PROPERTY LINE CONTINUES

PROPERTY LINE CONTINUES

FENCE LINE

HARBOUR RD.

FENCE LINE

FAREWELL ST.

R 1000mm

DETAIL 7A

LOADING RACK #3

LOADING RACK #4

LOADING RACK #5

LOADING RACK #1

LOADING RACK #2

TANK FARM #1

T-307 T-313 T-314 T-302 T-315 T-303 T-306 T-309

TANK FARM #2

T-301 T-317 T-316 T-113 T-312 T-308 T-310 T-311

TANK FARM #3

T-712 T-709 T-711 T-115 HH20-1 T-704 CLAT-1 ALAT-1

Tank 713 - 14' D x 15" thick pad
Pump 713 - 2'6"W x 7'6"L x 12" thick pad

TANK FARM #4

T-200 T-206 T-405 T-207 T-210 T-404 T-209 T-208

DETAIL 5 TYP.

TANK FARM #5

T-112 T-105 T-708 T-707 T-100 T-109 T-111 T-710 T-106 T-108 T-104 T-110 T-199 T-102 T-103 T-198

DETAIL 4 TYP.

RETAIL SCALE OFFICE

RETAIL SCALE

BOILER RM.

ASOL-1 ASOL-2 CSOL-1 CSOL-2

EMULSION BLDG.

Tank 311 - 14'D x 15" thick pad

WAREHOUSE

NORTH PLANT

B-18 B-9 B-10 B-11 B-7 B-8 B-3 B-14 B-5 B-6 B-13 B-2 B-16 B-15

SILO A

SILO B

DETAIL 5 TYP.

OFFICE & MANUFACTURING BLDG.

MAINTENANCE SHIPPING & RECEIVING OFFICE

SCALE

T-406 T-407 T-408 T-205 T-201 T-203 T-212 B-17 T-202 T-211 T-213

HEATER RM. SOUTH PLANT

OFF LOADING

DETAIL 5 TYP.

MCC

## TANK CHART

**Tanks in Classified Area (Flammable)**

| Tank Farm | Tank# | Tank Content | D(ft) | H (ft) | V(L) |
|---|---|---|---|---|---|
| Tank Farm # 5 | 100 | CUTBACK | 11.5 | 15 | 69,592 |
| Tank Farm # 5 | 102 | CUTBACK | 13 | 36 | 135,306 |
| Tank Farm # 5 | 103 | CUTBACK | 13 | 36 | 135,306 |
| Tank Farm # 5 | 104 | CUTBACK | 13 | 36 | 135,306 |
| Tank Farm # 5 | 105 | CUTBACK | 14 | 38 | 169,999 |
| Tank Farm # 5 | 106 | CUTBACK | 14 | 38 | 169,999 |
| Tank Farm # 5 | 108 | CUTBACK | 14 | 38 | 165,640 |
| Tank Farm # 5 | 109 | CUTBACK | 13 | 33 | 113,517 |
| Tank Farm # 5 | 110 | CUTBACK | 12 | 23 | 69,592 |
| Tank Farm # 5 | 111 | CUTBACK | 14 | 32 | 135,358 |
| Tank Farm # 5 | 112 | Fuel Oil | 11 | 20 | 53,822 |
| Tank Farm # 5 | 198 | CUTBACK | 14 | 38 | 165,640 |
| Tank Farm # 5 | 199 | CUTBACK | 14 | 38 | 165,640 |
| Tank Farm # 5 | 707 | RAW MAT (Mineral Spirit) | 11.5 | 23 | 47,061 |
| Tank Farm # 5 | 708 | Fuel Oil | 11.5 | 16 | 70,347 |
| Tank Farm # 5 | 710 | RAW MAT (Solvent) | 13.9 | 36 | 165,640 |

**Tanks in NonClassified Area (Non Flammable)**

| Tank Farm | Tank# | Tank Content | D(ft) | H (ft) | V(L) |
|---|---|---|---|---|---|
| North Plant | B1B | ASPHALT | 20 | 36 | 373,454 |
| North Plant | B10 | ASPHALT | 20 | 36 | 318,127 |
| North Plant | B11 | ASPHALT | 30 | 32 | 1,162,878 |
| North Plant | B12 | PEPTIZER | 11.5 | 15.8 | 28,192 |
| North Plant | B13 | MACSEAL | 14 | 22.75 | 22,019 |
| North Plant | B14 | RAW MAT (Essoflex) | 14 | 22.75 | 46,947 |
| North Plant | B15 | MACSEAL | 9 | 16 | 35,188 |
| North Plant | B16 | MACSEAL | 14 | 36 | 151,409 |
| North Plant | B2 | PSA-1 | 11.5 | 30 | 91,482 |
| North Plant | B3 | LIGHT CYCLE OIL | 11.5 | 30 | 91,289 |
| North Plant | B4 | Sulphur | 3 | 6 | 1,201 |
| North Plant | B5 | STY | 12 | 20 | 66,194 |
| North Plant | B6 | STY | 12 | 20 | 67,455 |
| North Plant | B7 | ASPHALT | 20 | 36 | 318,127 |
| North Plant | B8 | ASPHALT | 20 | 36 | 321,046 |
| North Plant | B9 | ASPHALT | 20 | 36 | 320,170 |
| North Plant | SILO A | CRUMB RUBBER | N/A | N/A | N/A |
| North Plant | SILO B | LIMESTONE DUST | N/A | N/A | N/A |
| South Plant | 201 | ASPHALT | 67 | 47 | 4,005,959 |
| South Plant | 202 | ASPHALT | 68 | 40 | 3,743,688 |
| South Plant | 203 | ASPHALT | 20 | 35 | 321,307 |
| South Plant | 205 | ASPHALT | 36 | 48 | 1,373,005 |
| South Plant | 211 | ASPHALT | 80 | 48 | 5,656,992 |
| South Plant | 212 | ASPHALT | 80 | 48 | 5,657,476 |
| South Plant | 213 | STY | 34 | 40 | 1,028,378 |
| South Plant | 406 | PSA-1 | 20 | 36 | 320,256 |
| South Plant | 407 | Additive Oil | 20 | 36 | 320,256 |
| South Plant | 408 | Evotherm | 10 | 16 | 35,584 |
| South Plant | B17 | ANTISTRIP | 11.5 | 15 | 44,484 |
| Tank Farm # 1 | 302 | ANTISTRIP | 15 | 38 | 195,152 |
| Tank Farm # 1 | 303 | EMULSION | 15 | 38 | 195,152 |
| Tank Farm # 1 | 306 | EMULSION | 14 | 38 | 169,999 |
| Tank Farm # 1 | 307 | EMULSION | 11.5 | 35 | 102,946 |
| Tank Farm # 1 | 309 | EMULSION | 14 | 38 | 169,999 |
| Tank Farm # 1 | 313 | EMULSION | 12 | 38 | 135,307 |
| Tank Farm # 1 | 314 | EMULSION | 12 | 38 | 121,696 |
| Tank Farm # 1 | 315 | EMULSION | 13.75 | 38 | 159,779 |
| Tank Farm # 2 | 113 | WATER | 11 | 20 | 53,822 |
| Tank Farm # 2 | 301 | EMULSION | 15 | 38 | 195,152 |
| Tank Farm # 2 | 308 | EMULSION | 14 | 38 | 169,999 |
| Tank Farm # 2 | 310 | EMULSION | 13 | 37 | 136,546 |
| Tank Farm # 2 | 311 | EMULSION | 12 | 33 | 105,684 |
| Tank Farm # 2 | 312 | EMULSION | 12 | 38 | 136,108 |
| Tank Farm # 2 | 316 | EMULSION | 14 | 36 | 151,370 |
| Tank Farm # 2 | 317 | EMULSION | 12 | 38 | 121,696 |
| Tank Farm # 3 | 115 | EMULSIFIER | 0 | 23 | 45,862 |
| Tank Farm # 3 | 701 | ANI Latex | 10 | 20.6 | 88,240 |
| Tank Farm # 3 | 702 | CAT Latex | 10 | 20.6 | 88,240 |
| Tank Farm # 3 | 704 | Raw Material (MQK) | 9 | 25.5 | 45,773 |
| Tank Farm # 3 | 709 | Raw Material (4318) | 12 | 24 | 88,240 |
| Tank Farm # 3 | 711 | Raw Material (SAL) | 12 | 24 | 88,240 |
| Tank Farm # 3 | 712 | Raw Material (W5) | 12 | 24 | 88,240 |
| Tank Farm # 3 | HH20-1 | Hot Water | 13.5 | 38 | 156,922 |
| Tank Farm # 4 | 200 | PSA-1 | 12 | 24 | 70,592 |
| Tank Farm # 4 | 206 | ASPHALT | 20 | 38 | 338,044 |
| Tank Farm # 4 | 207 | ASPHALT | 20 | 38 | 338,044 |
| Tank Farm # 4 | 208 | ASPHALT | 20 | 38 | 338,044 |
| Tank Farm # 4 | 209 | ASPHALT | 20 | 38 | 338,044 |
| Tank Farm # 4 | 210 | MONAR | 20 | 38 | 338,044 |
| Tank Farm # 4 | 404 | ASPHALT | 20 | 38 | 338,044 |
| Tank Farm # 4 | 405 | ASPHALT | 20 | 38 | 338,044 |

**LEGEND**

CLASS I–FLAMMABLE GASES, VAPORS OR LIQUIDS

- CLASS 1 ZONE 0
- CLASS 1 ZONE 1
- CLASS 1 ZONE 2

CLASS II–COMBUSTIBLE DUSTS

- CLASS II ZONE 22

NOTES:

ENGINEERING STAMPS

REFERENCE DRAWINGS

| NO. | DESCRIPTION | DWG. NO. |
|---|---|---|
| 1 | ELECTRICAL AREA CLASSIFICATION DETAILS | 118-10-0101-02 |

REVISIONS

| NO. | DATE | DESCRIPTION | BY | CKD. | APP. |
|---|---|---|---|---|---|

ENGINEERING RECORD

| | | |
|---|---|---|
| DRAWN | 03MAR2022 | A.G. |
| CHK'D | 03MAR2022 | V.J. |
| APPROVED | 03MAR2022 | B.P. |
| PROJECT NO. | DATE | BY |

McASPHALT

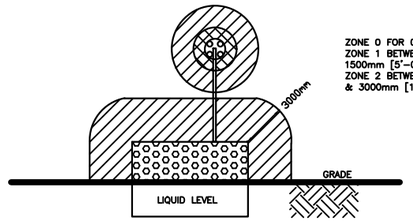
PLANT: 118–OSHAWA

TITLE: ELECTRICAL AREA CLASSIFICATION SITE PLAN

| SCALE | PLANT NO. | DRAWING NO. | SHEET | REV |
|---|---|---|---|---|
| NTS | 118 | 10-0101 | 01 | 00 |

NOTE:

A COVERED SUMP IS CLASSIFIED SIMILAR TO A STORAGE TANK

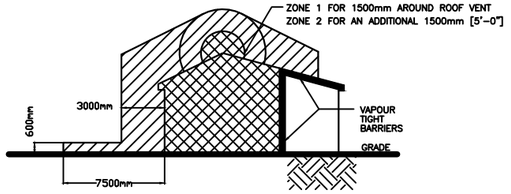



1 U/G COVERED SUMP OILY WATER SEPARATOR IN ADEQATELY VENTILATED AREA

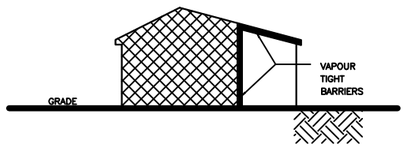
NOTES:

AN ENCLOSED AREA (ROOM OR BUILDING) THAT IS ADJACENT TO A CLASSIFIED AREA MAY BE UNCLASSIFIED IF IT IS SEPARATED FROM THE CLASSIFIED AREA BY A VAPORTIGHT BARRIER AS SHOWN. AN EXAMPLE IS AN ELECTRICAL ROOM SEPARATED FROM A PROCESS ROOM ON A COMMON SKID BUILDING

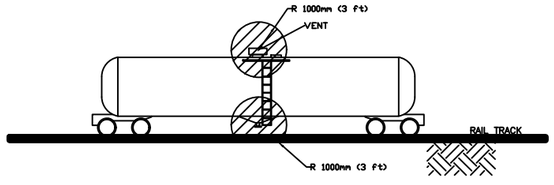
WHERE THE ADJACENT AREA IS CLASSIFIED ZONE 1. THE VAPORTIGHT BARRIER MUST ALSO SEPARATE THE ENCLOSED AREA FROM THE ZONE 2 AREA THAT SURROUNDS THE ZONE 1 AREA ENCLOSED AREA ADJACENT TO A CLASSIFIED AREA




2A (CLASS 1 ZONE 1)



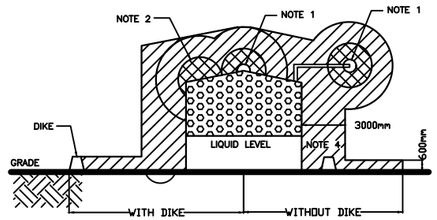

2B ENCLOSED AREA ADJACENT TO A CLASSIFIED AREA (CLASS 1 ZONE 2)




3 RAIL CAR OFFLOADING-ASPHALT

NOTES:

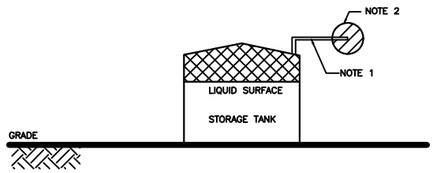
1. ZONE 0 FOR 500mm [1'-6"] AROUND VENT.
   ZONE 1 BETWEEN 500mm [1'-6"] AND 1500mm [5'-0"]
   ZONE 2 FOR AN ADDITIONAL 1500mm [5'-0"]
2. ZONE 1 FOR 1500mm [5'-0"] AROUND THIEF HATCH
   ZONE 2 FOR AN ADDITIONAL 1500mm [5'-0".
3. THE AREA IN AND AROUND FLAMMABLE LIQUID STORAGE TANKS IN NON-ENCLOSED ADEQUATELY VENTILATED AREAS ARE CLASSIFIED AS SHOWN. TANKS THAT STORE PRODUCED WATER THAT IS LIKELY TO CONTAIN FLAMMABLES ON ROUTINE OCCASIONS ARE ALSO CLASSIFIED AS TANKS HANDLING FLAMMABLES, THEREFORE, THE TYPICAL CLASSIFICATION OF TANKS ON McASPHALT FACILITIES IS SHOWN IN THIS DETAIL.
4. A DIKE THAT IS HIGHER THAN 600mm [2'-0"] IS CONSIDERED A BARRIER TO LIMIT THE EXPECTED EXTENT OF HEAVIER-THAN-AIR VAPORS. HOWEVER, IF THE DIKE IS WITHIN THE 3000mm [10'-0"] RADIUS SURROUNDING THE TANK, HEAVIER-THAN-AIR VAPORS MAY BE EXPECTED TO SPREAD BEYOND THE DIKE.



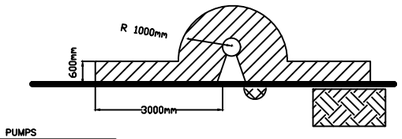

4 STORAGE TANK FOR FLAMMABLE LIQUIDS

NOTE:

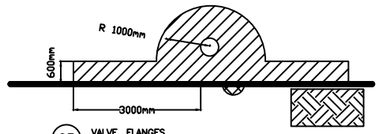
1. THE INTERIOR OF THE VENT PIPING IS ZONE 1. CROSS HATCHING AS BEEN OMITTED FOR DRAWING CLARITY
2. 500mm (18") RADIUS AROUND VENT



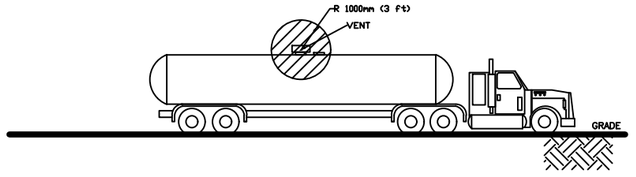

5 STORAGE TANK FOR COMBUSTIBLE LIQUIDS




6A PUMPS



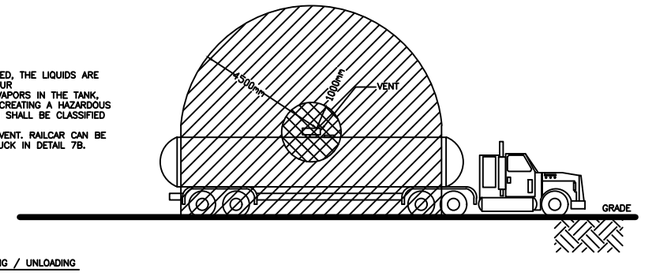

6B VALVE, FLANGES




7A ASPHALT TRUCK LOADING/UNLOADING

NOTES:

1. WHEN A TANKER TRUCK IS BEING LOADED, THE LIQUIDS ARE LIKELY PRODUCE FLAMMABLE VAPOUR THESE VAPOURS, AND ANY TRANSIENT VAPORS IN THE TANK, WILL BE VENTED TO THE ATMOSPHERE CREATING A HAZARDOUS LOCATION. THE TRUCK LOADING STATION SHALL BE CLASSIFIED AS SHOWN
2. RAILCAR OFFLOADING- CUTBACK & SOLVENT. RAILCAR CAN BE CLASSIFIED SIMILAR TO THE TANKER TRUCK IN DETAIL 7B.




7B CUTBACK & SOLVENT TRUCK LOADING / UNLOADING

LEGEND

- CLASS 1 ZONE 0
- CLASS 1 ZONE 2 600mm ABOVE GRADE (UNLESS OTHERWISE NOTED)
- CLASS 1 ZONE 1
- NONCLASSIFIED
- CLASS 1 ZONE 2

GENERAL NOTES (ZONE METHOD):

THE DECISION TO CLASSIFY AN AREA AS A HAZARDOUS LOCATION IS BASED ON THE POSSIBILITY THAT AN IGNITABLE MIXTURE OF FLAMMABLE MATERIALS MAY BE PRESENT. CLASS 1 LOCATIONS ARE LOCATIONS IN WHICH THE FLAMMABLE MATERIAL IS A GAS OR VAPOR.

THE ZONE IS DETERMINED BY THE DEGREE TO WHICH SUCH FLAMMABLE MIXTURES ARE LIKELY TO OCCUR:

ZONE 0: FLAMMABLE CONCENTRATIONS ARE PRESENT CONTINUOUSLY OR FOR LONG PERIODS OF TIME.

ZONE 1: FLAMMABLE CONCENTRATIONS ARE LIKELY TO EXIST UNDER NORMAL OPERATING CONDITIONS; OR MAY FREQUENTLY OCCUR DUE TO MAINTENANCE, REPAIR, LEAKAGE, OR FAULT CONDITIONS; OR ADJACENT TO A ZONE 0 LOCATION FROM WHICH VAPORS COULD BE COMMUNICATED

ZONE 2: FLAMMABLE CONCENTRATIONS ARE NOT LIKELY TO OCCUR UNDER NORMAL OPERATING CONDITIONS, BUT IF THEY DO, WILL ONLY EXIST FOR A SHORT PERIOD: OR ADJACENT TO A ZONE 1 LOCATION FROM WHICH VAPORS COULD BE COMMUNICATED.

CLASS 1 FLAMMABLE MATERIALS ARE FURTHER BROKEN DOWN INTO GROUPS:

| | |
|---|---|
| GROUP IIA: | EXAMPLES, ACETONE, ALCOHOL, BUTANE, GASOLINE, METHANE, PROPANE. |
| GROUP IIB: | EXAMPLES, ETHYLENE, HYDROGEN SULFIDE |
| GROUP IIC: | EXAMPLES, ACETYLENE, HYDROGEN. |

FINALLY, THE AREA CLASSIFICATION WILL INCLUDE A TEMPERATURE CODE WHICH IS DETERMINED BY THE MAXIMUM ALLOWABLE SURFACE TEMPERATURE OF HEAT PRODUCING EQUIPMENT. THIS CODE IS TYPICALLY AN EQUIPMENT MARKING AND IS USED FOR THE SELECTION OF SPECIFIC EQUIPMENT FOR THE AREA

THUS, A COMPLETE AREA CLASSIFICATION WILL BE SIMILAR TO THIS:

CLASS 1, ZONE 2, GROUP IIA, T2 (T-RATING BASED ON AIT OF ASPHALT)

EQUIPMENT APPROVALS

ACCORDING TO THE CANADIAN ELECTRICAL CODE, ELECTRICAL EQUIPMENT SHOULD NOT BE USED IN A HAZARDOUS LOCATION, UNLESS THE EQUIPMENT IS ESSENTIAL TO THE PROCESSES BEING CARRIED ON IN THE HAZARDOUS LOCATION. WHEN IT IS NECESSARY TO INSTALL ELECTRICAL EQUIPMENT IN A HAZARDOUS LOCATION. THE EQUIPMENT AND THE INSTALLATION MUST BE APPROVED FOR THE LOCATION.

IN GENERAL, NO ELECTRICAL EQUIPMENT IS PERMITTED IN A CLASS 1, ZONE 0 LOCATION.

ELECTRICAL EQUIPMENT INSTALLED IN A CLASS 1, ZONE 1 LOCATION MUST BE APPROVED FOR CLASS 1, ZONE 1.

IN GENERAL, ELECTRICAL EQUIPMENT INSTALLED IN A CLASS 1, ZONE 2 LOCATION MUST BE APPROVED FOR CLASS 1, ZONE 2. EQUIPMENT PERMITTED IN ZONE 1 IS ALSO PERMITTED IN ZONE 2. SOME SPECIFIC EQUIPMENT, SUCH AS MOTORS, TRANSFORMERS AND SOLENOIDS THAT DO NOT INCORPORATE ARCING. SPARK-PRODUCING OR HEAT-PRODUCING COMPONENTS ARE PERMITTED FOR USE IN ZONE 2 AREAS. HOWEVER, IN THIS CASE, THE TEMPERATURE CODE RATING IS CRITICAL AND AN ENGINEER MUST REVIEW THE EQUIPMENT AND PROVIDE APPROVAL FOR THE USE OF SUCH EQUIPMENT. NOTE THAT SINGLE-PHASE MOTORS CONTAIN ARCING SWITCHES AND MUST BE APPROVED FOR USE IN CLASS 1, ZONE 1 OR ZONE 2 AREAS.

ADEQUATE VENTILATION

ADEQUATE VENTILATION MEANS THAT THE VAPOR-AIR MIXTURE IS PREVENTED FROM EXCEEDING A CONCENTRATION OF 25% OF THE LOWER EXPLOSIVE LIMIT (LEL) OF THE VAPOR. IN PRACTICE, AN AREA MAY BE CONSIDERED ADEQUATELY VENTILATED IF NATURAL OR MECHANICAL VENTILATION PROVIDES A MINIMUM OF SIX AIR CHANGES PER HOUR. A SAFETY FACTOR OF TWO IS USUALLY APPLIED, SO THE VENTILATION SHOULD BE DESIGNED TO PROVIDE TWELVE AIR CHANGES PER HOUR. AN OUTSIDE LOATION IS NORMALLY CONSIDERED TO BE AN ADEQUATELY VENTILATED LOCATION.

THE DETAILS SHOWN ON THIS DRAWING HAVE BEEN DEVELOPED FROM PUBLISHED STANDARDS INCLUDING API RP505, NFPA 30, AND NFPA70, THE CANADIAN ELECTRICAL CODE, THE DETAILS ARE SHOWN HERE AS GUIDELINES ONLY.

NOTES:

ENGINEERING STAMPS

REFERENCE DRAWINGS

| NO. | DESCRIPTION | DWG. NO. |
|---|---|---|
| 1 | ELECTRICAL AREA CLASSIFICATION SITE PLAN | 118-10-0101-01 |

REVISIONS

| NO. | DATE | DESCRIPTION | BY | CKD. | APP. |
|---|---|---|---|---|---|

ENGINEERING RECORD

| | | |
|---|---|---|
| DRAWN | 03MAR2022 | A.G. |
| CHK'D | 03MAR2022 | V.J. |
| APPROVED | 03MAR2022 | B.P. |
| PROJECT NO. | DATE | BY |

McASPHALT

PLANT: 118-OSHAWA

TITLE: ELECTRICAL AREA CLASSIFICATION DETAILS

| SCALE | PLANT NO. | DRAWING NO. | SHEET | REV |
|---|---|---|---|---|
| NTS | 118 | 10-0101 | 02 | 00 |