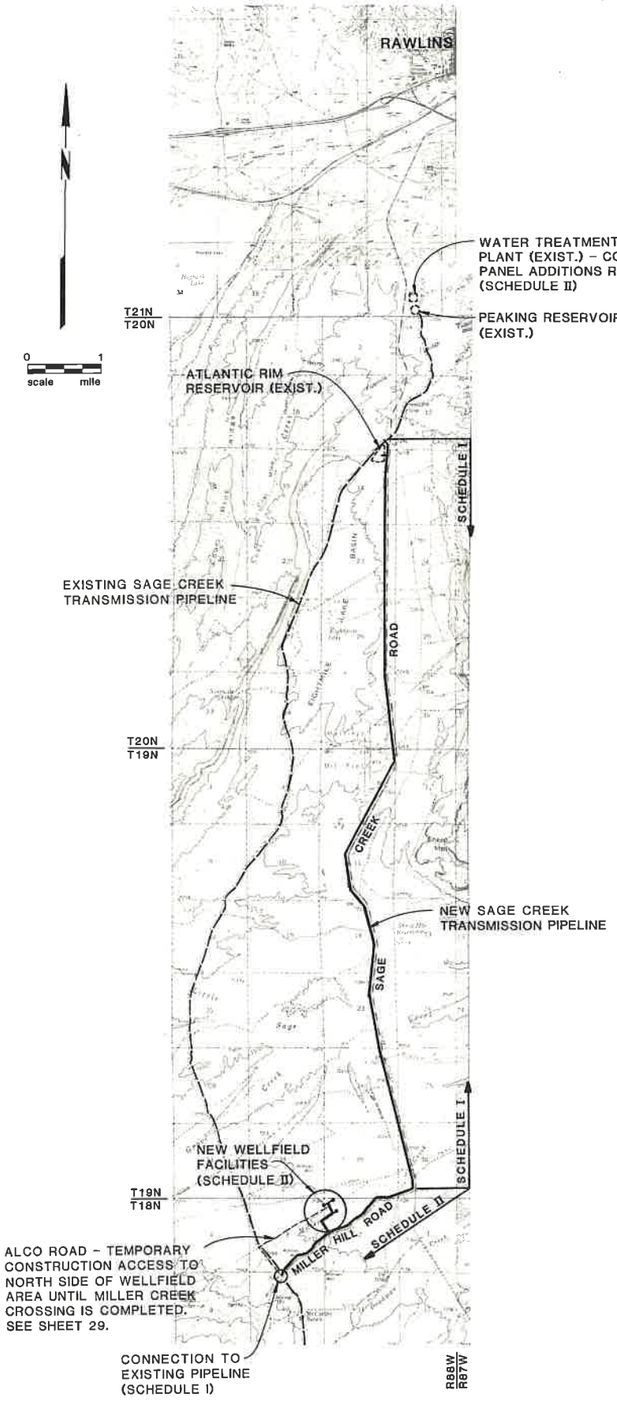
CITY OF RAWLINS
RAWLINS, WYOMING

CONSTRUCTION OF SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

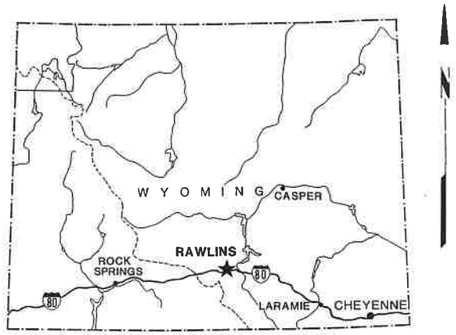
WWDC PROJECT NO. R1032186/F
DRAWINGS
1987

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.
LARAMIE, WYOMING

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE



PROJECT LOCATION MAP



VICINITY MAP

LIST OF DRAWINGS

I CERTIFY THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT CONTROL AND SUPERVISION.

Robert G. Jossis

ROBERT G. JOSSIS
WYOMING P.E. NO. 4066

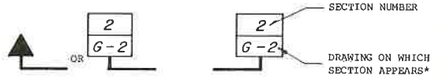
SYMBOLS

- ACCESS MANHOLE
- AIR VACUUM / AIR RELEASE VALVE (PLAN)
- AIR VACUUM / AIR RELEASE VALVE (PROFILE)
- ANGLE
- BLOWOFF (PLAN)
- BLOWOFF (PROFILE)
- BUTTERFLY VALVE OR GATE VALVE
- ELECTRICAL TEST STATION
- ---G--- GAS (EXISTING)
- OVERHEAD POWER LINES (EXISTING)
- PAVEMENT (EXISTING)
- ---S--- SANITARY SEWER (EXISTING)
- ---SD--- STORM DRAIN (EXISTING)
- ---T--- TELEPHONE LINES OR CABLE (EXISTING)
- VALVED OUTLET
- ---W--- WATER MAIN (EXISTING)
- BENCHMARK
- ⌀ DIAMETER
- ℄ CENTERLINE
- ≤ LESS THAN OR EQUAL TO
- PRESSURE RELIEF/SUSTAINING VALVE
- RIGHT-OF-WAY
- EASEMENT

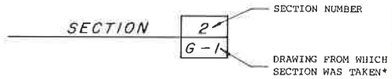
SECTION AND DETAIL IDENTIFICATION

SECTION IDENTIFICATION

(1) SECTION CUT ON DRAWING G-1:

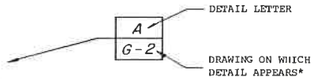


(2) ON DRAWING G-2 THIS SECTION IS IDENTIFIED AS:

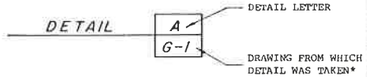


DETAIL IDENTIFICATION

(1) DETAIL SHOWN ON DRAWING G-1 AS:



(2) ON DRAWING G-2 THIS DETAIL IS IDENTIFIED AS:



*NOTE: IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A LINE.

ABBREVIATIONS

AC	ASBESTOS CEMENT
AC	ASPHALTIC CONCRETE
ACP	ASBESTOS CEMENT PIPE
AH	AHEAD
ALUM	ALUMINUM
APPROX	APPROXIMATELY
AVAR	AIR VACUUM & AIR RELEASE VALVE
AWWA	AMERICAN WATERWORKS ASSOC.
BK	BACK
B F	BUTTERFLY
B/O	BLOWOFF
CI	CAST IRON
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CO	COUNTY
CONC	CONCRETE
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION
COR	CORNER
CORP	CORPORATION
CPLG	COUPLING
DET	DETAIL
DIA OR DIAM	DIAMETER
DRWG OR DWG	DRAWING
E	EAST
E F	EACH FACE
EA	EACH
ELEC	ELECTROLYSIS
EL OR ELEV	ELEVATION
EQUIP	EQUIPMENT
ESMT	EASEMENT
EXIST	EXISTING
FT	FOOT, FEET
FIG	FIGURE
FIN	FINISHED
FLEX	FLEXIBLE
FLG	FLANGE
F S	FORGED STEEL
GA	GAUGE
GALV	GALVANIZED
HORIZ	HORIZONTAL
HEX	HEXAGON
HWY	HIGHWAY
IN	INCH, INCHES
IDENT	IDENTIFICATION
ID	INSIDE DIAMETER
INV	INVERT ELEVATION
LB	POUND
LGT	LENGTH
LT	LEFT
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
M I	MALLEABLE IRON
NOM	NOMINAL
N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
PSI	POUNDS PER SQUARE INCH
PC	POINT OF CURVATURE
PE	POLYELECTROLYTE, PLANT EFFLUENT
PL	PLATE
PT	POINT
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
RD	ROAD
REINF	REINFORCEMENT, REINFORCING
REQD	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
S	SOUTH
SCH	SCHEDULE
SHT	SHEET
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STN	STAINLESS
STL	STEEL
THK	THICK
TRANS	TRANSMISSION
TYP	TYPICAL
VAC	VACUUM
VERT	VERTICAL
W/	WITH
W	WEST
WWM	WELDED WIRE MESH

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

GENERAL NOTES

(1) THE FOLLOWING ALTERNATIVE PIPELINE MATERIALS WILL BE CONSIDERED FOR THIS PROJECT (SEE SPECS):

- MORTAR LINED AND TAPE COATED STEEL PIPE
- MORTAR LINED AND COATED STEEL PIPE WITH COAL TAR EPOXY TOP COAT
- MORTAR LINED AND TAPE COATED DUCTILE IRON PIPE
- PVC PIPING WHERE ≤ 12 INCH DIAMETER IN THE WELLFIELD

(2) SEE CATHODIC PROTECTION DRAWINGS FOR CORROSION PROTECTION REQUIREMENTS. PVC PIPING WILL NOT REQUIRE CORROSION PROTECTION.

(3) A SOILS REPORT BY NORTHERN ENGINEERING AND TESTING, DATED SEPT. 1985 IS AVAILABLE FOR REVIEW IN THE OFFICE OF THE CITY ENGINEER AND IN THE LARAMIE OFFICE OF JMM.

(4) SEE DETAIL A, SHEET 43 FOR PIPELINE AND APPURTENANCE LOCATOR POST REQUIREMENTS.

(5) TOP OF NEW PIPELINE SHALL BE BURIED A MINIMUM OF 5'-0" BELOW EXISTING GRADE UNLESS SHOWN OTHERWISE ON DRAWINGS. A 6'-0" BURIAL DEPTH IS REQUIRED IN THE WELLFIELD. THE CONTRACTOR SHALL BE AWARE THAT THE 16"-24" TRANSMISSION PIPELINE ON THE PLAN AND PROFILE SHEETS IS DRAWN 1'0" LOWER THAN ELEVATIONS AND BURIAL DEPTHS SHOWN. THE DIMENSIONS SHALL GOVERN.

(6) ELEVATIONS SHOWN ON PLAN AND PROFILE SHEETS ARE FROM AERIAL SURVEY AND SHALL BE CONSIDERED ACCURATE TO THE CONTOUR INTERVAL SHOWN.

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED D. Sutherman
DRAWN M. Hays
CHECKED A. Anderson

SUBMITTED Dennis Sutherman PROJECT ENGINEER 1/9/87 DATE
RECOMMENDED Robert G. Jossis JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. 4066 R.C.E. NO. 1/9/87 DATE

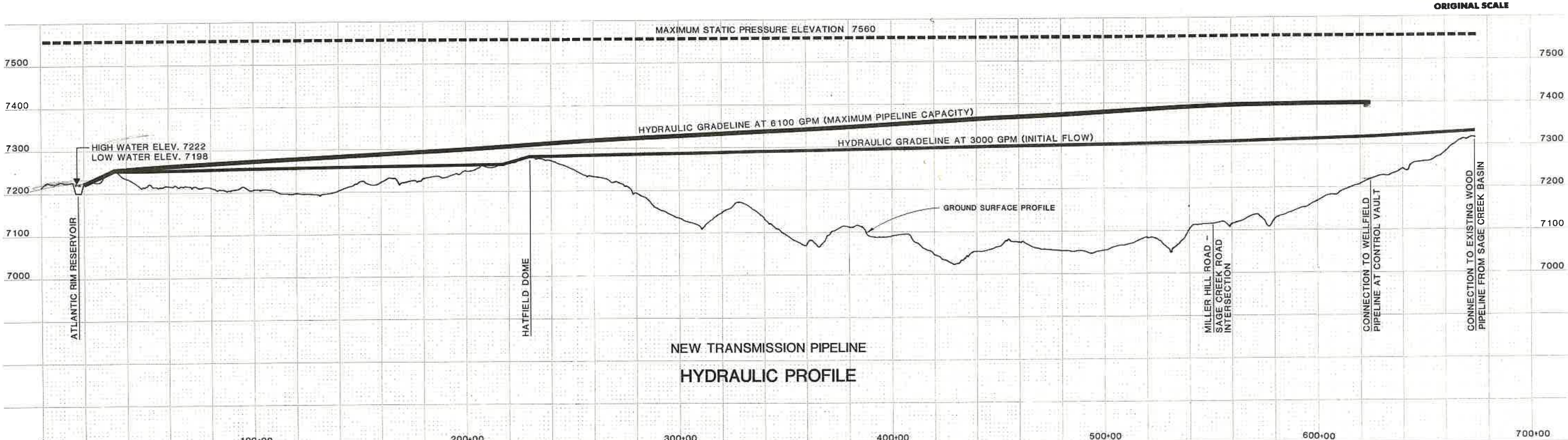
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Gary D. Miller 1-12-87 DATE
APPROVED DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
LOCATION MAP, VICINITY MAP, LIST OF DRAWINGS, SYMBOLS, ABBREVIATIONS AND GENERAL NOTES

SHEET 2 OF 49 SHEETS

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE



NEW TRANSMISSION PIPELINE

HYDRAULIC PROFILE

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED D. Sukkonen
DRAWN F. Marad
CHECKED A. Anderson

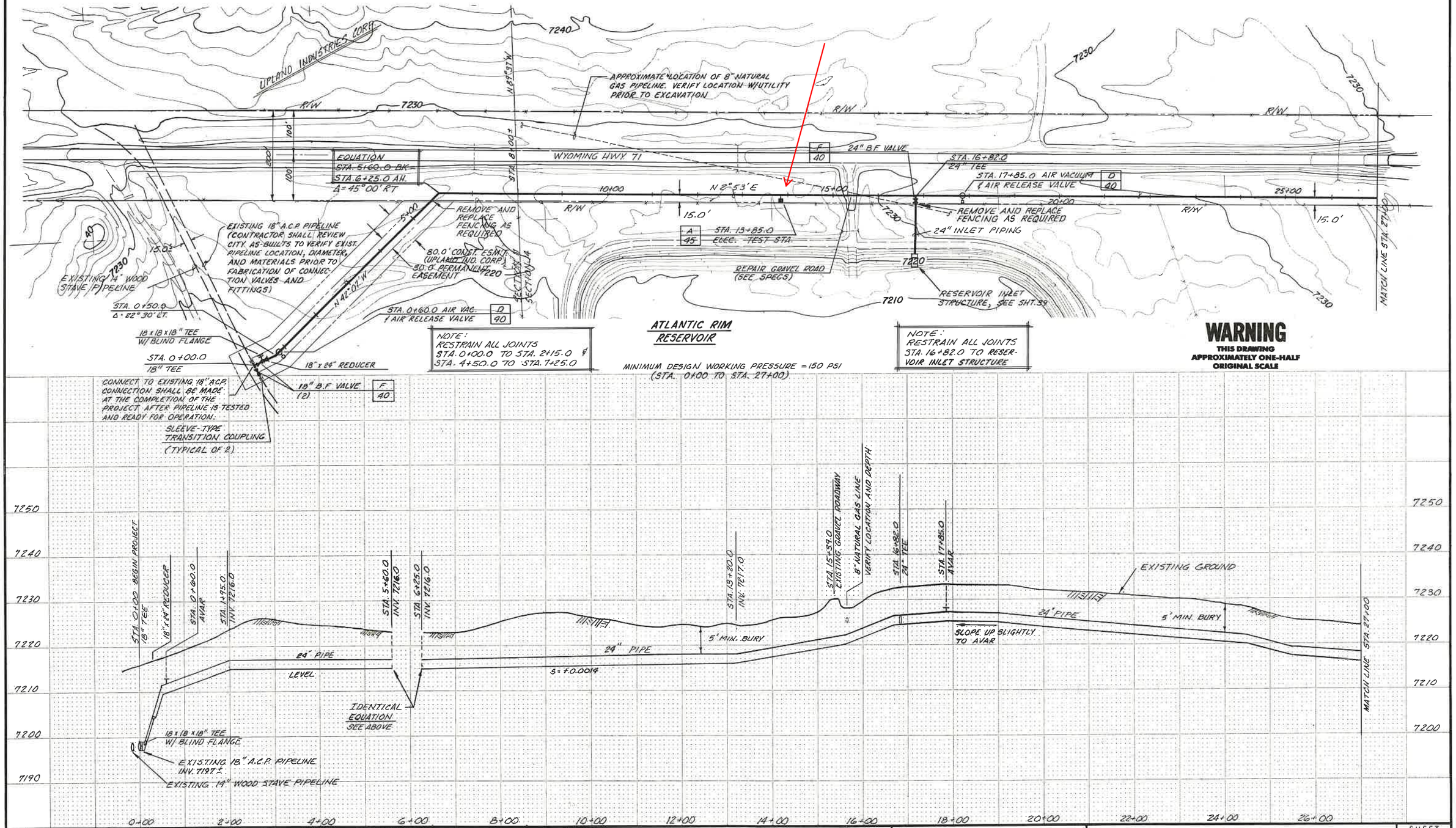
SUBMITTED Dennis Sukkonen, PROJECT ENGINEER, R.C.E. NO. ___, DATE 1/9/87
RECOMMENDED [signature], JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC., R.C.E. NO. 4066, DATE 1/10/87

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED [signature] DATE 1-12-87
APPROVED ___ DATE ___

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
HYDRAULIC PROFILE

SHEET 3 OF 49 SHEETS



REV	DATE	BY	DESCRIPTION

SCALE: HORIZ: 1" = 100' VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/19/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE

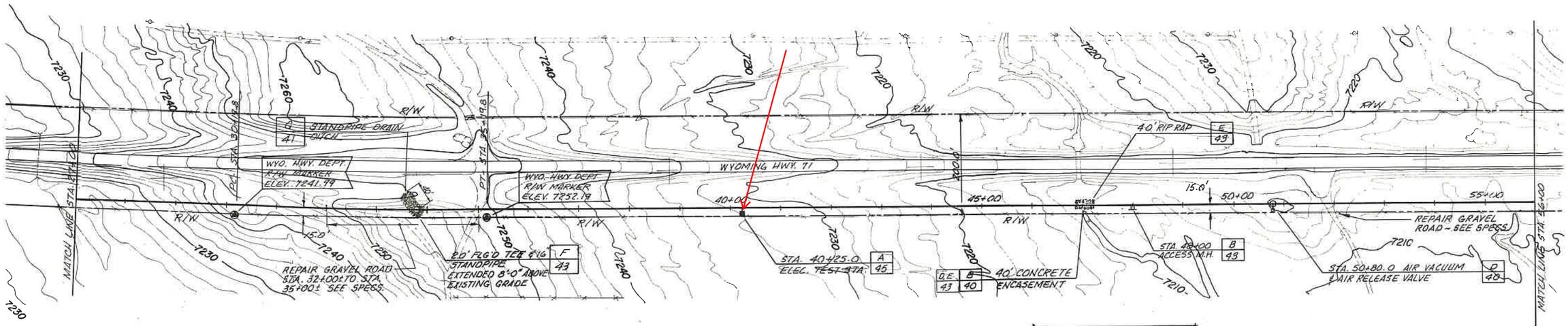
APPROVED — DATE

CITY OF RAWLINS, WYOMING

SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

PIPELINE – PLAN AND PROFILE
STA. 0+00 TO STA. 27+00

SHEET 4 OF 49 SHEETS

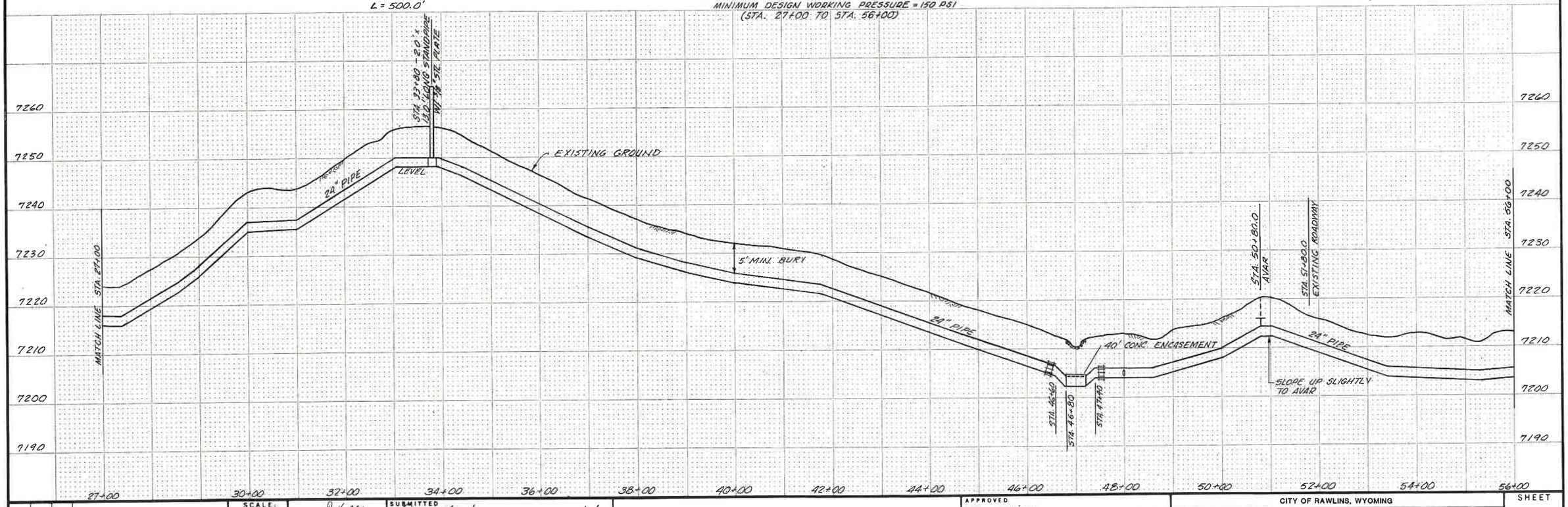


℄ PIPE CURVE DATA
Δ = 2°30' LT
R = 11,544.2'
T = 251.9'
L = 500.0'

NOTE:
RESTRAIN ALL JOINTS
STA. 46+20.0 TO STA. 47+80.0

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 27+00 TO STA. 56+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED D. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

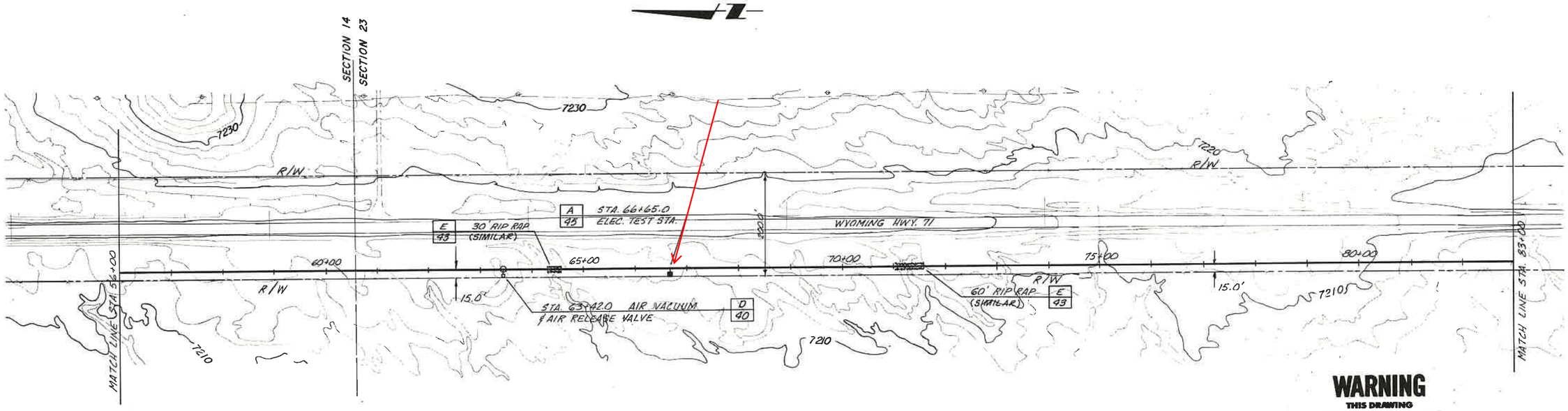
APPROVED — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE - PLAN AND PROFILE
STA. 27+00 TO STA. 56+00

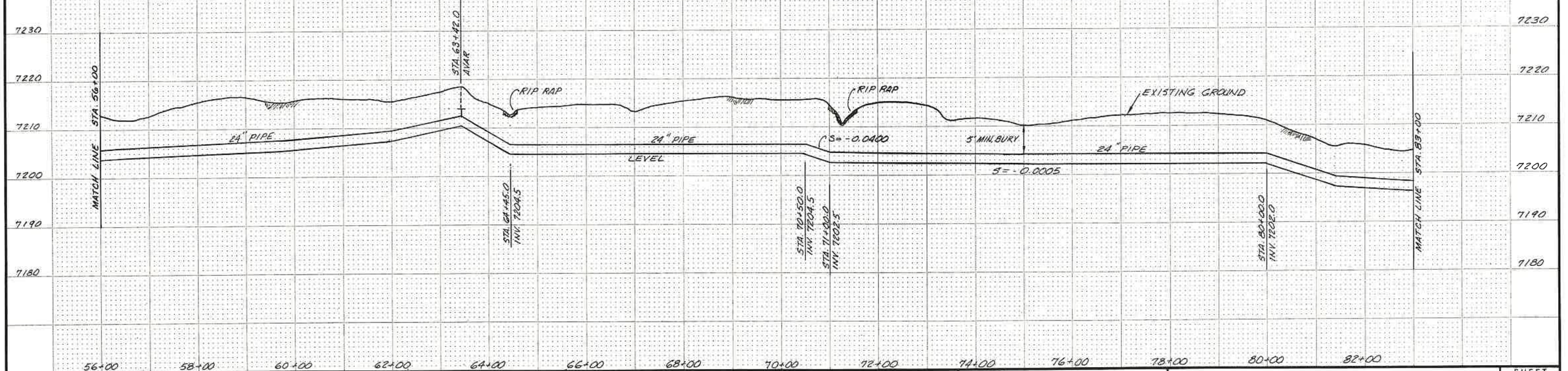
SHEET 5 OF 49 SHEETS

89030



WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 56+00 TO STA. 83+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/16/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

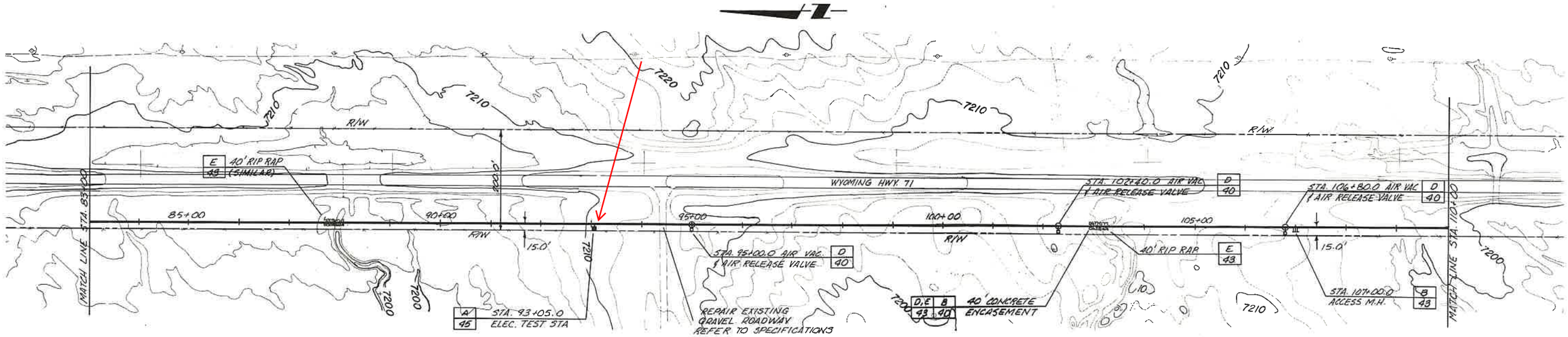
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 56+00 TO STA. 83+00

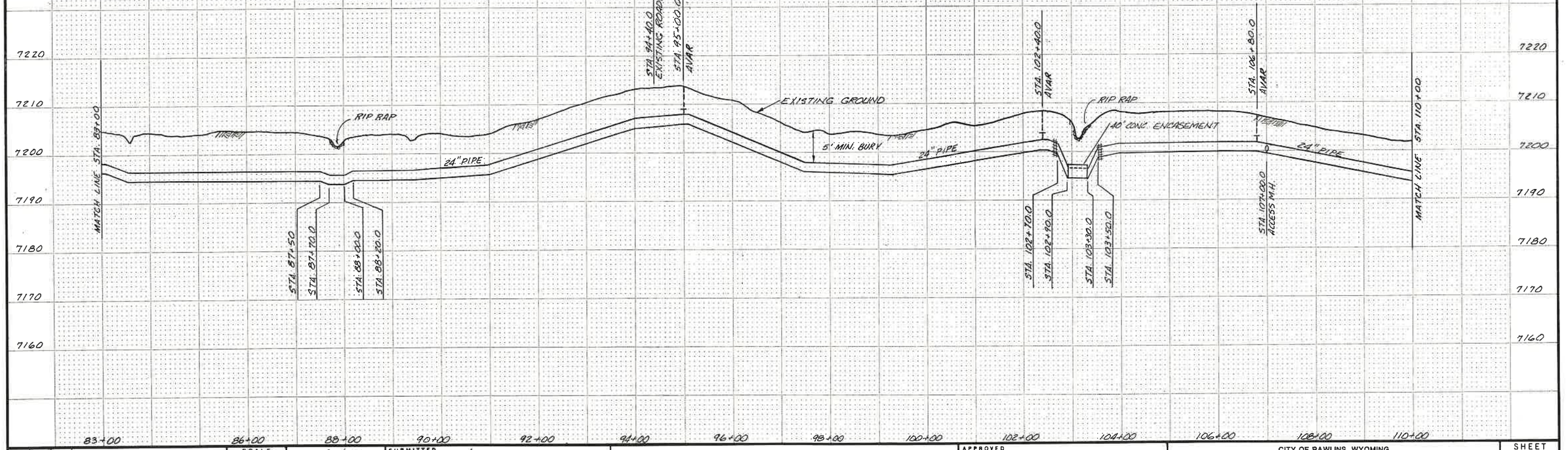
SHEET 6 OF 49 SHEETS



NOTE:
RESTRAIN ALL JOINTS
STA. 101+90.0 TO 104+30.0

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 83+00 TO STA. 110+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/16/87 DATE

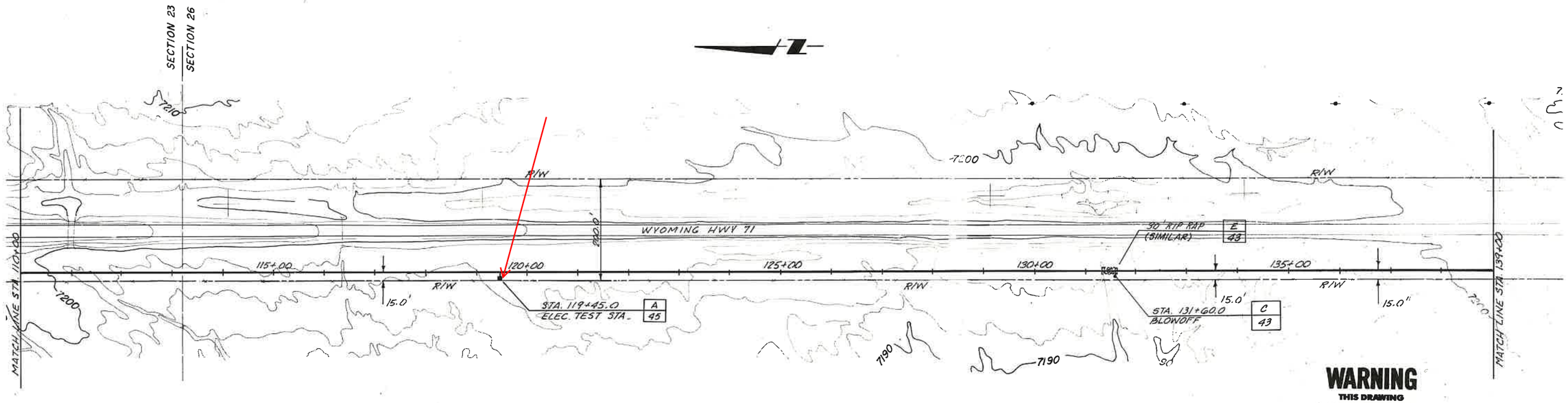
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller — 1-12-87 DATE

APPROVED — DATE

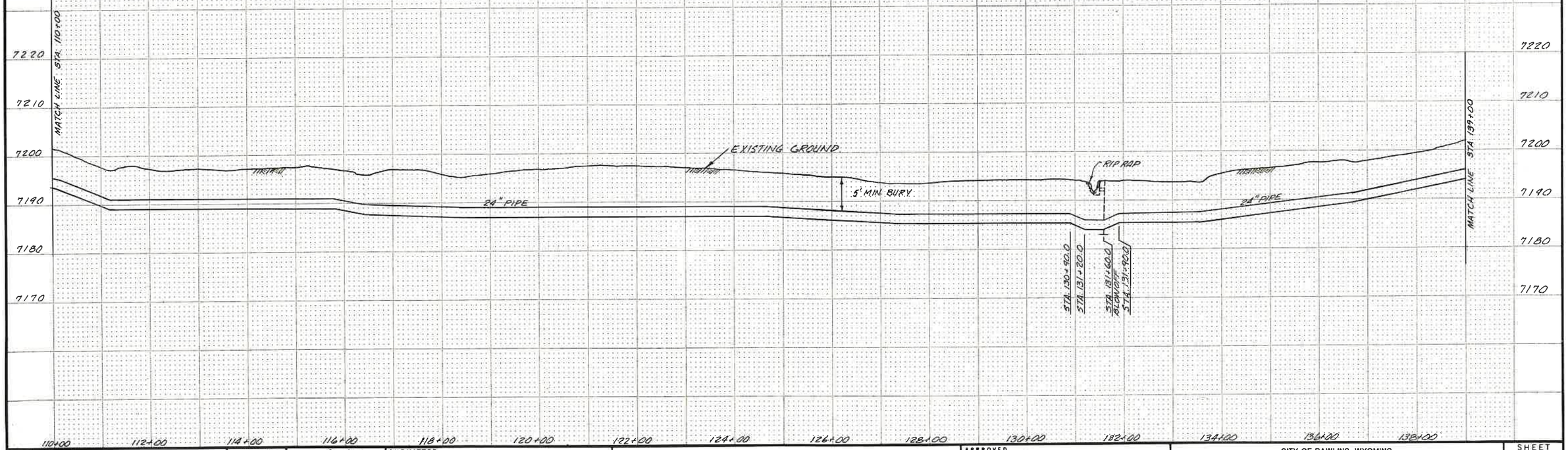
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 83+00 TO STA. 110+00

SHEET 7 OF 49 SHEETS



WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 110+00 TO STA. 139+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/10/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

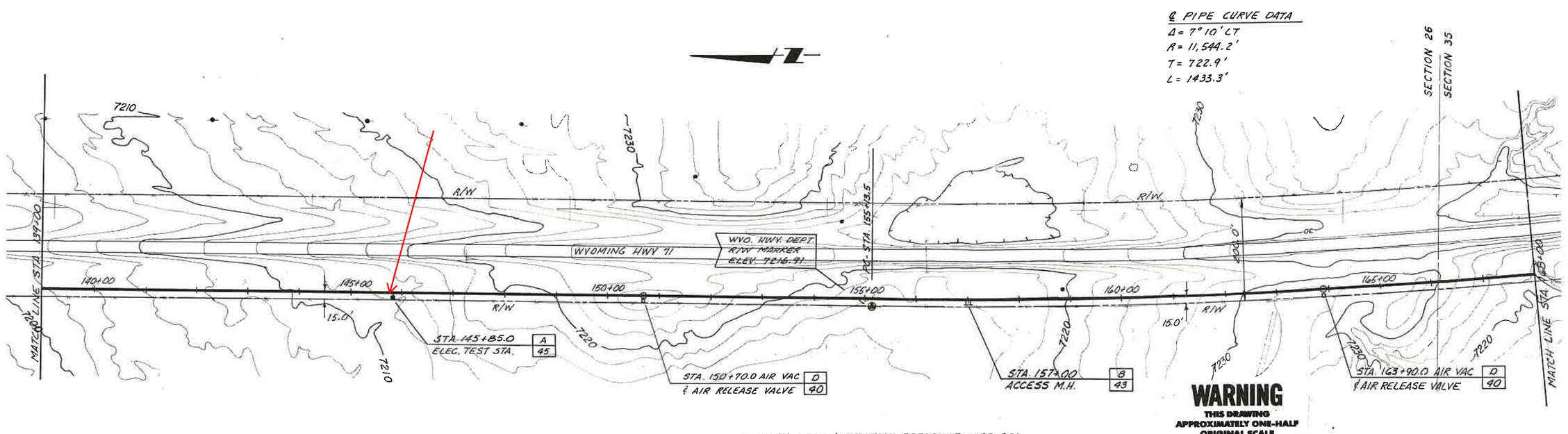
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE
APPROVED — DATE

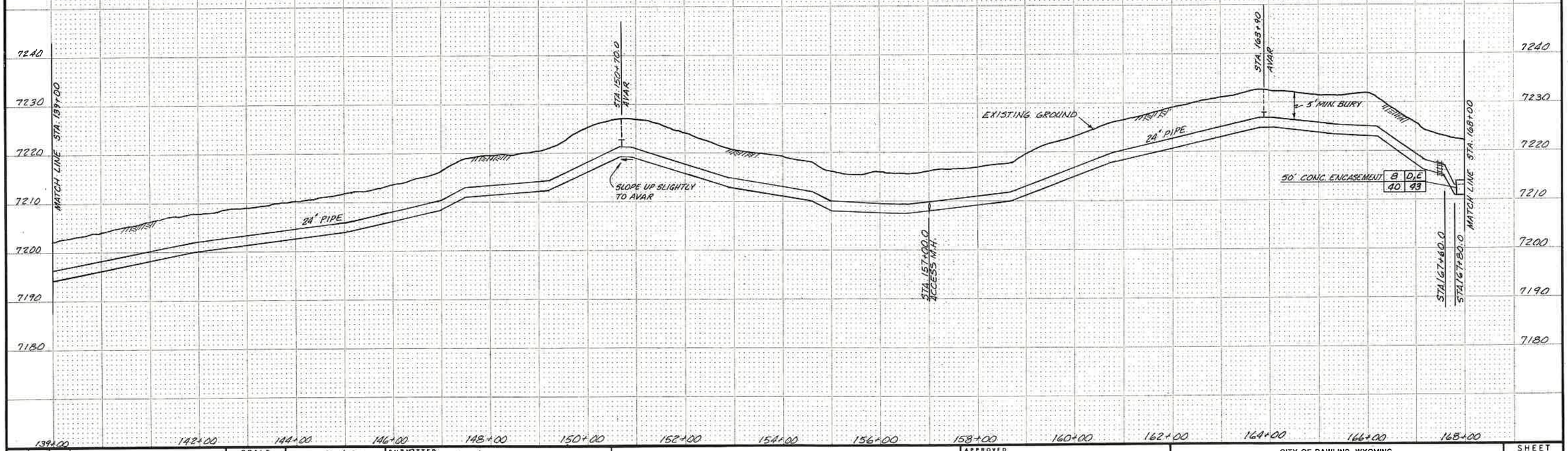
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 110+00 TO STA. 139+00

SHEET 8 OF 49 SHEETS

89030



MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 139+00 TO STA. 168+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

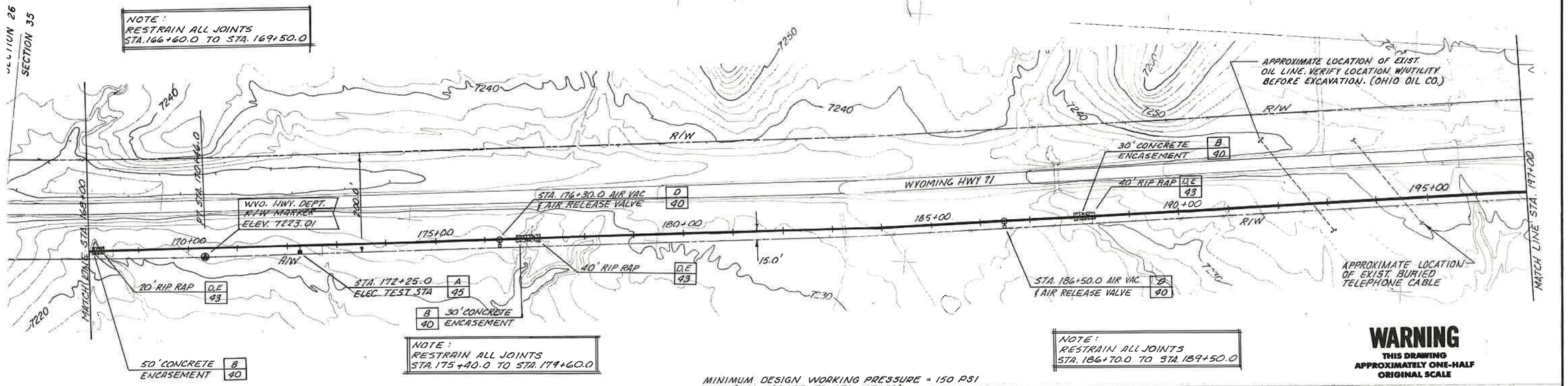
RECOMMENDED
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller — 1-12-87 DATE
APPROVED — DATE

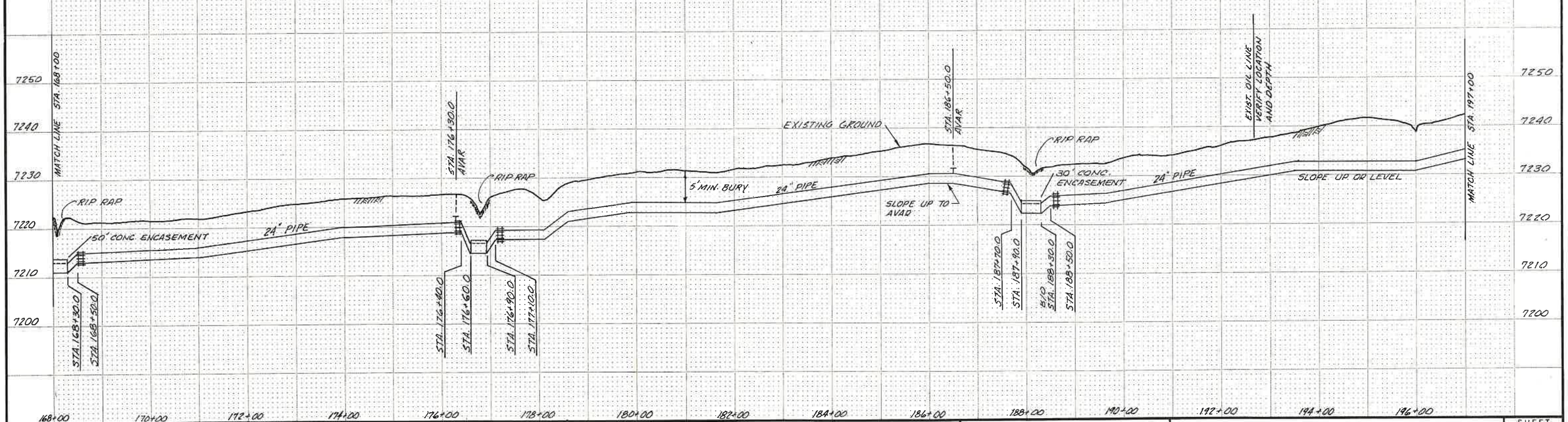
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 139+00 TO STA. 168+00

SHEET 9 OF 49 SHEETS



MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 168+00 TO STA. 197+00)

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED D. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/15/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4866 R.C.E. NO. — 1/16/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

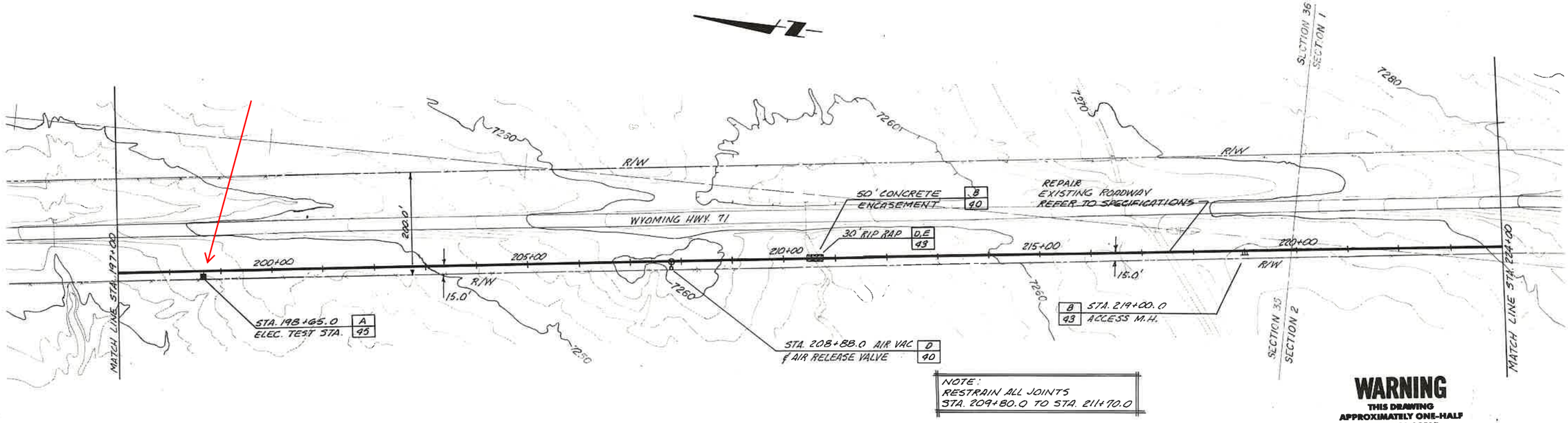
APPROVED Gerry D. Miller — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 168+00 TO STA. 197+00

SHEET 10 OF 49 SHEETS

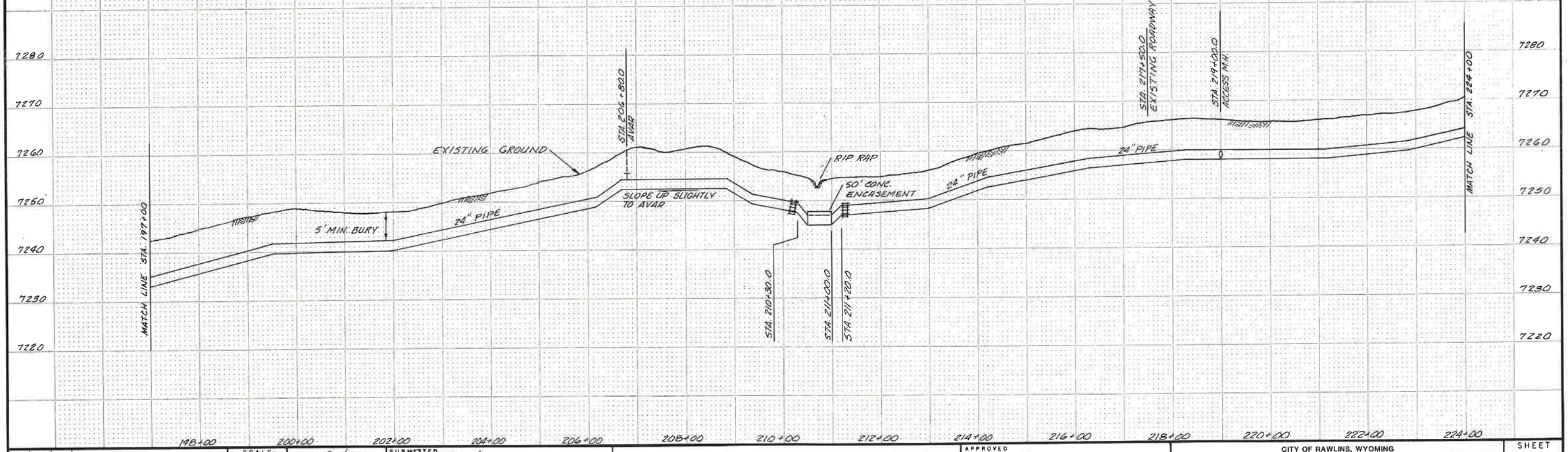
89030



NOTE:
RESTRAIN ALL JOINTS
STA. 209+80.0 TO STA. 211+70.0

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 197+00 TO STA. 224+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 11/12/87 DATE

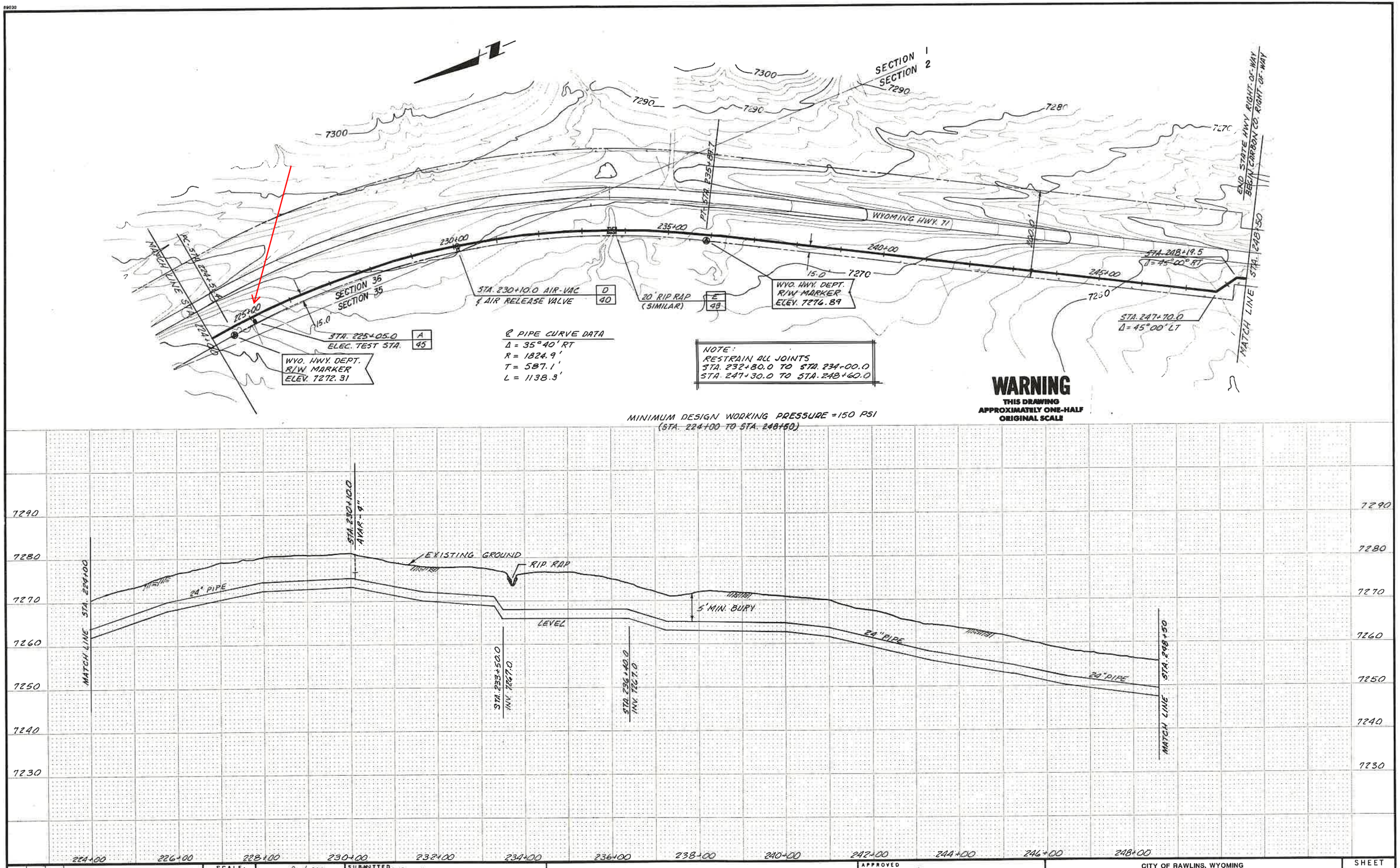
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 197+00 TO STA. 224+00

SHEET 11 OF 49 SHEETS



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Gerry D. Miller — 1-12-87 DATE

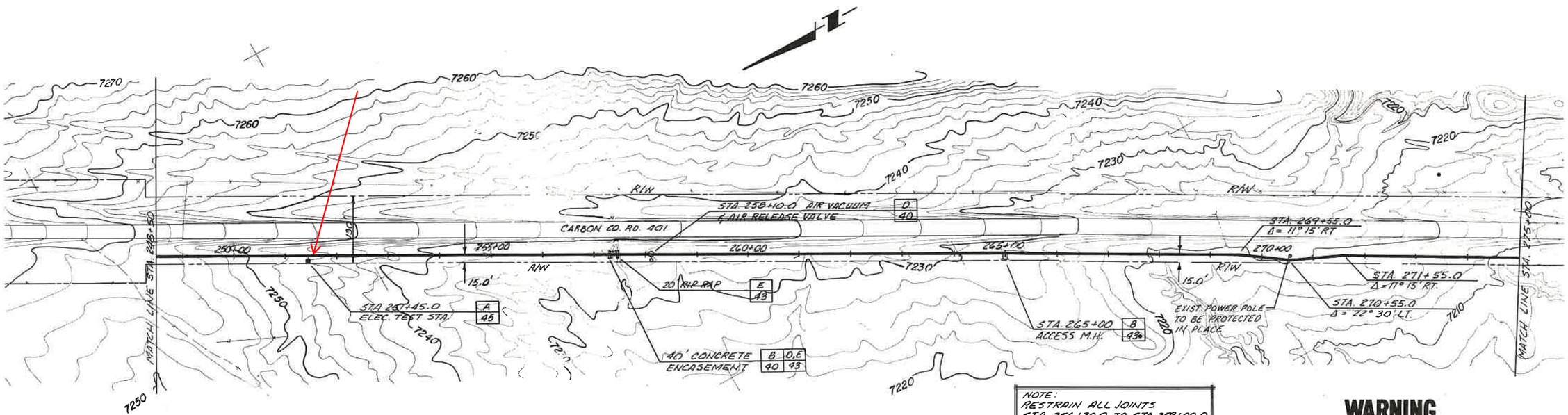
APPROVED — DATE

CITY OF RAWLINS, WYOMING

SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

PIPELINE – PLAN AND PROFILE
STA. 224+00 TO STA. 248+50

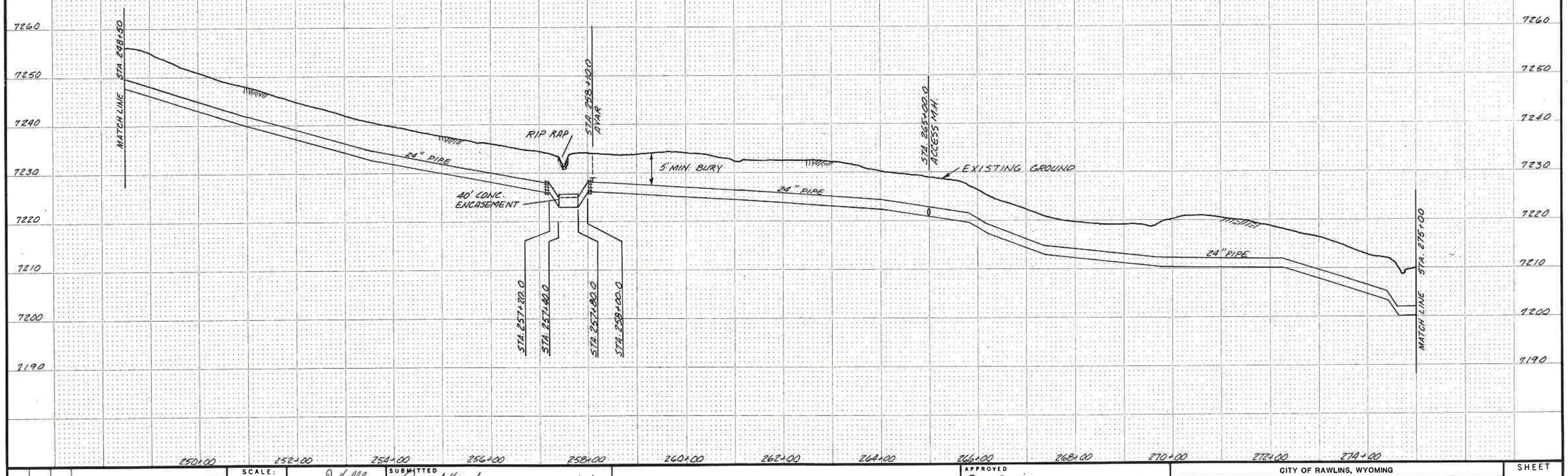
SHEET 12 OF 49 SHEETS



NOTE:
RESTRAIN ALL JOINTS
STA. 256+20.0 TO STA. 259+00.0
STA. 269+00.0 TO STA. 272+10.0
STA. 274+00.0 TO STA. 275+00.0

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 248+50 TO STA. 275+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/6/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

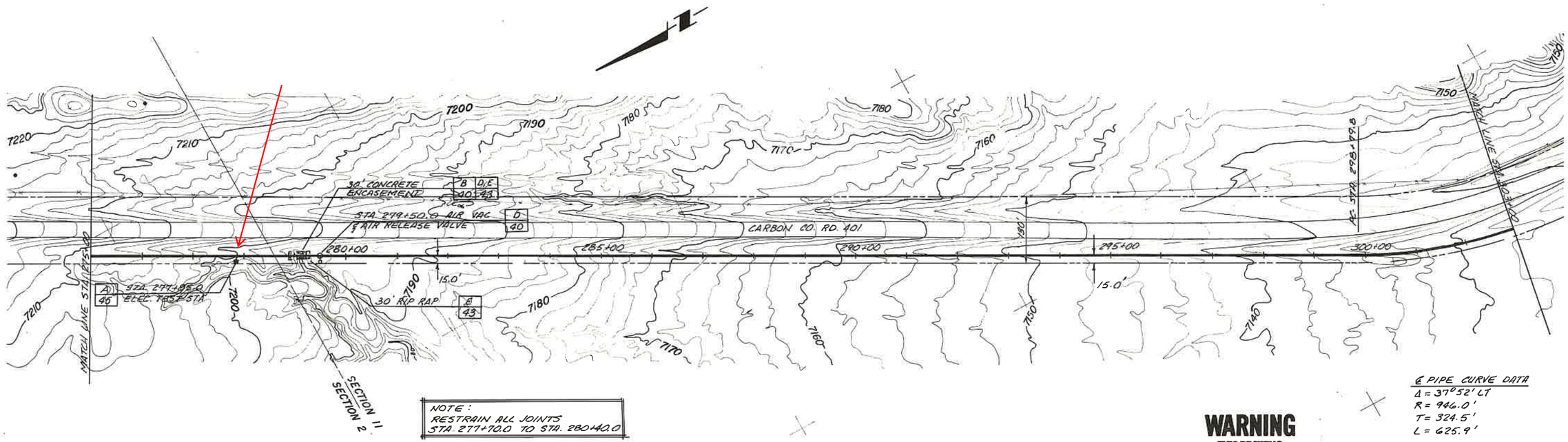
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller — 1-12-87 DATE
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 248+50 TO STA. 275+00

SHEET 13 OF 48 SHEETS

89030



NOTE:
RESTRAIN ALL JOINTS
STA. 277+70.0 TO STA. 280+40.0

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 275+00 TO STA. 303+00)

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

℄ PIPE CURVE DATA
Δ = 37°52' LT
R = 946.0'
T = 324.5'
L = 625.9'

REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER _____ R.C.E. NO. _____ 1/16/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. 4056 R.C.E. NO. 1/10/87 DATE

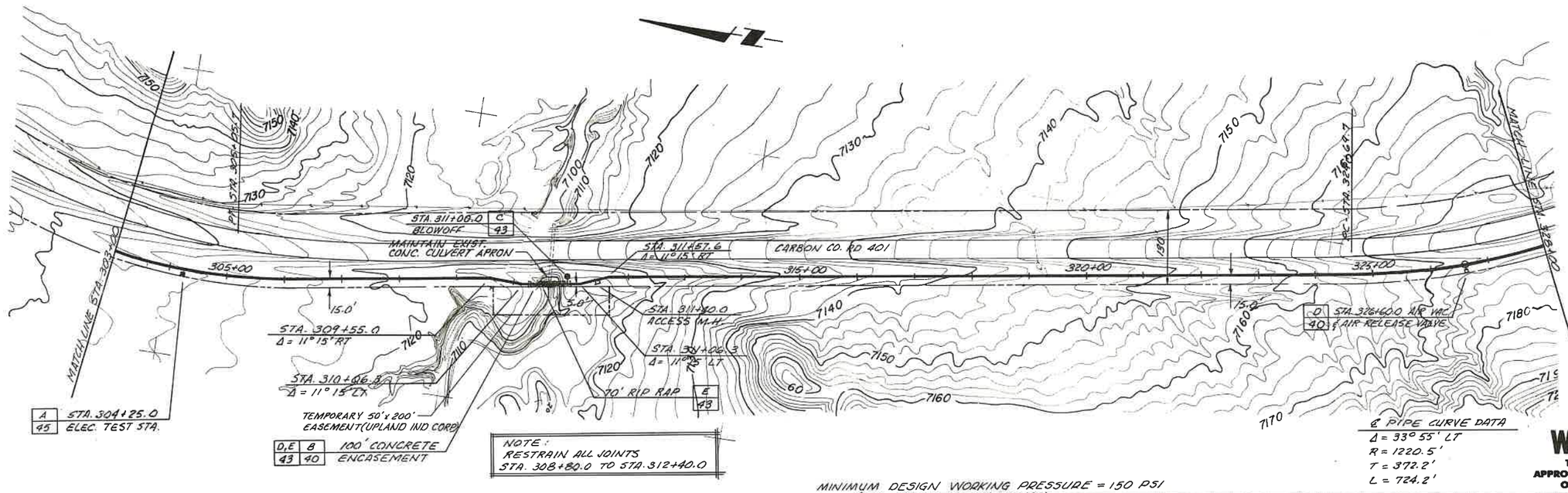
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Gerry D. Miller 1-12-87 DATE

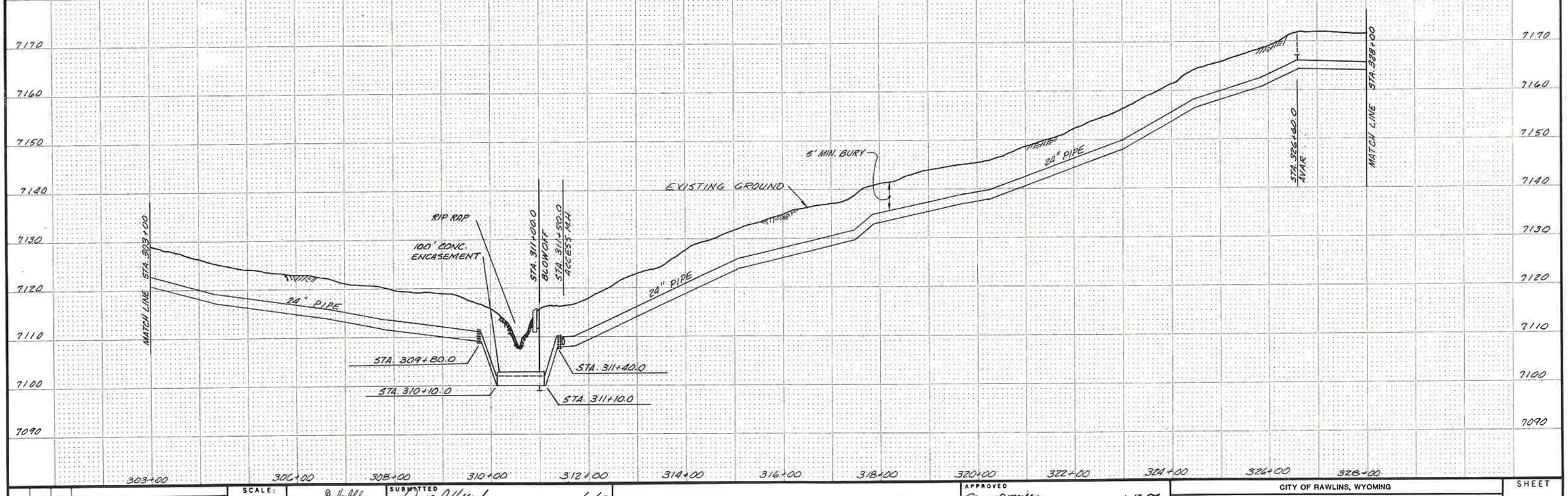
APPROVED _____ DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 275+00 TO STA. 303+00

SHEET 14 OF 49 SHEETS



MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 303+00 TO STA. 328+00)



WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: HORIZ: 1" = 100' VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED R. Anderson

SUBMITTED PROJECT ENGINEER — R.C.E. NO. — 1/16/87 DATE

RECOMMENDED JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/16/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

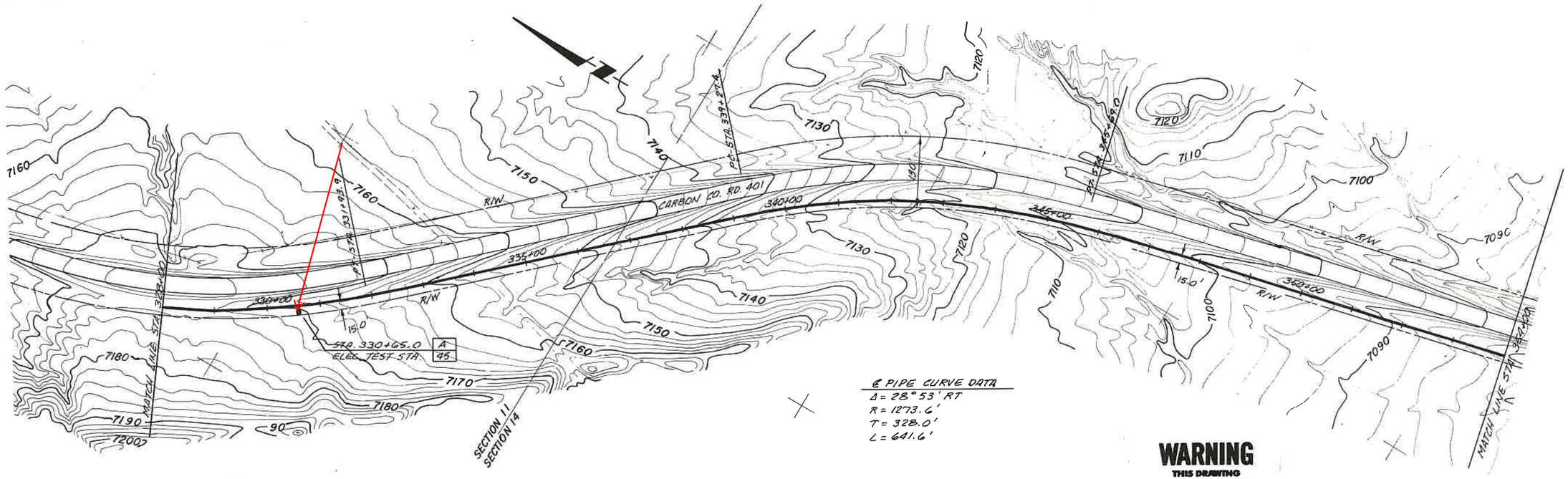
APPROVED Jerry D. Miller — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 303+00 TO STA. 328+00

SHEET 15 OF 49 SHEETS

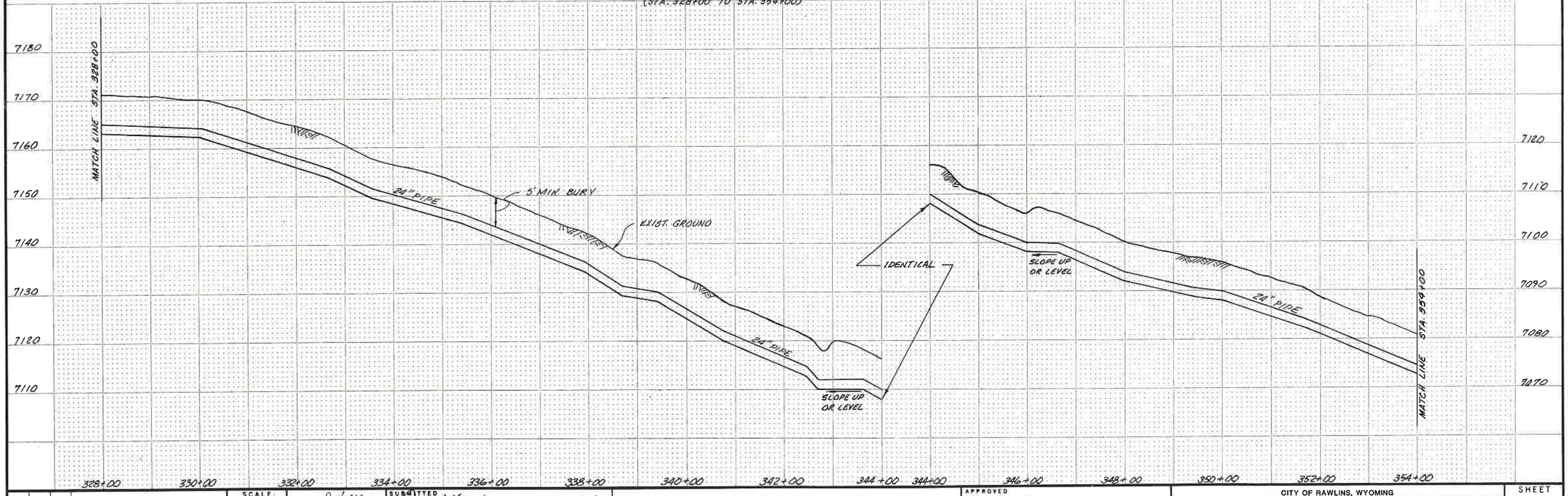
89030



℄ PIPE CURVE DATA
Δ = 28° 53' RT
R = 1273.6'
T = 328.0'
L = 641.6'

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 328+00 TO STA. 354+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER _____ R.C.E. NO. _____ DATE 1/12/87

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. _____ R.C.E. NO. 4066 DATE 1/10/87

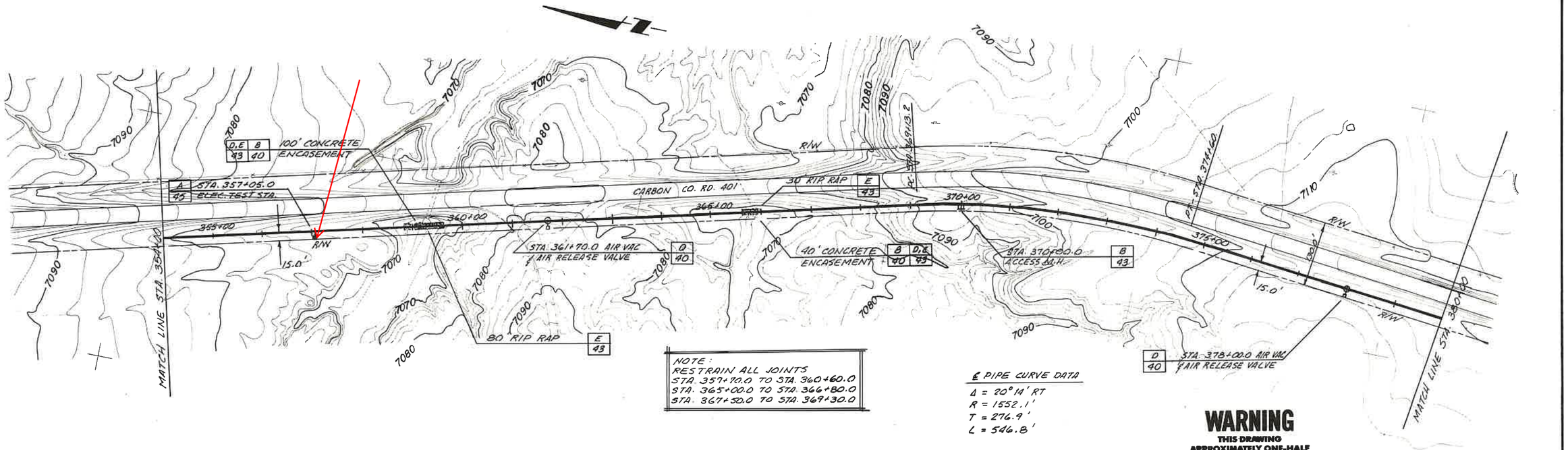
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED _____ DATE 1-12-87

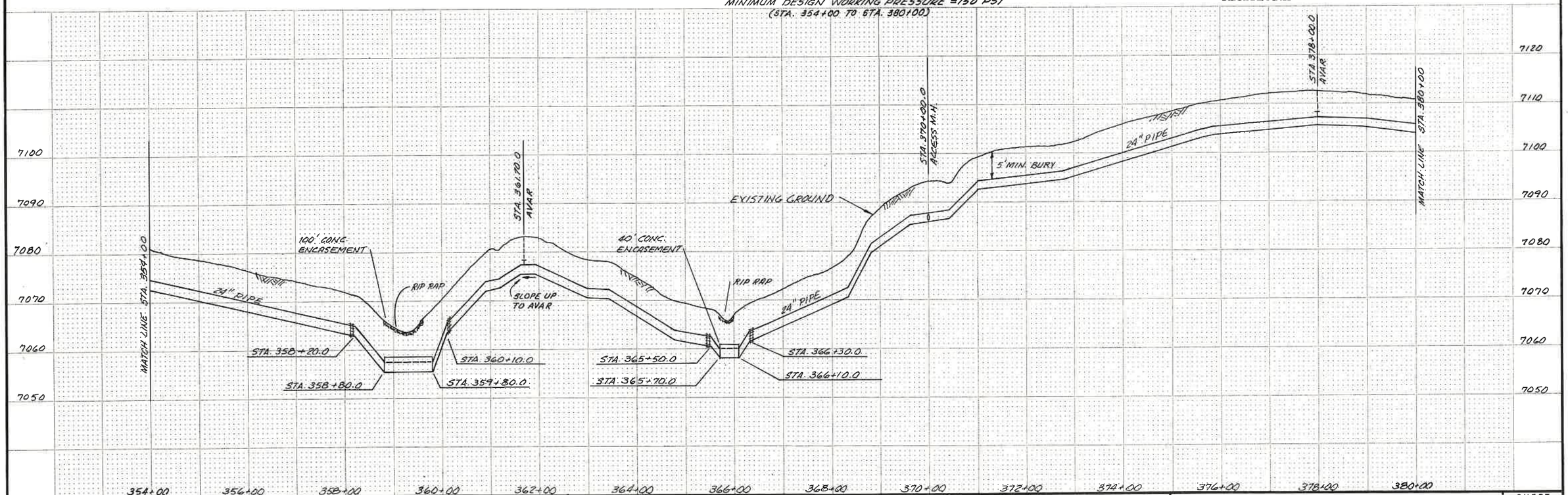
APPROVED _____ DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE - PLAN AND PROFILE
STA. 328+00 TO STA. 354+00

SHEET 16 OF 49 SHEETS



MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 354+00 TO STA. 380+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED _____ PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE
RECOMMENDED _____ JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/19/87 DATE

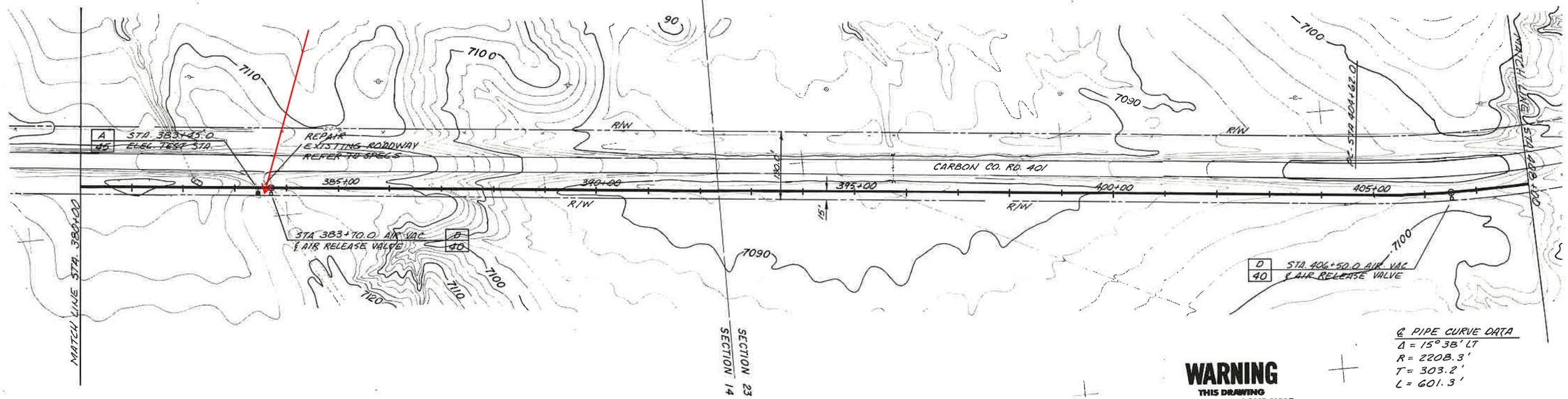
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED _____ — 1-28-87 DATE
APPROVED _____ — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 354+00 TO STA. 380+00

SHEET 17 OF 49 SHEETS

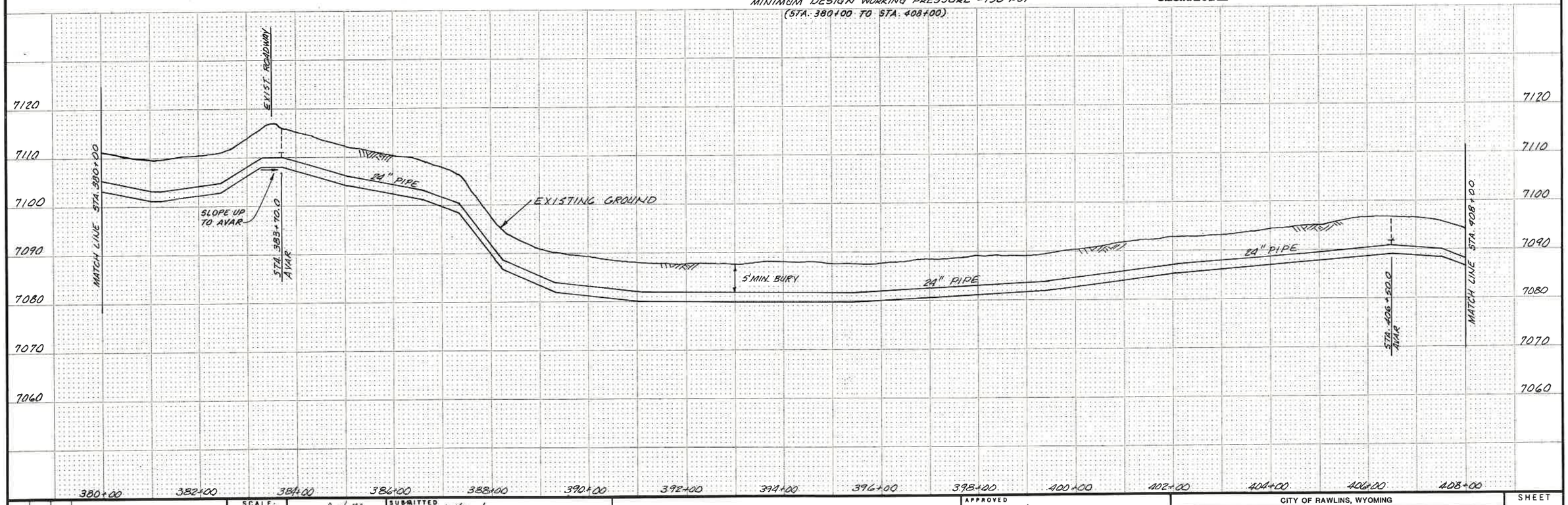
89030



℄ PIPE CURVE DATA
Δ = 15°38' LT
R = 2208.3'
T = 303.2'
L = 601.3'

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 380+00 TO STA. 408+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE

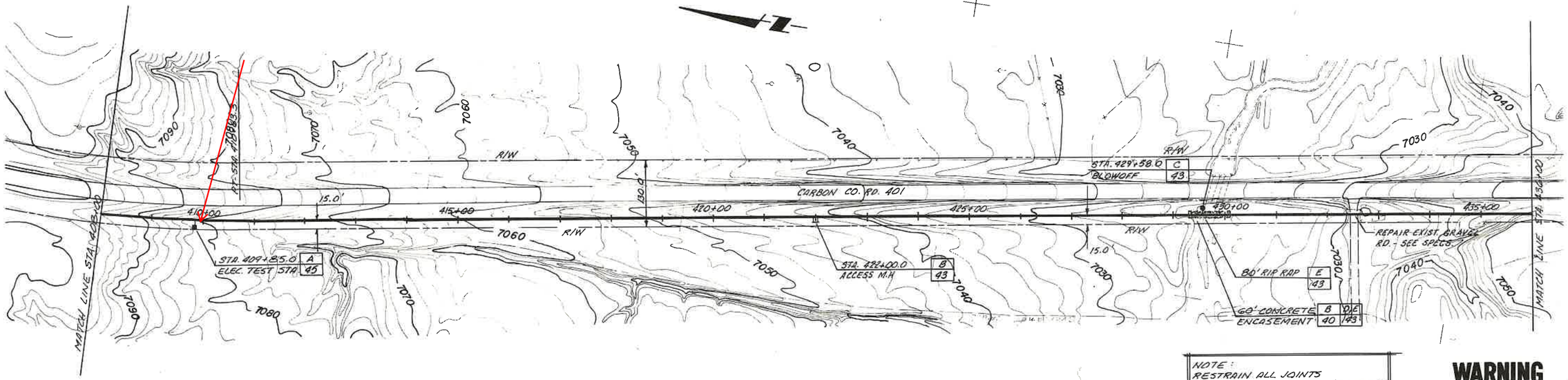
APPROVED — DATE

CITY OF RAWLINS, WYOMING

SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

PIPELINE – PLAN AND PROFILE
STA. 380+00 TO STA. 408+00

SHEET 18 OF 49 SHEETS



NOTE:
RESTRAIN ALL JOINTS
STA. 428+30.0 TO STA. 431+30.0

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 175 PSI
(STA. 408+00 TO STA. 436+00)

REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER _____ R.C.E. NO. _____ DATE 1/12/87

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. _____ R.C.E. NO. 4666 DATE 1/10/87

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

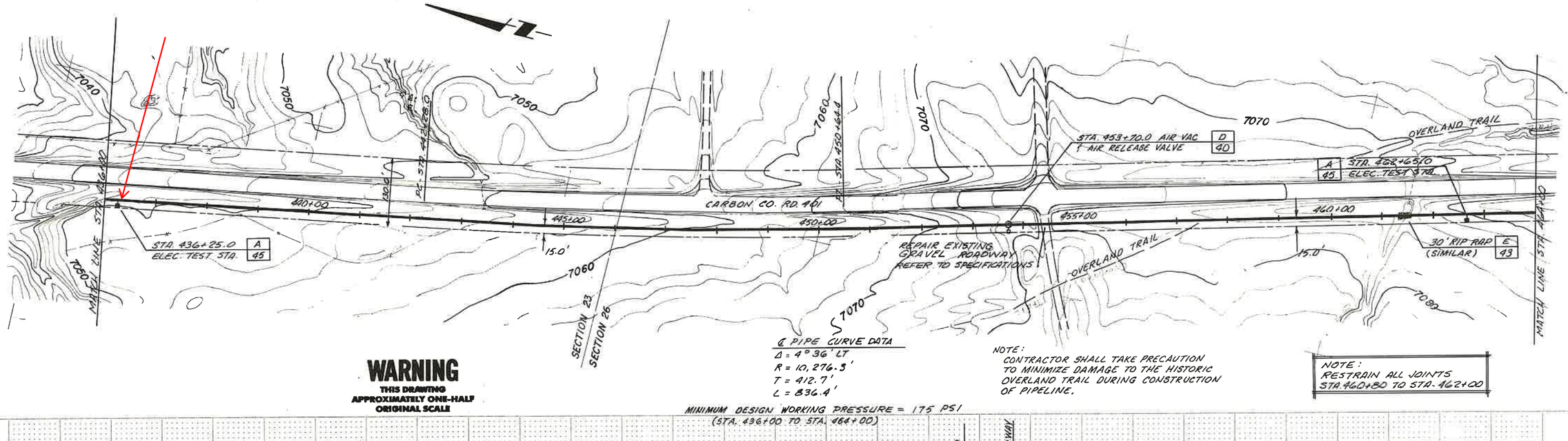
APPROVED Gerry D. Miller 1-12-87 DATE

APPROVED _____ DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 408+00 TO STA. 436+00

SHEET 19 OF 49 SHEETS

89030



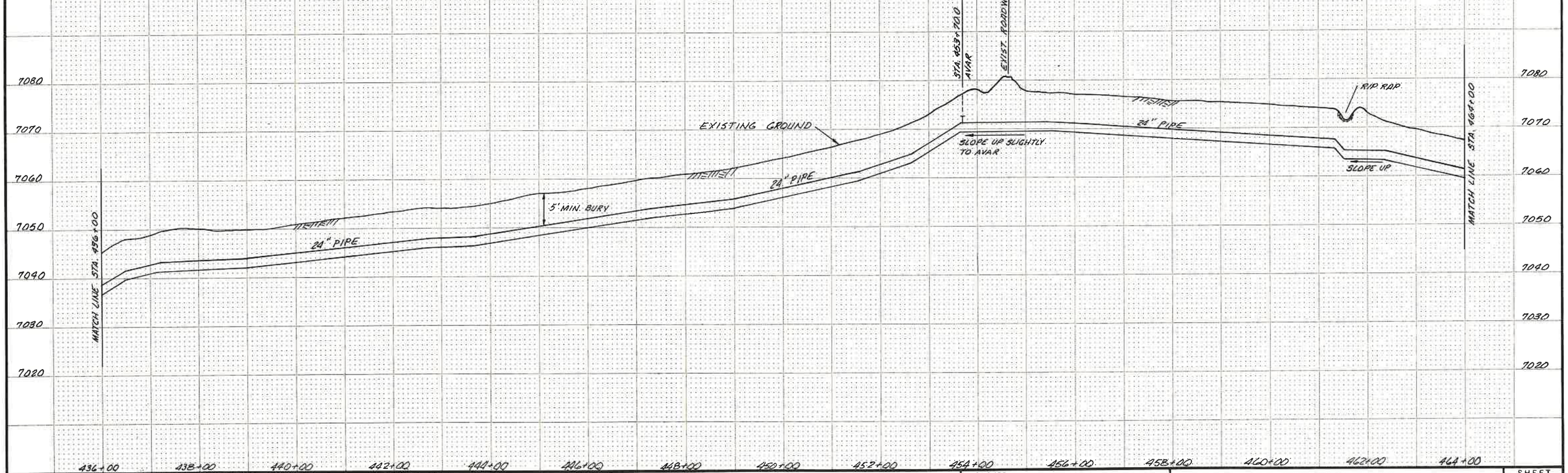
WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

℄ PIPE CURVE DATA
Δ = 4° 36' LT
R = 10,276.3'
T = 412.7'
L = 836.4'

NOTE:
CONTRACTOR SHALL TAKE PRECAUTION TO MINIMIZE DAMAGE TO THE HISTORIC OVERLAND TRAIL DURING CONSTRUCTION OF PIPELINE.

NOTE:
RESTRAIN ALL JOINTS STA 460+80 TO STA 462+00

MINIMUM DESIGN WORKING PRESSURE = 175 PSI
(STA. 436+00 TO STA. 464+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. 4466 — 1/16/87 DATE

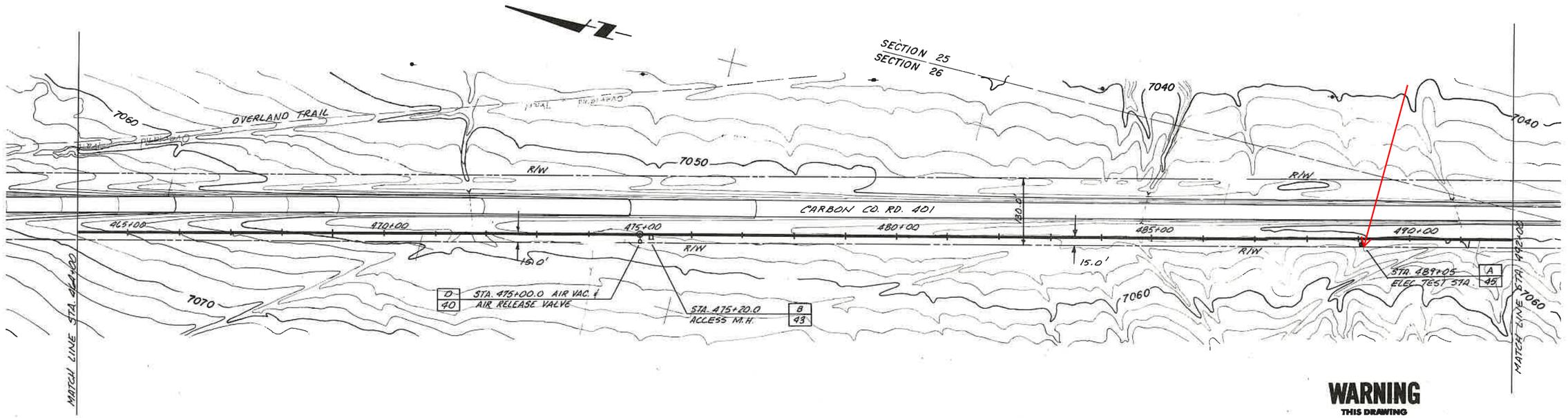
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE

APPROVED — DATE

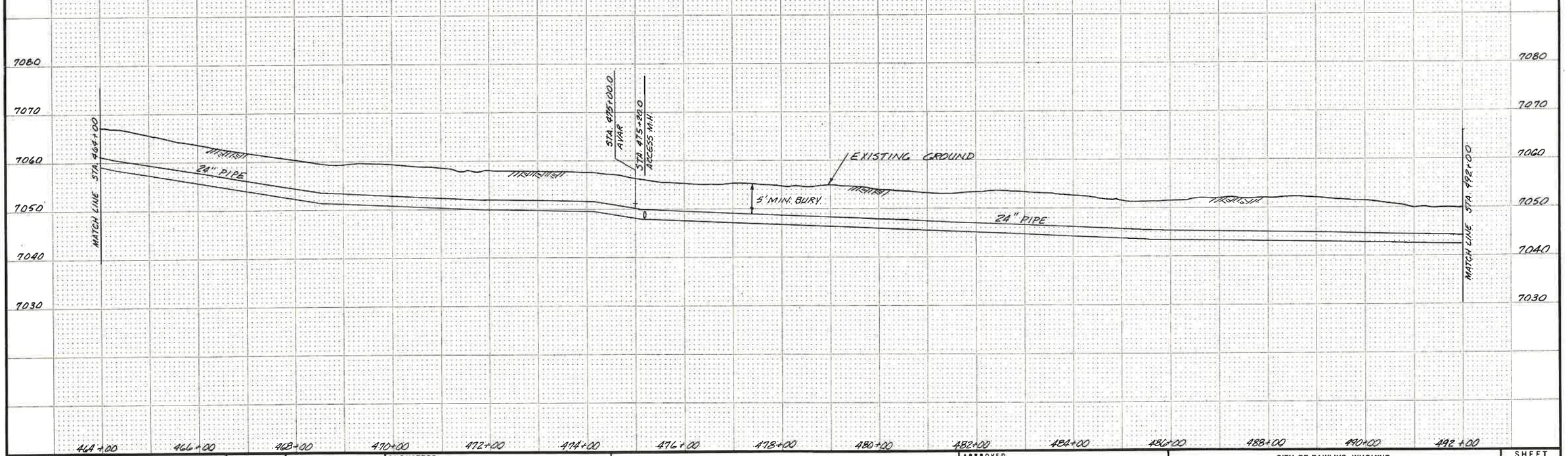
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 436+00 TO STA. 464+00

SHEET 20 OF 49 SHEETS



WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 175 PSI
(STA. 464+00 TO STA. 492+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

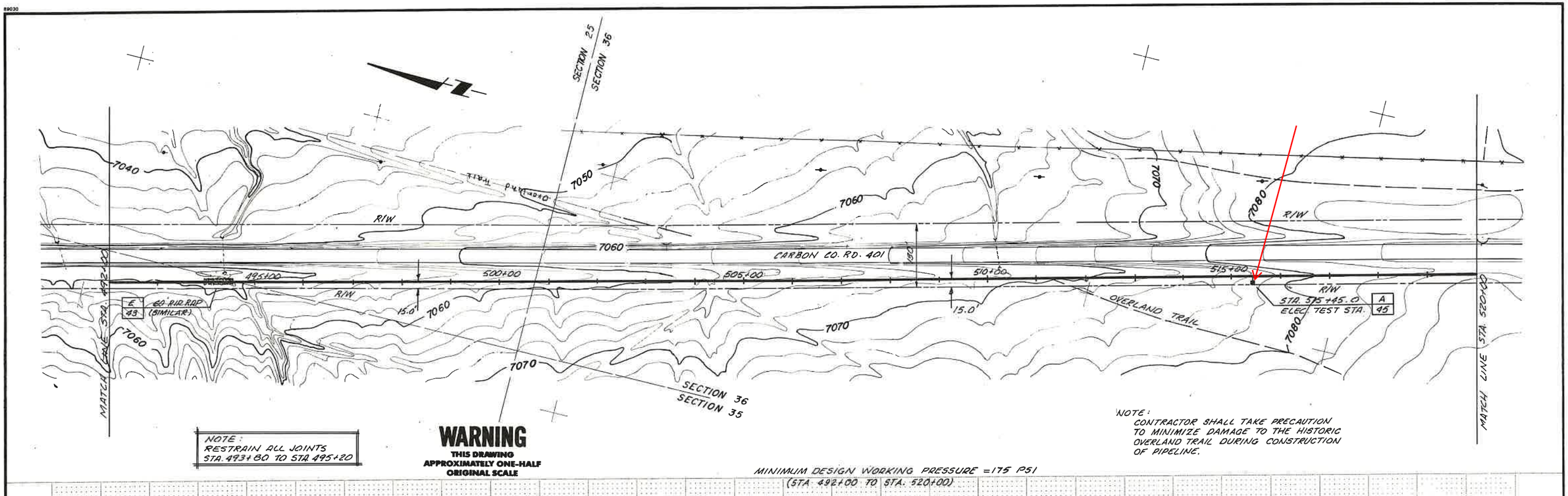
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 464+00 TO STA. 492+00

SHEET 21 OF 49 SHEETS

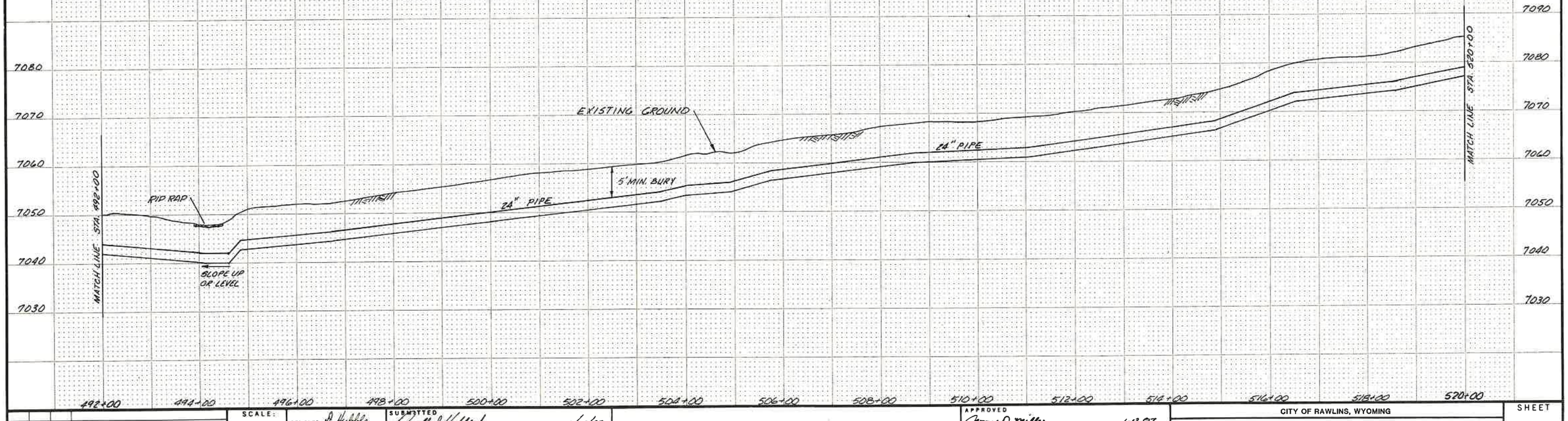


NOTE:
RESTRAIN ALL JOINTS STA. 493+80 TO STA. 495+20

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

NOTE:
CONTRACTOR SHALL TAKE PRECAUTION TO MINIMIZE DAMAGE TO THE HISTORIC OVERLAND TRAIL DURING CONSTRUCTION OF PIPELINE.

MINIMUM DESIGN WORKING PRESSURE = 175 PSI
(STA. 492+00 TO STA. 520+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER _____ R.C.E. NO. _____ DATE 1/26/87

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. R.C.E. NO. 4666 DATE 1/30/87

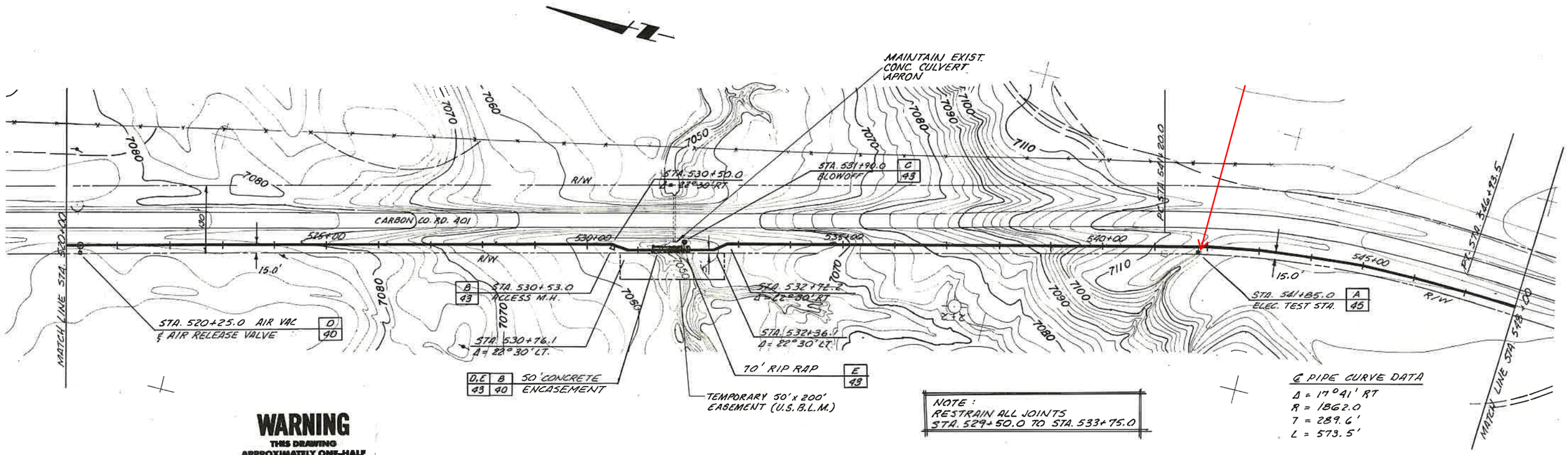
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Gary D. Miller DATE 1-12-87
APPROVED _____ DATE _____

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 492+00 TO STA. 520+00

SHEET 22 OF 49 SHEETS

89030

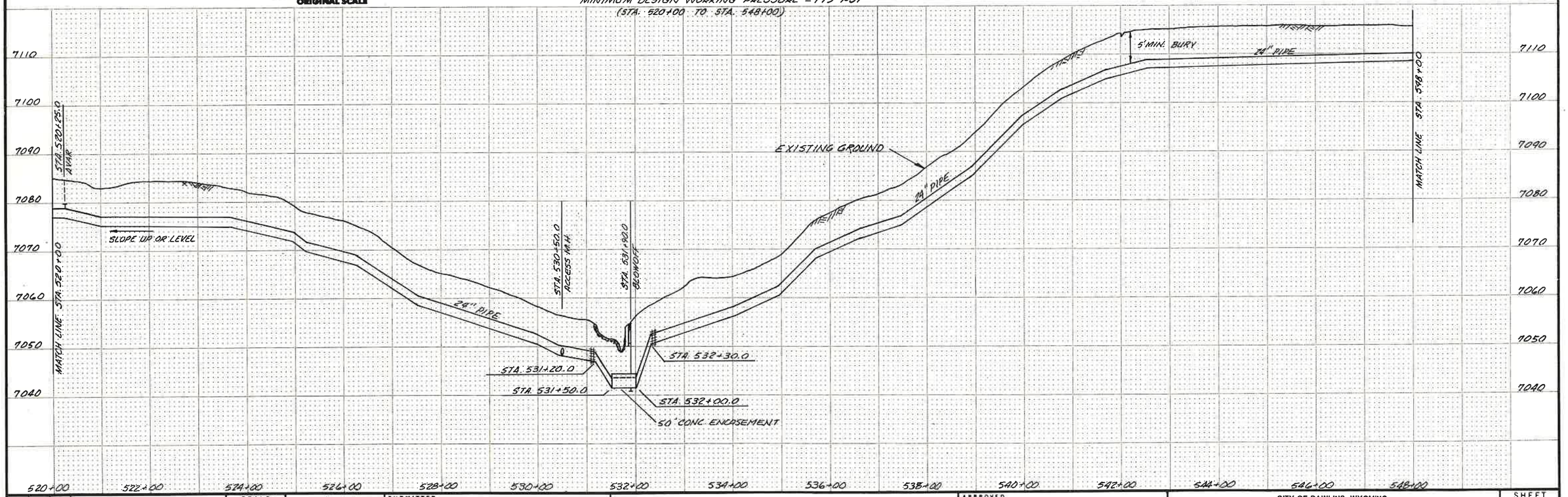


WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

NOTE :
RESTRAIN ALL JOINTS
STA. 529+50.0 TO STA. 533+75.0

℄ PIPE CURVE DATA
Δ = 17°41' RT
R = 1862.0
T = 289.6'
L = 573.5'

MINIMUM DESIGN WORKING PRESSURE = 175 PSI
(STA. 520+00 TO STA. 548+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1"=100'
VERT: 1"=10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED G. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — DATE 1/12/87

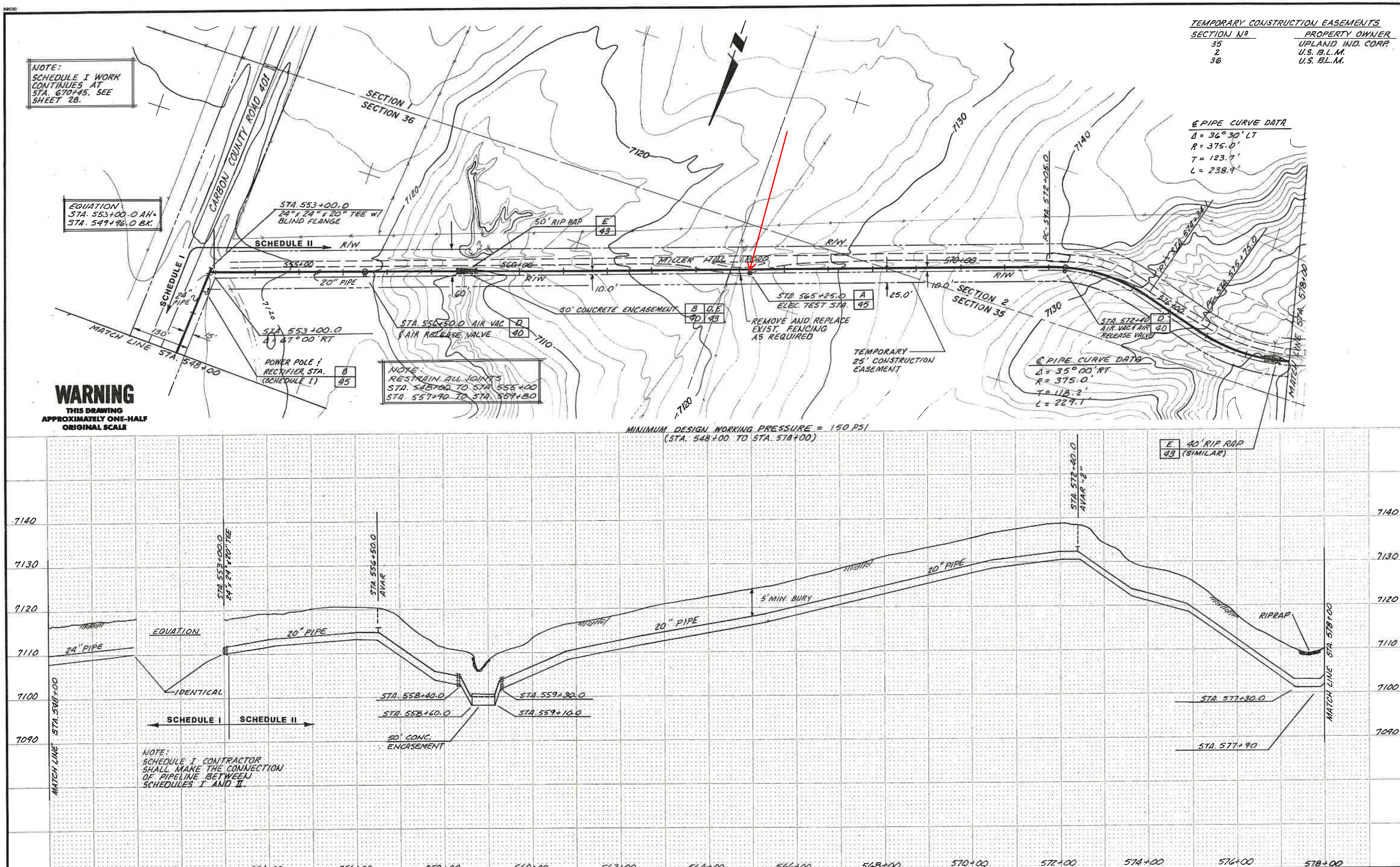
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. 4066 — DATE 1/10/87

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED Gerry D. Miller — DATE 1-12-87
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 520+00 TO STA. 548+00

SHEET 23 OF 49 SHEETS



TEMPORARY CONSTRUCTION EASEMENTS
SECTION Nº PROPERTY OWNER
35 UPLAND IND. CORP.
2 U.S. B.L.M.
36 U.S. B.L.M.
NOTE: SCHEDULE I WORK CONTINUES AT STA. 670+45. SEE SHEET 28.
SECTION 1
SECTION 36
CARBON COUNTY ROAD 401
EQUATION: STA. 553+00.0 AH= STA. 549+96.0 BK.
STA. 553+00.0 24"x 24"x 20" TEE w/ BLIND FLANGE
50' RIP RAP E 43
SCHEDULE II
R/W
SCHEDULE I
24" PIPE
20" PIPE
MILLER HILL ROAD
℄ PIPE CURVE DATA
Δ = 36°30' LT
R = 375.0'
T = 123.7'
L = 238.9'
PC STA. 572+05.0
STA. 565+25.0 ELEC. TEST STA. A 45
REMOVE AND REPLACE EXIST. FENCING AS REQUIRED
50' CONCRETE ENCASEMENT B 40 D,E 43
STA. 556+50.0 AIR VAC & AIR RELEASE VALVE D 40
STA. 553+00.0 Δ = 67°00' RT
MATCH LINE STA. 548+00
POWER POLE & RECTIFIER STA. (SCHEDULE I) B 45
NOTE: RESTRAIN ALL JOINTS STA. 548+00 TO STA. 555+00 STA. 557+90 TO STA. 559+80
TEMPORARY 25' CONSTRUCTION EASEMENT
SECTION 2
SECTION 35
10.0'
25.0'
STA. 572+40 AIR VAC AIR RELEASE VALVE D 40
℄ PIPE CURVE DATA
Δ = 35°00' RT
R = 375.0'
T = 118.2'
L = 229.1'
MATCH LINE STA. 578+00
WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE
MINIMUM DESIGN WORKING PRESSURE = 150 PSI (STA. 548+00 TO STA. 578+00)
E 40' RIP RAP 43 (SIMILAR)
STA. 572+40.0 AVAR "D"
STA. 553+00.0 24"x 24"x 20" TEE
STA. 556+50.0 AVAR
5' MIN. BURY
20" PIPE
24" PIPE
EQUATION
IDENTICAL
RIPRAP
STA. 558+40.0
STA. 558+60.0
STA. 559+30.0
STA. 559+10.0
50' CONC. ENCASEMENT
STA. 577+30.0
STA. 577+90
SCHEDULE I
SCHEDULE II
NOTE: SCHEDULE I CONTRACTOR SHALL MAKE THE CONNECTION OF PIPELINE BETWEEN SCHEDULES I AND II.
MATCH LINE STA. 548+00
MATCH LINE STA. 578+00
7140
7130
7120
7110
7100
7090
548+00
552+00
554+00
556+00
558+00
560+00
562+00
564+00
566+00
568+00
570+00
572+00
574+00
576+00
578+00

REV	DATE	BY	DESCRIPTION

SCALE: HORIZ: 1" = 100' VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

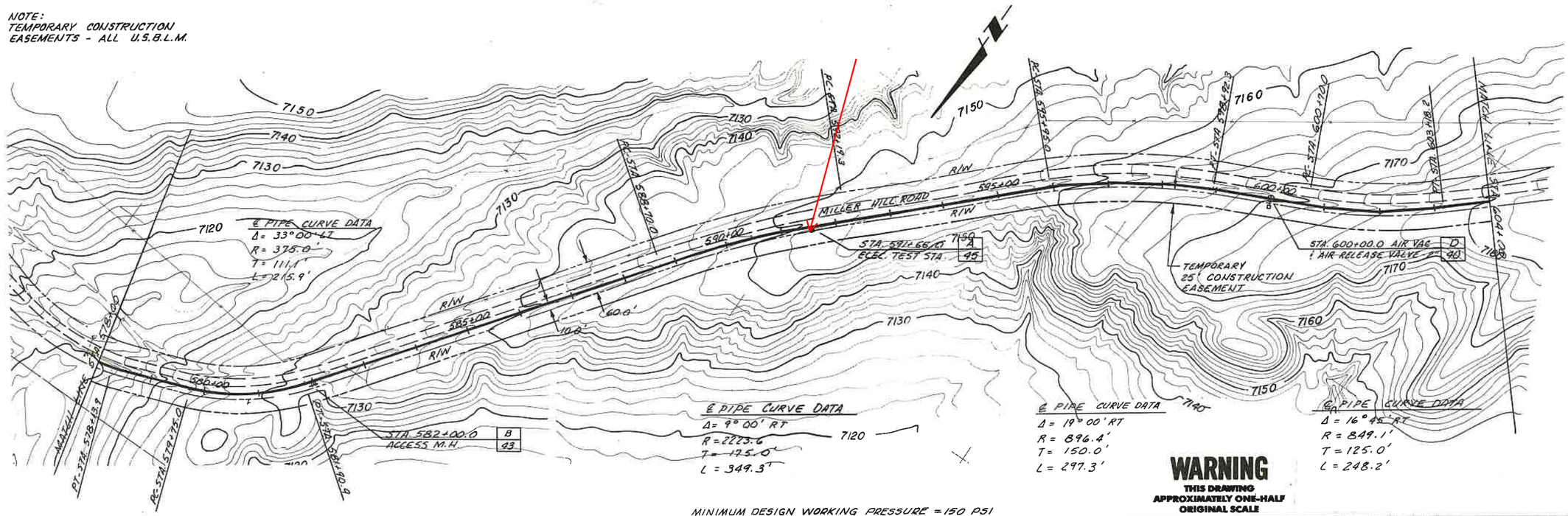
SUBMITTED — PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE
RECOMMENDED — JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED Gary D. Miller 1-12-87 DATE
APPROVED — DATE

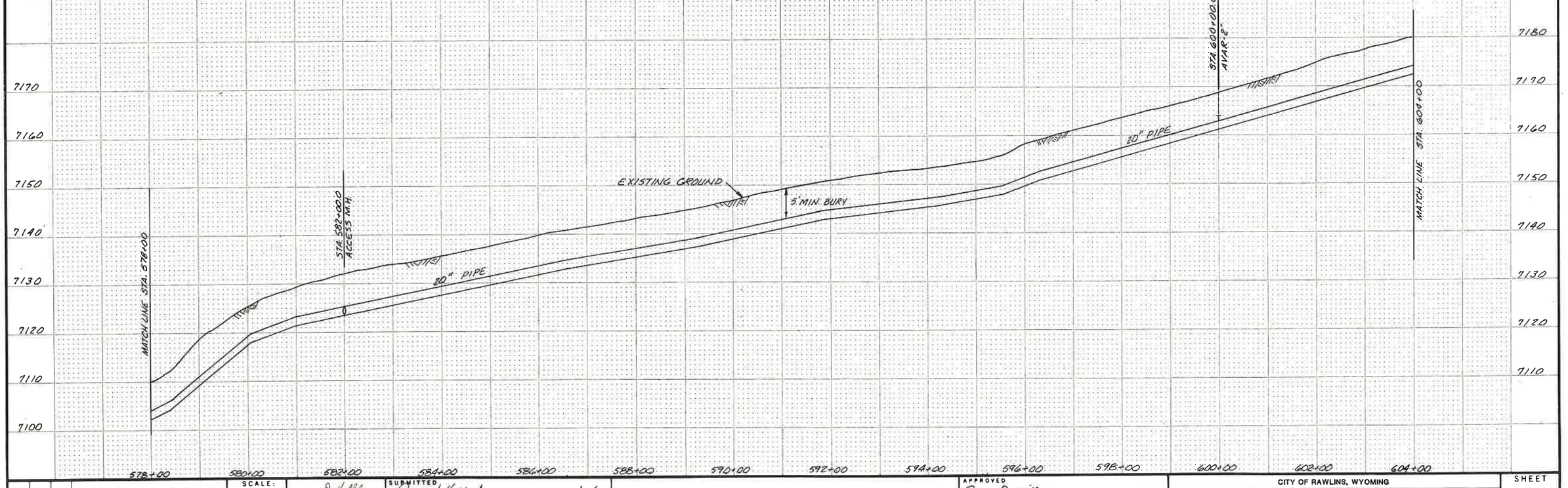
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE - PLAN AND PROFILE
STA. 548+00 TO STA. 578+00

NOTE:
TEMPORARY CONSTRUCTION
EASEMENTS - ALL U.S.B.L.M.



WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 578+00 TO STA. 604+00)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE - PLAN AND PROFILE
STA. 578+00 TO STA. 604+00

SHEET 25 OF 49 SHEETS

℄ PIPE CURVE DATA
Δ = 39°30' RT
R = 350.0'
T = 125.7'
L = 241.3'

TEMPORARY CONSTRUCTION EASEMENTS

SECTION NO.	PROPERTY OWNER
2	U.S.B.L.M.
3	UPLAND IND. CORP.

℄ PIPE CURVE DATA.
Δ = 5°30' RT
R = 2602.4'
T = 125'
L = 249.8'

SECTION 2
SECTION 3

℄ PIPE CURVE DATA
Δ = 19°00' LT
R = 1344.6'
T = 225'
L = 445.8'

℄ PIPE CURVE DATA
Δ = 8°30' LT
R = 2018.5'
T = 150.0'
L = 299.5'

℄ PIPE CURVE DATA
Δ = 8°30' LT
R = 672.8'
T = 50.0'
L = 99.8'

A 45 STA. 618+05.0 ELEC. TEST STA.

TEMPORARY 25' CONSTRUCTION EASEMENT

20"x16" REDUCER

16" B.F. VALVE

JOIN WELLFIELD PIPING AND CONTROL VAULT - SEE SHTS. 29 & 34

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 604+00 TO STA. 632+00)

EXISTING GROUND

20" PIPE

16" PIPE

5' MIN. BURY

SLOPE UP OR LEVEL

20'ø FROM CONTROL VAULT

16'ø TO CONTROL VAULT

MATCH LINE STA. 604+00

MATCH LINE STA. 632+00

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/16/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/16/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Gerry D. Miller — 1-12-87 DATE

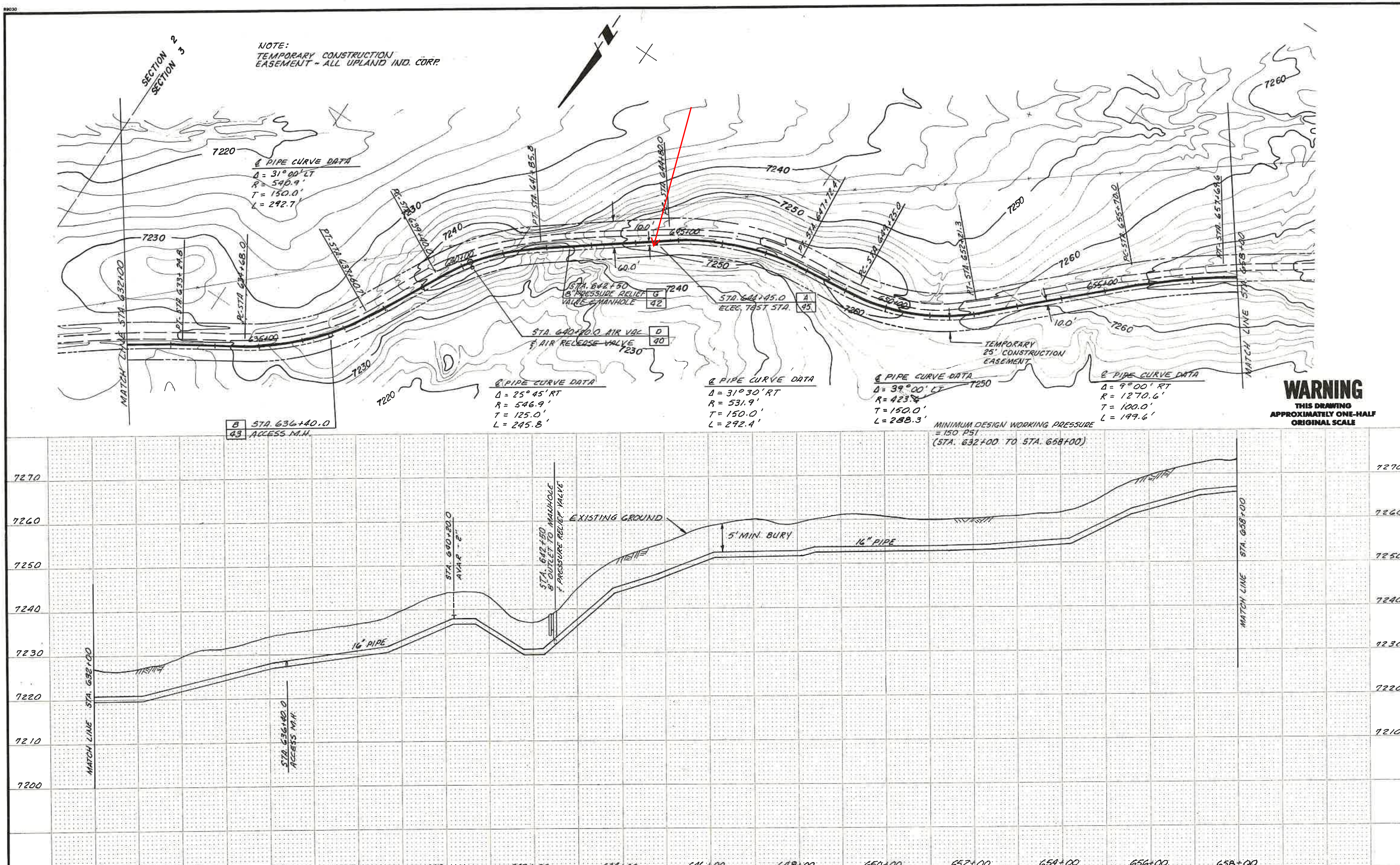
APPROVED — DATE

CITY OF RAWLINS, WYOMING

SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

PIPELINE – PLAN AND PROFILE
STA. 604+00 TO STA. 632+00

SHEET 26 OF 49 SHEETS



REV	DATE	BY	DESCRIPTION

SCALE: HORIZ: 1" = 100' VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

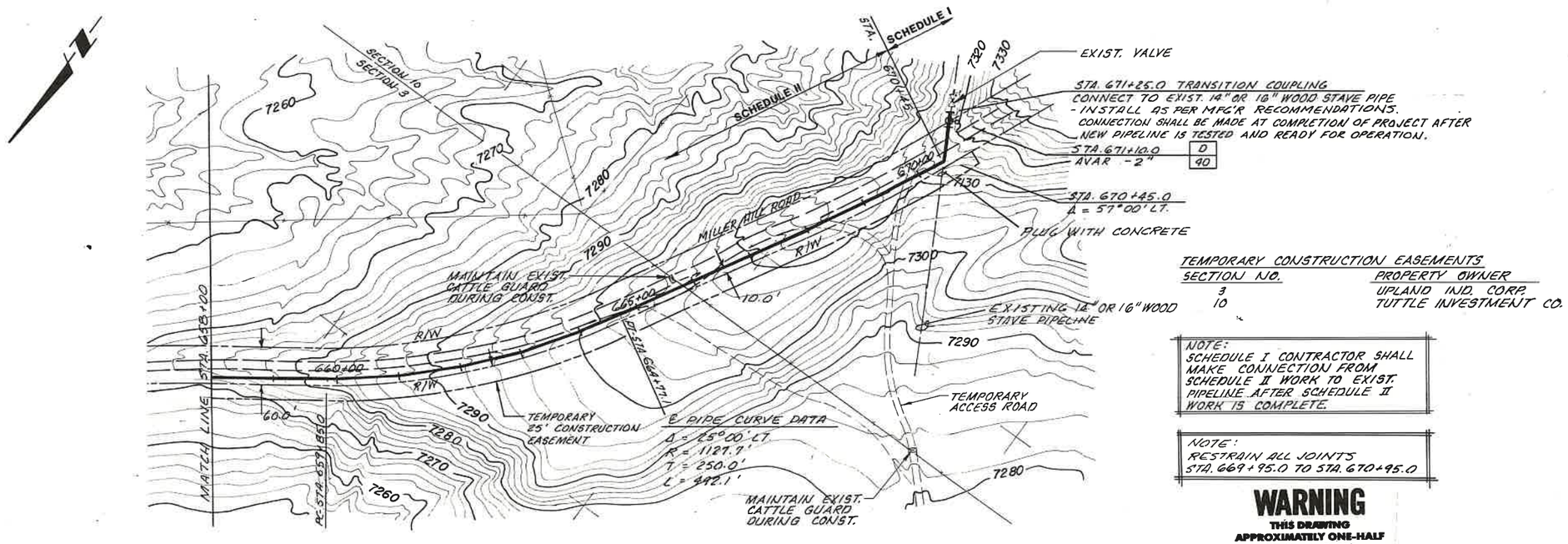
SUBMITTED PROJECT ENGINEER R.C.E. NO. 1/12/87 DATE
RECOMMENDED JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. 4066 R.C.E. NO. 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller 1-12-87 DATE
APPROVED DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE - PLAN AND PROFILE
STA. 632+00 TO STA. 658+00

SHEET 27 OF 49 SHEETS



TEMPORARY CONSTRUCTION EASEMENTS

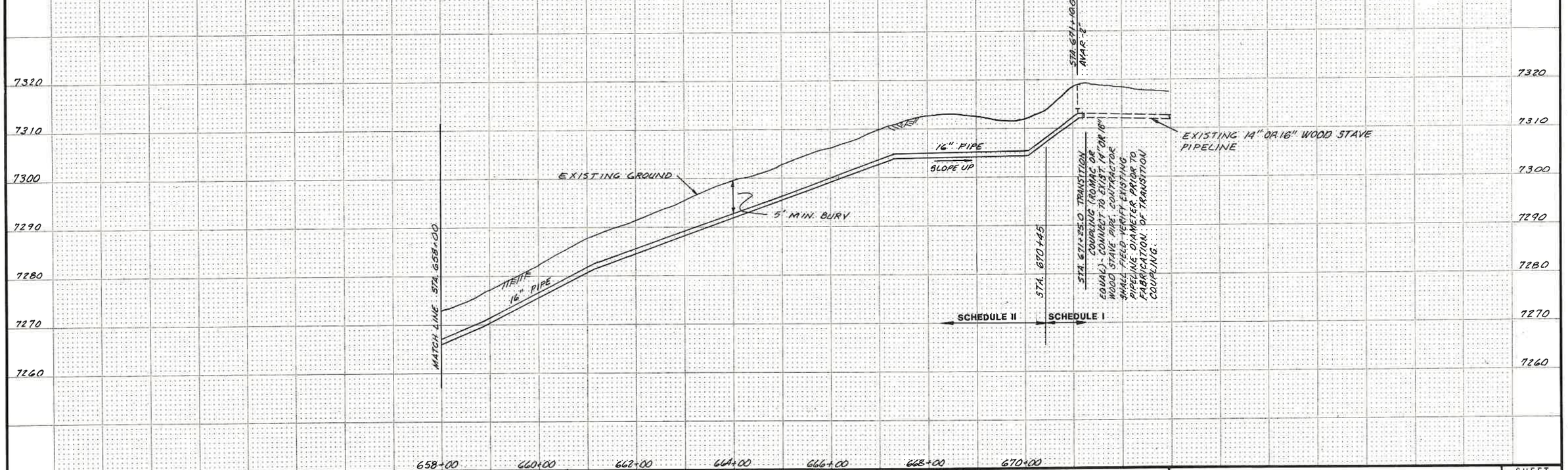
SECTION NO.	PROPERTY OWNER
3	UPLAND IND. CORP.
10	TUTTLE INVESTMENT CO.

NOTE:
SCHEDULE I CONTRACTOR SHALL MAKE CONNECTION FROM SCHEDULE II WORK TO EXIST. PIPELINE AFTER SCHEDULE II WORK IS COMPLETE.

NOTE:
RESTRAIN ALL JOINTS STA. 669+95.0 TO STA. 670+95.0

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

MINIMUM DESIGN WORKING PRESSURE = 150 PSI
(STA. 658+00 TO STA. 671+25)



REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER _____ R.C.E. NO. _____ 1/12/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. _____ 4066 R.C.E. NO. 1/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED _____ 1-12-87 DATE

APPROVED _____ DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE – PLAN AND PROFILE
STA. 658+00 TO STA. 671+25

SHEET 28 OF 49 SHEETS

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

SECTION 3

LANDOWNER
UNION PACIFIC R.R.

ALCO ROAD – TEMPORARY CONSTRUCTION ACCESS
SEE SHEET 2

N15,500
N16,000
N16,500
N17,000
N17,500
N18,000
E44,500
E45,000
E45,500
E46,000

MILLER CREEK

NEW CROSSING OF MILLER CREEK
SEE SHEETS NO. 30 & 33

NEW WELLFIELD ACCESS ROAD
SEE SHEETS NO. 30, 31 AND 32

OVERLAND TRAIL

SECTION CORNER

EXISTING WELL NO. 2

SECTION 3
SECTION 2

NEW WELLHEAD VAULT

CONSTRUCTION EASEMENT

EXISTING WELL NO. 3

NEW WELLHEAD VAULT

ELECTRICAL CABLES IN PIPELINE TRENCH BETWEEN WELLS NO. 1, 2 AND 3
SEE SHEET 46

NEW WELLFIELD PIPELINE
SEE SHEETS NO. 30, 31 AND 32

NEW WELLFIELD CONTROL VAULT
TELEMETRY REQUIRED TO EXISTING WATER TREATMENT PLANT. SEE SHEETS NO. 48 & 49

HILL ROAD

TEMPORARY 25' CONSTRUCTION EASEMENT

CARBON COUNTY RIGHT-OF-WAY

BUREAU OF LAND MANAGEMENT
LANDOWNER
SECTION 2

NEW WELLHEAD VAULT

EXISTING WELL NO. 1

T.18N.
T.19N.

REV	DATE	BY	DESCRIPTION

SCALE: 1"=100'

DESIGNED R. Stubbson
DRAWN T. Narad
CHECKED R. Anderson

SUBMITTED
Dennis Stubbson — R.C.E. NO. — 1/9/87 DATE
PROJECT ENGINEER

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. 4006 — 1/16/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

WELLFIELD FACILITIES INDEX MAP

SHEET 29 OF 49 SHEETS

R9030

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ.: 1" = 60'
VERT: 1" = 10'

DESIGNED D. Stubbson
DRAWN J. Narad
CHECKED A. Anderson

SUBMITTED
Dennis Stubbson — PROJECT ENGINEER — R.C.E. NO. — 11/9/87 DATE
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 11/10/87 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Gerry D. Miller — 1-12-87 DATE
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLFIELD PIPELINE - PLAN AND PROFILE
STA. 0+00 TO STA. 12+80

SHEET 30 OF 49 SHEETS

89030

MATCH LINE - PIPELINE STA. 12+80

SECTION 3 / SECTION 2

N 0° 11' W

N63°17'E 480.6'

CONSTRUCT 14" Ø PIPELINE SEE PROFILE BELOW

18" DIA. CULVERT PROVIDE MIN. 1' COVER

PIPELINE STA. 15+46± 4 PT.

PIPELINE STA. 16+25± JOIN 14" Ø MAIN WITH 8" Ø DISCHARGE FROM WELL NO 3

PIPELINE STA. 16+30± PROVIDE 14"x12" REDUCER

CONSTRUCT 12" Ø PIPELINE SEE PROFILE BELOW

CONST. 16' WIDE ACCESS ROAD SEE TYPICAL SECTION C / 33

℄ ROAD AND EASEMENT

54° 32' W 367.2'

55° 00' E 435.7'

PIPELINE STA. 16+00 INSTALL CORROSION TEST STATION - DET. A / 45

10" GRAVEL

EXIST. WELL NO 3

NOTES:
1. RESTRAIN PIPE JOINTS FROM WELLHEAD TO THE 14" CONNECTION.
2. LUMP SUM BID ITEM FOR WELLHEAD VAULT NO. 3 SHALL INCLUDE 8" PIPING FROM THE WELL TO THE 14" PIPELINE.

18" DIA. CULVERT PROVIDE MIN. 1' COVER / C / 33

PIPELINE STA. 19+18± 4 PT.

75' TEMPORARY CONST EASEMENT

60' PERMANENT EASEMENT

CONSTRUCT 16' WIDE ACCESS ROAD SEE TYPICAL SECTION

MATCH LINE - PIPELINE STA. 22+00

7190 / 7180 / 7170 / 7160

MINIMUM DESIGN WORKING PRESSURE ~ 150 PSI

RESTRAIN JOINTS

STA. 14+70

STA. 16+50

PIPELINE STA. 16+25 ± JOIN 14" Ø MAIN W/8" Ø DISCHARGE FROM WELL NO 3

EXIST. GROUND

8' MIN. BURY (TYP.)

MATCH LINE - PIPELINE STA. 12+80

MATCH LINE - PIPELINE STA. 22+00

14" Ø PIPE

12" Ø PIPE

PIPELINE STA. 16+30± PROVIDE 14"x12" REDUCER

13 14 15 16 17 18 19 20 21 22

WARNING
TX.IS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE:
HORIZ.: 1" = 50'
VERT: 1" = 10'

DESIGNED D. Stubbson
DRAWN T. Narad
CHECKED A. Anderson

SUBMITTED
Dennis Stubbson
PROJECT ENGINEER — R.C.E. NO. — 11/3/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

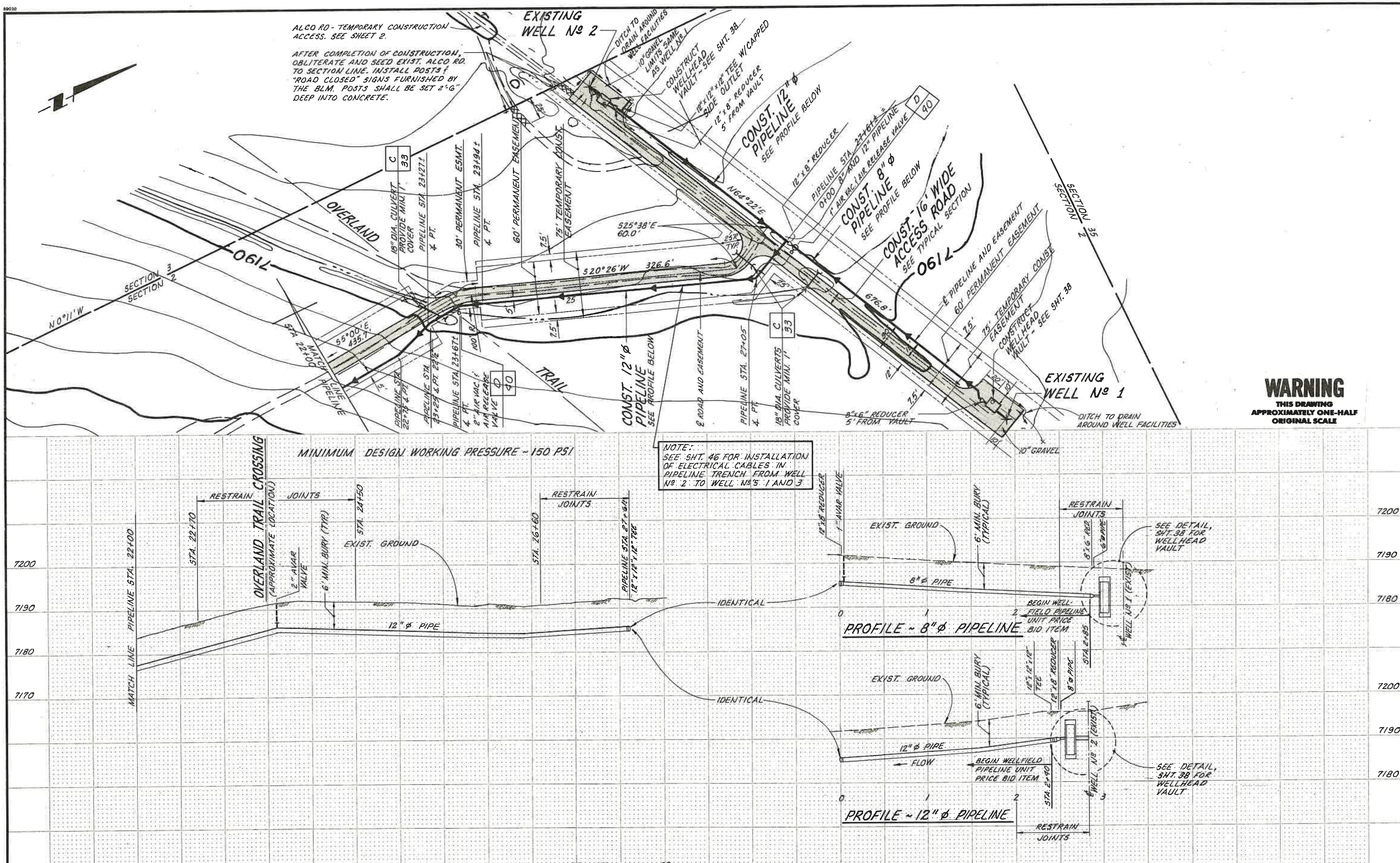
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED
Gerry D. Miller — 1-12-87 DATE

APPROVED
DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLFIELD PIPELINE - PLAN AND PROFILE
STA. 12+80 TO STA. 22+00

SHEET 31 OF 49 SHEETS



ALCO RD - TEMPORARY CONSTRUCTION ACCESS. SEE SHEET 2.
AFTER COMPLETION OF CONSTRUCTION, OBLITERATE AND SEED EXIST. ALCO RD. TO SECTION LINE. INSTALL POSTS & "ROAD CLOSED" SIGNS FURNISHED BY THE BLM. POSTS SHALL BE SET 2'-6" DEEP INTO CONCRETE.
EXISTING WELL Nº 2
DITCH TO DRAIN AROUND WELL FACILITIES
10" GRAVEL LIMITS SAME AS WELL Nº 1
CONSTRUCT WELLHEAD VAULT - SEE SHT. 38
12"x12"x12" TEE W/CAPPED SIDE OUTLET
12"x8" REDUCER 5' FROM VAULT
CONST. 12" ϕ PIPELINE SEE PROFILE BELOW
12"x8" REDUCER
PIPELINE STA. 27+61± 0+00 8" AND 12" PIPELINE
1" AIR VAC/AIR RELEASE VALVE
D 40
CONST. 8" ϕ PIPELINE SEE PROFILE BELOW
CONST. 16' WIDE ACCESS ROAD SEE TYPICAL SECTION
7190
SECTION 35
SECTION 2
N64°22'E
S25°38'E 60.0'
25'R TYP.
S20°26'W 326.6'
676.8'
℄ PIPELINE AND EASEMENT
60' PERMANENT EASEMENT
75' TEMPORARY CONST. EASEMENT
CONSTRUCT WELLHEAD VAULT - SEE SHT. 38
EXISTING WELL Nº 1
DITCH TO DRAIN AROUND WELL FACILITIES
10" GRAVEL
8"x6" REDUCER 5' FROM VAULT
C 33
18" DIA. CULVERT PROVIDE MIN. 1' COVER
PIPELINE STA. 23+27± ℄ PT.
30' PERMANENT ESMT.
PIPELINE STA. 23+94± ℄ PT.
60' PERMANENT EASEMENT
75' TEMPORARY CONST. EASEMENT
7.5'
OVERLAND
TRAIL
7190
SECTION 3
SECTION 2
N0°11'W
STA. 22+00
MATCH LINE PIPELINE
55°00'E 435.1'
PIPELINE STA. 22+75 ℄ PT.
PIPELINE STA. 23+27 ℄ PT. 22+...
PIPELINE STA. 23+67± ℄ PT.
2" AIR VAC/AIR RELEASE VALVE
D 40
CONST. 12" ϕ PIPELINE SEE PROFILE BELOW
℄ ROAD AND EASEMENT
PIPELINE STA. 27+05 ℄ PT.
18" DIA. CULVERTS PROVIDE MIN. 1' COVER
C 33
WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE
MINIMUM DESIGN WORKING PRESSURE ~ 150 PSI
NOTE: SEE SHT. 46 FOR INSTALLATION OF ELECTRICAL CABLES IN PIPELINE TRENCH FROM WELL Nº 2 TO WELL Nº'S 1 AND 3
RESTRAIN JOINTS
STA. 22+70
OVERLAND TRAIL CROSSING (APPROXIMATE LOCATION)
2" AVAR VALVE
6' MIN. BURY (TYP)
STA. 24+50
EXIST. GROUND
STA. 26+60
PIPELINE STA. 27+61± 12"x12"x12" TEE
MATCH LINE PIPELINE STA. 22+00
12" ϕ PIPE
IDENTICAL
12"x8" REDUCER
1" AVAR VALVE
EXIST. GROUND
6' MIN. BURY (TYPICAL)
8" ϕ PIPE
BEGIN WELL-FIELD PIPELINE UNIT PRICE BID ITEM.
8"x6" RED.
6" PIPE
SEE DETAIL, SHT. 38 FOR WELLHEAD VAULT
℄ WELL Nº 1 (EXIST.)
STA. 2+85
PROFILE ~ 8" ϕ PIPELINE
12"x12"x12" TEE
12"x8" REDUCER
8" ϕ PIPE
12" ϕ PIPE
FLOW
BEGIN WELLFIELD PIPELINE UNIT PRICE BID ITEM
STA. 2+40
℄ WELL Nº 2 (EXIST.)
SEE DETAIL, SHT. 38 FOR WELLHEAD VAULT.
PROFILE ~ 12" ϕ PIPELINE
7200
7190
7180
7170
22
23
24
25
26
27
28

REV	DATE	BY	DESCRIPTION

SCALE: HORIZ.: 1" = 50' VERT: 1" = 10'

DESIGNED D. Suikkanen — DRAWN F. Narad — CHECKED A. Anderson

SUBMITTED Dennis Suikkanen, PROJECT ENGINEER, R.C.E. NO., 1/9/87 DATE

RECOMMENDED, JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC., A066 R.C.E. NO., 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED 1-12-87 DATE

APPROVED — DATE

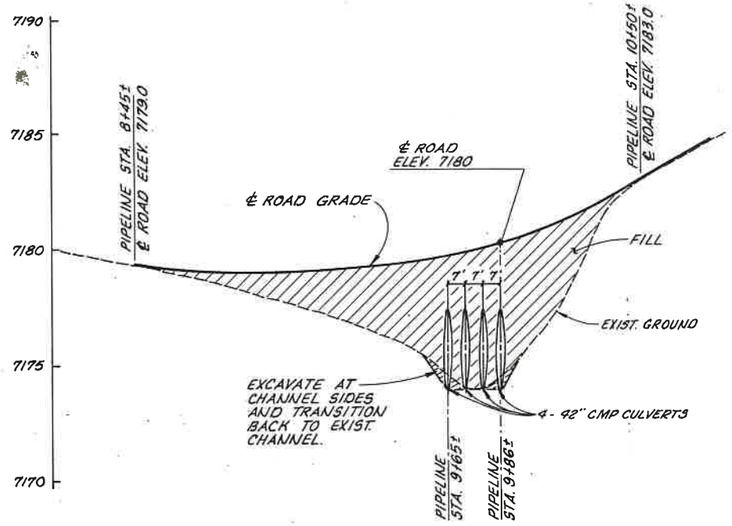
CITY OF RAWLINS, WYOMING

SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

WELLFIELD PIPELINE - PLAN AND PROFILE

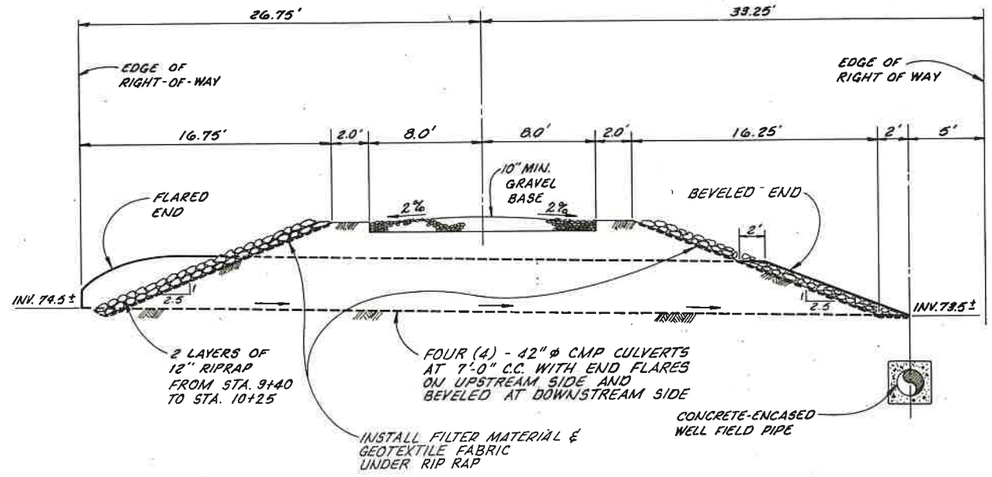
STA. 22+00 TO STA. 27+67

SHEET 32 OF 49 SHEETS



ROAD PROFILE AT MILLER CREEK CROSSING

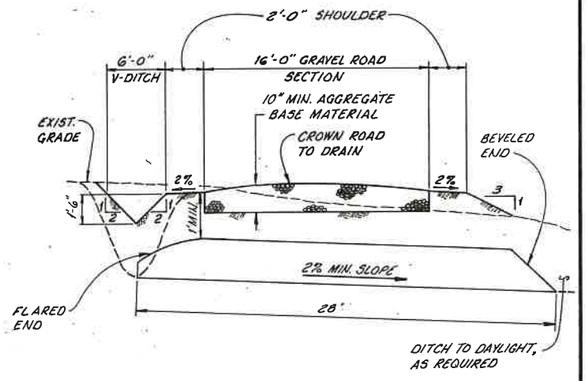
A
30



MILLER CREEK CROSSING TYPICAL SECTION

B
30

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE



NOTE: ROAD BASE SHALL BE TOPPED WITH ADDITIONAL MATERIAL AS NECESSARY TO RESTORE TO THE ABOVE SECTION IF DAMAGED BY HEAVY EQUIPMENT DURING CONSTRUCTION.

TYPICAL ROAD AND 18" CULVERT SECTION

C
VAR

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED D. Smithson
DRAWN M. Hays
CHECKED A. Anderson

SUBMITTED
Dennis Smithson — PROJECT ENGINEER — R.C.E. NO. — 1/9/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

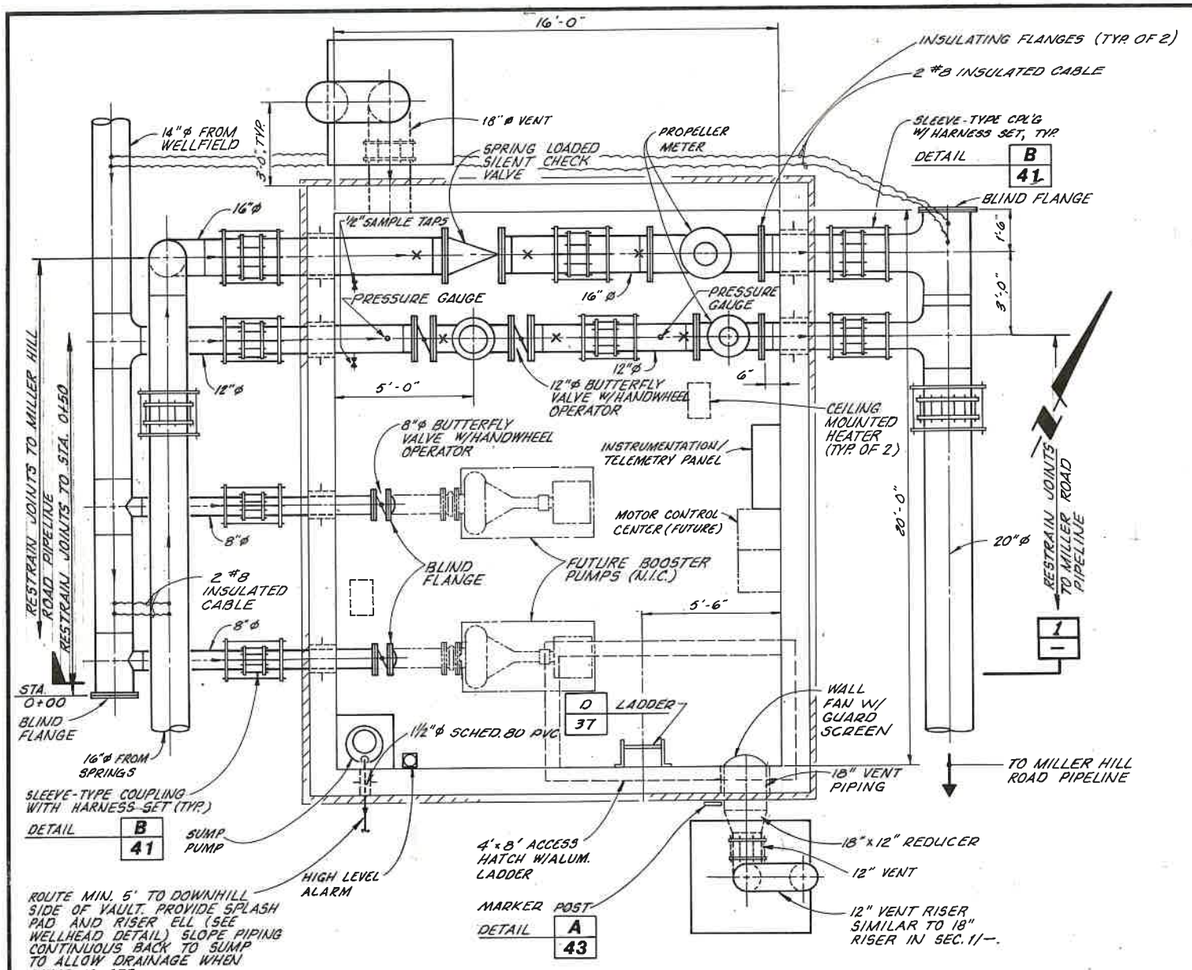
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller — 1-12-87 DATE

APPROVED — DATE

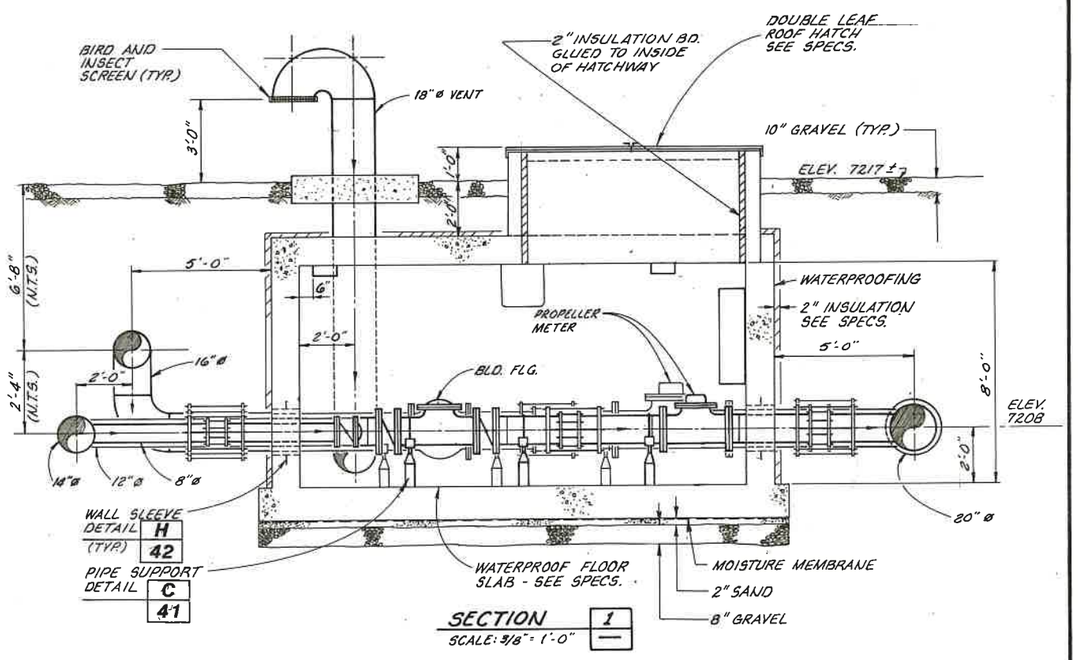
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
MILLER CREEK CROSSING DETAILS

SHEET 33 OF 49 SHEETS



NOTE:
ALL INTERIOR STRUCTURE AND VENT PIPING ≥ 6"ø SHALL BE FABRICATED STEEL. ~ SEE SPECS. PIPING AND EQUIPMENT SHALL BE COATED PER SPEC SECTION 09800. ABOVE GRADE COATINGS SHALL CONFORM TO BLM COLOR REQUIREMENTS

PLAN
SCALE: 3/8"=1'-0"



SECTION 1/—
SCALE: 3/8"=1'-0"

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

DESIGNED D. Sutton
DRAWN R. Hays, TEN.
CHECKED A. Anderson

SUBMITTED Dennis Stibbens PROJECT ENGINEER — R.C.E. NO. — 1/9/87 DATE
RECOMMENDED James M. Montgomery JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/16/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

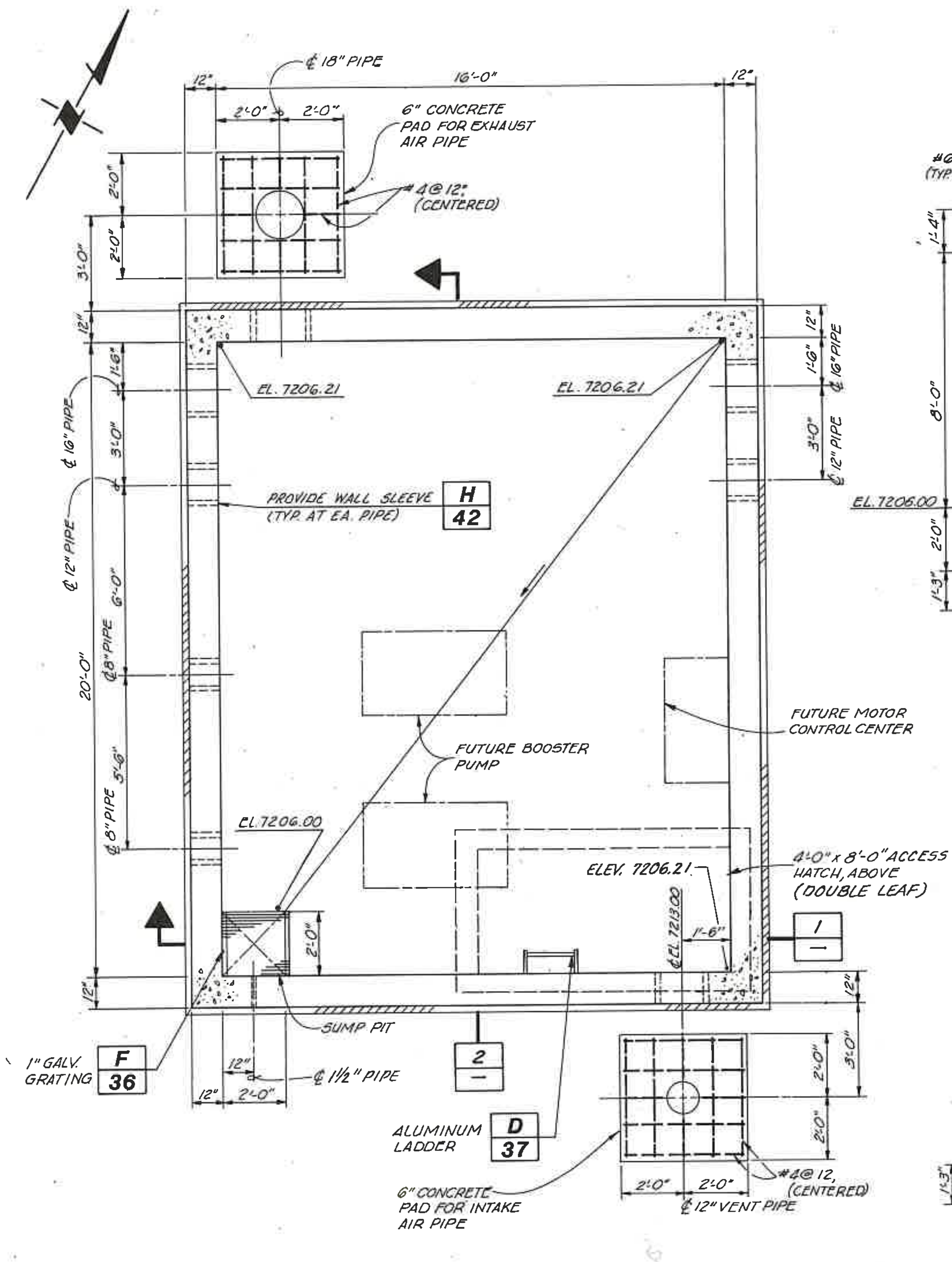
APPROVED Gary D. Miller — 1-12-87 DATE
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLFIELD CONTROL VAULT - MECHANICAL

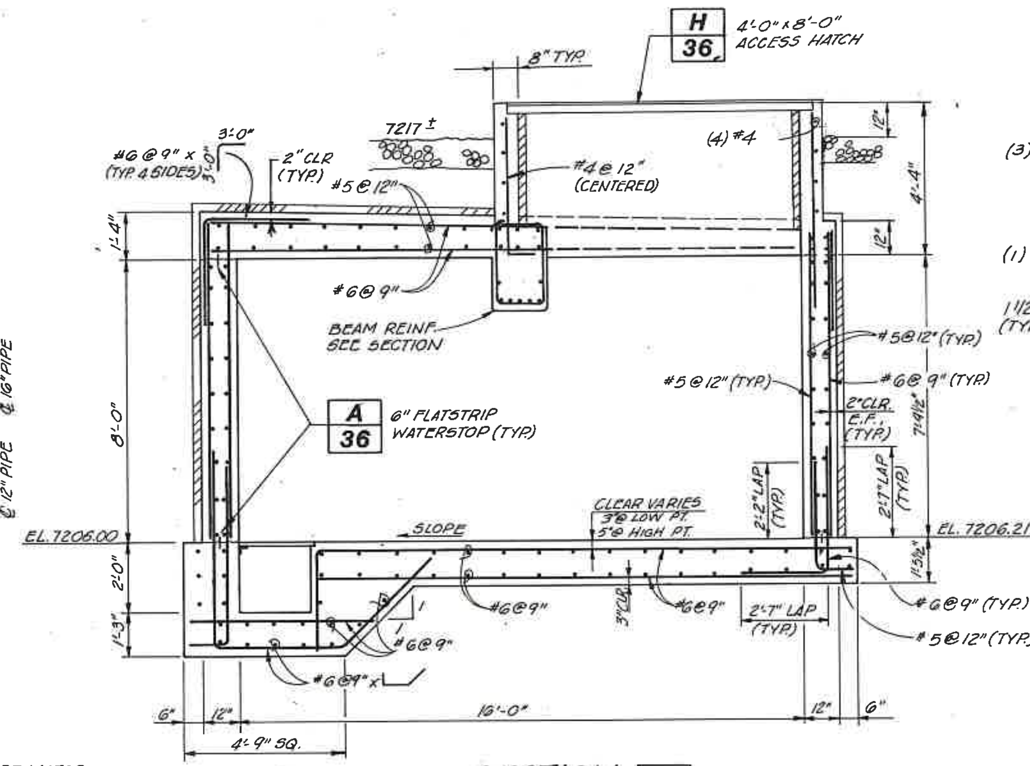
SHEET 34 OF 49 SHEETS

NOTES:

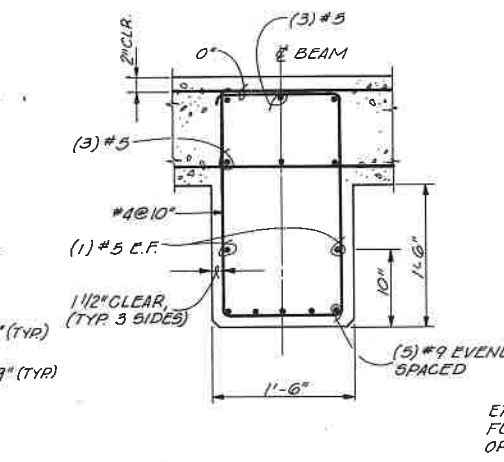
1. INSTALL LIFTING EYE DIRECTLY ABOVE FUTURE BOOSTER PUMPS AND EACH PROPELLER METER, SEE LIFTING EYE DETAIL J/36.
2. TYPE V CEMENT SHALL BE USED IN THIS STRUCTURE.



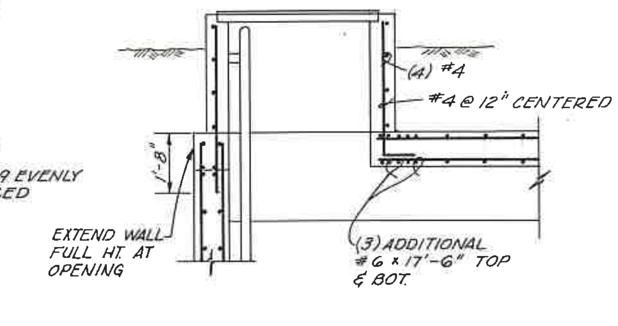
PLAN
SCALE: 3/8" = 1'-0"



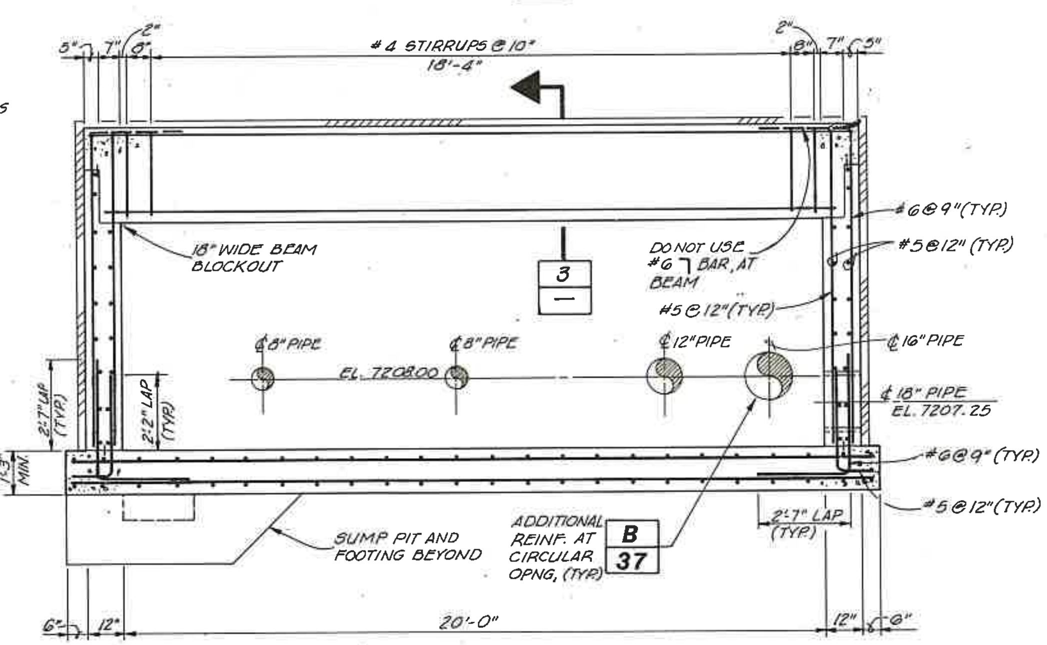
SECTION 1
SCALE: 3/8" = 1'-0"



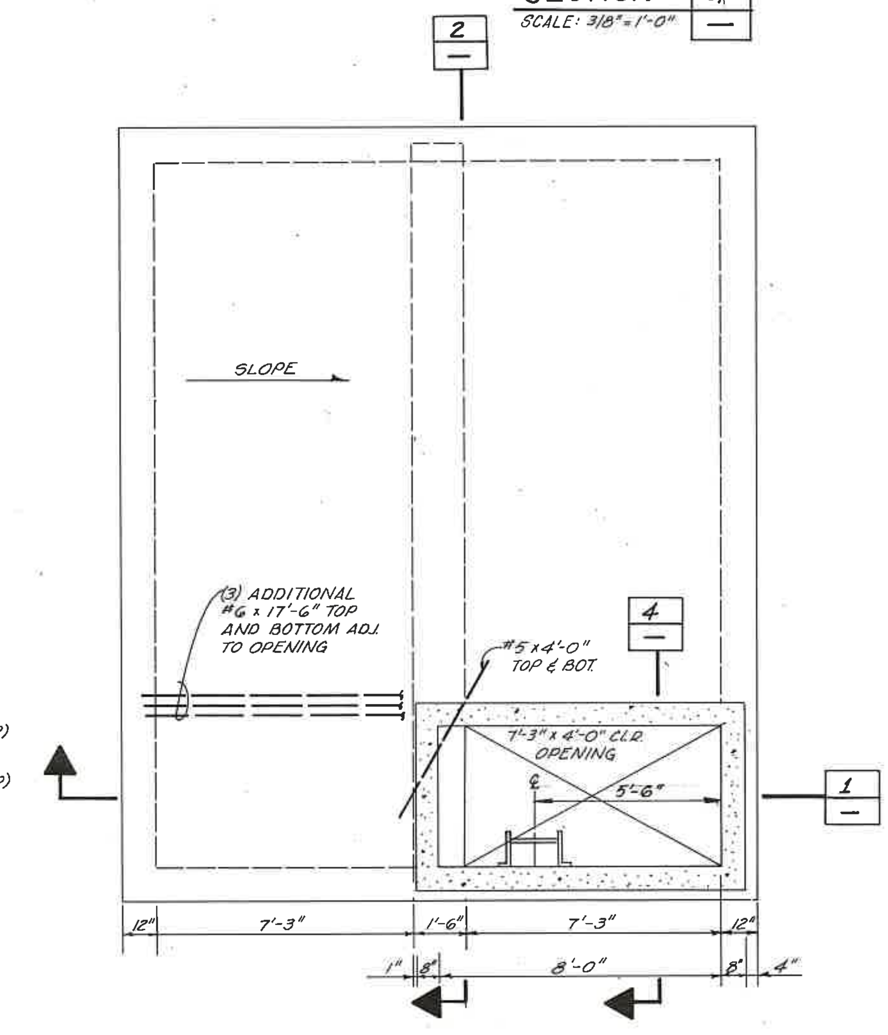
SECTION 3
SCALE: 1" = 1'-0"



SECTION 4
SCALE: 3/8" = 1'-0"



SECTION 2
SCALE: 3/8" = 1'-0"



ROOF PLAN
SCALE: 3/8" = 1'-0"

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

DESIGNED B. Maxwell
DRAWN D. Mozlecic
CHECKED A. Anderson

SUBMITTED Dennis Swikbone, PROJECT ENGINEER, R.C.E. NO., 1/9/87 DATE
RECOMMENDED JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC., 4066 R.C.E. NO., 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller 1-12-87 DATE
APPROVED ______ DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLFIELD CONTROL VAULT - STRUCTURAL

SHEET 35 OF 49 SHEETS

GENERAL

STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED FOR PRIOR TO PLACING CONCRETE.

STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH MECHANICAL, ELECTRICAL, ARCHITECTURAL, CIVIL DRAWINGS AND SHOP DRAWINGS PROVIDED BY MANUFACTURERS OF EQUIPMENT.

STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND BALANCING WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR.

UNLESS OTHERWISE SHOWN, ON ALL STRUCTURAL DRAWINGS, THE FINISH GRADE AROUND STRUCTURES IS SHOWN THUS ~~~~, INDICATING EITHER GROUND SURFACE, TOP OF CONCRETE SLAB OR A.C. PAVEMENT. FOR DETAILS OF FINISH SURFACES SEE CIVIL AND ARCHITECTURAL DRAWINGS.

STRUCTURAL

DESIGN IN ACCORDANCE WITH THE 1985 EDITION OF THE UNIFORM BUILDING CODE, EXCEPT WHERE OTHER APPLICABLE CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE.

CONCRETE

UNLESS OTHERWISE NOTED OR SPECIFIED, ALL STRUCTURAL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.

REINFORCEMENT STEEL SHALL BE DEFORMED BARS CONFORMING IN QUALITY TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT" ASTM DESIGNATION A-615, GRADE 60.

ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI-315, LATEST EDITION.

TOLERANCES IN PLACING REINFORCEMENT SHALL BE:

$\pm$ 3/8 INCH FOR MEMBERS WITH d $\leq$ 8 INCHES
$\pm$ 1/2 INCH FOR MEMBERS WITH d $>$ 8 INCHES

ALL KEYWAYS IN CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED FOR BOND.

DOWELS, PIPES, WATERSTOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.

UNLESS OTHERWISE SHOWN, ASIDE FROM NORMAL ACCESSORIES USED TO HOLD REINFORCING BARS FIRMLY IN POSITION, THE FOLLOWING SHALL BE ADDED:

A) IN SLABS #5 RISER BARS AT 36 INCHES O.C. MAXIMUM TO SUPPORT TOP REINFORCING BARS.

B) IN WALLS WITH 2 CURTAINS #3 U OR Z SHAPE SPACERS AT 6 FEET O.C. EACH WAY.

METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.

DOWELS SHALL BE WIRED OR OTHERWISE HELD IN POSITION. THEY SHALL NOT BE SHOVED INTO FRESHLY PLACED CONCRETE.

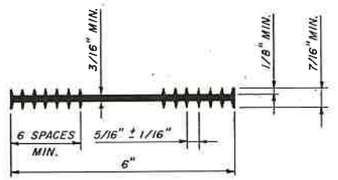
REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES.

UNLESS OTHERWISE SHOWN, EXTERIOR CORNERS IN CONCRETE MEMBERS SHALL BE PROVIDED WITH 3/4-INCH CHAMFERS.

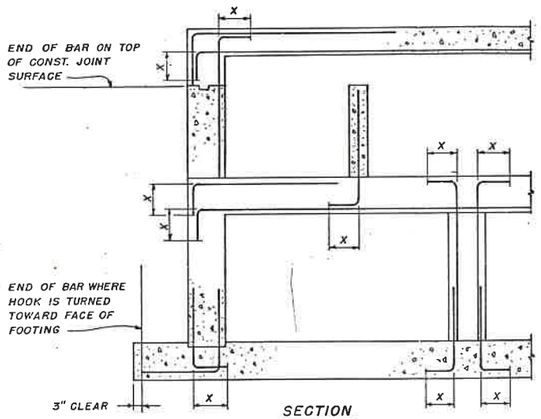
THE DETAILS ILLUSTRATED ON THIS SHEET ARE PART OF JAMES M. MONTGOMERY STANDARD DETAILS.

THESE DETAILS ARE TO BE USED WHEN REFERRED TO OR WHEN NO OTHER MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON THE DRAWINGS.

DETAILS NOT PERTAINING TO THE PROJECT ARE MARKED THUS ▨ N.I.C. (NOT IN CONTRACT)



6" FLATSTRIP WATERSTOP — A

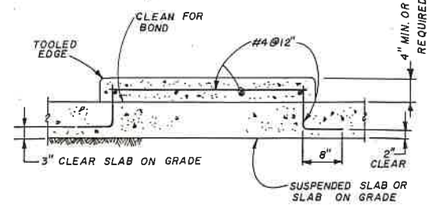


SECTION

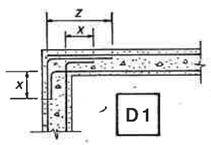
BAR SIZE	90° HOOKS "X"	BAR SIZE	90° HOOKS "X"
# 3	6"	# 8	16"
# 4	8"	# 9	19"
# 5	10"	# 10	22"
# 6	12"	# 11	24"
# 7	14"		

NOTE:
UNLESS OTHERWISE NOTED ON THE DRAWINGS ALL LENGTHS OF BAR HOOKS IN FOOTINGS, COLUMNS, WALLS AND SLABS SHALL BE AS GIVEN IN THE TABLE HEREIN.
THE HOOK LENGTH "X" IS THE STANDARD 90° BAR HOOK LENGTH FOR GRADE 40 OR GRADE 60 REINFORCEMENT STEEL.

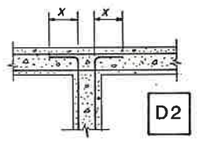
STANDARD 90° BAR HOOKS — B



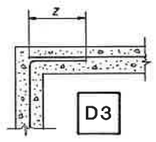
EQUIPMENT PAD (FUTURE - NOT IN CONTRACT) — C



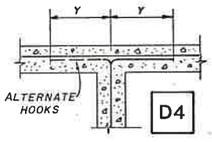
D1



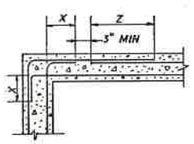
D2



D3



ALTERNATE HOOKS — D4



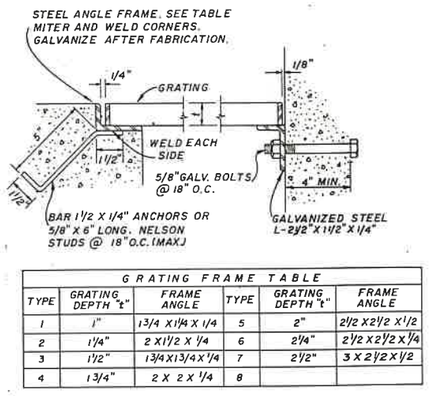
ALTERNATE (ONLY WHERE NOTED ON THE DRAWINGS)

BAR SIZE	GRADE 40 X	GRADE 40 Z	GRADE 60 Y	GRADE 60 Z
# 4	18"	20"	12"	20"
# 5	18"	20"	15"	26"
# 6	13"	26"	18"	31"

BAR SIZE	GRADE 40 X	GRADE 40 Z	GRADE 60 Y	GRADE 60 Z
# 7	18"	31"	23"	39"
# 8	23"	33"	30"	51"
# 9	29"	43"	38"	65"

NOTE: FOR STANDARD 90° BAR HOOK LENGTHS "X", SEE DETAIL B

HORIZONTAL REINFORCEMENT AT WALL INTERSECTIONS — D



ALUMINUM GRATING — E

BEARING BARS: DEPTH "t" x 3/16" @ 1 3/16" O.C.
CROSS BARS @ 4" O.C.
USE ALUM. ANGLE SUPPORTS AND BOLTS

GALVANIZED STEEL GRATING — F

BEARING BARS: DEPTH "t" x 3/16" @ 1 3/16" O.C.
CROSS BARS @ 4" O.C.
PER DETAIL TO LEFT

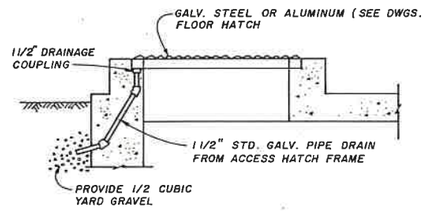
STAINLESS STEEL GRATING — G

STAINLESS STEEL SHALL BE TYPE 18-8
BEARING BARS: DEPTH "t" x 3/16" @ 1 3/16" O.C.
CROSS BARS @ 4" O.C.
USE STAINLESS STEEL ANGLE SUPPORTS AND BOLTS

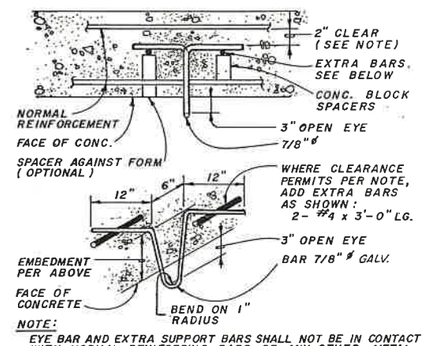
GRATING FRAME TABLE					
TYPE	GRATING DEPTH "t"	FRAME ANGLE	TYPE	GRATING DEPTH "t"	FRAME ANGLE
1	1"	1 3/4 X 1 1/4 X 1/4	5	2"	2 1/2 X 2 1/2 X 1/2
2	1 1/4"	2 X 1 1/2 X 1/4	6	2 1/4"	2 1/2 X 2 1/2 X 1/4
3	1 1/2"	1 3/4 X 1 3/4 X 1/4	7	2 1/2"	3 X 2 1/2 X 1/2
4	1 3/4"	2 X 2 X 1/4	8		

GRATING OF DEPTH "t" AS NOTED ON DRAWINGS SHALL BE AS SPECIFIED HEREIN.
ALL ENDS AND OPENINGS SHALL BE BANDED.
ALL GRATINGS SHALL BE SECURED IN PLACE WITH REMOVABLE FASTENERS, SEE DETAIL K.
WEIGHT OF GRATING SECTION SHALL NOT EXCEED 80 LBS.

MANUFACTURER (OR EQUAL)	WATERTIGHT FLOOR HATCH W/ DIAMOND PLATE COVER	
	SINGLE - LEAF TYPE	DOUBLE-LEAF TYPE
BILCO	J	JD
BABCOCK - DAVIS	AM	GT
INRYCO / MILCOR	G	G

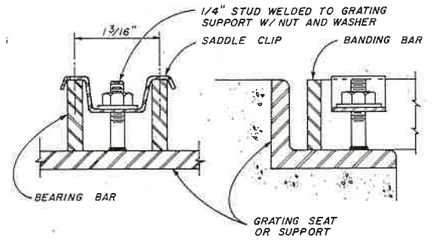


ACCESS HATCH DETAIL — H



NOTE:
EYE BAR AND EXTRA SUPPORT BARS SHALL NOT BE IN CONTACT WITH NORMAL REINFORCING BARS OR ANY OTHER METAL INSTALLATION OR ACCESSORY EMBEDDED IN CONCRETE.

LIFTING EYE DETAILS — J



PROVIDE 4 CLIPS PER GRATING PANEL, APPROX. 4" FROM PANEL CORNERS. MAXIMUM CLIP SPACING AT 36" O.C.

STUD, NUT, WASHER AND CLIP TO BE THE SAME MATERIAL AS THE GRATING.

GRATING ANCHOR DETAIL — K

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED JMM STANDARD
DRAWN JMM
CHECKED A. Anderson

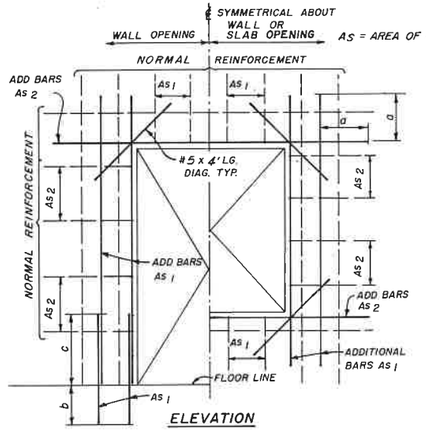
SUBMITTED Dennis Stubbson PROJECT ENGINEER — R.C.E. NO. — 1/9/87 DATE
RECOMMENDED JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. 4066 — 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Gary D. Miller — 1-12-87 DATE
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLFIELD CONTROL VAULT - STRUCTURAL

SHEET 36 OF 49 SHEETS



ELEVATION

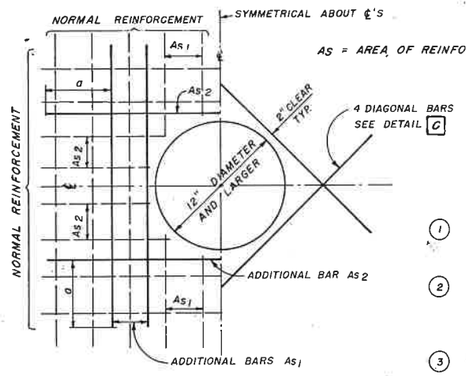
BAR SIZE	GRADE 40 a	GRADE 40 b	GRADE 40 c	GRADE 60 a	GRADE 60 b	GRADE 60 c
# 4	13"	7"	24"	16"	12"	20"
# 5	16"	13"	27"	20"	15"	26"
# 6	17"	18"	29"	24"	18"	31"
# 7	23"	18"	31"	30"	24"	39"
# 8	30"	24"	39"	39"	30"	51"
# 9	38"	30"	49"	49"	38"	65"
# 10	48"	36"	63"	63"	48"	82"

(1) CUT NORMAL REINFORCEMENT AT OPENING:
AS1 AND AS2 = 1/2 AREA OF CUT BARS TO BE ADDED ON EACH SIDE OF OPENING.

(2) ADDITIONAL BARS As1 AND AS2 TO BE PLACED:
a) AT ℄ OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
b) AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.

(3) THIS DETAIL TO BE USED ONLY WHEN NO OTHER DETAIL IS INDICATED ON THE DRAWINGS.

ADDITIONAL REINFORCEMENT AROUND RECTANGULAR OPENINGS — A



ELEVATION

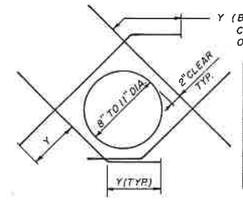
BAR SIZE	"a" GRADE 40	"a" GRADE 60
# 4	13"	15"
# 5	18"	21"
# 6	16"	24"
# 7	21"	27"
# 8	24"	36"
# 9	30"	42"
# 10	36"	48"

(1) CUT NORMAL REINFORCEMENT AT OPENING:
AS1 AND AS2 = 1/2 AREA OF CUT BARS TO BE ADDED ON EACH SIDE OF OPENING.

(2) ADDITIONAL BARS As1 AND AS2 TO BE PLACED:
a) AT ℄ OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
b) AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.

(3) ADD ADDITIONAL FOOTING DOWELS TO MATCH ADDITIONAL VERTICAL STEEL WHICH IS CUT.

ADDITIONAL REINFORCEMENT AT CIRCULAR OPENINGS — B



BAR SIZE	"Y" GRADE 40	"Y" GRADE 60
# 4	12"	12"
# 5	15"	15"
# 6	18"	18"
# 7	21"	24"
# 8	24"	30"

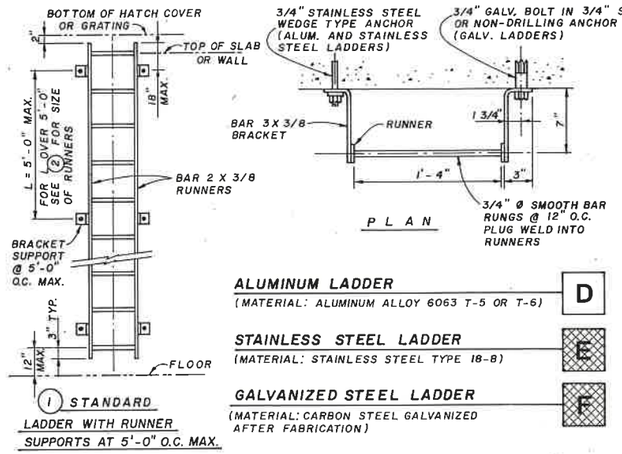
(1) CUT NORMAL REINFORCEMENT AT OPENING.

(2) DIAGONAL BARS TO BE PLACED;
A. AT ℄ OF WALL OR SLAB WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
B. AT EACH FACE OF WALL OR SLAB WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED

(3) UNLESS OTHERWISE NOTED, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINF. BAR CUT.

(4) THIS DETAIL TO BE USED ONLY WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER DETAIL IS SPECIFIED.

DIAGONAL REINFORCEMENT AT CIRCULAR OPENINGS — C

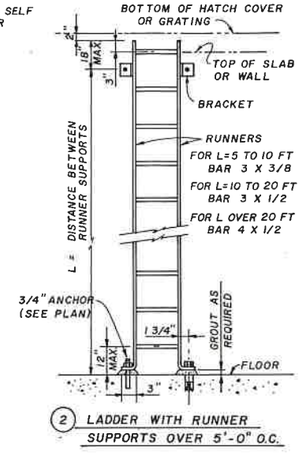


(1) STANDARD LADDER WITH RUNNER SUPPORTS AT 5'-0" O.C. MAX.

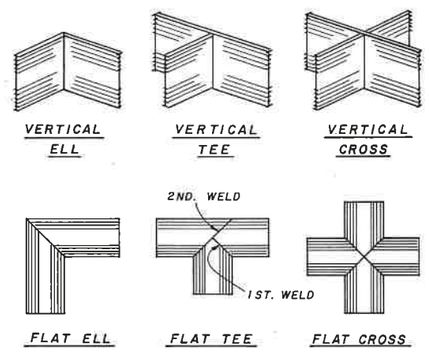
ALUMINUM LADDER — D
(MATERIAL: ALUMINUM ALLOY 6063 T-5 OR T-6)

STAINLESS STEEL LADDER — E
(MATERIAL: STAINLESS STEEL TYPE 18-8)

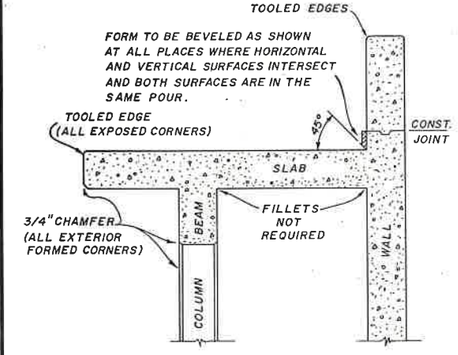
GALVANIZED STEEL LADDER — F
(MATERIAL: CARBON STEEL GALVANIZED AFTER FABRICATION)



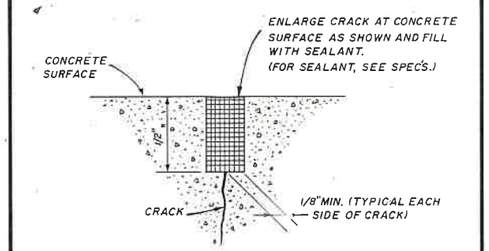
(2) LADDER WITH RUNNER SUPPORTS OVER 5'-0" O.C.



FLATSTRIP WATERSTOPS FACTORY MADE JOINTS — G



FORMING DETAILS — H



NOTE:
PRIOR TO FILLING, STRUCTURES TO CONTAIN WATER SHALL HAVE ALL CRACKS REPAIRED AS SHOWN IN THIS DETAIL.

CONCRETE CRACK REPAIR — J

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED JMM STANDARD
DRAWN JMM
CHECKED A. Anderson

SUBMITTED Dennis Tuthill — PROJECT ENGINEER — R.C.E. NO. — 1/9/87 DATE

RECOMMENDED — JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/87 DATE

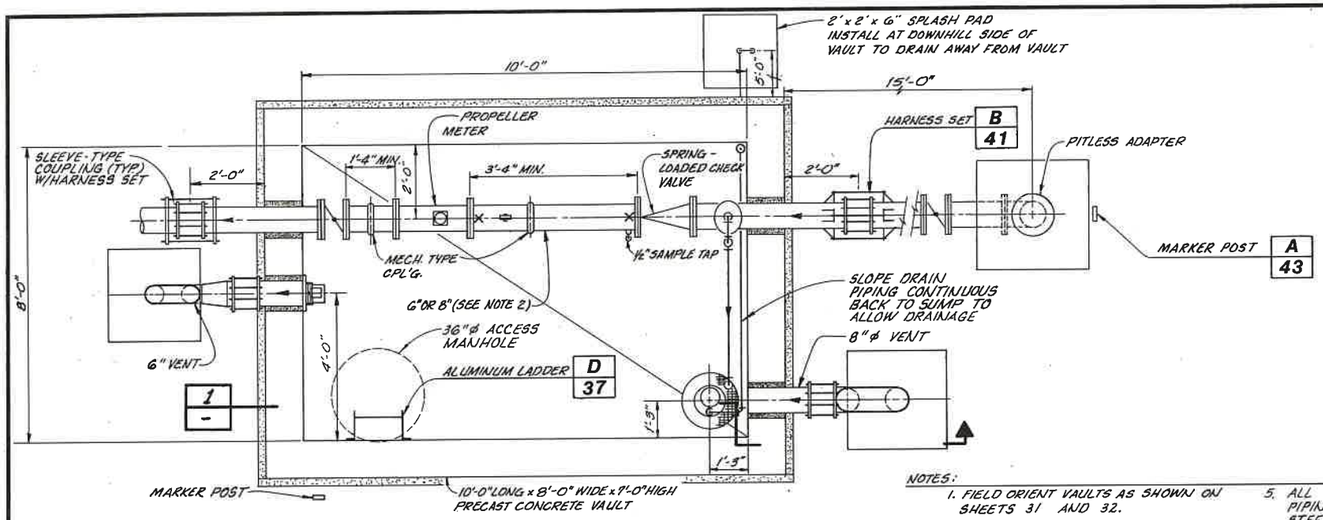
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Jerry D. Miller — 1-12-87 DATE

APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLFIELD CONTROL VAULT - STRUCTURAL

SHEET 37 OF 49 SHEETS

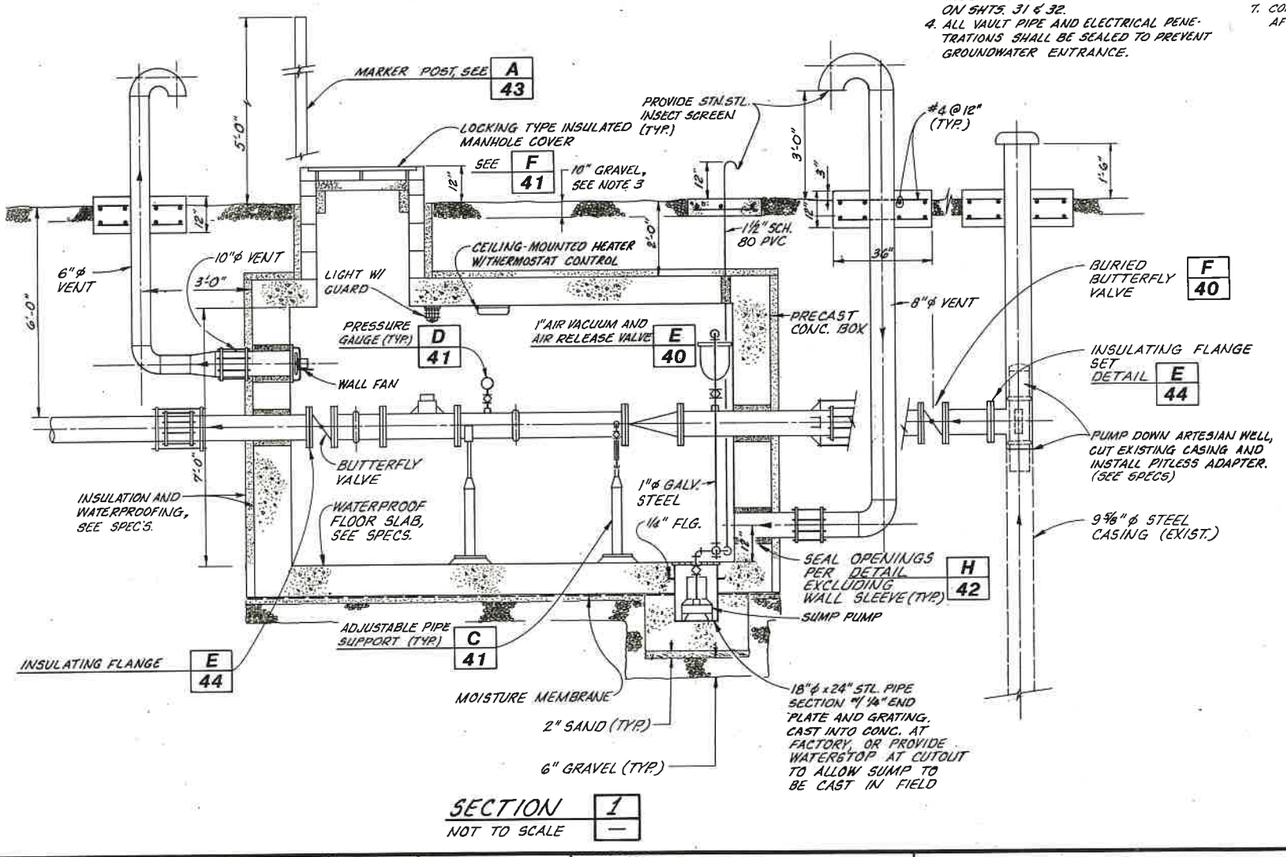


WELLHEAD VAULT PLAN (TYP. OF 3)

NOT TO SCALE

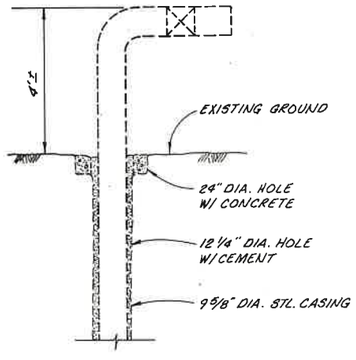
NOTES:

1. FIELD ORIENT VAULTS AS SHOWN ON SHEETS 31 AND 32.
2. WELL NOS. 2 AND 3 SHALL HAVE 8" APPURTENANCES AND VAULT PIPING. WELL NO. 1 SHALL BE 6".
3. PROVIDE 10" DEEP GRAVEL BASE AROUND WELL VAULT AS SHOWN ON SHTS. 31 & 32.
4. ALL VAULT PIPE AND ELECTRICAL PENETRATIONS SHALL BE SEALED TO PREVENT GROUNDWATER ENTRANCE.
5. ALL VENT AND STRUCTURE INTERIOR PIPING ≥ 6" SHALL BE FABRICATED STEEL. SEE SPECS.
6. PIPING AND EQUIPMENT SHALL BE COATED PER SPEC. SECTION 09800. ABOVE GROUND COATINGS SHALL CONFORM TO BLM COLOR REQUIREMENTS.
7. CORE DRILL PIPE OPENINGS THROUGH WALLS AFTER THE VAULT IS SET IN PLACE.



SECTION 1

NOT TO SCALE



EXISTING WELL CONDITION

NOT TO SCALE

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED D. Tuttbomen
DRAWN Dan VA. Davis
CHECKED A. Anderson

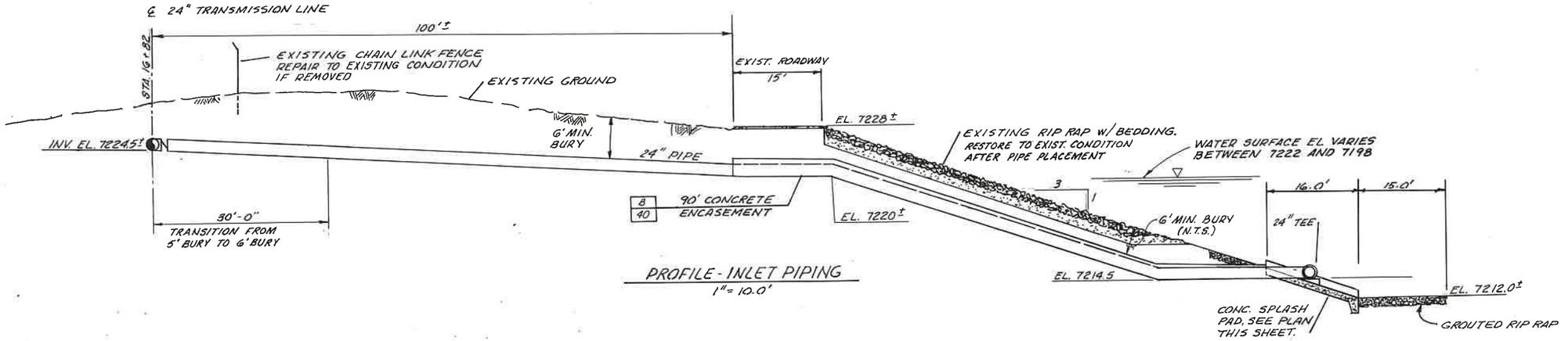
SUBMITTED Dennis Tuttbomen PROJECT ENGINEER — R.C.E. NO. — 1/9/87 DATE
RECOMMENDED JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. 4066 — 1/9/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Jerry D. Miller — 1-12-87 DATE
APPROVED — DATE

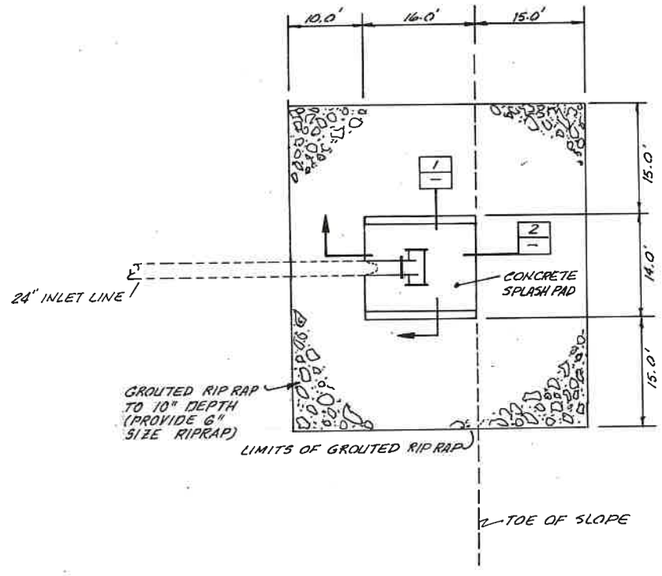
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLHEAD VAULTS - MECHANICAL

SHEET 38 OF 40 SHEETS

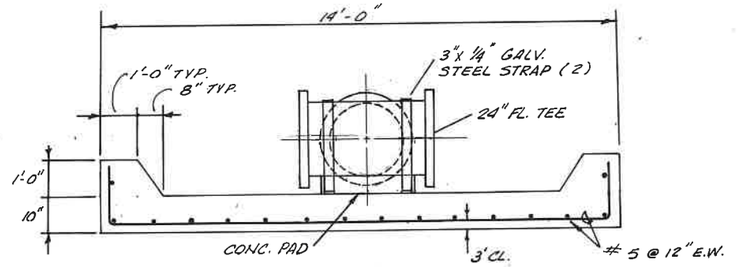


PROFILE - INLET PIPING
1" = 10.0'

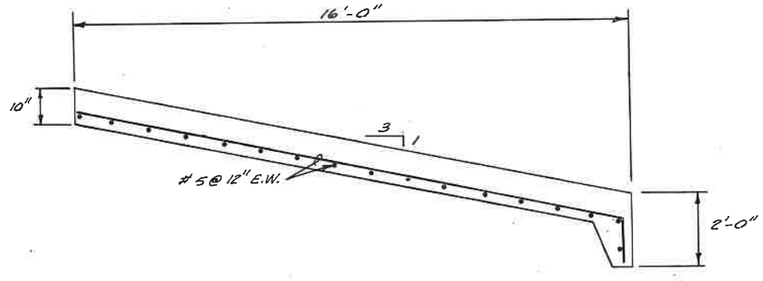
NOTE:
THE OWNER WILL DRAIN THE RESERVOIR DOWN BELOW EL. 7210 SO THE CONTRACTOR CAN WORK IN DRY CONDITIONS. SEE SPEC. SECTION 01010 REGARDING SEQUENCING OF WORK.



SPLASH PAD PLAN
1" = 10.0'



SECTION 1/—
1/2" = 1'-0"



SECTION 2/—
1/2" = 1'-0"

WARNING
THIS DRAWING
APPROXIMATELY ONE-HALF
ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

DESIGNED D. Hubble
DRAWN D. Hubble
CHECKED A. Anderson

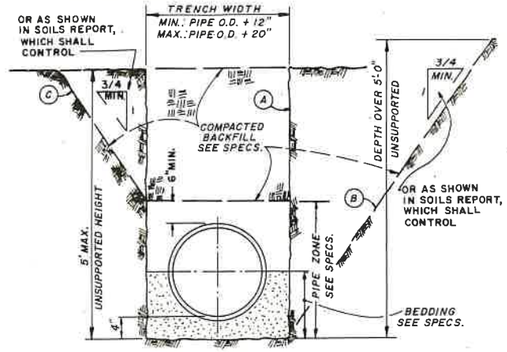
SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — DATE
RECOMMENDED
JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC. — 4066 R.C.E. NO. — 1/10/89 DATE

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

APPROVED Gary D. Miller — 1-12-89 DATE
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
ATLANTIC RIM RESERVOIR CONNECTION

SHEET 39 OF 49 SHEETS



1. ALTERNATIVE TRENCH SECTIONS (A,B, and C) ARE FOR USE ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. WHERE BOULDERS OR LARGE CONSTRUCTIONS ARE ENCOUNTERED, THE TRENCH SECTIONS MAY BE WIDER & DEEPER THAN THAT SHOWN:

   A. Vertical trench walls-Section
      1. For depths up to 5 feet, no trench support is required.
      2. For depths exceeding 5 feet, shoring or solid sheathing is required.

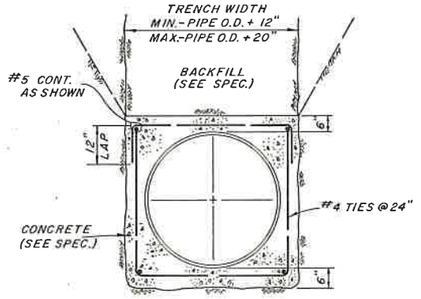
   B. Sloping trench walls-Section
      1. Sloping trench wall section shall not be used without approval of engineer, unless specifically designated on plans or specifications.
      2. Except as approved by engineer, unsupported sloping trench walls shall not be steeper than 3/4 horiz. to 1 vert. or as shown in soils report which shall control.

   C. Combination of vertical and sloping trench walls-Section
      1. Trench depths not exceeding 5 feet shall have vertical walls in pipe zone unless otherwise approved, by engineer, or where specified.
      2. For trenches with combined walls and any depth exceedign 5 feet, design calculations by a registered civil engineer and approval by governing agency of supported methods are required.

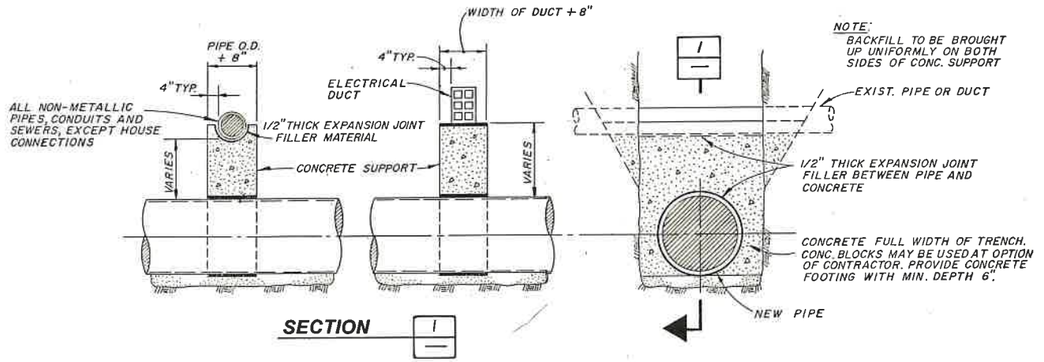
2. WHERE NET, UNSTABLE OR RUNNING SOIL IS ENCOUNTERED, SOLID SHEATHING IS REQUIRED FOR ALL VERTICAL TRENCH WALLS.

NOTE: TRENCH SECTIONS SHOWN DO NOT DESIGNATE PAY LINES.

TYPICAL TRENCH SECTION — A VAR

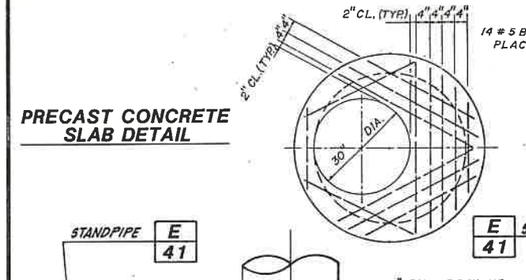


CONCRETE ENCASEMENT DETAIL — B VAR

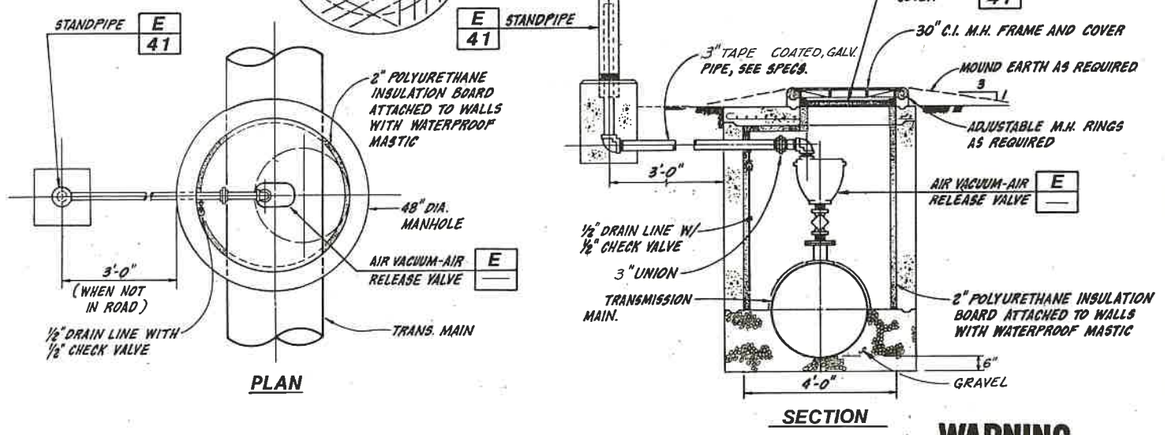


NOTES:
1. UNDERGROUND UTILITY SUPPORTS ARE TO BE PROVIDED WHERE SHOWN ON PLAN OR PROFILE.
2. EXISTING PIPE OR DUCT SHALL BE FIRMLY SUPPORTED DURING INSTALLATION OF NEW PIPE AND SUPPORT.
3. ASSUME 3 OF THESE REQ'D IN BID.

UNDERGROUND UTILITY SUPPORT DETAILS — C VAR

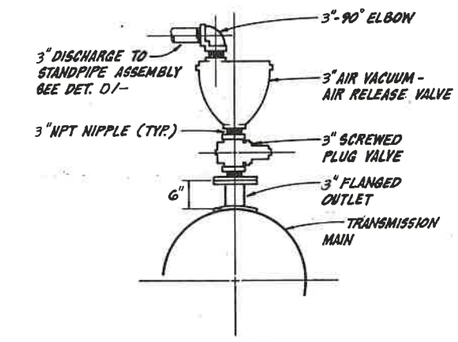


PRECAST CONCRETE SLAB DETAIL



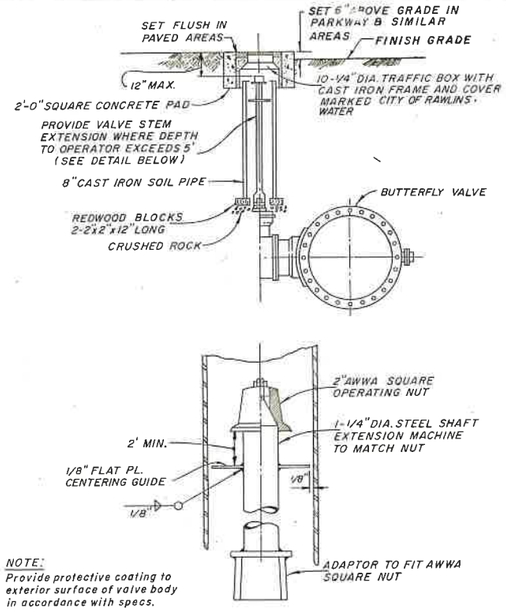
AIR VACUUM AND AIR RELEASE VALVE STRUCTURE — D VAR

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE



NOTE:
AVAR VALVES SHALL BE 3" UNLESS THE SIZE IS SPECIFICALLY SHOWN TO BE DIFFERENT ON DRAWINGS.

AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY — E VAR



NOTE:
Provide protective coating to exterior surface of valve body in accordance with specs.

BURIED VALVE INSTALLATION — F VAR

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED JMM
DRAWN JMM
CHECKED A. Anderson

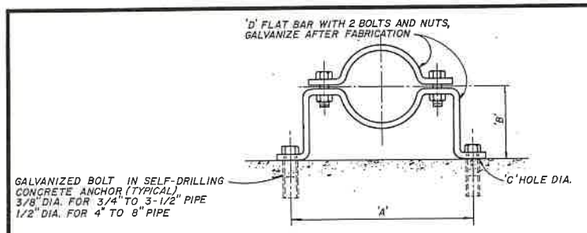
SUBMITTED Dennis Linkhorn PROJECT ENGINEER R.C.E. NO. 1/9/87 DATE
RECOMMENDED James M. Montgomery JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. R.C.E. NO. 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Gregg D. Miller 1-12-87 DATE
APPROVED DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE DETAILS

SHEET 40 OF 49 SHEETS



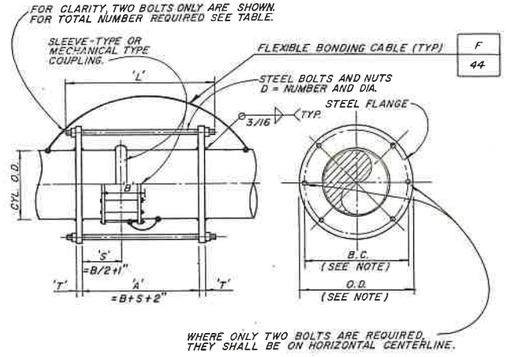
DIMENSIONS IN INCHES					
PIPE DIA.	'A'	'B' SEE NOTE 3 BELOW	'C' HOLE DIA.	'D' FLAT BAR SIZE	LOAD RATING LBS.*
3/4	5-15/16	2-1/2	7/16	3/16 x 1-1/4	300
1	6-1/4	2-5/8	7/16	3/16 x 1-1/4	300
1-1/4	6-11/16	2-3/4	7/16	3/16 x 1-1/4	300
1-1/2	6-15/16	3	7/16	3/16 x 1-1/4	300
2	8-5/16	3-3/16	7/16	1/4 x 1-1/4	500
2-1/2	8-7/8	3-7/16	7/16	1/4 x 1-1/4	500
3	9-1/8	3-3/4	7/16	1/4 x 1-1/4	500
3-1/2	10-1/16	4	7/16	1/4 x 1-1/4	500
4	10-9/16	4-1/4	9/16	1/4 x 1-1/2	600
5	11-3/4	4-3/4	9/16	1/4 x 1-1/2	600
6	14-3/8	5-5/16	9/16	3/8 x 1-1/2	850
8	16-5/8	6-5/16	9/16	3/8 x 1-1/2	850

* SAFETY FACTOR OF 5

NOTES:
1. WHERE SUBMERGED, PIPE CLAMP, BOLTS AND NUTS TO BE TYPE 18-8 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP, WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" STRIP OF RUBBER FABRIC.
3. FOR FLANGED PIPING INCREASE 'B' DIMENSION AS REQUIRED.

PIPE CLAMP FOR INDIVIDUAL PIPES

A VAR

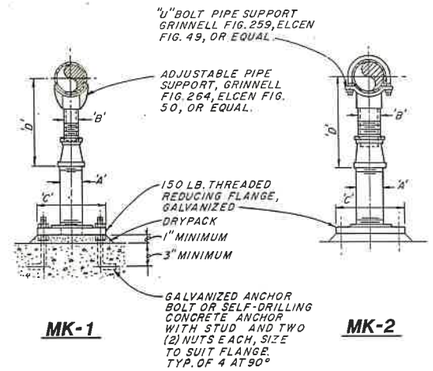


IDENT MARK	DIMENSIONS IN INCHES					
	NOM. DIA.	'A'	'T'	'S'	'D'	'L'
I	6"	18	3/4	6	2-3/4	24
II	8"	18	3/4	6	2-7/8	24
III	12"	18	1	6	2-11/8	24
IV	14"	24	1-1/2	8	2-11/8	30
V	16"	24	1-1/2	8	2-1 1/4	30
VI	20"	24	1-1/2	8	2-11/4	30
VII	24"	24	1-1/2	8	4-11/4	30

1. B.C. (BOLT CIRCLE) AND O.D. (OUTSIDE DIAMETER) SHALL BE SIZED TO ENSURE 1/2" MINIMUM CLEARANCE AROUND COUPLING.
2. CONTRACTOR SHALL VERIFY THE ABOVE DIMENSIONS BASED ON ACTUAL COUPLINGS FURNISHED.
3. COATINGS SHALL BE PROVIDED AS INDICATED IN THE SPECS.
4. BONDING CABLES SHALL BE PROVIDED ON ALL HARNESSED COUPLINGS EXCEPT THOSE INSIDE THE CONTROL VAULT STRUCTURE AND WELLHEAD VAULTS.

HARNESS SET

B VAR

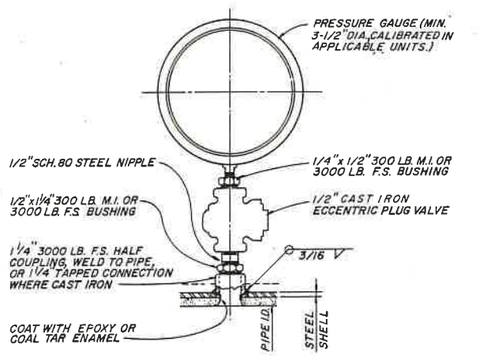


ADJUSTABLE PIPE SUPPORT APPROXIMATE DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D MINIMUM	D MAXIMUM
2-1/2	2-1/2	1-1/2	9	8	11-1/2
3	2-1/2	1-1/2	9	8-1/4	11-3/4
3-1/2	2-1/2	1-1/2	9	8-1/2	12
4	3	* 2-1/2	9	10-1/4	14
6	3	* 2-1/2	9	11-5/8	15-1/4
8	3	* 2-1/2	9	13-5/8	16-1/2
10	3	* 2-1/2	9	14-5/8	18-1/4
12	3	* 2-1/2	9	15-5/8	19-3/4
14	4	3	11	18-7/8	20-3/4
16	4	3	11	19-7/8	22-1/4
18	6	3-1/2	13-1/2	21-1/4	24
20	6	3-1/2	13-1/2	23-1/4	25-1/2
24	6	4	13-1/2	26-1/2	28-1/4
30	6	4	13-1/2	29-5/8	31-1/2
32	6	4	13-1/2	30-5/8	32-3/4
36	6	4	13-1/2	32-5/8	34-3/4

* SEE MFR.

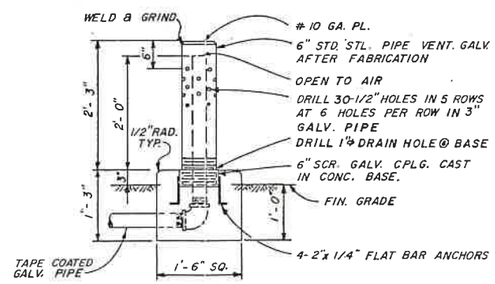
ADJUSTABLE PIPE SUPPORT

C VAR



PRESSURE GAUGE

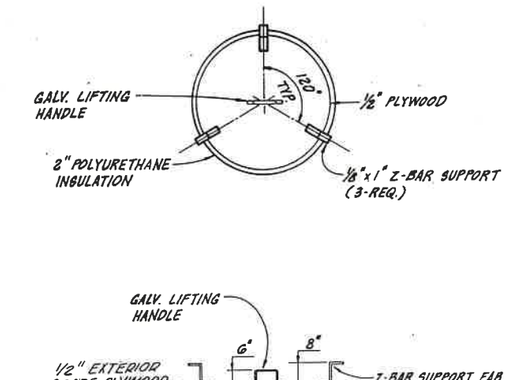
D VAR



WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

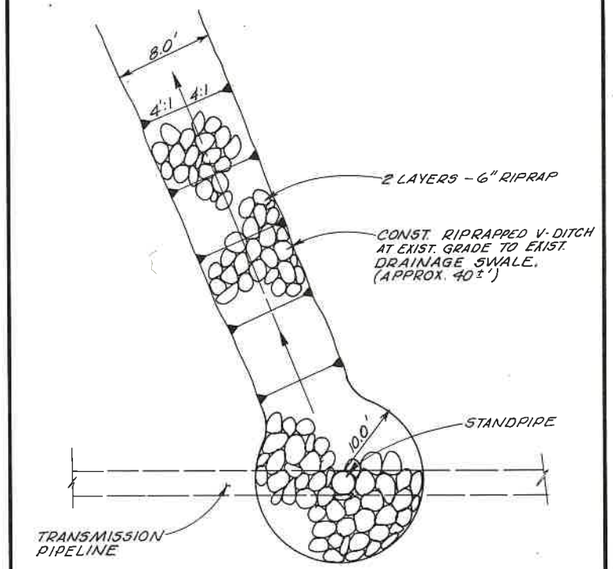
STANDPIPE ASSEMBLY

E VAR



INSULATED COVER

F VAR



STANDPIPE DRAIN DITCH

G 5

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED JMM
DRAWN JMM
CHECKED A. Anderson

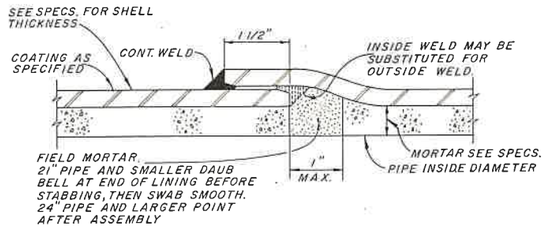
SUBMITTED Dennis Stubkemer, PROJECT ENGINEER, R.C.E. NO. ____, 1/9/87 DATE
RECOMMENDED JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC., R.C.E. NO. A066, 1/12/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller, 1-12-87 DATE
APPROVED ____ DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE DETAILS

SHEET 41 OF 49 SHEETS

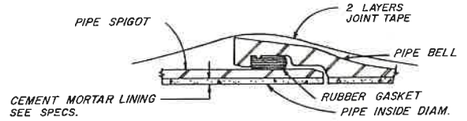


LAP-WELDED SLIP JOINT

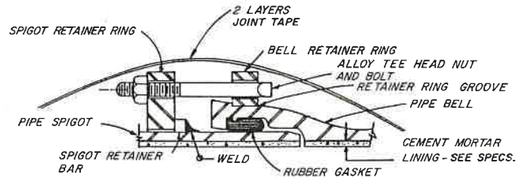
SINGLE-BUTT WELD JOINT

DOUBLE-BUTT WELD JOINT

WELDED STEEL PIPE A VAR

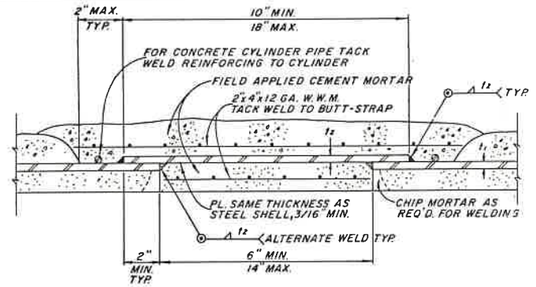


BELL AND SPIGOT RUBBER GASKET JOINT

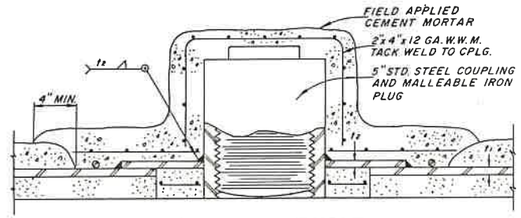


RESTRAINED JOINT OR APPROVED EQUAL

DUCTILE IRON PIPE B VAR

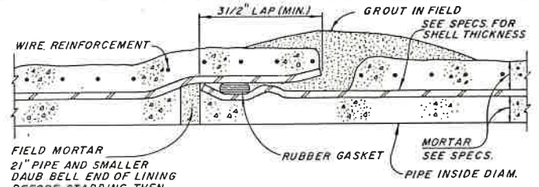


TYPICAL SECTION - BUTT-STRAP JOINT

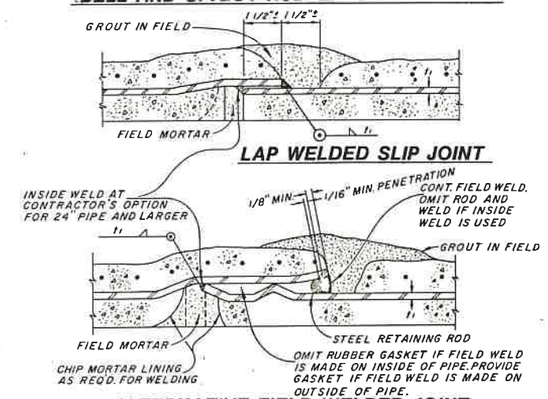


TYPICAL HANDHOLE
(REQUIRED ON PIPE SMALLER THAN 24" DIAMETER)

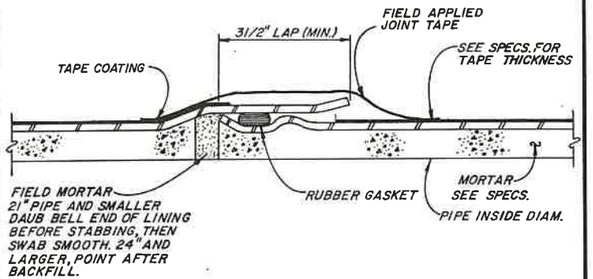
BUTT-STRAP JOINT FOR STEEL PIPE - MORTAR LINED AND COATED, AND WELDED STEEL PIPE C VAR



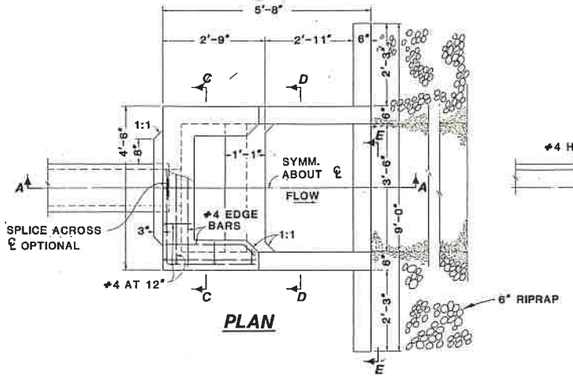
BELL AND SPIGOT RUBBER GASKET JOINT



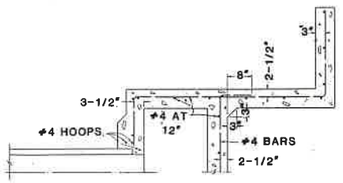
MORTAR LINED AND COATED STEEL PIPE D VAR



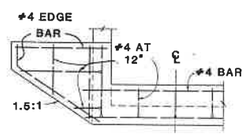
MORTAR LINED AND TAPE COATED STEEL PIPE E VAR



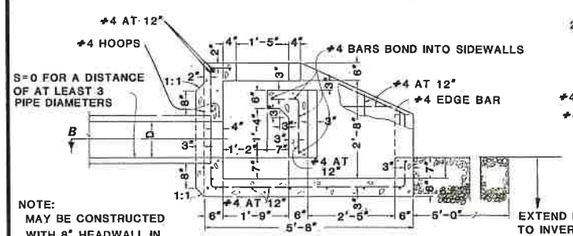
PLAN



SECTION B-B

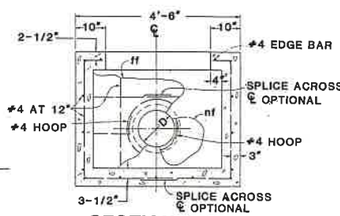


ELEVATION E-E

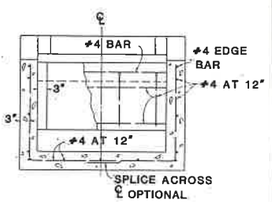


NOTE:
MAY BE CONSTRUCTED WITH 8" HEADWALL IN LIEU OF 6" HEADWALL AND 3" COLLAR SHOWN.

SECTION A-A



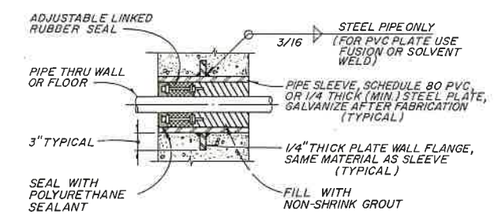
SECTION C-C



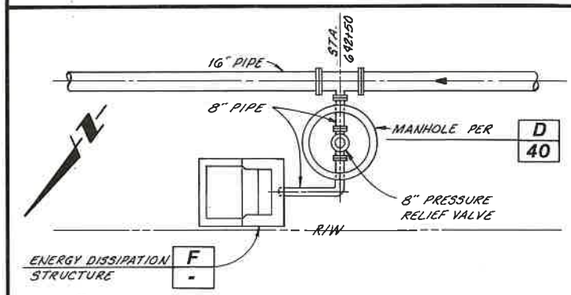
SECTION D-D

ENERGY DISSIPATION STRUCTURE F VAR

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE



SLEEVED PIPE OPENING H VAR



8" PRESSURE RELIEF VALVE & MANHOLE G 27

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED JMM
DRAWN JMM
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/8/87 DATE

RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED — 1-12-87 DATE

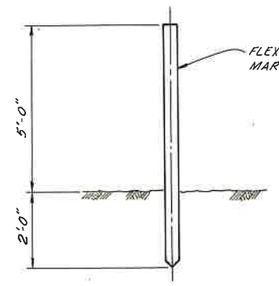
APPROVED — DATE

CITY OF RAWLINS, WYOMING

SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

PIPELINE DETAILS

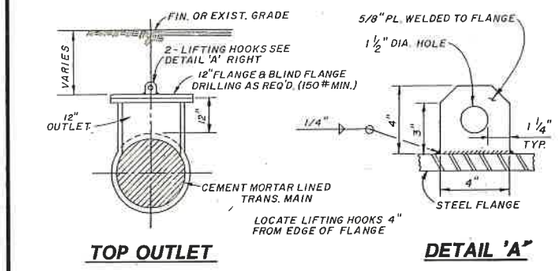
SHEET 42 OF 49 SHEETS



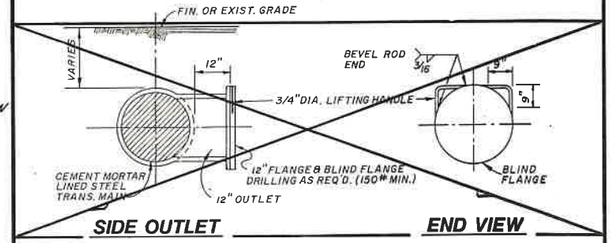
NOTE:
MARKER POSTS SHALL BE INSTALLED FOR GENERAL TRANSMISSION PIPELINE LOCATION AT 1000 FT. INTERVALS AND AT VAULTS, ELECTRICAL TEST STATIONS, ACCESS OPENINGS, BURIED VALVES, BLOWOFFS, AND A.V.A.R. VALVES. MARKERS WILL NOT BE REQ'D IN WELL FIELD AREA, EXCEPT AS VAULT & WELL LOCATORS. MARKERS SHALL BE CARSONITE UTILITY I.D. POSTS OR EQUAL & SHALL BE YELLOW WITH REFLECTIVE BLUE LETTERING WITH IDENTIFIERS AS FOLLOWS:

LOCATION	LETTERING
GENERAL PIPELINE LOCATORS AT 1000 FT. INTERVALS	WATER PIPELINE
ELECTRICAL TEST STATIONS	ETS
VAULT LOCATORS	VAULT
EXISTING WELLS	WELL No. ?
ACCESS OPENINGS	PIPELINE ACCESS
BLOWOFFS	BLOWOFF
A.V.A.R. VALVES	AVAR
ISOLATION VALVES	VALVE

MARKER POST DETAIL A VAR



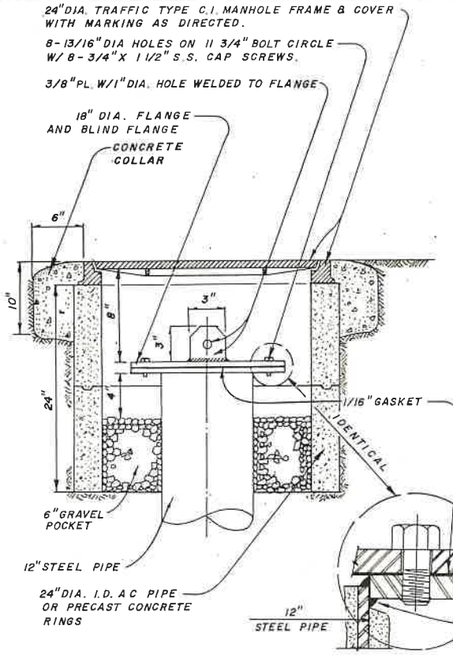
TOP OUTLET — DETAIL 'A'

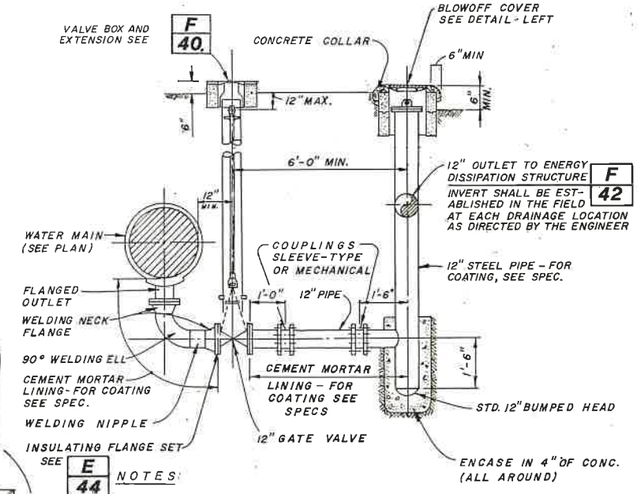


SIDE OUTLET — END VIEW

NOTES:
1. ALL FERROUS SURFACES OF BURIED PIPE AND APPURTENANCES TO BE PROVIDED WITH PROTECTIVE COATINGS PER SPECIFICATIONS.
2. PROVIDE STAINLESS STEEL NUTS, BOLTS AND WASHERS.

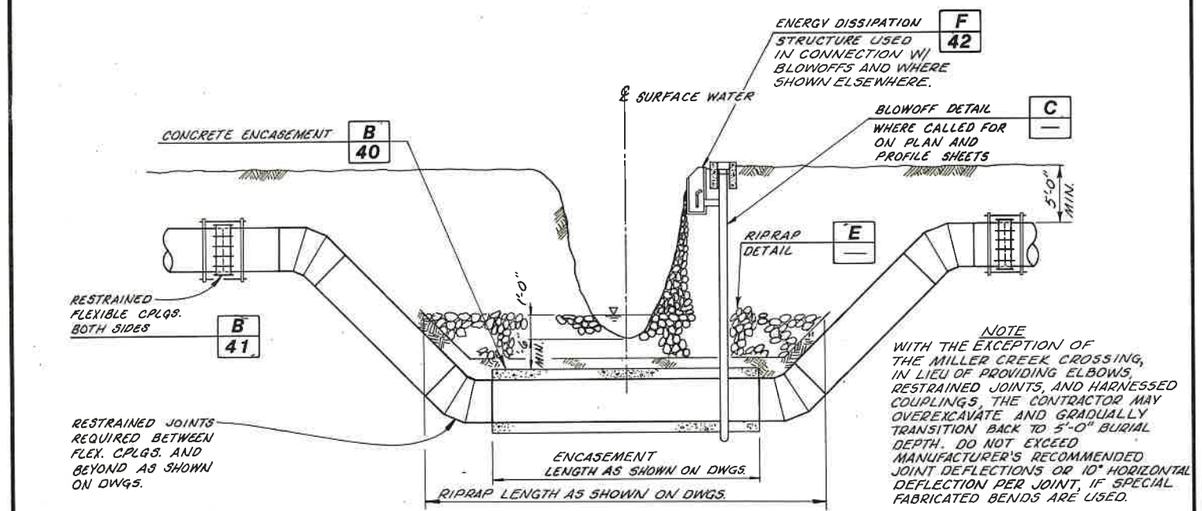
TYPICAL BURIED 12" ACCESS MANHOLE B VAR





NOTES:
1. FLANGE AND BLIND FLANGE SAME CLASS AS PIPELINE.
2. CEMENT 1/16" THK. FULL COVER GASKET TO FLANGE.
3. ALL EXPOSED FERROUS SURFACES OF BURIED PIPE & APPURTENANCES TO BE PROVIDED WITH PROTECTIVE COATINGS PER SPECIFICATIONS.
4. PROVIDE STAINLESS STEEL NUTS, BOLTS & WASHERS TO BURIED FLANGES & COUPLINGS EXCEPT FOR NON-METALLIC WASHERS AS PART OF INSULATING FLANGE SET.
5. DISCHARGE PIPING AND VALVE SHALL BE 8" AT MILLER CREEK CROSSING.

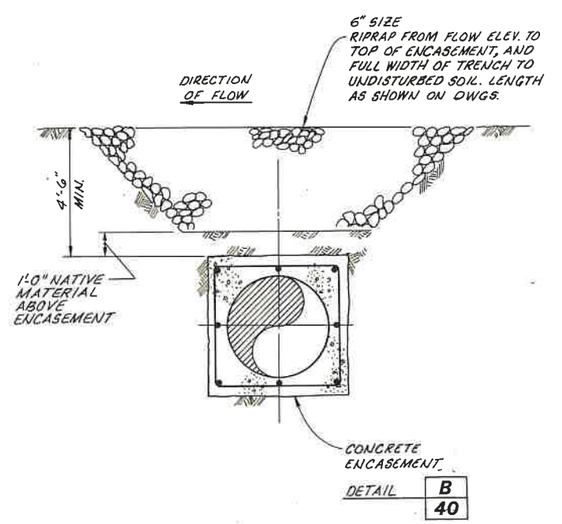
BLOWOFF DETAILS C VAR



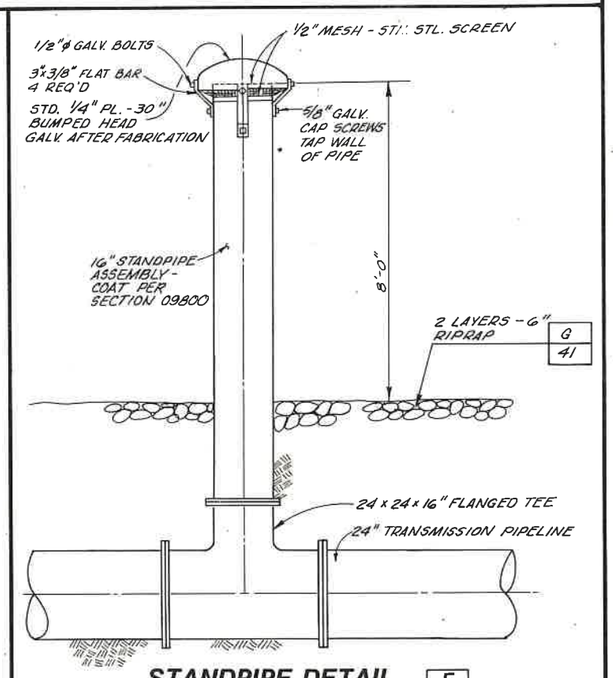
NOTE
WITH THE EXCEPTION OF THE MILLER CREEK CROSSING, IN LIEU OF PROVIDING ELBOWS, RESTRAINED JOINTS, AND HARNESSED COUPLINGS, THE CONTRACTOR MAY OVEREXCAVATE AND GRADUALLY TRANSITION BACK TO 5'-0" BURIAL DEPTH. DO NOT EXCEED MANUFACTURER'S RECOMMENDED JOINT DEFLECTIONS OR 10° HORIZONTAL DEFLECTION PER JOINT, IF SPECIAL FABRICATED BENDS ARE USED.

UNDERGROUND CROSSING OF SURFACE WATER COURSE D VAR

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE



RIPRAP DETAIL E VAR



STANDPIPE DETAIL (STATION 33+80) F 5

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED JMM
DRAWN JMM
CHECKED A. Anderson

SUBMITTED Dennis Linthicum, PROJECT ENGINEER, R.C.E. NO., 1/9/87 DATE
RECOMMENDED, JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC., R.C.E. NO. 4066, 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Gerry D. Miller, 1-12-87 DATE
APPROVED, DATE

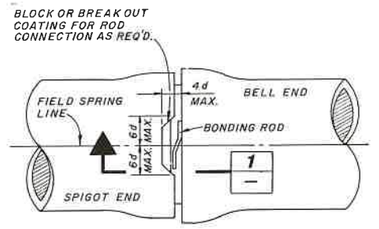
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
PIPELINE AND MECHANICAL DETAILS

SHEET 43 OF 49 SHEETS

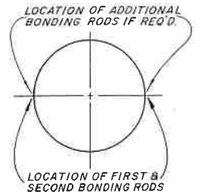
1. FOR LOCATION AND TYPE OF ELECTROLYSIS TEST STATION (ETS) OR CATHODIC PROTECTION SYSTEM INSTALLATION. SEE PLANS.
2. ALL TEST CONNECTIONS ON BURIED STEEL PIPE TO BE MADE AT EXPOSED FIELD JOINTS. WHERE TEST CONNECTIONS ARE SHOWN 2" APART, THE CONNECTIONS ARE TO BE MADE ON THE SAME SIDE OF THE JOINT. IF CONNECTIONS CANNOT BE MADE EASILY 2" APART LONGITUDINALLY, THEY MAY BE SEPARATED CIRCUMFERENTIALLY INSTEAD.
3. ALL TEST CABLE CONNECTIONS ON STEEL PIPE TO BE MADE BY THERMITE WELDING OR BRAZING.
4. ALL WELDED OR BRAZED CABLE CONNECTIONS TO BE INSULATED WITH FLEXIBLE DIELECTRIC MATERIAL EQUIVALENT TO BITUMINOUS PIPE COATING.
5. DELETED
6. IN VICINITY OF UTILITY BOX AND IN VICINITY OF PIPE, PROVIDE TWO FEET OF SLACK COIL IN EACH WIRE.
7. ALL UTILITY BOXES FOR ETS ARE TO BE PLACED DIRECTLY ABOVE YELLOW TEST CABLES.
8. ALL EXPOSED COPPER (TEST LEADS, BONDS, ETC.) SHALL BE FULLY INSULATED WITH A FLEXIBLE DIELECTRIC MATERIAL EQUIVALENT TO BITUMINOUS PIPE COATING. CEMENT MORTAR AND EPOXY ARE NOT ACCEPTABLE. REMAINDER OF COATING TO BE PLACED OVER THE BITUMINOUS PIPE COATING SHALL BE SAME AS ON ADJACENT PIPE SECTIONS.
9. ALL CABLE DIMENSIONS ARE AWG (AMERICAN WIRE GAGE).
10. THE OUTER WIRES SHALL BE NO. 4, THE INNER WIRES SHALL BE NO. 12. IF THE CARRIER PIPE DIAMETER IS LESS THAN 12". A NO. 8 WIRE SHALL BE SUBSTITUTED FOR THE NO. 4.
11. ALL TEST LEADS AND BONDING CABLES SHALL BE COPPER AND SHALL BE INSULATED WITH 600-VOLT CLASS INSULATION WITH MOISTURE AND ROT RESISTANT CHARACTERISTICS EQUIVALENT TO PVC, PE OR NEOPRENE.
12. ALL TEST LEADS AND BONDING CABLES ARE SINGLE CONDUCTOR (1/C), STRANDED WELDING CABLE FOR SIZES NO. 6 AND LARGER, STRANDED OR SOLID FOR SIZES NO. 8 AND SMALLER.
13. TEST LEADS SHALL NOT BE SPLICED.
14. CABLE COLOR CODING SCHEME:
    - A. YELLOW AND GREEN TEST CABLES ARE ON CARRIER LINE.
    - B. YELLOW IS USED TO DESIGNATE SOUTH OR WEST AND GREEN TO DESIGNATE NORTH OR EAST ON THE CARRIER PIPE.
    - C. RED DESIGNATES A FOREIGN LINE OR STRUCTURE.
    - D. BLACK DESIGNATES AN ANODE CABLE, EXCEPT THAT ON CURRENT TEST STATION FOR ANODES, CABLE BETWEEN CARRIER LINE AND TEST BOARD SHALL BE YELLOW. SEE STD. DWG. C-242
15. THE BANANA JACK OR MALE TERMINAL SHALL BE THE SAME COLOR AS THE TEST CABLE (I.E., YELLOW, GREEN OR RED) TO WHICH IT IS CONNECTED.
16. EACH TERMINAL IN TEST BOARD SHALL BE IDENTIFIED ON THE TERMINAL STRIP BY PERMANENT MARKING.
17. A ZINC RIBBON SPIRAL OF 20' LINEAL LENGTH SHALL BE INSTALLED IN A CIRCULAR PATTERN AROUND ALL ETS LOCATED IN AREAS WHERE THE PIPELINE RUNS PARALLEL TO HIGH VOLTAGE AC TRANSMISSION LINES, AT THE DISCRETION OF THE ENGINEER.
20. FEMALE BANANA PLUGS SHALL BE USED ON ALL TERMINAL TEST BOARDS WHERE AC OR DC VOLTAGES ARE AN ELECTROCUTION HAZARDS (e.g. FAULT CURRENTS OR INDUCED AC FROM PARALLELING AC TRANSMISSION LINES.)
21. MALE TERMINALS SHALL BE USED ON ALL TERMINAL TEST BOARDS WHERE THERE IS NO ELECTROCUTION HAZARD.

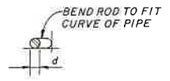
CATHODIC PROTECTION, TESTING AND BONDING - GENERAL NOTES

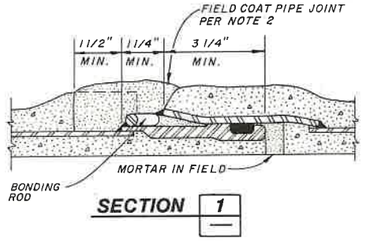
A VAR



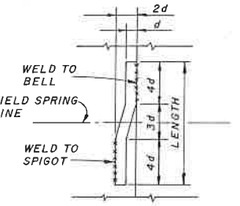
SIDE VIEW







SECTION 1



BONDING ROD

BONDING ROD DETAILS

NOM. PIPE DIA. (IN.) / PRESSURE	24	20	16	14	12	8
CYLINDER WALL THICKNESS (IN.)	——	SEE	SPECS.		——	——
BONDING ROD DIA. (d) (IN.)	0.25	0.25	0.25	0.25	0.25	0.25
BONDING ROD LENGTH (IN.)	2.25	2.25	2.25	2.25	2.25	2.25
NO. OF RODS PER PIPE JOINT	2	2	2	2	2	2

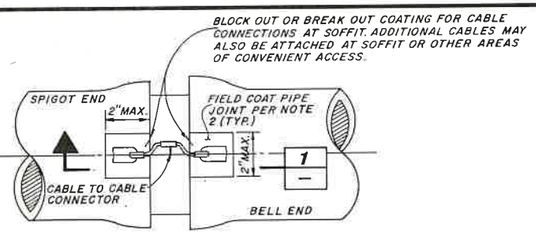
NOTES:

1. AT THE CONTRACTOR'S OPTION, JOINT BOND MAY BE OF THE RIGID OR FLEXIBLE TYPE, BUT NOT BOTH FOR A CONTINUOUS REACH OF PIPELINE.
2. FIELD COAT PIPE JOINTS WITH THE SAME MATERIAL AS THE PIPE COATING. COVER BONDING CABLES WITH A MINIMUM THICKNESS OF MATERIAL, EQUAL TO THE SPECIFIED PIPE COATING THICKNESS.
3. FOR TESTING OF THE JOINT ELECTRICAL CONTINUITY SEE SPECIFICATION.
4. SEE STD. DETAIL A/- FOR ADDITIONAL NOTES.

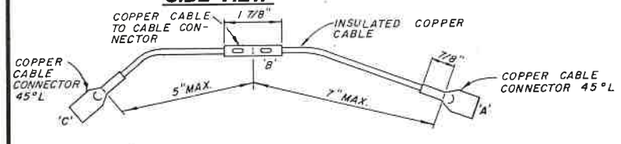
WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

BURIED STEEL PIPE ELECTRICAL BONDING WITH BONDING RODS

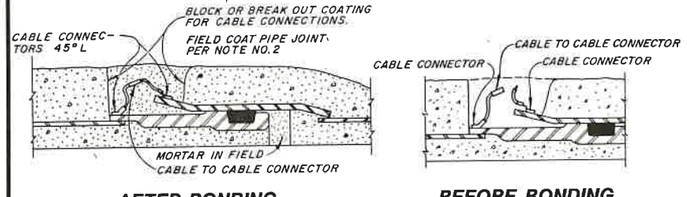
B VAR



SIDE VIEW



FLEXIBLE BONDING CABLE DETAIL



AFTER BONDING — BEFORE BONDING

SECTION 1

NOM. PIPE DIA. (IN.)	24	20	16	14	12	8
CYLINDER WALL THICKNESS (IN.)	——	SEE	SPECS.		——	——
FLEXIBLE BONDING CABLE SIZE	AWG 1/0	AWG 1/0	AWG 2	AWG 2	AWG 2	AWG 2
FLEXIBLE BONDING CABLE LGT. (IN.)	——	SEE	DETAIL		——	——
NO. OF CABLES PER PIPE JOINT	2	2	2	2	2	2

NOTES:

1. AT THE CONTRACTOR'S OPTION, JOINT BOND MAY BE OF THE RIGID OR FLEXIBLE TYPE, BUT NOT BOTH FOR A CONTINUOUS REACH OF PIPELINE.
2. FIELD COAT PIPE JOINTS WITH THE SAME MATERIAL AS THE PIPE COATING. COVER BONDING CABLES WITH A MINIMUM THICKNESS OF MATERIAL, EQUAL TO THE SPECIFIED PIPE COATING THICKNESS.
3. SEE STD. DRWG. A/- FOR ADDITIONAL NOTES.

FIELD INSTALLATION PROCEDURE FOR FLEXIBLE BONDING CABLES

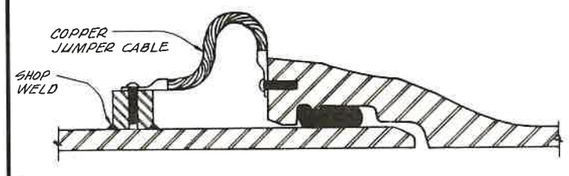
1. LUG A BRAZED TO BELL END BY PIPE MANUFACTURER.
2. CABLE FROM 'A' TO 'B' BRAZED, SOLDERED OR CRIMPED BY PIPE MANUFACTURER TO BOTH 'A' + 'B'.
3. LUG 'C' BRAZED TO SPIGOT END BY PIPE MANUFACTURER.
4. CABLE FROM 'B' TO 'C' BRAZED, SOLDERED OR CRIMPED AT 'C' BY PIPE MANUFACTURER.
5. CONNECTION OF 'B' TO CABLE FROM 'C' TO BE SOLDERED OR CRIMPED IN FIELD
6. AS AN ALTERNATIVE TO STEPS 1-5, CONTRACTOR MAY BREAK OUT COATING IN THE FIELD AND BRAZE OR THERMITE WELD CABLE TO BELL AND SPIGOT.
7. CABLE SHALL BE MULTISTRAND COPPER WELDING CABLE FOR MAXIMUM FLEXIBILITY.
8. A, B AND C TO BE INSULATED WITH RUBBER MASTIC ELECTRICAL INSULATING COMPOUND 1/16" THICK, GATES RUBBER OR APPROVED EQUAL.
9. AFTER COMPLETING THE FIELD JOINT AT B IN THE FIELD, TOUCH UP ALL EXPOSED COPPER WITH ELECTRICAL INSULATING COMPOUND 1/16" MIN.. GATES RUBBER OR APPROVED EQUAL.
10. FOLD CABLE ASSEMBLY INTO JOINT SPACE.

BURIED STEEL PIPE ELECTRICAL BONDING W/ FLEXIBLE BONDING CABLES

C VAR

NOTES:

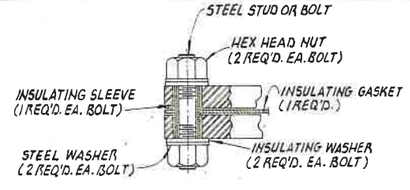
1. TWO COPPER CABLES ARE REQUIRED AT EACH JOINT.
2. TAPE COATING SHALL BE INSTALLED AFTER THE PIPE JOINTS ARE BONDED



CAST IRON OR DUCTILE IRON PIPE

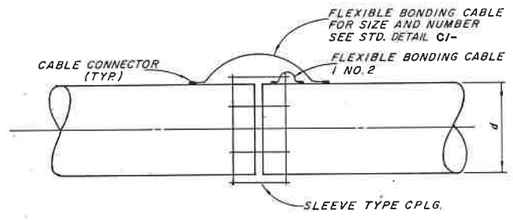
ELECTRICAL BONDING DETAIL

D VAR



TYPICAL INSULATING FLANGE

E VAR



NOTES:

1. FLEXIBLE BONDING CABLES SHALL BE LONG ENOUGH TO ALLOW MAXIMUM MOVEMENT OF COUPLING.
2. SEE STD. DRWG. A/- FOR ADDITIONAL NOTES.
3. BONDING CABLES ARE REQUIRED EVERYWHERE EXCEPT INSIDE WELLHEAD AND CONTROL VAULT STRUCTURES.

SLEEVE-TYPE COUPLING ELECTRICAL BONDING DETAIL

F VAR

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED JMM
DRAWN JMM
CHECKED A. Anderson

SUBMITTED
PROJECT ENGINEER — R.C.E. NO. — 1/9/87 DATE

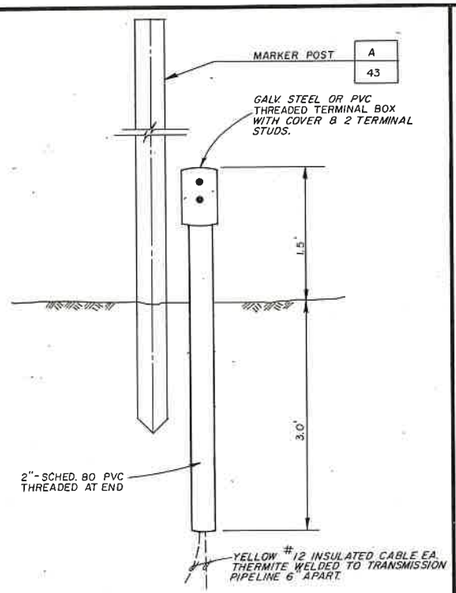
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. 4066 — 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Jerry D. Miles — 1-12-87 DATE
APPROVED — DATE

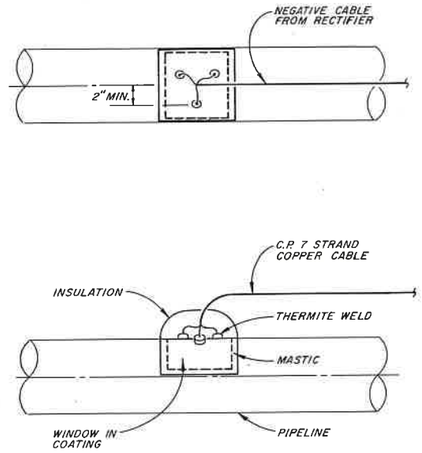
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
CATHODIC PROTECTION DETAILS

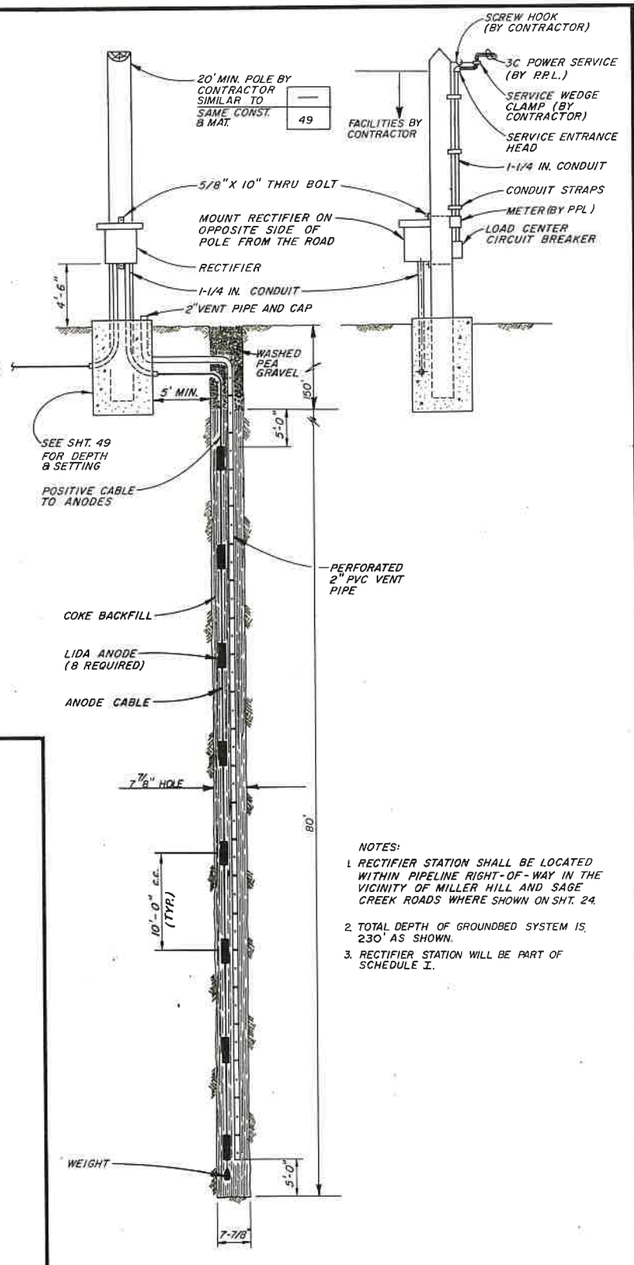
SHEET 44 OF 49 SHEETS



SINGLE POINT - TWO WIRE ELECTROLYSIS TEST STATION FOR GENERAL POTENTIAL MEASUREMENTS

A
VAR





NOTES:

1. RECTIFIER STATION SHALL BE LOCATED WITHIN PIPELINE RIGHT-OF-WAY IN THE VICINITY OF MILLER HILL AND SAGE CREEK ROADS WHERE SHOWN ON SHT. 24.
2. TOTAL DEPTH OF GROUNDBED SYSTEM IS 230' AS SHOWN.
3. RECTIFIER STATION WILL BE PART OF SCHEDULE I.

RECTIFIER AND ANODE DEEP GROUNDBED INSTALLATION AND NEGATIVE CABLE CONNECTION FROM RECTIFIER TO PIPELINE

N.T.S.

B
24

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED D. Smithhisler
DRAWN T. Norad
CHECKED A. Anderson

SUBMITTED
Dennis Smithhisler — PROJECT ENGINEER — R.C.E. NO. — 1/9/87 DATE

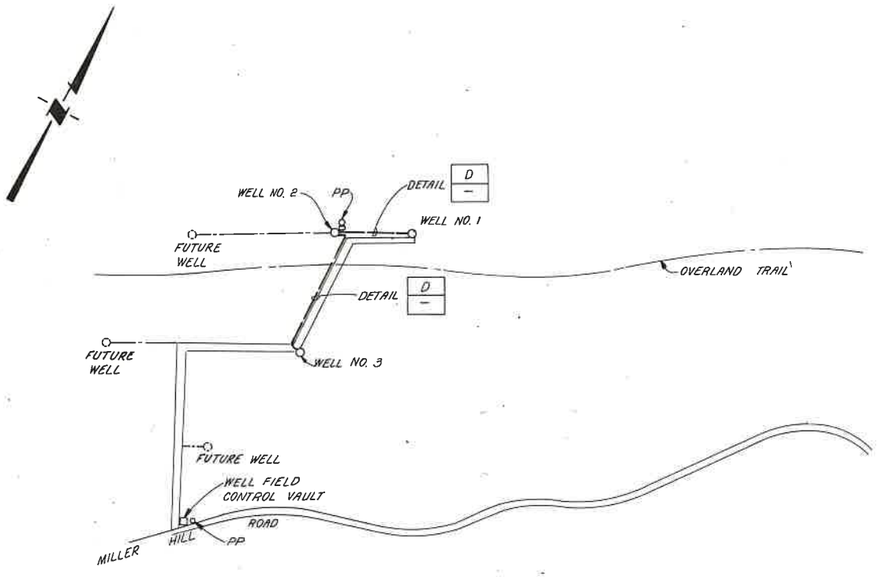
RECOMMENDED
JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — 4065 R.C.E. NO. — 1/10/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED Jerry D. Miller — 1-12-87 DATE
APPROVED — DATE

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
CATHODIC PROTECTION DETAILS

SHEET 45 OF 49 SHEETS



SITE PLAN

SCALE: 1" = 560'

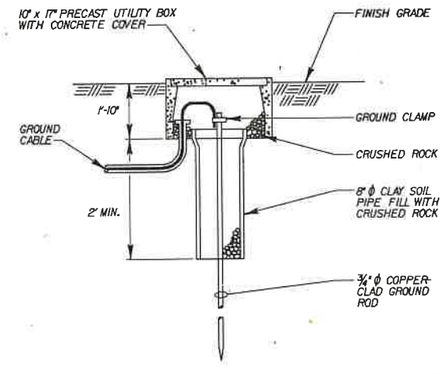
NOTE: SEE SHEET 29 FOR DETAILED LAYOUT OF WELLFIELD.

GENERAL NOTES

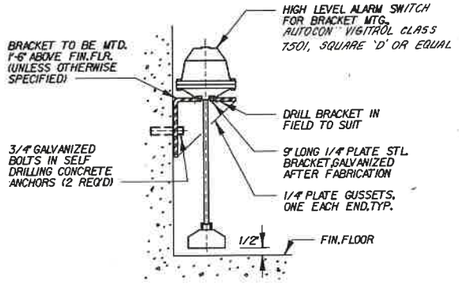
1. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST SHOP DRAWINGS BEFORE STUBBING UP CONDUITS.
2. CONNECTION BETWEEN RIGID CONDUIT AND MOTOR/HEATER TERMINAL BOX SHALL BE LIQUID-TIGHT.
3. EXPOSED FLEXIBLE CONNECTION SHALL BE FLEXIBLE LIQUID-TIGHT CONDUIT WITH APPROVED GROUNDING TYPE FITTINGS AND SHALL NOT EXCEED 30" IN LENGTH FOR 2" SIZE AND LARGER. MAXIMUM OF 18" FOR SIZES 1½" AND SMALLER.
4. CONDUITS TERMINATING AT POWER PANELS, CONTROL CABINETS, ETC. SHALL BE EQUIPPED WITH A GROUNDING BUSHING 'OZ' TYPE 'GB' AND GROUNDED AS A BANK.
5. CONDUIT STUB-UPS SHALL NOT BE MORE THAN 6" FROM CENTER LINES OF TERMINAL BOXES.
6. ALL DEVICES SHALL BE WEATHERPROOF. ALL RECEPTACLES SHALL BE MOUNTED 24" ABOVE FLOOR SURFACE AND SHALL BE EQUIPPED WITH GROUND FAULT INTERRUPTERS.
7. LOCATION OF PULLBOXES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF PULLBOXES WITH MECHANICAL PIPING.
8. ALL PANELS, CONTROL ENCLOSURES SHALL BE MOUNTED WITH 1/2" AIR SPACE FROM WALLS.
9. ALL ELECTRICAL CONDUIT WALL PENETRATIONS SHALL BE SEALED TO PREVENT GROUND WATER LEAKAGE.

SYMBOLS

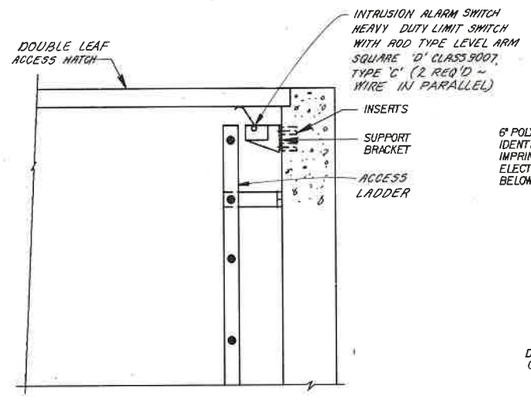
- EXPOSED CONDUIT
- CONDUIT RUN UNDERGROUND OR CONCRETE
- BARE COPPER GROUND WIRE SIZE PER CODE OR AS NOTED
- FLEXIBLE LIQUID-TIGHT CONDUIT CONNECTION
- HASH MARKS INDICATE NUMBER OF NO.12 WIRES. NO MARKS INDICATE 2#12 WIRES. ¾" CONDUIT MINIMUM.
- FLUORESCENT LIGHTING FIXTURE
- CIRCUIT BREAKER
- $\$^{M}_{P}$ MANUAL MOTOR STARTER (WITH PILOT LIGHT)
- JUNCTION BOX OR FITTING
- GROUND ROD, ¾"x10' COPPER-CLAD STEEL
- INDEX TO NOTE 1 ("SEE NOTE 1")
- 120V DUPLEX RECEPTACLE NEMA CONFIGURATION 5-20
- WP WEATHERPROOF



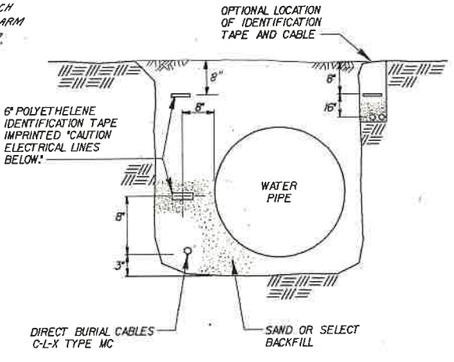
GROUND ROD & WELL — A — VAR
N.T.S.



FLOOD ALARM SWITCH — B — VAR
N.T.S.



INTRUSION SWITCH MOUNTING DETAIL — C — —
ADJUST LIMIT SWITCH TO TRANSFER CONTACT POSITION WHEN COVER IS LIFTED.



TRENCH DETAIL — D — —
N.T.S.

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

DESIGNED W.Rodriguez
DRAWN NRC
CHECKED Norm Hunter

SUBMITTED Dennis Stubbson — PROJECT ENGINEER — R. C. E. NO. — 1/8/87 DATE

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R. C. E. NO. 4066 — 1/8/87 DATE

JAMES M. CONSULTING MONTGOMERY ENGINEERS, INC. JMM

APPROVED Gary D. Miller — 1-12-87 DATE

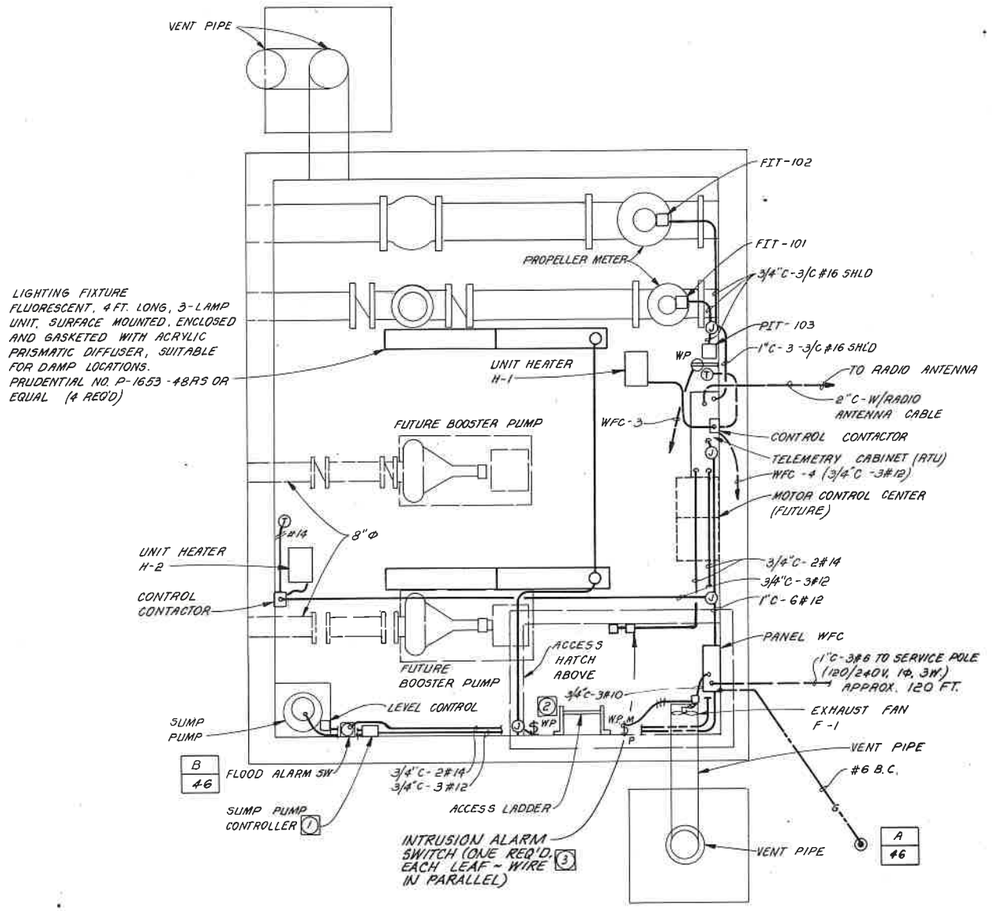
APPROVED — DATE

CITY OF RAWLINS, WYOMING

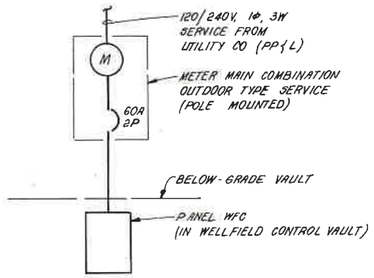
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

WELLFIELD ELECTRICAL – SITE PLAN, SYMBOLS, NOTES & DETAILS

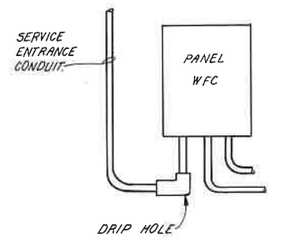
SHEET 46 OF 49 SHEETS



PLAN
SCALE: 3/8"=1'-0"



SINGLE LINE DIAGRAM



DETAIL A — —

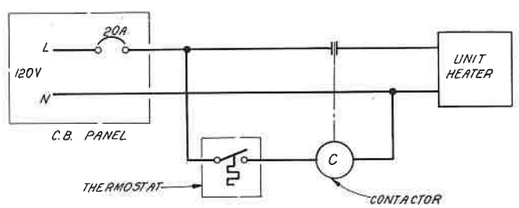
NOTE: ALL CONDUIT TERMINATIONS SHALL BE AT BOTTOM OF PANEL. ALL CONDUITS ROUTED TO OR FROM OUTSIDE VAULT SHALL BE PROVIDED WITH DRIP HOLE.

120/240 VOLTS, 1 Φ, 3 W — 50A MAIN — PANELBOARD WFC — LOCATION WELL FIELD CONT VAULT — FEED BOTTOM — MTG SURFACE

LOAD DESCRIPTION	WATTAGE OR VA ΦA	ΦB	ΦC	LTG	REC	MIS	CIR	BKR		BKR	CIR	MIS	REC	LTG	WATTAGE OR VA ΦA	ΦB	ΦC	LOAD DESCRIPTION
VAULT LTS	600			4			1	20		15	2	1			300			TELEMETRY CABINET
RECEP.		200			1		3			20	4	1				1500		UNIT HTR. H-1
SPARE	500						5			20	6	1			1500			UNIT HTR. H-2
SPARE		500					7			15	8	1				350		EXHAUST FAN F-1 (1/6 HP)
SPARE	500						9	20		15	10	1			675			SUMP PUMP (1/4 HP)
SPACE							11				12							SPACE
							13				14							
							15				16							
							17				18							
							19				20							
							21				22							
							23				24							
	1600	700					TOTAL			TOTAL					2475	1850		
	PHASE TOTALS 4075		2550	TOTAL LOAD 6.6 KVA (27.6 AMPS)														

NOTES:

1. PUMP CONTROLLER TO BE FURNISHED WITH THE SUMP PUMP PACKAGE, COMPLETE WITH MAGNETIC STARTER (SINGLE PHASE), H-O-A SELECTOR SW, LEVEL CONTROL (START-STOP SUMP LEVEL), AUXILIARY CONTACTS (N.O.) FOR REMOTE PUMP STATUS INDICATION.
2. MOUNT SW. 12 INCHES BELOW ACCESS HATCH COVER.
3. COORDINATE LOCATION AND INSTALLATION DETAILS WITH VAULT ACCESS COVER. SEE C 46



UNIT HEATER CONTROL
(TYPICAL)

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

DESIGNED H. Rodriguez
DRAWN M. Chakian
CHECKED Marvin Fortin

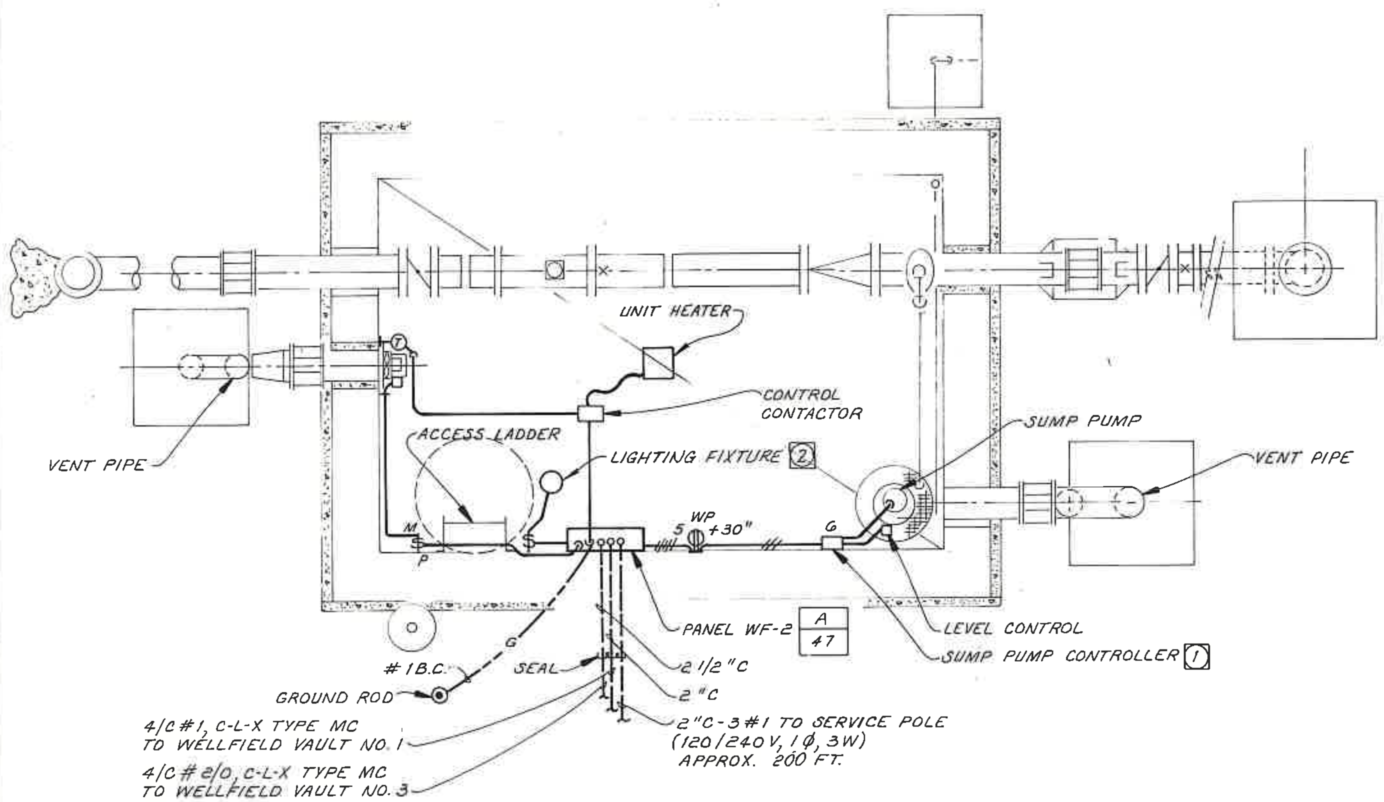
SUBMITTED Dennis Tuttle, PROJECT ENGINEER, R.C.E. NO. —, DATE 1/9/87
RECOMMENDED Edward J. Dunn, JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC., R.C.E. NO. 4066, DATE 1/16/87

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. JMM

APPROVED Jerry D. Miller, DATE 1-12-87
APPROVED —, DATE —

CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLFIELD CONTROL VAULT ELECTRICAL PLAN

SHEET 47 OF 49 SHEETS



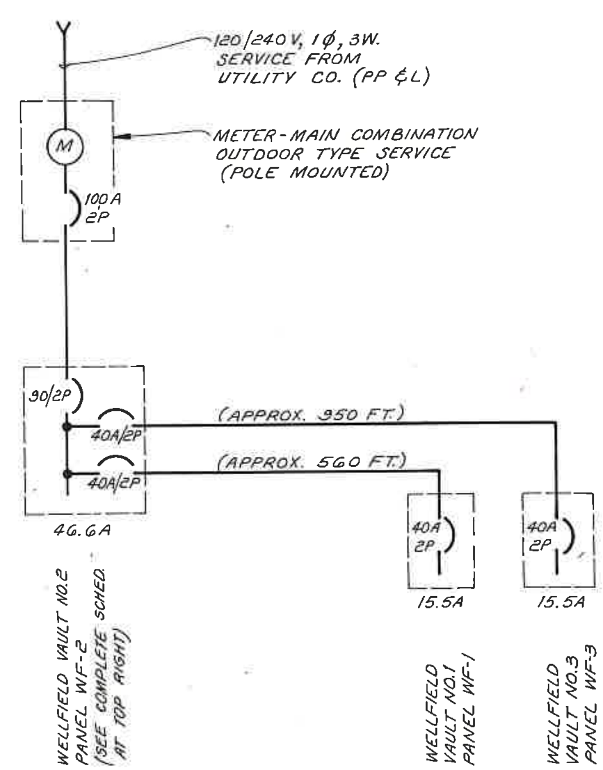
WELLFIELD VAULT NO. 2 ELECTRICAL PLAN

SIMILAR FOR VAULTS NO. 1 AND NO. 3 [3]
1/2" = 1'-0"

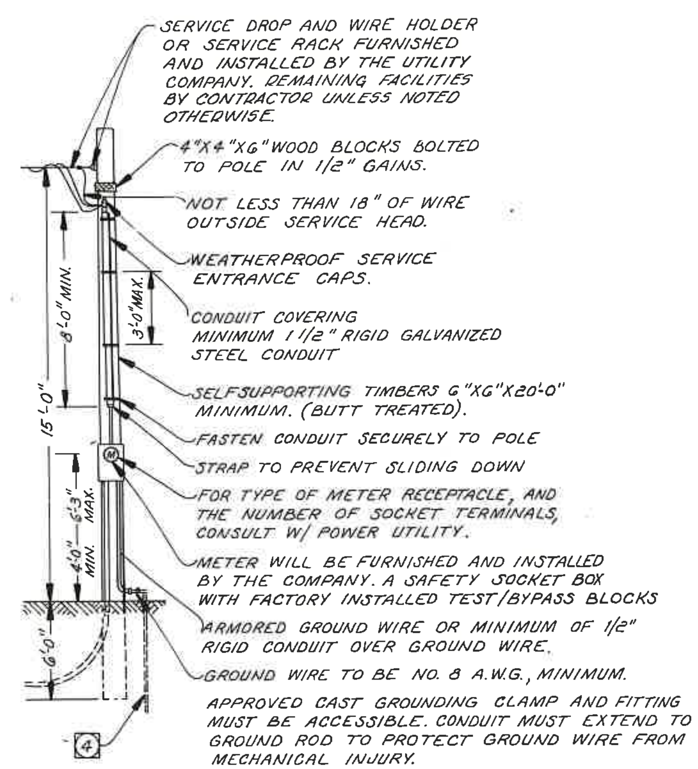
120/240 VOLTS 1 ϕ 3 W, 90A MAIN			PANELBOARD WF-2, LOCATION WELLFIELD VAULT NO-2													FEED BOTTOM, MTG SURFACE
LOAD DESCRIPTION	WATTAGE ϕA	WATTAGE ϕB	LTG	REC	MISC	CIR	BKR	A B	BKR	CIR	MISC	REC	LTG	WATTAGE ϕA	WATTAGE ϕB	LOAD DESCRIPTION
VAULT LIGHT	150		1			1	15		20	2	1			1250		UNIT HEATER
RECEP.		200		1		3	20		15	4	1				100	EXHAUST FAN (1/50 HP)
SPARE	500					5	15		15	6	1			525		SUMP PUMP (1/6 HP)
SPARE		500				7	15		20	8					500	SPARE
SPARE	500					9	20		15	10				500		SPARE
VAULT NO. 2 (PNL. WF-2)		1863			1	11	40/		40/	12	1				1863	VAULT NO. 3 (PNL. WF-3)
———	1863					13	/2		/2	14				1863		———
						15				16						
						17				18						
						19				20						
						21				22						
						23				24						
	2513	2563				TOTAL			TOTAL					3638	2463	
	PHASE TOTAL		TOTAL LOAD													
	6151	5026	11.2 KVA (46.6 AMP)													

120/240 VOLTS 1 ϕ 3 W, 40A MAIN			PANELBOARD WF-1 *, LOCATION WELLFIELD VAULT NO. 1													FEED BOTTOM, MTG SURFACE
LOAD DESCRIPTION	WATTAGE ϕA	WATTAGE ϕB	LTG	REC	MISC	CIR	BKR	A B	BKR	CIR	MISC	REC	LTG	WATTAGE ϕA	WATTAGE ϕB	LOAD DESCRIPTION
VAULT LIGHT	150		1			1	15		20	2				1250		UNIT HEATER
RECEP.		200		1		3	20		15	4	1				100	EXHAUST FAN
SPARE	500					5	20		15	6	1			525		SUMP PUMP
SPARE		500				7	15		20	8					500	SPARE
SPACE ↓						9				10						SPACE ↓
						11				12						
						13				14						
						15				16						
	650	700				TOTAL			TOTAL					1775	600	
	PHASE TOTAL		TOTAL LOAD													
	2425	1300	3.7 KVA (15.5 AMP)													

* TYPICAL FOR PANEL WF-3 LOCATED IN WELLFIELD VAULT NO. 3.



SINGLE LINE DIAGRAM



TYPICAL SERVICE INSTALLATION DETAIL

NOTES:

1. PUMP CONTROLLER TO BE FURNISHED WITH THE SUMP PUMP PACKAGE, COMPLETE WITH MAGNETIC STARTER (SINGLE PHASE), H-O-A SELECTOR SWITCH, LEVEL CONTROL (START-STOP SUMP LEVEL), AUXILIARY CONTACTS (N.O.) FOR FUTURE REMOTE PUMP STATUS INDICATION.
2. INCANDESCENT, SURFACE MOUNTED, ENCLOSED AND GASKETED, VAPORTIGHT, CAST ALUMINUM CONSTRUSTION, CORROSION RESISTANT WITH CLASS GLOBE AND GUARD, 150 W. LAMP.
   STONCO NO. VCXL-21GC OR EQUAL.
3. WELLFIELD VAULTS NO. 1 AND NO. 3 ARE SIMILAR, EXCEPT FOR POWER FEEDERS; PANEL WF-1 LOCATED IN VAULT NO. 1 IS FED FROM PANEL WF-2 IN VAULT NO. 2 AND PANEL WF-3 LOCATED IN VAULT NO. 3 IS ALSO FED FROM PANEL WF-2.
4. GROUND WIRE FROM POLE TO ELECTRODE SHALL BE ENCLOSED IN GALVANIZED RIGID CONDUIT, OR EQUIVALENT MECHANICAL PROTECTION. IF A GROUND ROD IS USED, THE FOLLOWING MINIMUM REQUIREMENTS APPLY:

   DIAMETER OF ROD: 3/4", IF IRON ROD OR GALVANIZED PIPE, 1/2" IF SOLID ROD OF BRASS, COPPER, OR COPPER COVERED STEEL. DRIVE TO MINIMUM DEPTH OF 8'-0" BELOW GROUND SURFACE. REFER TO LOCAL INSPECTION AGENCY FOR ADDITIONAL REQUIREMENTS.

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION	SCALE: AS NOTED

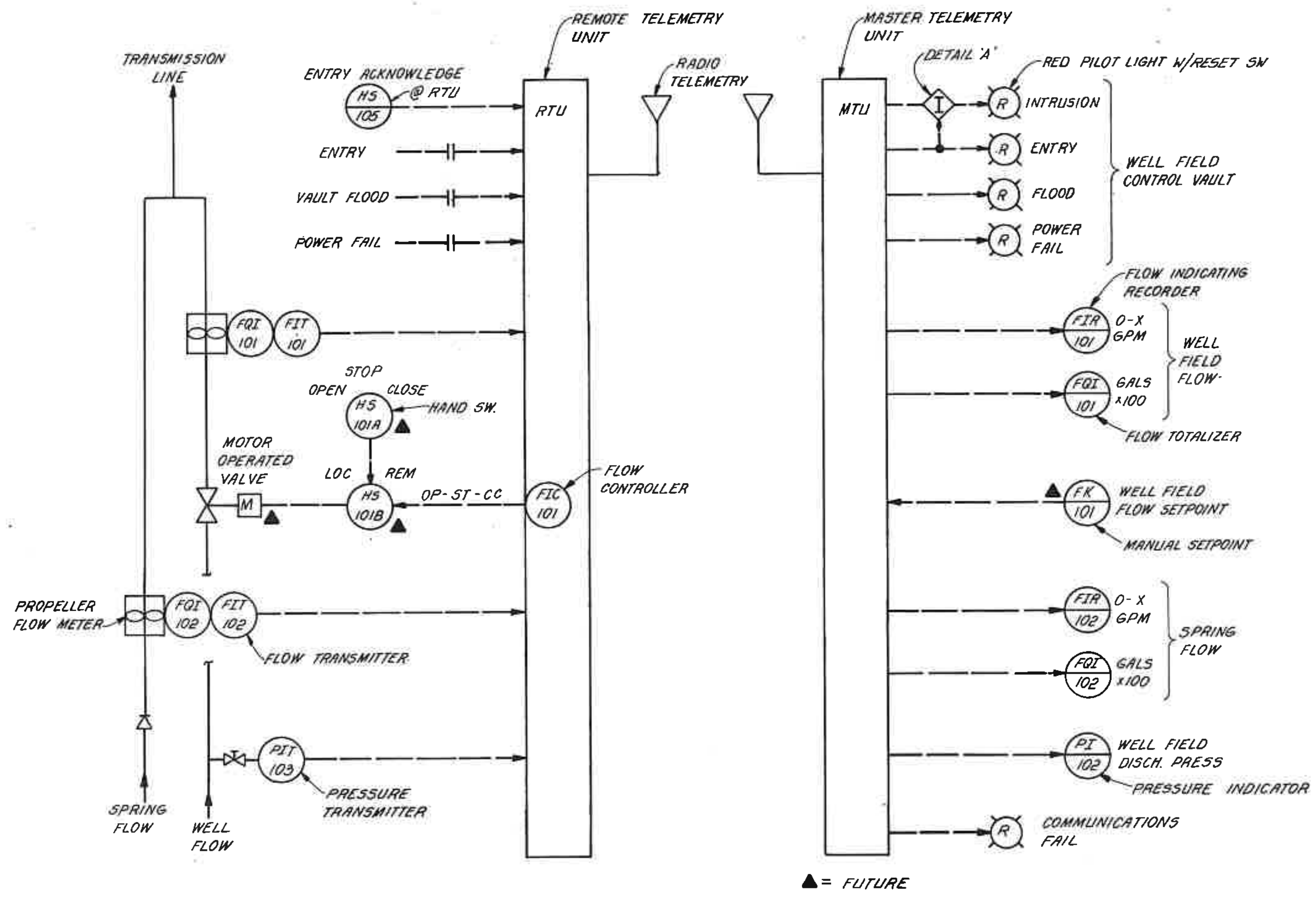
DESIGNED | DRAWN | CHECKED
SUBMITTED — PROJECT ENGINEER — R.C.E. NO. — DATE 1/9/87
RECOMMENDED — JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. — DATE 1/10/87

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED — DATE 1-12-87
APPROVED — DATE

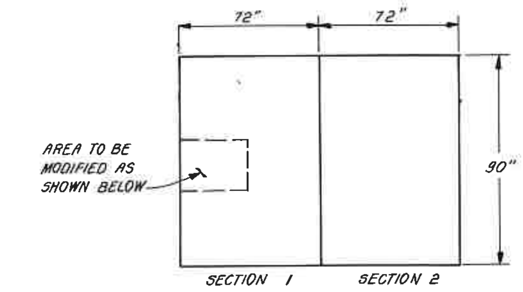
CITY OF RAWLINS, WYOMING
SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES
WELLHEAD VAULTS ELECTRICAL PLAN

SHEET 48 OF 49 SHEETS



WELL FIELD CONTROL VAULT

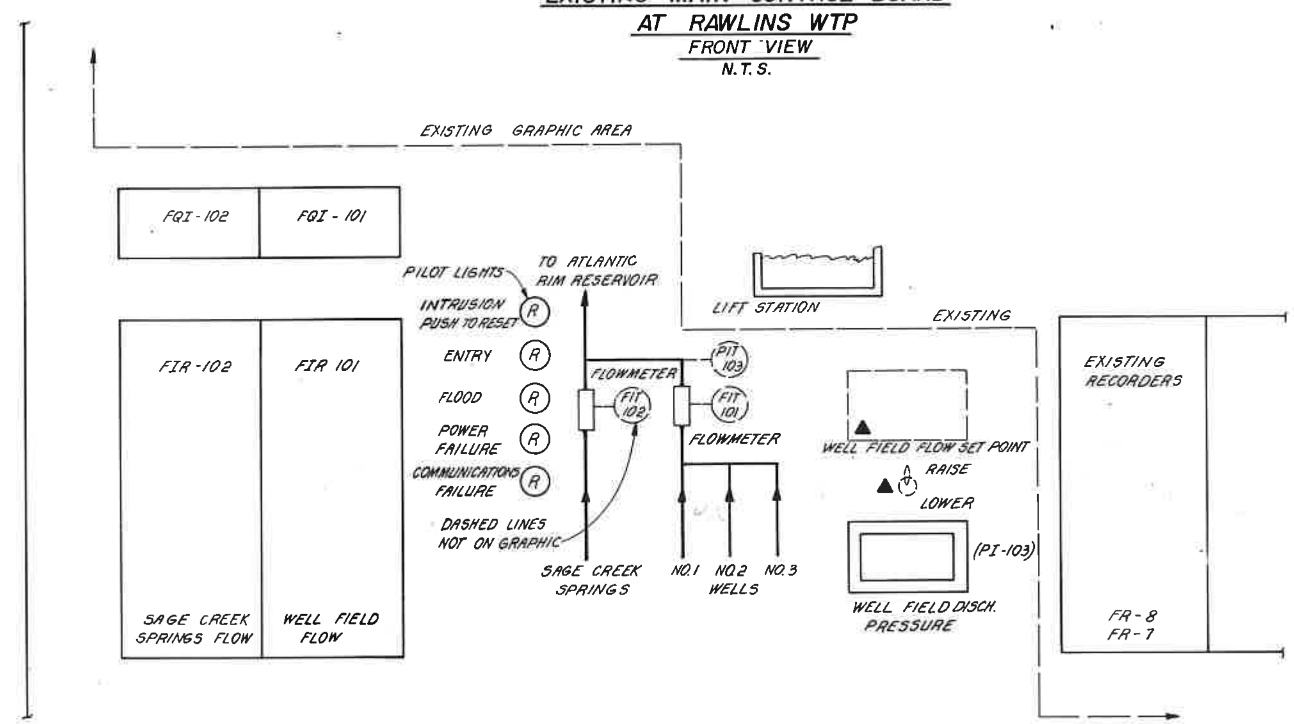
RAWLINS WTP



EXISTING MAIN CONTROL BOARD AT RAWLINS WTP

FRONT VIEW

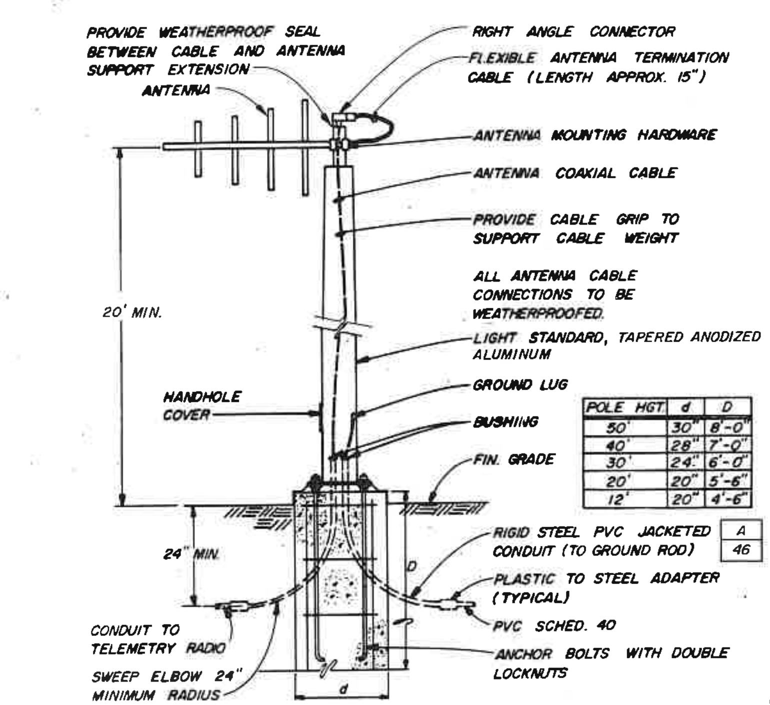
N.T.S.



MAIN CONTROL BOARD MODIFICATIONS

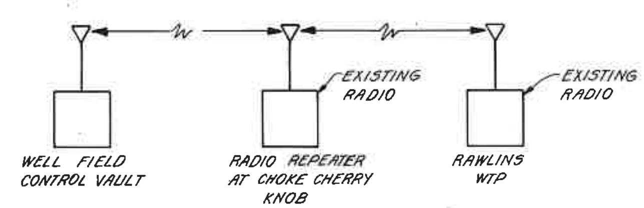
N.T.S.

▲ = FUTURE



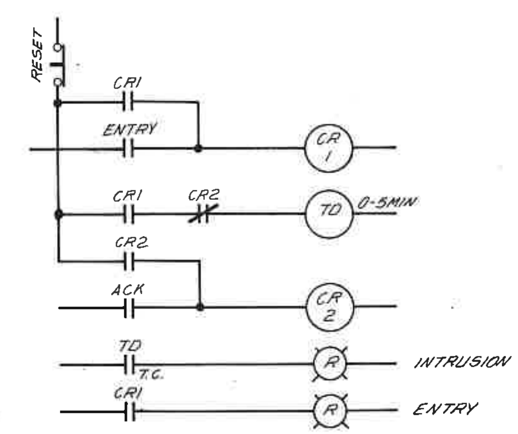
POLE HGT	d	D
50'	30"	8'-0"
40'	28"	7'-0"
30'	24"	6'-0"
20'	20"	5'-6"
12'	20"	4'-6"

POLE MOUNTED DIRECTIONAL ANTENNA DETAIL AT WELLFIELD CONTROL VAULT



RADIO TELEMETRY SYTEM

NOTE:
LOCATE POLE WITHIN 25'-0" OF CONTROL VAULT AS DIRECTED BY THE ENGINEER.



DETAIL 'A'

WARNING
THIS DRAWING APPROXIMATELY ONE-HALF ORIGINAL SCALE

REV	DATE	BY	DESCRIPTION

SCALE: NONE

DESIGNED / DRAWN / CHECKED

SUBMITTED — PROJECT ENGINEER — R.C.E. NO. — DATE 1/9/87

RECOMMENDED — JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. — R.C.E. NO. 4066 — DATE 1/10/87

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

APPROVED — DATE 1-12-87

APPROVED — DATE

CITY OF RAWLINS, WYOMING

SAGE CREEK TRANSMISSION PIPELINE AND WELLFIELD FACILITIES

WELLFIELD - INSTRUMENTATION AND TELEMETRY

SHEET 49 OF 49 SHEETS