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Waldo?s Recommendations for Interlocking Gates While the AGS has Beam

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USDOE Office of Science (SC)

DISCLAIMER

Memo: Waldo's recommendations for interlocking gates while the AGS has beam.
Date: 31 Mar 1994
To: Bob Frankel

First I list the key bending magnet power supplies in the ATR transfer lines:

1) U-line 4 degree arc
   Name: psuarc4
   Magnets: ud1 & ud2
2) U-line 8 degree arc
   Name: psuarc8
   Magnets: ud3, ud4, ud5, & ud6
3) W-line 20 degree arc
   Name: pswarc20
   Magnets: wd1 -> wd8
4) Switch magnet
   Name: psswm
   Magnet: swm
5) X-line large arc
   Name: psxarc90
   Magnets: xd1 -> xd31 & xlamb(main bus)
6) Y-line large arc
   Name: psyarc90
   Magnets: yd1 -> yd31 & ylamb(main bus)

Here is my list of your proposed locations:

1) UGI1 stub tunnel
2) UGE1 entrance at upstream end of U-line upstream of uq6
3) UGS1 downstream of utv7
4) WED1 exit from of tunnel near old neutrino line between wd3 & wd4
   EXIT only
5) WID1 beam dump in old neutrino line, downstream of wd3
6) WGS1 gate upstream of wd7 at step in floor

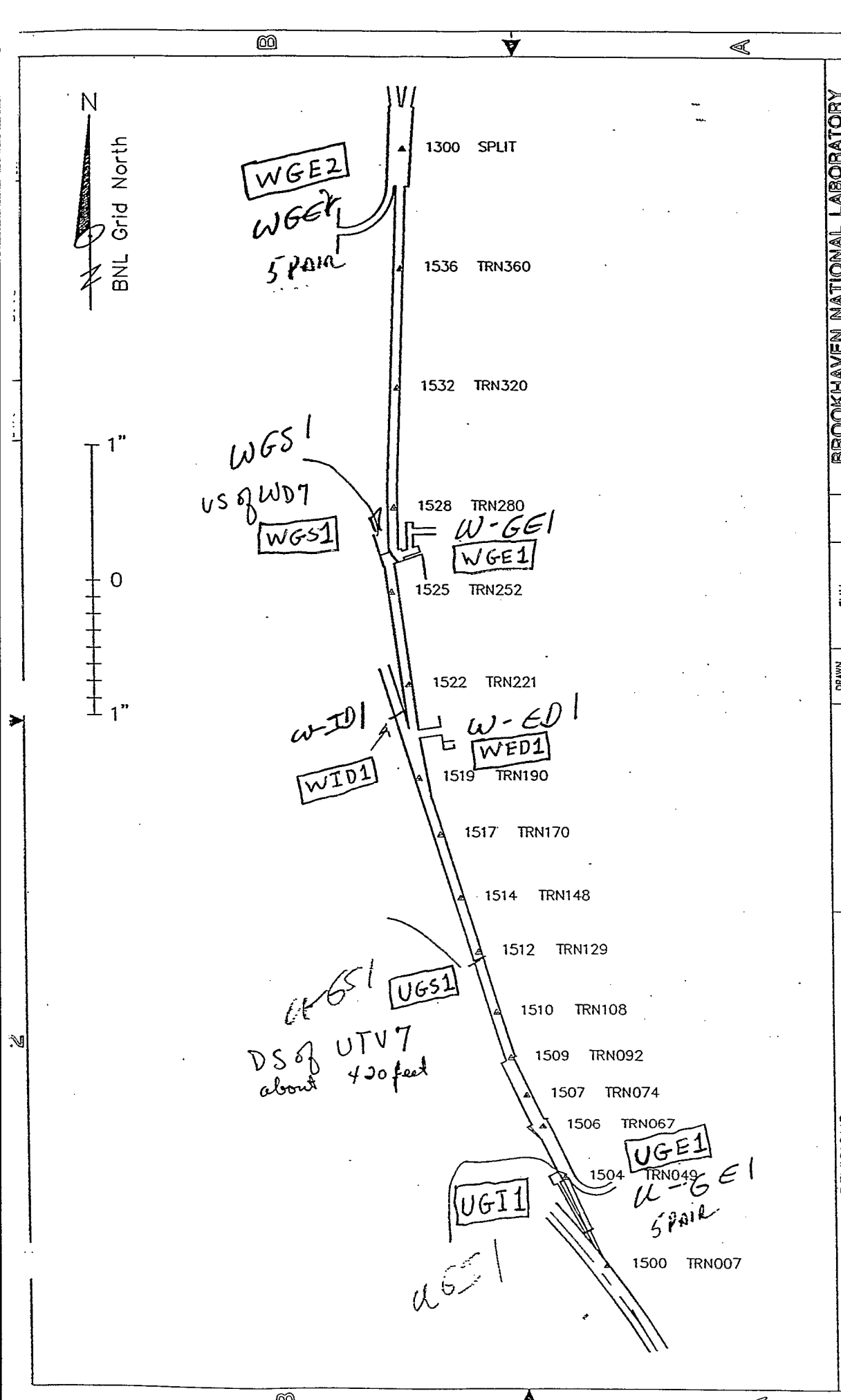
7) WGE1 entrance to tunnel at wd7
8) WGE2 entrance to tunnel upstream of wq6
9) XGI1 gate between xd2 & xd3
10) XGI2 gate between xd26 & xq1
11) YGI1 gate between yd2 & yd3
12) YGI2 gate between yd26 & yq1

From an injection point of view:

If any of 1 through 6 are violated then extraction from the AGS should be stopped and the power supplies to both the 4 degree (psuarc4) and 8 degree (psuarc8) bends should be made inactive. The extraction kicker should also be inhibited.

If any of the other interlocks are broken downstream of WGS1 then the power supplies to the 8 degree (psuarc8) bend should be disabled. The power supply to the 20 degree arc (pswarc20) could be disabled, if necessary; however the string of magnets operates at about 0.5MW, so the possibility of frequent dumping might cause some electrical damage.
Disabling psuarc8 should allow people to work downstream of WGE1, without interrupting g-2 operation, assuming, of course, that radiation levels are acceptable in this region. If the levels are too high, then access could be restricted to only the X and Y arcs.

Due to the large amount of stored energy in the W, X and Y line arcs, we would prefer not to crash the power supplies pswarc20, psxarc90 and psyarc90.



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TITLE: RHIC INSTALLATION
AGS - RHIC TRANSFER LINE
ALIGNMENT CONTROL MONUMENTATION

SIZE A | DRAWING NUMBER: SURVEY & ALIGNMENT GROUP SAG - 0044 | REV. A

SCALE: 1 : 1750 | WEIGHT: | SHEET 1 of 1

	FMH
DRAWN BY	
DESIGN APPROVAL	-
CHECKED BY	
ENGINEER APPROVAL	-
SUPERVISOR APPROVAL	-
Q.A. APPROVAL	-
DRAWING NAME:	CTRL_TRN.DWG

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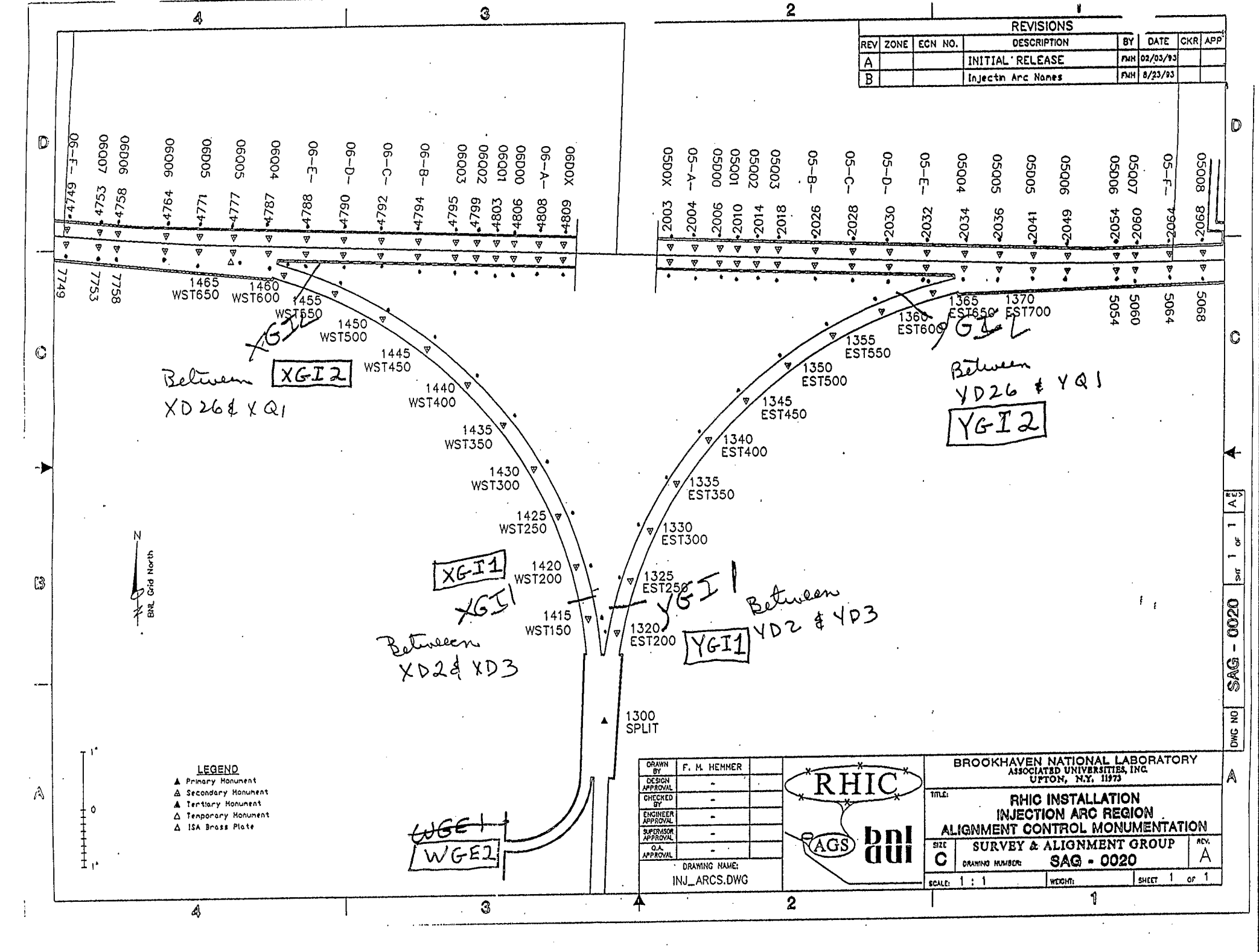
REVISIONS

REV	ZONE	ECN NO.	DESCRIPTION	BY	DATE	CKR	APP
A			INITIAL RELEASE	FMH	8/23/93		


REVISIONS
REV | ZONE | ECN NO. | DESCRIPTION | BY | DATE | CKR | APP
A | | | INITIAL RELEASE | FMH | 02/03/93 | |
B | | | Injectn Arc Names | FMH | 8/23/93 | |
06-F 06007 06006 06006 06005 06005 06004 06-E 06-D 06-C 06-B 06003 06002 06001 06000 06-A 06X00
4749 4753 4758 4764 4771 4777 4787 4788 4790 4792 4794 4795 4799 4803 4806 4808 4809
05X00 05-A 05000 05001 05002 05003 05-B 05-C 05-D 05-E 05004 05005 05005 05006 05007 05-F 05008
2003 2004 2006 2010 2014 2018 2026 2028 2030 2032 2034 2036 2041 2049 2054 2060 2064 2068
7749 7753 7758 1465 WST650 1460 WST600 1455 WST550 1450 WST500 1445 WST450 1440 WST400 1435 WST350 1430 WST300 1425 WST250 1420 WST200 1415 WST150
1360 EST600 1365 EST650 1370 EST700 1355 EST550 1350 EST500 1345 EST450 1340 EST400 1335 EST350 1330 EST300 1325 EST250 1320 EST200
5054 5060 5064 5068
XGI2
Between XD26 & XQ1
XGI1
Between XD2 & XD3
YGI1
Between YD2 & YD3
YGI2
Between YD26 & YQ1
WGE1
WGE2
1300 SPLIT
N
BNL Grid North
LEGEND
Primary Monument
Secondary Monument
Tertiary Monument
Temporary Monument
ISA Brass Plate
DRAWN BY F. M. HEMMER
DESIGN APPROVAL -
CHECKED BY -
ENGINEER APPROVAL -
SUPERVISOR APPROVAL -
Q.A. APPROVAL -
DRAWING NAME: INJ_ARCS.DWG
RHIC
AGS
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TITLE:
RHIC INSTALLATION
INJECTION ARC REGION
ALIGNMENT CONTROL MONUMENTATION
SIZE C
SURVEY & ALIGNMENT GROUP
DRAWING NUMBER: SAG - 0020
REV. A
SCALE: 1 : 1
WEIGHT:
SHEET 1 OF 1
DWG NO SAG - 0020
SHT 1 OF 1 ARS