



- NOTES.**
1. DO NOT SCALE FROM THIS DRAWING.
 2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
 3. ALL MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH "SEWERS FOR SCOTLAND" 2nd EDITION (2007).
 4. FOUL AND SURFACE WATER SEWER PIPES AND PIPE FITTINGS ARE TO BE VERIFIED CLAY TO BS EN 295, OR PLASTIC, HARTLEY QUANTITY SEWER SYSTEM OR EQUIVALENT TO H.W. WATER APPROVAL. CLAY TO BE USED UP TO 300mm & PIPES LARGER THAN THIS WILL BE WATERED CLAY OR CONCRETE.
 5. PIPES ARE TO BE BEDDED AND SURROUNDED (150mm) WITH 10mm SINGLE SIZED PEA GRAVEL, OTHER THAN WHERE COVER IS LESS THAN 900mm - A MINIMUM OF 150mm CONCRETE SURROUND IS TO BE PROVIDED (FURNISHED CLAY OR A REINFORCED CONCRETE SLAB WHICH BRIDGES THE TRENCH IS TO BE PROVIDED (PLASTIC OPTION)).
 6. ALL GULLY CONNECTIONS ARE TO BE 150mm DIAMETER AND INSTALLED TO A MINIMUM GRADIENT OF 1:150.
 7. ALL MANHOLE COVERS AND FRAMES ARE TO BE DUCTILE IRON TO EN 1244-1994 WITH A 675 x 675 mm CLEAR OPENING. FOR STANDARD MANHOLE DETAILS SEE DRG NO. AA4457/EW/08 & 09.
 8. THE INVERT LEVELS OF THE EXISTING DITCHES AT CONNECTION POINTS ARE TO BE CHECKED ON SITE PRIOR TO COMMENCING CONSTRUCTION, AND ANY DISCREPANCIES FROM LEVELS GIVEN ON ATTACHED SCHEDULES ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
 9. DETAILS OF PROCESS WASTE WATER PIPEWORK TO BE CONFIRMED FOLLOWING COMPLETION OF PROCESS DESIGN BY ACCO.

KEY: (EXISTING)

| | |
|---------------------------|--------|
| EXISTING SERVICES | |
| STREETLIGHTING CABLE | |
| EXISTING STREETLIGHT | |
| SURFACE WATER SEWER | |
| FOUL SEWER | |
| PROCESS WASTE WATER SEWER | |
| COMBINED SEWER | |
| BT OVERHEAD | |
| BT UNDERGROUND | |
| WATER MAIN | |
| GAS MAIN | |
| ELECTRICITY | |
| ELECTRICITY (OVERHEAD) | |
| EXISTING LEVEL | 12.304 |

PROPOSED EXTERNAL LEVELS - 5.75
PROPOSED INTERNAL LEVELS - 5.90

KEY: PROPOSED DRAINS

| | |
|---|--|
| PROCESS WASTE WATER DRAIN (UNDERGROUND GRAVITY DRAIN) | |
| PROCESS WATER UNDERGROUND PUMPED MAIN | |
| FOUL DRAIN | |
| FOUL PUMPING MAIN | |
| YARD WATER DRAIN | |
| ROOF WATER DRAIN | |
| MAN-HOLE | |
| CHANNEL DRAINAGE (SURFACE WATER) | |
| CHANNEL DRAINAGE (EXTERNAL HIGH RISK AREA) | |

SURFACE WATER STRATEGY

1. All roof water to be positively collected and discharged to southern swale (Swale A).
2. All hardstanding drainage to be positively collected.
3. Area to East & South of building to be drained to channel line at outer side of circulatory road. Channel line to fall to Sump / Oil Skimmer at South East corner. Following removal of gross solids, water will pass through a full retention Oil Separator and then outfall to southern swale (Swale A). Penstock protection shall be provided to contain any spillages from entering the swale.
4. Area to West of building and at site access road is positively drained to gullies. Water will pass through a full retention Oil Separator and then outfall to main southern swale (Swale A), via Swale B. Penstock protection shall be provided to contain any spillages from entering the swale.
5. Area to North of building to be drained to Northern swale (Swale C), via a Sump / Oil Skimmer at the North West corner. Following removal of gross solids, water will be passed through a full retention Oil Separator and then outfall to Northern swale (Swale C). Penstock protection shall be provided to contain any spillages from entering the swale.
6. Surface water flow to be attenuated in swales. Swales to be unlined and will act as bio retention / bio remediation areas.
7. Discharge from swales to be via Hydrobrakes to restrict discharge to existing gullies to total of 20 litres / second maximum, in accordance with the approved Planning Consent.

| Rev. | Description | DO | KGA | NGA | Rev. | Checked | Approved | Date |
|------|---|----|-----|-----|------|---------|----------|----------|
| U | LAYOUT UPDATED AS PER AA4457/EW/027. HIGH RISK AREA REDUCED IN EXTENT. DRAINAGE CHANNEL POSITIONS ADJUSTED TO SUIT REVERSED HIGH RISK AREA. HIGH RISK AREA SUMP PIT RE-POSITIONED & NOTE ADDED REGARDING HEATED ENCLOSURE SWALE ADJUSTED. RUNS Y14-Y18 & Y19 ADJUSTED. OIL SKIMMER REMOVED FROM Y23. MANHOLES ADDED AT PW1 & PW2. POSITION OF R1-R4 ADJUSTED. HEADWALL AT Y18 RE-POSITIONED TO SUIT CHANGES. NOTES ADDED. CLOSURE NOTES ADDED FOR PROCESS WATER DRAINAGE. | | | | DO | KGA | NGA | 12/09/14 |
| T | LAYOUT UPDATED AS PER DRAWING AA4457/EW/026. FOUL DRAINAGE LAYOUT REVISED NORTH OF WOOD FLOUR STORE. 25m³ STORAGE TANK ADDED. DRAINAGE CHANNEL ADDED AT LOW POINT AT EAST OF SITE BY FUEL OIL TANK AND TALLOW PUMPS OFFLOADING AREA. DRAINAGE LAYOUT REVISED AT SOUTH EAST CORNER. FOUNDATION FOR PIPEBRIDGE SHOWN. HIGH RISK SHADDED AREA ADDED. | | | | DO | KGA | NGA | 12/09/14 |
| S | DRAINAGE LAYOUT AT SOUTH EAST CORNER REVISED IN LINE WITH DRAWING AA4457/EW/020. | | | | DO | KGA | NGA | 12/09/14 |
| R | LAYOUT UPDATED AS PER EW/020. SOLIDS INTERCEPTORS REMOVED. SWALE C SHORTENED AND KLARGESTER INTERCEPTOR RE-POSITIONED AT WEST END OF THIS SWALE. CHANNEL DRAINAGE ADDED AROUND KERBLINE. DRAINAGE STRATEGY UPDATED. | | | | DO | KGA | NGA | 12/09/14 |
| Q | LAYOUT UPDATED AS PER DRAWING AA4457/EW/028. ROOF WATER DRAIN, YARD WATER DRAIN AND FOUL DRAIN LAYOUTS REVISED. SCHEDULING FOR EACH ALSO REVISED. ROOF DRAIN (R1-R4) YARD DRAIN (Y1-20) AND FOUL DRAIN (F1-5) OFFICE DRAINAGE LAYOUT UPDATED. | | | | DO | KGA | NGA | 12/09/14 |
| P | LAYOUT UPDATED AS PER DRAWING AA4457/EW/024. PIPE LAYOUT AROUND THE SOLIDS INTERCEPTOR AT THE NORTH WEST OF THE SITE REVISED. | | | | DO | KGA | NGA | 12/09/14 |
| N | LAYOUT UPDATED AS PER DRAWING AA4457/EW/022. SURFACE WATER STRATEGY UPDATED. IN ABYANCE BOX ADDED. FOUL WASTE STORAGE CHAMBER RELOCATED AND NOTE ADDED. SWALE LEVELS ADJUSTED. LINE OF DOWNPIPE CONNECTION AMENDED AT WASTE WOOD FLOUR STORE. | | | | DO | KGA | NGA | 12/09/14 |
| M | LAYOUT UPDATED AS PER EW/021. DRAIN LAYOUT FROM WOOD FLOUR STORE REVISED. | | | | DO | KGA | NGA | 12/09/14 |
| L | GENERAL UPDATE TO REFLECT CHANGES AS EW/02. | | | | GDH | GDH | NGA | 12/09/14 |

FOR APPROVAL

| Client | Status | Appd. | Date |
|---------------|--------|-------|------|
| ARGENT ENERGY | | | |

Project
 BIODIESEL PRE PROCESSING FACILITY,
 OIL SITES ROAD,
 ELLESMERE PORT

Title
 DRAINAGE LAYOUT

| Drawn | Date | Checked | Date | Approved | Date |
|-------|----------|---------|----------|----------|----------|
| DO | 12.09.14 | KGA | 12.09.14 | KGA | 12.09.14 |

Scales: 1:250 @A0

asher ASSOCIATES
 CIVIL ENGINEERS
 STRUCTURAL ENGINEERS
 PROJECT MANAGERS

Job No. AA4457
 Client Drawing No.
 Drawing No. AA4457/EW/03