Drawings – Volume 4

Utilities and Lighting
# Drawings – Volume 4

## Utilities and Lighting

<table>
<thead>
<tr>
<th>Drawing/Sketch No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>32-481-301</td>
<td>Existing Electric Equipment – Terminal</td>
<td>3</td>
</tr>
<tr>
<td>32-481-302</td>
<td>Proposed Electric Equipment – Terminal</td>
<td>4</td>
</tr>
<tr>
<td>32-481-303</td>
<td>Power Schematic</td>
<td>5</td>
</tr>
<tr>
<td>32-481-304</td>
<td>Proposed Electric Equipment – Waterfront Rd, At grade &amp; CROP.</td>
<td>6</td>
</tr>
<tr>
<td>32-481-500</td>
<td>Terminal Utilities – Water Lines</td>
<td>7</td>
</tr>
<tr>
<td>(Sheets 1 to 8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-501</td>
<td>Terminal Utilities – Sanitary Sewers</td>
<td>15</td>
</tr>
<tr>
<td>(Sheets 1 to 8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-502</td>
<td>Terminal Utilities – Storm Sewers</td>
<td>23</td>
</tr>
<tr>
<td>(Sheets 1 to 8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-503</td>
<td>Terminal Utilities – Gas Lines</td>
<td>31</td>
</tr>
<tr>
<td>(Sheets 1 to 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-504</td>
<td>Terminal Utilities – BC Hydro &amp; Telus</td>
<td>32</td>
</tr>
<tr>
<td>(Sheets 1 to 8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-509</td>
<td>CROP Utilities – Water Lines</td>
<td>40</td>
</tr>
<tr>
<td>(Sheets 1 to 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-510</td>
<td>CROP Utilities – Sanitary Sewers</td>
<td>43</td>
</tr>
<tr>
<td>(Sheets 1 to 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-511</td>
<td>CROP Utilities – Storm Sewers</td>
<td>46</td>
</tr>
<tr>
<td>(Sheets 1 to 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-512</td>
<td>CROP Utilities – Gas Lines</td>
<td>49</td>
</tr>
<tr>
<td>(Sheets 1 to 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-513</td>
<td>CROP Utilities – BC Hydro &amp; Telus</td>
<td>52</td>
</tr>
<tr>
<td>(Sheets 1 to 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-481-514</td>
<td>Existing and Proposed Outfall Locations</td>
<td>55</td>
</tr>
</tbody>
</table>
EXISTING ELECTRICAL EQUIPMENT

LEGEND

- EXISTING HIGH MAST LIGHT TOWER TO REMAIN
- EXISTING HIGH MAST LIGHT TOWER TO BE REMOVED
- EXISTING HIGH MAST LIGHT TOWER TO BE RELOCATED
- EXISTING 12kV SUBSTATION TO REMAIN
- EXISTING 12kV SUBSTATION TO BE REMOVED
- EXISTING 12kV SUBSTATION TO BE RELOCATED
- EXISTING 347/600V LOCAL DISTRIBUTION PANEL TO REMAIN
- EXISTING 347/600V LOCAL DISTRIBUTION PANEL TO BE REMOVED
- EXISTING CRANE RAIL RECEPTACLE PIT TO REMAIN
- EXISTING BULL RAIL SERVICE BOX TO REMAIN

ABBREVIATIONS

- BRP: BULL RAIL SERVICE BOX
- CMS: CENTERM SERVICE BOX
- CMW: CONTAINER MAINTENANCE WAREHOUSE
- COF: CONTAINER OPERATIONS FACILITY
- CRS: CENTERM SITE SERVICES FACILITY
- CSS: CENTERM SITE SUBSTATION
- DD: DOUBLE DAVIT
- HVSC: HIGH VOLTAGE SHORE CONNECTION
- LT: LIGHT TOWER
- MG: MAIN GATE
- RMGP: RAIL MOUNTED GANTRY PLUG
EXISTING HIGH MAST LIGHT TOWER
PROPOSED DOUBLE DAVIT LUMINAIRE POLE
EXISTING 12kV SUBSTATION
RELOCATED 12kV SUBSTATION
PROPOSED HIGH MAST LIGHT TOWER
RELOCATED HIGH MAST LIGHT TOWER
PROPOSED 12kV SUBSTATION
EXISTING 347/600V LOCAL DISTRIBUTION PANEL
EXISTING CRANE RAIL RECEPTACLE PIT
PROPOSED RMG RECEPTACLE PIT
EXISTING BULL RAIL SERVICE BOX
RELOCATED BULL RAIL SERVICE BOX
PROPOSED GENERATOR
PROPOSED ELECTRICAL EQUIPMENT

LEGEND

EXISTING HIGH MAST LIGHT TOWER
PROPOSED HIGH MAST LIGHT TOWER
RELOCATED HIGH MAST LIGHT TOWER
PROPOSED DOUBLE DAVIT LUMINAIRE POLE
EXISTING 12kV SUBSTATION
RELOCATED 12kV SUBSTATION
PROPOSED 12kV SUBSTATION
PROPOSED BULL RAIL SERVICE BOX
PROPOSED LIGHT TOWER
PROPOSED GENERATOR

ABBREVIATIONS

BRSB: BULL RAIL SERVICE BOX
CMS: CENTER MAIN SUBSTATION
CMW: CONTAINER MAINTENANCE WAREHOUSE
COF: CONTAINER OPERATIONS FACILITY
CRNP: CRANE PLUG
CSSF: CENTER SITE SERVICES FACILITY
CSSx: CENTER SITE SUBSTATION
DD: DOUBLE DAVIT
HVSC: HIGH VOLTAGE SHORE CONNECTION
LT: LIGHT TOWER
RMGP: RAIL MOUNTED GANTRY PLUG
TE: TERMINAL ENTRANCE
PROPOSED ELECTRICAL EQUIPMENT

LEGEND

PROPOSED PTZ CAMERA
PROPOSED PTZ CAMERA (ELEVATED STRUCTURE)
PROPOSED FIXED CAMERA
PROPOSED FIXED CAMERA (ELEVATED STRUCTURE)
PROPOSED SINGLE DAVIT LUMINAIRE POLE (11m)
PROPOSED UNDERDECK LUMINAIRE
PROPOSED 347/600V LOCAL DISTRIBUTION PANEL
PROPOSED VEHICLE ACCESS CONTROL ZONE
PROPOSED DYNAMIC MESSAGE SIGN

ABBREVIATIONS

VZ1. VEHICLE ACCESS CONTROL ZONE 1
VZ2. VEHICLE ACCESS CONTROL ZONE 2
LEGEND
EXISTING WATER
EXISTING WATER (COV)
EXISTING WATER (ABANDONED)
EXISTING WATER REMOVED
PROPOSED WATER
PROPOSED RAIL
WATER VALVE / THRUST BLOCK
FIRE HYDRANT

CONNECT EXISTING WATER LINE WITH NEW 90° BEND C/W VALVES AND THRUST BLOCK
LEGEND
EXISTING SANITARY SEWERS
EXISTING SANITARY (ABANDONED)
EXISTING SANITARY BY OTHERS
EXISTING SANITARY (REMOVED)
PROPOSED SANITARY SEWERS
PROPOSED RAIL
SANITARY MANHOLES
EXTEND EXISTING CONNECTION TO LUNCH ROOM

CONNECT TO EXISTING SANITARY SEWER

LEGEND

EXISTING SANITARY SEWERS
EXISTING SANITARY (ABANDONED)
EXISTING SANITARY BY OTHERS
EXISTING SANITARY (REMOVED)
PROPOSED SANITARY SEWERS
PROPOSED RAIL
SANITARY MANHOLES
NOTES:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL WATER SEPARATOR PRIOR TO RELEASE TO MARINE WATERS.
3. ALL OUTLETS TO BE CONNECTED TO EMERGENCY SHUT-OFF SYSTEM.
LEGEND
EXISTING STORM SEWERS
EXISTING STORM (ABANDONED)
EXISTING STORM BY OTHERS
EXISTING STORM REMOVED
PROPOSED STORM SEWER
PROPOSED RAIL
CB / CB MANHOLE / STORMCEPTOR / BUILD-OVER MH

NOTES:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL WATER SEPARATOR PRIOR TO RELEASE TO MARINE WATERS.
3. ALL OUTLETS TO BE CONNECTED TO EMERGENCY SHUT OFF SYSTEM.
LEGEND
EXISTING STORM SEWERS
EXISTING STORM (ABANDONED)
EXISTING STORM BY OTHERS
EXISTING STORM REMOVED
PROPOSED STORM SEWER
PROPOSED RAIL
CB / CB MANHOLE /
STORMCEPTOR / BUILD-OVER MH

NOTES:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED
   BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL WASTE SEPARATOR PRIOR TO RELEASE
   TO MARINE WATERS.
3. ALL OUTLETS TO BE CONNECTED TO EMERGENCY SHUT-OFF SYSTEM.
NOTES:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL-WATER SEPARATOR PRIOR TO RELEASE TO MARINE WATERS.
3. ALL OUTLETS TO BE CONNECTED TO EMERGENCY SHUT-OFF SYSTEM.
NOTES:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL WATER SEPARATOR PRIOR TO RELEASE TO MARINE WATERS.
3. ALL OUTLETS TO BE CONNECTED TO EMERGENCY SHUT OFF SYSTEMS.

LEGEND
- EXISTING STORM SEWERS
- EXISTING STORM (ABANDONED)
- EXISTING STORM BY OTHERS
- EXISTING STORM REMOVED
- PROPOSED STORM SEWER
- PROPOSED RAIL
- CB / CB MANHOLE / STORMCEPTOR / BUILD-OVER MH
NOTE:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL WATER SEPARATOR PRIOR TO RELEASE TO MARINE WATERS.
3. ALL OUTLETS TO BE CONNECTED TO EMERGENCY SHUT OFF SYSTEM.
NOTES:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL WATER SEPARATOR PRIOR TO RELEASE TO MARINE WATERS.
3. ALL OUTLET TO BE CONNECTED TO EMERGENCY SHUT OFF SYSTEM.

LEGEND
EXISTING STORM SEWERS
EXISTING STORM (ABANDONED)
EXISTING STORM BY OTHERS
EXISTING STORM REMOVED
PROPOSED STORM SEWER
PROPOSED RAIL

CENTRAL EXPANSION PROJECT
TERMINAL UTILITIES
STORM SEWERS

NEW OUTLET DRAIN

NOTES:
1. PROPOSED STORM SEWER ARRANGEMENT AND SIZING TO BE CONFIRMED BY RATIONAL METHOD ANALYSIS.
2. ALL WATER TO BE TREATED BY OIL WATER SEPARATOR PRIOR TO RELEASE TO MARINE WATERS.
3. ALL OUTLET TO BE CONNECTED TO EMERGENCY SHUT OFF SYSTEM.
1. Proposed storm sewer arrangement and sizing to be confirmed by rational method analysis.
2. All water to be treated by oil water separator prior to release.
3. All outlets to be connected to emergency shutoff system.
TIE TO EXISTING Ø400 WATER LINE WITH NEW TEE C/W THRUST BLOCK AND VALVES

60° BEND C/W THRUST BLOCK

TIE INTO EXISTING Ø250 WATER LINE WITH NEW CROSS C/W THRUST BLOCK AND VALVES

NEW TEE AND VALVES
NEW CONNECTION TO MAINTENANCE BUILDING OUTFLOW
NEW CONNECTION TO SANITARY OUTFLOW
CONNECT TO EXISTING SANITARY SEWER
PROTECT EXISTING HARBOUR WEST INTERCEPTOR SANITARY SEWER

LEGEND
EXISTING SANITARY SEWERS
EXISTING SANITARY (ABANDONED)
EXISTING SANITARY BY OTHERS
EXISTING SANITARY (REMOVED)
PROPOSED SANITARY SEWERS
PROPOSED RAIL
SANITARY MANHOLES
LEGEND

EXISTING STORM SEWERS
EXISTING STORM (ABANDONED)
EXISTING STORM BY OTHERS
EXISTING STORM REMOVED
PROPOSED STORM SYSTEM
PROPOSED RAIL
CB / CB MANHOLE / STORMCEPTOR / BUILD-OVER MH

ADJUST GATE LID
ADJUST GRIT CHAMBER LID TO NEW GRADE
CONNECT TO EXISTING STORM SYSTEM
INSTALL NEW CB MANHOLES
CONNECT TO PROPOSED STORM SYSTEM
CONNECT TO EXISTING STORM SYSTEM