

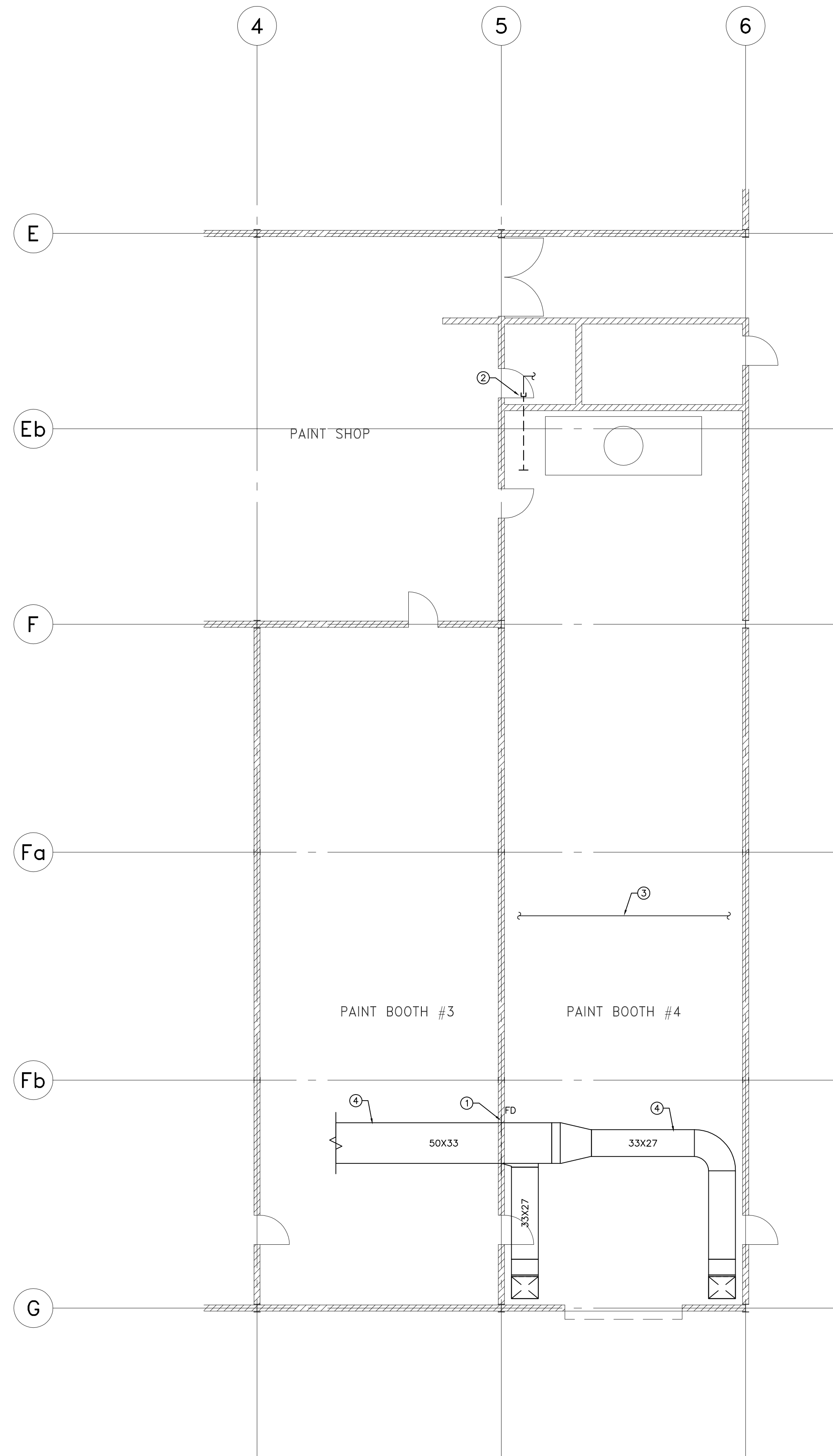
MECHANICAL SPECIFICATION

23 00 05 MECHANICAL GENERAL

1. VISIT JOBSITE PRIOR TO BID CLOSING. DRAWINGS INDICATE APPROXIMATE LOCATION OF EXISTING MECHANICAL EQUIPMENT AND SERVICES. VERIFY EXACT LOCATIONS OF EXISTING MECHANICAL EQUIPMENT AND SERVICES AND ALLOW FOR NECESSARY RELOCATING OF NOTED SERVICES TO SUIT NEW CONSTRUCTION.
2. ALL WORK SHALL CONFORM TO MANITOBA BUILDING CODE AND LOCAL AUTHORITIES. APPLY FOR, OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
3. COORDINATE INSTALLATION WITH ALL RELATED TRADES, ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS. VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING EQUIPMENT AND SERVICES PRIOR TO PROCEEDING WITH WORK.
4. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT.
5. PROVIDE TWO (2) YEAR GUARANTEE FOR ALL EQUIPMENT.
6. ALL CONNECTIONS TO EXISTING BUILDING MECHANICAL SERVICES SHALL BE COORDINATED WITH THE CITY.
7. ALL NECESSARY CUTTING AND PATCHING SHALL BE PERFORMED BY COMPETENT SUB-TRADES EMPLOYED BY MECHANICAL SUB-CONTRACTOR TO SATISFACTION OF THE CITY.
8. COORDINATE WITH THE CITY REPRESENTATIVE FOR REQUIREMENTS REGARDING PROJECT PHASING, WORKING HOURS, SHUT-DOWN PROCEDURES, ACCESS, ETC.
9. PRIOR TO DRILLING HOLES AND/OR OPENINGS IN EXISTING STRUCTURE, THE CONTRACTOR SHALL RETAIN SERVICES OF A STRUCTURAL ENGINEER TO LOCATE AND MARK ALL STRUCTURAL REINFORCING STEEL LOCATED IN AREA WHERE CUTTING OR DRILLING IS PROPOSED. AT NO TIME SHALL REINFORCING STEEL BE CUT WITHOUT PRIOR WRITTEN APPROVAL FROM STRUCTURAL ENGINEER QUALIFIED AND LICENSED TO PRACTICE IN PROVINCE OF MANITOBA.
10. FURNISH TO THE CITY ONE (1) COMPLETE SET OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT REQUIRING MAINTENANCE. REVIEW INSTRUCTIONS WITH CITY'S REPRESENTATIVE TO ENSURE A THOROUGH UNDERSTANDING OF THE EQUIPMENT AND ITS OPERATION.
11. PROVIDE A MARK-UP OF THE CONTRACT DRAWINGS FOR RECORD "AS-BUILT" DRAWINGS, REVISED AS REQUIRED TO SHOW ANY CHANGES FROM THAT ORIGINALLY SHOWN.
12. ALL DUCTWORK AND PIPING TO BE INSTALLED STRAIGHT, PARALLEL TO THE BUILDING WALLS.
13. PROVIDE FIRESTOPPING FOR ALL OPENINGS IN FIRE SEPARATIONS FOR PASSAGE OF PIPES, DUCTS, ETC. TO MAINTAIN INTEGRITY OF FIRE SEPARATIONS AS PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
14. INSTALLATION OF WORK SHALL BE COORDINATED WITH THE CONTRACTOR AND SHALL BE SCHEDULED SO AS NOT TO ENDANGER OR DISTURB USERS OF THE BUILDING. SHUTDOWN OF EXISTING BUILDING SYSTEMS SHALL BE COORDINATED WITH THE CITY.
15. CONTRACTOR SHALL REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL HOOK-UP WITH ELECTRICAL SUB-CONTRACTOR AND ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT. ENSURE PROPER ELECTRICAL CHARACTERISTICS ARE DETERMINED FOR ALL AFFECTED AND RELATED WORK.
16. PRIOR TO INSTALLATION OF THE CEILING, NOTIFY THE CITY AND ARRANGE FOR A FINAL REVIEW OF THE WORK.
 1. ALL DEFICIENCIES SHALL BE COMPLETED WITHIN TWO (2) WEEKS OF AN AGREED PERIOD OF TIME AFTER FINAL REVIEW AND A LETTER SHALL BE SUBMITTED TO THE WINNIPEG TRANSIT REPRESENTATIVE WITHIN THAT TIME ADVISING OF SUCH. FAILURE TO COMPLETE WORK MAY RESULT IN WORK BEING DONE BY THE CITY AND THE COSTS DEDUCTED FROM FINAL PAYMENT.

23 30 00 VENTILATION

1. DUCTWORK
 1. GALVANIZED IRON SCHEDULE:
 - MAX. SIDEGAUGES (USSG) BRACING
 - UP TO 24" 24 NONE
 - 25 TO 30" 24 1" x 1" x 1/8" ANGLE, 4' FROM JOINT.
 - 31 TO 40" 22 1" x 1" x 1/8" ANGLE, 4' FROM JOINT.
 2. ROUND DUCT UP TO 19"Ø NONE
 3. WHERE DUCT WIDTH EXCEEDS 18" IN LARGEST DIMENSION, STIFFEN BY BREAKING SHEETS DIAGONALLY.
 4. DUCTWORK SHALL BE CONSTRUCTED AS RECOMMENDED IN ASHRAE GUIDE.
 5. SEAL ALL JOINTS (NEW AND EXISTING) AIRTIGHT WITH DURO-DYNE S-2 DUCT SEALER OR EQUAL, IN STRICT ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS. PRIOR TO APPLICATION, DUCTWORK TO BE DRY AND FREE OF GREASE, ETC. USE 1/4" BEAD OF MATERIAL ALONG JOINTS. MATERIAL, WHEN DRY, TO HAVE 1/8" DEPTH EXTENDING 1" ON EACH SIDE OF JOINT OR SEAM.
 6. PRIOR TO FABRICATION OF DUCTWORK, CHECK ALL CEILING SPACES AND HEIGHTS FOR CONFLICTION WITH OTHER TRADES.
 7. DUCT AND EQUIPMENT SUPPORTS, HANGERS AND INSERTS
 1. SUPPORT HORIZONTAL DUCTS ON MAXIMUM 8'-0" CENTRES BY NON-PERFORATED GALV. STEEL RIVETTED STRAP FOR DUCTWORK 36" (EITHER DIMENSION) OR LESS, AND MINIMUM 1" x 1" x 1/8" GALV. IRON PASSING UNDER DUCTS 37" OR OVER (EITHER DIMENSION) WITH 3/8" DIAM. THREADED RODS SUSPENDING ANGLES FROM STRUCTURE.
 2. FOR INSERTS IN EXISTING CONCRETE, USE HILT H.K.D. STEEL ANCHORS.
 8. FIRE DAMPERS AND CEILING FIRE STOPS SHALL CONFORM TO MANITOBA FIRE CODE AND LOCAL AUTHORITIES. THE FIRE DAMPER BETWEEN PAINT BOOTH #3 AND PAINT BOOTH # 4 TO BE DYNAMIC TYPE RATED AT 2000 FPM MAXIMUM VELOCITY AND 4" W.C. MAXIMUM PRESSURE DIFFERENCE. PROVIDE TEST REPORT.
 9. PROVIDE ACCESS DOORS AT FIRE DAMPER.



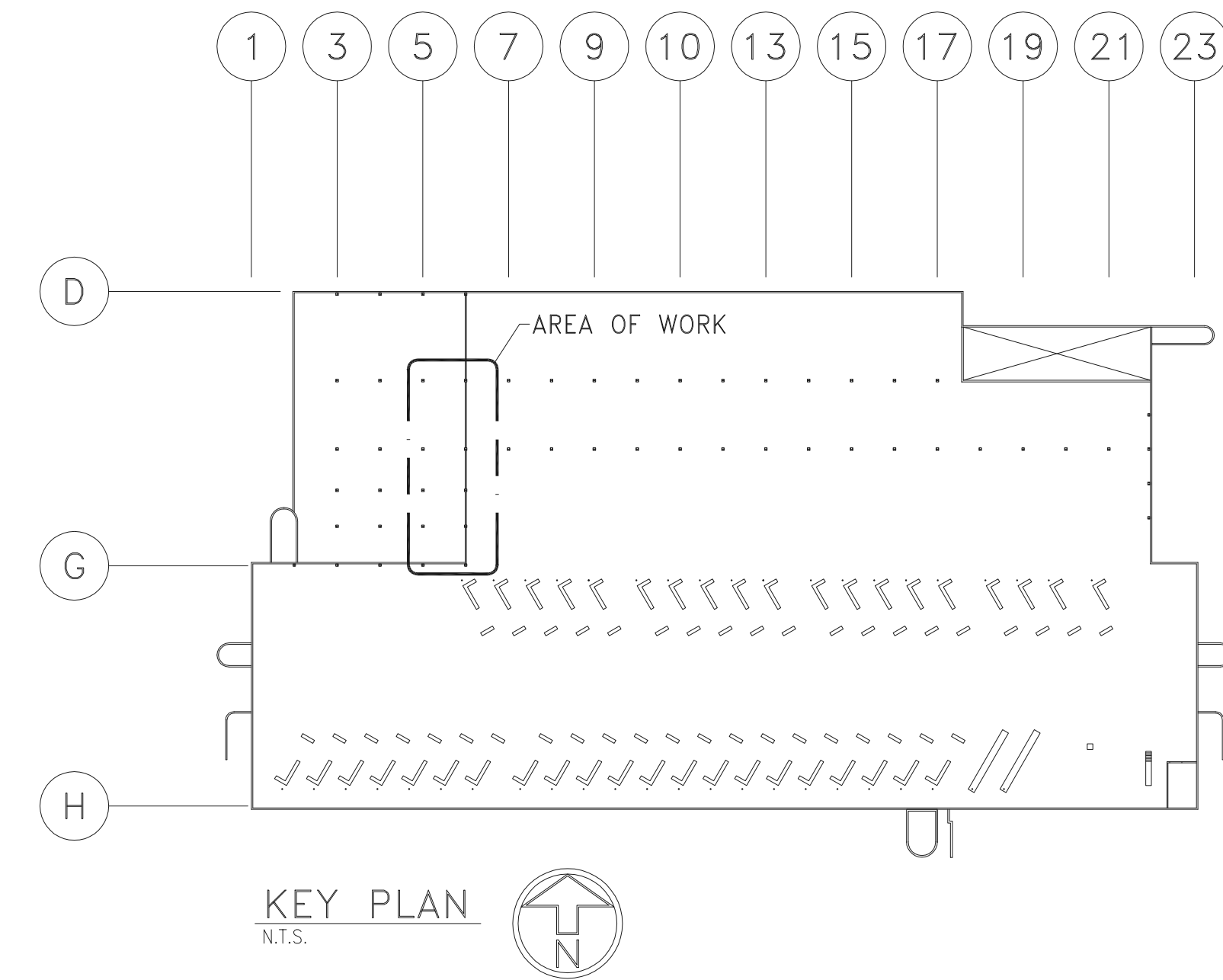
1 PAINT BOOTH #4 PLAN - HVAC
SCALE: 1/8"=1'-0"

GENERAL NOTES

- A. INSTALLATION OF NEW DUCT AND FIRE DAMPER SHALL NOT COMMENCE UNTIL THE COMPLETION OF ASBESTOS ABATEMENT.
- B. ALL EXISTING MECHANICAL SERVICES END PIPING SHALL BE TEMPORARILY SUSPENDED FROM THE ROOF PRIOR TO REMOVAL OF THE EXISTING CEILING FRAMING.

KEY NOTES

1. NEW FIRE DAMPER TO BE INSTALLED ON EXISTING DUCT. PROVIDE DUCT AND CEILING ACCESS DOORS FOR FIRE DAMPER SERVICING IN PAINT BOOTH #4. DOOR RATING SHALL MATCH CEILING RATING.
2. REMOVE PART OF EXISTING DUCT AND CAP-OFF WHERE SHOWN. WALL PATCHING BY ARCHITECTURAL.
3. EXISTING BREATHING AIR PIPING TO REMAIN.
4. EXISTING MAKEUP AIR DUCT TO BOOTH#4 TO REMAIN.



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APEGM Certificate of Authorization
SMS Engineering Ltd.
No. 166 Expiry: April 30, 2013

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The General Contractor shall check & verify all dimensions and report any errors or omissions to the designers.

No.	Date	Issue/Revision	By
2	05/JULY/12	ISSUED FOR BID	PWG
1	15/JUNE/12	ISSUED FOR 99% SUBMISSION	XH

Project WINNIPEG TRANSIT - PAINT BOOTH #4 RENOVATION 421 OSBORNE ST WINNIPEG, MANITOBA		Sheet No. M-1
Sheet Title PAINT BOOTH #4 PLAN - RENOVATION - HVAC		
Design PWG	Drawn IE/RNS	Checked PWG
Scale 1/8"=1'-0"	Date JULY 2012	File 12-106-01