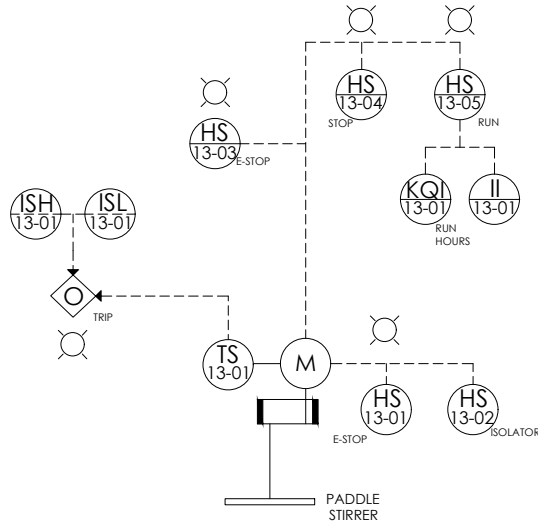


DETAIL 4: INLET WORKS VORTEX DEGRITTER PADDLE STIRRER



NOTE 4:

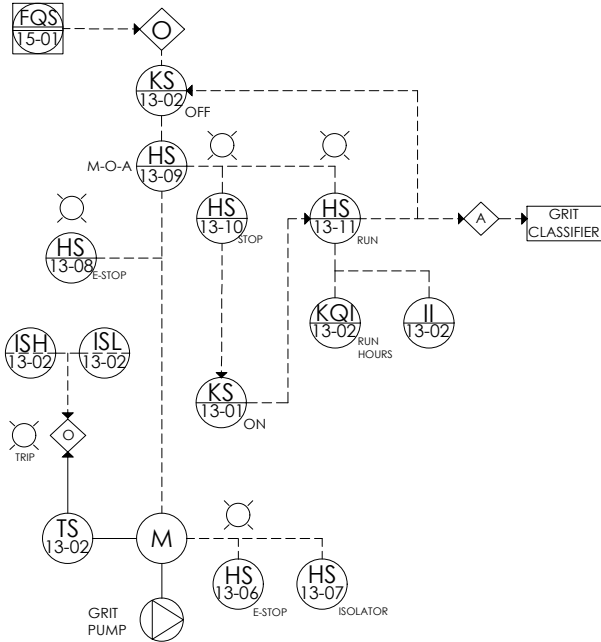
THE PADDLE STIRRER OPERATES ONLY IN MANUAL MODE, A HS13-05 RUN OR HS13-04 STOP CAN BE SELECTED BY THE OPERATOR BY WAY OF PRESS BUTTONS. RUN OR STOP INDICATORS ARE ILLUMINATED BASED ON THE OPERATOR'S SELECTION.

AN IN-FIELD E-STOP (HS13-01), ISOLATOR (HS13-02) AND ON PANEL E-STOP (HS13-03) ARE SET TO CUT POWER TO THE PADDLE STIRRER AND A STOP INDICATOR IS ILLUMINATED.

TRIPS ON THE PADDLE STIRRER AND MOTOR MAY INCLUDE, HIGH TEMPERATURE (TS13-01) IN THE MOTOR, UNDERLOAD CURRENT (ISL13-01) AND OVERLOAD CURRENT (ISH13-01). A TRIP SWITCHES OFF THE PADDLE STIRRER AND THE TRIP INDICATOR IS ILLUMINATED.

WHEN THE PADDLE STIRRER IS IN OPERATION, II13-01 AND KQI13-01 METERS ARE ACTIVATED.

DETAIL 5: INLET WORKS GRIT PUMP



NOTE 5:

A MANUAL, OFF OR AUTOMATIC MODE (HS13-09) CAN BE SELECTED BY THE OPERATOR. IN MANUAL MODE, THE GRIT PUMP CAN BE SWITCHED ON BY HS13-11 OR OFF BY HS13-10 PRESS BUTTONS. RUN OR STOP INDICATORS ARE ILLUMINATED BASED ON THE OPERATOR'S SELECTION IN MANUAL MODE.

IN AUTOMATIC MODE, THE FLOW TOTALIZER (BATCH FLOW) GENERATES A SIGNAL (FQS15-01) THAT SWITCHES ON THE GRIT PUMP AFTER A PREDETERMINED FLOW. THE GRIT PUMP CONTINUES OPERATING FOR AN ADJUSTABLE PERIOD OF TIME AFTER WHICH THE MOTOR IS STOPPED (KS13-02). A RUN INDICATOR IS ILLUMINATED WHEN GRIT PUMP IS RUNNING.

IF AFTER A PREDETERMINED PROGRAMMABLE TIME INTERVAL (SAY 1 HOUR), THE GRIT PUMP HAS NOT SWITCHED ON, IN AUTOMATIC MODE BASED ON A PREDETERMINED FLOW, THEN A TIMER SWITCH (KS13-01) SHALL SWITCH ON THE GRIT PUMP TO RUN FOR A FIXED PERIOD BEFORE SWITCHING OFF (KS13-02). THE RUN SIGNAL OF THE GRIT PUMP IS ALSO SENT TO RUN THE GRIT CLASSIFIER.

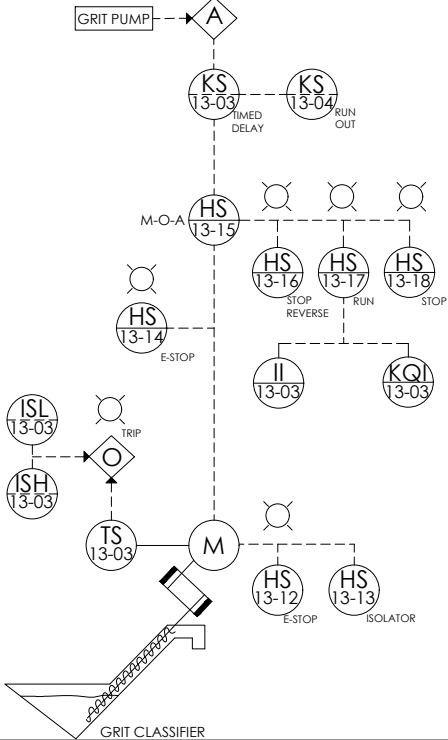
WHEN GRIT PUMP IS IN OPERATION EITHER IN MANUAL OR AUTOMATIC, II13-02 AND KQI13-02 METERS ARE ACTIVATED.

AN IN-FIELD E-STOP (HS13-06), ISOLATOR (HS13-07) AND ON PANEL E-STOP (HS13-08) ARE SET TO CUT POWER TO THE GRIT PUMP, WHETHER IN MANUAL, OFF OR AUTOMATIC MODE. A STOP INDICATOR IS ILLUMINATED WHEN GRIT PUMP IS OFF.

WHEN TRIPS ON THE GRIT PUMP ARE ACTIVATED, POWER TO THE GRIT PUMP IS CUT AND THE TRIP INDICATOR IS ILLUMINATED.

TRIPS ON THE GRIT PUMP AND MOTOR MAY INCLUDE, HIGH TEMPERATURE (TS13-02) IN THE MOTOR, UNDERLOAD CURRENT (ISL13-02) AND OVERLOAD CURRENT (ISH13-02).

DETAIL 6: INLET WORKS GRIT CLASSIFIER



NOTE 6:

A MANUAL, OFF OR AUTOMATIC MODE (HS13-15) CAN BE SELECTED BY THE OPERATOR. IN MANUAL MODE, THE GRIT CLASSIFIER CAN BE SWITCHED ON BY HS13-17 OR OFF BY HS13-18 PRESS BUTTONS. RUN OR STOP INDICATORS ARE ILLUMINATED BASED ON THE OPERATOR'S SELECTION IN MANUAL MODE.

WHEN IN AUTOMATIC MODE, THE GRIT CLASSIFIER STARTS AFTER A DELAY (KS13-03) WHENEVER THE GRIT PUMP IS IN OPERATION IN AUTOMATIC MODE. THE GRIT CLASSIFIER CONTINUES OPERATING FOR AN ADJUSTABLE PERIOD OF TIME (KS13-04) AFTER COMPLETION OF THE GRIT PUMP'S OPERATING CYCLE TO ENSURE THE GRIT CLASSIFIER IS "CLEAN" FOR THE FOLLOWING SEQUENCE (TIME REQUIRED TO COMPLETE ONE FULL ROTATION). RUN INDICATOR IS ILLUMINATED WHEN GRIT CLASSIFIER IS RUNNING.

WHEN HS13-15 TOGGLE SWITCH IS SET TO OFF, HS13-16 IS A SPRING LOADED SWITCH THAT ACTIVATES ONLY WHILE IT IS PRESSED/PUSHED, AND REVERTS TO OFF POSITION WHEN RELEASED. THE REVERSE SWITCH IS ONLY FOR MAINTENANCE PURPOSES TO RELEASE LARGE PIECES OF GRIT THAT ARE STUCK. A REVERSE INDICATOR IS ACTIVATED WHEN THE GRIT CLASSIFIER IS IN REVERSE MODE.

WHEN THE GRIT CLASSIFIER IS IN OPERATION EITHER IN MANUAL, REVERSE OR AUTOMATIC, II13-03 AND KQI13-03 METERS ARE ACTIVATED.

AN IN-FIELD E-STOP (HS13-12), ISOLATOR (HS13-13) AND ON PANEL E-STOP (HS13-14) ARE SET TO CUT POWER TO THE GRIT CLASSIFIER WHETHER IN MANUAL, OFF OR AUTOMATIC MODE. A STOP INDICATOR IS ILLUMINATED WHEN THE GRIT CLASSIFIER IS OFF.

WHEN TRIPS ON THE MOTOR OR GRIT CLASSIFIER ARE ACTIVATED, THE GRIT CLASSIFIER SWITCHES OFF. A TRIP SWITCHES OFF THE GRIT CLASSIFIER AND THE TRIP INDICATOR IS ILLUMINATED.

TRIPS ON THE GRIT CLASSIFIER AND MOTOR MAY INCLUDE, HIGH TEMPERATURE (TS13-03) IN THE MOTOR, UNDERLOAD CURRENT (ISL13-03) AND OVERLOAD CURRENT (ISH13-03).

NOTES:

REFER TO DRAWING 10909001-7000 FOR PROCESS AND INSTRUMENTATION LEGEND.

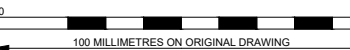
LOCAL MUNICIPALITY: MAP



SPONSOR & REGULATOR: DWS



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BEFORE CONTRACT COMMENCES  
AFTER CONSTRUCTION CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS

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PROJECT  
TSHIAME WWTW REFURBISHMENT

DRAWING DESCRIPTION  
P&ID SIGNAL DIAGRAMS, NOTES & DETAILS:  
PART 2

DRAWING NO.

10909001 - 7019

REVISION

T1

DESIGNED:	JAW	CHECKED:	ECSA PR No: 20130658	J. de la Harpe
DRAWN:	SP	SCALE:	N.T.S	A3
APPROVED:	ECSA PR No: 20130658	J. de la Harpe	INCEPTION DATE:	JUL'24
FILE PATH:	SHAREPOINT / BLOEMFONTEIN - 10909001 TSHIAME WWTW / 04 DOC PROC / 04 DRAW			



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