

sPHENIX Construction Update

Status of activities needed before sPHENIX is rolled out into the IR







sPHENIX <u>AH</u> Installation Schedule Baseline Dates from Aug 21' PCR Actual Dates

9/10/21 9/8/21



Sequential Build Steps	<u>Updated 10/13/21</u>											ctual Da	ites	0/20/2		9/8	744	-			
AH Track Upgrades (started 3/1) AH 3/1/21 5/14/21	Sequential Build Steps	Locate	Start	End	J-21	F-21	M-21	A-21	M-21	J-21	J-21	A-21	S-21	0-21	N-21	D-21	J-22	F-22	M-22	A-22	M-22
Secure Magnet in oHCAL, Tests AH	AH Track Ungrados (started 2/1)	ΔН	3/1/21	5/3/21											Vau	Ann Hone					
Cradie-Base	- Track Opprodes (started 5, 1)	741													Tou	Are nere					
Outer HCAL 1-13	Cradle-Base	AH			ļ						١.										
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Secure Magnet in oHCAL, Tests	Outer HCAL 1-13	AH			1										•					7	
Secure Magnet in oHCAL, Tests				1 1							-										
Carriage, Platforms, Cable Tray and Pipe Supports, Pole Tip yet Lower Racks) Carriage, Platform procurement Carriage, Platform	Secure Magnet in oHCAL, Tests	AH																			
11/17/21																		~11/1	17		
Section California Califo	Large Support Rings	AH	11/17/21		1					LS	R Procui	re and 912	Assy								
HCAL insertion and Services AH	Outor HCAL 14 22	ΛШ	11/17/22	1/18/22																	
### AH	Outer HCAL 14-32	A.I.																			
EMCAL Insertion and Services AH 3/22/22 5/3/22 EMCAL sector factory Install tool pracure, load test, and practice Carriage, Platforms, Cable Tray and Pipe Supports, Pole Tips (+ Lower Racks) LN2/Helium Line Infrastructure IR 7/15/21 11/15/21 7/15/21 8/15/21 IR Track Upgrades IR 7/15/21 11/15/21 7/15/21 11/15/21 7/15/21 11/15/21 Magnet Valve Assembly AH AH to IR AH to IR 4/6/22 4/20/22 Magnet Cryo and Electric Connect IR 4/6/21 6/13/21 Magnet Cryo and Electric Connect AH AH to IR 4/6/21 6/13/21	iHCAL install structures and iHCAL insertion	АН	3/1/22	3/21/22																1	
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Carrier in a yand Pipe Supports, Pole Tips (+ Lower Racks)				2/24/22										ia test, ai	pracue						F
IN2/Helium Line Infrastructure		AH	1/7/22	3/24/22	-			_	Pole						LSR install will start ~11/17						
IR Track Upgrades IR 7/15/21 8/15/21 IR Track Upgrades IR 7/15/21 11/15/21 Magnet Valve Assembly AH 3/28/22 4/5/22 Move sPHENIX to IR AH to IR Magnet Cryo and Electric Connect IR 4/6/21 6/13/21 Magnet Cryo and Electric Connect	Supports, Fole Tips (+ Lower Racks)		7/45/04	44/45/24					role	Proce	-				-				\vdash		
R Track Upgrades	LN2/Helium Line Infrastructure	IR										•	•		_						
R Track Upgrades		IR													_				\vdash		
Magnet Valve Assembly AH 3/28/22 4/5/22 Move sPHENIX to IR AH to IR 4/6/22 4/20/22 Magnet Cryo and Electric Connect IR 4/6/21 6/13/21	IR Track Upgrades			11/15/21								_			₽-						
Magnet Valve Assembly AH Move sPHENIX to IR AH to IR AH to IR A/6/22 A/20/22 Magnet Cryo and Electric Connect IR A/6/21 A/6/	Magnet Valve Assembly	АН		4/5/22											_					_	
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	Magnet Cryo and Electric Connect	IR	4/6/21	6/13/21																	
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1/30/21 to 7/15/21

11/15/21 to 4/3/22

What needs to happen before sPHENIX moves to the IR?



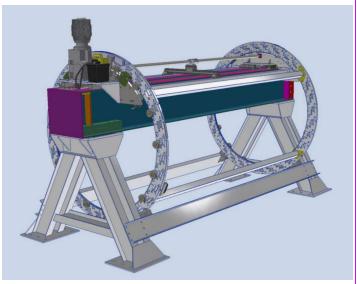
Milestones required to roll into the IR	Work to go, pre-requisites	Notes						
AH and IR track upgrades	Complete							
IR cryo-piping upgrades	Complete							
Install Inner HCAL	Cradle-Base →oHCAL 1-13 → Magnet → LSRs → oHCAL 14-32 → iHCAL install structures (see next slide)	 LSR install start 11/15-ish 1/18/22 baseline oHCAL completion EMCAL install can start when iHCAL is complete, but can all be done in the IR 						
Install Pole Tip Doors Install magnet valve box Install west lower and mid level racks	 Build the carriage and platforms Prep required racks 	 Carriage Deliveries (Streck's) primary posts and beams on 1/7/22 pole tip doors on 1/18/22 remaining components by 2/8/22 						
Install west IR stairwell in IR	Procurement complete	Need some engineering for stairwell interface with IR tracks and floor						

Status of iHCAL installation structures



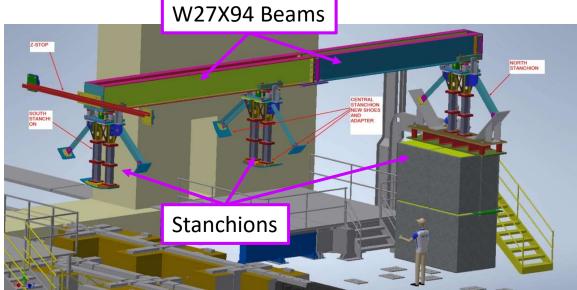
iHCAL Barrel Fabrication Rig

- All components arriving by 12/3
- ~2 weeks to assemble, test and start building barrel
- Instrumented and tested iHCAL sectors will be ready when needed in mid to late December



iHCAL Installation Beams and Stanchions

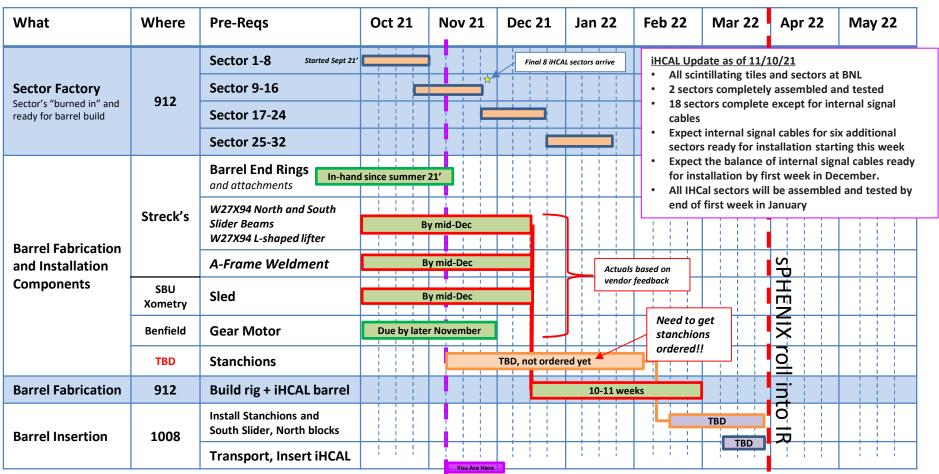
- All W27X94 beam weldments are on order and will arrive by early January
- Stanchion component procurement <u>just starting</u>. <u>Need by</u> <u>early February</u>.



iHCAL Assembly Schedule → Need to keep things moving

SPHENIX

sPHENIX can not move into IR at end of FY22 run until iHCAL is inserted



sPHENIX IR Installation Schedule

SPHENIX

Updated baseline from Aug 21' PCR

	Opulated baseline Holli Aug 21 FCN																			
Sequential Build Steps	Locate	Start	End	M-22	A-22	M-22	J-22	J-22	A-22	S-22	0-22	N-22	D-22	J-23	F-23	M-23	A-23	M-23	J-23	J-23
Move sPHENIX to IR	AH to IR	4/6/22	4/20/22																	
Magnet Cryo and Electric Connect	IR	4/6/22	6/13/22																	
EMCAL (if needed, not in P6)		4/6/22	6/13/22																	
Magnet Pump down, Cooldown, Power Test and Mapping	IR	6/17/22	7/26/22		CERN team Eqpt set	arrival tup														
TPC and TPC Services	IR	8/1/22	9/16/22			stru	PC install ctures set up													
<u>INTT Supports</u> → Beam Pipe Install → Beam Pipe Bake	IR	8/30/22	10/1/22			Time	available l	BNL NEG Co	ating											
INTT detector and services	IR	10/2/22	10/22/22																	
MVTX supports, detector and services	IR	10/23/22	11/23/22																	
MBD And Final Beam Pipe Supports	IR	10/23/22	11/23/22																	
Carriage Stairs and Seismic Supports	IR	4/20/22	6/26/22																	
Racks	IR	4/20/22	11/23/22																	
Carriage Infrastructure (continued)	IR	4/20/22	11/23/22																	
Other 1008 Infrastructure	IR	4/20/22	11/23/22																	
ORR (Early Finish)	IR	11/24/22	12/24/22				·													

11/15/21 to 4/3/22

Model (Jan to June)