

Evaluation of the Release of Metals for Recycling from the C0 Assembly Building (MMR #0023752)

History of the C0 Assembly Building:

The C0 Assembly Building, now also referred to as the Remote Handling Facility (RHF), was constructed in 1998 in preparation for the B-Tev experiment, and is located in the Tevatron ring. However, B-Tev was never funded by DOE, and the hall was never used for beam collision experiments. When B-Tev was cancelled, the building was retro-fitted with magnets for fixed target collider runs starting in June of 1999 and continuing through September of 2011. During the fixed target runs periodic surveys of the building were performed, and indicated there were no beam losses within the target hall area.

After the completion of the fixed target runs, and the end of collider run II, the Tevatron was decommissioned, and all of the magnets were removed from the hall. Concrete samples were taken of the walls and floor areas, and a direct Bicron Analyst survey of the demolition areas showed no counts above background on the items being removed. Infrastructure upgrades of the C0 building began in April 2016 and included the removal of electrical components, water piping, and HVAC ductwork. The majority of the materials are intended to be recycled. The Tevatron A-E region (which includes C0) was posted as a Controlled Area/Radioactive Material Area on May 30, 2012.

Radiation Survey Information and Results:

This load of materials consisted of one metal dumpster containing metal ductwork and pipe, and was taken to the Railhead. The Railhead is posted as a Controlled Area/Radioactive Materials Area. All Facility Engineering Services Section (FESS) and Accelerator Division (AD) policies and procedures for releasing materials for recycling were followed. AD surveyed all materials leaving C0, before being transported to the Railhead, and determined that they were not radioactive. The dumpster was transported under Material Move Request (MMR), # 0023752 dated 4/8/16 and is included as part of this material evaluation package.

AD also provided surveys dated 1/12/03, 3/15/04, 7/18/10 and 1/13/16. These surveys were performed during the fixed target collider run, and just before deconstruction of the building was underway. They, along with a radioisotope analysis of the shield block wall, all confirm that the C0 building is posted appropriately and that no removable contamination is present.

Due to jagged edges on the ductwork and the weight of the pipe, the contents of the dumpsters were unloaded onto the ground at the Railhead. Members of the Property Control and Logistics office and the FESS RSO surveyed the materials again on 4/13/16, and also found that none of the materials on MMR #0023752 were radioactive. This survey information, a Railhead area survey map, which indicates the location where the materials were surveyed, and pictures of the materials listed on MMR #0023752 are included as part of the material evaluation package. The information contained in this package confirms that these materials can be recycled.

Recycling Package Generated by:  Date: 4/18/16

Susan McGimpsey, ESH&Q Radiation Protection Group

Recycling Package Approved by:  Date: 4/18/16

Don Cossairt, Senior Radiation Safety Officer

Assessment of Materials for Release from CO (MMR #0023752)

Survey Information:

Surveyor Name and ID: Susan McGimpsey, FESS Radiation Safety Officer, 12359N

Surveyor Signature: 

Survey Date: 4/13/16

Survey Location: Railhead- Scrap Sorting Area, Southeast Corner

Instrument Information

Instrument Name and Number: Bicron #12

Calibration Due Date: 3/2017

Battery Check: Ok

Source Check: Ok

Background Reading: 1800cpm

Additional Survey Notes/Comments



ONSITE MATERIAL MOVE REQUEST NUMBER MMR0023752

DATE 2016-04-08	REQUESTED BY Jonathan Hunt	ID # 15287N	MS # MS 214	PHONE EXT. 4312
EXACT LOCATION OF MATERIALS Outside C-0 Assembly Building		PROJECT NUMBER G14217	TASK NUMBER	

CERTIFIER		ID NUMBER
CONTAINS RADIOACTIVE MATERIAL?	No	Tony Busch 10068N
RADIOACTIVE NATURE & EXTENT	None Detected	
CONTAINS DOT HAZARDOUS MATERIAL?	No	Jonathan Hunt 15287N
HAZARDOUS TYPE(S) SELECTED		

SURVEYOR Paul Sedory	ID NUMBER 12630N	SURVEY INSTRUMENT / NUMBER Analyst/47	CALIB. DUE DATE 2017-01-31
BACKGROUND READING 1200	SOURCE CHECK- OK <input checked="" type="checkbox"/>	BATTERY CHECK- OK <input checked="" type="checkbox"/>	

INTERNATIONAL SHIPMENT?: No

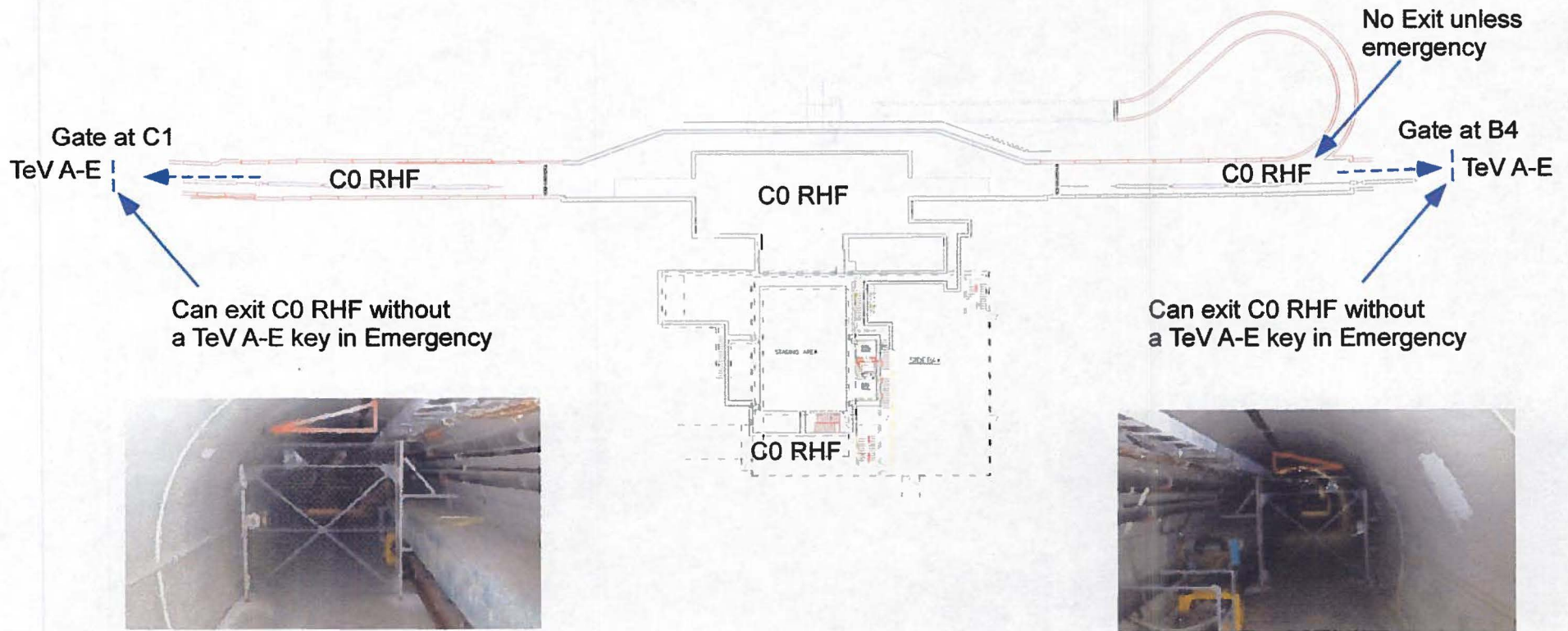
QUANTITY	UOM	DESCRIPTION	DIMENSIONS	WEIGHT	PROPERTY NO.	SERIAL NO.	GROUP	CONDITION CODE
81	Cuyd	Hopper 8YRD	x x x x ft	x lbs			Group 1	Scrap

SHIP TO Railhead Attention: Sue McGimpsey Phone Number: <i>W. Miller 13091</i> <i>Bicron # 44 Cal. 12-16</i>	ORDER TYPE	PO/PROCARD/EBAY #
	Not Applicable	
	RETURN AUTHORIZATION NUMBER	
	PROCUREMENT APPROVER	
	DATE REQUIRED AT DESTINATION	
	2016-04-11	
	MODE OF SHIPMENT	
Most Economical		
MODE OF PAYMENT		
Prepaid		
OTHER SHIPPING VENDERS NAME AND ACCOUNT NUMBER		

REASON FOR SHIPMENT	SPECIAL SHIPPING INSTRUCTIONS
Scrap	

LOAN OR EXPERIMENT NUMBER

C0 Assembly Bldg (RHF) Area December 23, 2014



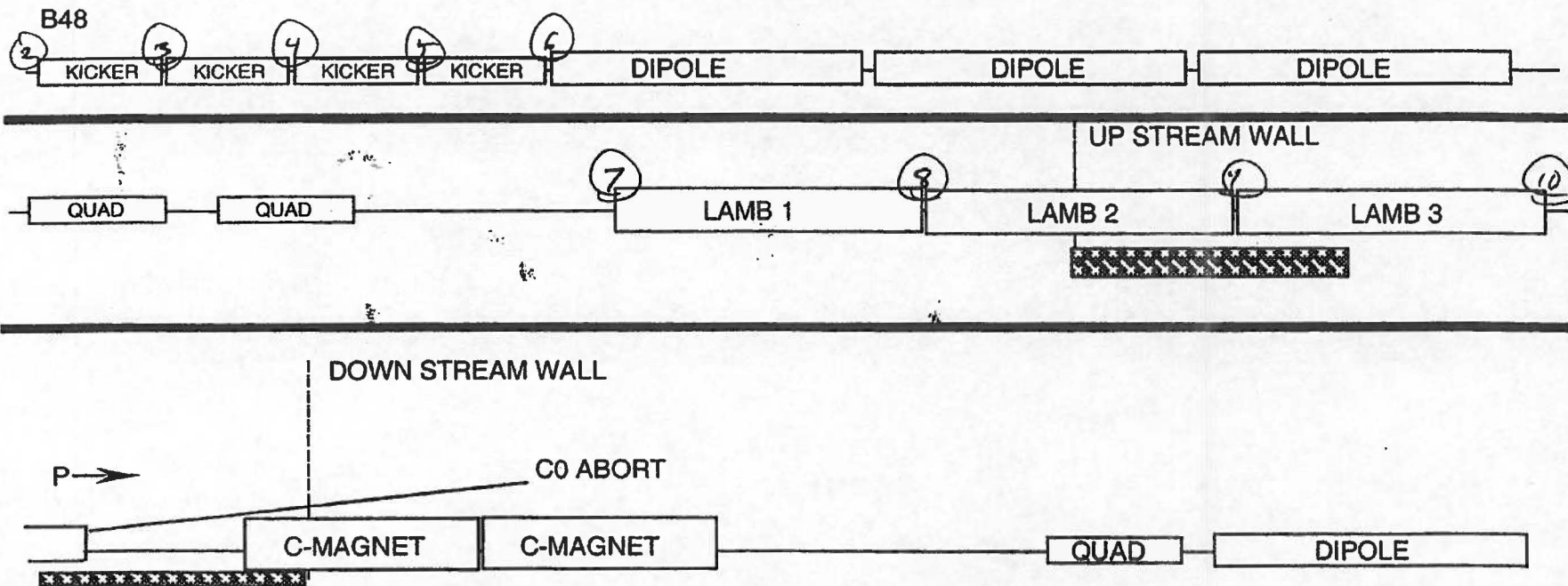
The C0 Assembly Building Remote Handling Facility (RHF) area now includes the former TeV A-E enclosure between the new gates at B4 and C1. For now, a C0 Assembly Bldg RHF key is required to enter this area if accessing from TeV A-E through these new gates, which are keyed the same as the C0 Assembly Bldg. TeV tours are not permitted in the area between C1 and B4.



ERMILAB
BEAMS DIVISION

DATE: 1/12/03 TIME: 2200 PURPOSE: INITIAL ENTRY RWP # BD 275

CØ COLLISION HALL CATWALK



All Dose Rates Below <u>2</u> mR/hr Unless Noted.			Bkgd <u>50</u> cpm				Highest Dose Rate Found <u>2</u> mR/hr at 1 ft.	
Inst Type:	<u>LCM</u>	<u>FRISH</u>	Wipe #	Reading	Wipe #	Reading	Note: RSO approval required to work in areas where it is: >100 mR/hr @ 1 foot OR >100 CCPM on a wipe. Comments:	
Inst No:	<u>46</u>	<u>66</u>	<u>2</u>	<u>30</u> ccpm	<u>7</u>	<u>30</u> ccpm		
Batt/Source Chk:	<u>5HT</u>	<u>5HT</u>	<u>3</u>	<u>30</u> ccpm	<u>8</u>	<u>40</u> ccpm		
Cal. Due Date:	<u>9/03</u>	<u>9/03</u>	<u>4</u>	<u>40</u> ccpm	<u>9</u>	<u>30</u> ccpm		
			<u>5</u>	<u>30</u> ccpm	<u>10</u>	<u>40</u> ccpm		
LEGEND Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact A = Air Sample ○ = Wipe (F) = Floor wipe			<u>6</u>	<u>40</u> ccpm				
			Beam Off Date: <u>1-12-03</u>			Surveyed By: <u>[Signature]</u>		
			Beam Off Time: <u>1220</u>			Reviewed By: <u>[Signature]</u>		
			Intensity: <u>4.7E12</u>					

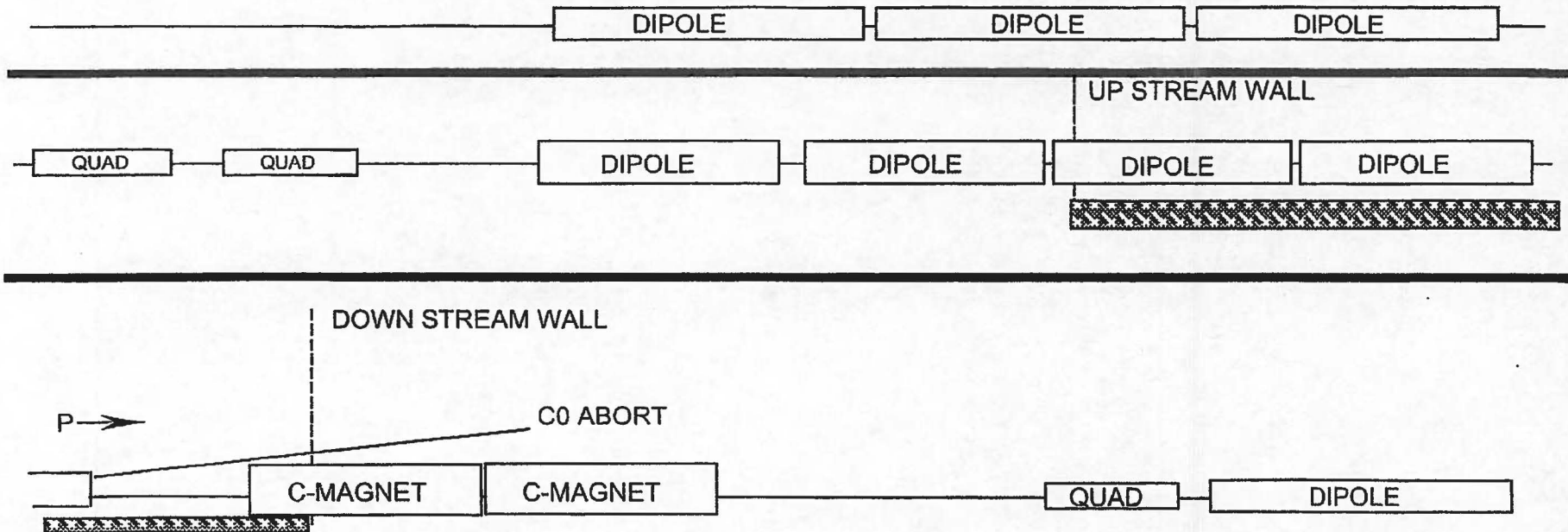


FERMILAB
BEAMS DIVISION

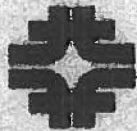
DATE: 3-15-04 TIME: 0400 PURPOSE: Initial Entry RWP # 501

CØ COLLISION HALL CATWALK

B48



All Dose Rates Below <u>5.0</u> mR/hr Unless Noted.		Bkgd _____ cpm		Highest Dose Rate Found <u>25.0</u> mR/hr at 1 ft.	
Inst Type: <u>LSM</u>	_____	Wipe # _____	Reading _____	Wipe # _____	Reading _____
Inst No: <u>52</u>	_____	_____	ccpm _____	_____	ccpm _____
Batt/Source Chk: <u>3AT</u>	_____	_____	ccpm _____	_____	ccpm _____
Cal. Due Date: <u>6-04</u>	_____	_____	ccpm _____	_____	ccpm _____
LEGEND Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact A = Air Sample ○ = Wipe ⊙ = Floor wipe		Beam Off Date: <u>3-15-04</u>		Surveyed By: <u>White / Felgner</u>	
		Beam Off Time: <u>0800</u>		Reviewed By: <u>J. White</u> <u>3/15/04</u>	
		Intensity: <u>falling</u>			



Fermilab
Accelerator Division

DATE: 7/18/10 TIME: 0930 PURPOSE: initial entry

AD 1002
1006

TeV Cover Sheet

All Dose Rates Below → mR/hr Unless Noted.			
Inst Type: <u>LSM</u>			<p>Note: RSO approval required to work in areas where it is >100 mR/hr @ 1 foot OR >100-CCPM on a wipe.</p> <p>Comments</p>
Inst No: <u>38</u>			
Batt/Source Chk. <u>SA</u>			
Cal Due Date <u>7/10</u>			
<p>LEGEND Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * - mR/hr @ contact A - Air Sample ○ = Wipe ⊙ = Floor wipe</p>		<p>Beam Off Date: <u>7/18/10</u> Beam Off Time: <u>0606</u> Intensity: <u>1.3213 pph</u></p>	<p>Surveyed By: <u>Bush Fulgham</u> Reviewed By: <u>H. [unclear] 7/18/10</u></p>



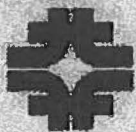
Fermilab
Accelerator Division

DATE: 7/18/10 TIME: 0930 PURPOSE: initial entry

AD.1002
1006

TeV Cover Sheet

All Dose Rates Below		mR/hr Unless Noted.			Note: RSO approval required to work in areas where it is 100 mR/hr @ 1 foot OR >100-CCPM on a wipe.
Inst Type:	<u>LSM</u>				
Inst No.	<u>38</u>				
Batt/Source Chk.	<u>SAS</u>				
Cal Due Date	<u>7/10</u>				
LEGEND Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * - mR/hr @ contact A - Air Sample ○ = Wipe ⊙ = Floor wipe				Beam Off Date: <u>7/18/10</u> Beam Off Time: <u>0930</u> Intensity: <u>1.3 EB pph</u>	Surveyed By: <u>Bush Fulgham</u> Reviewed By: <u>H. Lee 7/18/10</u>

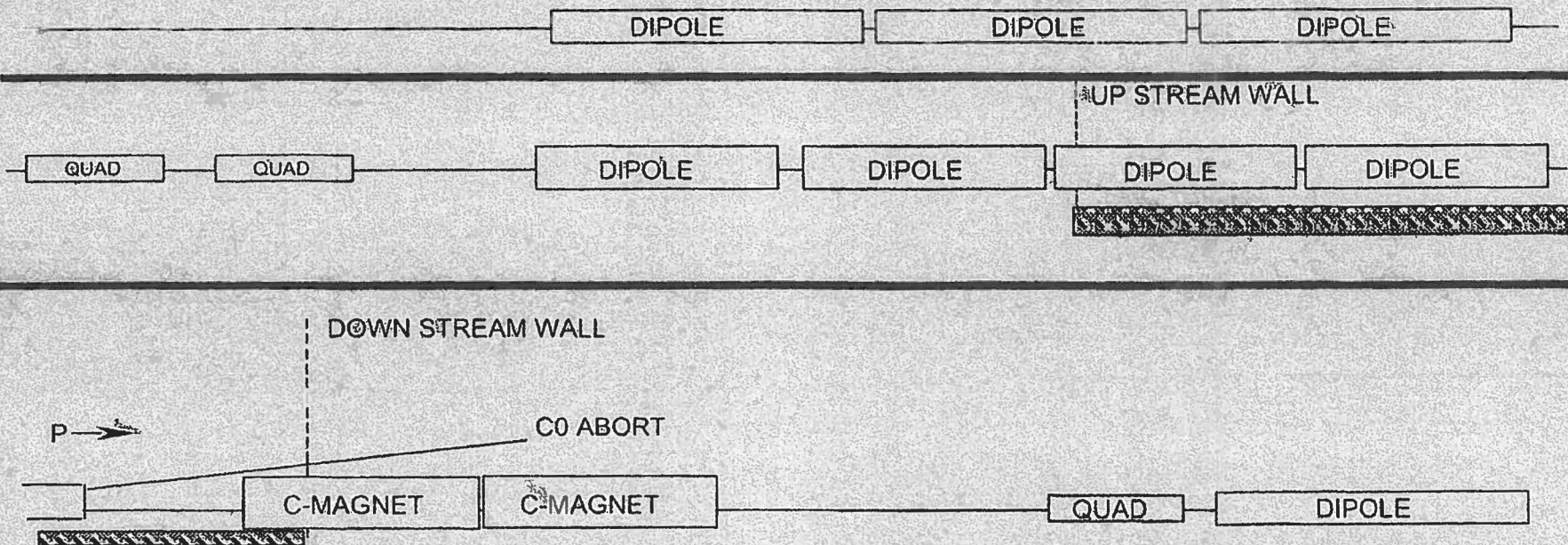


FERMILAB
ACCELERATOR DIVISION

DATE: _____ TIME: _____ PURPOSE: _____ RWP # _____

CØCOLLISION HALL CATWALK

B48



All Dose Rates Below <u>5</u> mR/hr Unless Noted.			Bkgd _____ cpm				Highest Dose Rate found <u>45</u> mR/hr at 1 ft.	
Inst Type: _____	_____	_____	Wipe # _____	Reading _____	Wipe # _____	Reading _____	Note: RSO approval required to work in areas where it is >100 mR/hr @ 1 foot OR >100 CCPM on a wipe. Comments: _____ _____ _____	
Inst No: _____	_____	_____	_____	ccpm _____	_____	ccpm _____		
Batt/Source Chk. _____	_____	_____	_____	ccpm _____	_____	ccpm _____		
Cal. Due Date: _____	_____	_____	_____	ccpm _____	_____	ccpm _____		
_____	_____	_____	_____	ccpm _____	_____	ccpm _____		
LEGEND Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below ^ = mR/hr @ contact A = Air Sample ○ = Wipe ⊕ = Floor wipe			Beam Off Date: _____ Beam Off Time: _____ Intensity: _____				Surveyed By: _____ Reviewed By: _____	

REVISED 1/22/03



FERMILAB
ACCELERATOR
DIVISION

DATE: <u>1/13/16</u>	TIME: <u>0900</u>	PURPOSE: <u>C0 Hall demolition survey</u>	RWP #: <u>N/A</u>
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All Dose Rates Below n/a mR/hr Unless Noted.

Inst Type:	Analyst		
Inst No:	28		
Batt/Source Chk:	sat		
Cal. Due Date:	11/2016		

LEGEND

Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below

* = mR/hr @ contact

A = Air Sample ○ = Wipe (F) = Floor wipe

bkgd 1500 cpm

Highest Dose Rate Found n/a mR/hr at 1 ft.

Note: RSO approval required to work in areas where it is: >100 mR/hr @ 1 foot OR >100 CCPM on a wipe.

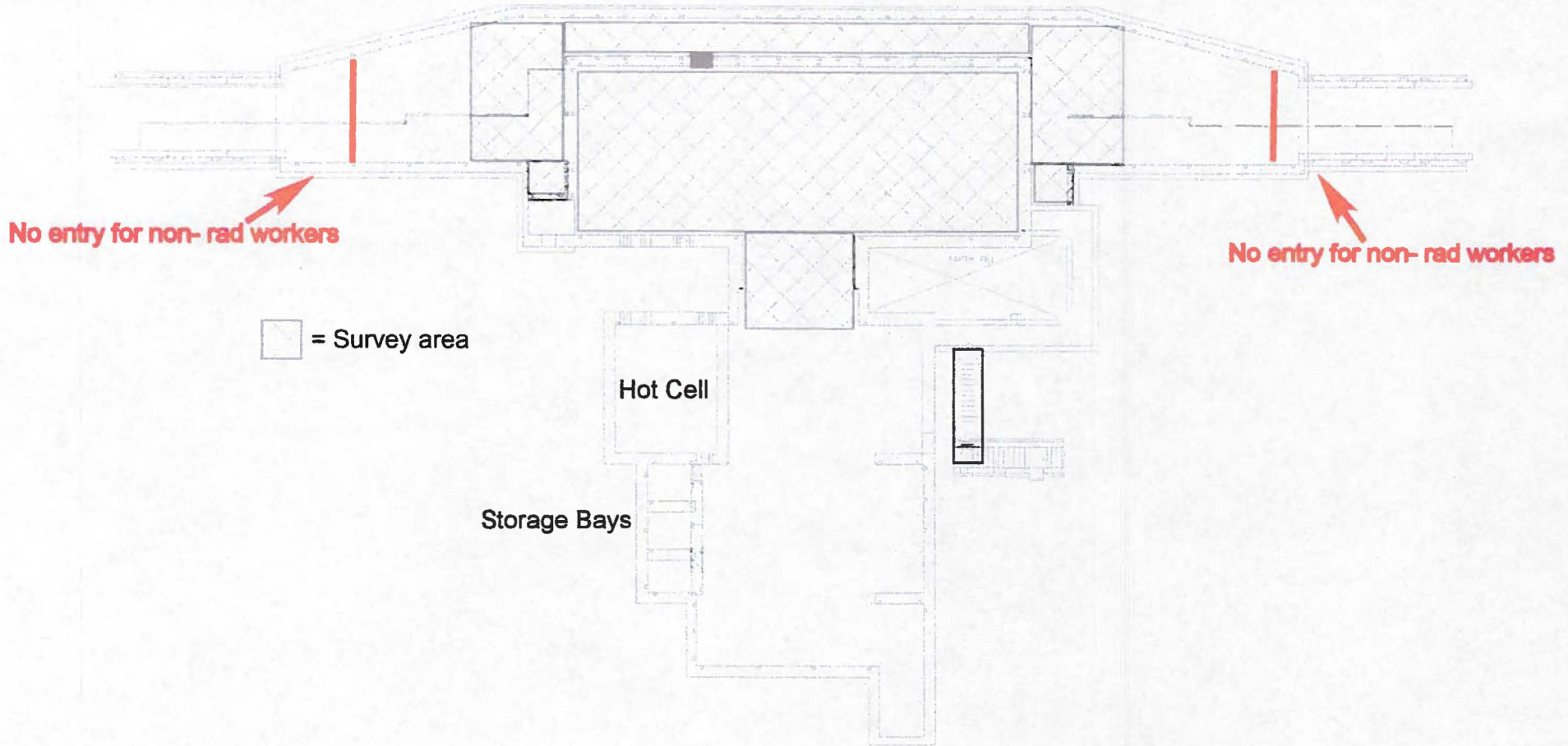
Comments: Pictured areas were surveyed with a Bicon Analyst. No increases in counts above background were noted

Surveyed By: Busch
Reviewed By: [Signature] 3/28/16



FERMILAB
ACCELERATOR
DIVISION

DATE: 1/13/16 TIME: 0900 PURPOSE: C0 Hall demolition survey RWP # N/57



All Dose Rates Below _____ mR/hr Unless Noted.		bkgd 1500 cpm	Highest Dose Rate Found <u>n/a</u> mR/hr at 1 ft.	
Inst Type: _____	Analyst _____		Comments: Areas indicated were surveyed with a Bicron Analyst. No increases in counts above background were noted	
Inst No: <u>28</u>	_____			
Batt/Source Chk: <u>sat</u>	_____			
Cal. Due Date: <u>11/2016</u>	_____	Surveyed By: <u>Busch</u>		
LEGEND Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact A = Air Sample ○ = Wipe (F) = Floor wipe		Reviewed By: <u>[Signature] 3/28/16</u>		

* Note surfaces were surveyed on contact with an Analyst. Items will also be surveyed upon removal.

Radionuclide Analysis Facility
Gamma Analysis Report
Issued by Meka E. Francis

Report Date: April 18, 2014
Work Request #: 14-096
Submitted by: T. Busch on 4/17/14
Workbook: HPGe #2-10. page(s) 34

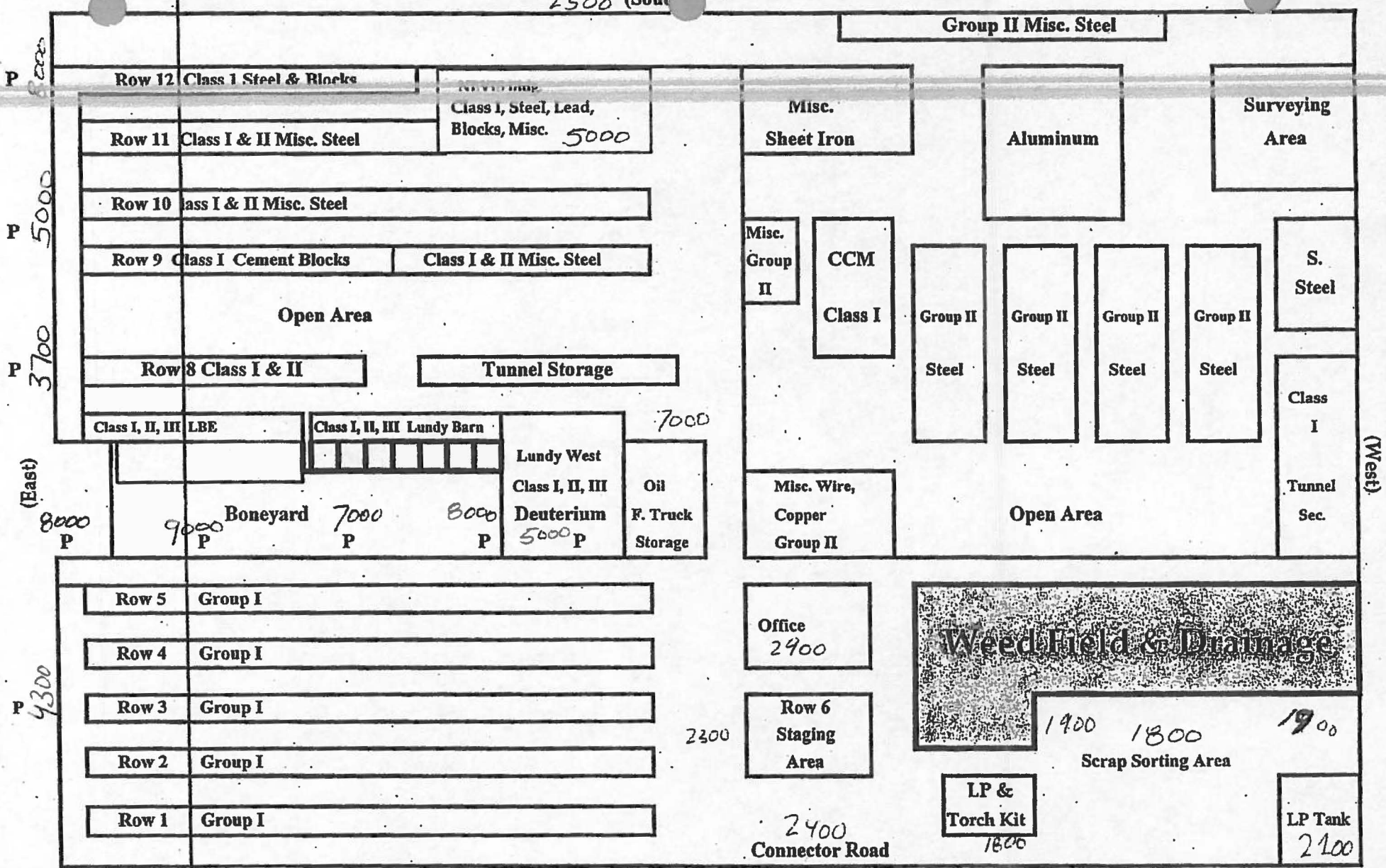
C0 Detector Hall Shielding Block

The Accelerator Division/ES&H Group submitted 1 concrete sample on Work Request# 14-096 for analysis of accelerator produced radionuclides. The sample was counted on detector HPGe#2. The following table lists the radionuclides detected in the sample along with the corresponding specific activity. If a sample activity was reported, it has been corrected to the time of sampling.

<u>SampleID#</u>	<u>Sample Time</u>	<u>Location</u>	<u>Container</u>	<u>Count Info</u>	<u>Mass</u>	<u>Count Date</u>	<u>Radionuclide</u>	<u>Activity (pCi/g)</u>
140415TB01	13:30	C0 Detector Hall (Moveable Shield Wall)	125 mL Poly Bottle	7200sec @ 4cm	37.212 g	4/17/14 @ 13:59	---	None Detected

cc: Accelerator Division Distribution List D. Cossairt E. Korzeniowski
M. Francis I. Hoppie M. Quinn RAF Folder

2500 (South)



P 3/00 P 3300 P 3200

Bicron # 8

Date: 4/27/26

P=Pole: _____

Calibration Due Date 2/20/27

Background: 2100

Source: 3000

Erik Bainbridge
Surveyed By

Updated 03/08/2011











