

1100 – 100 Sheppard Ave. East, Toronto ON M2N 6N5 t 416 487 8151 f 416 487 9104 smithandandersen.com

2025-04-28

Town of Whitby 575 Rossland Road East Whitby, ON L1N 2M8

Attention: Adam Cater | Supervisor of Facilities, Building Maintenance

RE: WHITBY FIRE STATION NO.3 HVAC UPGRADE AT 1501 BROCK STREET SOUTH, WHITBY, ONTARIO S+A PROJECT # 23318.001.M.001 SUBSTANTIAL COMPLETION LETTER

Dear Adam:

The certificate of substantial performance (attached to this letter) applies to all work described in the contract documents titled Whitby Fire Station No.3 HVAC upgrade at 1501 Brock Street South, Whitby, Ontario and dated 2025-04-24 The work to which this certificate applies has been reviewed by authorized representatives of the OWNER, CONTRACTOR and ENGINEER and found to be substantially performed and is also the date of commencement of applicable warranties required by the contract documents (excluding items identified on the deficiency list).

The contractor must advertise that the project has been completed in the local construction newspaper. The contractor must also provide proof of the advertisement along with a letter informing the owner and consultant.

The work is hereby declared to be substantially performed according to the contract documents on:

Date: 2025-04-28

A deficiency list addresses the remaining items to be completed by this contractor and is attached hereto (Deficiencies are listed in the S+A mechanical job report #02 dated September 30, 2024). The contractor shall complete or correct all the work on the deficiency list. Warranties for such items on the deficiency list shall not take effect until the work is completed and the contractor has submitted a letter to the owner stating that the work is complete. Warranty shall take effect once the owner agrees that the work is complete and the contractor.

Yours truly,

SMITH + ANDERSEN

Dong Jia, M.Eng., PMP Senior Designer - Mechanical

23318-001 FH#3 Substantial Completion Letter

FORM 9 CERTIFICATE OF SUBSTANTIAL PERFORMANCE OF THE CONTRACT UNDER SECTION 32 OF THE ACT

Construction Act

Town of Whitby										
(County/District/Regional Municipality/Town/City in which premises are situated)										
1501 Brock Street South, Whitby, Ontario										
(street address and city, town, etc., or, if there is no street address, the location of the premises)										
This is to certify that the contract for the following improvement:										
Whitby Fire station No.3 HVAC Upgrade										
(short description of the improvement)										
to the above premises was substantially performed on 2025-04-28										
(date substantially performed)										
Date certificate signed: 2025-04-28										
Deny-ju										
(payment certifier where there is one) (owner and contractor, where there is no payment certifier)										
Name of owner: Town of Whitby										
Address for service: 575 Rossland Road East, Whitby, ON L1N 2M8										
Name of contractor: Service - Toronto										
Address for service: 8125 Highway 50, Vaughan, ON L6H 4S6										
Smith and Andersen Consulting										
Address: 1100-100 Sheppard Avenue East Toronto, Ontario M2N 6N5										
(Use A or B, whichever is appropriate)										
A. Identification of premises for preservation of liens:										
(if a lien attaches to the premises, a legal description of the premises, including all property identifier numbers and addresses for the premises)										
 B. Office to which claim for lien must be given to preserve lien: Town of Whitby 										
575 Rossland Road East, Whitby, ON L1N 2M8										

(if the lien does not attach to the premises, a concise description of the premises, including addresses, and the name and address of the person or body to whom the claim for lien must be given)



1100 – 100 Sheppard Ave. East, Toronto ON M2N 6N5 **t** 416 487 8151 **f** 416 487 9104 **smithandandersen.com**

JOB REPORT

PROJECT NAME: Whitby Fire Station No.3 HVAC	Jpgrade
COMPANY: Modern Niagara Toronto	
ATTENTION: Megan Bell	
PROJECT NO.: 23318.001.M.001	Date: 2024-09-30
JOB REPORT NO.: J002	ISSUED BY: Dong Jia
Building Permit No.: N/A	Application of Occupancy No.: N/A

General review is being performed in accordance with the requirements of the ONTARIO BUILDING CODE and Standard Guidelines of PROFESSIONAL ENGINEERS ONTARIO to ensure that the work is generally being performed in accordance with the Contract Documents.

This list is submitted to assist the Contractor and must not be construed as being a complete list of non-conforming items for the purpose of determining whether the requirements of the Contract Documents have been met.

It is the responsibility of the Contractor to carry out their own inspection to determine that the Contract is being performed in accordance with the requirements of the Contract Documents.

This report is not a substitute for and does not replace the statutory duties of authorities having jurisdiction to carry out their own independent inspections.

The site was visited on 2024-09-24 to review the Mechanical and electrical installations. The following observations have been made:

1.1 GENERAL OBSERVATIONS

- 1.1.1 At the time of visit, AC-1, AC-2 and AHU-1 is functioning and operating in cooling mode.
- 1.1.2 All demolition works of the existing rooftop units and condensing unit have been completed. Flashing on roof has been completed.
- 1.1.3 The GFCI receptacles at roof level are installed for AC-1 and AC-2 as per ME-301.
- 1.1.4 The 14kW Electric duct heater is installed but not yet connected to the power.
- 1.1.5 The HVAC start-up, commissioning and air balancing are not competed.
- 2.1.1 At the time of visit, all new units (AC-1, AC-2, AHU-1 and HP-1) installations are completed.
- 2.1.2 The new 14kW electric duct heater for AHU-1 is installed and wired, however, turned off at the disconnect switch during the site visit.
- 2.1.3 The equipment start-up, commissioning and air balancing were completed. Reports were reviewed with comments. Refer to attachment for comments;

1.2 ITEMS REQUIRING ATTENTION



1.2.1

	equipment are fully functional (both heating mode, cooling mode and economiser mode).
1.2.2	Startup and balancing reports are required for each unit shall be submitted once completed.
1.2.3	Disconnect switch for HP-1 is blocked by the unit, please ensure there is 1m clearance in front of the electrical device as per code requirement.
1.2.4	All the gas lines shall be pressure tested, and labeled by the certified gas technician.
1.2.5	The condensate drain shall be extended closer to the existing floor drain to avoid potential water flooding in the pit. The condensate drain for AC-1 and AC-2 shall be extended closer to the roof drain.
1.2.6	HP-1 Footing shall be completed with patio stone underneath.
1.2.7	Flexible connector for AHU-1 is missing for the discharge duct.
1.2.8	Existing penetration was reused, the contractor shall provide sufficient weatherproof sealant and ensure no water leakage to below. Provide proper flashing material at the penetration as necessary.
2.2.1	The AHU-1 pit opening shall be protected with a steel checker plate to prevent tripping.
2.2.2	The dry wall around the new thermostat for AHU-1 shall be patched and painted to match the adjacent condition.
2.2.3	The air balancing report for AHU-1 shows one air flow rate for the unit. However, this is a two (2) speed AHU. Provide clarification on high and low air flow rate.
	Also, the outdoor air readings are not provided.
	Refer to markup on air balancing report for more detail.
2.2.4	Exposed control wiring was observed on AC- 2. Provide proper flexible conduit and weather protection.
2.2.5	Start-up reports for AHU-1, EDH-1 and HP-1 are missing.
2.2.6	The RTU start-up report do not contain any testing for heat pump heating operation and associated defrost operation. Please confirm with the testing agent such functions were tested as per JCI operation manual and start-up template.
1.3	DISCUSSIONS WITH CONTRACTOR

All units shall be started up and tested by the manufacturer certified technician to ensure the

- 1.3.1Startup and balancing reports are required.
- 2.3.1 Refer to attached comments on the air balancing report.
- 2.3.2 High indoor humidity was noted within the spaces served by the new RTU AC-1 and AC-2 during the visit. The outdoor air condition was recorded at 20C with 80% RH. Both RTUs were not running as the indoor room temperature already reached the setpoint (20C), however, the indoor relative humidify level was recorded at 79% whereas the setpoint was 55%.



2.3.3 As the new RTU units were not provide with dehumidification option (hot gas reheat), the team agreed to further investigate on utilizing the unit provided dehumidification switch (slowing down fan blower to achieve better dehumidification) as well as limiting cooling at low cool stage to achieve better dehumidification.

The RTU heat pump shall still be able to operate at high heat and low heat modes during winter season.

2.3.4 A stand-alone duct mounted dehumidifier can be installed to achieve better humidity control within the spaces, however, require further investigation on feasibility as well as design engineering. Potable dehumidifiers can also be considered as an option to address the high humidity concern.



Item 2.1.2 New electric duct heater in off position.



Item 2.2.1 AHU-1 underground discharge pit to be protected with checker plate.



Item 1.2.7 Flexible connector for AHU-1 is missing on the discharge duct.



Item 2.2.2 Wall finish to be repaired around thermostat for AHU-1 $\,$





Item 2.2.4 Exposed control wiring on AC-2 to be protected



New HP-1 with associated support and other accessories on roof.

END OF MECHANICAL JOB REPORT

23318.001.M.001.J002.docx



15A – 1235 Queensway East, Mississauga, ON L4Y 0G4 T - 905.848.1000 / 416.875.7744 F - 905.848.1001 Email: info@vitalcanada.com

Testing & Balancing Report of HVAC Air Systems

@

Whitby Fire Station No.3 HVAC Upgrade 1501 Brock Street South, Whitby, ON

Consultant : Smith + Anderson

Contractor : Modern Niagara Toronto Inc.



Date: September 5, 2024

VCG Project Number: 3678









Vital-Canada Group Inc. Independent TAB Agency



Page:

Date: September 5, 2024

1

Air Moving Equipment Test Sheet

Project:	W	hitby Fire Station No.	3 HVAC Upgrade - 1501 Brock	Street South, Whitby, ON
Unit Number		E E	xisting Furnace	
Manufacturer			hinson Controls	S&A:
Location			Ground Floor	This shall be new AHU-01.
Area Served / Duty				
Model		Г	TIAH030B22M	
Serial Number			T2E20257	
			Supply Fan	
Operating Condition	ns	Specified	Tested	S&A: Two speed AHU, Please provide
Airflow:				readings under High speed and
Fan Total Capacity	L/s		436	iow speed.
Design Airflow - Distributions	L/s		408	
Return Air	L/s		28	
Outside Air	L/s			
Exhaust Air	L/s			S&A:
Achievement - % of Design	of Design %			Outdoor air flow rates readings
Pressure:				
Inlet Pressure	Pa		-32	
Outlet Pressure	Pa		204	
External Static Pressure	Pa		236	
Fan RPM, Belts and Sheaves:				
Fan RPM / Speed			Direct Drive	
Fan Sheave			Direct Drive	
Motor Sheave			Direct Drive	
Number of Grooves			Direct Drive	
Belt (s)			Direct Drive	
Motor:				
Motor Manufacturer			Genteq	
Motor RPM		200 - 1200	Direct Drive	
Nominal Capacity	kW	0.373	N/A	
Voltage	v	208-230 / 1 / 60 / 50	N/A	
Amperage	A	4.1	N/A	
System:				

High Speed

Motor is operating at:

Notes:

1. There is no outside damper installed at the unit.





Date: March 21, 2024

Duct Traverse Readings (DTR) Test Sheet

Project:		Whitby Fire Station No.3 HVAC Upgrade - 1501 Brock Street South, Whitby, ON								
System:			Existing	Furnace		Test Location	on: Ground Floor			
Area Served /	Duty:						٥.			
						S&	4: s shall be ne	w AHU-01.		
				Re	adings (m/s))				
Point No.	1	2	3	4	5	6	7	8	9	10
А	1.86	1.70	2.03	1.66						
В	1.73	1.68	1.99	1.68						
С	1.71	1.95	2.14	1.82						
D	1.66	1.96	2.10	2.10						
Е										
F										
G										
Н										
Ι										
J										
Total of Readings ÷		Nc	o. of Readings	=	Average m/s	x	Агеа	=	Total L/s	
29.76	÷	1	6	=	1.86	x	0.234	=	436	
Ite	m	Unit	Design	n Data	Test	Data		No	otes	
Duct Size		mm			625	x 375				

		0		
Duct Size	mm		625 x 375	
Duct Area	m ²		0.234	
Airflow	L/s		436	
Central Line SP	Pa		33	



Vital-Canada Group Inc. Independent TAB Agency



Page:

Date: September 5, 2024

3

Air Moving Equipment Test Sheet

Project:	WI	nitby Fire Station No.3	HVAC Upgrades – 1501 Bro	ock Street South, Whitby	y, ON
Unit Number			AC-1		
Manufacturer		F	raser Johnston		
Location			Roof		
Area Served / Duty			N/A		
Model		PH	G6B361002X4A		
Serial Number		,	W2D4266219		
			Supply Fan		
Operating Conditio	ns	Specified	Tested		
Airflow:					
Fan Total Capacity	L/s		324		
Return Air	L/s		273		
Outside Air	L/s		51		
Exhaust Air	L/s				
Achievement - % of Capacity	%				
Pressure:					
Suction Pressure	Pa		-72		
Discharge Pressure	Pa		24		
Total Static Pressure	Pa		96		
Fan RPM, Belts and Sheaves:					
Fan RPM / Speed			Direct Drive		
Fan Sheave			Direct Drive		
Motor Sheave			Direct Drive		
Number of Grooves			Direct Drive		
Belt (s)			Direct Drive		
Motor:					
Motor Manufacturer			Broad-Ocean		
Motor RPM		1050	Direct Drive		
Nominal Capacity	kW	0.56	0.56		
Voltage	V	208-230 / 1 / 50 / 6	N/A		
Amperage	Α	5.4	N/A		

Motor is operating at:

Single Speed

Notes:

1. The outside air damper is 10% open.





Date:

Duct Traverse Readings (DTR) Test Sheet

Project:	Whitby Fire Station No.3 HVAC Upgrades - 1501 Brock Street South, Whitby, ON							
System:	AC-1: Supply Air Test Location: DTR #1							
Area Served / Duty:	N/A							

Readings (m/s)											
Point No.	1	2	3	4	5	6	7	8	9	10	
А	3.85	3.02	3.64	3.58							
В	3.39	3.37	3.85	3.77							
С	3.82	3.96	3.09	3.86							
D											
E											
F											
G											
Н											
I											
J											

Total of Readings	÷	No. of Readings	=	Average m/s	х	Area	=	Total L/s

43.21	÷	12	=	3.60	х	0.090	=	324

Item	Unit	Design Data	Test Data	Notes
Duct Size (O.D.)	mm		500 x 250	
Duct Size	mm		450 x 200	
Duct Area	m ²		0.090	
Airflow	L/s		324	
Central Line SP	Pa		24	





Date:

September 5, 2024

5

Air Moving Equipment Test Sheet

Project:	W	hitby Fire Station No.3	3 HVAC Upgrades – 1501 Bro	ock Street South, Whith	by, ON	
Unit Number			AC-2			
Manufacturer		I	Fraser Johnston			
Location			Roof			
Area Served / Duty			N/A			
Model		PH	G6B601252X4A			
Serial Number			W2D4313095			
Operating Conditions			Supply Fan			
		Specified	Specified Tested			
Airflow:						
Fan Total Capacity	L/s		436			
Return Air	L/s		306			
Outside Air	L/s		130			
Exhaust Air	L/s					
Achievement - % of Capacity	%					
Pressure:						
Suction Pressure	Pa		-80			
Discharge Pressure	Pa		15			
Total Static Pressure	Pa		95			
Fan RPM, Belts and Sheaves:						
Fan RPM / Speed			Direct Drive			
Fan Sheave			Direct Drive			
Motor Sheave			Direct Drive			
Number of Grooves			Direct Drive			
Belt (s)			Direct Drive			
Motor:						
Motor Manufacturer			Broad-Ocean			
Motor RPM		1050	Direct Drive			
Nominal Capacity	kW	0.75	0.75			
Voltage	V	208-230 / 1 / 50 / 6	N/A			
Amperage	A	7.0	N/A			1

Motor is operating at:

Single Speed

Notes:

1. The outside air damper is 10% open.

2. The unit operates at a single speed; direct drive.





Date:

6

Duct Traverse Readings (DTR) Test Sheet

Project:	Whitby Fire Station No.3 HVAC Upgrades - 1501 Brock Street South, Whitby, ON						
System:	AC-2: Supply Air Test Location: DTR #1						
Area Served / Duty:	N/A						

	Readings (m/s)									
Point No.	1	2	3	4	5	6	7	8	9	10
А	3.11	3.35	3.60	3.72	3.69					
В	3.03	3.07	3.09	3.39	3.38					
С	3.30	3.12	3.41	3.38	3.65					
D										
Е										
F										
G										
Н										
Ι										
J										

Total of Readings	÷	No. of Readings	=	Average m/s	Х	Area	=	Total L/s

50.29	÷	15	=	3.35	х	0.130	=	436

Item	Unit	Design Data	Test Data	Notes
Duct Size (O.D.)	mm		700 x 250	
Duct Size	mm		650 x 200	
Duct Area	m ²		0.130	
Airflow	L/s		436	
Central Line SP	Pa		15	







Date: March 21, 2024

7

Duct Traverse Readings (DTR) Test Sheet

Project:	Whitby Fire Station No.3 HVAC Upgrades - 1501 Brock Street South, Whitby, ON						
System:	AC-2: Return Air Test Location: DTR #1						
Area Served / Duty:	N/A						

Readings (m/s)										
Point No.	1	2	3	4	5	6	7	8	9	10
Α	2.85	3.06	3.05							
В	2.98	3.29	3.07							
С	3.50	2.93	2.89							
D										
Е										
F										
G										
Н										
I										
J										

Total of Readings	÷	No. of Readings	=	Average m/s	х	Area	=	Total L/s

$27.64 \div 9 = 3.07 \times 0.030 = 92$	27.64	÷	9	=	3.07	х	0.030	=	92
---	-------	---	---	---	------	---	-------	---	----

Item	Unit	Design Data	Test Data	Notes
Duct Size (O.D.)	mm		250 x 200	
Duct Size	mm		200 x 150	
Duct Area	m ²		0.030	
Airflow	L/s		92	
Central Line SP	Pa		-80	





Date: September 5, 2024

8

Outlet/Inlet Test Sheet

Project:	Whitby Fire Station No.3 HVAC Upgrades – 1501 Brock Street South, Whitby, ON						
System:	AC-2: Return Air	Location:	N/A				

Outlet /	Room	Tuna	Size	Size E. Area		Design Data		Tested Data		Notes
Inlet No.	No.	Type	mm	m ²	L/s	m/s	m/s	L/s	Design	
1		Duct	225 Ø	0.040				82		
2		RAG	575 x 175	0.050				132		
							_			



- MANUAL FOR INSTALLATION DETAILS. REFER TO PROJECT SPECIFICATION, EQUIPMENT SCHEDULE AND DRAWING MOO1 MECHANICAL DETAILS FOR MORE INFORMATION.
- SUPPLY AND INSTALL TRANSITION DUCT FROM NEW AHU-1 TO EXISTING DUCTWORK C/W 25MM ACOUSTIC INSULATION. CONTRACTOR SHALL SITE VERIFY EXISTING DUCTWORK SIZES, LOCATION AND PROVIDE PROPERLY SIZED TRANSITION DUCT TO SUIT.
- NEW THERMOSTAT TO BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AND INSTALLED BY MECHANICAL CONTRACTOR AS SHOWN. COORDINATE WITH OPERATIONS TEAM FOR FINAL LOCATION. SUPPLY AND INSTALL SUFFICIENT CONTROL WIRING TO SUIT FINAL LOCATION. THE NEW THERMOSTAT SHALL BE MOUNTED ON THE INDICATED WALL AT 1200mm ABOVE THE FINISHED FLOOR. PATCH AND PAINT ANY DAMAGED WALL TO MATCH EXISTING CONDITION.
- SUPPLY AND INSTALL NEW REFRIGERANT PIPING IN CEILING SPACE C/W INSULATION, SUPPORT, AND OTHER NECESSARY FITTINGS. THE NEW PIPING SHALL BE SIZED BY CERTIFIED REFRIGERANT TECHNICIAN IN ACCORDANCE WITH MANUFACTURER GUIDELINES. COORDINATE WITH OTHER EXISTING SERVICES IN CEILING SPACE FOR FINAL PIPING ROUTING. MAINTAIN SUFFICIENT SERVICE SPACE FROM UNDERSIDE OF THE NEW PIPING FOR FUTURE MAINTENANCE AND INSPECTION. REFER TO PROJECT SPECIFICATION FOR MORE DETAILS ON PIPING AND INSULATION. TEMPORARILY REMOVE EXISTING T-BAR CEILING AND REINSTATE TO MATCH EXISTING CONDITION AFTER ALL WORK IS COMPLETED. COORDINATE WITH BUILDING OPERATIONS TEAM WITH MINIMUM 48HOURS WRITTEN NOTICE AND DETAILED WORK PLAN PRIOR TO BLOCKING THE UNDERNEATH AREA FOR CEILING ACCESS.

1 NEW PLAN FOR AIR HANDLER UNIT AHU-1 AND HEAT PUMP CONDENSER HP-1 (ME-301) 1:50

- 2. SUPPLY AND INSTALL FULLY INSULATED ROOF CURB ADAPTER FOR NEW ROOF TOP UNITS TO SUIT EXISTING ROOF CURB. CONTRACTOR SHALL SITE VERIFY EXISTING DUCT AND CURB SIZE. THE CURB ADAPTER SHALL BE ONCE PIECE WELDED WITH HEAVY GAUGE GALVANIZED STEEL, RUST PREVENTION SPRAY AND PROVIDED WITH ACOUSTICALLY LINED DUCTS. THE CURB ADAPTER HEIGHT SHALL BE REMAIN AS LOW AS POSSIBLE.
- 3. NEW THERMOSTAT TO BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AND INSTALLED BY MECHANICAL CONTRACTOR AS SHOWN. COORDINATE WITH OPERATING TEAM FOR FINAL LOCATION. SUPPLY AND INSTALL SUFFICIENT CONTROL WIRING TO SUIT FINAL LOCATION. THE NEW THERMOSTAT SHALL BE MOUNTED ON THE INDICATED WALL AT 1200mm ABOVE THE FINISHED FLOOR. PATCH AND PAINT ANY DAMAGED WALL TO MATCH EXISTING CONDITION.
- 4. SUPPLY AND INSTALL NEW GAS PIPE (APPROXIMATELY 2 FEET PER UNIT) TO SUIT THE NEW ROOF TOP UNIT AS INDICATED C/W NEW ISOLATION VALVE, ROOF SUPPORT, UNION, DRIP LEG AND ANY OTHER FITTINGS AS REQUIRED BY LATEST VERSION OF CSA B149.1. PAINT THE NEW AND EXISTING GAS LINE ON ROOF IN YELLOW WITH RUST INHIBITING PAINT. RETAIN CERTIFIED GAS TECHNICIAN TO CONDUCT PRESSURE TESTING AND PROVIDE PERMANENT GAS TAG PRIOR TO THE UNIT START-UP.
- 5. SUPPLY AND INSTALL NEW 25Ø CONDENSATE DRAIN PIPE DOWN TO 300mm ABOVE ROOF SURFACE C/W TRAP. REFER TO M-001 FOR MORE DETAILS.



AC-2



- SUPPLY AND INSTALL NEW GFCI RECEPTACLES MOUNTED TO THE EXISTING WALLS AT MIN 450MM ABOVE ROOF. REFER TO NOTE #8.

ONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCY TO THE CONSULTANT BEFORE PROCEEDING. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL AUTHORIZED IN WRITING BY CONSULTANT.





KEY PLAN

NO.	DATE	DESCRIPTION					
1	2023-10-16	ISSUED FOR 100% REVIEW					
2	2024-01-17	ISSUED FOR TENDER					

ISSUE

PROJECT CONTACT

NAME: DONG JIA

TEL: 647 943 0262

EMAIL: dong.jia@smithandandersen.com

HIS DRAWING SHALL BE READ IN CONJUNCTION WITH MECHANICAL SPECIFICATION SUBMITTED FOR THIS PROJECT.



Smith + Andersen

1100 — 100 Sheppard Ave. East, Toronto On, M2N 6N5 416 487 8151 f 416 487 9104 www.smithandandersen.com

OWNER:

PROJECT:



WHITBY FIRE STATION NO.3 HVAC UPGRADE

1501 BROCK STREET SOUTH WHITBY, ONTARIO TOWN OF WHITBY SHEET TITLE:

GROUND FLOOR PLAN -NEW

PROJECT NUMBER:

23318.001.M.001 DRAWING SCALE:

1:50

DRAWN BY: CHECKED BY DJ/CP SEP. 2023 ΤY SHEET NO:

ME - 301