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KEY PLAN
Scale N.T.S.



LOCATION PLAN
Scale N.T.S.

DRAWING LIST	
DRAWING NUMBER	DESCRIPTION
GENERAL	
G-001	LOCATION PLAN & DRAWING LIST
G-002	GENERAL NOTES
G-003	GENERAL ARRANGEMENT
CIVIL	
C-101	PLAN, PROFILE, SECTION
C-001	DETAILS



TOWNSHIP OF ESQUIMALT 857 ADMIRALS ROAD CULVERT REPLACEMENT

kwl KERR WOOD LEIDAL
consulting engineers
Accountability - Collaboration - Excellence - Innovation



Rev	Date	Des	Dwn	Chk	Description	Rev	Date	Des	Dwn	Chk	Description
0	2020-04-03	EN	KXC	RVL	ISSUED FOR TENDER						

**TOWNSHIP OF ESQUIMALT
857 ADMIRALS RD CULVERT REPLACEMENT
LOCATION PLAN & DRAWING LIST**

Project No: **601.014** Drawing No: **G-001** Rev: **0**
 Group: **GENERAL**

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GENERAL

- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE PROJECT SUPPLEMENTAL SPECIFICATIONS, MMCD 2019 EDITION, AND OWNER ENGINEERING STANDARD SPECIFICATIONS & DRAWINGS, UNLESS NOTED OTHERWISE.
- CONSTRUCTION REQUIRES SPECIAL COORDINATION WITH CRD PARKS, ISLAND CORRIDOR FOUNDATION, AND PUBLIC SERVICES AND PROCUREMENT CANADA (PSPC). COORDINATION PRIOR TO AND DURING CONSTRUCTION IS REQUIRED. REFER TO PROJECT SUPPLEMENTAL SPECIFICATIONS FOR DETAILS.
- EXPLORE AND CONFIRM KEY TIE-IN ELEVATIONS AND UTILITY CROSSING POINTS AT LEAST 48 HRS PRIOR TO START OF CONSTRUCTION ON ANY SUCH ITEM. NOTIFY THE CONTRACT ADMINISTRATOR SHOULD CONFLICTS BE FOUND.
- ADJUST ALL EXISTING AND NEW APPURTENANCES TO MEET THE FINAL DESIGN GRADES.
- RESTORE ALL AREAS AFFECTED BY CONSTRUCTION WORKS TO THEIR ORIGINAL CONDITION OR BETTER.
- ENSURE THAT ALL OPERATIONAL SERVICES TO EXISTING BUILDINGS REMAIN FUNCTIONAL DURING CONSTRUCTION AND ARE CONNECTED TO NEW INFRASTRUCTURE AND OPERATIONAL POST-CONSTRUCTION. ENSURE SERVICES ARE INSPECTED BY THE CONTRACT ADMINISTRATOR OR, IN SOME CASES, BY OTHER REGULATORY AUTHORITIES.
- DO NOT START ANY BACKFILL OPERATION UNTIL ALL WORK HAS BEEN APPROVED BY THE CONTRACT ADMINISTRATOR, ENGINEER OF RECORD, THEIR REPRESENTATIVES AND/OR OTHER REGULATORY AUTHORITIES.
- REPAIR AND/OR REPLACE ALL INFRASTRUCTURE (INCLUDING PRIVATE PROPERTY & BOULEVARDS) DAMAGED OR REMOVED DURING CONSTRUCTION TO BETTER THAN OR EQUAL TO PRE-CONSTRUCTION CONDITION.
- ELEVATIONS HAVE BEEN OBTAINED FROM SURVEY, RECORD DRAWINGS AND PRIVATE UTILITY RECORDS. ALL ARE TO BE FIELD CONFIRMED.
- ALL ELEVATIONS AND DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
- ALLOWABLE HOURS OF CONSTRUCTION INCLUDE:
 - WORK SHALL FOLLOW THE OWNER'S CONSTRUCTION ACTIVITY BYLAWS OF 7:00 AM TO 7:00 PM MONDAY TO FRIDAY AND 9:00 AM TO 6:00 PM SATURDAY. WORK MUST ALSO ADHERE TO THE OWNER'S NOISE CONTROL BYLAW (BYLAW NO. 282 SECTION 33) WHICH PROHIBITS THE CAUSE OF NOISE BETWEEN 10:00 PM AND 7:00 AM MONDAY TO FRIDAY, AND 10:00 PM TO 9:00 AM SATURDAY, SUNDAY, AND HOLIDAYS. SEE BYLAW FOR EXACT WORKING.
- END OF DAY TRENCH RESTORATION REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO:
 - NO OPEN TRENCH WITH BARRICADE OR FENCE. ALL NON-BACKFILLED TRENCHES SHALL BE COVERED WITH APPROPRIATE ROAD PLATES AT THE END OF THE DAY.
 - GRAVEL TO GRADE CAN BE USED FOR TEMPORARY TRENCH RESTORATION PRIOR TO PAVING.
 - ALL TEMPORARY GRAVEL MUST BE BACKFILLED TO WITHIN 25 mm OF EXISTING ASPHALT AND SHALL BE MONITORED DAILY AND MAINTAINED AS REQUIRED.

UTILITIES

- SEWER AND DRAIN PIPE DIMENSIONS SHALL BE AS DETAILED ON THE FOLLOWING DESIGN DRAWINGS.
- THE DRAIN CASING PIPE SHALL BE INSTALLED BY GUIDED HORIZONTAL AUGER BORING. GEOTECHNICAL BOREHOLE RECORDS AND INSITU SOILS TESTING ARE PROVIDED ON THIS SHEET.
- ALL PIPING SHALL BE AS FOLLOWS:
 - DRAIN PIPES 150 mm & SMALLER SHALL BE DR 28 PVC BELL & SPIGOT DRAIN PIPE TO ASTM D3034
 - DRAIN PIPES 200 mm & LARGER SHALL BE DR 35 PVC BELL & SPIGOT DRAIN PIPE TO ASTM D3034 UNLESS OTHERWISE NOTED
 - HDPE PIPE SHALL BE HIGH DENSITY POLYETHYLENE TO PE4710 AND DR PER CONTRACT DOCUMENTS
 - STEEL PIPE SHALL BE CARBON STEEL PIPING TO ASME B36.10 AND ASME B31.3 PER ASTM A53 GRADE A OR HIGHER
 - MINIMUM TENSILE STRENGTH: 48 KSI
 - MINIMUM YIELD STRENGTH: 30 KSI
- DRAIN MAINS 100 mm AND LARGER SHALL BE VIDEOED AS PER MMCD. VIDEOS SHALL BE COMPLETED WITH A FLOW OF 5-10% IN THE PIPE. VIDEOS PROVIDED WITH NO FLOW WILL BE REJECTED. THE VIDEO SHALL PASS THROUGH THE BENCHING OF BOTH UPSTREAM AND DOWNSTREAM MANHOLES FOR THE PURPOSE OF ASSESSING BENCHING DEFICIENCIES.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION FOR ALL MANHOLE COMPONENTS AND COUPLERS.
- DRAIN FLOWS WILL BE MANAGED BY THE OWNER DURING CONSTRUCTION. CONTRACTOR MUST COORDINATE WITH THE OWNER TO IDENTIFY WHERE PUMPS AND HOSES SHOULD BE LOCATED TO ALLOW FOR SUFFICIENT CONSTRUCTION WORKING ROOM. PROVIDE MINIMUM 72 HOURS TO ALLOW THE OWNER TO RELOCATE OR ADJUST THE BYPASS SYSTEM TO SUIT CONSTRUCTION.
- PIPE AND MANHOLE BEDDING AND BACKFILL MATERIALS:
 - UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR DIRECTED BY THE ENGINEER, ALL PIPING AND ROAD/DRIVEWAYS SHALL BE INSTALLED USING:
 - PIPE BEDDING: 150 mm THICK LAYER OF MMCD GRANULAR PIPE BEDDING AND SURROUND MATERIAL TYPE 1
 - PIPE SURROUND: MMCD GRANULAR PIPE BEDDING AND SURROUND MATERIAL TYPE 1 PLACED IN LOOSE LIFTS NOT EXCEEDING 150 mm, AND COMPACTED, 95 - 98% MODIFIED PROCTOR DENSITY (MPD).
 - TOP OF PIPE TO ROAD BASE: MMCD GRANULAR PIPE BEDDING AND SURROUND MATERIAL TYPE 1 PLACED IN LOOSE LIFTS NOT EXCEEDING 300 mm, AND COMPACTED, 95 - 98% MPD.
 - ROAD/TRAIL/DRIVEWAY BASE: 300 mm THICK MMCD GRANULAR PIPE BEDDING AND SURROUND MATERIAL TYPE 1
 - NATIVE MATERIAL: THE USE OF NATIVE MATERIAL SHALL NOT BE PERMITTED UNLESS APPROVED BY THE OWNER
 - MANHOLE SUBBASE: 150 mm THICK LAYER OF MMCD GRANULAR PIPE BEDDING AND SURROUND MATERIAL TYPE 1. CONTRACT ADMINISTRATOR TO APPROVE NATIVE SUBGRADE PRIOR TO PLACEMENT OF IMPORTED SUBBASE.
 - MANHOLE BACKFILL: MMCD GRANULAR PIPE BEDDING AND SURROUND MATERIAL TYPE 1 PLACED AND COMPACTED IN 300 mm THICK LIFTS.
 - PIPE ABANDONMENT CDF FILL: INFILL ABANDONED PIPES WITH CONTROL DENSITY FILL / SELF CONSOLIDATING CONCRETE WHERE SHOWN ON C-101 USING PUMP AND HOSES. PROVIDE CDF TO:
 - SLUMP: 750 mm
 - STRENGTH: 3.5 MPa

ENVIRONMENTAL

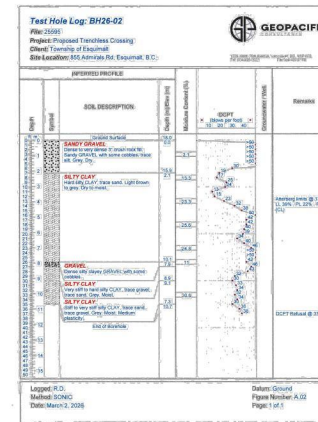
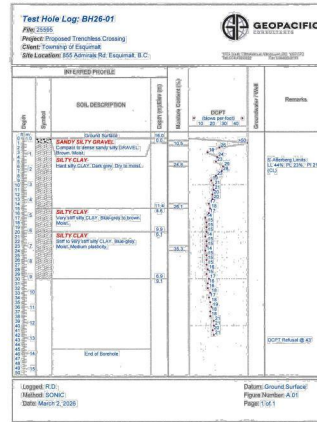
- USE BEST MANAGEMENT PRACTICES (BMP), IN ACCORDANCE WITH BC'S BMP GUIDELINES AND REGULATIONS. DURING CONSTRUCTION, ADJUST WORK ACTIVITIES DURING PERIODS OF HEAVY RAIN TO MINIMIZE SEDIMENTS ENTERING THE STORM DRAIN SYSTEM. SOME BMP'S TO CONSIDER ARE:
 - INSTALL A SILT FENCE 1 m OFF THE EXPECTED DISTURBED DOWNSTREAM AREA
 - INSPECT ALL EQUIPMENT DAILY FOR FLUID LEAKS
 - ENSURE THAT TRUCK WHEELS ARE FREE FROM ANY SITE DEBRIS BEFORE DRIVING ON THE TOWNSHIP ROADS FOR OFFSITE DISPOSAL
 - ENSURE SPILL PROTECTION MEASURES ARE IN PLACE DURING RE-FUELING OF EQUIPMENT
 - KEEP A SPILL KIT ON SITE AT ALL TIMES
 - CONTRACTOR SHALL INSTALL CATCH BASIN SEDIMENT FILTERS WITHIN AND DOWNSTREAM OF THE WORK AREA THAT SHALL BE MAINTAINED REGULARLY, INCLUDING EVERY TWO (2) DAYS DURING SIGNIFICANT RAINFALL EVENTS
 - CONTRACTOR SHALL PROTECT ALL TREES FROM DAMAGE DURING CONSTRUCTION. NOTIFY THE CONTRACT ADMINISTRATOR IMMEDIATELY IF A POSSIBLE CONFLICT IS FOUND.

SURFACE RESTORATIONS

- ASPHALT
 - ROADWAY ASPHALT PATCHES TO BE A MINIMUM OF 50 mm THICK (1 LIFT OR MATCH EXISTING IF THICKER ASPHALT IS REQUIRED) OF MMCD UPPER COURSE NO. 2 IN ACCORDANCE WITH MMCD AND/OR OWNER SPECIFICATIONS c/w TACK COAT BONDING FOR NEW ASPHALT TO SURFACE UNDERNEATH, INCLUDING APPROVED ASPHALT SEALANT AT COLD JOINTS.
 - DRIVEWAY AND TRAIL ASPHALT PATCHES TO BE MINIMUM OF 50 mm THICK OF MMCD UPPER COURSE NO.2
 - ALL TIE-INS TO EXISTING ASPHALT SHALL INCLUDE A 300 mm WIDE BY 30 mm DEEP LAP JOINT.
 - SUBMIT MIX DESIGN TO ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.
- ALL NEW SIDEWALKS, CURBS, GUTTERS, ROAD, PARKING & DRIVEWAYS SHALL TIE INTO EXISTING INFRASTRUCTURE WITH SMOOTH TRANSITION.
- COMPACT TRENCH BACKFILL, ROAD, PARKING & DRIVEWAY BASES TO A MINIMUM OF 95 - 98% MODIFIED PROCTOR DENSITY (MPD). TEST COMPACTION AS FREQUENTLY AS FOLLOWS:
 - 2 TESTS ON 600 mm DIA. DRAIN OPEN CUT BEDDING
 - 3 TESTS ON COMPACTED ROAD/TRAIL ROAD
 - TEST LOCATIONS TO BE EVENLY DISTRIBUTED ACROSS PROJECT.

TRAFFIC MANAGEMENT

- CONTRACTOR SHALL PROVIDE 2 TRAFFIC MANAGEMENT PLANS (TMP) PREPARED BY A CERTIFIED TRAFFIC MANAGEMENT PROFESSIONAL AS DETAILED IN THE PROJECT SPECIFICATIONS. TMP'S TO MEET OR EXCEED REQUIREMENTS OF A CATEGORY 2 PER MOTT GUIDELINES.
 - TMP-1: WORK OUTSIDE OF PSPC
 - TMP-2: WORK WITHIN PSPC



BORE HOLE LOGS

Rev	Date	Des	Dwn	Chk	Description
0	2024-04-03	EN	KTK	RVL	ISSUED FOR TENDER

TOWNSHIP OF ESQUIMALT
857 ADMIRALS RD CULVERT REPLACEMENT
GENERAL NOTES

Project No: 601.014
 Drawing No: G-002
 Sheet: GENERAL
 Rev: 0

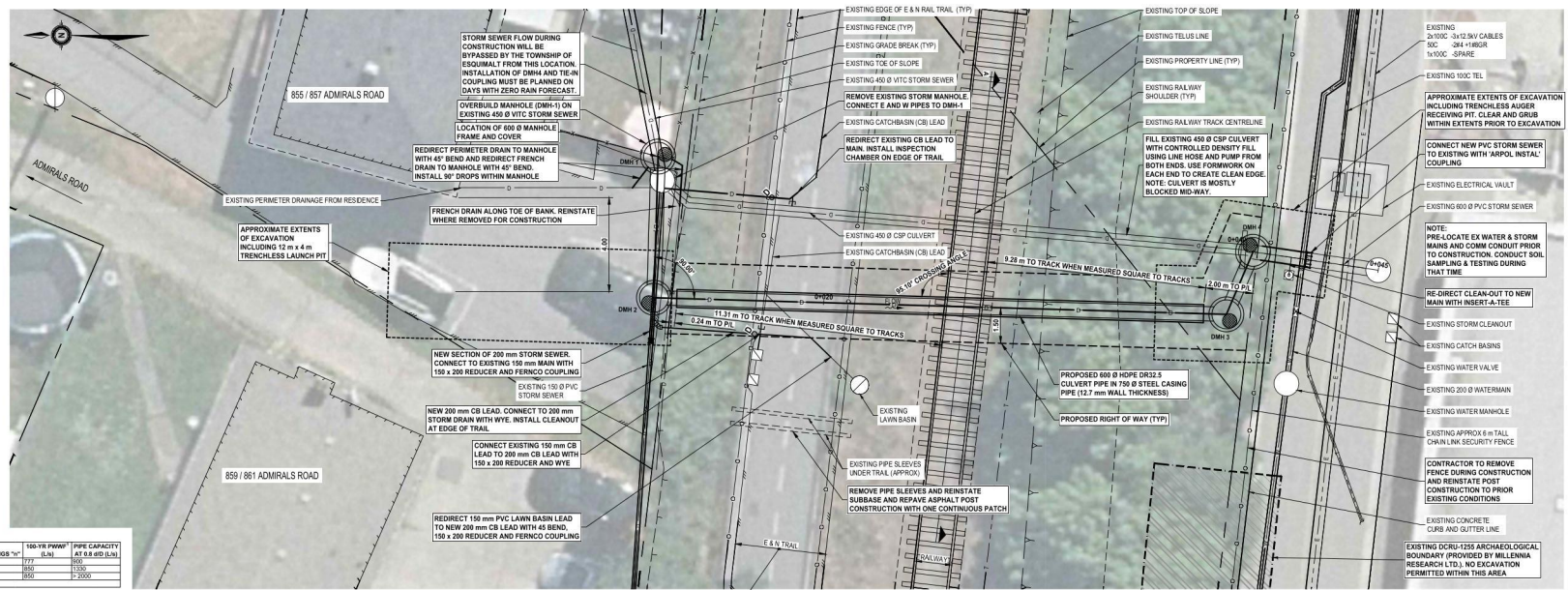


- NOTES:**
- CONTRACTOR TO CONFIRM DEPTH AND LOCATION OF ALL UTILITIES IN PROXIMITY TO EXCAVATION ZONES AND REPORT ANY CONFLICTS TO THE ENGINEER PRIOR TO CONSTRUCTION. CB & LD LEADS ARE SHOWN APPROXIMATE AND REQUIRE PRE-LOCATE USING FISH-TAPE & "M" SCOPE LOCATOR. THE CROSSING WILL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE BRITISH COLUMBIA RAILWAY SAFETY CODE PART 3 CONSTRUCTION AND MAINTENANCE. THE CROSSING IS DESIGNED FOR COOPER'S 6.80 TON TRAIN LOADING WITH IMPACT FOR LOCAL CONDITIONS.
 - STEEL CASING PIPE TO BE INSTALLED TRENCHLESSLY BY HORIZONTAL AUGER BORING.
 - CARRIER PIPE:
 - 600 mm Ø HOPE PE4710 DR32.5
 - MIN. 18 mm WALL THICKNESS
 - 4 PSI MAX. OPERATING PRESSURE
 - HOPE PE4710 @ 3000 PSI MIN. YIELD STRENGTH
 - ENCASUREMENT PIPE:
 - 762 mm Ø STEEL
 - MIN. 12 mm WALL THICKNESS
 - GRADE A STEEL OR HIGHER
 - 30 KSI MIN. YIELD STRENGTH

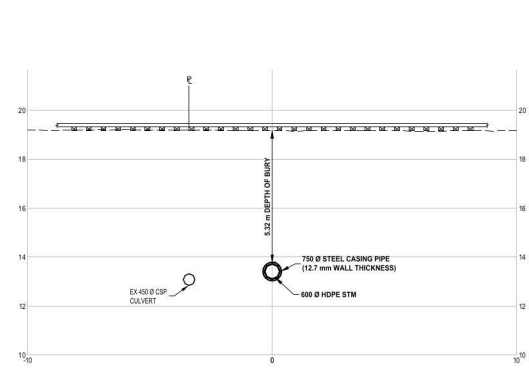
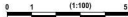
STM STRUCTURE TABLE		
STRUCTURE #	STATION	COORDINATES
DMH 1	0+006.86	N 5,365,033.14 E 468,728.32
DMH 2	0+012.83	N 5,365,033.32 E 468,722.36
DMH 3	0+037.03	N 5,365,009.12 E 468,721.66
DMH 4	0+039.90	N 5,365,007.99 E 468,724.29

STORM SEWER HYDRAULICS					
US MANHOLE	DIS MANHOLE	DI (mm)	SLOPE	PIPE TYPE	MANNINGS "n"
DMH 1	DMH 2	600	0.2%	HOPE	0.12
DMH 2	DMH 3	600	0.50%	HOPE	0.12
DMH 3	DMH 4	600	0.2%	HOPE	0.12

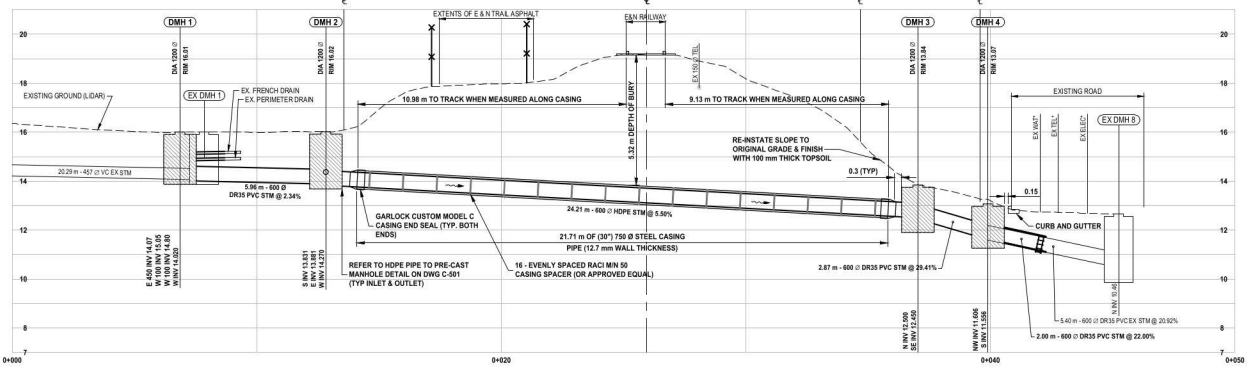
1. PAVP BASED ON GEORADICE INTERIM STORM WATER MASTER PLAN MODEL (2020-01-26)



PLAN
Scale 1:100



RAILWAY CROSSING SECTION A
Scale 1:100



PROFILE
Scale 1:100

Rev	Date	Des	Dwn	Chk	Description
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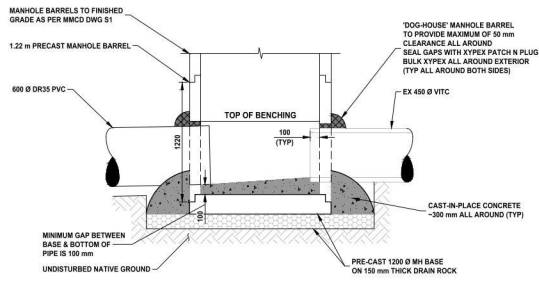
**TOWNSHIP OF ESQUIMALT
857 ADMIRALS RD CULVERT REPLACEMENT
PLAN, PROFILE, SECTION**

Project No: 601.014
Sheet: CIVIL
Drawing No: C-101
Rev: 0

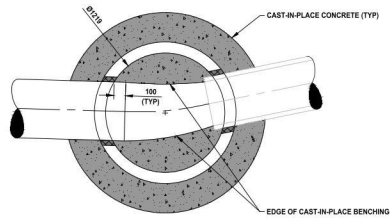


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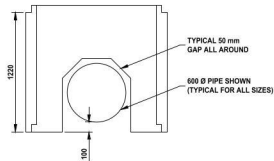
ELEVATION VIEW



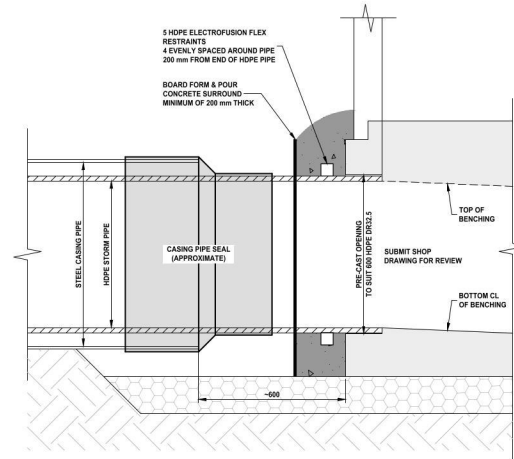
PLAN VIEW

DMH 1 - OVERBUILD MANHOLE DETAIL

Scale 1:25



'DOG-HOUSE' TYPICAL DETAIL



HDPE PIPE TO PRE-CAST MH BASE CONNECTION DETAIL

Scale 1:10

Rev	Date	Des	Dwn	Chk	Description
0	2020-04-03	EN	KTK	RYL	ISSUED FOR TENDER

Rev	Date	Des	Dwn	Chk	Description