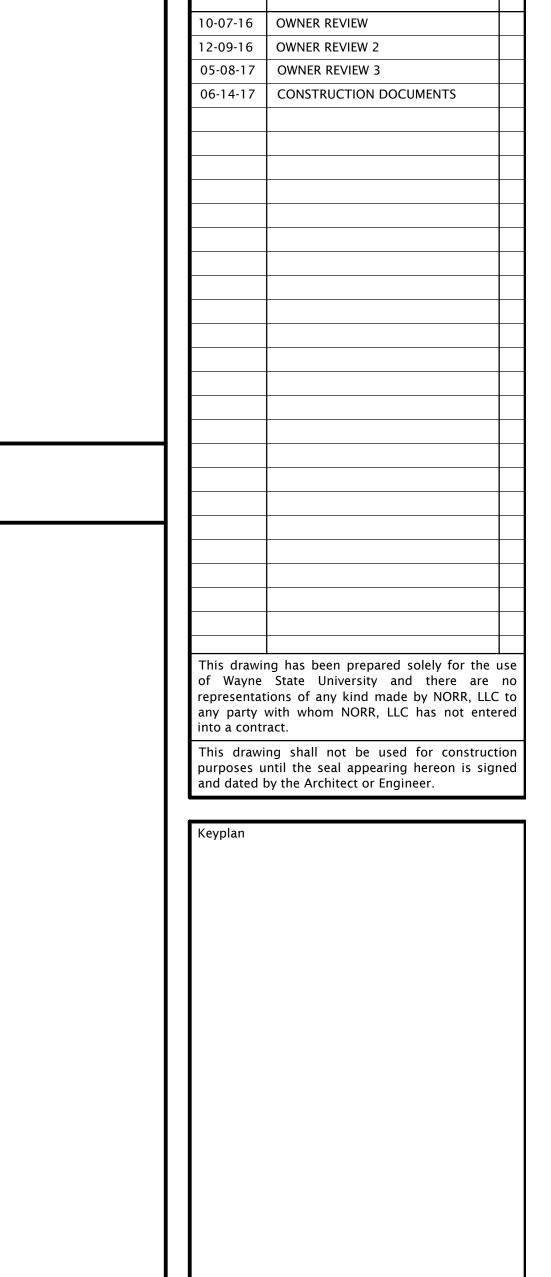


WAYNE STATE UNIVERSITY ART ROOMS 250 & 254 RENOVATION 150 ART BUILDING DETROIT, MI 48202 WSU PROJECT NUMBER: 040-284897

PROJECT TEAM:

NORR LLC, Architects Engineers Planners 150 W. Jefferson Avenue, Suite 1300 Detroit, MI 48226 (313) 324-3136 Contact: Scott Robach

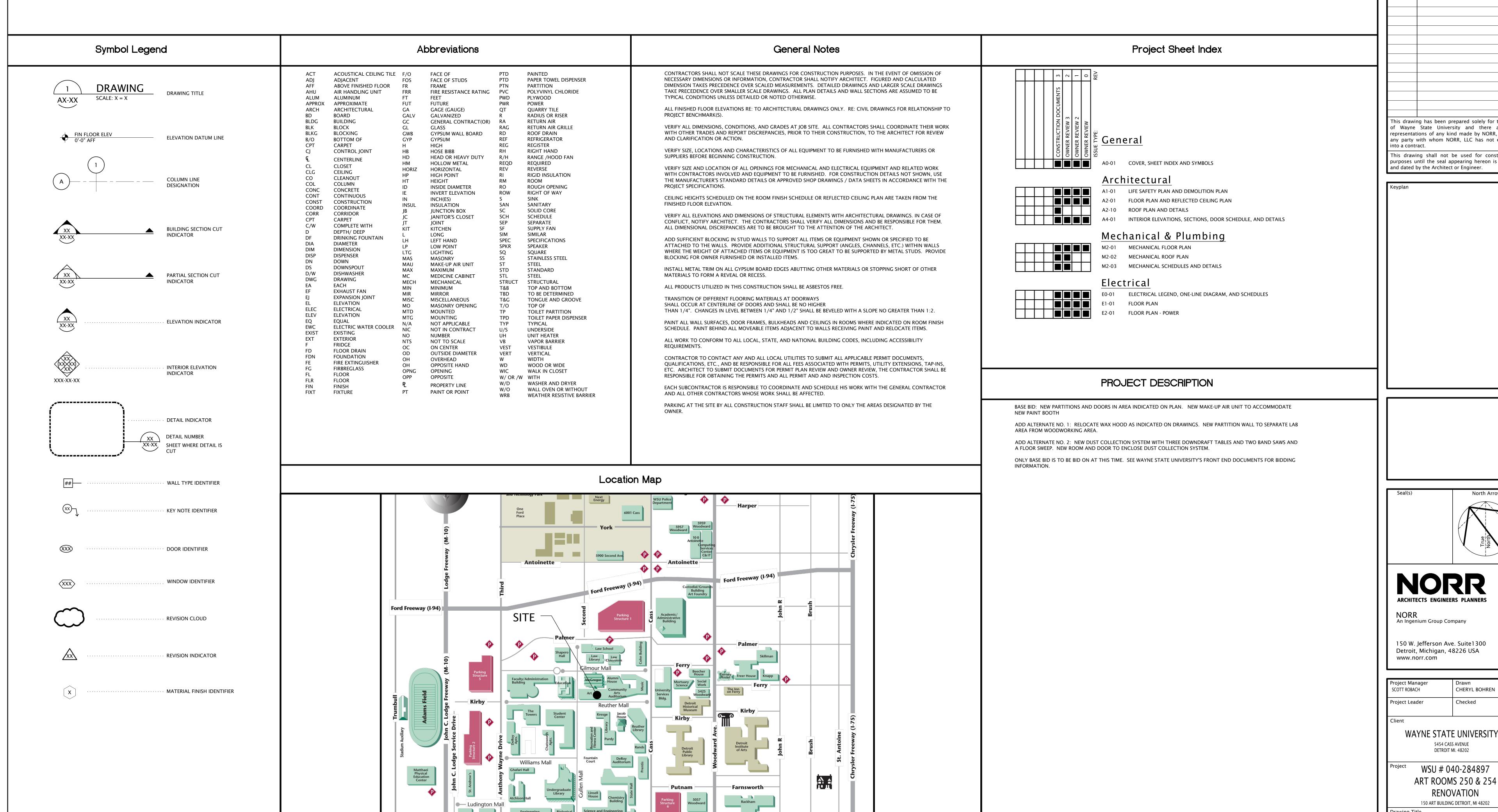


COVER SHEET

JCDT16-0247

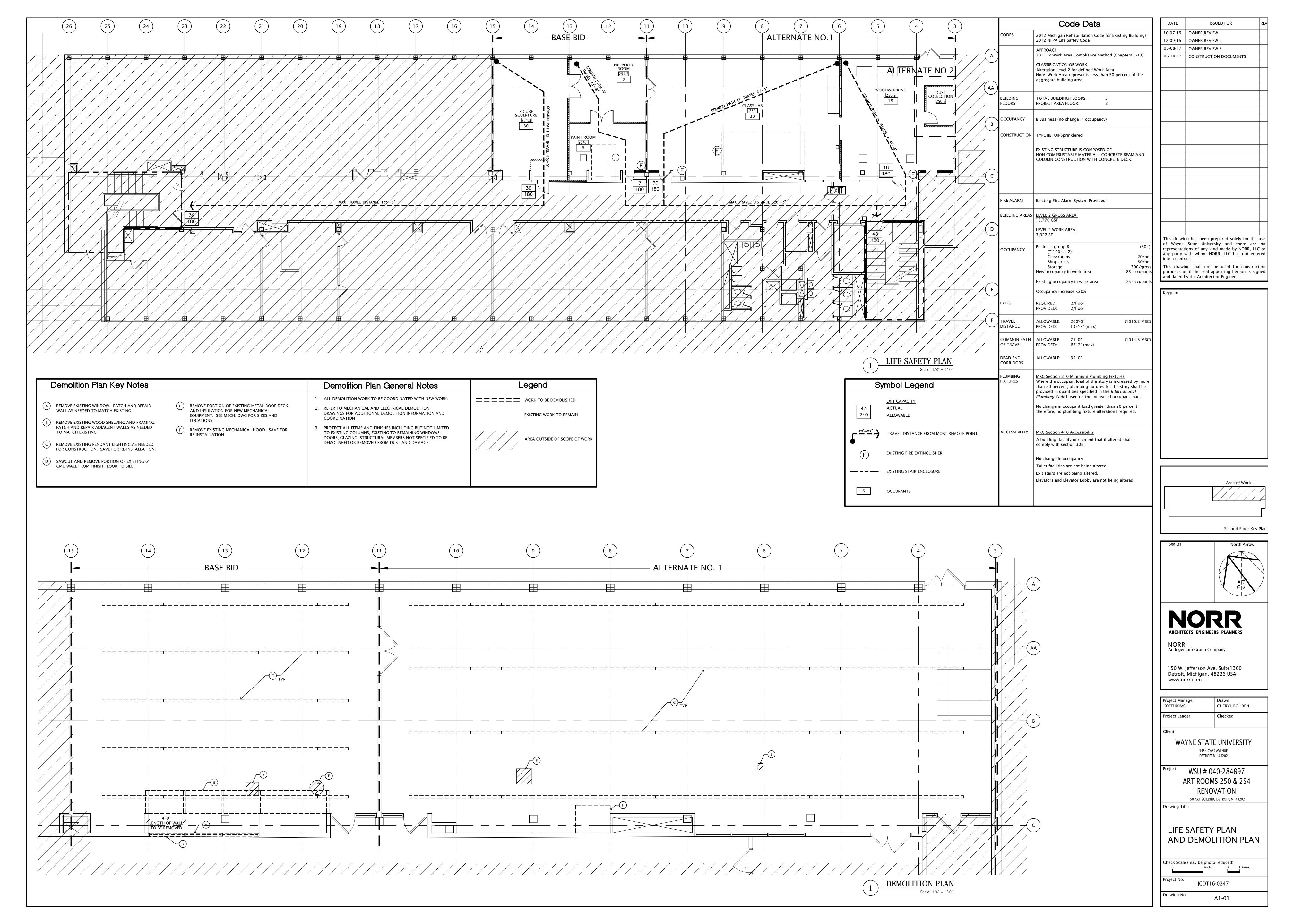
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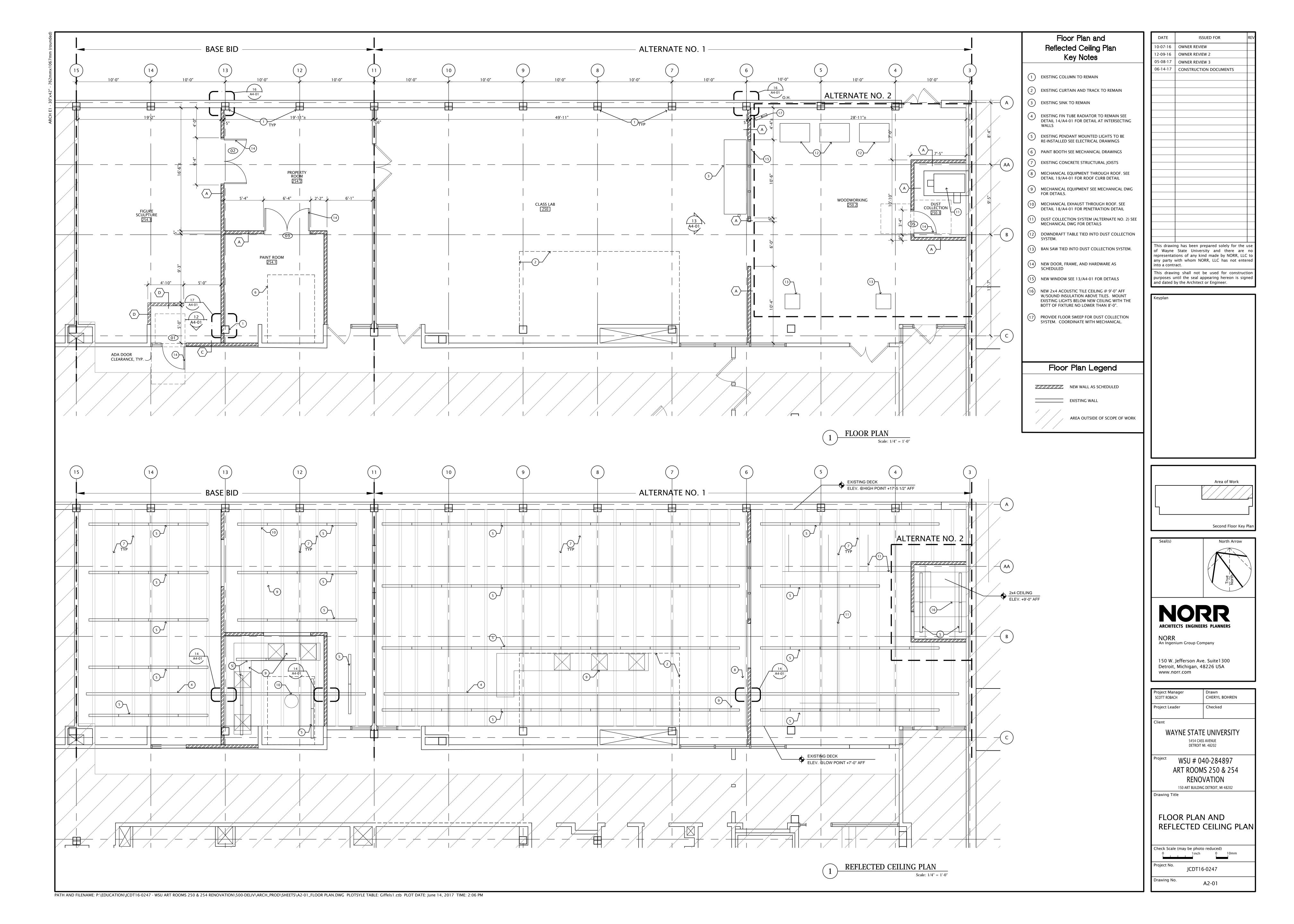
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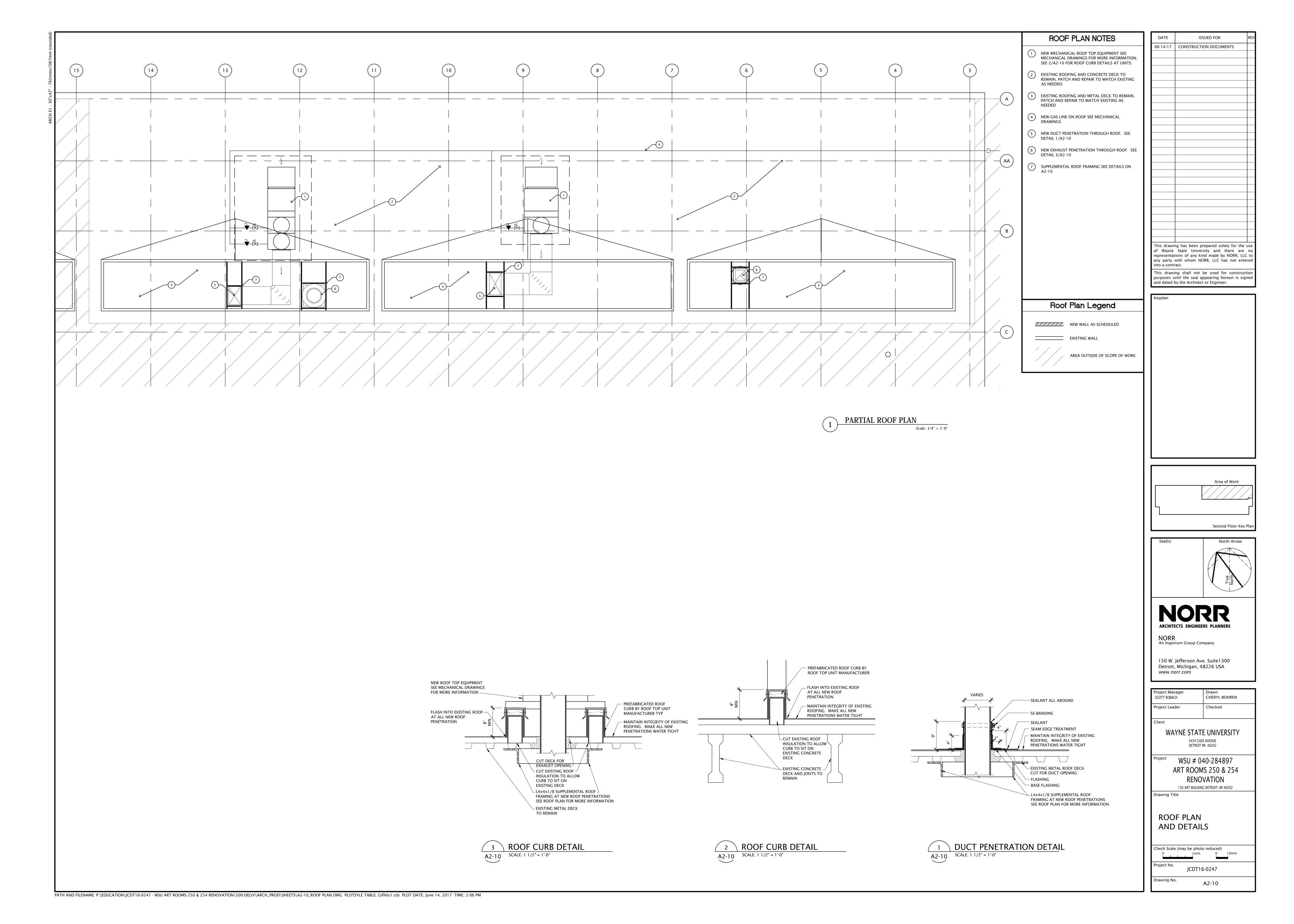


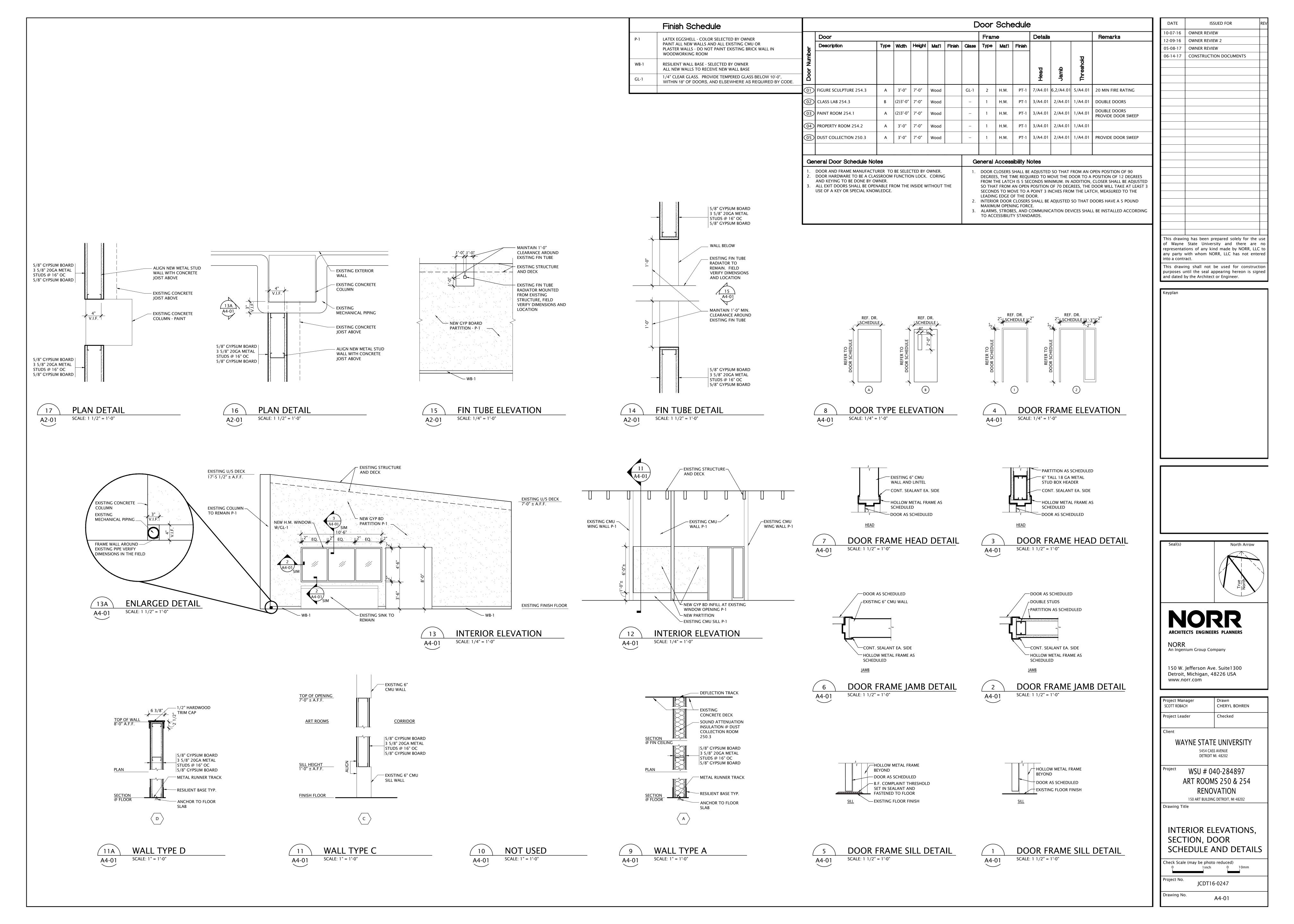
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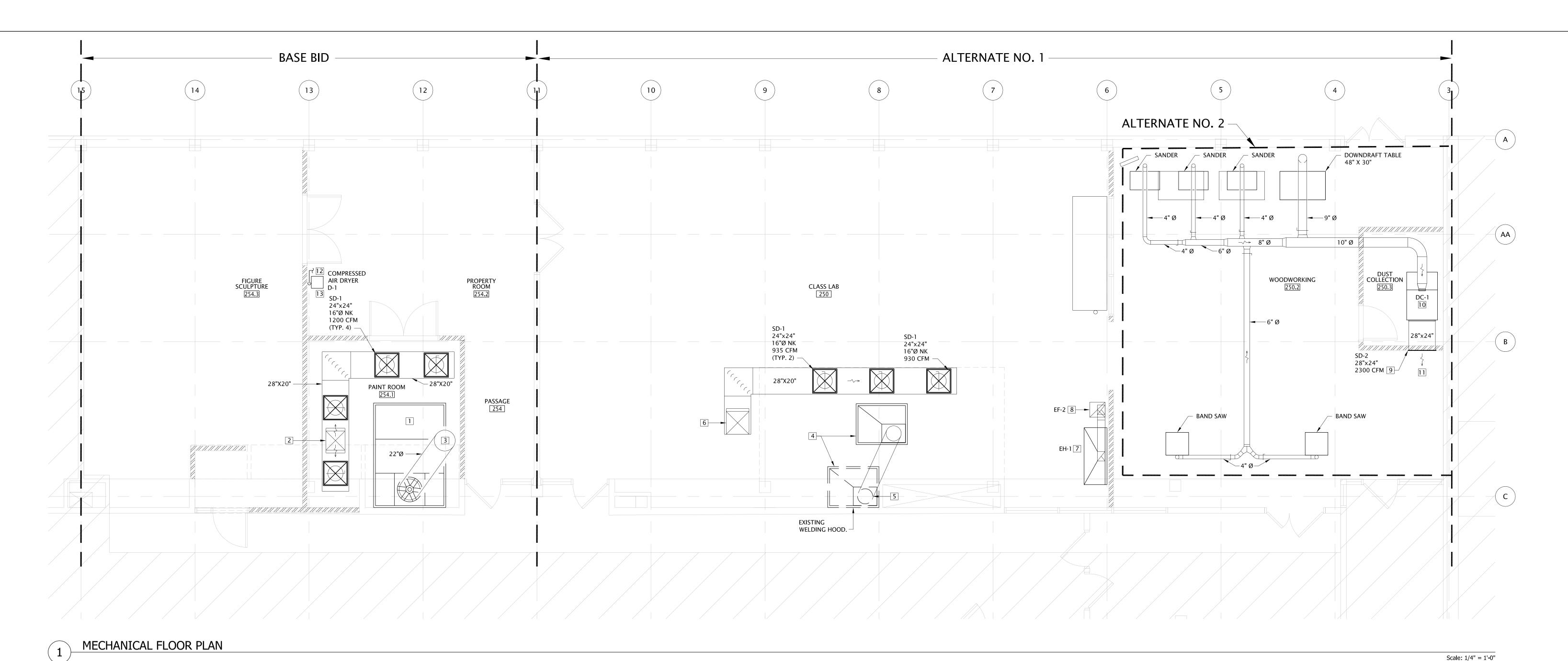
Prentis











MECHANICAL KEY NOTES

1 NEW PAINT BOOTH. REFER TO SCHEDULE FOR ADDITIONAL INFORMATION. 2 24"x24" SUPPLY DUCT UP TO MAKE-UP AIR UNIT, MAU-1, ON ROOF. MAKE

TRANSITION TO MAU SUPPLY DUCT SIZE AS NECESSARY. COORDINATE ROOF PENETRATION WITH EXISTING METAL DECKING AND STRUCTURE. REFER TO SHEET M2-02 FOR CONTINUATION.

3 22"Ø EXHAUST DUCT UP THROUGH ROOF COMPLETE WITH BACKDRAFT DAMPER. REFER TO SHEET M2-02 FOR CONTINUATION.

4 RELOCATE EXISTING WELDING HOOD. PROVIDE ALL REQUIRED DUCTWORK AND SUPPORTS. VERIFY EXACT INSTALLATION LOCATION WITH THE CLIENT.

5 EXTEND 16"Ø EXHAUST DUCTWORK FROM RELOCATED WELDING HOOD BACK TO EXISTING EXHAUST DUCTWORK. DUCTWORK ROUTED UP TO EXISTING FAN ROOM 302. REFER TO SHEET M2-02 FOR CONTINUATION.

6 20"x20" SUPPLY DUCT UP TO MAKE-UP AIR UNIT, MAU-2, ON ROOF. MAKE TRANSITION TO MAU SUPPLY DUCT SIZE AS NECESSARY. COORDINATE ROOF PENETRATION WITH EXISTING METAL DECKING AND STRUCTURE. REFER TO

7 WAX EXHAUST HOOD, EH-1. REFER TO SCHEDULE FOR ADDITIONAL

8 16"x16" EXHAUST DUCTWORK UP TO EXHAUST FAN, EF-2. REFER TO SHEET M2-02 FOR CONTINUATION. COORDINATE ROOF PENETRATION WITH EXISTING METAL DECKING AND STRUCTURE.

9 28"x24" SUPPLY AIR GRILLE PAINTED TO MATCH WALL. 10 NEW DUST COLLECTOR. REFER TO SCHEDULE FOR ADDITIONAL INFORMATION.

[11] FILTERED AIR SUPPLIED BACK TO THE ROOM.

SHEET M2-02 FOR CONTINUATION.

12 ROUTE DRAIN LINE FROM COMPRESSED AIR DRYER TO THE NEAREST DRAIN.

13 PROVIDE 3/4" DIAMETER COMPRESSED AIR PIPING TO PAINT BOOTH, CONNECT TO EXISTING HOUSE COMPRESSED AIR SYSTEM. COORDINATE WORK WITH OWNER.

MECHANICAL GENERAL NOTES

WORK INCLUDES INSTALLATION OF HVAC SYSTEMS. BOOTH, DUST COLLECTOR, EXHAUST FANS, MAKE-U AIR DUCT, RETURN AIR DUCT, EXHAUST AIR DUCT, DIFFUSERS, COMPLETE CONTROLS SYSTEM, INTERLOCK WIRING, DUCT INSULATION, AND RELATED ITEMS NECESSARY FOR A COMPLETE FUNCTIONING SYSTEM AS INDICATED ON THE PLANS. FURNISH ALL NEW MATERIALS AND EQUIPMENT UNLESS NOTED OTHERWISE (U.N.O.).

MECHANICAL DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND REQUIRED EQUIPMENT. DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. AS REQUIRED, REFER TO ARCHITECTURAL AND MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. FURNISH AND INSTALL DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND EQUIPMENT SHOWN ON PLANS.

CODE COMPLIANCE: ALL WORK COVERED BY THIS SECTION SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

COORDINATE WORK WITH OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS AND OWNER REQUIREMENTS. PROVIDE DUCT RISES AND DROPS AS REQUIRED FOR INSTALLATION AND/OR TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK. WORK SHALL BE PERFORMED BY EXPERIENCED TRADESMEN AND THEIR WORK SHALL BE OF HIGH STANDARD ACCEPTABLE TO THE OWNER.

DUCTWORK: DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED, SEALED AND INSULATED AS PROVIDED IN THE INT'L ENERGY AND MECHANICAL CODES. SHEET METAL SHALL BE IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS. SHEET METAL SHALL BE GALVANIZED OF LOCK-FORMING QUALITY, ASTM A-525. UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON DRAWINGS ARE NET INSIDE CLEAR DIMENSIONS ON LINED DUCTS OR SHEET METAL DIMENSIONS ON UNLINED DUCTS. ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. ROUND RIGID DUCTWORK SHALL CONFORM TO SMACNA TABLE 3-2.

ARCHITECT AND ENGINEER FOR ALTERNATE ROUTING IF CONFLICT

PROVIDE TURNING VANES AT ALL ELBOWS OR OFFSETS EXCEEDING 60

WAX EXHAUST SYSTEM: ALL WAX EXHAUST DUCTS SHALL BE FABRICATED BY WELDED JOINT CONSTRUCTION OF 16 GAUGE WELDED STEEL OR 18 GAUGE STAINLESS STEEL. PROVIDE RATED ACCESS DOORS AT ALL ELBOWS AND OFFSETS NECESSARY FOR COMPLETE CLEANING OF WAX DUCT. PROVIDE MINIMUM 30"x30" UNOBSTRUCTED ACCESS OR ROUTE FROM THE CEILING TO EACH ACCESS DOOR. DO NOT BLOCK ACCESS WITH PLUMBING, ELECTRICAL OR HVAC OBSTRUCTIONS. ALL ELBOWS SHALL BE LONG RADIUS.WAX EXHAUST DUCT SHALL BE WRAPPED WITH FIREMASTER WAX DUCT WRAP (2HR FIRE RESISTIVE INSULATION).

9. DUCT INSULATION: PROVIDE DUCT INSULATION FOR ALL DUCTS WHEN THE AIR TEMPERATURE INSIDE THE DUCT IS + OR - 20F DEGREE FROM THE SPACE AROUND THE DUCT.. DUCT INSULATION SHALL BE JOHNS MANVILLE OR EQUAL WITH FOIL/SCRIM/KRAFT FACING, 2.25 POUNDS/FT3 DENSITY, 1 IN THICKNESS BLANKET FOR INDOOR, AND 2 IN THICKNESS RIGID FOR OUTDOOR AND SHAFTS. DUCT INSULATION SHALL BE BONDED GLASS FIBERS IN THERMOSETTING RESIN MEETING NFPA 90A AND 90B, WITH K VALUE NOT TO EXCEED 0.25 AT 75 DEGREES F. FLAME SPREAD AND SMOKE DEVELOPED RATINGS SHALL NOT EXCEED 25/50. APPLY 100% ADHESIVE COVERAGE TO SHEET METAL DUCTWORK. PROVIDE ADDITIONAL MECHANICAL FASTENERS ON DUCTS OVER 12" WIDE OR 16" HIGH. MECHANICAL FASTENERS SHALL BE "GRIPNAIL" OR WELDED PIN AND SPEED CLIPS SPACED PER SMACNA STANDARDS. PROVIDE SLEF-ADHESIVE OUTDOOR JACKET 1.5MM THICK, LAMINATED VAPOR BARRIER AND WATERPROOFING MEMBRANE FOR INSTALLATION OVER THE OUTDOOR INSULATION.

10. FLEX DUCT: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181) WITH FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEX DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50 AND SHALL BE RATED FOR 2" W.C. PRESSURE AND 0 TO 250 DEGREE TEMPERATURE. FLEX DUCT MAXIMUM ALLOWED LENGTH IS 3FT. 11. TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER AIR BALANCE AND OPERATION. PROVIDE A

CERTIFIED AIR BALANCE REPORT TO OWNER SHOWING DESIGN AND MEASURED AIR VOLUMES, STATIC PRESSURES, FAN RPMS, ETC. AIR VIBRATION, AND TO ASSURE PROPER FUNCTION OF CONTROLS. MAINTENANCE OF TEMPERATURE AND OPERATION. GENERAL CONTRACTOR TO OBTAIN ALL INSPECTIONS REQUIRED BY LOCAL CODE AND GUARANTEE WORK AND INSTALLATION FOR ONE YEAR AFTER ACCEPTANCE BY OWNER. GENERAL CONTRACTOR TO FURNISH OWNER WITH TWO COMPLETE SETS OF AS-BUILT DRAWINGS INDICATING ALL INSTALLED WORK, INCLUDING ALL CONTROL WIRING DIAGRAMS AND INTERLOCK FOR SYSTEM OPERATION.

NOTES	
, INCLUDING PAINT UP AIR UNIT, SUPPLY	
GRILLES, REGISTERS,	

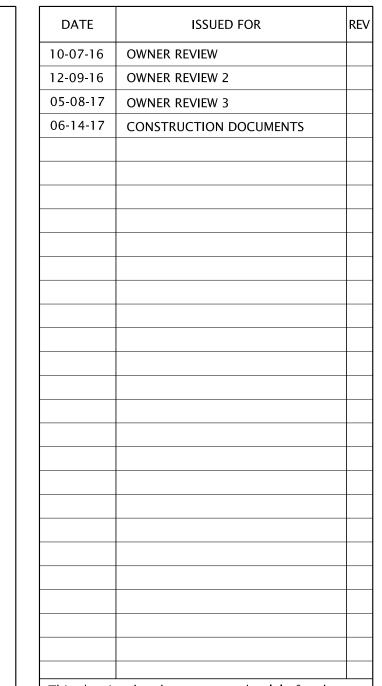
6. INSTALL DUCT HIGH AS POSSIBLE WITHIN JOIST SPACE. CONSULT OCCURS.

SEAL ALL TRANSVERSE AND LONGITUDINAL DUCT SEAMS AIR-TIGHT. DEGREES.

BALANCE CONTRACTOR SHALL ADJUST SYSTEMS TO MINIMIZE NOISE AND

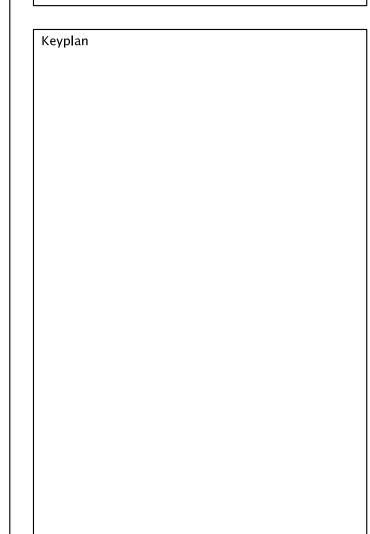
MECHANICAL LEGEND											
SYMBOL	ABBREVIA	ATION DESCRIPTION									
	ABV	ABOVE									
	AFF	ABOVE FINISHED FLOOR									
	C/W	COMPLETE WITH									
	DN	DOWN									
	FD	FIRE DAMPER									
\boxtimes , \boxtimes , \boxtimes		DUCT SECTIONS (SUPPLY, EXHAUST, RETURN)									
<i></i>		FLEXIBLE DUCT									
	MVD	MANUAL VOLUME DAMPER									
	OBD	OPPOSED BLADE DAMPER									
	MFR	MANUFACTURER									
	MIN	MINIMUM									
	OSA	OUTSIDE AIR									
\Box		ROUND RIGID DUCTWORK									
	TSP	TOTAL STATIC PRESSURE									
7		TURNING VANES									
1		CONSTRUCTION NOTES									
(EF)		MECHANICAL EQUIPMENT DESIGNATION									
S		SMOKE DETECTOR									
(T)		THERMOSTAT / UNIT									

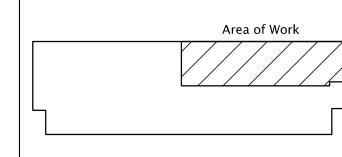
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Second Floor Key Plan

North Arrow

An Ingenium Group Company

150 W. Jefferson Ave. Suite1300 Detroit, Michigan, 48226 USA www.norr.com

Project Manager C. PARKHURST SCOTT ROBACH Project Leader Checked H. MONTAGUE

WAYNE STATE UNIVERSITY 5454 CASS AVENUE DETROIT MI. 48202

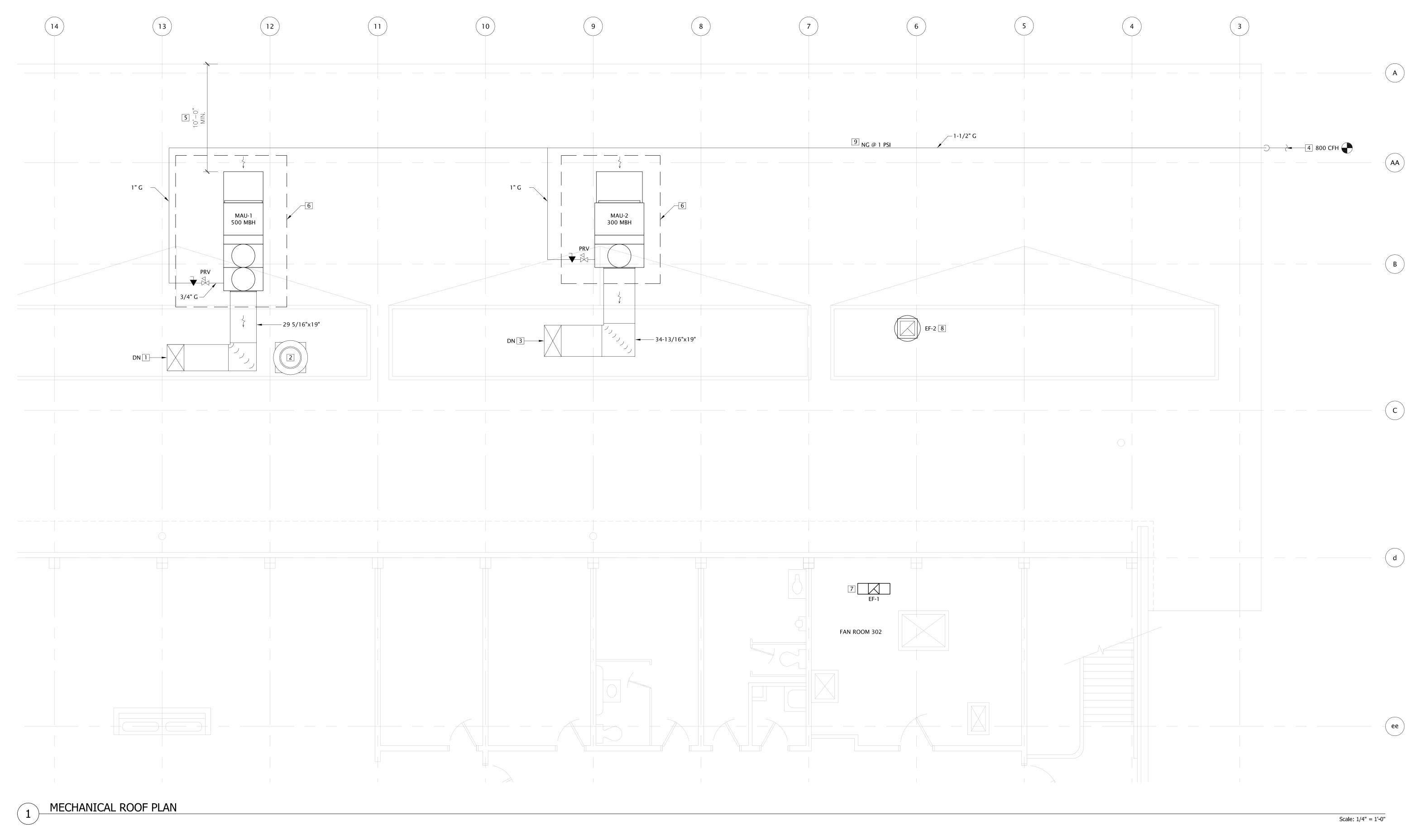
WSU # 040-284897 ART ROOMS 250 & 254 150 ART BUILDING DETROIT, MI 48202

Drawing Title

MECHANICAL FLOOR PLAN

Check Scale (may be photo reduced) JCDT16-0247 Drawing No. M2-01

PATH AND FILENAME: P:\EDUCATION\JCDT16-0247 - WSU ART ROOMS 250 & 254 RENOVATION\500-DELIV\MECH\SHEETS\M2-01_FLOOR PLAN.DWG PLOTSYLE TABLE: Giffels1.ctb PLOT DATE: June 19, 2017 TIME: 3:30 PM



MECHANICAL KEY NOTES

1 45-13/16"x19" INSULATED SUPPLY DUCT FROM MAKE-UP AIR UNIT, MAU-1. TRANSITION DOWN THROUGH METAL DECKING WHERE SHOWN. INSTALL INSULATION CONTINUOUSLY THROUGH ROOF PENETRATION. SEAL PENETRATION WITH FLASHING SEALANT. COORDINATE ROOF PENETRATION WITH EXISTING METAL DECKING AND STRUCTURE. REFER TO SHEET M2-01 FOR CONTINUATION.

2 22"Ø EXHAUST DUCT UP THROUGH ROOF. PROVIDE GRAVITY VENTILATOR WITH FLASHING FLANGE AND INTEGRAL BIRDSCREEN, GREENHECK #GRSR OR SIMILAR. REFER TO SHEET M2-01 FOR CONTINUATION.

3 34-13/16"x19" INSULATED SUPPLY DUCT DOWN FROM MAKE-UP AIR UNIT, MAU-2. TRANSITION DOWN THROUGH METAL DECKING WHERE SHOWN. INSTALL INSULATION CONTINUOUSLY THROUGH ROOF PENETRATION. SEAL PENETRATION WITH FLASHING SEALANT. COORDINATE ROOF PENETRATION WITH EXISTING METAL DECKING AND STRUCTURE. REFER TO SHEET M2-01 FOR CONTINUATION.

4 1-1/2" GAS LINE DOWN WALL, ALONG LOWER ROOF AND TIE INTO EXISTING GAS LINE AT MUSIC BUILDING. VERIFY GAS PRESSURE IN FIELD.

GAS LINE AT MUSIC BUILDING. VERIFY GAS PRESSURE IN FIELD.

5 MAINTAIN MINIMUM 10' CLEARANCE FROM ROOF EDGE.

6 MAINTAIN MANUFACTURER'S WORKING CLEARANCES.

EXISTING EXHAUST FAN, EF-11, SERVING WELDING HOOD SHALL BE REPLACED WITH EXHAUST FAN EF-1. REFER TO SCHEDULES FOR ADDITIONAL INFORMATION.

16"x16" EXHAUST DUCT DOWN FROM EXHAUST FAN, EF-2. REFER TO SCHEDULE FOR MORE INFORMATION AND SHEET M2-01 FOR CONTINUATION.

9 GAS PIPING BASED ON 1 PSIG, VERIFY IN FIELD.

MECHANICAL GENERAL NOTES

WORK INCLUDES INSTALLATION OF HVAC SYSTEMS, INCLUDING PAINT BOOTH, DUST COLLECTOR, EXHAUST FANS, MAKE-UP AIR UNIT, SUPPLY AIR DUCT, RETURN AIR DUCT, EXHAUST AIR DUCT, GRILLES, REGISTERS, DIFFUSERS, COMPLETE CONTROLS SYSTEM, INTERLOCK WIRING, DUCT INSULATION, AND RELATED ITEMS NECESSARY FOR A COMPLETE FUNCTIONING SYSTEM AS INDICATED ON THE PLANS. FURNISH ALL NEW MATERIALS AND EQUIPMENT UNLESS NOTED OTHERWISE (U.N.O.).
 MECHANICAL DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND REQUIRED EQUIPMENT. DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. AS REQUIRED,

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SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. AS REQUIRED,
REFER TO ARCHITECTURAL AND MANUFACTURER'S STANDARD
INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND
INSTALLATION REQUIREMENTS. FURNISH AND INSTALL DUCTWORK,
CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO
FACILITATE SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND

EQUIPMENT SHOWN ON PLANS.

3. CODE COMPLIANCE: ALL WORK COVERED BY THIS SECTION SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

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6. INSTALL DUCT HIGH AS POSSIBLE WITHIN JOIST SPACE. CONSULT ARCHITECT AND ENGINEER FOR ALTERNATE ROUTING IF CONFLICT

OCCURS.

7. SEAL ALL TRANSVERSE AND LONGITUDINAL DUCT SEAMS AIR-TIGHT.
PROVIDE TURNING VANES AT ALL ELBOWS OR OFFSETS EXCEEDING 60
DEGREES.

8. WAX EXHAUST SYSTEM: ALL WAX EXHAUST DUCTS SHALL BE FABRICATED BY WELDED JOINT CONSTRUCTION OF 16 GAUGE WELDED STEEL OR 18 GAUGE STAINLESS STEEL. PROVIDE RATED ACCESS DOORS AT ALL ELBOWS AND OFFSETS NECESSARY FOR COMPLETE CLEANING OF WAX DUCT. PROVIDE MINIMUM 30"x30" UNOBSTRUCTED ACCESS OR ROUTE FROM THE CEILING TO EACH ACCESS DOOR. DO NOT BLOCK ACCESS WITH PLUMBING, ELECTRICAL OR HVAC OBSTRUCTIONS. ALL ELBOWS SHALL BE LONG RADIUS.WAX EXHAUST DUCT SHALL BE WRAPPED WITH

FIREMASTER WAX DUCT WRAP (2HR FIRE RESISTIVE INSULATION). DUCT INSULATION: PROVIDE DUCT INSULATION FOR ALL DUCTS WHEN THE AIR TEMPERATURE INSIDE THE DUCT IS + OR - 20F DEGREE FROM THE SPACE AROUND THE DUCT.. DUCT INSULATION SHALL BE JOHNS MANVILLE OR EQUAL WITH FOIL/SCRIM/KRAFT FACING, 2.25 POUNDS/FT3 DENSITY, 1 IN THICKNESS BLANKET FOR INDOOR, AND 2 IN THICKNESS RIGID FOR OUTDOOR AND SHAFTS. DUCT INSULATION SHALL BE BONDED GLASS FIBERS IN THERMOSETTING RESIN MEETING NFPA 90A AND 90B, WITH K VALUE NOT TO EXCEED 0.25 AT 75 DEGREES F. FLAME SPREAD AND SMOKE DEVELOPED RATINGS SHALL NOT EXCEED 25/50. APPLY 100% ADHESIVE COVERAGE TO SHEET METAL DUCTWORK. PROVIDE ADDITIONAL MECHANICAL FASTENERS ON DUCTS OVER 12" WIDE OR 16" HIGH. MECHANICAL FASTENERS SHALL BE "GRIPNAIL" OR WELDED PIN AND SPEED CLIPS SPACED PER SMACNA STANDARDS. PROVIDE SLEF-ADHESIVE OUTDOOR JACKET 1.5MM THICK, LAMINATED VAPOR BARRIER AND WATERPROOFING MEMBRANE FOR

INSTALLATION OVER THE OUTDOOR INSULATION.

10. FLEX DUCT: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181)
WITH FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE
COVER/VAPOR BARRIER. FLEX DUCT SHALL MEET NFPA 90A WITH FLAME
SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50 AND SHALL BE RATED
FOR 2" W.C. PRESSURE AND 0 TO 250 DEGREE TEMPERATURE. FLEX DUCT
MAXIMUM ALLOWED LENGTH IS 3FT.

11. TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER AIR BALANCE AND OPERATION. PROVIDE A CERTIFIED AIR BALANCE REPORT TO OWNER SHOWING DESIGN AND MEASURED AIR VOLUMES, STATIC PRESSURES, FAN RPMS, ETC. AIR BALANCE CONTRACTOR SHALL ADJUST SYSTEMS TO MINIMIZE NOISE AND VIBRATION, AND TO ASSURE PROPER FUNCTION OF CONTROLS, MAINTENANCE OF TEMPERATURE AND OPERATION. GENERAL CONTRACTOR TO OBTAIN ALL INSPECTIONS REQUIRED BY LOCAL CODE AND GUARANTEE WORK AND INSTALLATION FOR ONE YEAR AFTER ACCEPTANCE BY OWNER. GENERAL CONTRACTOR TO FURNISH OWNER WITH TWO COMPLETE SETS OF AS-BUILT DRAWINGS INDICATING ALL INSTALLED WORK, INCLUDING ALL CONTROL WIRING DIAGRAMS AND INTERLOCK FOR SYSTEM OPERATION.

		Scale: 1/4" = 1'-0"
MECHAN	IICAL L	LEGEND
SYMBOL	ABBREVIAT	ION DESCRIPTION
	ABV	ABOVE
	AFF	ABOVE FINISHED FLOOR
	C/W	COMPLETE WITH
	DN	DOWN
	FD	FIRE DAMPER
\boxtimes , \boxtimes , \boxtimes		DUCT SECTIONS (SUPPLY, EXHAUST, RETURN)
\mathcal{M}		FLEXIBLE DUCT
	MVD	MANUAL VOLUME DAMPER
	OBD	OPPOSED BLADE DAMPER
	MFR	MANUFACTURER
	MIN	MINIMUM
	OSA	OUTSIDE AIR
ф		ROUND RIGID DUCTWORK
	TSP	TOTAL STATIC PRESSURE
7 7		TURNING VANES
		CONSTRUCTION NOTES
(EF)		MECHANICAL EQUIPMENT DESIGNATION
(S)		SMOKE DETECTOR

THERMOSTAT / UNIT

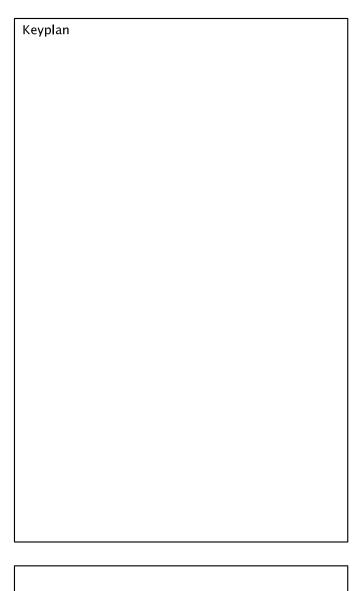
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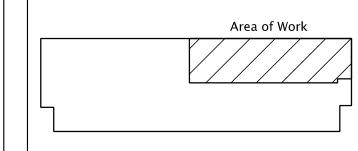
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DATE	ISSUED FOR	ı
10-07-16	OWNER REVIEW	
12-09-16	OWNER REVIEW 2	
05-08-17	OWNER REVIEW 3	
06-14-17	CONSTRUCTION DOCUMENTS	
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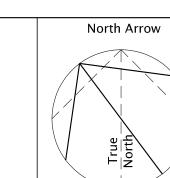
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Second Floor Key Plan



RORR
ARCHITECTS ENGINEERS PLANNERS

NORR An Ingenium Group Company

150 W. Jefferson Ave. Suite1300 Detroit, Michigan, 48226 USA www.norr.com

Project Manager SCOTT ROBACH	Drawn C. PARKHURST
Project Leader	Checked

Project Leader Checked
H. MONTAGUE

WAYNE STATE UNIVERSITY

5454 CASS AVENUE
DETROIT MI. 48202

Project WSU # 040-284897 ART ROOMS 250 & 254 RENOVATION

150 ART BUILDING DETROIT, MI 48202

Drawing Title

MECHANICAL ROOF PLAN

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Project No.	JCDT16-0)247
Drawing No.	M	12-02

PATH AND FILENAME: P:\EDUCATION\JCDT16-0247 - WSU ART ROOMS 250 & 254 RENOVATION\500-DELIV\MECH\SHEETS\M2-02_ROOF PLAN.DWG PLOTSYLE TABLE: Giffels1.ctb PLOT DATE: June 19, 2017 TIME: 3:50 PM

PAINT BOOTH SEQUENCE OF OPERATION

SEQUENCE OF OPERATION

- 1. PAINT BOOTH EXHAUST FAN AND MAKE-UP AIR UNIT (MAU-1) SHALL BE INTERLOCKED WITH PAINT BOOTH CONTROL PANEL PROVIDED BY EQUIPMENT SUPPLIER.
- 2. EXHAUST FAN SHALL OPERATE WHEN PAINT BOOTH CONTROL PANEL SWITCH IS IN THE "ON" POSITION.
- 3. SIGNAL FROM PAINT BOOTH CONTROL PANEL INDICATING OPERATION OF PAINT BOOTH EXHAUST FAN SHALL SIGNAL THE START OF THE MAU-1.
- 4. OUTSIDE AIR DAMPER END SWITCH CLOSURE INDICATE DAMPER FULLY OPEN SHALL ALLOW SUPPLY FAN TO START. 5. MAKE UP AIR SUPPLY FAN SHALL START AND RUN CONTINUOUSLY WHILE PAINT BOOTH EXHAUST FAN IS ON.

HEATING/WINTER OPERATION

BY THE CONTROL PANEL.

- 1. OUTSIDE AIR DAMPER END SWITCH CLOSURE INDICATE DAMPER FULLY OPEN SHALL ALLOW SUPPLY FAN TO START.
- 2. SPACE TEMPERATURE SENSOR CALL FOR HEATING SHALL SIGNAL THE FIRST GAS FIRED BURNER VALVE TO MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE.
- 3. ON FURTHER CALL FOR HEATING THE SECOND GAS FIRED BURNER VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE. 4. DISCHARGE AIR TEMPERATURE SHALL MAINTAIN A LOW LIMIT OF 50F (ADJ.) WINTER.

ALARM POINTS

- 1. SMOKE DETECTOR SHALL SHUT DOWN MAU-1, CLOSES ALL DAMPERS AND ALERTS THE BUILDING FIRE ALARM SYSTEM.
- 2. FILTER DIFFERENTIAL SWITCH EXCEEDING SET POINT SHALL ALERT CONTROL PANEL. 3. SUPPLY AIR FLOW SWITCH SENSING NO FLOW AFTER A DELAY TIME PERIOD (ADJ.) SHALL
- ALERT CONTROL PANEL. 4. OPERATION OF MAU-1 AND PAINT BOOTH EXHAUST SYSTEM SHALL ALL BE MONITORED

WELDING HOOD SEQUENCE OF OPERATION

SEQUENCE OF OPERATION

- 1. WELDING HOOD EXHAUST FAN (EF-1) AND MAKE-UP AIR UNIT (MAU-2) SHALL BE INTERLOCKED WITH MAU-2 CONTROL PANEL PROVIDED BY EQUIPMENT SUPPLIER.
- 2. EXHAUST FAN SHALL OPERATE WHEN MAU-2 CONTROL PANEL SWITCH IS IN THE "ON"
- 3. SIGNAL FROM MAU-2 CONTROL PANEL INDICATING OPERATION OF WELDING HOOD EXHAUST FAN, EF-1, SHALL SIGNAL THE START OF MAU-2.
- 4. OUTSIDE AIR DAMPER END SWITCH CLOSURE INDICATE DAMPER FULLY OPEN SHALL ALLOW SUPPLY FAN TO START.
- 5. MAKE UP AIR SUPPLY FAN SHALL START AND RUN CONTINUOUSLY WHILE EF-1 IS ON.

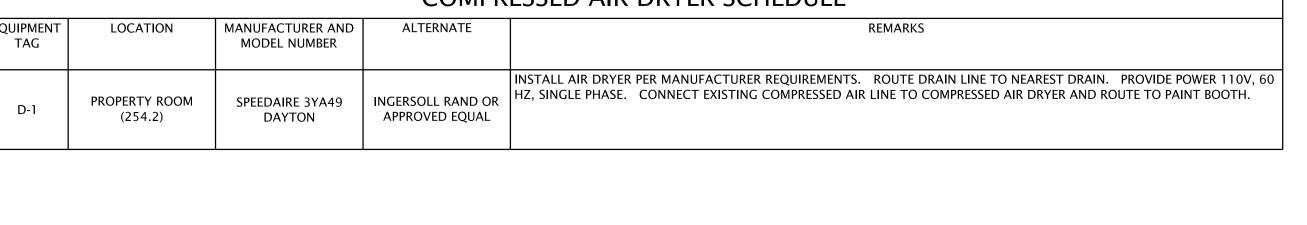
HEATING/WINTER OPERATION

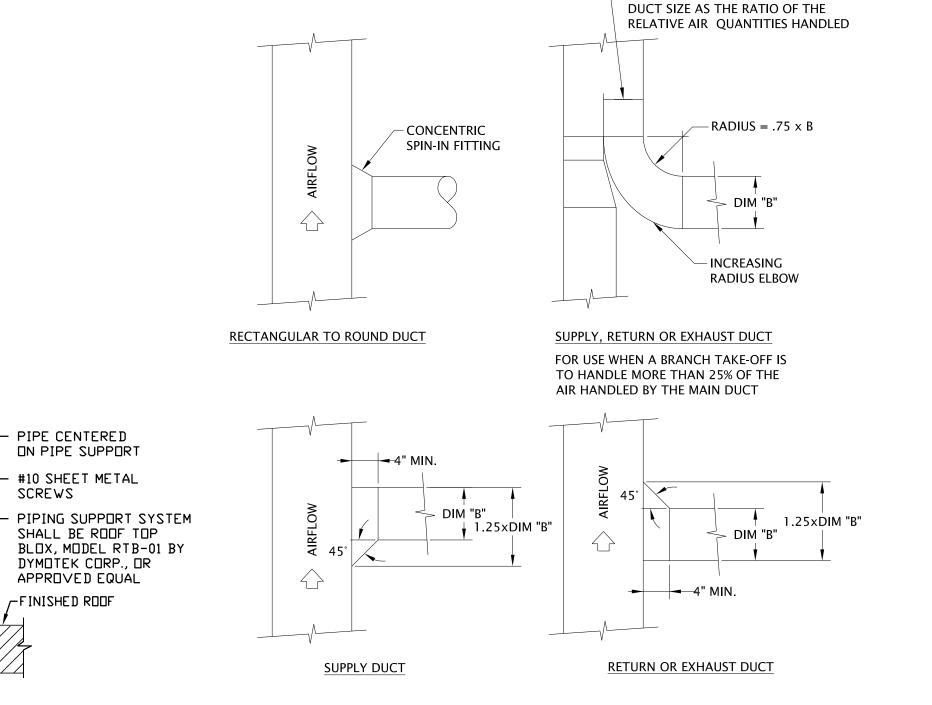
- 1. OUTSIDE AIR DAMPER END SWITCH CLOSURE INDICATE DAMPER FULLY OPEN SHALL ALLOW SUPPLY FAN TO START.
- 2. SPACE TEMPERATURE SENSOR CALL FOR HEATING SHALL SIGNAL THE FIRST GAS FIRED BURNER VALVE TO MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE.
- 3. ON FURTHER CALL FOR HEATING THE SECOND GAS FIRED BURNER VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE. 4. DISCHARGE AIR TEMPERATURE SHALL MAINTAIN A LOW LIMIT OF 50F (ADJ.) WINTER

ALARM POINTS

- 1. SMOKE DETECTOR SHALL SHUT DOWN MAU-2, CLOSES ALL DAMPERS AND ALERTS THE
- BUILDING FIRE ALARM SYSTEM. . FILTER DIFFERENTIAL SWITCH EXCEEDING SET POINT SHALL ALERT CONTROL PANEL.
- 3. SUPPLY AIR FLOW SWITCH SENSING NO FLOW AFTER A DELAY TIME PERIOD (ADJ.) SHALL
- ALERT CONTROL PANEL. 4. OPERATION OF MAU-1 AND PAINT BOOTH EXHAUST SYSTEM SHALL ALL BE MONITORED BY THE CONTROL PANEL.

	COMPRESSED AIR DRYER SCHEDULE											
EQUIPMENT TAG	LOCATION	MANUFACTURER AND MODEL NUMBER	ALTERNATE	REMARKS								
D-1	PROPERTY ROOM (254.2)	SPEEDAIRE 3YA49 DAYTON		INSTALL AIR DRYER PER MANUFACTURER REQUIREMENTS. ROUTE DRAIN LINE TO NEAREST DRAIN. PROVIDE POWER 110V, 60 HZ, SINGLE PHASE. CONNECT EXISTING COMPRESSED AIR LINE TO COMPRESSED AIR DRYER AND ROUTE TO PAINT BOOTH.								





— SIZE THE LEADING END OF THE ELBOW IN THE SAME RATIO TO THE MAIN

						M	1AKE-l	JP A	IR UNIT S	CHEDUL	.E							
EQUIPMENT TAG	AREA SERVED	FAN					HEATING		ELECTRICAL						DIMENSIONS			
		AIRFLOW (CFM)	CONTROL	DRIVE TYPE	EXTERNAL STATIC (IN. WC)	INPUT (MBH)	OUTPUT (MBH)	ΔT(°F)	SUPPLY FAN MOTOR (HP)	SUPPLY FAN MOTOR (BHP)	VOLT	PHASE	MCA	МОР	DIMENSIONS HxWxL (IN)	WEIGHT (LB)	MODEL NO.	REMARKS
MAU-1	PAINT ROOM (254.1)	4800	CONSTANT VOLUME	BELT	.5	500	400	76.8	5.0 (W/ MAGNETIC STARTER)	3.4	208	3	15.9	28.17		1454	GRAA50-GDBF0N 6BQ302A01	INTERLOCK WITH SPRAY BOOTH CONTROL PANE
MAU-2	CLASS LAB (250), WELDING HOOD	2800	CONSTANT VOLUME	BELT	.5	300	240	79.0	1.5 (W/ MAGNETIC STARTER)	0.79	208	3	5.8	10.1		1239	GRCA30-GDBF0N 6BL302A01	INTERLOCK WITH WELDING HOOD

NOTES: 1. OUTDOOR GAS-FIRED, HEATING-ONLY MAKE-UP AIR UNIT WITH HIGH TEMPERATURE RISE FURNACE, NATURAL VENTILATION, ELECTRONIC MODULATING ROOM SENSOR, OPEN DRIP PROOF MOTOR, OUTSIDE AIR HOOD, OUTSIDE AIR TWO-POSITION, SPRING RETURN MOTOR, AND FACTORY SUPPLIED ROOF CURB. PROVIDE SPARE CONTACT FOR INTERLOCKING FIELD WIRING.

PROVIDE PRESSURE REGULATING VALVE AS REQUIRED TO REDUCE MAIN GAS LINE PRESSURE TO A MINIMUM 7" WC.

3. MODEL NUMBERS ARE BASED ON TRANE. ACCEPTABLE MANUFACTURERS: YORK AND CARRIER.

4. SCHEDULED CAPACITIES ARE REQUIRED VALUES. DESIGN BASED ON 208V BEING AVAILABLE, FIELD VERIFY VOLTAGE BEFORE PURCHASE OF EQUIPMENT. 5. UNIT SHALL COMPLY WITH UL, NEC, NFPA 70 AND ASHRAE 90.1.

6. ELECTRICAL DATA, DIMENSIONS AND WEIGHTS ARE BASED ON THE "BASE BID" UNIT. IF ALTERNATE MANUFACTURERS ARE USED, COORDINATE CHANGES WITH ELECTRICAL, STRUCTURAL AND ARCHITECTURAL TRADES. ANY ADDITIONAL COSTS DUE TO CHANGES RESULTING FROM USE OF ALTERNATE MANUFACTURERS SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR

	EXHAUST HOOD SCHEDULE										
EQUIPMENT TAG	LOCATION	MANUFACTURER AND MODEL NUMBER	ALTERNATE	REMARKS							
EH-1	CLASS LAB (250)	GREENHECK #GH-E-P	CAPTIVEAIRE	EXHAUST HOOD: LOW PROXIMITY, RATED FOR 450F AND 600F HEATING SURFACE TEMPERATURE, FABRICATED OF TYPE 304 STAINLESS STEEL, #3 OR #4 POLISH, ON ALL EXPOSED SURFACES. FULLY WELDED AND POLISHED FRONT CORNER. BUILT IN AIR SPACE TO MEET NFPA 96. HOOD IS 5' LENGTH X 2' WIDTH. INSTALLED 4' ABOVE THE WAX TABLE SURFACE. PROVIDE REMOVABLE STAINLESS STEEL BAFFLE FILTER FOR EASY CLEANING. PROVIDE UL 300 FIRE SUPPRESSION SYSTEM. PROVIDE STAINLESS VERTICAL STEEL BACKSPLASH.							

NOTE: 1. HOOD TO BE CONNECTED TO EXHAUST FAN, EF-2.

	EXHAUST FAN SCHEDULE														
EQUIPMENT TAG				ESP ("W.C.)	FRPM	/ DRIVE	ELECTRICAL					DIMENSIONS (W"xH"xD")	MODEL NUMBER	MANUFACTURER	REMARKS
.,,,_			(3.1)	(MOTOR HP	ВНР	VOLT	PHASE	FLA	(/ / /			
EF-1	EXHAUST	CLASS LAB (250), WELDING HOOD	3000	1.50	1291	BELT	1.5	1.11	208	3	6.6	35"X43"X35"	CPV - 180	СООК	1
EF-2	EXHAUST	CLASS LAB (250), WAX HOOD	750	1.50	1587	BELT	0.5	0.40	208	3	2.4	34.7"Øx25.5"H, 24"x24" CURB CAP	150RH5B	соок	2

NOTE: 1. FAN TO BE INTERLOCKED WITH WELDING HOOD.

2. FAN TO BE INTERLOCKED WITH WAX EXHAUST HOOD, EH-1. 3. DESIGN BASED ON 208 V BEING AVAILABLE, FIELD VERIFY VOLTAGE BEFORE PURCHASE OF EQUIPMENT.2. FAN TO BE INTERLOCKED WITH WAX EXHAUST HOOD, EH-1.

4. MODEL NUMBERS ARE BASED ON COOK. ACCEPTABLE MANUFACTURERS: TWIN CITY AND APPROVED EQUAL.

	DUST COLLECTOR SCHEDULE											
EQUIPMENT TAG	LOCATION	MANUFACTURER AND MODEL NUMBER	ALTERNATE	REMARKS								
DC-1	DUST COLLECTION (250.3)	AGET #FT40-DUSTKOP	SLADE, CAMFIL APC	DUST COLLECTOR: DUCT COLLECTOR SHALL BE PUSH THROUGH AFTER FILTER TYPE, NAPPED COTTON SATEEN FILTER TUBES, ACOUSTIC TOP PLENUM, REMOVABLE DUST BIN DRAWER, BLOWER FAN, ATTENUATOR. PROVIDE BLOWER FAN 2300 CFM @ 6.6" W.C. ESP, 5 HP, 208/3/60, TEFC MOTOR. PROVIDE ENCLOSURE PANELS WITH ACOUSTIC LINED OUTLET PANEL, ACOUSTIC LINED TOP PLENUM. PROVIDE FLOOR SUPPORT ANCHORS. PROVIDE GALVANIZED SPIRAL DUCT PIPE CONNECTIONS, SUPPORTS, ELBOWS, GATES, INTAKES, FLEX FABRIC HOSE, CLAMPS AND DUST TRAY.								

NOTE: 1. DESIGN BASED ON 208V BEING AVAILABLE, FIELD VERIFY VOLTAGE BEFORE PURCHASE OF EQUIPMENT

PAINT BOOTH SCHEDULE													
		IN	TEGRAL E	(HAUST FAN			DIMENSIONS (WxHxD)	MODEL NUMBER	MANUFACTURER	ALTERNATIVE	REMARKS		
LOCATION	AIRFLOW (CFM)	ESP ("W.C.)	DRIVE	ELEC	TRICAL								
	(3.1)	(MOTOR HP	VOLT	PHASE							
PAINT ROOM (254.1)	5250	0.25	BELT	1.0	208	3	6'x7'x6'	#IFP-060706	GLOBAL FINISHING SOLUTIONS	MARATHON, AMERI-CURE INC	1,3		

1. GALVANIZED SHEET STEEL CONSTRUCTION, PRE-PUNCHED AND FLANGED FOR NUT-AND-BOLT ON-SITE ASSEMBLY. 2. SOLENOID VALVE REQUIRED FOR INTERLOCKING SPRAY AIR WITH LIGHT LIMIT SWITCH AND EXHAUST.

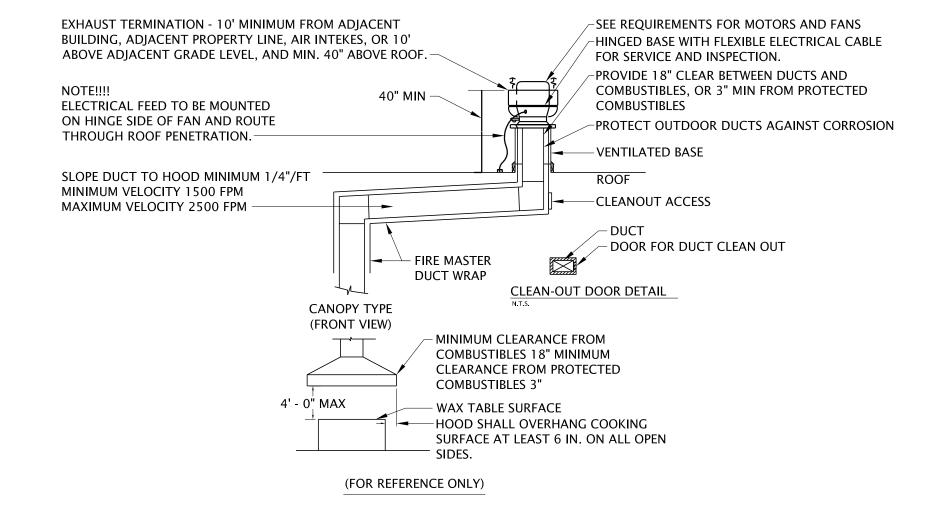
3. PROVIDE EXHAUST FILTER CHAMBER, DRYER MARK 2 MANOMETER, DEVILBISS FRC 650 FILTER/REGULATOR/COALESCER, 1 SET 20"X20"X2" FILTER AND GRIDS. AIR PROVING SWITCH FOR EXHAUST FAN, PREWIRED ELECTRICAL CONTROL PANEL, NEMA-1 RATED. DESIGN BASED ON 208V BEING AVAILABLE FIELD VERIFY VOLTAGE

REQUIREMENTS BEFORE PURCHASE OF EQUIPMENT.

4. PROVIDE CLASS 1, DIV-2 RATED FLUORESCENT LIGHT FIXTURES, 48", 4 TUBE, 32 WATT, T8 BALLAST 120V TUBES. 5. PROVIDE DELUXE CONTROL PANEL FOR INTERLOCK WITH MAKE UP AIR UNIT.

	GRILLE, REGISTER, DIFFUSER SCHEDULE													
TAG	SERVICE	NECK SIZE	FRAME SIZE	FRAME TYPE	ACCESSORIES	MATERIAL	FINISH	MODEL NUMBER	REMARKS					
SD-1	SUPPLY	SEE PLANS	24"x24"	DUCT MOUNTED	NONE	STEEL	MILL (PAINTED IN FIELD TO MATCH CEILING)	PDC						
SD-2	SUPPLY	SEE PLANS	28"x24"	SURFACE MOUNT	NONE	STEEL	MILL (PAINTED IN FIELD TO MATCH CEILING)	520	DOUBLE DEFLECTION 3/4" BLADE SPACING FLAT BORDER,					

1. MODEL NUMBERS ARE PRICE UNLESS OTHERWISE NOTED. 2. PROVIDE TRANSITION TO DIFFUSER WHERE REQUIRED.



WAX EXHAUST DETAIL

N.T.S.

12-09-16 | OWNER REVIEW 2 | 05-08-17 | OWNER REVIEW 3 06-14-17 | CONSTRUCTION DOCUMENTS This drawing has been prepared solely for the use of Wayne State University and there are no representations of any kind made by NORR, LLC to any party with whom NORR, LLC has not entered into a contract. This drawing shall not be used for construction

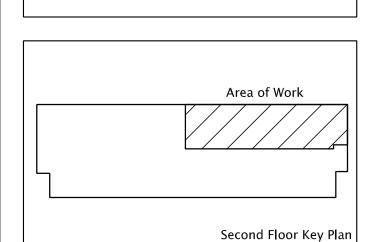
ISSUED FOR

DATE

10-07-16 OWNER REVIEW

purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Keyplan



North Arrow

ARCHITECTS ENGINEERS PLANNERS

150 W. Jefferson Ave. Suite1300 Detroit, Michigan, 48226 USA

An Ingenium Group Company

www.norr.com Project Manager C. PARKHURST SCOTT ROBACH

Project Leader Checked H. MONTAGUE

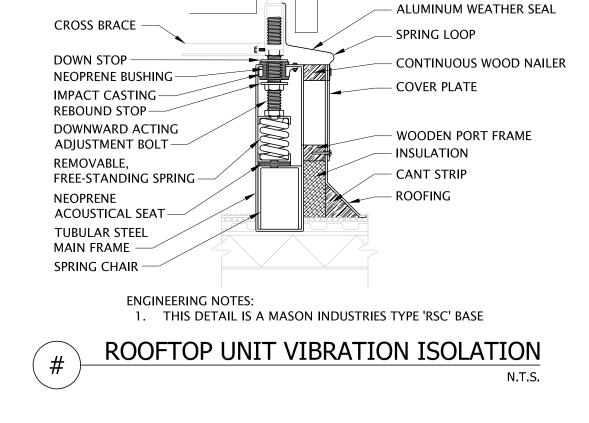
WAYNE STATE UNIVERSITY 5454 CASS AVENUE DETROIT MI. 48202

WSU # 040-284897 ART ROOMS 250 & 254 150 ART BUILDING DETROIT, MI 48202

MECHANICAL DETAILS AND SCHEDULES

Drawing Title

JCDT16-0247 Drawing No. M2-03



ROOFTOP AIR

CONDITIONING UNIT

20 GA. GALV PIPE STRAP

(LEAVE PIPE FREE TO -

PIPE CENTERED

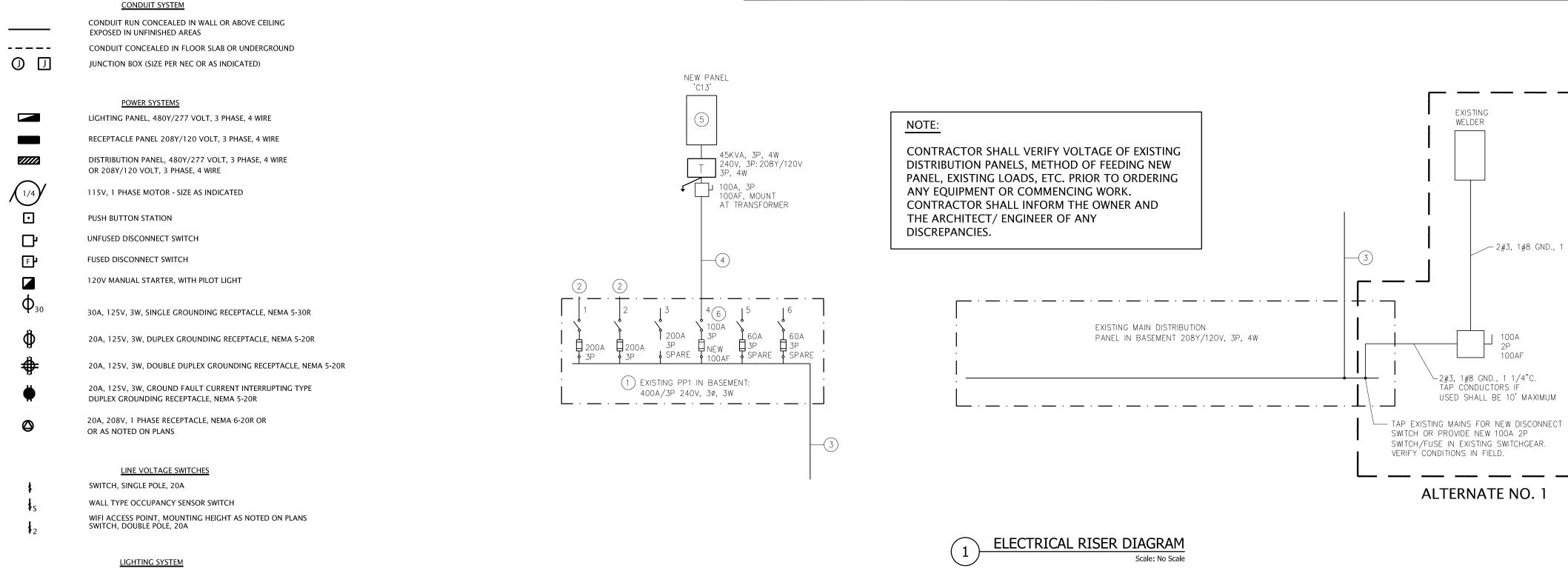
FINISHED ROOF

SCREWS

			L	.UN	INAIRE SCHEDULE		
	LUMINAIRE	LAMP					
	DESCRIPTION	TYPE	BALLAST	VOLTS	MANUFACTURER AND CATALOG NUMBER SERIES	REMARKS	MOUNTING / LOCATION
X	WALL MOUNTED EXIT SIGN WITH NICKEL-CADMIUM BATTERY, RED LETTERS	LED		120	LITHONIA #LHQM-S- W-3-R OR EQUAL BY COOPER	BATTERY SHALL PROVIDE EMERGENCY POWER FOR A MINIMUM OF 90 MINUTES	SURFACE WALL MOUNT
XA	WALL MOUNTED EXIT SIGN WITH NICKEL-CADMIUM BATTERY, RED LETTERS AND (2) HEADS	LED		120	LITHONIA #LHQM-S-W-3-R WITH (2) 5.4W KRYPTON LIGHTS OR EQUAL BY COOPER	BATTERY SHALL PROVIDE EMERGENCY POWER FOR A MINIMUM OF 90 MINUTES	WALL MOUNT

MECHANICAL EQUIPMENT CHARACTERISTICS

							•										
ITEM	DESCRIPTION	EQUI	IPMENT (CHARACT	ERISTICS		CIRCUIT	FEEDER		DISC	CONNECT S	WITCH	REMARKS				
NO.		VOLTS	PH	KW	НР	MCA	CIRCUIT	FLLDLK	SIZE	PL	FUSE	FEATURES					
MAU	MAKE UP AIR UNIT -1	208	3		5	15.9	C13-1,3,5	3#12 & 1#12G - 3/4" C.	30	3	30	NEMA 3R	PROVIDE DISCONNECT. CONNECT FEEDER TO DISCONNECT AND CONTROL PANEL. PROVIDE 15A FUSES. INTERLOCK TO EXHAUST FAN EF-1 BY THE M.C.				
MAU 2	MAKE UP AIR UNIT -2	208	3		1.5	5.8	C13-2,4,6	3#12 & 1#12G - 3/4" C.	30	3	15	NEMA 3R	PROVIDE DISCONNECT. CONNECT FEEDER TO DISCONNECT AND CONTROL PANEL. PROVIDE 15A FUSES. INTERLOCK TO EXHAUST FAN EF-1 BY THE M.C.				
PSB 1	PAINT SPRAY BOOTH EXH. FAN	208	3		1	4.8	C13-7,9,11	3#12 & 1#12G - 3/4" C.					CONNECT FEEDER TO PREWIRED CONTROL PANEL.				
1	WELDER (EXISTING)	240	1				EXISTING MAIN DISTRIBUTION PANEL	2#3 & 1#8G - 1 1/4" C.	100	3	100	NEMA 1	PROVIDE NEW WELDER CABLE CONNECTION AND RECEPTACLE FROM DISCONNECT SWITCH TO WELDER. PROVIDE NEW 100A FUSES.				
EF 1	EXHAUST FAN EF-1 WELDING HOOD	208	3		1 1/2		C13-16,18,20	3#12 & 1#12G - 3/4" C.		3	3	NEMA 3R	PROVIDE SIZE 0 COMBINATION MOTOR STARTER/ FUSED DISCONNECT SWITCH AND FUSES				
EF 2	EXHAUST FAN EF-2 WAX HOOD	208	3		1/2		C13-15,17,19	3#12 & 1#12G - 3/4" C.		3	3	NEMA 3R	PROVIDE SIZE 0 COMBINATION MOTOR STARTER/ FUSED DISCONNECT SWITCH AND FUSES				
000	DUST COLLECTOR	208	3		5	17.5	C13-8,10,12	3#10 & 1#10G - 3/4" C.		3	30	NEMA 1	PROVIDE SIZE 1 COMBINATION MOTOR STARTER/ FUSED DISCONNECT SWITCH AND FUSES. CONNECT TO DUST COLLECTOR CONTROL PANEL.				



		PANELBOARD												SCH	EDUL	E.					
	VOLTAGE:	208Y/1	20V	MAINS	INS 100 MAIN BREAKER					MOUNTING S					CE		REMAR	RKS:			
	BUS SIZE:	125	AMP	TOTAL	LOAD	22.1	KVA				F	AULT	DUTY	42K/10l	K MINIM	UM					
				LOAD ((VA)			BRKR			PH		BRKR			LOAD ((KVA)				
o.	SERVES	LTG	RCPT	MTR	A/C	HTG	MISC	TRIP	Р	Α	в с	Р	TRIP	MISC	HTG	A/C	MTR	RCPT	LTG	SERVES	N
1				1.9						•	1	-			0.8						
3 MA	U-1			1.9				30	3	\vdash	+	- 3	15		0.8					MAU-2	
5				1.9						+	+	-			0.8					7	
7 PA	INT SPRAY BOOTH			0.6						1-∳	+	- _					2.1			DUST COLLECTOR	
9 EX	HAUST FAN			0.6				20	3	+	\downarrow	- 3	30				2.1			(ALTERNATE #2)	
11 (AL	TERNATE #1)			0.6						4	$+ \bullet$	-					2.1				
13 RE	CEPTACLES		0.8					20	1	1♣	+	- 1	20					0.8		RECEPTACLES	
15 EF-	-1			0.8						14	+	- _					0.3			EF-2	
17 (WI	ELDING HOOD)			0.8				15	3	1	+ ♦	- 3	15				0.3			(WAX HOCD)	
19 (AL	TERNATE #1)			0.8						-	+	-					0.3			(ALTERNATE #1)	
21 AIR	DRYER			1.0				20	1	14	\downarrow	- 1								SPACE	
23 SP	ACE								1	14-	┿	- 1								SPACE	
25 SP	ACE								1	 	+	- 1								SPACE	
27 SP	ACE								1	Ī	♦	- 1								SPACE	
29 SP	ACE								1	_	 ∳	- 1								SPACE	
			•							•		-	•	0.0	2.4	0.0	18.1	1.6	0.0	CONNECTED KVA	22.1
														0.0	2.4	0.0	18.6	1.6	0.0	DEMAND KVA	22.6
															•	•	•			DEMAND AMPS	63

F	Riser Diagram Key Notes
1	EXISTING FRANK ADAMS FUSIBLE DISTRIBUTION PANEL TO REMAIN. SIZE AND VOLTAGE AS INDICATED.
2	EXISTING SWITCH AND LOAD TO REMAIN
3	EXISTING FEEDERS TO REMAIN.
4	NEW 4#3, 1#8G, 1 1/2"C. TO PANEL. PROVIDE (3) NEW 100A FUSES IN EXISTING SPARE FUSIBLE SWITCH.
5	NEW PANEL. REFER TO SCHEDULE, THIS SHEET.
6	REUSE EXISTING SWITCH. PROVIDE NEW 100A FUSES.

WELDER

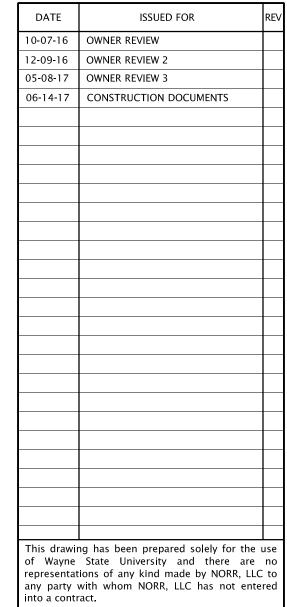
-2#3, 1#8 GND., 1 1/4°C.

USED SHALL BE 10' MAXIMUM

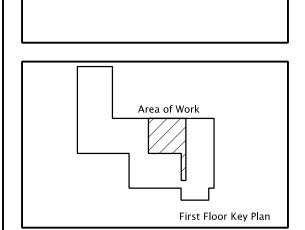
TÄP CÖNDUCTORS ÍF

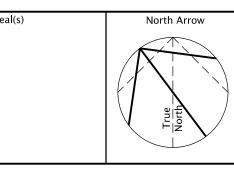
ALTERNATE NO. 1

____2#3, 1#8 GND., 1 1/2"C.



This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.





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Drawing Title

Project Manager GARY COLLINS SCOTT ROBACH Project Leader Checked MELISSA GOOD Client

> WAYNE STATE UNIVERSITY 5454 CASS AVENUE

WSU # 040-284897 ART ROOMS 250 & 254 RENOVATION 150 ART BUILDING DETROIT, MI 48202

ELECTRICAL LEGEND, ONE-LINE DIAGRAM

AND SCHEDULES Check Scale (may be photo reduced) JCDT16-0247 Drawing No. E0-01

		PAN	ELBC	ARD				C13						SCH	EDUL	E					
	VOLTAGE:	208Y/1	20V	MAINS	100	MAIN E	REAKE	R			M	OUN	ΓING	SURFA	CE		REMAR	RKS:			
	BUS SIZE:	125	AMP	TOTAL	LOAD	22.1	KVA				FΑ	ULT	DUTY	42K/10l	K MINIM	UM					
				LOAD (KVA)			BRKR		F	ΡΗ		BRKR			LOAD (KVA)				
lo.	SERVES	LTG	RCPT	MTR	A/C	HTG	MISC	TRIP	Р	A E	3 C	Р	TRIP	MISC	HTG	A/C	MTR	RCPT	LTG	SERVES	
1				1.9						•	$\overline{}$				0.8						
3	MAU-1			1.9				30	3	$\vdash \vdash$	\blacklozenge	3	15		0.8					MAU-2	
5				1.9						 	┿				0.8						
7	PAINT SPRAY BOOTH			0.6						 →	++						2.1			DUST COLLECTOR	
9	EXHAUST FAN			0.6				20	3	$\vdash \vdash$	\leftarrow	3	30				2.1			(ALTERNATE #2)	
1	(ALTERNATE #1)			0.6							┿						2.1				
	RECEPTACLES		0.8					20	1	 	++	1	20					0.8		RECEPTACLES	
	EF-1			0.8						Н⊸	• 						0.3			EF-2	
	(WELDING HOOD)			0.8				15	3	+-	 ♦	3	15				0.3			(WAX HOCD)	
9	(ALTERNATE #1)			0.8						 	++						0.3			(ALTERNATE #1)	
	AIR DRYER			1.0				20	1	Н∙	┿┼	1								SPACE	
	SPACE								1	\vdash	+	1								SPACE	
	SPACE								1	•	+	1								SPACE	
	SPACE								1		•—	1								SPACE	
29	SPACE								1		<u> </u>	1								SPACE	
														0.0	2.4	0.0	18.1	1.6	0.0	CONNECTED KVA	22.
														0.0	24	0.0	l 186	1.6	loo	DEMAND KVA	22

STRIP FLUORESCENT FIXTURE

OCCUPANCY SENSOR

OR APPROVED EQUAL

MANUAL PULL STATION

(ALL MOUNTING HEIGHTS ARE TO THE CENTER

OF THE DEVICE, UNLESS OTHERWISE NOTED)

MOUNTING HEIGHTS

RECEPTACLE

LIGHT SWITCHES

RECEPTACLE PANELS MOTOR STARTERS OR

SAFETY SWITCHES

LIGHTING OR

BATTERY OPERATED AUTOMATIC EMERGENCY LIGHTING UNIT WITH NUMBER OF HEADS AS SHOWN

WATTSTOPPER CEILING MOUNT #DT-355

FIRE ALARM SYSTEM

ALARM SIGNAL RECESSED WALL MOUNTED

AUDIO/VISUAL ALARM SIGNAL RECESSED WALL MOUNTED

1'-6" AFF

4'-0" AFF

6'-0" AFF TO TOP

5'-0" AFF TO TOP

