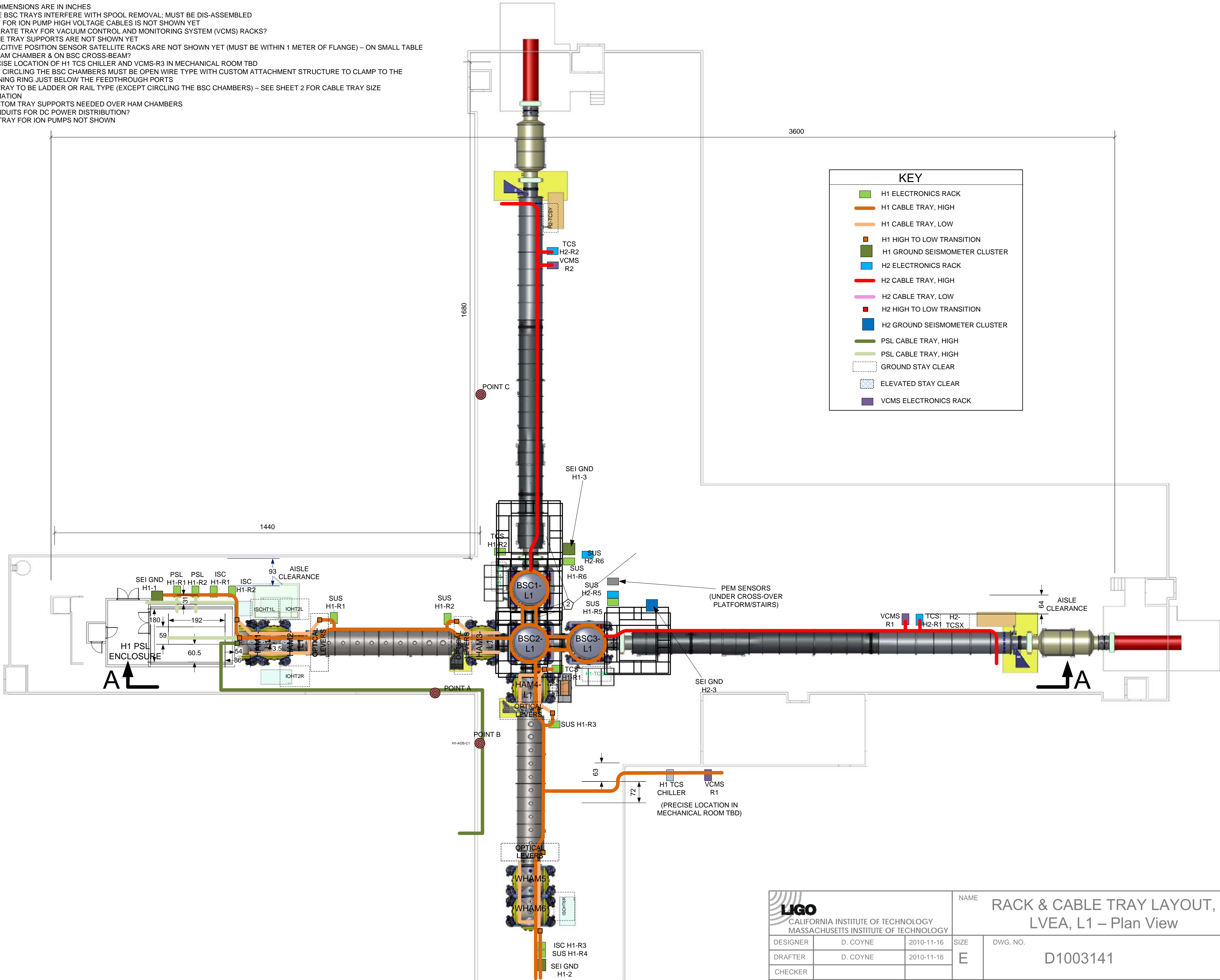


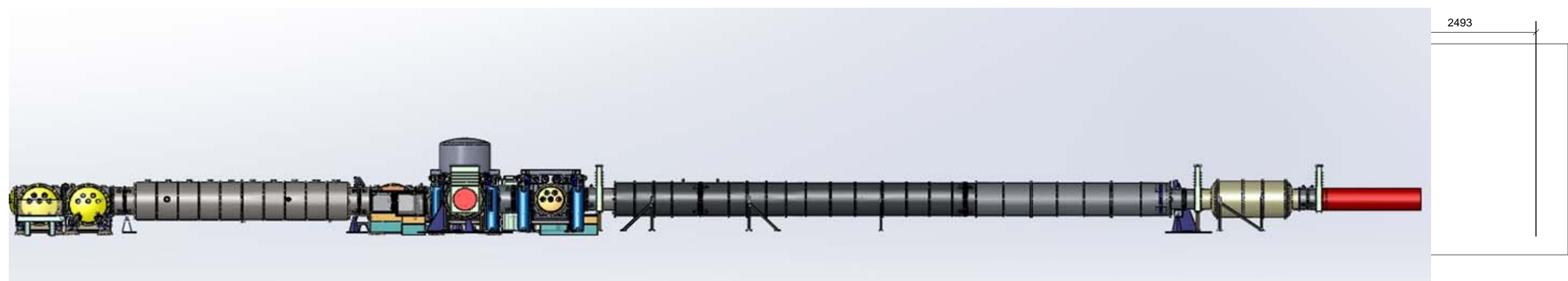
NOTES:

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) SOME BSC TRAYS INTERFERE WITH SPOOL REMOVAL; MUST BE DIS-ASSEMBLED
- 3) TRAY FOR ION PUMP HIGH VOLTAGE CABLES IS NOT SHOWN YET
- 4) SEPARATE TRAY FOR VACUUM CONTROL AND MONITORING SYSTEM (VCMS) RACKS?
- 5) CABLE TRAY SUPPORTS ARE NOT SHOWN YET
- 6) CAPACITIVE POSITION SENSOR SATELLITE RACKS ARE NOT SHOWN YET (MUST BE WITHIN 1 METER OF FLANGE) – ON SMALL TABLE NEAR HAM CHAMBER & ON BSC CROSS-BEAM?
- 7) PRECISE LOCATION OF H1 TCS CHILLER AND VCMS-R3 IN MECHANICAL ROOM TBD
- 8) TRAY CIRCLING THE BSC CHAMBERS MUST BE OPEN WIRE TYPE WITH CUSTOM ATTACHMENT STRUCTURE TO CLAMP TO THE STIFFENING RING JUST BELOW THE FEEDTHROUGH PORTS
- 9) ALL TRAY TO BE LADDER OR RAIL TYPE (EXCEPT CIRCLING THE BSC CHAMBERS) – SEE SHEET 2 FOR CABLE TRAY SIZE INFORMATION
- 10) CUSTOM TRAY SUPPORTS NEEDED OVER HAM CHAMBERS
- 11) CONDUITS FOR DC POWER DISTRIBUTION?
- 12) HV TRAY FOR ION PUMPS NOT SHOWN



KEY	
<span style="color: green;">■</span>	H1 ELECTRONICS RACK
<span style="color: orange;">—</span>	H1 CABLE TRAY, HIGH
<span style="color: lightorange;">—</span>	H1 CABLE TRAY, LOW
<span style="color: brown;">■</span>	H1 HIGH TO LOW TRANSITION
<span style="color: olive;">■</span>	H1 GROUND SEISMOMETER CLUSTER
<span style="color: blue;">■</span>	H2 ELECTRONICS RACK
<span style="color: red;">—</span>	H2 CABLE TRAY, HIGH
<span style="color: magenta;">—</span>	H2 CABLE TRAY, LOW
<span style="color: darkred;">■</span>	H2 HIGH TO LOW TRANSITION
<span style="color: darkblue;">■</span>	H2 GROUND SEISMOMETER CLUSTER
<span style="color: darkgreen;">—</span>	PSL CABLE TRAY, HIGH
<span style="color: lightgreen;">—</span>	PSL CABLE TRAY, HIGH
<span style="border: 1px dashed black; display: inline-block; width: 10px; height: 10px;"></span>	GROUND STAY CLEAR
<span style="border: 1px dotted black; display: inline-block; width: 10px; height: 10px;"></span>	ELEVATED STAY CLEAR
<span style="color: purple;">■</span>	VCMS ELECTRONICS RACK


 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY			NAME			RACK & CABLE TRAY LAYOUT, LVEA, L1 – Plan View		
			DESIGNER	D. COYNE	2010-11-16	SIZE	DWG. NO.	REV
DRAFTER	D. COYNE	2010-11-16	E	D1003141				
CHECKER								
FOR APPROVAL SEE THE DCC RECORD				SCALE:	PROJECTION:	SHEET 1 OF 5		



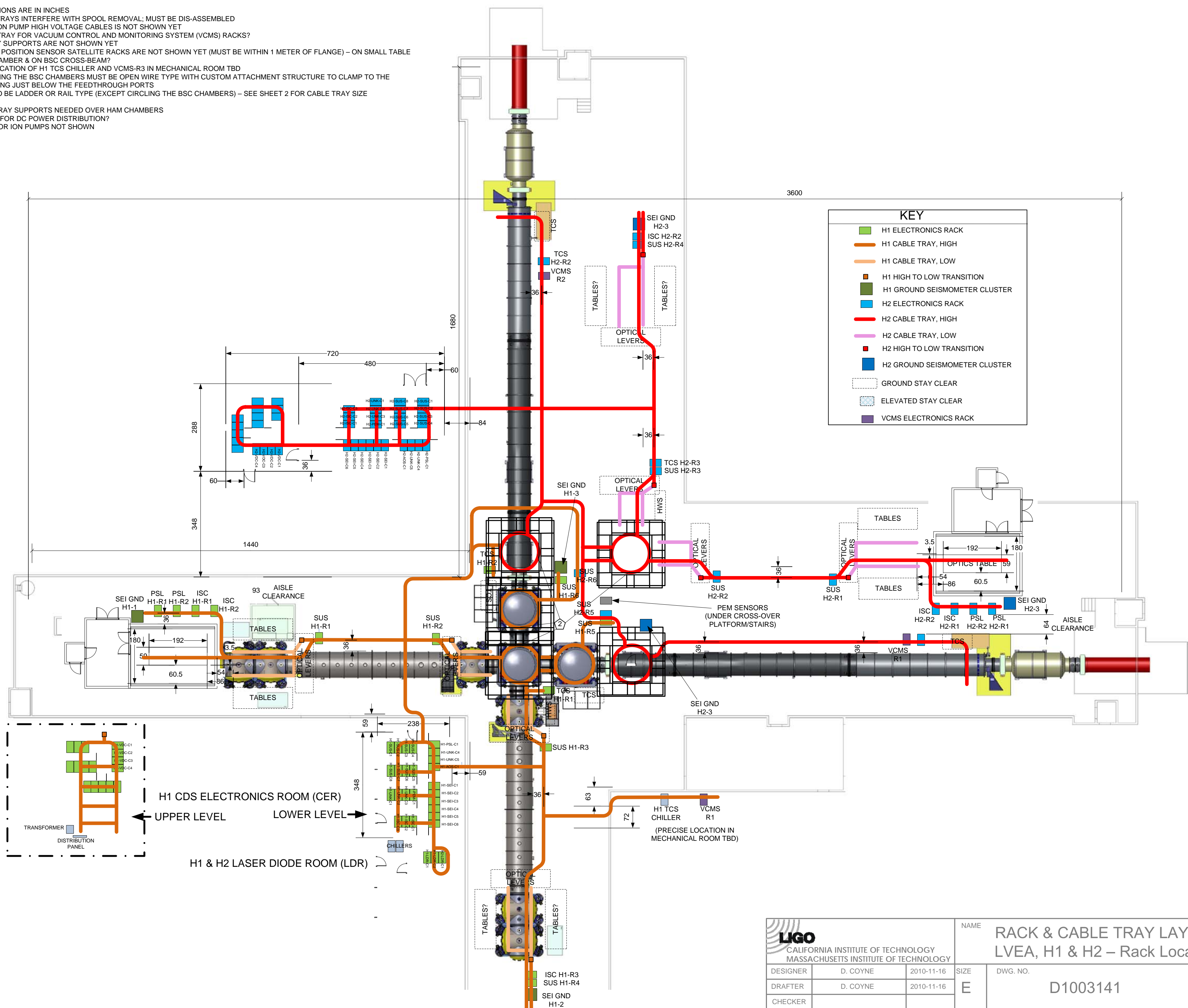
BOTTOM OF TRAY IS 10 FT. ABOVE FLOOR.

**SECTION A-A**  
**SECTION A-A**  
 NOTE: CABLE TRAY IS ONLY SHOWN ALONG THE H1 A-ARM FOR CLARITY.

NOTE: CABLE TRAY IS ONLY SHOWN ALONG THE H1 A-ARM FOR CLARITY.

 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY			NAME <b>RACK &amp; CABLE TRAY LAYOUT,          LVEA, H1 &amp; H2 -- Elevations</b>		
DESIGNER	D. COYNE	2010-11-16	SIZE	DWG. NO.	REV
DRAFTER	D. COYNE	2010-11-16	<b>E</b>	<b>D1003141</b>	<b>V2</b>
CHECKER					
FOR APPROVAL SEE THE DCC RECORD			SCALE:	PROJECTION:	SHEET 2 OF 5

- NOTES:  
 1) ALL DIMENSIONS ARE IN INCHES  
 2) SOME BSC TRAYS INTERFERE WITH SPOOL REMOVAL; MUST BE DIS-ASSEMBLED  
 3) TRAY FOR ION PUMP HIGH VOLTAGE CABLES IS NOT SHOWN YET  
 4) SEPARATE TRAY FOR VACUUM CONTROL AND MONITORING SYSTEM (VCMS) RACKS?  
 5) CABLE TRAY SUPPORTS ARE NOT SHOWN YET  
 6) CAPACITIVE POSITION SENSOR SATELLITE RACKS ARE NOT SHOWN YET (MUST BE WITHIN 1 METER OF FLANGE) – ON SMALL TABLE NEAR HAM CHAMBER & ON BSC CROSS-BEAM?  
 7) PRECISE LOCATION OF H1 TCS CHILLER AND VCMS-R3 IN MECHANICAL ROOM TBD  
 8) TRAY CIRCLING THE BSC CHAMBERS MUST BE OPEN WIRE TYPE WITH CUSTOM ATTACHMENT STRUCTURE TO CLAMP TO THE STIFFENING RING JUST BELOW THE FEEDTHROUGH PORTS  
 9) ALL TRAY TO BE LADDER OR RAIL TYPE (EXCEPT CIRCLING THE BSC CHAMBERS) – SEE SHEET 2 FOR CABLE TRAY SIZE INFORMATION  
 10) CUSTOM TRAY SUPPORTS NEEDED OVER HAM CHAMBERS  
 11) CONDUITS FOR DC POWER DISTRIBUTION?  
 12) HV TRAY FOR ION PUMPS NOT SHOWN

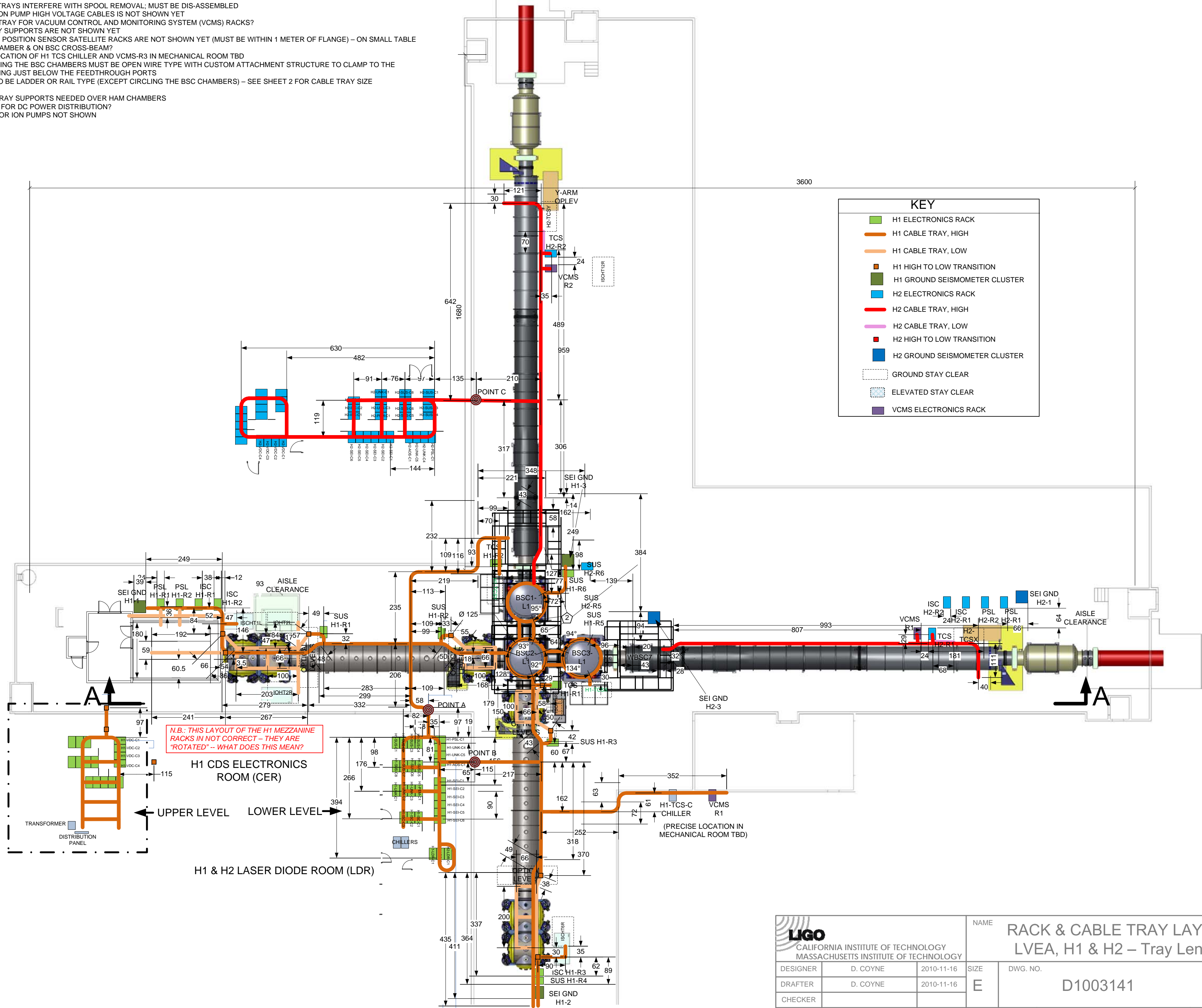


**KEY**

- H1 ELECTRONICS RACK
- H1 CABLE TRAY, HIGH
- H1 CABLE TRAY, LOW
- H1 HIGH TO LOW TRANSITION
- H1 GROUND SEISMOMETER CLUSTER
- H2 ELECTRONICS RACK
- H2 CABLE TRAY, HIGH
- H2 CABLE TRAY, LOW
- H2 HIGH TO LOW TRANSITION
- H2 GROUND SEISMOMETER CLUSTER
- GROUND STAY CLEAR
- ELEVATED STAY CLEAR
- VCMS ELECTRONICS RACK

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY			NAME		RACK & CABLE TRAY LAYOUT, LVEA, H1 & H2 – Rack Locations	
			DESIGNER	D. COYNE	2010-11-16	SIZE
DRAFTER	D. COYNE	2010-11-16	E	D1003141		V2
CHECKER				SCALE:	PROJECTION:	SHEET 3 OF 5
FOR APPROVAL SEE THE DCC RECORD						

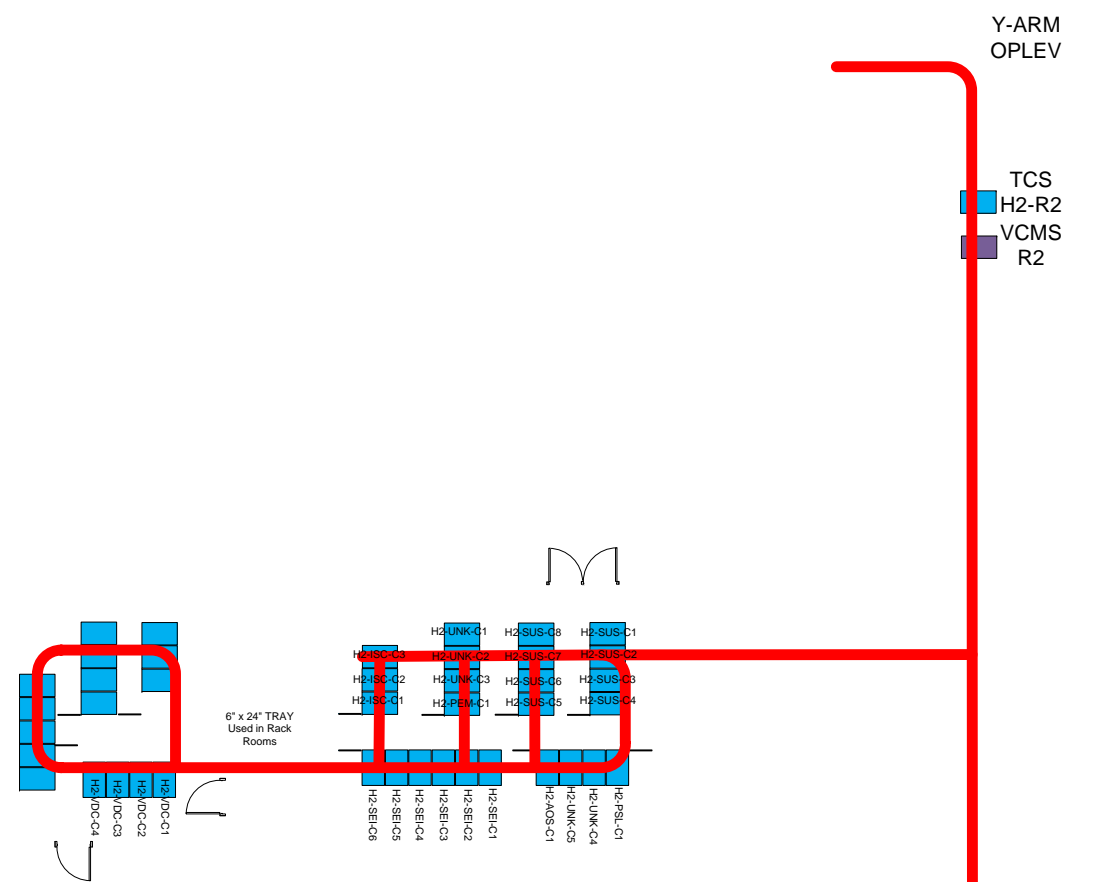
- NOTES:
- 1) ALL DIMENSIONS ARE IN INCHES
  - 2) SOME BSC TRAYS INTERFERE WITH SPOOL REMOVAL; MUST BE DIS-ASSEMBLED
  - 3) TRAY FOR ION PUMP HIGH VOLTAGE CABLES IS NOT SHOWN YET
  - 4) SEPARATE TRAY FOR VACUUM CONTROL AND MONITORING SYSTEM (VCMS) RACKS?
  - 5) CABLE TRAY SUPPORTS ARE NOT SHOWN YET
  - 6) CAPACITIVE POSITION SENSOR SATELLITE RACKS ARE NOT SHOWN YET (MUST BE WITHIN 1 METER OF FLANGE) – ON SMALL TABLE NEAR HAM CHAMBER & ON BSC CROSS-BEAM?
  - 7) PRECISE LOCATION OF H1 TCS CHILLER AND VCMS-R3 IN MECHANICAL ROOM TBD
  - 8) TRAY CIRCLING THE BSC CHAMBERS MUST BE OPEN WIRE TYPE WITH CUSTOM ATTACHMENT STRUCTURE TO CLAMP TO THE STIFFENING RING JUST BELOW THE FEEDTHROUGH PORTS
  - 9) ALL TRAY TO BE LADDER OR RAIL TYPE (EXCEPT CIRCLING THE BSC CHAMBERS) – SEE SHEET 2 FOR CABLE TRAY SIZE INFORMATION
  - 10) CUSTOM TRAY SUPPORTS NEEDED OVER HAM CHAMBERS
  - 11) CONDUITS FOR DC POWER DISTRIBUTION?
  - 12) HV TRAY FOR ION PUMPS NOT SHOWN



N.B.: THIS LAYOUT OF THE H1 MEZZANINE RACKS IS NOT CORRECT – THEY ARE "ROTATED" -- WHAT DOES THIS MEAN?

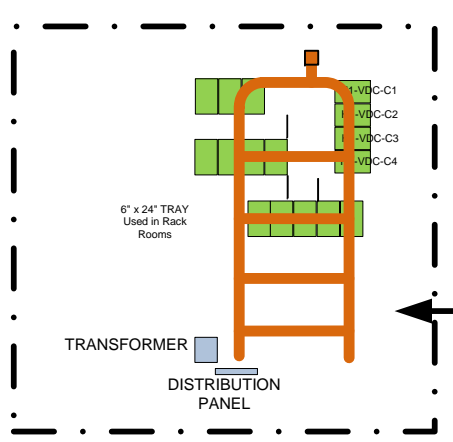
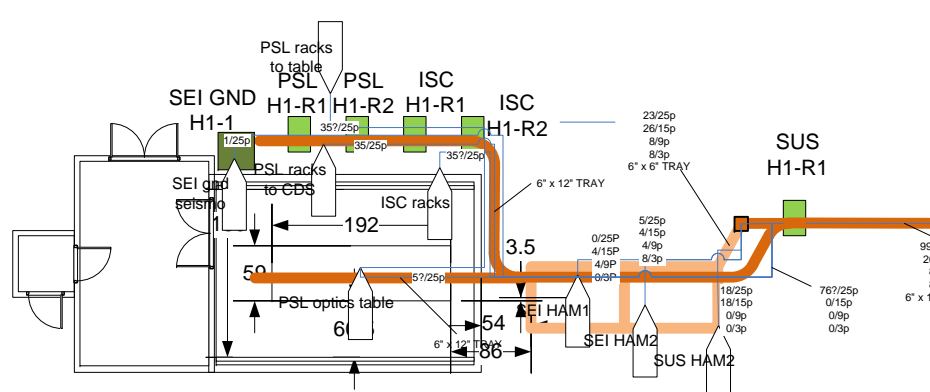
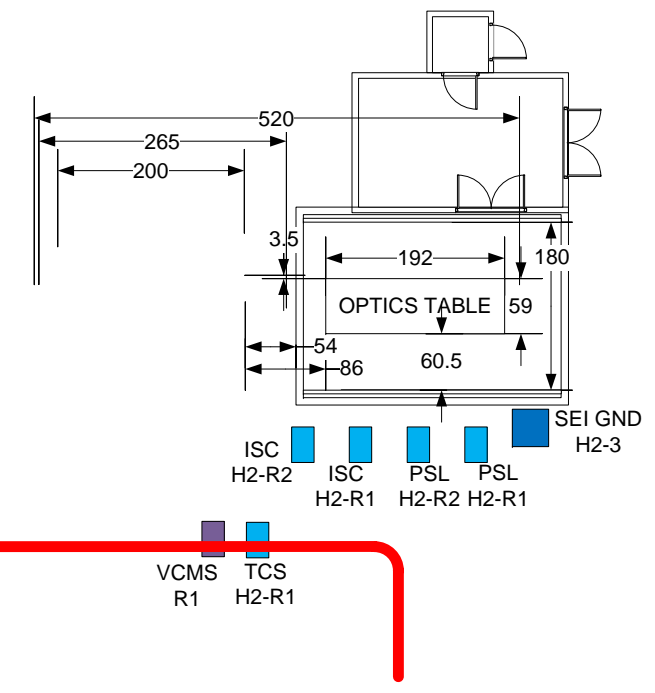
KEY	
	H1 ELECTRONICS RACK
	H1 CABLE TRAY, HIGH
	H1 CABLE TRAY, LOW
	H1 HIGH TO LOW TRANSITION
	H1 GROUND SEISMOMETER CLUSTER
	H2 ELECTRONICS RACK
	H2 CABLE TRAY, HIGH
	H2 CABLE TRAY, LOW
	H2 HIGH TO LOW TRANSITION
	H2 GROUND SEISMOMETER CLUSTER
	GROUND STAY CLEAR
	ELEVATED STAY CLEAR
	VCMS ELECTRONICS RACK

			NAME <b>RACK &amp; CABLE TRAY LAYOUT, LVEA, H1 &amp; H2 – Tray Lengths</b>		
CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		DESIGNER D. COYNE	2010-11-16	SIZE DWG. NO.	REV V2
DRAFTER D. COYNE		2010-11-16		E D1003141	
CHECKER		FOR APPROVAL SEE THE DCC RECORD		SCALE:	PROJECTION:
					SHEET 4 OF 5

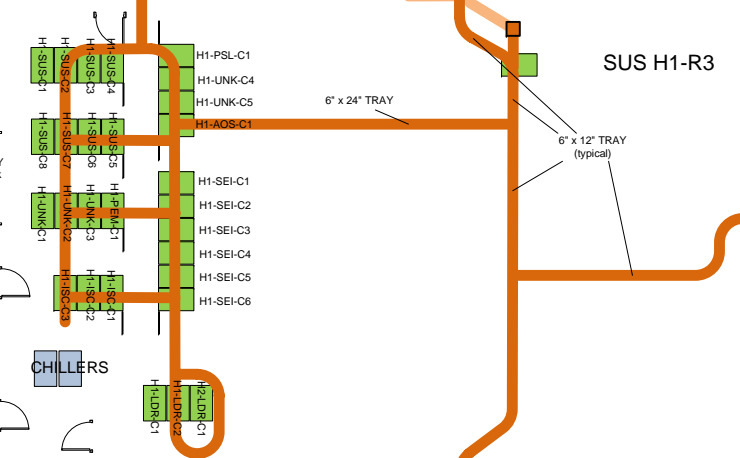


- NOTES:  
 1) CABLE NUMBER/TYP E CALL OUTS ARE ONLY ESTIMATES.  
 2) CABLE TRAYS ARE SIZED FOR 50% FILL RATIO PLUS 100% SPARE CAPACITY

N1/25p = N1 signal cables each with 25 conductors  
 N2/15p = N2 signal cables each with 15 conductors  
 N3/9p = N3 signal cables each with 9 conductors  
 N4/3p = N4 power cables each with 3 conductors



H1 CDS ELECTRONICS ROOM (CER)  
 UPPER LEVEL ← LOWER LEVEL →  
 H1 & H2 LASER DIODE ROOM (LDR)



H1 TCS CHILLER VCMS R1  
 (PRECISE LOCATION IN MECHANICAL ROOM TBD)

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY			NAME <b>RACK &amp; CABLE TRAY LAYOUT, LVEA, H1 &amp; H2 – Tray Sizes</b>		
DESIGNER	D. COYNE	2010-11-16	SIZE	DWG. NO.	REV
DRAFTER	D. COYNE	2010-11-16	E	<b>D1003141</b>	<b>V2</b>
CHECKER					
FOR APPROVAL SEE THE DCC RECORD			SCALE:	PROJECTION:	SHEET 5 OF 5