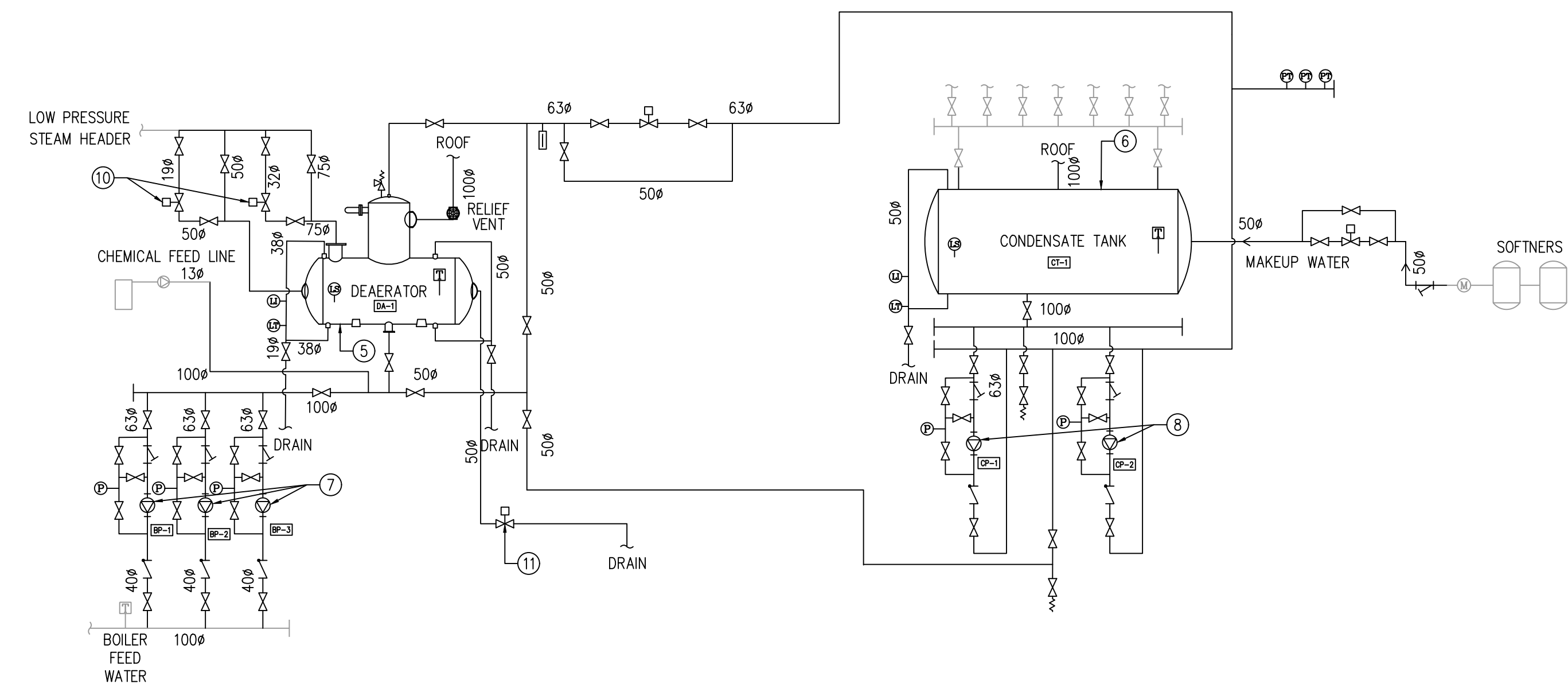


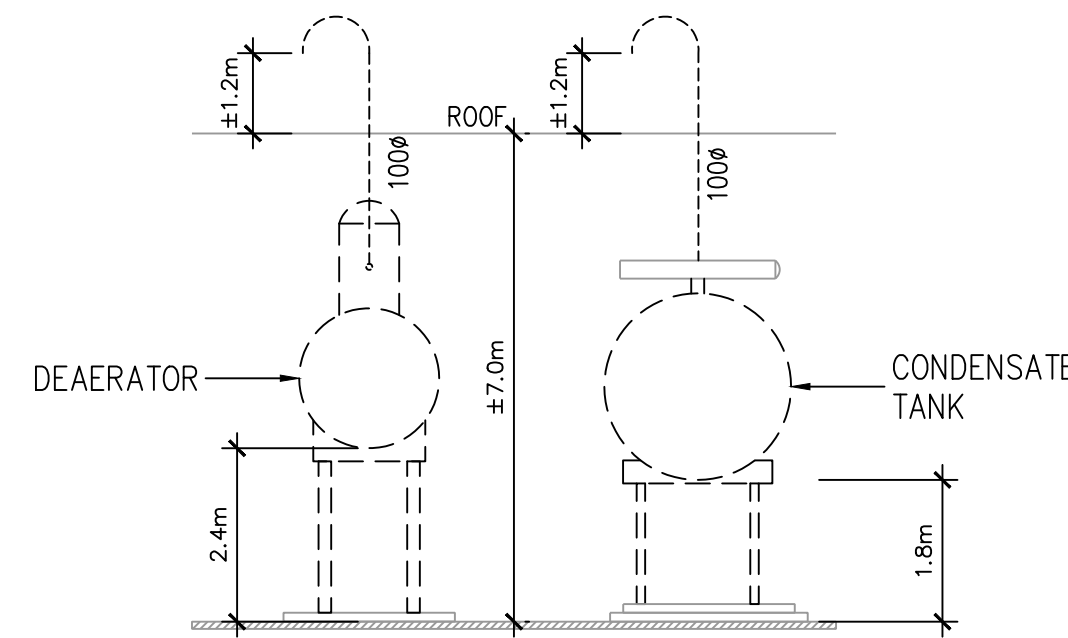
**A** CONDENSER & DEAERATOR SCHEMATIC - DEMOLITION  
SCALE:N.T.S.



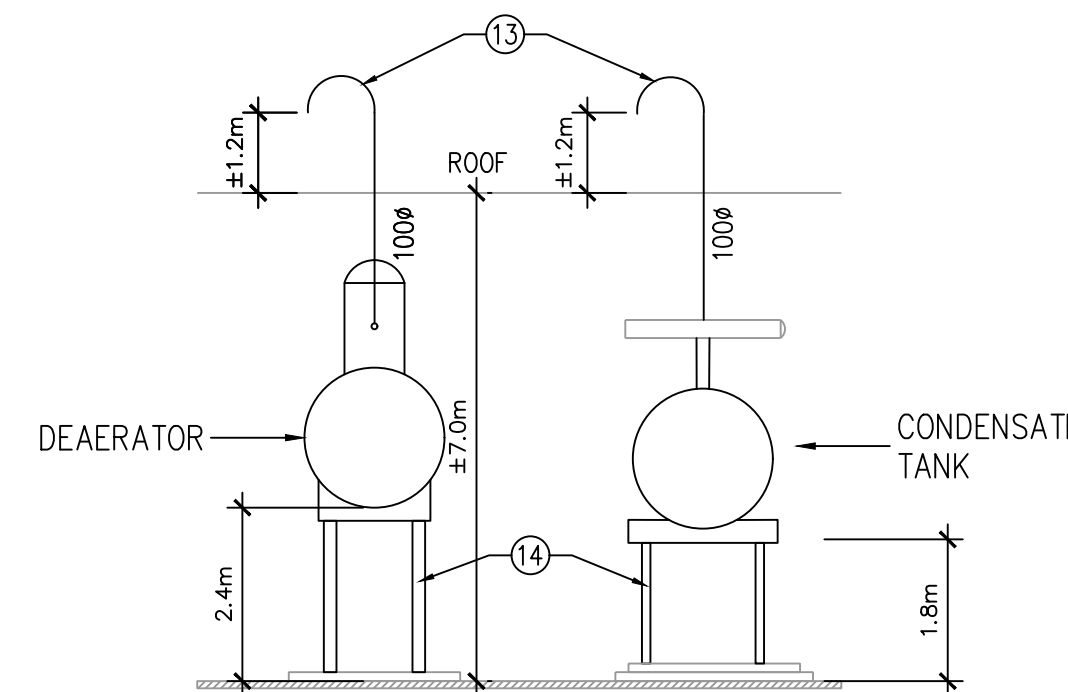
**B** CONDENSER & DEAERATOR SCHEMATIC - CONSTRUCTION  
SCALE:N.T.S.

#### SEQUENCE OF OPERATION

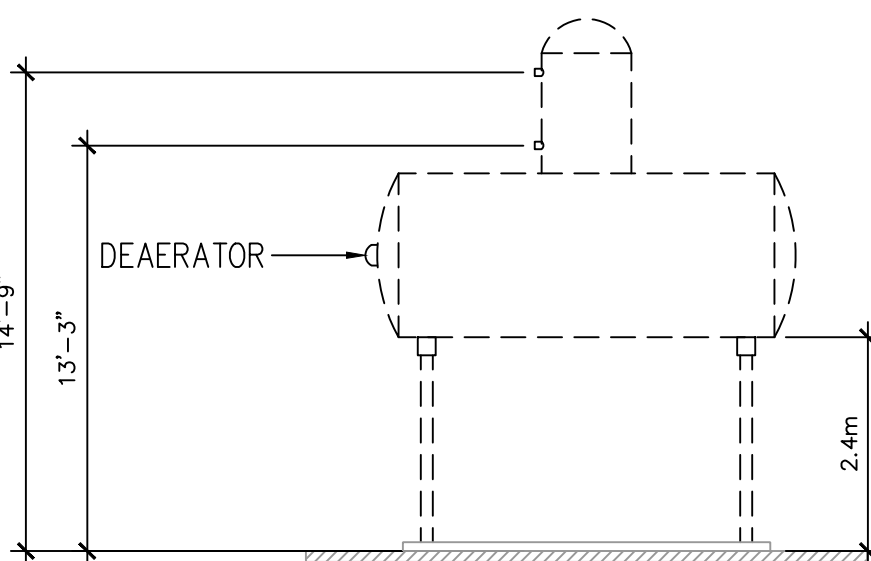
1. ALL SYSTEM PUMPED AND GRAVITY RETURN CONDENSATE COMES BACK TO THE SURGE TANK RECEIVER.
2. COLD WATER MAKE-UP IS PIPED TO THE MODULATING MAKE-UP CONTROL VALVE ON THE SURGE TANK.
3. THE SURGE TANK ELECTRONIC LIQUID LEVEL CONTROL SYSTEM SENDS A 4-20mA CONTROL SIGNAL TO THE SURGE TANK MAKE-UP CONTROL VALVE TO MAINTAIN PRE-SET LEVEL IN THE SURGE TANK RECEIVER.
4. THE SURGE TANK CONDENSATE PUMPS ARE PROGRAMMED TO RUN CONTINUOUSLY AND WILL FEED MAKE-UP WATER TO THE DEAERATOR MODULATING MAKE-UP CONTROL VALVE. ONE PUMP IS THE PRIMARY PUMP WHICH IS ALWAYS RUNNING AND THE 2ND PUMP IS IN STAND-BY. IN THE EVENT THE DEAERATOR LEVEL FALLS TO A LOW LEVEL ALARM, THE DEAERATOR CONTROLLER WILL SEND A SIGNAL TO THE SURGE TANK PANEL AND THE SURGE TANK WILL THEN START THE STANDBY PUMP TO PROVIDE MORE MAKE-UP WATER TO THE DEAERATOR.
5. THE DEAERATOR ELECTRONIC LIQUID LEVEL CONTROL SYSTEM SENDS A 4-20 mA CONTROL SIGNAL TO THE DEAERATOR TANK MAKE-UP CONTROL VALVE TO MAINTAIN PRE-SET LEVEL IN THE DEAERATOR.
6. THE DEAERATOR TANK INCLUDES AN ELECTRONIC OVERFLOW CONTROL SYSTEM. IN THE EVENT THE WATER LEVEL RISES TO A HIGH WATER LEVEL, THE SYSTEM WILL SEND A SIGNAL TO OPEN THE ELECTRONIC OVERFLOW VALVE TO DISCHARGE WATER TO DRAIN.
7. THE DEAERATOR HAS 2 DIRECT STEAM INJECTION POINTS. ONE IS BELOW THE WATER LINE, ONE IS ABOVE THE WATER LINE. EACH HAS ITS OWN PRESSURE REDUCING VALVE, THE LOWER INJECTION POINT AND PRESSURE REDUCING VALVE IS SIZED FOR APPROX 1/3 OF THE TOTAL MAXIMUM STEAM LOAD REQUIRED TO MAINTAIN THE DEAERATOR AT 5-8 PSI, AND THE UPPER INJECTION POINT AND PRESSURE REDUCING VALVE IS SIZED FOR APPROX 2/3 OF THE MAXIMUM LOAD. THE LOWER VALVE WILL BE SET UP TO MAINTAIN THE DEAERATOR AT 8 PSI, AND THE LARGE UPPER VALVE WILL MAINTAIN THE DEAERATOR PRESSURE AT 5 PSI IN THE VENT THE LOWER PRV CANNOT KEEP UP WITH THE LOAD AND THE PRESSURE FALLS OFF TO 5 PSI.
8. THE DEAERATOR BOILER FEED PUMPS ARE DESIGNED TO SUPPLY WATER TO THE BOILER MAKE-UP VALVES AT ALL TIMES. EACH BOILER FEED PUMP WILL BE INTERLOCKED WITH THE INDIVIDUAL BOILER AND CONTROL VALVE.



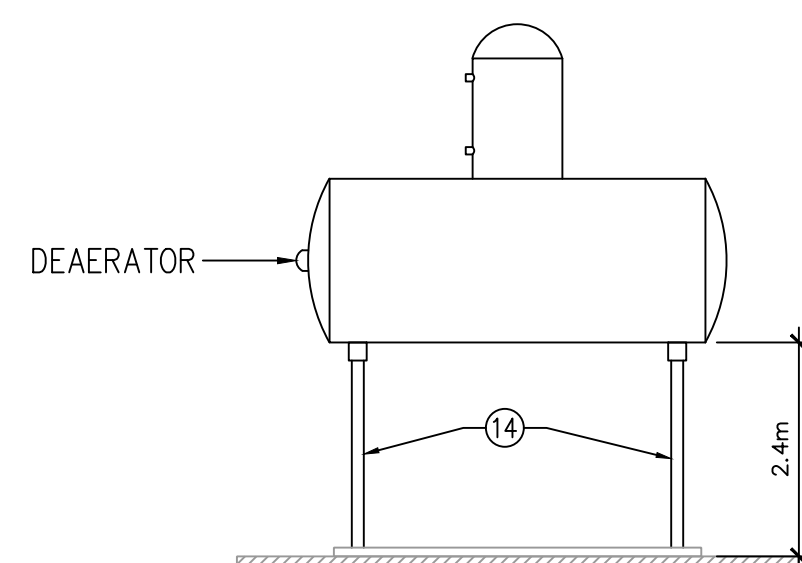
**C** SIDE ELEVATION - DEMOLITION  
SCALE:N.T.S.



**D** SIDE ELEVATION - DEMOLITION  
SCALE:N.T.S.



**E** FRONT ELEVATION - DEMOLITION  
SCALE:N.T.S.



**F** SIDE ELEVATION - CONSTRUCTION  
SCALE:N.T.S.

#### DRAWING NOTES:

1. REMOVE AND DISPOSE OF EXISTING DEAERATOR TANK, SUPPORTING LEGS AND ASSOCIATED PIPING.
2. REMOVE AND DISPOSE OF EXISTING CONDENSATE TANK, SUPPORTING LEGS AND ASSOCIATED PIPING.
3. REMOVE AND DISPOSE OF EXISTING BOILER FEED PUMP AND ASSOCIATED PIPING.
4. REMOVE AND DISPOSE OF EXISTING CONDENSATE PUMP AND ASSOCIATED PIPING.
5. SUPPLY AND INSTALL NEW DEAERATOR TANK AND ASSOCIATED PIPING. PROVIDE NEW THERMAL INSULATION ON NEW TANK AND PIPING.
6. SUPPLY AND INSTALL NEW CONDENSATE TANK AND ASSOCIATED PIPING. PROVIDE NEW THERMAL INSULATION ON NEW TANK AND PIPING.
7. SUPPLY AND INSTALL NEW BOILER FEED PUMP AND ASSOCIATED PIPING. PROVIDE NEW THERMAL INSULATION ON PIPING.
8. SUPPLY AND INSTALL NEW CONDENSATE PUMP AND ASSOCIATED PIPING. PROVIDE NEW THERMAL INSULATION ON PIPING.
9. REMOVE AND DISPOSE PRESSURE REGULATING VALVE WITH ISOLATING VALVE, BYPASS VALVE AND ASSOCIATED CONTROLS.
10. SUPPLY AND INSTALL PRESSURE REGULATING VALVE WITH ISOLATING VALVE, BYPASS VALVE AND ASSOCIATED CONTROLS.
11. SUPPLY AND INSTALL ELECTRIC VALVE ON THE OVERFLOW LINE TO BE CONTROLLED BY DIGITAL LEVEL CONTROL SYSTEM IN THE DEAERATOR.
12. REMOVE AND DISPOSE FEED WATER HEATER AND ASSOCIATED PIPING AND VALVES. CAP AND SEAL STEAM LINE CONNECTED TO THE FEED WATER HEATER. NEW DEAERATOR SHALL BE CAPABLE ON USING COLD WATER MAKE UP AT 40F.
13. PROVIDE NEW VENT LINE FROM DEAERATOR AND CONDENSATE TANK AND TERMINATE ABOVE ROOF. VENT LINE SHALL BE EQUIPPED WITH BIRD SCREEN.
14. PROVIDE SUPPORTING LEGS, SADDLE, MOUNTING BOLTS ETC. FOR THE NEW DEAERATOR AND CONDENSATE TANK.

#### GENERAL NOTE:

1. CONTRACTOR IS RESPONSIBLE FOR ALL VEGETATION. CONTRACTOR TO REPLACE/REINSTATE AFFECTED GRASS AREAS, SHRUBS, TRESS WITH SIMILAR VEGETATION.
2. PROVIDE FIRESTOPPING TO MAINTAIN THE INTEGRITY OF FIRE SEPARATIONS.

LEVEL OF SECURITY | NIVEAU DE SÉCURITÉ  
UNCLASSIFIED | NON CONFIDENTIEL



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1	ISSUED FOR TENDER	2021/03/30
revision	description	date

Do not scale drawings.  
Verify all dimensions and conditions on site and  
immediately notify the engineer of all discrepancies.

A	Detail No.
B	No. du détail
C	drawing no. - where detail required dessin no. - où détail exigé
C	drawing no. - where detailed dessin no. - où détaillé

project title  
titre du projet  
Ottawa Ontario  
PUBLIC SERVICES AND  
PROCUREMENT CANADA

DEAERATOR REPLACEMENT  
BUILDING 3, SHIRLEY'S BAY

drawing title  
titre du dessin  
DEAERATOR & CONDENSATE  
TANK SCHEMATICS

drawn by  
dessiné par  
MAXIME HURTUBISE

designed by  
conc par  
AMIT AGARWAL

approved by  
approuvé par  
SÉBASTIEN SOUCY

tender  
soumission  
2021/03/26  
project manager  
administrateur  
de projets

project date  
date du projet  
2021/01/26

project no.  
no. du projet  
200545

drawing no.  
dessiné no.  
M900