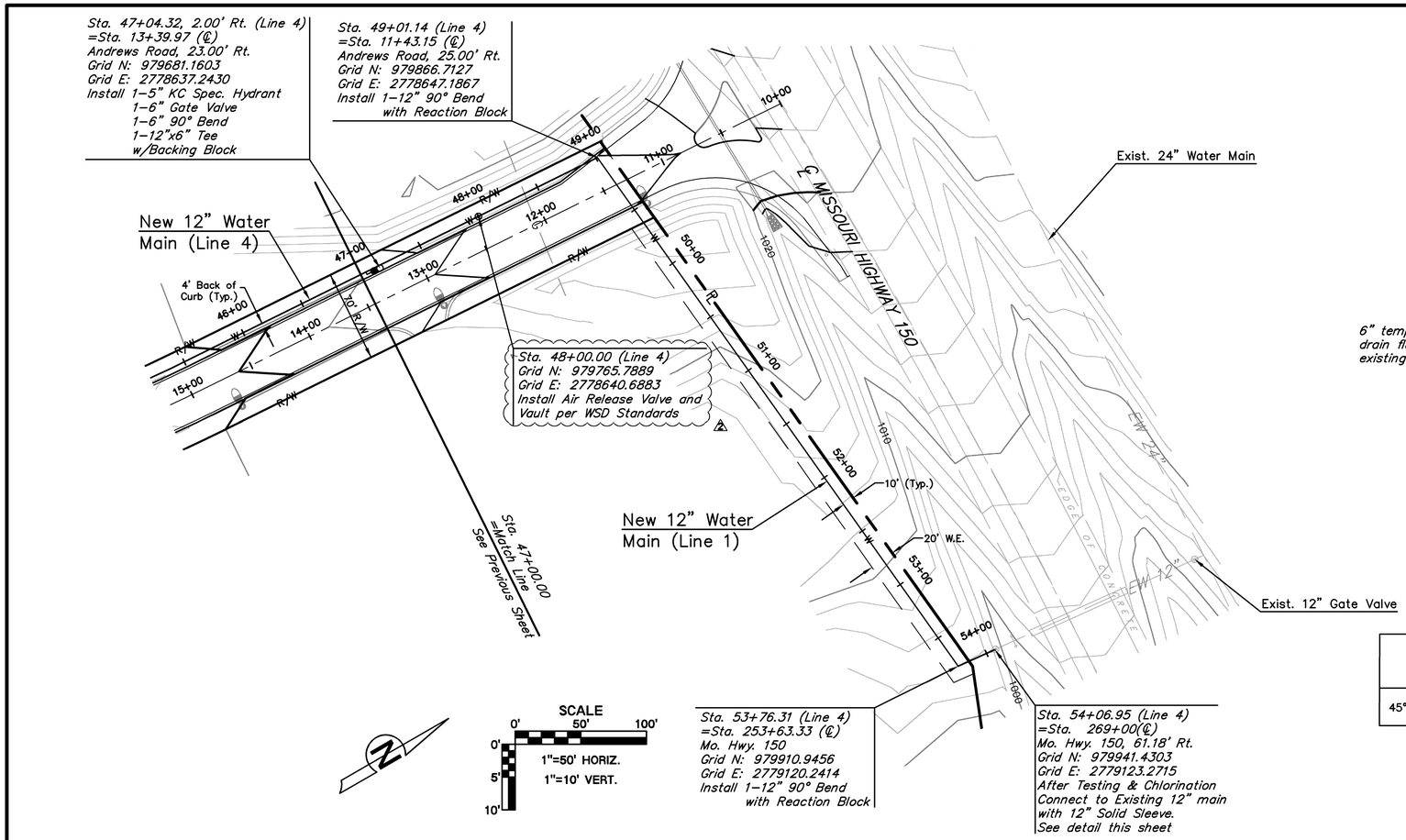
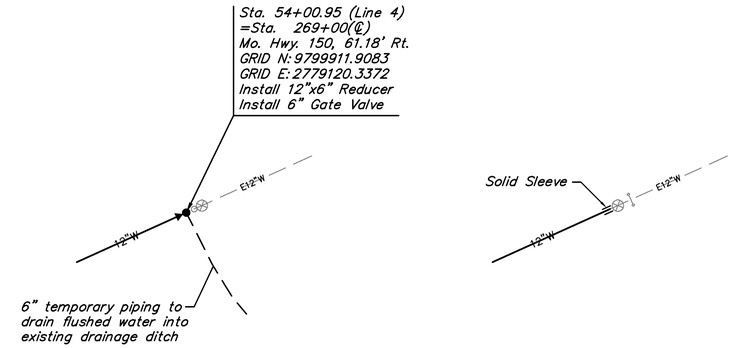




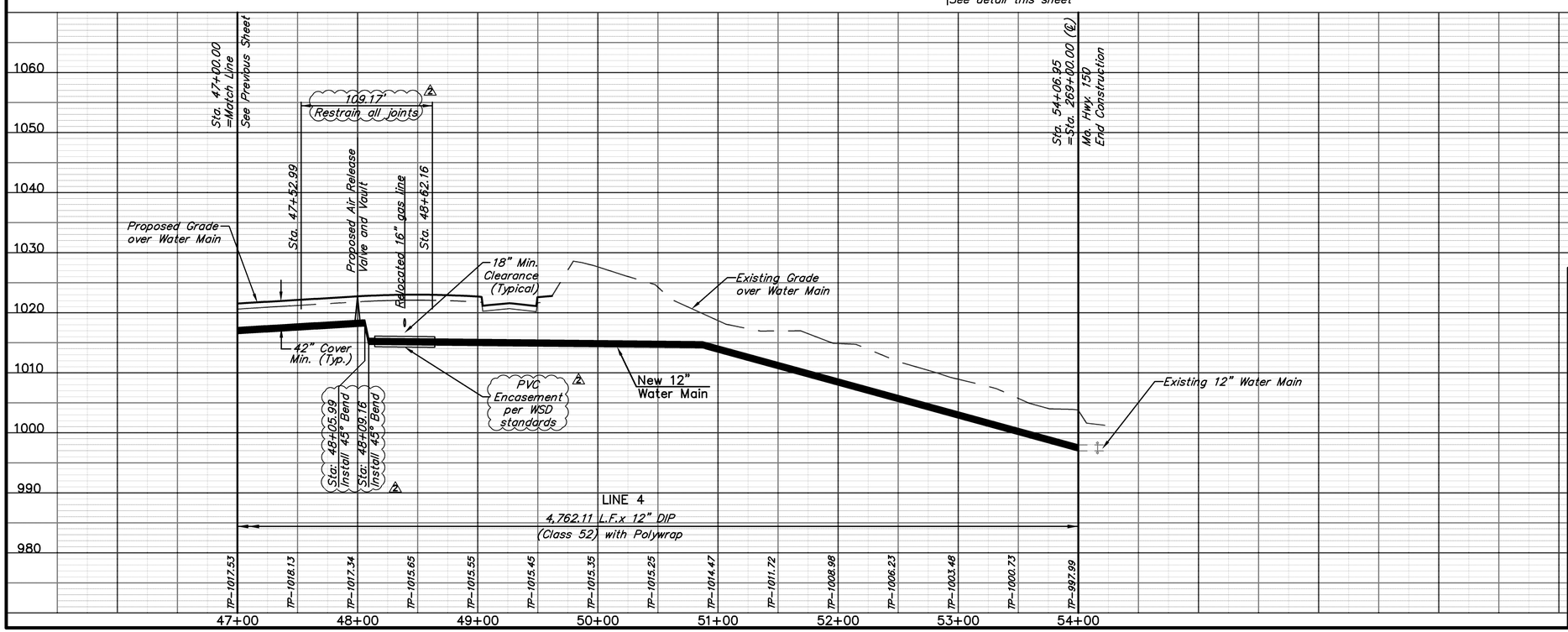
CONNECTION DETAILS
Not to Scale

Note: Contractor shall obtain permit from MODOT prior to any work activity in highway R.O.W.

Fitting	Pipe (Branch) Diameter	Laying Condition	Soil Designation	Depth of Cover, ft.	Design Pressure	Factor of Safety	Restrained Length, ft. (Polywrap)
45° Bend (down)	12"	Type 4	Clay 1	4.0	180	1.5	53

Source:
Ductile Iron Pipe Research Association,
"Thrust Restraint Design for Ductile Iron Pipe" (computer program)

JOINT RESTRAINT TABLE



DATE	P.E. SIGNATURE	DESCRIPTION
09-07-07	R.J.S.	Prepared for Review.
01-25-08	R.J.S.	1 Revised horizontal and vertical alignment
04-02-08	R.J.S.	2 Revised per City comments

Location: N:\Engineering\Richard Gebaur - 07165 & 07166\Drafting\Andrews Road\Water\WA4 - 07165.dwg

WATER PLAN & PROFILE

CENTERPOINT-KCS INTERMODAL CENTER

Reviewed By:	B.A.C.
Designed By:	R.J.S.
Drafted By:	J.W.W.
Lutjen Project No.:	07216

LUTJEN
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planning
engineering
landscape architecture

Professional Engineer Seal:

STATE OF MISSOURI
ROBERT J. SUNTA
E-25751
REGISTERED PROFESSIONAL ENGINEER

for WSD use:

CITY OF KANSAS CITY, MISSOURI WATER SERVICES DEPARTMENT

WATER MAIN RELOCATION

12" Water Main in Andrews Road
Centerpoint - KCS Intermodal Center
Kansas City, Jackson County, Missouri

DRAWN BY:	CHECKED BY:	DATE SUBMITTED:	RANGE	TOWNSHIP	SECTION
J.M.K.	R.J.S.	09-07-07	33 W	51 N	35
CONTRACTOR			DATE COMPLETED:		

CONTRACT NO.	CONTRACT DATE	MAP NO.	WORK ORDER NO.	DRAWING NO.
		J-8319	M-08-28	19747

PROJECT NO. 80 001268

SHEET 6 OF 6