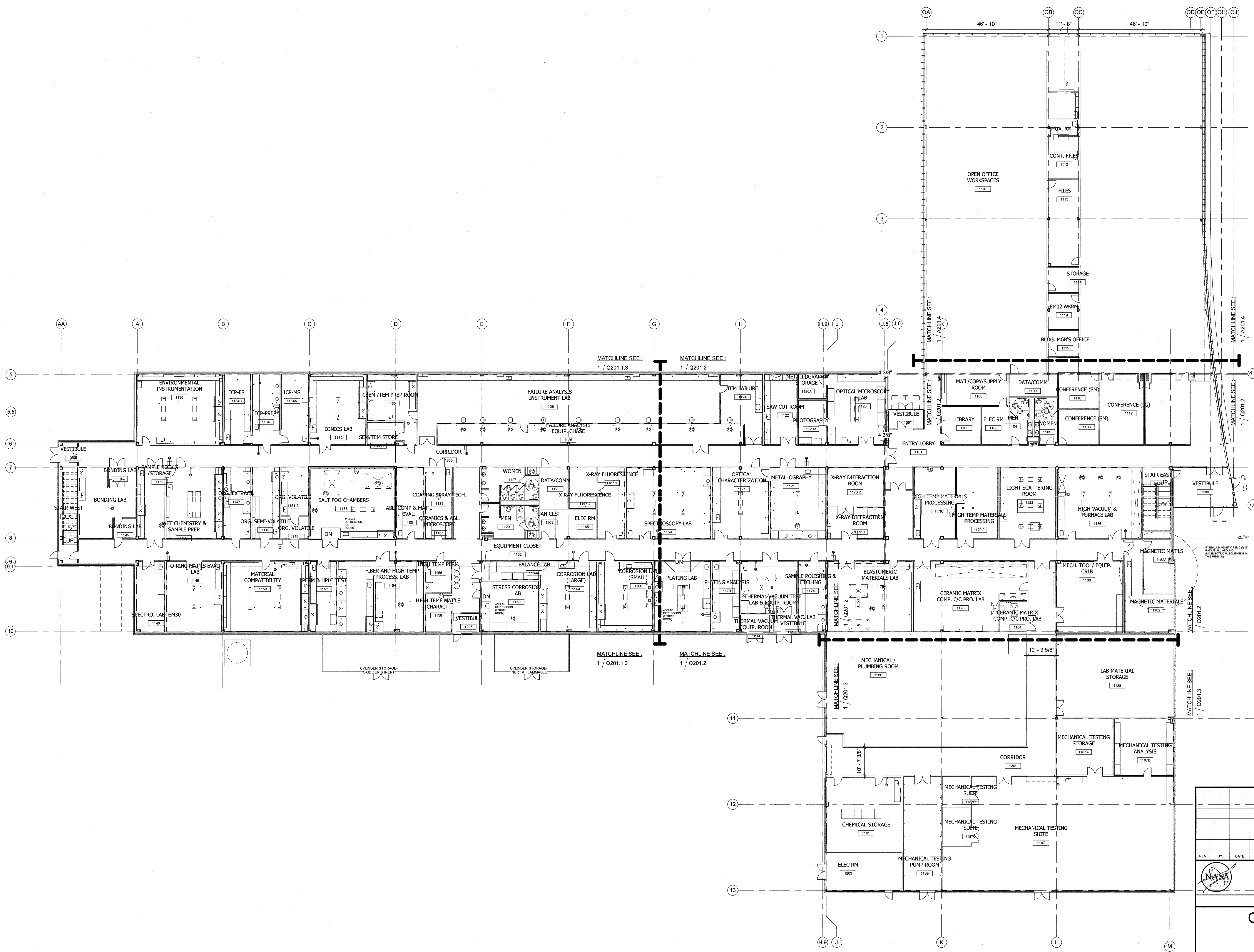
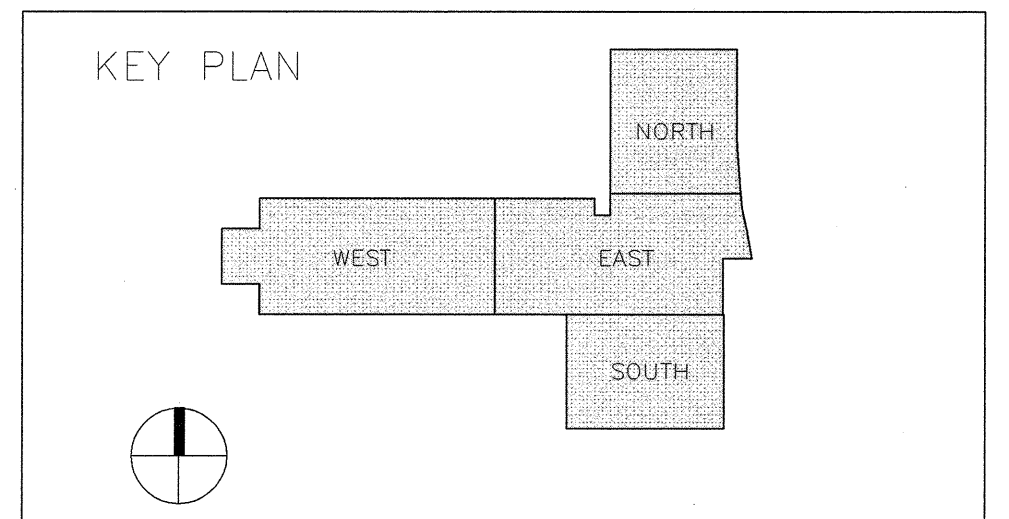


A B C D E F G



COMPOSITE LAB  
PLAN-OPTION-2  
1/16" = 1'-0"



**WARNING**  
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THIS DRAWING WAS DESIGNED TO BE PRINTED AT  
A NASA SHEET SIZE: MSFC STD. SIZE 40" X 28"

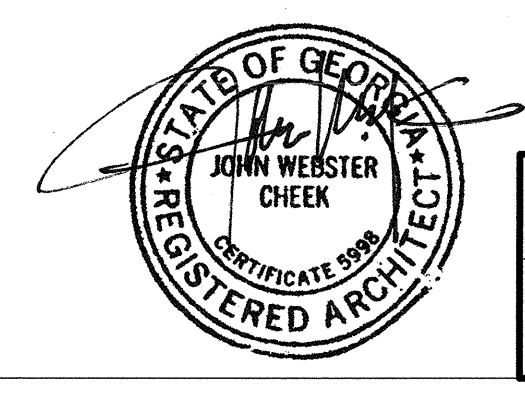
**CADD DRAWING**  
CHANGES TO THIS DRAWING SHALL BE MADE  
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LATEST CADD UPDATE:  
BY: \_\_\_\_\_

REV	BY	DATE	REVISION	C.I. NO.	APPROVED

**NASA**  
Marshall Space Flight Center  
Alabama, 35812

06-11-08 FOR CONSTRUCTION  
**CONSTRUCT REPLACEMENT  
BUILDING 4602**  
COMPOSITE LAB PLAN-OPTION-2

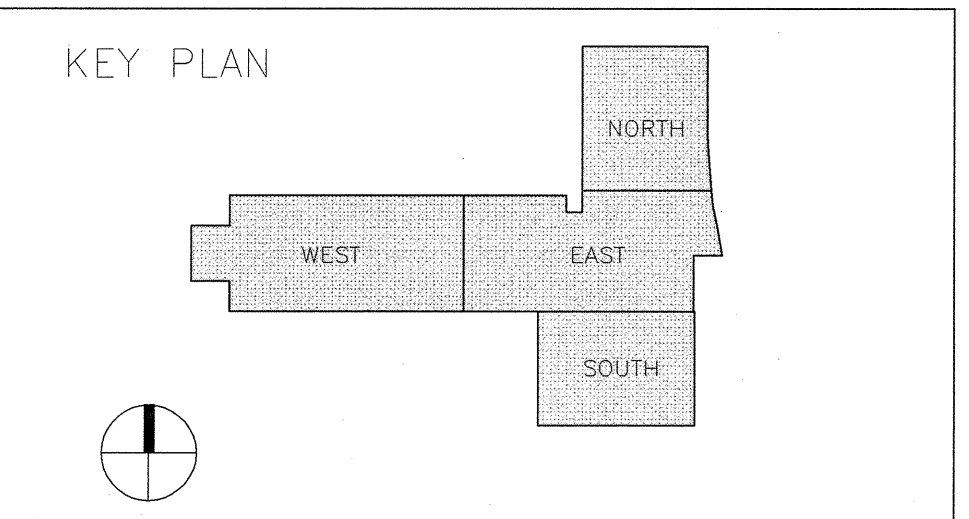
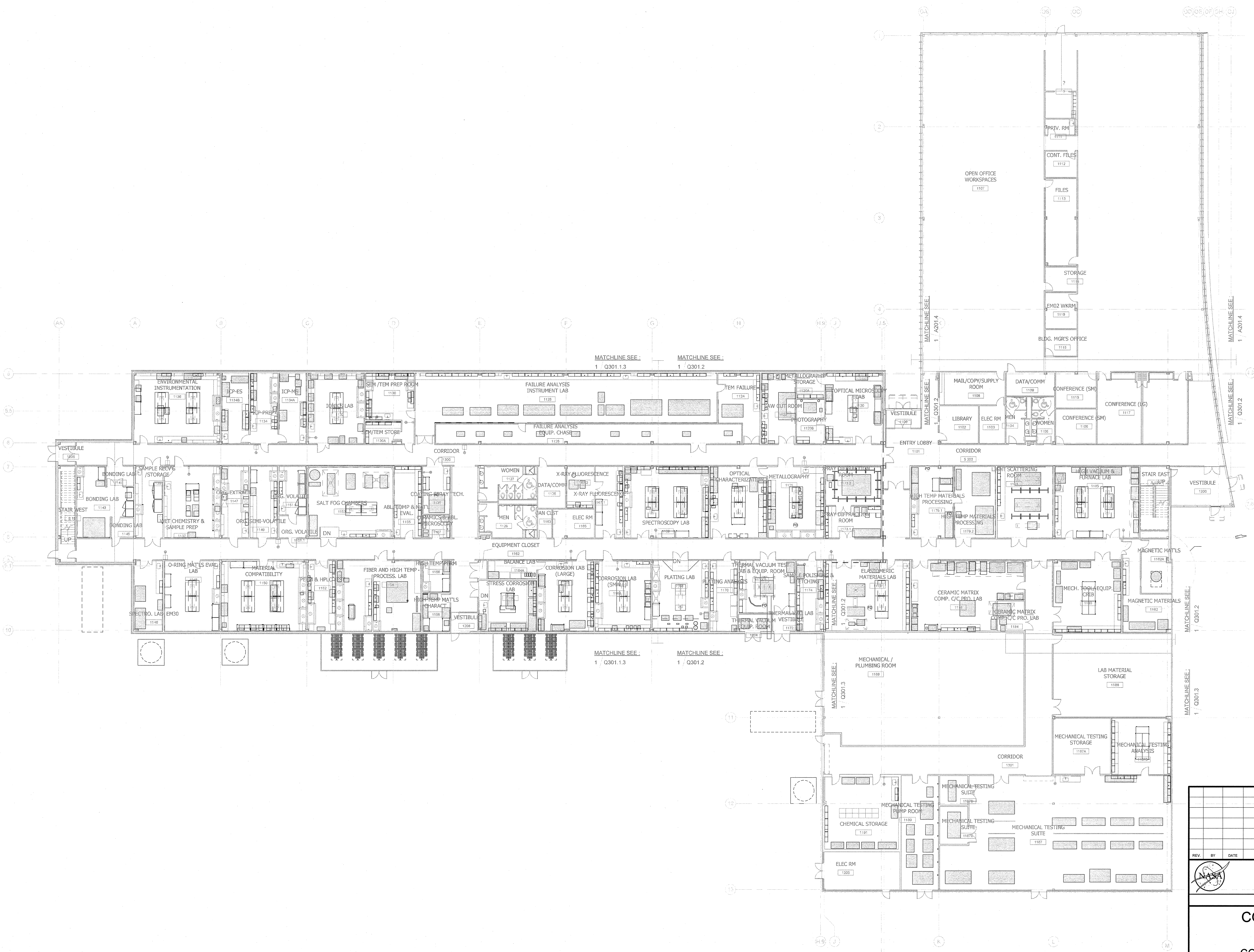
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SUBMITTED: JOHN CHEEK	APPROVAL RECOMMENDED: ROBERT T. MATHIS	APPROVED: VINCENT JAMES GUARIN	DATE: _____
DESIGNED BY: _____	APPROVAL RECOMMENDED: ROBERT T. MATHIS	DESIGNED BY: _____	DATE: _____
DRAWN: _____	APPROVAL RECOMMENDED: ROBERT T. MATHIS	DRAWN: _____	DATE: _____
CHECKED: _____	APPROVAL RECOMMENDED: ROBERT T. MATHIS	DRAWN: _____	DATE: _____
SCALE: 1/16" = 1'-0"	SPEC. NO. FAC: M5030	DRAWING NO. FAC - A - 4602 - Q101.3	SHEET-169 OF 445



SIGNATURES ON INDEX SHEET INDICATE  
ACCEPTANCE OF THIS SHEET  
REF. NO **Q101.3**  
87 OF 117

MSFC-FORM 232 REV. 8-21-89-REL

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**WARNING**  
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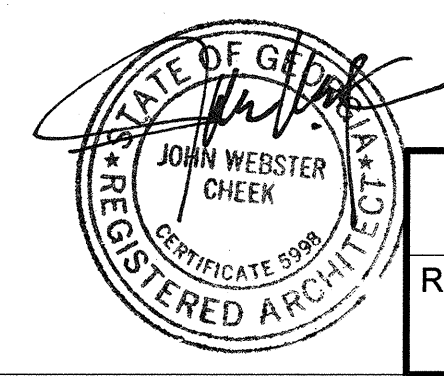
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BY: \_\_\_\_\_

REV	BY	DATE	REVISION	C.I. NO.	APPROVED

**Marshall Space Flight Center**  
Alabama, 35812

06-11-08 FOR CONSTRUCTION  
**CONSTRUCT REPLACEMENT**  
**BUILDING 4602**  
**COMPOSITE LAB PLAN- OFOI-OPTION-2**

AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc.		NASA AE CONTRACT NO. NA59-0303
SUBMITTED: JOHN CHEEK	APPROVAL RECOMMENDED: ROBERT T. MATHIS	APPROVED: VINCENT JAMES GUARN
DESIGNED BY: JOHN CHEEK	APPROVAL RECOMMENDED: ROBERT T. MATHIS	DATE: _____
DRAWN: SSAS/PLUP	APPROVAL RECOMMENDED: ROBERT T. MATHIS	DRAWING NO. FAC - A - 4602 - Q150.3
CHECKED: SOS	APPROVAL RECOMMENDED: JOHN T. MATHIS	SHEET: 172 OF 445
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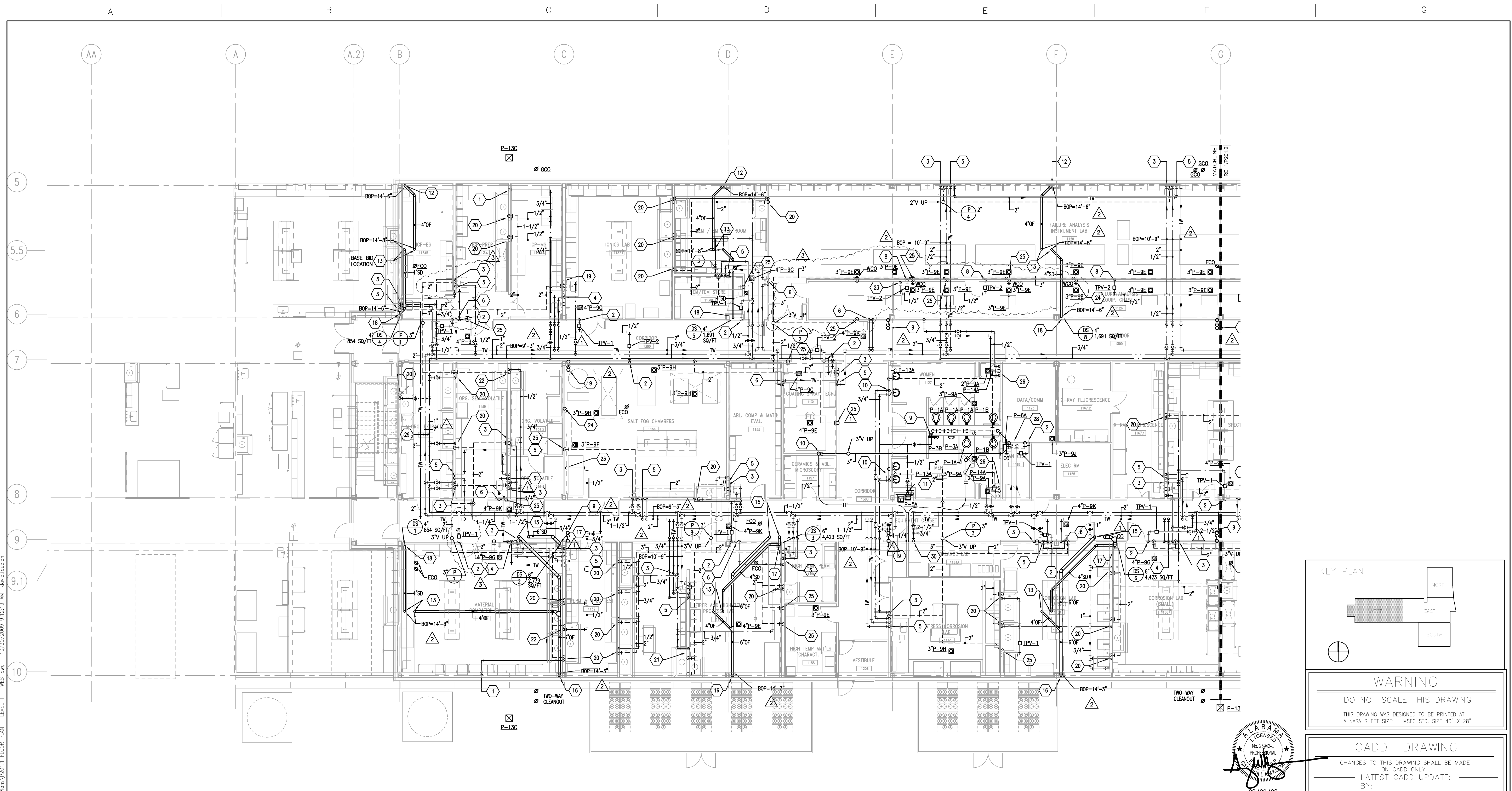


SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET  
**REF. NO. Q150.3**  
90 OF 117

COMPOSITE LAB PLAN- OFOI-OPTION-2  
1/16" = 1'-0"

\\nas-08sra\proj\proj\05-16009-00 NASA 4602\E-Cad\Construct Replacement Building 4602\Sheets\Plumbing\0-General Notes\001-SYMBOLS ABBREVIATIONS & GENERAL NOTES.dwg 6/6/2008 12:22:24 PM RILEY.POBLETT

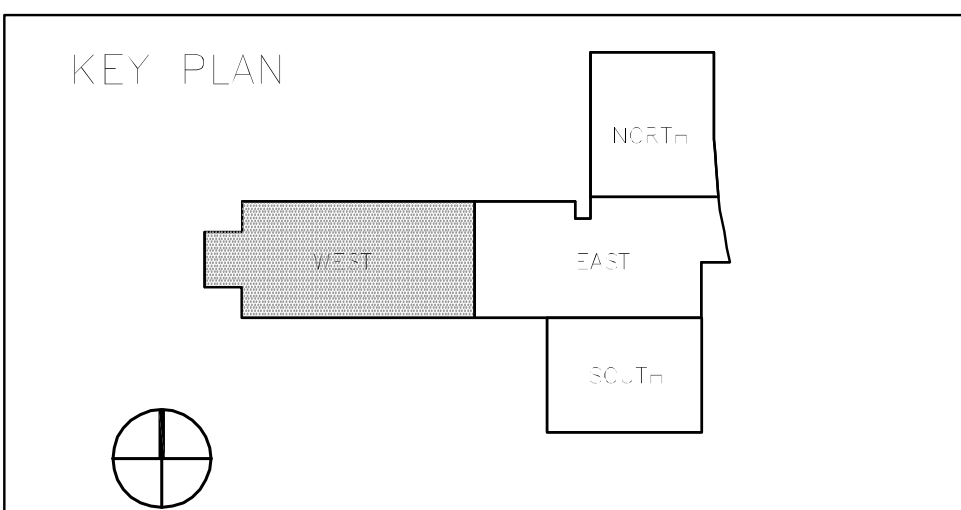
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<b>SYMBOLS</b>			<b>ABBREVIATIONS</b>			<b>GENERAL NOTES</b>																																																							
<p>..... DOMESTIC POTABLE COLD WATER</p> <p>..... DOMESTIC HOT WATER (120° F) SYSTEM</p> <p>..... HOT WATER RETURN</p> <p>—TW— TEMPERED WATER (85° F) SYSTEM</p> <p>—TWR— TEMPERED WATER RETURN</p> <p>—SAN— SANITARY SEWER ABOVE GROUND</p> <p>---SAN--- SANITARY SEWER UNDERGROUND</p> <p>----- SANITARY VENT</p> <p>—SD— STORM DRAIN ABOVE GROUND</p> <p>—OF— OVERFLOW DRAIN</p> <p>---SD--- STORM DRAIN UNDERGROUND</p> <p>---OF--- OVERFLOW DRAIN UNDERGROUND</p> <p>—ROS— REVERSE OSMOSIS SUPPLY</p> <p>—ROR— REVERSE OSMOSIS RETURN</p> <p>---RG--- RADON GAS</p> <p>—MGA— MISSILE GRADE AIR</p> <p>—AR— ARGON GAS</p> <p>—N2— NITROGEN GAS</p> <p>—LN2— LIQUID NITROGEN</p> <p>—SP— FIRE SPRINKLER PIPING</p>	<p> WALL MOUNTED FLUSH VALVE WATER CLOSET</p> <p> URINAL</p> <p> COUNTER MOUNTED OVAL LAVATORY</p> <p> RECTANGULAR WALL HUNG LAVATORY</p> <p> FLOOR MOUNTED SERVICE SINK</p> <p> SINGLE COMPARTMENT COUNTER TOP MOUNTED KITCHEN SINK</p> <p> DOUBLE COMPARTMENT COUNTER TOP MOUNTED KITCHEN SINK</p> <p> SHOWER HEAD</p> <p> FLOOR DRAIN</p> <p> ROOF DRAIN / OVERFLOW DRAIN</p> <p> ANGLE STYLE VALVE</p> <p> BALL VALVE</p> <p> BUTTERFLY VALVE</p> <p> COMBINATION BALANCING/ SHUT-OFF VALVE</p> <p> PLUG VALVE</p> <p> PRESSURE REDUCING VALVE</p> <p> CHECK VALVE</p> <p> ELECTRICALLY ACTUATED VALVE</p> <p> PRESSURE GAUGE WITH COCK</p> <p> FLOW SWITCH</p> <p> PRESSURE SWITCH</p> <p> SHOCK ARRESTER</p> <p> STRAINER</p> <p> FLOOR DRAIN (RISER)</p> <p> TEMPERATURE &amp; PRESSURE RELIEF VALVE</p> <p> THERMOMETER (STRAIGHT SCALE)</p> <p> HOSE BIBB WITH VACUUM BREAKER (PLAN) (P-13A)</p> <p> VALVE (RISER)</p> <p> WALL HYDRANT (P-13B)</p>	<p> FLOOR CLEANOUT</p> <p> WALL HYDRANT W/ VACUUM BREAKER (PLAN)</p> <p> P-TRAP (RISER)</p> <p> ROOF DRAIN (RISER)</p> <p> FLOOR DRAIN WITH P-TRAP (RISER)</p> <p> HOSE BIB (RISER)</p> <p> INCREASER-REDUCER (CONCENTRIC)</p> <p> INCREASER-REDUCER (ECCENTRIC)</p> <p> LINE STUB</p> <p> NINETY DEGREE ELBOW</p> <p> BRANCH CONNECTION OUT OF TOP</p> <p> BRANCH CONNECTION OUT OF BOTTOM</p> <p> CAP OR PLUG ON END OF PIPE</p> <p> TEE-FITTING</p> <p> UNION (SCREWED)</p> <p> PIPE DROP (PLAN)</p> <p> PIPE RISER UP (PLAN)</p> <p> CLEANOUT</p> <p> P-TRAP (PLAN)</p> <p> SANITARY DOUBLE WYE FITTING</p> <p> SANITARY COMBO FITTING</p> <p> SANITARY WYE FITTING</p> <p> VENT THROUGH ROOF</p> <p> WALL CLEANOUT</p> <p> KEYED NOTE</p> <p> SHOCK ARRESTER SYMBOL &amp; SIZE</p> <p> STORM DRAIN DOWNSPOUT</p> <p> PLUMBING STACK/RISER</p> <p> AIR CHAMBER</p> <p> KITCHEN EQUIPMENT KEYED NOTE</p> <p> REDUCED PRESSURE BACKFLOW PREVENTER</p> <p> I.E.=000.00 INVERT ELEVATION IN FEET ABOVE SEA LEVEL</p> <p> ORDINARY HAZARD GROUP 1 OCCUPANCY</p> <p> ORDINARY HAZARD GROUP 2 OCCUPANCY</p> <p> EXTRA HAZARD OCCUPANCY</p>	<p> AT</p> <p>ABV ABOVE</p> <p>AFF ABOVE FINISH FLOOR</p> <p>AP ACCESS PANEL</p> <p>ARCH ARCHITECTURE</p> <p>ADA AMERICANS WITH DISABILITIES ACT</p> <p>BEL BELOW</p> <p>BFF BELOW FINISH FLOOR</p> <p>BLDG BUILDING</p> <p>BOP BOTTOM OF PIPE</p> <p>CLG CEILING</p> <p>CO CLEANOUT</p> <p>COG CLEANOUT AT GRADE</p> <p>CONC CONCRETE</p> <p>CONN CONNECTION</p> <p>CONT CONTINUATION</p> <p>CW DOMESTIC COLD WATER COMPARTMENT</p> <p>COMP COMPARTMENT</p> <p>D DRAIN</p> <p>DFU DRAINAGE FIXTURE UNITS</p> <p>DIA DIAMETER</p> <p>DN DOWN</p> <p>DS DOWNSPOUT</p> <p>ELEV ELEVATION</p> <p>ELEC ELECTRICAL</p> <p>EQUIP EQUIPMENT</p> <p>F FAHRENHEIT</p> <p>FCD FLOOR CLEANOUT</p> <p>FD FLOOR DRAIN</p> <p>FIN FINISHED</p> <p>FLR FLOOR</p> <p>FT FEET</p> <p>FU FIXTURE UNITS (WATER SERVICE)</p> <p>GALV GALVANIZED</p> <p>GPH GALLON PER HOUR</p> <p>GPM GALLON PER MINUTE</p> <p>GW GREASE WASTE</p> <p>HD HUB DRAIN</p> <p>HE HEAT EXCHANGER</p> <p>HG MERCURY</p> <p>HTR HEATER</p> <p>HW DOMESTIC HOT WATER</p> <p>HWR DOMESTIC HOT WATER RETURN</p> <p>H HIGH</p> <p>IE = INVERT ELEVATION</p> <p>KG KILOGRAM</p> <p>KPA KILOPASCALS</p> <p>LL LOWER LEVEL</p> <p>L LITERS</p> <p>LAV LAVATORY</p> <p>MAX MAXIMUM</p> <p>MECH MECHANICAL</p> <p>MIN MINIMUM</p> <p>NC NORMALLY CLOSED</p> <p>NO NORMALLY OPEN</p> <p>NF NON-FUSED</p> <p>NTS NOT TO SCALE</p> <p>OC ON CENTER</p> <p>OF OVERFLOW DRAIN</p> <p>PRESS PRESSURE</p> <p>PRV PRESSURE REDUCING VALVE</p> <p>R ROUGH-IN</p> <p>RD ROOF DRAIN</p> <p>RE REFERENCE</p> <p>RPZ REDUCED PRESSURE ZONE BACKFLOW PREVENTER</p> <p>S SOIL</p> <p>SAN SANITARY</p> <p>SD STORM DRAIN</p> <p>SQ SQUARE</p> <p>SQ/FT SQUARE FEET</p> <p>SS SANITARY SEWER</p> <p>TOS TOP OF SLAB</p> <p>TP TRAP PRIMER</p> <p>TEMP TEMPERATURE</p> <p>TMV TEMPERATURE MIXING VALVE</p> <p>TR TOILET ROOM</p> <p>TYP TYPICAL</p> <p>UCS UTILITY CONTROL SYSTEM</p> <p>VTR VENT THROUGH ROOF</p> <p>W WASTE</p> <p>WH WATER HEATER</p> <p>W/ WITH</p> <p>W/O WITHOUT</p> <p>V VENT</p>	<p style="text-align: center;"><b>PLUMBING OPTIONS</b></p> <p><b>OPTION 1</b> PROVIDE PLUMBING SYSTEMS AS OUTLINED ON THE PLANS FOR THE CHEM LAB BAY.</p> <p><b>OPTION 2</b> PROVIDE PLUMBING SYSTEMS AS OUTLINED ON THE PLANS FOR THE BONDING LAB BAY.</p> <p><b>OPTION 3</b> PROVIDE PLUMBING SYSTEMS AS OUTLINED ON THE PLANS FOR THE REDUNDANT AIR HANDLER IN THE PENTHOUSE.</p> <p><b>OPTION 4</b> PROVIDE STAINLESS STEEL PIPE FOR THE MISSILE GRADE AIR SYSTEM INCLUDING THE PIPING SHOWN IN OPTIONS 1 AND 2 LAB PLANS.</p> <p><b>OPTION 5</b> PROVIDE A PRESSURE REDUCING STATION FOR THE MISSILE GRADE AIR AS DETAILED ON THE PLANS AND SPECIFICATIONS.</p> <p style="text-align: center;"><b>EQUIPMENT DESIGNATIONS</b></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>UNIT SEQUENTIAL NUMBER</p> <p>BUILDING DESIGNATION</p> <p>EQUIPMENT TYPE ABBREVIATION</p> <p>BUILDING LEVEL</p> <p>NUMERIC PART (01-99)</p> <p>ALPHABETIC PART (A-Z)</p> </div> <div style="text-align: center;"> <p>(EXAMPLE: 4602-EWH-1.01A)</p> <p>OFFICE BUILDING</p> <p>ELECTRIC WATER HEATER</p> <p>LEVEL ONE</p> <p>UNIT NUMBER 1</p> <p>ALPHABETIC PART A</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <table border="0"> <tr> <td><b>BBB:</b></td> <td><b>EEE:</b></td> <td><b>L:</b></td> </tr> <tr> <td>4602</td> <td>EWH - ELECTRIC WATER HEATER</td> <td>1 - LEVEL ONE</td> </tr> <tr> <td></td> <td>IWH - INSTANTANEOUS WATER HEATER</td> <td>2 - LEVEL TWO</td> </tr> <tr> <td></td> <td>ET - EXPANSION TANK</td> <td>3 - LEVEL THREE</td> </tr> <tr> <td></td> <td>GT - GREASE TRAP</td> <td>4 - LEVEL FOUR</td> </tr> <tr> <td></td> <td>BP - BOOSTER PUMP</td> <td>5 - PENTHOUSE</td> </tr> <tr> <td></td> <td>ESP - ELEVATOR SUMP PUMP</td> <td>6 - ROOF</td> </tr> <tr> <td></td> <td>CP - CIRCULATING PUMP</td> <td></td> </tr> <tr> <td></td> <td>BFP - BACKFLOW PREVENTER</td> <td></td> </tr> <tr> <td></td> <td>MTR - METER</td> <td></td> </tr> </table> </div> <div style="border: 1px solid black; 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NOTES</b></p> </div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td colspan="2">AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc.</td> <td>NASA AE CONTRACT NO. NAS8-03083</td> </tr> <tr> <td>SUBMITTED: GARY MARSH</td> <td>APPROVAL RECOMMENDED: ROBERT T. MATHIS AS22 PROJECT MGR</td> <td>APPROVED: VINCENT JAMES GUARIN</td> </tr> <tr> <td>AE: DATE: 06-11-08</td> <td>APPROVAL RECOMMENDED: DENNIS FOSTER AS22 SUPPORT MGR</td> <td>AB22 GROUP LEAD DATE: _____</td> </tr> <tr> <td>DESIGNED: G. MARSH</td> <td>APPROVAL RECOMMENDED: PHILLIP HENDRIX AS22 TEAM LEAD</td> <td>DRAWING NO. FAC-A-4602-P001</td> </tr> <tr> <td>CHECKED: G. MARSH</td> <td>APPROVAL RECOMMENDED: PHILLIP HENDRIX AS22 TEAM LEAD</td> <td>SHEET 392 OF 445</td> </tr> </table> <div style="margin-top: 10px;"> <p>SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET</p> <p>REF. NO. <b>P001</b> 01 OF 39</p> <p>SCALE: NTS</p> </div>	<b>BBB:</b>	<b>EEE:</b>	<b>L:</b>	4602	EWH - ELECTRIC WATER HEATER	1 - LEVEL ONE		IWH - INSTANTANEOUS WATER HEATER	2 - LEVEL TWO		ET - EXPANSION TANK	3 - LEVEL THREE		GT - GREASE TRAP	4 - LEVEL FOUR		BP - BOOSTER PUMP	5 - PENTHOUSE		ESP - ELEVATOR SUMP PUMP	6 - ROOF		CP - CIRCULATING PUMP			BFP - BACKFLOW PREVENTER			MTR - METER		REV.	BY	DATE	REVISION	C.I. NO.	APPROVED							AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc.		NASA AE CONTRACT NO. NAS8-03083	SUBMITTED: GARY MARSH	APPROVAL RECOMMENDED: ROBERT T. MATHIS AS22 PROJECT MGR	APPROVED: VINCENT JAMES GUARIN	AE: DATE: 06-11-08	APPROVAL RECOMMENDED: DENNIS FOSTER AS22 SUPPORT MGR	AB22 GROUP LEAD DATE: _____	DESIGNED: G. MARSH	APPROVAL RECOMMENDED: PHILLIP HENDRIX AS22 TEAM LEAD	DRAWING NO. FAC-A-4602-P001	CHECKED: G. MARSH	APPROVAL RECOMMENDED: PHILLIP HENDRIX AS22 TEAM LEAD	SHEET 392 OF 445
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**A LEVEL 1 - WEST**  
 P201.1 1/8" = 1'-0"  
 0 4 8 16 FT

**KEY NOTES:**

- 1 3/4" COLD WATER DOWN TO BELOW SLAB TO P-13C.
- 2 1/2" COLD WATER FROM IPV DOWN TO BELOW SLAB TO FLOOR DRAIN(S).
- 3 1/2" COLD AND HOT WATER DOWN TO SINK. 2" WASTE DOWN TO BELOW SLAB AND 2" VENT UP.
- 4 2" TEMPERED WATER DOWN; PROVIDE 1/2" CONNECTION TO EYEWASH AT SINK AND 1-1/4" TO EMERGENCY SHOWER/EYEWASH; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 5 2" TEMPERED WATER DOWN; PROVIDE 1/2" CONNECTION TO EYEWASH AT SINK; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 6 2" TEMPERED WATER DOWN; PROVIDE 1-1/4" CONNECTION TO EMERGENCY SHOWER/EYEWASH; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 7 1/2" COLD WATER DOWN TO OWNER FURNISHED EQUIPMENT.
- 8 1/2" COLD WATER FROM IPV-2 DOWN TO BELOW SLAB TO P-9E.
- 9 2" COLD WATER DOWN WITH 1" TO EACH WC AND 3/4" TO EACH URINAL.
- 10 3/4" HOT & COLD WATER DOWN WITH 1/2" HOT & COLD WATER TO EACH LAV.
- 11 1/2" COLD WATER DOWN TO P-5A. 2" WASTE AND 2" VENT.
- 12 4" OVERFLOW DRAIN DOWN, TERMINATE THRU WALL WITH DOWNSPOUT NOZZLE AT 6" ABOVE FINISHED FLOOR.
- 13 4" ROOF DRAIN AND OVERFLOW DRAIN FROM ABOVE, OFFSET ABOVE CEILING.
- 14 1/2" COLD WATER DOWN TO WATER VALVE AT HOOD.
- 15 6" STORM AND OVERFLOW DRAIN FROM ABOVE.
- 16 6" OVERFLOW DRAIN DOWN, TERMINATE THRU WALL WITH DOWNSPOUT NOZZLE AT 6" ABOVE FINISHED FLOOR.
- 17 6" STORM DRAIN DOWN TO BELOW SLAB.
- 18 4" STORM DRAIN DOWN TO BELOW SLAB.
- 19 3/4" HOT & COLD WATER DOWN W/ 1/2" HOT & COLD WATER TO EACH SINK. 2" WASTE & VENT FOR EACH SINK.
- 20 1/2" COLD WATER DOWN TO OUTLET AT CUP SINK IN HOOD. 2" WASTE AND 2" VENT.
- 21 3/4" COLD WATER DOWN W/ 1/2" TO OUTLET AT EACH CUP SINK IN HOOD. 2" WASTE AND 2" VENT FOR EACH HOOD.
- 22 3/4" COLD WATER DOWN W/ 1/2" TO OUTLET AT EACH CUP SINK IN HOODS. 2" WASTE AND 2" VENT FOR HOODS.
- 23 1/2" COLD WATER DOWN ON WALL TO OUTLET.
- 24 3" VENT FROM BELOW SLAB.
- 25 2" VENT FROM BELOW SLAB.
- 26 1/2" HOT & COLD WATER DOWN TO SHOWER, 2" WASTE & 2" VENT.
- 27 3" WASTE FROM FD ABOVE.
- 28 3/4" HOT AND COLD WATER DOWN TO MOP SINK, 2" WASTE AND VENT.
- 29 THIS SECTION OF PIPE OCCURS ON BASE BUILDING ONLY.
- 30 3/4" COLD WATER UP TO PENTHOUSE.



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1	1/2/08	ADDENDUM 1			
2	3/20/08	AMENDMENT 5			
3		NRO22 LAB REVISIONS			

**Marshall Space Flight Center**  
 Alabama, 35812  
 06-11-08 FOR CONSTRUCTION

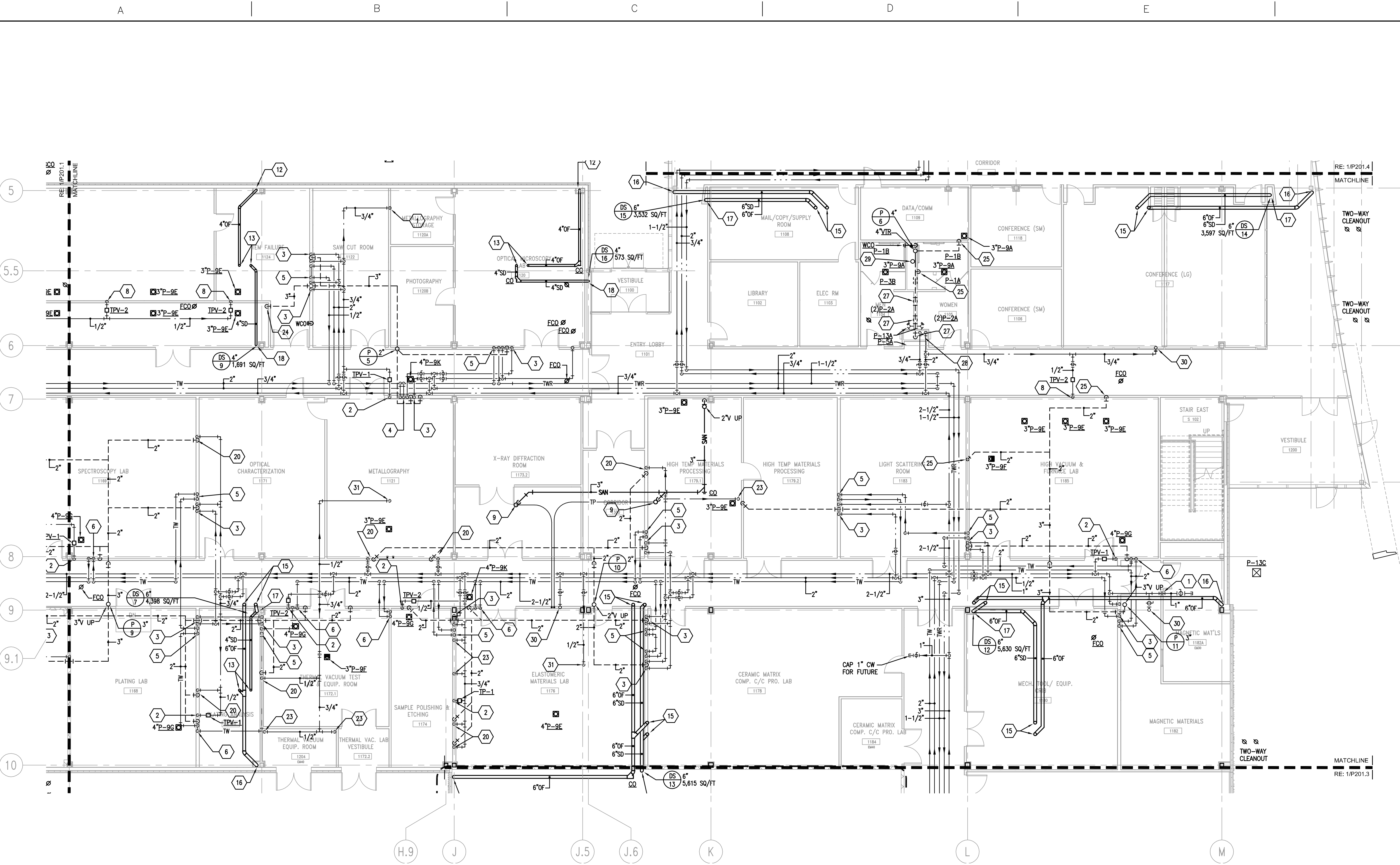
**CONSTRUCT REPLACEMENT**  
 BUILDING 4602  
 FLOOR PLAN - LEVEL 1 - WEST

AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc.		NASA AE CONTRACT NO. NAS8-03083	
SUBMITTED: GARY MARSH	APPROVAL RECOMMENDED: ROBERT T. MATSIS ADD2 PROJECT MGR	APPROVED: VINCENT JAMES GUARIN	
AE DATE: 06-11-08	APPROVAL RECOMMENDED: DENNIS FOSTER ADD2 SUPPORT MGR	APPROVED: _____	
DESIGNED: D. FAUBION	APPROVAL RECOMMENDED: PHILLIP HENDRIX ADD2 TEAM LEAD	DRAWING NO. FAC-A-4602-P201.1	
CHECKED: G. MARSH	APPROVAL RECOMMENDED: _____	SHEET 397 OF 445	

PROGRESS SET

SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET  
 REF. NO. **P201.1**  
 06 OF 39

J:\05\_160030\_00\_NASA\_4602\E-Cad\Construct\_Replacement\_Building\_4602\Sheets\Plumbing\Floor Plans\P201.1 FLOOR PLAN - LEVEL 1 - WEST.dwg 10/30/2009 9:12:19 AM dfaubion

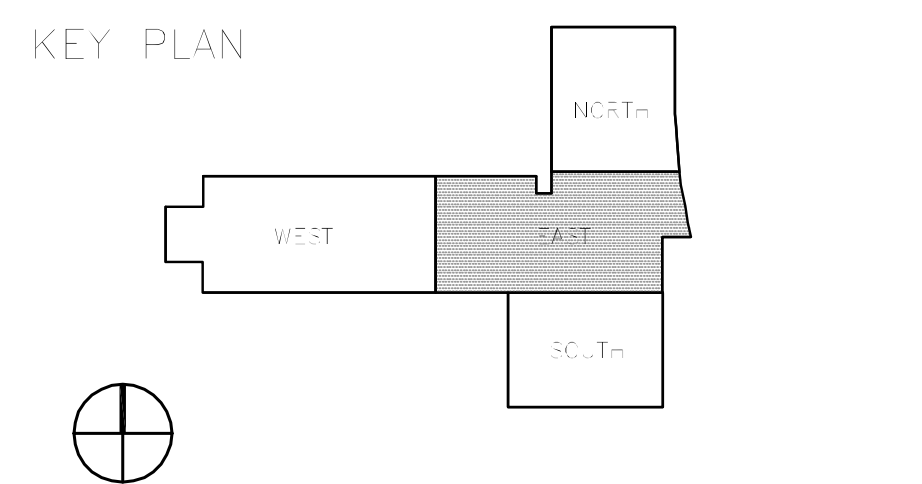


**A LEVEL 1 - EAST**  
SCALE: 1/8" = 1'-0"

**KEY NOTES:**

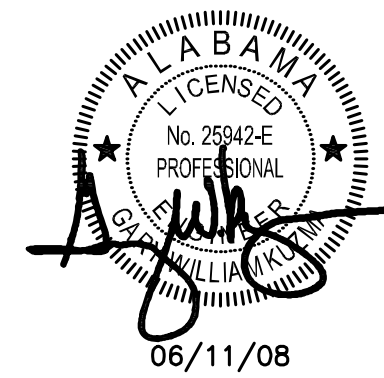
- 1 3/4" COLD WATER DOWN TO BELOW SLAB TO P-13C.
- 2 1/2" COLD WATER FROM TPV-1 DOWN TO BELOW SLAB TO FLOOR DRAIN(S).
- 3 1/2" COLD AND HOT WATER DOWN TO SINK. 2" WASTE DOWN TO BELOW SLAB AND 2" VENT UP.
- 4 2" TEMPERED WATER DOWN; PROVIDE 1/2" CONNECTION TO EYEWASH AT SINK AND 1-1/4" TO EMERGENCY SHOWER/EYEWASH; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 5 2" TEMPERED WATER DOWN; PROVIDE 1/2" CONNECTION TO EYEWASH AT SINK; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 6 2" TEMPERED WATER DOWN; PROVIDE 1-1/4" CONNECTION TO EMERGENCY SHOWER/EYEWASH; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 7 1/2" COLD WATER DOWN TO OWNER FURNISHED EQUIPMENT.
- 8 1/2" COLD WATER FROM TPV-2 DOWN BELOW SLAB TO FLOOR DRAIN(S).
- 9 3" WASTE FROM FD ABOVE.
- 10 3/4" HOT & COLD WATER DOWN WITH 1/2" HOT & COLD WATER TO EACH LAV.
- 11 1/2" COLD WATER DOWN TO P-5A. 2" WASTE AND 1-1/2" VENT.
- 12 4" OVERFLOW DRAIN DOWN, TERMINATE THRU WALL WITH DOWNSPOUT NOZZLE AT 6" ABOVE FINISHED FLOOR.
- 13 4" ROOF DRAIN AND OVERFLOW DRAIN FROM ABOVE, OFFSET ABOVE CEILING.
- 14 1/2" COLD WATER DOWN TO WATER VALVE AT HOOD.
- 15 6" STORM AND OVERFLOW DRAIN FROM ABOVE.
- 16 6" OVERFLOW DRAIN DOWN, TERMINATE THRU WALL WITH DOWNSPOUT NOZZLE AT 6" ABOVE FINISHED FLOOR.
- 17 6" STORM DRAIN DOWN TO BELOW SLAB.
- 18 4" STORM DRAIN DOWN TO BELOW SLAB.
- 19 3/4" HOT & COLD WATER DOWN W/ 1/2" HOT & COLD WATER TO EACH SINK. 2" WASTE & VENT FOR EACH SINK.
- 20 1/2" COLD WATER DOWN TO OUTLET AT CUP SINK IN HOOD. 2" WASTE AND 1-1/2" VENT.

- 21 3/4" COLD WATER DOWN W/ 1/2" TO OUTLET AT EACH CUP SINK IN HOOD. 2" WASTE AND 1-1/2" VENT FOR EACH HOOD.
- 22 3/4" COLD WATER DOWN W/ 1/2" TO OUTLET AT EACH CUP SINK IN HOODS. 2" WASTE AND 1-1/2" VENT FOR HOODS.
- 23 1/2" COLD WATER DOWN ON WALL TO OUTLET.
- 24 3" VENT FROM BELOW SLAB.
- 25 2" VENT FROM BELOW SLAB.
- 26 1/2" HOT & COLD WATER DOWN TO SHOWER, 2" WASTE & 1-1/2" VENT.
- 27 2" WASTE & VENT.
- 28 2" COLD WATER & 1" HOT WATER DOWN WITH 1" CW TO EACH WC, 3/4" CW TO URINAL, 3/4" CW TO HOSE BIBBS, 1/2" CW TO DRINKING FOUNTAIN, 1/2" CW TO TRAP PRIMER AND 1/2" HW & CW TO EACH LAV.
- 29 4" RADON GAS VENT UP FROM BELOW SLAB AND VTR.
- 30 3/4" CW UP TO PENTHOUSE.
- 31 1/2" CW TO OVERHEAD SERVICES CARRIER.



**WARNING**  
DO NOT SCALE THIS DRAWING  
THIS DRAWING WAS DESIGNED TO BE PRINTED AT  
A NASA SHEET SIZE: MSFC STD. SIZE 40" X 28"

**CADD DRAWING**  
CHANGES TO THIS DRAWING SHALL BE MADE  
ON CADD ONLY.  
LATEST CADD UPDATE:  
BY:



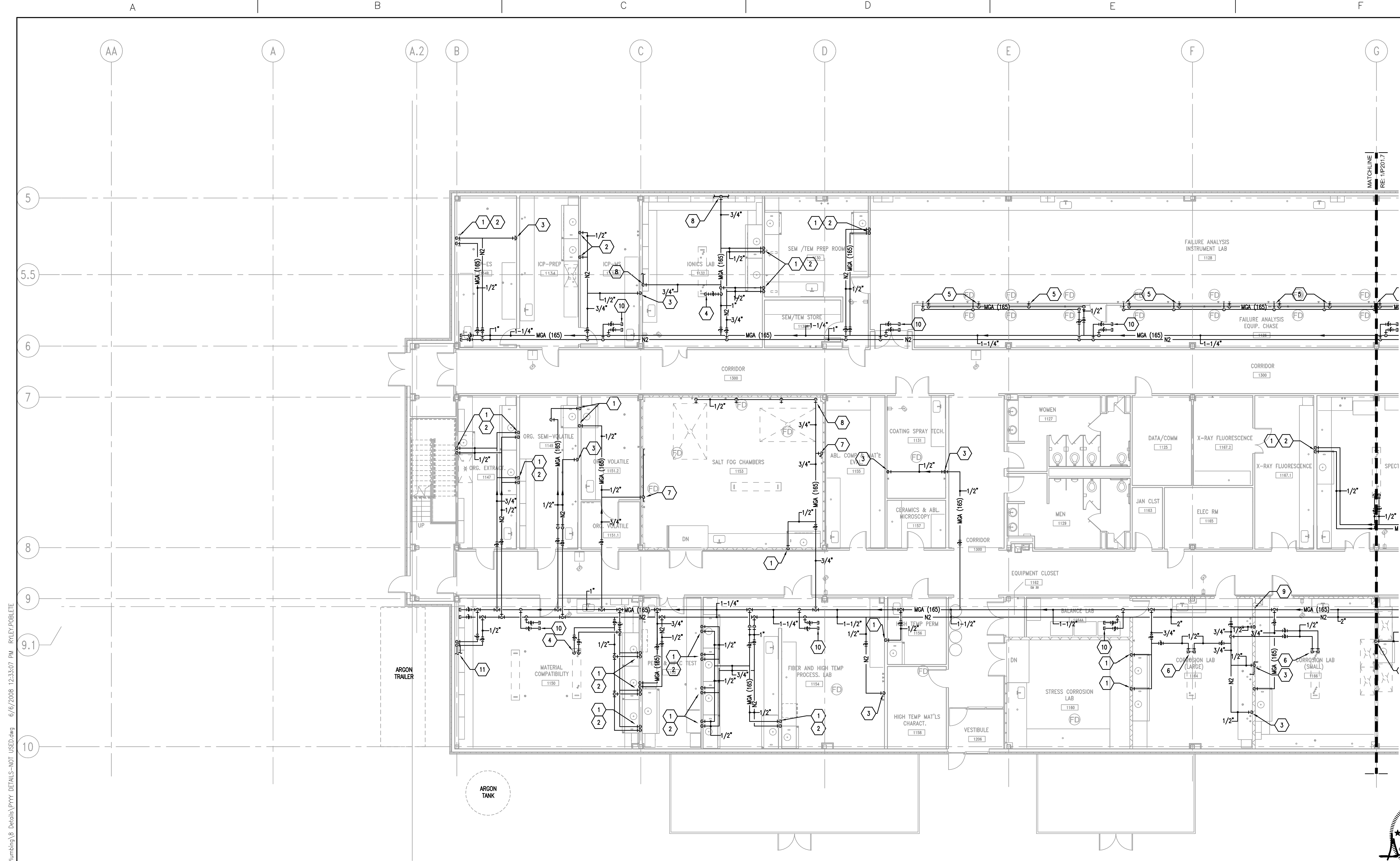
REV.	BY	DATE	REVISION	C.I. NO.	APPROVED
<b>Marshall Space Flight Center</b> <b>Alabama, 35812</b> <small>06-11-08 FOR CONSTRUCTION</small> <b>CONSTRUCT REPLACEMENT BUILDING 4602</b> <b>FLOOR PLAN - LEVEL 1 - EAST</b>					
AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc.			NASA AE CONTRACT NO. NAS8-03083		
SUBMITTED: GARY MARSH		APPROVAL RECOMMENDED: ROBERT T. MATHIS		APPROVED: VINCENT JAMES GUARIN	
AE: DATE: 06-11-08		APPROVAL RECOMMENDED: DENNIS FOSTER		APPROVED: DATE:	
DESIGNED: G. MARSH		APPROVAL RECOMMENDED: JASON SUPPORT A/E		DRAWING NO. FAC-A-4602-P201.2	
DRAWN: J. SAVINO		APPROVAL RECOMMENDED: PHILLIP HENDRIX			
CHECKED: G. MARSH		APPROVAL RECOMMENDED: A022 TEAM LEAD		SHEET 398 OF 445	

SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET

REF. NO. **P201.2** 07 OF 39

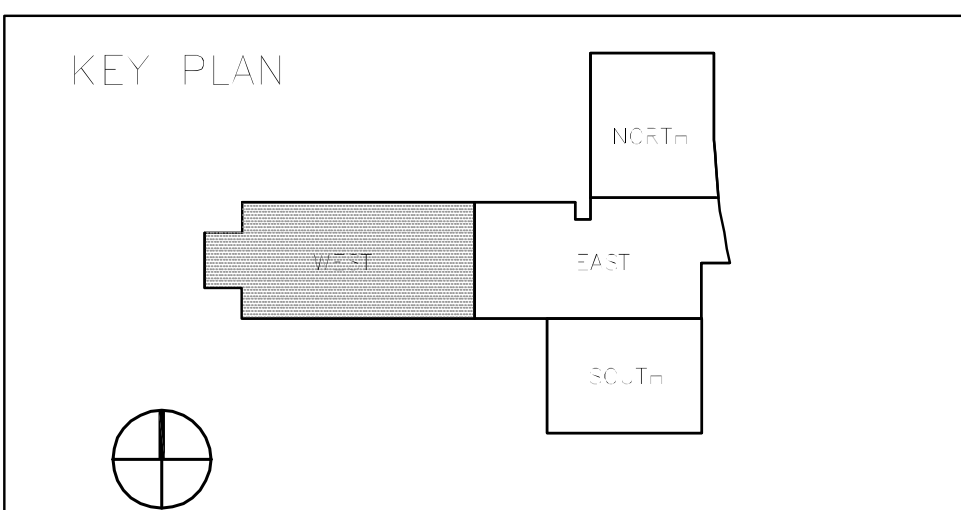
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\\p01-cbsr\p01-cbsr\projects\06-16009-00 NASA 4602\Sheets\Plumbing\8 Details\PMY DETAILS-NOT USED.dwg 6/6/2008 12:29:33 PM RILEY.POBLETTE  
 MSFC-FORM 332 REV. 8-21-89-RCL



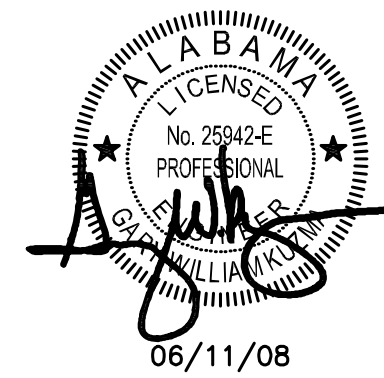
- GENERAL NOTES:**
- REFER TO LAB PLANS FOR OUTLET TYPES AND LOCATIONS.
  - REFER TO D/M505 FOR TYPICAL SECTION THRU CORRIDOR.
  - MGA AND N2 DROPS TO EQUIPMENT SHALL TERMINATE AT 60" AFF WITH A BALL VALVE AND CAP.

- KEY NOTES:**
- 1/2" MGA DOWN TO OUTLET IN HOOD.
  - 1/2" N2 DOWN TO OUTLET IN HOOD.
  - 1/2" N2 DOWN ON WALL TO BALL VALVE AND CAP.
  - CONNECT 1/2" MGA TO OVERHEAD SERVICES CARRIER.
  - 1/2" N2 & MGA UP FROM PIPING RACKED ON WALL TO BALL VALVE AND CAP.
  - CONNECT 1/2" MGA AND N2 TO OVERHEAD SERVICES CARRIER.
  - 1/2" MGA DOWN ON WALL TO BALL VALVE AND CAP.
  - 3/4" MGA DOWN ON WALL. OFFSET AND CONNECT 1/2" TO BALL VALVES WITH CAP ON WALL.
  - 1/2" N2 DOWN TO OUTLET ON TABLE.
  - VALVE AND CAP 3/4" 165 PSI MGA AND N2 FOR FUTURE.
  - 1/2" N2 & MGA UP DOWN ON WALL TO OUTLETS ON TABLE.



**WARNING**  
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A NASA SHEET SIZE: MSFC STD. SIZE 40" X 28"

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LATEST CADD UPDATE: \_\_\_\_\_  
BY: \_\_\_\_\_



**A LEVEL 1 - WEST**  
SCALE: 1/8" = 1'-0"

REV.	BY	DATE	REVISION	C.I. NO.	APPROVED
<b>Marshall Space Flight Center</b> <b>Alabama, 35812</b> 06-11-08 FOR CONSTRUCTION <b>CONSTRUCT REPLACEMENT</b> <b>BUILDING 4602</b> <b>FLOOR PLAN - LEVEL 1 - WEST</b>					
AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc.			NASA AE CONTRACT NO. NAS8-03083		
SUBMITTED: GARY MARSH		APPROVAL RECOMMENDED: ROBERT T. MATHIS AS22 PROJECT M/E		APPROVED: VINCENT JAMES GUARIN	
AE: DATE: 06-11-08		APPROVAL RECOMMENDED: DENNIS FOSTER AS22 SUPPORT M/E		AB22 GROUP LEAD DATE:	
DESIGNED: G. MARSH		APPROVAL RECOMMENDED: PHILLIP HENDRIX AS22 TEAM LEAD		DRAWING NO. FAC-A-4602-P201.5	
DRAWN: J. SAVINO		APPROVAL RECOMMENDED: PHILLIP HENDRIX AS22 TEAM LEAD		SHEET 401 OF 445	
CHECKED: G. MARSH		SPEC. NO. FAC M5030			

SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET  
**REF. NO. P201.5**  
 10 OF 39  
 SCALE: NTS

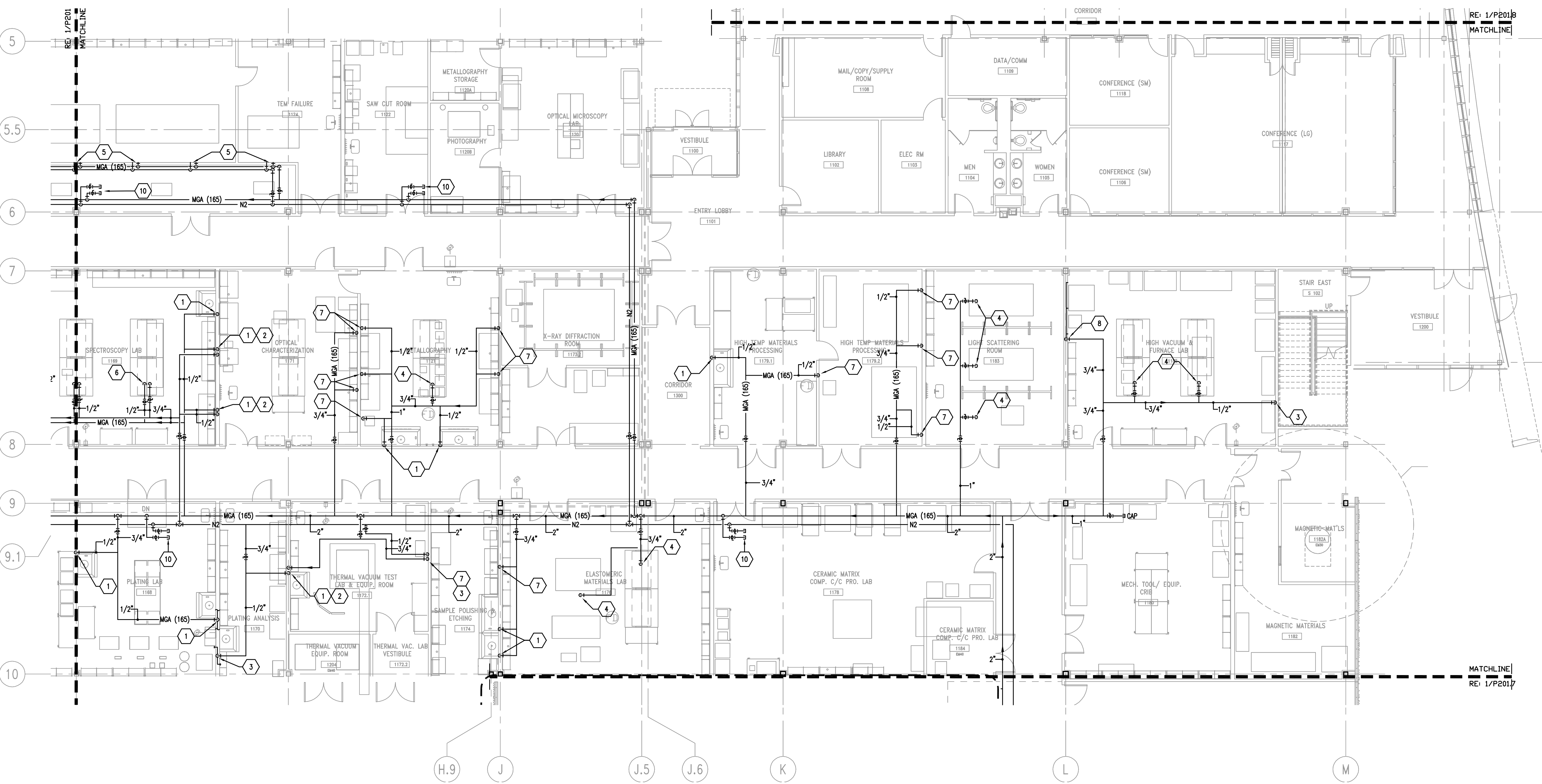
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 MSFC-FORM 332 REV. 8-21-89-RCL

**GENERAL NOTES:**

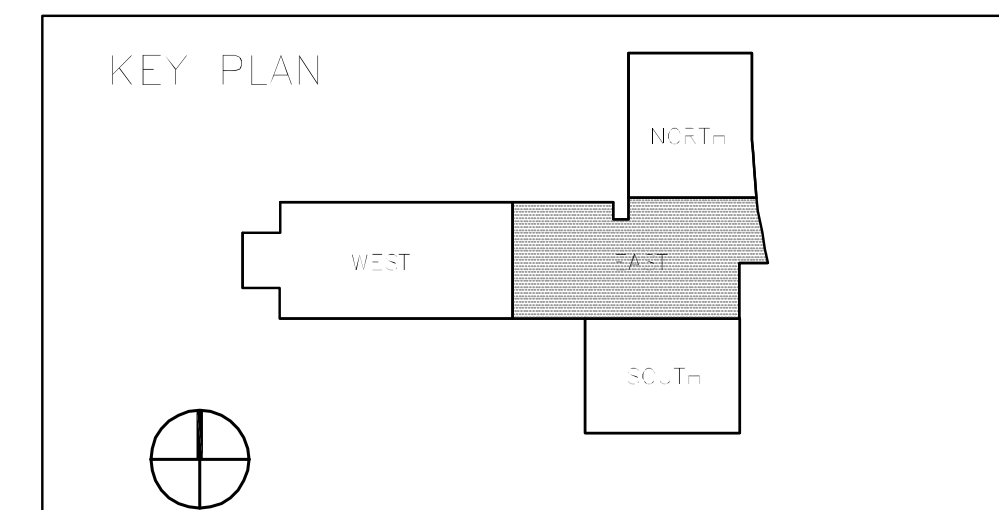
- REFER TO LAB PLANS FOR OUTLET TYPES AND LOCATIONS.
- REFER TO D/M505 FOR TYPICAL SECTION THRU CORRIDOR.
- MGA AND N2 DROPS TO EQUIPMENT SHALL TERMINATE AT 60" AFF WITH A BALL VALVE AND CAP.

**KEY NOTES:**

- 1/2" MGA DOWN TO OUTLET IN HOOD.
- 1/2" N2 DOWN TO OUTLET IN HOOD.
- 1/2" N2 DOWN ON WALL TO BALL VALVE AND CAP.
- CONNECT 1/2" MGA TO OVERHEAD SERVICES CARRIER.
- 1/2" N2 & MGA UP FROM PIPING RACKED ON WALL TO BALL VALVE AND CAP.
- CONNECT 1/2" MGA AND N2 TO OVERHEAD SERVICES CARRIER.
- 1/2" MGA DOWN ON WALL TO BALL VALVE AND CAP.
- 3/4" MGA DOWN ON WALL. OFFSET AND CONNECT 1/2" TO BALL VALVES WITH CAP ON WALL.
- 1/2" N2 DOWN TO OUTLET ON TABLE.
- VALVE AND CAP 3/4" 165 PSI MGA AND N2 FOR FUTURE.

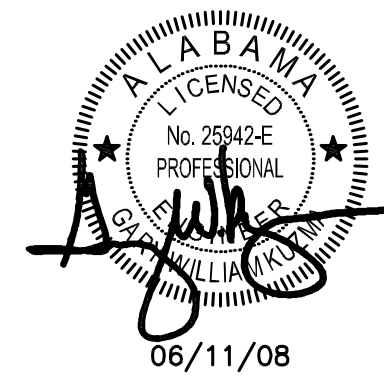


**A LEVEL 1 - EAST**  
SCALE: 1/8" = 1'-0"



**WARNING**  
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THIS DRAWING WAS DESIGNED TO BE PRINTED AT  
A NASA SHEET SIZE: MSFC STD. SIZE 40" X 28"

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BY: \_\_\_\_\_



REV.	BY	DATE	REVISION	C.I. NO.	APPROVED

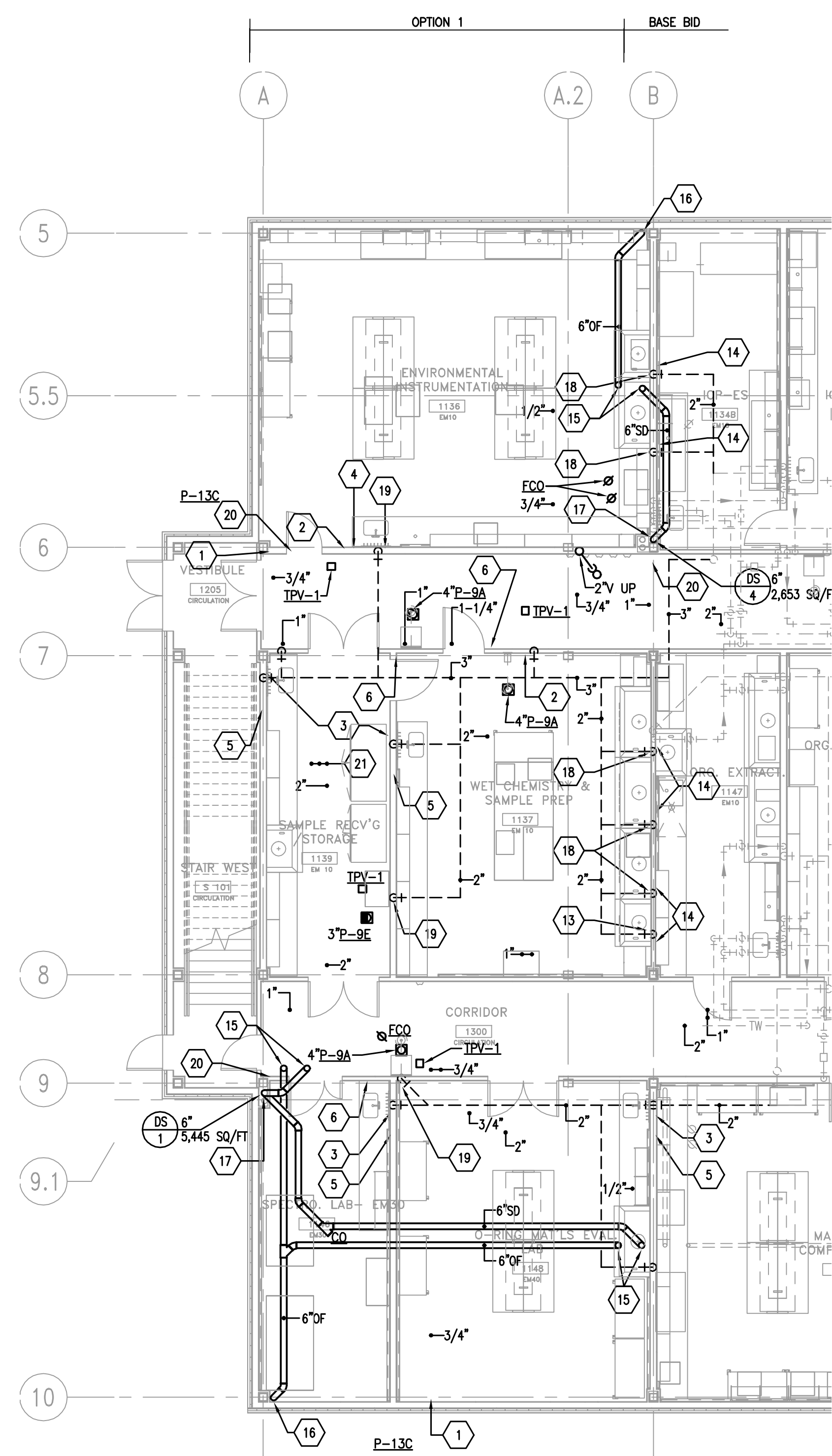
**Marshall Space Flight Center**  
**Alabama, 35812**  
06-11-08 FOR CONSTRUCTION

**CONSTRUCT REPLACEMENT**  
**BUILDING 4602**  
FLOOR PLAN - LEVEL 1 - EAST

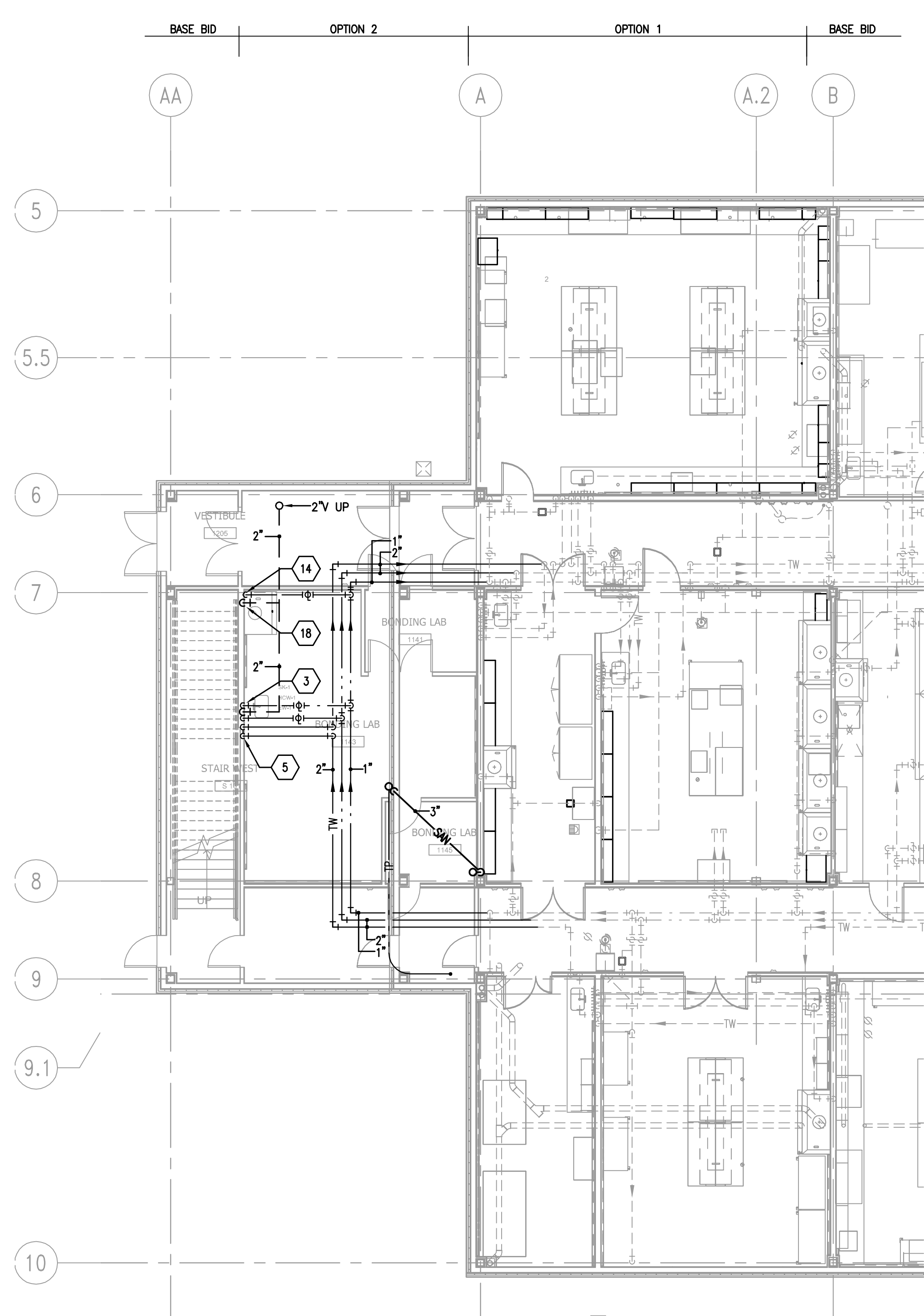
AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc. NASA AE CONTRACT NO. NAS8-03083

SUBMITTED: GARY MARSH APPROVED: ROBERT T. MATHIS  
DATE: 06-11-08 APPROVED: DENNIS FOSTER  
DESIGNED: G. MARSH APPROVED: J. SAVINO  
DRAWN: J. SAVINO APPROVED: PHILLIP HENDRIX  
CHECKED: G. MARSH APPROVED: PHILLIP HENDRIX

SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET  
REF. NO. **P201.6** 11 OF 39  
SCALE: NTS  
SHEET 402 OF 445



**A** FLOOR PLAN - LEVEL 1 - OPTION 1  
 PLUMBING SERVICES PIPING  
 1/8" = 1'-0"  
 0 2 4 8 FT



**B** FLOOR PLAN - LEVEL 1 - OPTION 2  
 PLUMBING SERVICES PIPING  
 1/8" = 1'-0"  
 0 2 4 8 FT

**KEY NOTES:**

- 1 3/4" COLD WATER DOWN TO BELOW SLAB TO SERVE P-13C.
- 2 1/2" COLD WATER FROM TPV DOWN TO BELOW SLAB TO SERVE FLOOR DRAIN(S).
- 3 1/2" COLD AND HOT WATER DOWN TO SERVE SINK(S); 2" WASTE DOWN TO BELOW SLAB AND 2" VENT UP.
- 4 2" TEMPERED WATER DOWN; PROVIDE 1/2" CONNECTION TO EYEWASH AT SINK AND 1-1/4" TO EMERGENCY SHOWER/EYEWASH; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 5 2" TEMPERED WATER DOWN; PROVIDE 1/2" CONNECTION TO EYEWASH AT SINK; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 6 2" TEMPERED WATER DOWN; PROVIDE 1-1/4" CONNECTION TO EMERGENCY SHOWER/EYEWASH; CONTINUE 2" TEMPERED WATER UP AND OFFSET ABOVE CEILING.
- 7 1/2" COLD WATER DOWN TO OWNER FURNISHED EQUIPMENT.
- 8 1/2" COLD WATER FROM TPV-1 DOWN TO BELOW SLAB TO SERVE P-9E.
- 9 2" COLD WATER AND 3/4" HOT WATER DOWN TO SERVE FIXTURES.
- 10 3/4" COLD WATER AND 1/2" HOT WATER DOWN TO SERVE FIXTURES.
- 11 1/2" COLD WATER DOWN TO SERVE FIXTURE.
- 12 1" COLD WATER DOWN TO RPZ BELOW AND UP TO OFFSET ABOVE CEILING.
- 13 3" WASTE AND VENT WITH 2" P-TRAP FOR HOOD WASHDOWN DRAIN.
- 14 1/2" COLD WATER DOWN TO OUTLET AT CUP SINK IN HOOD.
- 15 6" STORM AND OVERFLOW DRAIN FROM ABOVE.
- 16 6" OVERFLOW DRAIN DOWN, TERMINATE OVERFLOW DRAIN THRU WALL WITH DOWNSPOUT NOZZLE AT 12" ABOVE FINISHED FLOOR.
- 17 6" STORM DRAIN DOWN TO BELOW SLAB.
- 18 2" WASTE AND VENT.
- 19 2" VENT FROM BELOW.
- 20 3/4" COLD WATER UP TO PENTHOUSE.
- 21 OCCURS OPTION 1 ONLY.

**WARNING**

DO NOT SCALE THIS DRAWING

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 A NASA SHEET SIZE: MSFC STD. SIZE 40" X 28"

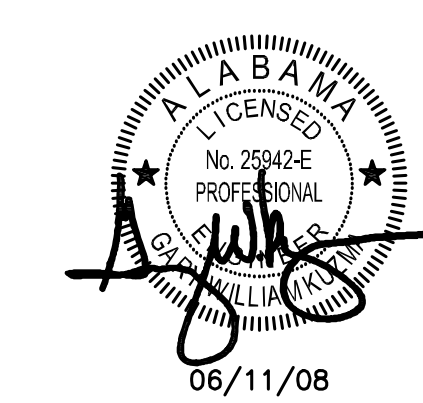
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 BY: \_\_\_\_\_

06/11/08



REV.	BY	DATE	REVISION	C.I. NO.	APPROVED
<b>Marshall Space Flight Center</b> Alabama, 35812 06-11-08 FOR CONSTRUCTION <b>CONSTRUCT REPLACEMENT</b> <b>BUILDING 4602</b> LEVEL 1 - OPTIONS 1 AND 2					
AE FIRM: HELLMUTH, OBATA, + KASSABAUM, Inc.			NASA AE CONTRACT NO. NAS8-03083		
SUBMITTED: GARY MARSH		APPROVAL RECOMMENDED: ROBERT T. MATHIS ADD2 PROJECT A/E		APPROVED: VINCENT JAMES GUARIN	
AE DATE: 06-11-08		APPROVAL RECOMMENDED: DENNIS FOSTER ADD2 SUPPORT A/E		AB22 GROUP LEAD DATE: _____	
DESIGNED: G. MARSH		APPROVAL RECOMMENDED: PHILLIP HENDRIX ADD2 TEAM LEAD		<b>DRAWING NO.</b> FAC-A-4602-P403	
CHECKED: G. MARSH		SPEC. NO. FAC M5030		<b>SHEET 413 OF 445</b>	

SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET

REF. NO. **P403** 22 OF 39

SCALE: NTS