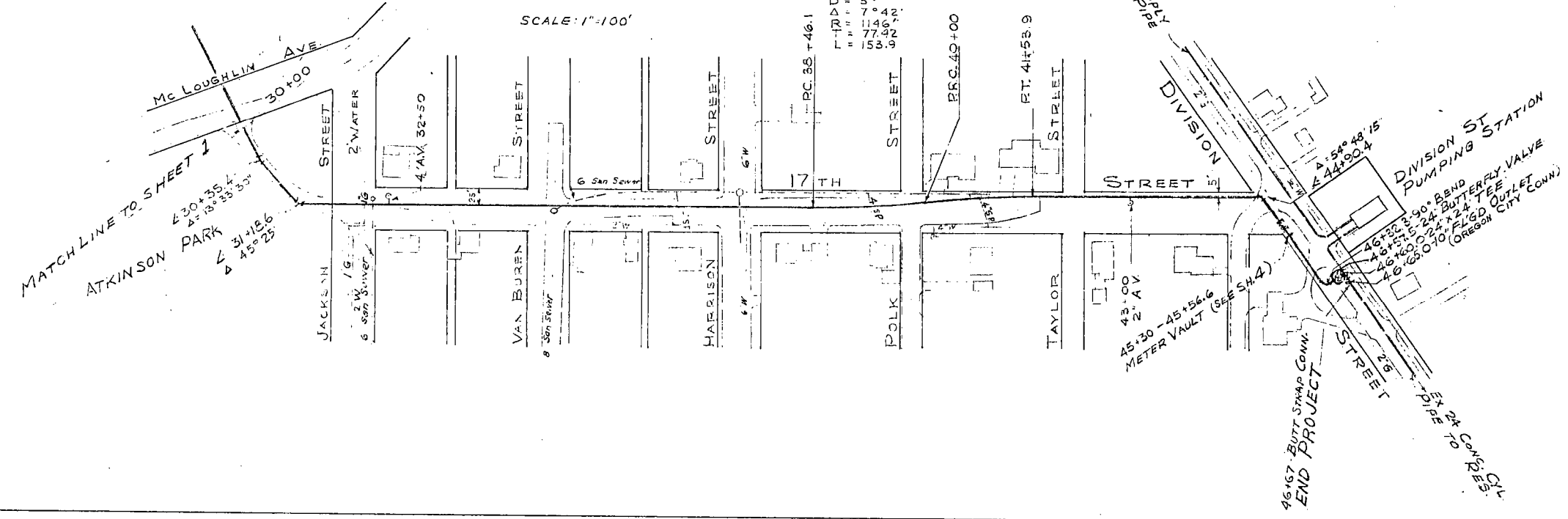
FABRICATED BENDS

STATION	DEGREE & TYPE
430+54.4	Δ 13° 33' 30" LT - 1 CUT
431+18.6	Δ 45° 25' 00" LT - 2 CUT
444+90.4	Δ 54° 48' 15" RT - 2 CUT
446+32.3	Δ 90° 00' 00" LT - 3 CUT

NOTE: ANGLES WITHIN JOINT DEFLECTION (4° 46') NOT 1-CUT BENDS

CURVE DATA

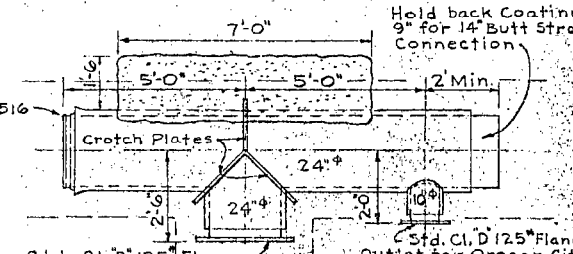
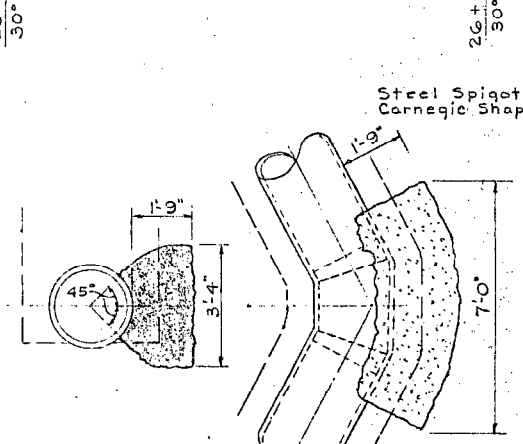
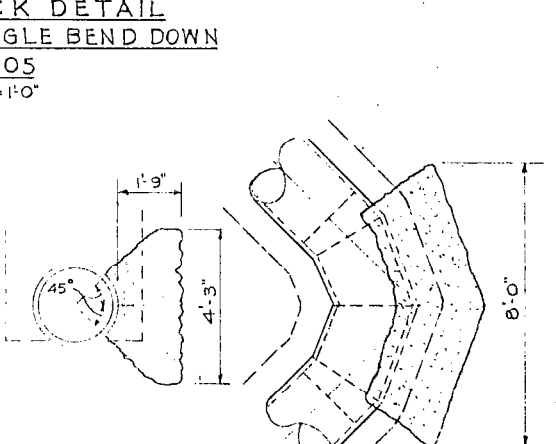
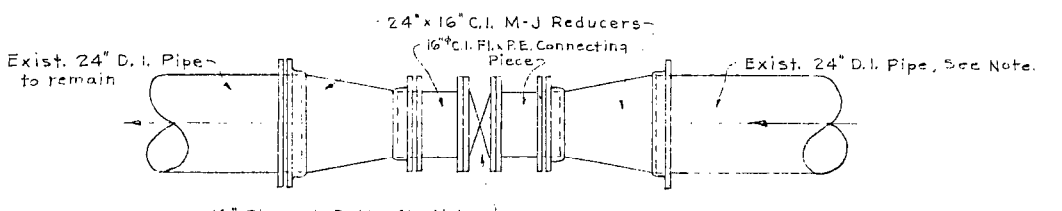
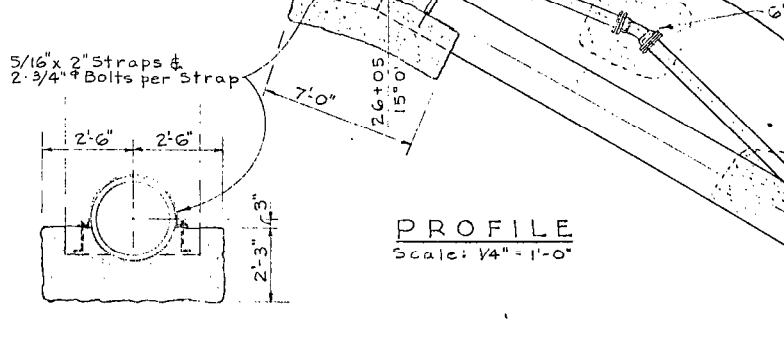
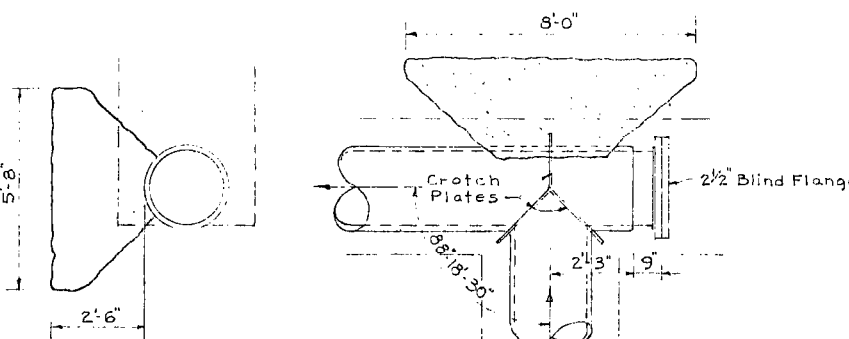
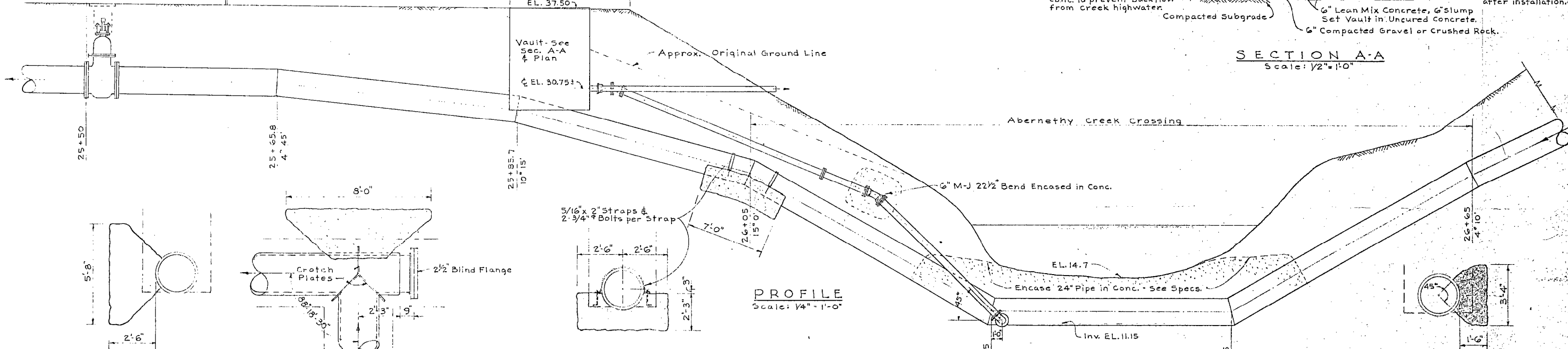
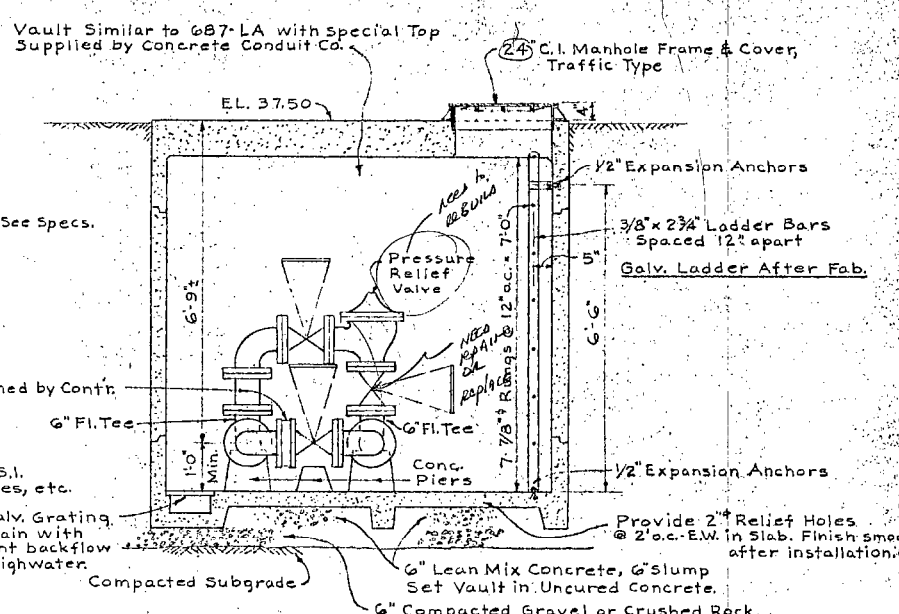
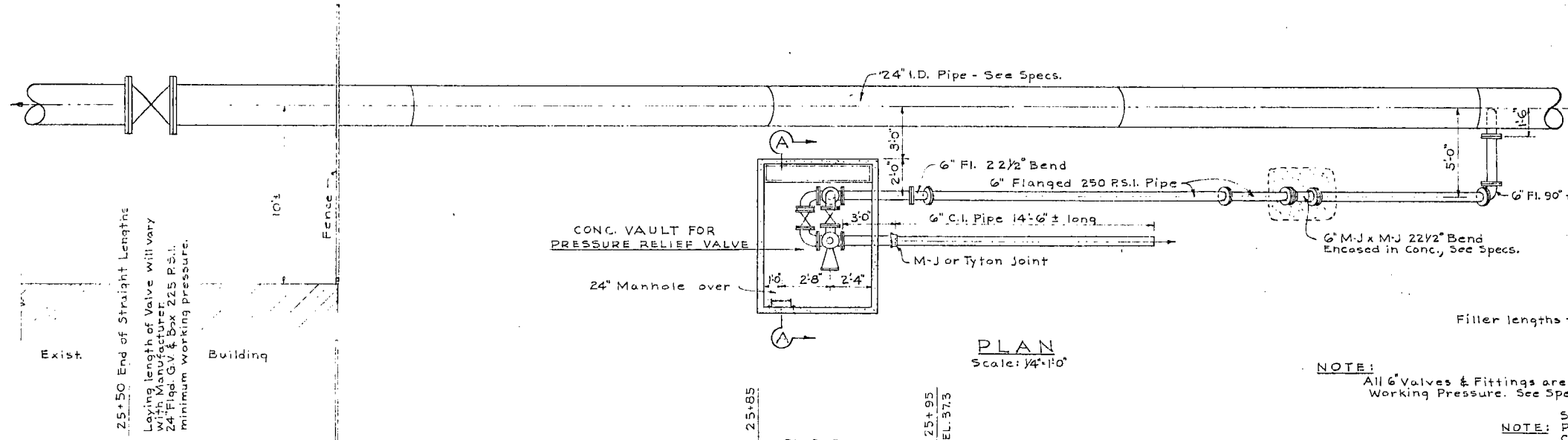
D	5"
Δ	7° 42'
TR	1146'
L	77.42'
E	153.9'



CITY OF WESTLINN, OREGON
 WATER IMPROVEMENT
 PHASE I
 24" SUPPLY LINE
 PLAN/PROFILE
 STA. 30+00-46+67 (END PROJECT)

NO.	DATE	BY	DESIGN	DRAWN	DATE	NO. OF SHEETS
4						
3						
2						
1						
DATE	NO.	BY	DESIGN	DRAWN	DATE	NO. OF SHEETS
			JRS RDA		FEB. 72	2 OF 4
						797-A-6
						5096

SCALE: AS SHOWN
 JOHN W. CUNNINGHAM & ASSOCIATES
 CONSULTING ENGINEERS
 PORTLAND, OREGON



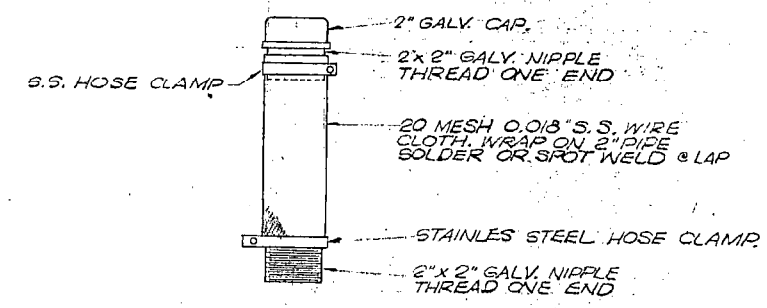
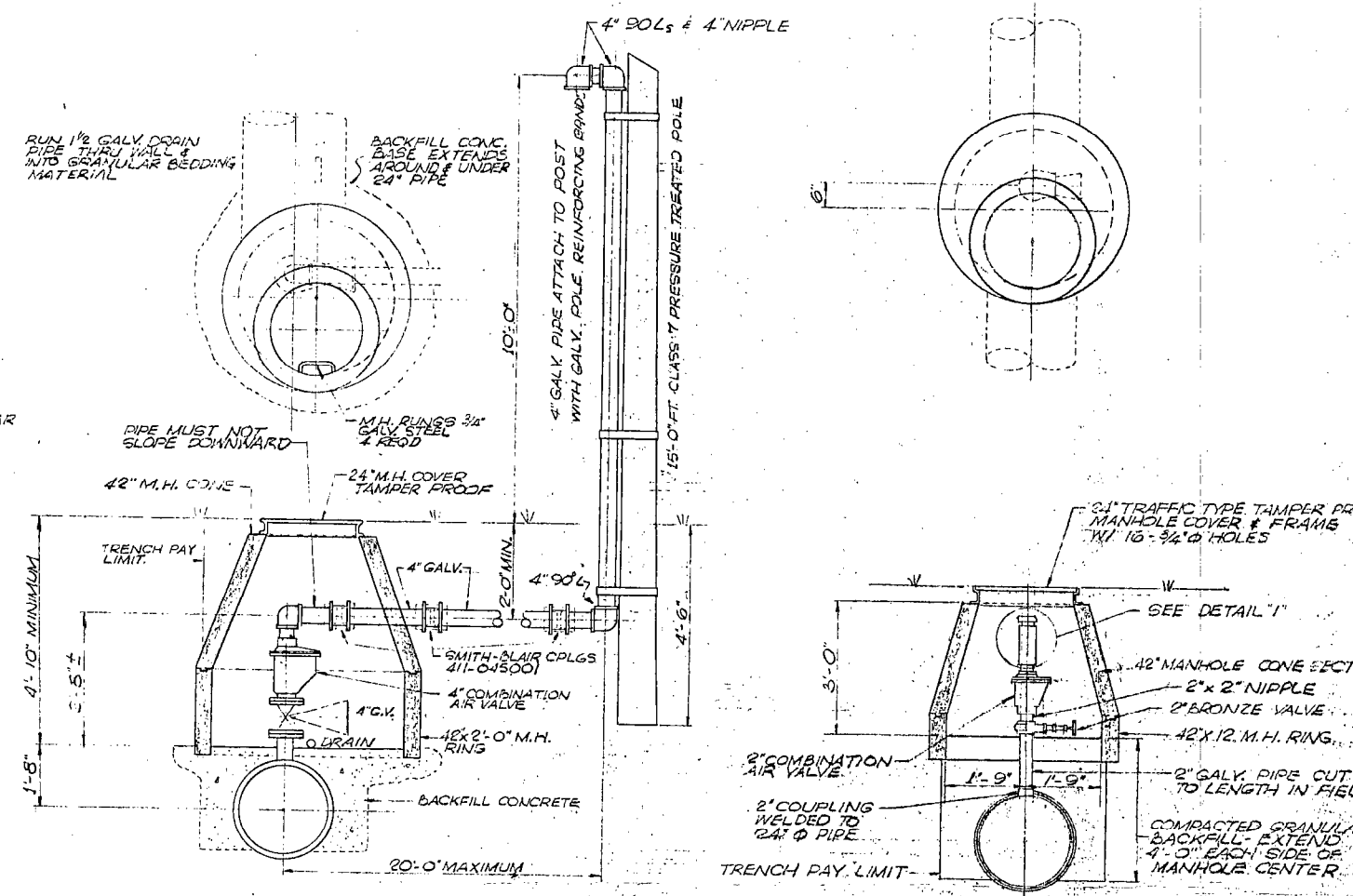
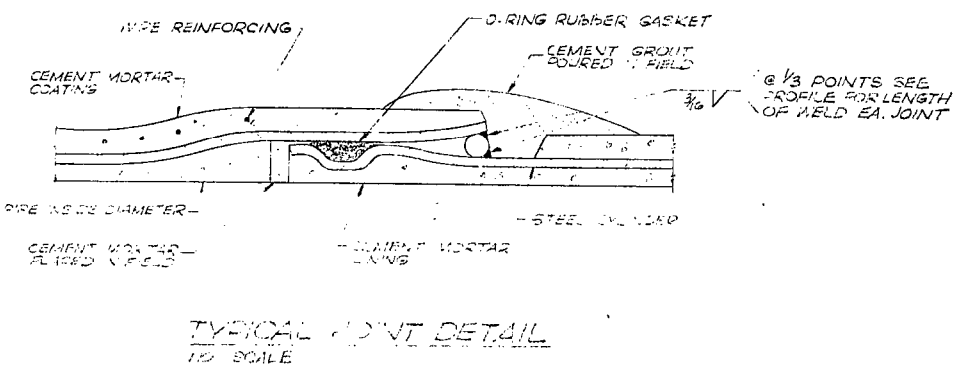
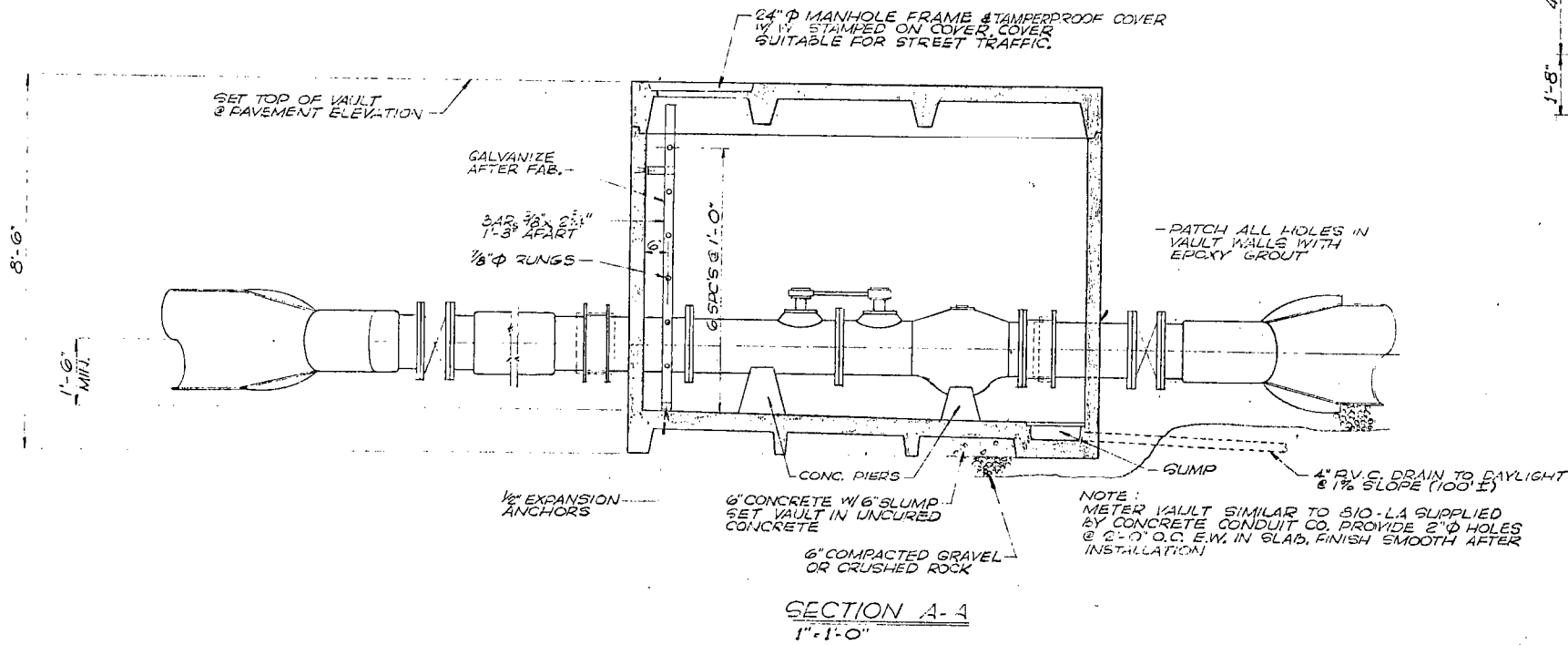
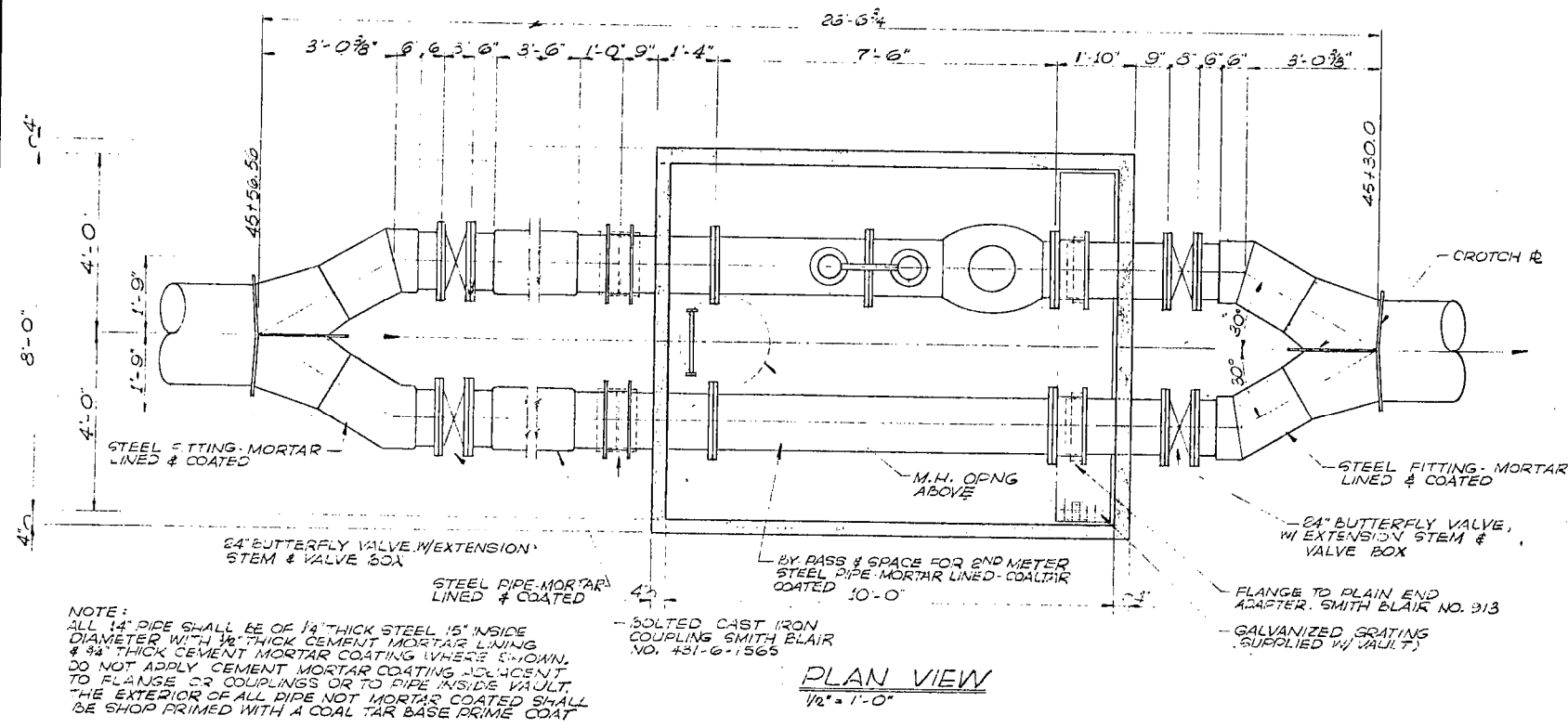
CITY OF WEST LINN, OREGON
WATER IMPROVEMENTS
PHASE I
24" SUPPLY LINE
CREEK CROSSING, RELIEF VALVE
& THRUST BLOCK DETAILS
SCALE: AS SHOWN

NO.	DATE	BY	REVISIONS	DESIGN	DATE	NO.
4						
3						
2						
1						

JOHN W. CUNNINGHAM & ASSOCIATES
CONSULTING ENGINEERS
PORTLAND, OREGON

DESIGN HSB-RDK DATE FEB. 1972
DESIGN BBM NO. 3 OF 4

797-A-7
5097



CITY OF VI
WATER
F
21

SCALE
J
CONSULTING
DESIGN
DRAWN

4			
3			
2			
1			
DATE	NO.	BY	DESIGN
REVISIONS		DRAWN	

