

Avista Utilities
1411 East Mission P.O. Box 3727
Spokane, Washington 99220-3727
Telephone 509-489-0500
Toll Free 800-727-9170



June 1, 2000

Mr. Scott Rukke
WA Utilities & Transportation Commission
P.O. Box 47250
Olympia, WA 98504-7250

**Re: Waiver for above ground plastic pipe in steel casing
DOT §192.321(a)**


Dear Scott:

In response to your questions about the PE pipe we are installing across the Rock Creek Bridge in Stevenson, Washington, I have enclosed a copy of the job. I have calculated the thermal contraction of 190 feet of PE pipe for a temperature differential of 65°F to be 14.82 inches. This is, of course, for pipe that is fully exposed to the elements, and that is not experiencing the cooling effect of flowing gas.

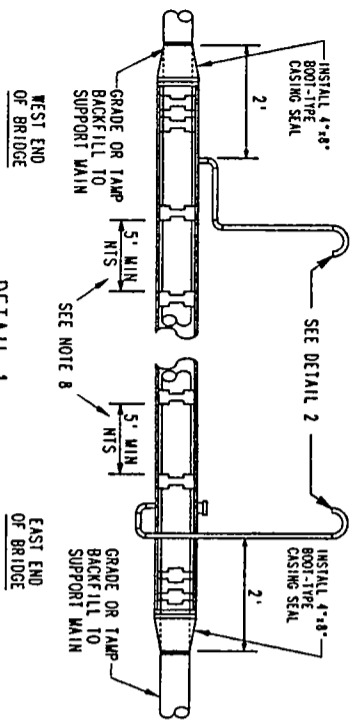
Our position is that the carrier pipe will never see the full swing in temperature for several reasons. It is fully encased in a casing, and isolated from the casing wall by 3.875 inches with thinsulators spaced every 5 feet minimum. The casing is vented to allow for air circulation, and is tucked up underneath the bridge so it will never be exposed to any sunlight. The gas is flowing at temperatures around 40°F to 50°F, which will tend to keep the temperature of the pipe relatively constant. Conservatively, if the pipe is installed at 65°F, and experiences temperature differentials of 30°F, the expansion will be 6.84 inches. We believe the movement can easily be absorbed in the soil since the pipe is fully padded with sand.

If you have any comments or questions, please give me a call. I will be out of the office from June 9 – July 5; our chief gas engineer, Mike Faulkenberry, will be available to you if you need to speak to someone. His number is (509) 495-8499.

Sincerely,


Jenny Gruenfelder
Associate Gas Engineer

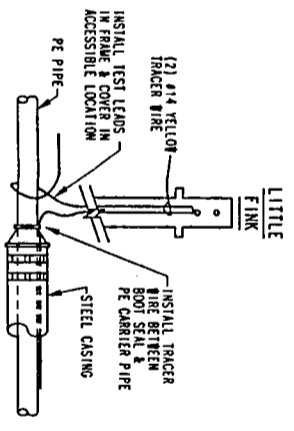
*RMS
WA*



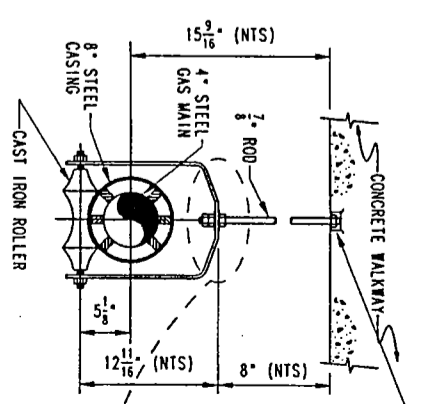
DETAIL 1
SCALE: NONE
CASING



DETAIL 2

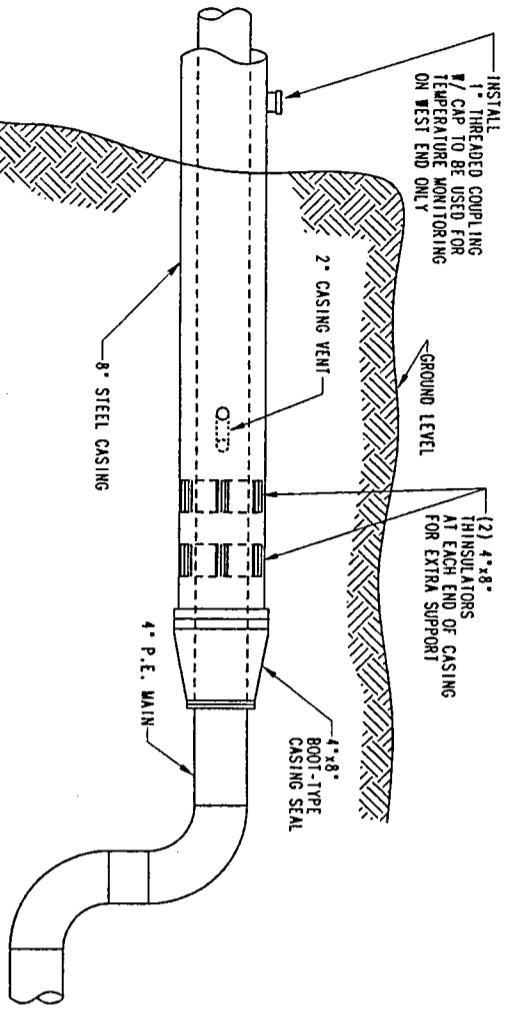


PE PIPE & STEEL CASING
TEST LEAD DETAIL 3
TEST LEAD AT TEMPORARY & PERMANENT CASING
SCALE: NONE



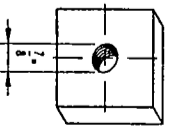
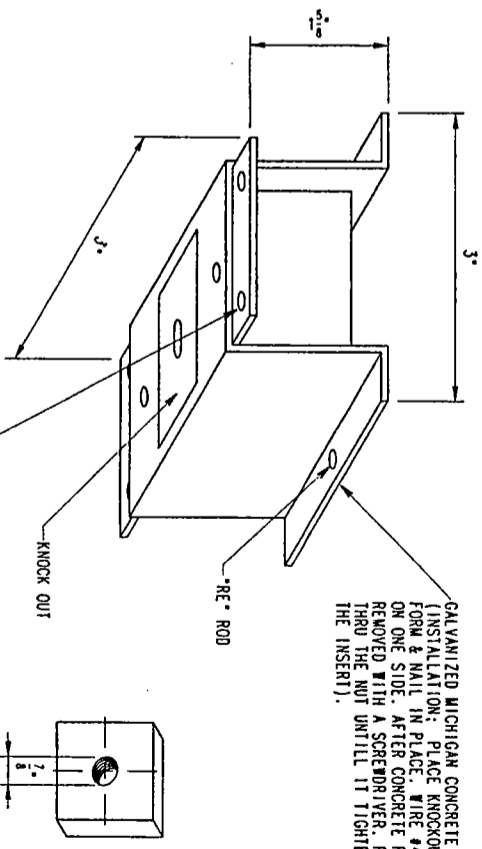
DETAIL 4
10" L 8 & A ADJUSTABLE ROLLER HANGER (SPACED EVERY 15 FEET)
SCALE: 1"=1'-0"

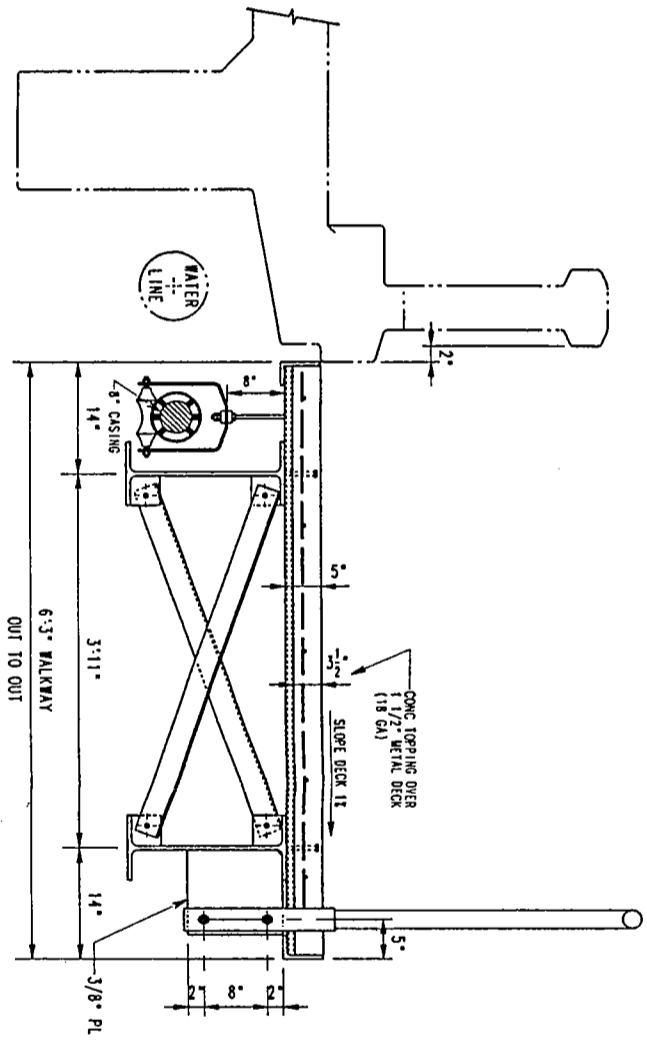
GALVANIZED MICHIGAN INSERT #355 & #355N MICHIGAN HANGER CO. ENGINEERING CATALOG



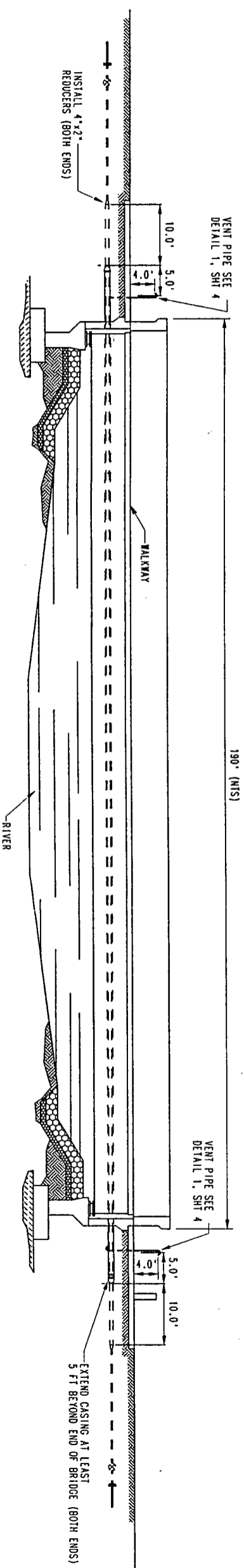
GALVANIZED MICHIGAN CONCRETE INSERT #355 & #355N (INSTALLATION: PLACE KNOCKOUT SIDE DOWN ON CONCRETE FORM & NAIL IN PLACE. WIRE #4&2"-6" REINFORCING BAR ON ONE SIDE. AFTER CONCRETE POUR, KNOCKOUT CAN BE REMOVED WITH A SCREWDRIVER. ROD SHOULD BE THREADED THROUGH THE NUT UNTILL IT TIGHTENS AGAINST THE TOP OF THE INSERT).

DETAIL 6





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



INSTALL 4"x2" REDUCERS (BOTH ENDS)

VENT PIPE SEE DETAIL 1, SH1 4

190' (N/S)

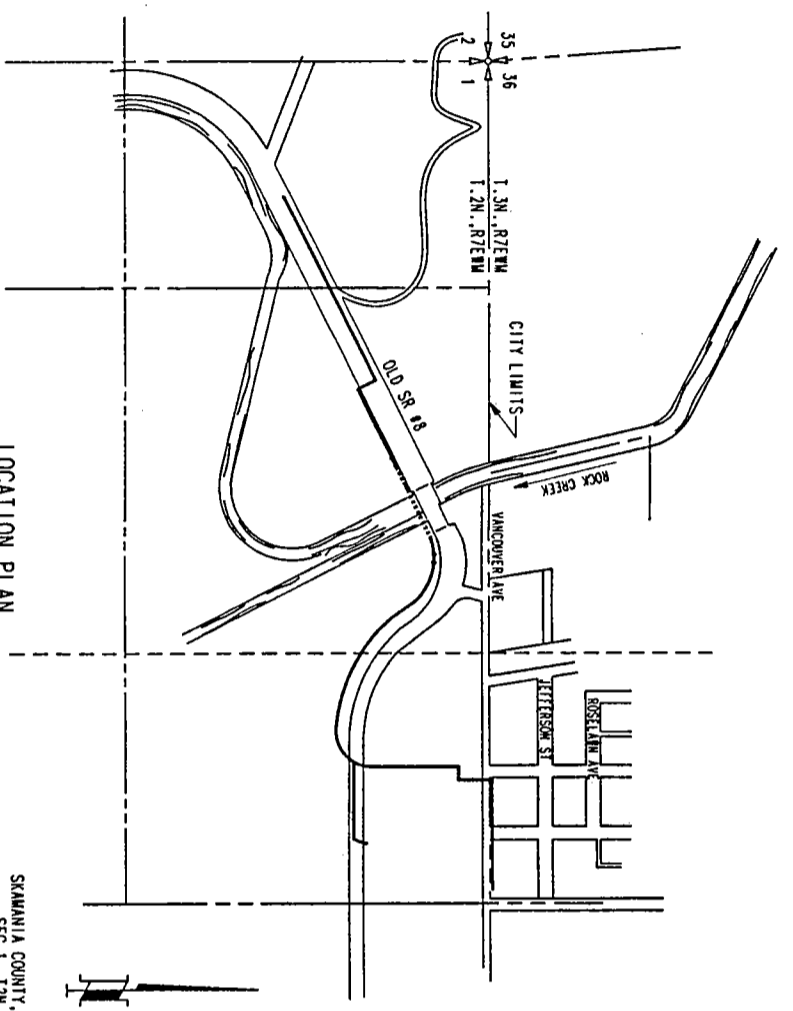
VENT PIPE SEE DETAIL 1, SH1 4

EXTEND CASING AT LEAST 5 FT BEYOND END OF BRIDGE (BOTH ENDS)

RIVER

WALKWAY

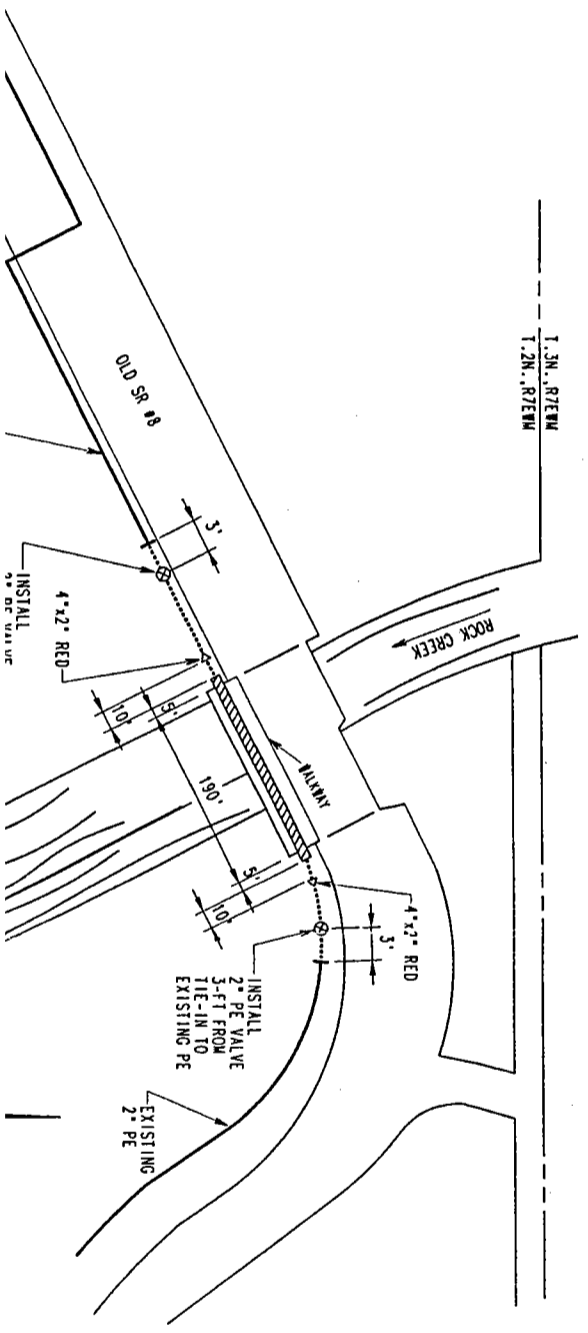
START HERE



LOCATION PLAN
NATURAL GAS ATTACHMENT TO
OLD SR #8 BRIDGE AT ROCK CREEK

SCALE: 1" = 400'

SKAMANIA COUNTY, WASHINGTON
 SEC 1, 12N, R7E NW



SIZE
1/8"
1/4"
3/8"
1/2"
3/4"
1"
1 1/4"
1 1/2"
2"
3"
4"
6"
8"

1. 4" P.E. CARRIER PIPE TO BE INSTALLED WITH SPECIFIED PIPE HANGER WITH MINIMUM PAST END OF BRIDGE.
2. WORK TO BE PERFORMED AS PER SPECIFICATIONS GIVEN BY CITY OF STEVENSON, WASH. CORP GAS ENGINEERING, PH #415-224-4444.
3. PRESSURE TEST 4" PE MAIN TO 50 PSI SPRING GAUGE.
4. PIPE SPECIFICATIONS:
 4" PE PIPE, SDR 11.5
 8" STL CASING, GRADE B, 0.083 WALL THICKNESS
5. INSTALL PIPELINE WARNING SIGNS #1 & #1A, SHEET 3 OF 3.
6. INSTALL BOOT-TYPE CASING SEPARATION CASING (BOTH ENDS). INSTALL SHEET 3 OF 3.
7. IF NEEDED, ELBOW DOWN AS SO CALLED COVER.
8. SAND PAD ALL PIPE IN DITCH.

COI